

# Michele Di Musciano, Ph.D.

Researcher Tenure Track (RTT) at the University of L'Aquila

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## Research Interests

I am an environmental biologist and researcher in applied botany at the University of L'Aquila, with a background in alpine ecology, ecological modeling, and plant trait analysis. My research focuses on understanding the past and present factors shaping diversity patterns and processes in plant communities from micro- to macro-scales. I am actively working on mountain ecosystems, aiming to disentangle the influence of microclimate, topography, and human activities on the multiple facets of plant biodiversity. I am also engaged in conservation biology research, trying to assess the effectiveness of protected areas in preserving biodiversity. Since 2023, I have been involved in projects focused on island ecosystems, including ongoing studies investigating the ecological dynamics of plant communities in small islands.

## Main research Topics

- 1) Alpine ecology;
- 2) Ecological modelling;
- 3) Conservation Biology;
- 4) Vegetation science;
- 5) Island Biogeography.

## Current work position

### Researcher Tenure Track (RTT) tenure track

**Feb 2025 - Today**

University of L'Aquila, L'Aquila - Member of the research Group in Laboratory of Cartography, Ecology and Modelling (LACEMOD) - Member of the research Group in Biodiversity and Macroecology (BIOME) Alma Mater Studiorum - University of Bologna **SSD:** BIOS-01/C

## Qualification

### Italian National Scientific Habilitation (ASN)

2nd Level - Botany - 05/BIOS-01 (ex 05/A1)

**Since 02 Dec 2023**

## Accademic experience

### Researcher fixed term (RTD-A)

**Feb 2022 - Jan 2025**

University of L'Aquila, L'Aquila - Member of the research Group in Laboratory of Cartography, Ecology and Modelling (LACEMOD) - Member of the research Group in Biodiversity and Macroecology (BIOME) Alma Mater Studiorum - University of Bologna **SSD:** BIOS-01/C

**Additional information:** RTD-A - Ricercatore a tempo determinato lettera A) C. 3 ART. 24 L. 240/2010 - Programma Operativo Nazionale "Ricerca-Innovazione" 2014-2020 (PON) risorse FSE-REACT EU DM 10 08 2021, n. 1062; Azione IV.6 - Contratti di ricerca su tematiche Green - D.R. Rep. n. 1049/2021 Prot. N. 119177 del 19/11/2021 - CUP D.M. 1062/2021 E15F21004400001 - Project code: DM1062\_GREEN\_MESVA

**Post-Doctoral fellowship****Sep 2020 – Jan 2022**

Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

**Title:** Spatio-temporal dynamics in plant communities using innovative ecological modeling techniques.**Tutor:** Prof. Anna Rita Frattaroli **SSD:** BIOS-01/C.**Scholarship****Jun 2020 – Aug 2020**

Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

**Title:** Monitoring and prediction of habitat conservation status using ecological modelling.**Tutor:** Prof. Anna Rita Frattaroli **SSD:** BIOS-01/C.**Ph.D. in Life and Environmental Science****Nov 2016 - Apr 2019****SSD:** BIOS-01/C (ex BIO/03) **Dissertation:** 'Elevation gradient of vascular plant distribution in the Central Apennines: diversity patterns and potential impact of global change.' **Excellent cum laude**

University of L'Aquila, L'Aquila, Italy.

**Graduation date:** 02 Apr 2020**Advisor:** Prof. Anna Rita Frattaroli;**Co-Advisor:** Prof. Jean-Paul Theurillat**Projects coordination****Unit leader and Co-PI (Co-Principal Investigator) Prin 2022 PNRR****Nov 2023 – ongoing****Title:** Plant Biodiversity and Ecosystem Change in protected Areas: land Use impacts and Scenario Evaluation. **PI:** Prof. Francesco Maria Sabatini (University of Bologna). **D.D. n.** 1370 - 01-09-2023. **Macro-sector:** Life Sciences. **Sector:** LS8 - Environmental Biology, Ecology and Evolution. **Code:** P2022JM3RZ. **CUP:** E53D23013800001 **Budget:** 94.007,00 € - Competitive Research Funding -**Unit leader and Co-PI (Co-Principal Investigator) Prin 2022****Sep 2023 – ongoing****Title:** Identification of priority sites for the conservation of terrestrial animal and plant diversity to meet European and CBD 2030 targets. **PI:** Prof. Roberto Cazzolla Gatti (University of Bologna). **D.D. n.** 739 - 29-05-2023. **Macro-sector:** Life Sciences. **Sector:** LS8 - Environmental Biology, Ecology and Evolution. **Code:** 2022C8E2F4. **CUP:** E53D23007530006 **Budget:** 39.000,00 € - Competitive Research Funding -**Principal investigator - University project for basic research****May 2022 – Dec 2022****Title:** Understanding, predicting, and mitigating the impact of climate change consequences on high-altitude biodiversity in the central Apennines using a multitaxonic approach. **Funded by:** University of L'Aquila **Budget:** 15.000,00 €

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**Academic activities****IN BRIEF****Summary of the teaching activities in the last 3 AYs**

Courses primarily focused on Applied Botany and Data Analysis &amp; Management

- AY 2023/24 **100h** bachelor and master degrees + **10h** Ph.D. school
- AY 2022/23 **90h** bachelor and master degrees + **14h** Ph.D. school
- AY 2021/22 **32h** bachelor and master degrees + **16h** Ph.D. school

## DATA MANAGEMENT SKILLS

Proficient in **data management and analysis**.  
Proficient in results **visualization and reporting**.  
Deep knowledge of the **statistical analysis applied to ecology**.  
A wide experience in **ecological modelling**.  
Excellent knowledge of **R language** and good of Python and Julia.  
Proficient in GIS program: **QGIS and ArcGIS**.  
A wide experience in satellite image management: **Google Earth Engine**.  
Good knowledge of image analysis: **ImageJ, Gimp, Adobe Photoshop**.

## FIELD & LAB. SKILLS

Proficient in plant species and **vegetation monitoring**.  
Deep knowledge of **fieldwork**, with more than 10 years of experience in high-altitude environments.  
A wide experience in **plant traits** collection.  
Excellent knowledge of **datalogger management** mainly applied to air and soil temperature and/or humidity.  
A little experience in **arthropod sampling**.

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## Publications

### BIBLIOMETRICS INDICATORS

**Document:** 45; **Cited by:** 1057; **h-index:** 15 (Scopus)

## Congress and conferences

### In brief

**Oral Communications** = 14

**Invited speaker** = 1

**Poster** = 7

**Member of the Scientific Committee** = 2

**Member of the Organizing Committee** = 1

**L'Aquila**

**10/02/2025**

**Signature**

