Filipe S. Dias fsdias@cibio.up.pt • fsdias.github.io

Research interests

Broadly—Understanding the effects of human activities and climate change on the preservation of Mediterranean oak woodlands, as well as the habitats they support, including shrublands and riparian habitats.

I am also excited about applying conceptual, mathematical, and statistical approaches to tackle ecological and biodiversity conservation questions.

Employment

2023 – ? **Auxiliary researcher**
Centro de Investigação em Biodiversidade e Recursos Genéticos (CIBIO/Biopolis)

I am working in the project "NaturaConnect - Designing a resilient and coherent Trans- European network for nature and people" which is funded under the European Union's Horizon Europe Research and Innovation Programme. I am involved in "Work Package 6 - Multi-scale nature connectivity and corridors design" and "Work Package 8 - Showcasing the implementation of TEN-N", and I will be working on "Task 6.1 - Connectivity knowledge exchange: identifying planning priorities and landscape elements for ecological corridors", "Task 6.2 - Functional connectivity for network design: form species and demographic traits to ecological corridor design" and "Task 8.4 - Case study national level - Portugal".

2019 – 2022 **Auxiliary researcher**
Centro de Investigação em Biodiversidade e Recursos Genéticos (CIBIO/Biopolis)

I worked as a contracted researcher on the project "RIVERSCALE - Ecological patterns and processes across scales: application to river networks (PTDC/BIA-ECO/28729/2017 – POCI-01-0145-FEDER-028729)" under the leadership of Dr. Luís Borda de Água and co-lead of Dr. Patrícia Rodríguez-González. My main focus was on analyzing how diversity patterns of riparian plant communities change across different scales using Bayesian methods.

2011– 2022 **Data analyst and Biodiversity and Ecosystem services consultant**
Associação Natureza Portugal/WWF Portugal

I was responsible for processing and analyzing biodiversity and ecosystem services data. My role involved overseeing the HABEaS Project (www.habeas-med.org), an online geographic information system that offers free access to biodiversity and ecosystem services data. I was also responsible for providing quantitative data to support ongoing biodiversity conservation projects and project funding proposals.

2016 – 2019 **Postdoctoral fellow**
Centro de Ecologia Aplicada "Prof. Baeta Neves", Instituto Superior de Agronomia, Universidade de Lisboa

I conducted research that involved reviewing the existing literature on the effects of forest certification on biodiversity conservation. Additionally, I analyzed the factors that influence visitation rates in protected areas and the Natura 2000 network in Portugal. Lastly, I examined the factors that influence changes in forest cover in Mediterranean oak woodlands.

2008 – 2009 **Research assistant**
Faculdade de Ciências, Universidade de Lisboa

I worked as a research assistant on the project "Assessing the effectiveness of mitigation measures in reducing the negative impacts of highways," funded by BRISA "Auto-estradas de Portugal, SA." My main responsibilities included trapping and capturing stone martens (*Martes foina*) and utilizing radio-tracking techniques to monitor their movements in relation to a major highway in Southern Portugal. Additionally, I played a crucial role in developing a geographic information system to analyze the collected data and conducted statistical analyses to assess habitat selection and movement patterns.

Education

2011–2015 **PhD, Forestry and Natural Resources, Instituto Superior de Agronomia, Universidade de Lisboa**
Advisors: Miguel N. Bugalho and Jorges Orestes Cerdeira
Thesis: The Role of Forest Certification for the Conservation of Biodiversity and Sustainability of Cork Oak Woodlands

2007–2008 **MSc, Conservation Biology, Faculdade de Ciências, Universidade de Lisboa**
Advisors: Margarida Santos-Reis
Thesis: Multi-Scale Analysis of Carnivores' Road Mortality Patterns in Highways: A Case Study with the Stone Marten and the Common Genet

2003–2007 **Degree in Environmental Biology, Faculdade de Ciências, Universidade de Lisboa**

Publications

2024 Mexia, Teresa, Maria Conceição Caldeira, Xavier Lecomte, **Filipe S. Dias**, Margarida Tomé, Leónia Nunes, and Miguel Nuno Bugalho. "Is Forest Certification Mitigating Oak Decline in Mediterranean Open Woodlands?" Forest Ecology and Management 568 (September 15, 2024): 122105. https://doi.org/10.1016/j.foreco.2024.122105.

2024 Lopes, L. F., **Filipe S. Dias,** P. M. Fernandes, and V. Acácio. "A Remote Sensing Assessment of Oak Forest Recovery after Postfire Restoration." European Journal of Forest Research, March 8, 2024. https://doi.org/10.1007/s10342-024-01667-z

2024 Acácio, Vanda, **Filipe S. Dias**, Mário Ferreira, Patricia M. Rodríguez-González, Hugo Matias, and Maria C. Caldeira. "Effects of Shrub Species Dominance and Diversity on Oak Seedling Survival in Mediterranean Woodlands: The Interplay of Abiotic Conditions and Plant Traits." Forest Ecology and Management 555: 121713. https://doi.org/10.1016/j.foreco.2024.121713

2022 **Dias, Filipe S.**, Michael Betancourt, Patricia María Rodríguez-González, and Luís Borda-de-Água. "BetaBayes—A Bayesian Approach for Comparing Ecological Communities." Diversity 14, no. 10 (October 2022): 858. https://www.mdpi.com/1424-2818/14/10/858/htm

2022 Pabst, Rebecca, **Filipe S. Dias**, Luís Borda-de-Água, Patricia María Rodríguez-González, and César Capinha. "Assessing and Predicting the Distribution of Riparian Invasive Plants in Continental Portugal." Frontiers in Ecology and Evolution 10 (May 6, 2022):875578. https://doi.org/10.3389/fevo.2022.875578

2021 **Dias, Filipe S.**, Michael Betancourt, Patricia María Rodríguez-González, and Luís Borda-de-Água. "Analysing the Distance Decay of Community Similarity in River Networks Using Bayesian Methods." Scientific Reports 11, no. 1 (November 4, 2021): 21660. https://doi.org/10.1038/s41598-021-01149-x

2021 Acácio, Vanda, **Filipe S. Dias**, Filipe X. Catry, Miguel N. Bugalho, and Francisco Moreira. "Canopy Cover Loss of Mediterranean Oak Woodlands: Long-Term Effects of Management and Climate." Ecosystems, March 16, 2021. https://doi.org/10.1007/s10021-021-00617-9

2020   Romeiras, Maria M, Mark Carine, Maria Cristina Duarte, Sílvia Catarino, Filipe S. Dias, and Luís Borda-de- Água. "Bayesian Methods to Analyze Historical Collections in Time and Space: A Case Study Using Cabo Verde Endemic Flora." Frontiers in Plant Science 11, no. 278 (2020) https://doi.org/10.3389/fpls.2020.00278.

2019   **Dias, Filipe S.**, José F. C. Wenceslau, Tiago A. Marques, and David L. Miller. "Density and Distribution of Western Chimpanzees around a Bauxite Deposit in the Boé Sector, Guinea-Bissau." American Journal of Primatology 81, no. 9 (2019):e23047. https://doi.org/10.1002/ajp.23047

2019   Arsénio, Pedro, Patricia María Rodríguez-González, Ivan Bernez, **Filipe S. Dias**, Miguel Nunes Bugalho, and Simon Dufour. "Riparian Vegetation Restoration: Does Social Perception Reflect Ecological Value?: Social Perception of Riparian Vegetation Restoration." River Research and Applications, August 20, 2019. https://doi.org/10.1002/rra.3514

2017   Acácio, Vanda, **Filipe S. Dias**, Filipe X. Catry, Marta Rocha, and Francisco Moreira. "Landscape Dynamics in Mediterranean Oak Forests under Global Change: Understanding the Role of Anthropogenic and Environmental Drivers across Forest Types." Global Change Biology 23, no. 3 (March 1, 2017): 1199–1217. https://doi.org/10.1111/gcb.13487

2016   **Dias, Filipe S.**, David L. Miller, Tiago A. Marques, Joana Marcelino, Maria C. Caldeira, J. Orestes Cerdeira, and Miguel N. Bugalho. "Conservation Zones Promote Oak Regeneration and Shrub Diversity in Certified Mediterranean Oak Woodlands." Biological Conservation 195 (March 2016): 226–34. https://doi.org/10.1016/j.biocon.2016.01.009

2015   **Dias, Filipe S.**, M N Bugalho, B. Briñas, and J. O. Cerdeira. "Using the High Conservation Value Forest Concept and Pareto Optimization to Identify Areas Maximizing Biodiversity and Ecosystem Services in Cork Oak Landscapes." Agroforestry Systems, April 19, 2015. https://doi.org/10.1007/s10457-015-9814-x

2015   **Dias, Filipe S.**, Miguel N. Bugalho, Patricia M. Rodríguez-González, António Albuquerque, and J. Orestes Cerdeira. "Effects of Forest Certification on the Ecological Condition of Mediterranean Streams." Journal of Applied Ecology 52, no.1 (February 2015): 190–98. https://doi.org/10.1111/1365-2664.12358

2013   **Dias, Filipe S.**, Miguel N. Bugalho, J. Orestes Cerdeira, and M. João Martins. "Is Forest Certification Targeting Areas of High Biodiversity in Cork Oak Savannas?" Biodiversity and Conservation 22 (November 2013): 93–112. https://doi.org/10.1007/s10531-012-0401-4

Reports

2017   Moreira, Francisco, **Filipe S. Dias**, Jeremy Dertien, Ana Ceia Hasse, Luis Borda-de-Água, Silvia Carvalho, Miguel Porto, et al. "Guidelines for Connectivity Conservation and Planning in Europe." ARPHA Preprints 5 (June 6, 2024): e129021. https://doi.org/10.3897/arphapreprints.e129021

2017   Bugalho, Miguel N., **Filipe S. Dias**, and Rui Barreira. "Incêndios Rurais Em Portugal: Até Quando Deixaremos a Paisagem Arder?" Lisboa, Portugal: WWF Mediterrâneo (WWF MED)/Centro de Ecologia Aplicada Prof. Baeta Neves do Instituto Superior de Agronomia (CEABN/ISA), 2017. Link

2010   Branco, Orlando, Miguel Nuno Bugalho, Luís Neves Silva, Rui Barreira, Pedro Vaz, and **Filipe S. Dias**. "Hotspot Areas for Biodiversity and Ecosystem Services in Montado." Lisbon: WWF Mediterranean –Portugal/Centre for Applied Ecology Prof. Baeta Neves (CEABN), 2010. Link

Peer review work

I am a Review Editor for Frontiers in Forests and Global Change and have also reviewed papers for Biological Conservation, International Forestry Review and Forestry.

Invited talks and conferences

Talks

2023   **How to Manage and Process Big Datasets in R - an Example with eBird Data**

Instituto Superior de Agronomia, CIBIO's Journal Club, March 23th. Link

2014   **Como utilizar o software R através do QGIS**

University of Évora, Link

2012   **HABEaS WebGIS: Practical applications**

Course "Evaluating ecosystem services for decision-making" , Natural Capital Project,   Instituto Superior Técnico

Conferences

2024   **A critical evaluation of current practices in connectivity projects across Europe**

7th European Congress of Conservation Biology (ECCB 2024), Bologna, Italy.

Moreira F, Dias F S., Dertien J, Borda-de-Água L, Porto M, Carvalho S, Ceia-Hasse A, Seliger C, Schinegger R, Santini L, Maiorano L, Cosentino F, Sacchi A, Férnandez N

2024   **NaturaConnect project workshop on Building a resilient ecological network of conserved areas across Europe for nature and people: Guidelines for connectivity conservation and planning in Europe**

15th Meeting of the Carpathian Convention Working Group on Biodiversity, Vienna, Austria

Moreira F, Dias F, Dertien J, Borda-de-Água L, Porto M, Carvalho S, Ceia-Hasse A, Seliger C, Schinegger R, Santini L, Maiorano L, Cosentino F, Sacchi A, Férnandez N

2023   **A unified approach to the species-area-relationship using statistics of extremes**

GfÖ Annual Meeting 2023, Leipzig

Borda-de-Água, L., Quoss, L., Dias, F.S., Neves, M., Hubbell, S.P., Pereira, H.M.

2023   **Use of remote sensing to evaluate effects of postfire emergency stabilization on oak forests recovery**

8th International Wildfire Conference, Porto, Portugal

Lopes, L.F., Dias, F.S., Fernandes, P., Acácio, V.

2021   **Analysing the distance decay of community similarity in river networks using Bayesian methods**.

20º Encontro Nacional de Ecologia, Escola Superior Agrária Ponte de Lima, Portugal

Filipe S. Dias, Michael Betancourt, Patricia María Rodríguez-González, and Luís Borda-de-Água

2019   **Long-term dynamics of canopy cover in Mediterranean evergreen oak woodlands reveals a degradation   trend determined by management and   climate**

15th EEF - European Ecological Federation Congress, Lisbon, Portugal

Acácio, V., Dias, F.S**.**, Catry, F.X., Bugalho, M., Moreira F.

2016 **Landscape dynamics in Mediterranean oak forests under global change: understanding the role of anthropogenic and environmental drivers across forest types**

Seminário "Ecologia, Florestas e Conservação" do Centro de Estudos Florestais e CEABN. Instituto   Superior de Agronomia, Lisboa, Portugal

Acácio, V., Dias, F.S., Catry, F.X., Rocha, M., Moreira, F

2016 **Landscape dynamics in Mediterranean oak forests under global change: understanding the role of anthropogenic and environmental drivers across   species**

World Congress Silvo-Pastoral Systems 2016, University of Évora, Évora, Portugal

Acácio, V., Dias, F.S., Catry, F.X., Rocha, M., Moreira, F., 2016

2009 **Do highways work as barriers for stone marten movements? Yes, and more than what may look**

IX Jornadas de la SECEM. 5-8 December 2009, Bilbao, Spain

Ascensão F, Tracey JA, Costa M, Pinheiro P, Clevenger A, Grilo,C.,Matos,H.M.,Dias,F.S., Santos-Reis M.

2009 **Stone martens and highway interactions: home range configurations and   crossing movements**

27th Mustelid Colloquium, 18-20 November 2009, Lisbon, Portugal

Pinheiro P, Costa M., Ascensão F., Grilo C., Matos H., Dias, F.S., Reto D. & M. Santos-Reis

2009 **Multi-scale analysis of road mortality patterns: a case study with the stone marten and the common genet**.

IENE-Infra Eco Network Seminar "Connecting Wildlife and People, Évora

Dias, F. S., Grilo, Clara; Ascensão, Fernando; Santos-Reis, Margarida.

Advising
Past Master students

2014 **Berta Briñas García, Erasmus Mundus, Instituto Superior de Agronomia**

Thesis: Mapping and identification of hotspots for biodiversity and ecosystem services in   cork oak woodlands in   Portugal

With Miguel N. Bugalho

Teaching experience

2011 **Biodiversidade Ambiente e Conservação, Instituto Superior de Agronomia**

Assistant lecturer

With Jorge Orestes Cerdeira, Diogo Alagador, Tiago Monteiro-Henriques

Students: ~25

Skills

Statistical analysis – I have extensive experience with both frequentist and Bayesian methods using Stan's probabilistic programming language (https://mc-stan.org/).

Data wrangling - I have been using R for data wrangling for 15+ years and I am comfortable both its native syntax and the tidyverse ecosystem of packages (https://www.tidyverse.org/).

Geographic Information Systems – I have extensive experience in processing and analyzing geographical data using free and open-source software like QGIS, GRASS GIS, GDAL, and PostGIS.

Fieldwork experience - I have experience working with mammal carnivores, including trapping and radio tracking. I have also conducted vegetation surveys to assess tree regeneration, shrub cover, and forest structure. Additionally, I am skilled in assessing the ecological condition of streams using the Stream Visual Assessment Protocol (SVAP). Furthermore, I have an intermediate level of expertise in birding.

Scientific communication and dissemination – I have experience in effectively communicating scientific research to non-scientific audiences and writing non-technical reports. I am used to working in multidisciplinary environments and I have a lot experience with engaging with individuals from diverse backgrounds.