Mario Mingarro López

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Bachelor in Environmental Science and Master in Geographic Information Technologies. Currently working at the National Museum of Natural Sciences (MNCN - CSIC), within the Biogeography and Global Change department. The aim of my research is to study how climate change and land use can affect protected areas. In this way, I identify the areas that will lose or preserve their current environmental conditions, creating a network of corridors capable of mitigating the effects of climate change.

While I am carrying out my thesis, I work as GIS technician for the project 'Climate change refugia identification using Iberian mountain butterflies'. In this project I study how climate change affects diurnal Lepidoptera in the Iberian Peninsula by analysing their environmental variables.

Specialties:

- Modelling of climatic and microclimatic variables

- Prediction of future climate data through the different existing scenarios

- Spatial analysis through geographic information systems

- Obtaining and processing of different satellite data: LiDAR, Radar, Multispectral Imaging

- Data Analysis with R

EDUCATION

▸ PhD candidate in department of Biogeography and Global Change (2019 - currently) The National Museum of Natural Sciences (Madrid)

▸ MSc in Geographical Information Technologies (2017-2018) Alcalá de Henares University (Madrid)

▸ BSc in Environmental Science (2011-2017) Rey Juan Carlos University (Madrid)

WORK EXPECIENCE

▸ PhD candidate in National Museum of Natural Science (CSIC) Biogeography and Global Change department (October 2019 - currently) Principal research: protected areas, land use changes and climate change

▸ Technician in National Museum of Natural Science (CSIC) Biogeography and Global Change department (September 2019 - currently) Principal research: insect range shift, microclimate and climate change

- ▶ Teacher in GEASIG (June 2018 - currently) Introduction to ArcGIS Network Analysis

- ▶ Research collaborator at the Observatory of Sustainability in Spain (May 2016 - Currently) Land use change and climate analysis reports (see other publications)

- ▶ Research collaborator at National Museum of Natural Science (CSIC) (September 2017– June 2020) Climatic modelling, geographic data management and land use scenarios modelling

- ▶ Biogeography laboratory internship at National Museum of Natural Science (CSIC) (November 2016 - June 2017) Spatial analysis with GIS

- ▶ Technician in National census of the Iberian Wolf, Canis lupus (MNCN) (November 2016 - June 2017) Data collection preparation (Epicollect) and data analysis with GIS

- ▶ *Circus pygargus* and *Circus aeruginosus* census in the southwest of Madrid internship (GREFA) (May 2015 - September 2015) Nest detection, egg counting and database management

- ▶ Mountain and nature guide (Tierra de Fuego) (March 2008 - July 2010) Mountain hikes through the Iberian Peninsula and France.

ACADEMIC TRAINING

2020

- Statistical methods for research, URJC (16h)

- How to review scientific articles, URJC (2.5h)

- Using the UN Biodiversity Lab to Support National Conservation and Sustainable
  Development Goals, ARSET - NASA (6h)

- How organize your readings during the thesis, URJC (2.5h)

2019

- Species distribution models, GBIF (20h)

- Writing scientific text, MNCN - CSIC (15h)

- Prevention training in field activities labour risks, CSIC (5h)

- Remote sensing for conservation and biodiversity, ASTER - NASA (6h)

2018

- Hyperspectral Thermal Image Unmixing, GEO University (20h)

- Processing satellite imagery for monitoring water quality ASTER – NASA (8h)

2017

- Factorial designs and analysis of experiments in natural sciences with R, CSIC (43h)

- Python applied to engineer and scientific research, Darwin Eventur (100h)

- Earth imagery at work, ESRI (40h)

2016

- Introduction to statistical analysis in scientific research with R, Darwin Eventur (100h)

- Test of English for International Communication. TOEIC (120h)

Before 2016

- Extremadura bird's identification (40 h)

- Mammal tracking (20 h)

- Current photography techniques (300h)

- Photographic edition with Photoshop (200h)

COMPUTER SKILLS

▸ Geographic Information Systems: ArcGIS, Qgis, Terrset, PostGIS, R.

▸ Remote sensing: ENVI, PCI Geomatics, eCognition, FUSION (LiDAR), R.

▸ Database management: PgAdmin, Access, PostgreSQL, R.

▸ Statistics: Geoda, STATISTICA, R.

▸ Programming language: R, SQL.

▸ Other Skills: Excel, Word, Power Point.

PUBLICATIONS

▸ **Mingarro M.** & Lobo JM. 2021. Connecting protected areas in the Iberian peninsula to facilitate climate change tracking. *Environmental Conservation*. Doi: https://doi.org/10.1017/S037689292100014X

▸ **Mingarro M.**, Cancela JP., Burón-Ugarte A., García-Barros E., Munguira M., Romo H. & Wilson, RJ. 2021. Butterfly communities track climatic variation over space but not time in the Iberian Peninsula. *Insect conservation and diversity*, Doi: https://doi.org/10.1111/icad.12498

▸ Cuesta E., **Mingarro M.** & Lobo JM. 2021. Between locality variations in the seasonal patterns of dung beetles: the role of phenology in mitigating global warming effects. *Ecological entomology*, 46.3: 592-600, Doi: https://doi.org/10.1111/icad.12498

▸ **Mingarro M.**, Aguilera-Benavente F. & Lobo JM. 2021. A methodology to assess the future connectivity of protected areas by combining climatic representativeness and land-cover

change simulations: the case of the Guadarrama National Park (Madrid, Spain). *Journal of Environmental Planning and Management*, 64: 734-753, Doi: https://doi.org/10.1080/09640568.2020.1782859

▸ **Mingarro M.** & Lobo JM. 2018. Environmental representativeness and the role of emitter and recipient areas in the future trajectory of a protected area under climate change. *Animal Biodiversity and Conservation*, 41.2: 333–344, Doi: https://doi.org/10.32800/abc.2018.41.0333

PUBLICATIONS UNDER REVIEW

▸ **Mingarro M.** & Lobo JM. 2021. Temporal land cover dynamics in European national parks suggest that their protective effects are geographically heterogeneous. *Conservation Biology.*

▸ Sánchez-Jardon L., del Rio-Hortega L., Nuñez Cea N., Manubens P., **Mingarro M.** & Acosta Gallo B. 2021. Fungal literature records database of the sub-Antarctic region of Aysén, Chile. *Biodiversity Data Journal*

OTHER PUBLICATIONS

▸ Sánchez-Jardón L., Uribe-Paredes R., Águila J., Álvarez D., Aldea C., Velázquez E., Raimilla V., Acosta Gallo B., Núñez Cea N., **Mingarro M.**, del Rio-Hortega L. & Lafón A. 2021. Diversidad potencial de macroalgas en el Sistema de Información en Biodiversidad para Aysén (SIB-Aysén), Chile. *GBIF Occurrence dataset*. DOI: https://doi.org/10.15468/qemr5b

▸ Informe sobre el cumplimiento de las Metas de Aichi de biodiversidad en España, 2021. Observatorio sostenibilidad.
https://www.observatoriosostenibilidad.com/2021/06/23/metas-de-aichi-de-biodiversidad-en-espana

▸ Informe T. Evolución de las temperaturas en España. Análisis de tendencias en el pasado reciente a partir de datos AEMET, 2021. Observatorio sostenibilidad.
https://www.observatoriosostenibilidad.com/2021/04/12/Informe_T_Evolucion_de_las_temperaturas_en_Espana

▸ Informe sobre la evolución de las precipitaciones en España, 2019. Observatorio sostenibilidad. https://www.observatoriosostenibilidad.com/2019/07/18/evolucion-de-las-precipitaciones-en-espana

- Informe sobre cambios de ocupación del suelo en la comunidad de Madrid, 2016. Observatorio sostenibilidad.
  http://www.observatoriosostenibilidad.com/2016/11/23/cambios-de-ocupacion-del-suelo-en-la-comunidad-de-madrid

- Informe 25 Años Urbanizando España, 2016. Observatorio sostenibilidad.
  http://www.observatoriosostenibilidad.com/2016/11/23/25-anos-de-aumento-de-superficie-artificial-en-espana

SYMPOSIUMS

- **Mingarro M.** & Lobo JM. 2020. Where will the Iberian National Parks go? *IV Scientific Conference of the National Museum of Natural Sciences*, Madrid.

- Wilson R., Cancela JP., Bassett L., **Mingarro M.** & Jon Bennie J. 2019. Effects of colonization, extinction and detectability on the elevation ranges of mountain butterflies. *British Ecology Society Symposium*, London.

- **Mingarro M.** & Lobo JM. 2019. A novel methodology to analyse the climate change effect in the Guadarrama national park. *III Scientific Conference of the National Museum of Natural Sciences*, Madrid.

ADITIONAL INFORMATION

- Driving License
- Dive License: Open water Diver PADI
- Language:

  Spanish - Native language.

  English - Excellent level, both spoken and written.

- Sports:

  Rugby: player for 16 years in Spanish national league.

  Climbing and alpinism.