

# 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 - o5/BIOS-01 (ex o5/A1)

**Since 02 Dec 2023**

## Academic experience

### Resarcher 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 multitanomic 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 & 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 Phyton 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**

