

# Michele Di Musciano, Ph.D.

Assistant professor (RtdA) at the University of L'Aquila

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## Research Interests

I am an environmental biologist, and researcher of applied botany at the University of L'Aquila, with a background in alpine ecology, ecological modelling, and plant traits. I am currently working on past and present factors shaping diversity patterns and processes of plant communities (vegetation) from micro to macro scale. Focusing mostly on mountain ecosystems, my principal aim is to disentangle the role of climate, topographic and anthropogenic factors on the taxonomic, functional, and phylogenetic composition and dissimilarity of plant communities. I'm currently working on topics related to conservation biology, trying to quantify the effectiveness of protected areas in conserving biodiversity. Last but not least, since 2023, I've joined projects focused on Islands, of which some aim to investigate 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

### Ricercatore a Tempo Determinato (RTD-a) - Assistant Professor

Feb 2022 - 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 (ex BIO/03).

**Additional information:** 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 agosto 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

## Qualification

### Italian National Scientific Habilitation (ASN)

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

Since 02 Dec 2023

## Accademic experience

### 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 (ex BIO/03).

### 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 (ex BIO/03).

## 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 €

## Projects collaboration

**Coordinator of the MIREN Rock - Central Apennine site** **May 2024 – ongoing**

**Title:** Mountain Invasion Research Network (MIREN) rock survey - Monitoring site Central Apennines, Italy. **Project coordinator:** Koenraad Van Meerbeek

**Associate Partner of the Horizon Europe** **Apr 2024 – ongoing**

**Title:** Biodiversity Building Blocks for policy B3. **Coordinator:** Agentschap Plantentuin Meise. **DOI** 10.3030/101059592. **Funded under:** Food, Bioeconomy Natural Resources, Agriculture and Environment. **Grant agreement ID:** 101059592.

**Member of the team MIREN - La Palma site** **Mar 2024 – ongoing**

**Title:** Mountain Invasion Research Network (MIREN) - Monitoring site La Palma, Canary Islands, Spain. **Site coordinator:** Prof. Anke Jentsch

**Member of the Scientific Advisory Board - TracEve** **Mar 2023 – ongoing**

**Title:** Tracing the evergreen broad-leaved species and their spread. **Coordinator:** University of Innsbruck. **Link:** <https://www.uibk.ac.at/en/projects/traceve/>

**Lecturer** **Jan 2022 – May 2022**

**Title:** Network for mycological diversity studies (ndm); **Contribute title:** Ecosystem and terrestrial habitat **Coordinator:** Italian Institute for Environmental Protection and Research (ISPRA). **Link:** <https://ndm.isprambiente.it/attivita/educazione-e-formazione-ambientale/percorso-formativo-di-micologia-ambientale/>

**Data Contributor** **Sep 2020 – ongoing**

**Title:** SoilTemp (global database of soil and near surface microclimate time series). **Contribute:** Data from several dataloggers (<50) placed in remote areas (encompassing high elevation of the Apennines and glacier). **Coordinator:** Jonas Lembrechts. **Link:** <https://www.soiltempproject.com/>

**Member Staff - Biodiversity Monitoring Plan****Aug 2020 – Apr 2021**

**Title:** Development of a National Plan for Biodiversity Monitoring. **Coordinator:** Prof. Alessandro Chiarucci. **Founded:** Italian Institute for Environmental Protection and Research (ISPRA)

**Member of the core team - GLORIA - ITCAM site****June 2015 – ongoing**

**Title:** Global observation research initiative in alpine environments (GLORIA) - Monitoring site Central Apennines ITCAM. **Site coordinator:** Prof. Angela Stanisci

**Ph.D tutoring and lecturing****Ph.D. Co-supervisor****Mar 2024 – ongoing**

**Ph.D candidate:** Giacomo Cangelmi at the University of L'Aquila **Title:** Biodiversity and Ecosystems Change in Protected Areas. **SSD:** BIOS-01/C (ex BIO/03).

**Ph.D. Co-supervisor****Nov 2023 – ongoing**

**Ph.D candidate:** Rocio Beatriz Cortes Lobos at Alma Mater Studiorum - University of Bologna **Title:** Deep learning for modelling current and future biodiversity scenarios. **SSD:** BIOS-01/C (ex BIO/03).

**Ph.D. Co-supervisor****Nov 2022 – ongoing**

**Ph.D candidate:** Lorenzo Ricci at the University of L'Aquila **Title:** The role of Protected Areas in conserving Plant Biodiversity across Europe. **SSD:** BIOS-01/C (ex BIO/03).

**Lecturer** for the Ph.D. candidates of the Life and Environmental Science school; Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy. **AY:** 2021/2022 **Course title:** Data management and biostatistics (16h); **AY:** 2022/2023 **Course title:** Data management, visualization and reporting using R (14h); **AY:** 2023/2024 **Course title:** Management of Biological and Environmental Data with R (10h).

**Institutional Responsibilities**

**Member of the communication and social media commission** of the Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

**Teaching activities**

Course lecturer: **Environmental Botany** (3CFU - 30h), **SSD:** BIOS-01/C (ex BIO/03). **Accademic year:** 2023-2024, **Semester:** II, **Degree program:** Master degree in Environmental Biology and Ecosystem Management. **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

Course lecturer: **Evolutionary Botany** (3CFU - 30h), **SSD:** BIOS-01/C (ex BIO/03). **Accademic year:** 2023-2024, **Semester:** II, **Degree program:** Bachelor degree in Biology. **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

Course lecturer: **Ecological Modelling** (3CFU - 30h), **SSD:** BIOS-01/C (ex BIO/03). **Accademic year:** 2023-2024, **Semester:** I, **Degree program:** Master degree in Environmental Biology and Ecosystem Management. **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

Course lecturer: **Management of Biological and Environmental Data with R Studio** (1CFU -

roh), **SSD:** BIOS-01/C (ex BIO/03). **Accademic year:** 2023-2024, **Semester:** I, **Degree program:** Bachelor degree in Environmental Science and Technology, optional course (AFO). **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

Course lecturer: **Environmental Botany** (3CFU - 30h), **SSD:** BIOS-01/C (ex BIO/03). **Accademic year:** 2022-2023, **Semester:** II, **Degree program:** Master degree in Environmental Biology and Ecosystem Management. **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

Course lecturer: **Systematic Botany** (3CFU - 30h), **SSD:** BIOS-01/C (ex BIO/03). **Accademic year:** 2022-2023, **Semester:** II, **Degree program:** Bachelor degree in Biology. **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

Course lecturer: **Management of Biological and Environmental Data with R Studio** (3CFU - 30h), **SSD:** BIOS-01/C (ex BIO/03). **Accademic year:** 2022-2023, **Semester:** I, **Degree program:** Bachelor degree in Environmental Science and Technology, optional course (AFO). **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

Course lecturer: **Environmental Botany** (3CFU - 24h), **SSD:** BIOS-01/C (ex BIO/03). **Accademic year:** 2021-2022, **Semester:** II, **Degree program:** Master degree in Environmental Biology and Ecosystem Management. **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

Course lecturer: **Introduction to R** (1CFU - 8h), **SSD:** not specified **Accademic year:** 2021-2022, **Semester:** II, **Degree program:** Bachelor degree in Environmental Science and Technology, optional course (AFO). **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

Course lecturer: **Introduction to R and management of environmental data** (1CFU - 8h), **SSD:** not specified **Accademic year:** 2019-2020, **Semester:** I, **Degree program:** Master degree in Environmental Biology and Ecosystem Management, optional course (AFO). **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

Course lecturer: **Introduction to R** (1CFU - 8h), **SSD:** not specified **Accademic year:** 2018-2019, **Semester:** I, **Degree program:** Master degree in Environmental Biology and Ecosystem Management, optional course (AFO). **Istitution:** Department of Life, Health and Environmental Sciences (MESVA), University of L'Aquila, L'Aquila, Italy.

### ***Tutoring***

Tutoring for pratical lecture, course: **Statistical analysis and modelling - Module 2** (10h) Master degree in Science and Management of Nature. **Course lecturer:** Prof. Piero Zannini. **Accademic Year:** 2021-2022. **Semester:** I.

Tutoring for laboratory and fieldwork activities, course: **Plant Ecology** (6h) Bachelor degree in Environmental Science and Technology. **Course lecturer:** Prof. Anna Rita Frattaroli. **Accademic Years:** 2016-2017, 2017-2018, 2018-2019, 2019-2020. **Semester:** II.

Tutoring for laboratory and fieldwork activities, course: **Applied Botany** (6h) Master degree in Environmental Biology and Ecosystem Management. **Course lecturer:** Prof. Anna Rita Frattaroli. **Accademic Years:** 2016-

2017, 2017-2018, 2018-2019, 2019-2020. **Semester:** II.

### **Summary of the teaching activities in the last 3 AYs**

- 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

## **Accademic background**

### **Ph.D. in Life and Environmental Science**

**Nov 2016 - Oct 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.

- **Advisor:** Prof. Anna Rita Frattaroli;

- **Co-Advisor:** Prof. Jean-Paul Theurillat

### **Dual Master's Degree in Environmental Biology**

**Sep 2014 - Jul 2016**

Master in Environmental Biology (LM6), University of L'Aquila, L'Aquila, Italy; Master in Ecosciences, Parcours Ecologie, Evolution, Biométrie, Université Claude Bernard Lyon 1, Lyon, France.

**Thesis title:** 'Vegetation analysis in the permanent plots of GLORIA project in Majella National Park: a synchronic approach to identify the key species for monitoring climate change.' **110/110 cum laude.**

- **Advisor:** Prof. Anna Rita Frattaroli;

- **Co-Advisor:** Prof. Angela Stanisci

### **Bachelor's Degree in Environmental Science and technology**

**Sep 2011 - Jul 2014**

Bachelor in Environmental Science and technology (L75), University of L'Aquila, L'Aquila, Italy.

**Thesis title:** Adattamenti morfo-fisiologici della flora d'alta quota con particolare riferimento all'endemismo Adonis distorta. **108/110.**

- **Advisor:** Prof. Anna Rita Frattaroli;

- **Co-Advisor:** Dott. Valter Di Cecco

## **Training experience**

### **Visiting PhD Student**

**Nov 2017 - Dec 2017**

**Aims:** Disentangle the patterns of species richness and composition from a set of nested vegetation plots along two elevation transects in Italy.

Spatial Ecology Lab. ECOSPAT, Department of Ecology and Evolution, University of Lausanne, Switzerland

- **Tutor:** Prof. Antoine Guisan

### **Alpine Plant Ecology Summer School**

**Jul 2018**

**Organized by:** University of Basel and the Alpine Research Station Furka (ALPFOR).

Furka Pass, 2440 m a.s.l., Swiss central Alps, Switzerland. **Lecturer** Prof. Christian Körner, Prof. Jürg Stöcklin, Prof. Jonathan Levine, Dr. Erika Hiltbrunner

### **Stage at the "Centre alpin de Phytogéographie"**

**Jul 2018 Aims:** Sampling alpine vegetation.

Alpine Garden "Flore-Alpe", Champex-Lac, Switzerland. - **Tutor:** Prof. Jean Paul Theurillat

### **Traineeship at Maiella National Park**

**Apr 2015 - Sep 2015**

Seeds bank and botanical garden "Michele Tenore". **Aims:** Laboratory activities focused on germination ecology, ex-situ conservation, restocking and reintroduction of threatened species, seeds collection.

- **Tutor:** Dott. Luciano Di Martino

## Publications

Santi F.; Testolin R.; Zannini P.; **Di Musciano M.**; Micci V.; Ricci L.; Guarino R.; Bacchetta G.; Fernández-Palacios J. M.; Fois M.; Kougioumoutzis K.; Kunt K. B.; Lucchi F.; Médail F.; Nikolić T.; Otto R.; Pasta S.; Panitsa M.; Proios K.; Sfenthourakis S.; Simaiakis S. M.; Tranne C. A.; Triantis K. A.; Chiarucci A. (2024) **MEDIS—A comprehensive spatial database on Mediterranean islands for biogeographical and evolutionary research** - *Global Ecology and Biogeography* - 33 1466-8238 10.1111/geb.13855

Cazzolla Gatti R.; Iaria J.; Moretti G.; Amendola V.; Cassola F. M.; Cerretti P.; **Di Musciano M.**; Francesconi L.; Frattaroli A. R.; Livornese M.; Martini M.; Nania D.; Pacifici M.; Piovesan G.; Prandelli S.; Rocchini D.; Rondinini C.; Chiarucci A. (2024) **EU2030 biodiversity strategy: Unveiling gaps in the coverage of ecoregions and threatened species within the strictly protected areas of Italy** - *Journal for Nature Conservation* - 79 1617-1381 10.1016/j.jnc.2024.126621

Kemppinen J.; Lembrechts J. J.; Van Meerbeek K.; Carnicer J.; Chardon N. I.; Kardol P.; Lenoir J.; Liu D.; Maclean I.; Pergl J.; Saccone P.; Senior R. A.; Shen T.; Słowińska S.; Vandvik V.; von Oppen J.; Aalto J.; Ayalew B.; Bates O.; Bertelsmeier C.; Bertrand R.; Beugnon R.; Borderieux J.; Brūna J.; Buckley L.; Bujan J.; Casanova-Katny A.; Christiansen D. M.; Collart F.; De Lombaerde E.; De Pauw K.; Depauw L.; **Di Musciano M.**; Díaz Borrego R.; Díaz-Calafat J.; Ellis-Soto D.; Esteban R.; de Jong G. F.; Gallois E.; Garcia M. B.; Gillerot L.; Greiser C.; Gril E.; Haesen S.; Hampe A.; Hedwall P. O.; Hes G.; Hespanhol H.; Hoffrén R.; Hylander K.; Jiménez-Alfaro B.; Jucker T.; Klimes D.; Kolstela J.; Kopecký M.; Kovács B.; Maeda E. E.; Máliš F.; Man M.; Mathiak C.; Meineri E.; Naujokaitis-Lewis I.; Nijs I.; Normand S.; Nuñez M.; Orczewska A.; Peña-Aguilera P.; Pincebourde S.; Plichta R.; Quick S.; Renault D.; Ricci L.; Rissanen T.; Segura-Hernández L.; Selvi F.; Serra-Diaz J. M.; Soifer L.; Spicher F.; Svenning J. C.; Tamian A.; Thomaes A.; Thoonen M.; Trew B.; Van de Vondel S.; van den Brink L.; Vangansbeke P.; Verdonck S.; Vitkova M.; Vives-Inglá M.; von Schmalensee L.; Wang R.; Wild J.; Williamson J.; Zellweger F.; Zhou X.; Zuza E. J.; De Frenne P. (2024) **Microclimate, an important part of ecology and biogeography** - *Global Ecology and Biogeography* - 33 1466-8238 10.1111/geb.13834

Ricci L.; **Di Musciano M.**; Sabatini F. M.; Chiarucci A.; Zannini P.; Gatti R. C.; Beierkuhnlein C.; Walentowitz A.; Lawrence A.; Frattaroli A. R.; Hoffmann S. (2024) **A multitaxonomic assessment of Natura 2000 effectiveness across European biogeographic regions** - *Conservation Biology* - 38 1523-1739 10.1111/cobi.14212

Knollová I.; Chytrý M.; Bruelheide H.; Dullinger S.; Jandt U.; Bernhardt-Römermann M.; Biurrun I.; de Bello F.; Glaser M.; Hennekens S.; Jansen F.; Jiménez-Alfaro B.; Kadaš D.; Kaplan E.; Klinkovská K.; Lenzner B.; Pauli H.; Sperandii M. G.; Verheyen K.; Winkler M.; Abdaladze O.; Aćić S.; Acosta A. T. R.; Alignier A.; Andrews C.; Arlettaz R.; Attorre F.; Axmanová I.; Babbi M.; Baeten L.; Baran J.; Barni E.; Benito-Alonso J. L.; Berg C.; Bergamini A.; Berki I.; Boch S.; Bock B.; Bode F.; Bonari G.; Boublík K.; Britton A. J.; Brunet J.; Bruzzaniti V.; Buholzer S.; Burrascano S.; Campos J. A.; Carlsson B. G.; Carranza M. L.; Černý T.; Charmillot K.; Chiarucci A.; Choler P.; Chytrý K.; Corcket E.; Csekerits A.; Cutini M.; Czarniecka-Wiera M.; Danihelka J.; de Francesco M. C.; De Frenne P.; **Di Musciano M.**; De Sanctis M.; Deák B.; Decocq G.; Dembicz I.; Dengler J.; Di Cecco V.; Dick J.; Diekmann M.; Dierschke H.; Dirnböck T.; Doerfler I.; Doležal J.; Döring U.; Durak T.; Dwyer C.; Ejrnæs R.; Ermakova I.; Erschbamer B.; Fanelli G.; Fernández-Calzado M. R.; Fickert T.; Fischer A.; Fischer M.; Foremnik K.; Frouz J.; García-González R.; García-Magro D.; García-Mijangos I.; Gavilán R. G.; Germ M.; Ghosn D.; Gigauri K.; Gizela J.; Golob A.; Golub V.; Gómez-García D.; Gowing D.; Grytnes J. A.; Güler B.; Gutiérrez-Girón A.; Haase P.; Haider S.; Hájek M.; Halassy M.; Harásek M.; Härdtle W.; Heinken T.; Hester A.; Humbert J. Y.; Ibáñez R.; Illa E.; Jaroszewicz B.; Jensen K.

Jentsch A.; Jiroušek M.; Kalníková V.; Kanka R.; Kapfer J.; Kazakis G.; Kermavnar J.; Kesting S.; Khanina L.; Kindermann E.; Kotřík M.; Koutecký T.; Kozub L.; Kuhn G.; Kutnar L.; La Montagna D.; Lamprecht A.; Lenoir J.; Lepš J.; Leuschner C.; Lorite J.; Madsen B.; Ugarte R. M.; Malicki M.; Maliniemi T.; Máliš F.; Maringer A.; Marrs R.; Matesanz S.; Metze K.; Meyer S.; Millett J.; Mitchell R. J.; Moeslund J. E.; Moiseev P.; di Cella U. M.; Mudrák O.; Müller F.; Müller N.; Naaf T.; Nagy L.; Napoleone F.; Nascimbene J.; Navrátilová J.; Ninot J. M.; Niu Y.; Normand S.; Ogaya R.; Onipchenko V.; Orczewska A.; Ortmann-Ajkai A.; Pakeman R. J.; Pardo I.; Pätsch R.; Peet R. K.; Penuelas J.; Peppler-Lisbach C.; Pérez-Hernández J.; Pérez-Haase A.; Petraglia A.; Petřík P.; Pielech R.; Piórkowski H.; Pladevall-Izard E.; Poschlod P.; Prach K.; Praleskouskaya S.; Prokhorov V.; Provoost S.; Puşcaş M.; Pustková Š.; Randin C. F.; Rašomavičius V.; Reczyńska K.; Rédei T.; Řehounková K.; Richner N.; Risch A. C.; Rixen C.; Rosbakh S.; Roscher C.; Rosenthal G.; Rossi G.; Rötzer H.; Roux C.; Rumpf S. B.; Ruprecht E.; Rüşüña S.; Sanz-Zubizarreta I.; Schindler M.; Schmidt W.; Schories D.; Schrautzer J.; Schubert H.; Schuetz M.; Schwabe A.; Schwaiger H.; Schwartze P.; Šebesta J.; Seiler H.; Šilc U.; Silva V.; Šmilauer P.; Šmilauerová M.; Sperle T.; Stachurska-Swakoń A.; Stanik N.; Stanisci A.; Steffen K.; Storm C.; Stroh H. G.; Sugorkina N.; Świerkosz K.; Świerszcz S.; Szymura M.; Teleki B.; Thébaud G.; Theurillat J. P.; Tichý L.; Treier U. A.; Turtureanu P. D.; Ujházy K.; Ujházyová M.; Ursu T. M.; Uziębło A. K.; Valkó O.; Van Calster H.; Van Meerbeek K.; Vandevoorde B.; Vandvik V.; Varricchione M.; Vassilev K.; Villar L.; Virtanen R.; Vittoz P.; Voigt W.; von Hessberg A.; von Oheimb G.; Wagner E.; Walther G. R.; Wellstein C.; Wesche K.; Wilhelm M.; Willner W.; Wipf S.; Wittig B.; Wohlgemuth T.; Woodcock B. A.; Wulf M.; Essl F. (2024) **ReSurveyEurope: A database of resurveyed vegetation plots in Europe** - *Journal of Vegetation Science* - 35 1654-1103 10.1111/jvs.13235

Testolin R.; Attorre F.; Bruzzaniti V.; Guarino R.; Jiménez-Alfaro B.; Lussu M.; Martellos S.; **Di Musciano M.**; Pasta S.; Sabatini F. M.; Santi F.; Zannini P.; Chiarucci A. (2023) **Plant species richness hotspots and related drivers across spatial scales in small Mediterranean islands** - *Journal of Systematics and Evolution* - 62 1759-6831 10.1111/jse.13034

Ricci L.; Farda B.; Ferrara A.; Cerasoli F.; De Simone W.; Frattaroli A. R.; Pirone G.; **Di Musciano M.** (2024) **Short-term functional response to post-fire vegetation dynamic: A case study in a Mediterranean Pinus halepensis forest** - *Flora* - 310 0367-2530 10.1016/j.flora.2023.152415

Lussu M.; Ancillotto L.; Labadessa R.; **Di Musciano M.**; Zannini P.; Testolin R.; Santi F.; Dolci D.; Conti M.; Marignani M.; Martellos S.; Peruzzi L.; Chiarucci A. (2024) **Prioritizing conservation of terrestrial orchids: A gap analysis for Italy** - *Biological Conservation* - 289 0006-3207 10.1016/j.biocon.2023.110385

Cazzolla Gatti R.; Zannini P.; Piovesan G.; Alessi N.; Basset A.; Beierkuhnlein C.; **Di Musciano M.**; Field R.; Halley J. M.; Hoffmann S.; Iaria J.; Kallimanis A.; Lövei G. L.; Morera A.; Provenzale A.; Rocchini D.; Vetaas O. R.; Chiarucci A. (2023) **Correction to: Analysing the distribution of strictly protected areas toward the EU2030 target** - *Biodiversity and Conservation* - 32 1572-9710 10.1007/s10531-023-02683-y

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Thouverai E.; Marcantonio M.; Cosma E.; Bottegoni F.; Cazzolla Gatti R.; Conti L.; **Di Musciano M.**; Malavasi M.; Moudry V.; Šímová P.; Testolin R.; Zannini P.; Rocchini D. (2023) **Helical graphs to visualize the NDVI temporal variation of forest vegetation in an open source space** - *Ecological Informatics* - 74 1574-9541 10.1016/j.ecoinf.2022.101956

Thouverai E.; Marcantonio M.; Lenoir J.; Galfré M.; Marchetto E.; Bacaro G.; Cazzolla Gatti R.; Da Re D.; **Di Musciano M.**; Furrer R.; Malavasi M.; Moudrý V.; Nowosad J.; Pedrotti F.; Pelorosso R.; Pezzi G.; Šímová P.; Ricotta C.; Silvestri S.; Tordoni E.; Torresani M.; Vacchiano G.; Zannini P.; Rocchini D. (2022) **Integrals of life: Tracking ecosystem spatial heterogeneity from space through the area under the curve of the parametric Rao's Q index** - *Ecological Complexity* - 52 1476-945X 10.1016/j.ecocom.2023.101029

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## Conferences

### *Speaker, invited speaker or member of the organizing/scientific committee*

7<sup>th</sup> European Congress of Conservation Biology: Biodiversity positive by 2030 (ECCB) - **Di Musciano M.**, Ricci L., Sabatini F.M., Geldmann J., Frattaroli A.R., Chiarucci A. - Conservation gaps of Natura 2000 (N2K) network in preserving European Habitat: an accurate prioritization is needed. - **Speaker** - Bologna, Italy (2024-06-17 - 2024-06-21).

Orchids and tourism in the Maiella National Park (MNP) - **Di Musciano M.** - Protected Areas and Biodiversity Conservation: Challenges and Opportunities in a Changing World - **Invited speaker** - Palena, Italy (2024-05-17 - 2024-05-18).

4<sup>th</sup> Mediterranean Plant Conservation Week (MPCW) - **Di Musciano M.**, Ricci L., Alessi N., Sabatini F.M., Chiarucci A., Frattaroli A.R., Di Martino L., Di Cecco V., Geldmann J. - Effectiveness of protected areas on Italian forest in the Mediterranean biogeographical region. - **Speaker** - Valencia, Spain (2023-10-23 - 2023-10-27).

4<sup>th</sup> International Conference on Community Ecology (ComEc) - **Di Musciano M.**, Ricci L., Theurillat J.P., Cutini M., Iocchi M., Frattaroli A.R. - Dynamics of mountain vegetation under global change: the microclimate role. - **Speaker** - Trieste, Italy (2023-09-20 - 2023-09-22).

65<sup>th</sup> Annual Symposium of the International Association for Vegetation Science (IAVS) - **Di Musciano M.**, Ricci L., Theurillat J.P., Cutini M., Iocchi M., Frattaroli A.R. - Soil Temperature and microtopography shape plant communities dynamic along altitudinal gradients. - **Speaker** - Coffs Harbour, Australia (2023-09-03 - 2023-09-08).

2<sup>nd</sup> Conference of Young Botanists (CYBO) - **Di Musciano M.** - **Member of the Scientific Committee; Chair** - Bozen, Italy (2023-02-09 - 2023-02-10).

Microclimate Ecology & Biogeography Conference (MEB) - **Di Musciano M.**, Ricci L., Theurillat J.P., Cutini M., Iocchi M., Frattaroli A.R. - Soil Temperature and its related variables shape species richness dynamic along an altitudinal gradient in the Central Apennines (Italy). - **Speaker** - Antwerp, Belgium (2022-08-29 - 2022-09-01).

55<sup>th</sup> Annual Symposium of the Italian Association of Vegetation Science (SISV) - **Di Musciano M.**, Calvia G., Ruggero A., Farris E., Frattaroli A.R., Bagella S. - Elevation patterns of species richness on the Mediterranean island using a published flora. - **Speaker; Member of the Scientific Committee; Member of the Organizing Committee; Secretary of the Conference** - L'Aquila, Italy (2022-06-16 - 2022-06-17).

54<sup>th</sup> Annual Symposium of the Italian Association of Vegetation Science (SISV) - **Di Musciano M.**, Theurillat J. P., Cutini M., Iocchi M., Ricci L., Zannini P., Chiarucci A., Frattaroli A.R. - Pattern and drivers of plant beta diversity along an elevational gradient of Central Apennines (Italy). - **Speaker** - Virtual Meeting (2021-09-27 - 2021-09-29).

116<sup>th</sup> Annual Symposium of the Italian Botanical Society (SBI) - **Di Musciano M.**, De Simone W., Di Cecco V., Ferella G., Frattaroli A.R. - Monitoring vegetation dynamics after wildfire events in Mediterranean mountain using satellite data. - **Speaker** - Virtual Meeting (2021-09-08 - 2021-09-10).

115<sup>th</sup> Annual Symposium of the Italian Botanical Society (SBI) - **Di Musciano M.**, Theurillat J.P., Cutini M., Iocchi M., Frattaroli A.R. - Soil Temperature and its related variables shape species richness dynamic along an altitudinal gradient in the Central Apennines (Italy). - **Speaker** - Virtual Meeting (2020-09-09 - 2020-09-11).

28<sup>th</sup> Meeting of the European Vegetation Survey (EVS) - **Di Musciano M.**, Theurillat J.P., Guisan A., Bronnimann O., Cutini M., Iocchi M., Frattaroli A.R. - Modelling vegetation composition and plant richness across spatial scales and environmental gradients in Central Apennines mountains. - **Speaker** - Madrid, Spain (2019-09-02 - 2019-09-06).

53<sup>rd</sup> Annual Symposium of the Italian Association of Vegetation Science (SISV) - **Di Musciano M.**, Di Cecco V., Ricci L., Di Martino L., Frattaroli A.R. - Dispersal ability of European vascular flora, relationship with altitudinal distribution and life-history categories. - **Speaker** - Sassari, Italy (2019-05-30 - 2019-05-31).

Workshop RIBES: contribution towards the 2020 Global Strategy for Plant Conservation targets (RIBES) - Di Cecco V., **Di Musciano M.**, D'Archivio A., Frattaroli A.R., Di Santo M., Di Martino L. - Ecoseeds - New tools for germination analysis - **Speaker** - Galbiate (Parco Monte Barro), Italy (2019-04-16 - 2019-04-17).

Plant Traits 2.0 (SBI) - **Di Musciano M.**, Stanisci A., Frate L., Di Cecco V., Di Martino L., Frattaroli A.R. - The importance of dispersal traits in mountain environment to predict changes in plant species distribution under climate warming, the case study on central Apennines GLORIA summits. - **Speaker** - Bologna, Italy (2017-02-09 - 2017-02-10).

### **Poster**

11<sup>th</sup> Biennial Conference of the International Biogeography Society (IBS) - **Di Musciano M.**, Santi F., Testolin R., Zannini P., Micci V., Ricci L., Guarino R., Bacchetta G., Fernández-Palacios J.M., Fois M., Kougioumoutzis K., Kunt K.B., Lucchi F., Medail F., Nikolic T., Otto R., Pasta S., Panitsa M., Proios K., Sfenthourakis S., Simaiakis S.M., Tranne C.A., Triantis K.A., Chiarucci A. - MEDIS - A Comprehensive Spatial Dataset on Mediterranean Islands for Biogeographical and Evolutionary Research - **Poster** - Prague, Czech Republic (2024-01-07 - 2024-01-11).

7<sup>th</sup> Seed Ecology Conference of the International Society for Seed Science (ISSS) - **Di Musciano M.**, Berrilli E., Frattaroli A.R., Ricci L., Di Cecco V., Di Martino L., Kaliontzopoulou A. - The evolution of plant dispersal syndromes and seed traits: evolutionary cues and diversification - **Poster** - Gijón (Asturias), Spain (2022-09-06 - 2022-09-09).

3<sup>rd</sup> Mediterranean Plant Conservation Week: from Science to Practice (MPCW) - **Di Musciano M.**, Di Cecco V., Bartolucci F., Conti F., Frattaroli A.R., Di Martino L. - Conservation strategies of threatened species should consider their dispersal ability - **Poster** - Crete, Greece (2021-09-27 - 2021-10-01).

28<sup>th</sup> Meeting of the European Vegetation Survey (EVS) - **Di Musciano M.**, Di Cecco V., Frattaroli A.R., Carranza M.L., Stanisci A., Di Martino L. - Exploring dispersion ability of high mountain species along environmental gradients. An insight in central Apennine. - **Poster** - Madrid, Spain (2019-09-02 - 2019-09-06).

112<sup>th</sup> Annual Symposium of the Italian Botanical Society (SBI) - **Di Musciano M.**, Stanisci A., Frate L., Carranza M.L., Di Cecco V., Di Martino L., Frattaroli A.R. - Nurse plant effect along mountain vertical gradients. An insight in central Apennine. - **Poster** - Parma, Italy (2017-09-20 - 2017-09-22).

51<sup>st</sup> Annual Symposium of the Italian Association of Vegetation Science (SISV) - **Di Musciano M.**, Di Cecco V., De Simone W., Ferella G., Gratani L., Catoni R., Frattaroli A.R. - Quantify ecosystems services of grassland at Campo Imperatore upland plain (Central Apennines, Italy). - **Poster** - Bologna, Italy (2017-04-20 - 2017-04-22).

### *Summary*

**Oral Communications** = 13

**Invited speaker** = 1

**Poster** = 6

**Member of the Scientific Committee** = 2

**Member of the Organizing Committee** = 1

### **Awards**

**Top Downloaded Article:** Diversity of European habitat types is correlated with geography more than climate and human pressure **Published in:** Ecology and Evolution **Role:** First author equally contributing

### **Editorial or reviewer activities**

**Managing Guest Editor**

**May 2022 - Jul 2024**

**Special issue:** 'Perspectives and applications of free and open source software in ecology.'

**Journal:** Ecological Informatics

**Review Editor in Biogeography and Macroecology**

**Apr 2024 - ongoing**

**Journal:** Frontiers in Ecology and Evolution

**Reviewer for:** PloS One; Journal of Biogeography; Journal of Vegetation Science; Scientific Reports, Ecological Informatics, Plant Ecology, Plant Biosystem, Community ecology, Communications earth & environment.

### **Languages**

**Italian** Native Speaker

**English** Advanced (C1)

**French** Upper intermediate (B2)

**Spanish** Elementary (A2)

### **Membership to Scientific Societies**

Società Botanica Italiana (SBI) - since 2016

Società Italiana di Scienze della Vegetazione (SISV) - since 2017

International Association for Vegetation Science (IAVS) - since 2021

International Biogeography Society (IBS) - since 2023

Founder member of the Society for Conservation Biology Italian Chapter (SCB Italy) - since 2022

## Freelance experience

**Professional collaboration** to perform vegetation survey in the Sirente-Velino Regional Park **Aims:** Verifying the correspondence of the preliminary Habitat Map to refine the distribution of the Habitat Natura 2000 within the Park's boundary. **Nov 2022 - Dec 2022**

**Professional collaboration** to elaborate the Environmental Technical Report aimed at defining the possible effects that the activities to realize the "Bike to coast" could generate at the expense of the Regional Natural Reserves "Ripari di Giobbe". "Interventions of completion of the 'Bike to coast' – CUP 71B18000100002. **May 2023**

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The presented CV was made using only opensource software; the list of publications and the bibliometrics indicators was automatically downloaded from Scopus

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**L'Aquila**  
**23/08/2024**

**Signature**

