

# MATTEO DAINESE

Department of Biotechnology  
University of Verona  
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37134 Verona VR, Italy



## PERSONAL INFO

**Nationality:** Italian  
**Date of birth:** 25 June 1980  
**Gender:** Male  
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## EDUCATION

### **Ph.D., Environmental Agronomy, University of Padova, 2010**

Dissertation: *Classification and biodiversity patterns in pasture of province of Trento*  
Dissertation Advisors: Prof. Antonio Berti

### **Degree, Forest and Environmental Sciences, University of Padova, 2005**

Thesis: *Produzione e raccolta di seme in un arrenaterato montano*  
Thesis Advisor: Prof. Michele Scotton

## EMPLOYMENT

**Assistant Professor (RtDb), University of Verona – Department of Biotechnology**  
(Oct 2022 - current)  
BIO/07 Ecology

**Senior researcher, Eurac research – Institute for Alpine Environment**

(Feb 2018 – Sep 2022)

Research Topic – *Land-use change and climate change in mountain ecosystems*

**Post-doc, University of Würzburg - Department of Animal and Tropical Ecology**

(Sep 2015 - Jan 2018)

Research Topic - *Biodiversity and ecosystem services in agricultural landscapes*

**Post-doc, University of Padova – DAFNAE**

(Jan 2015 – Aug 2015)

FP7 EU project - *Linking farmland Biodiversity to Ecosystem services for effective eco-functional intensification* (LIBERATION)

**Post-doc, University of Padova - TESAF**

(Jan 2012 – Dec 2014)

Senior Research Grant - *Understanding the effects of landscape and hedgerow fragmentation on plant and animal diversity using a multiscale approach*

**Research grant, University of Padova – TESAF**

(Apr 2010 – Oct 2011)

Research project - *Land abandonment and forest recovery: the hidden and mutable effect of the landscape on biodiversity*

Research project - *Spatial and statistical analyses of floristic data*

**Research grant, Fondazione E. Mach**

(May 2007 – Dec 2009)

Research project - *Classification and biodiversity patterns in pasture of province of Trento*

**Research grant, ERSA FVG**

(May 2006 – Dec 2006)

Research project EU INTERREG IIIB CADSES - *Successful Restoration and Rehabilitation Accompanying Infrastructural Interventions (SURE)*

**HABILITATION**

**Ecology (05/C1)**

Professore II fascia (Nov 2017)

**Botany (05/A1)**

Professore II fascia (Dec 2017)

## **TEACHING**

### **Ecology**

Bachelor's Degree in Biotechnology (48 h)

### **Applied Ecology**

Master's Degree in Biotechnology for bioresources and sustainable development (48 h)

## **PROJECTS**

### **AGATA - Accessible ecological data for resilient viticulture**

(2023 – 2025)

Joint Project University of Verona and Eurac research – *Project Coordinator*

### **IMPRESS - Improving agrobiodiversity for resilient pest control services across landscapes**

(2023 – 2025)

ERANet - 2022 Joint FACCE-JPI Suscrop – *National partner*

### **UPSHIFT - Effects of air pressure on upwards shifting alpine ecosystems**

(2022 – 2024)

Joint Project Funding FWF-South Tyrol – *Project Coordinator*

### **ECOCUBE - Launching ecological research in terraXcube: first demonstration experiments**

(2019 – 2021)

Eurac Research – *Project Coordinator*

### **ECODEAL - Enhancing biodiversity-based ecosystem services to crops through optimized densities of green infrastructure in agricultural landscapes**

(2015 – 2018)

EU Biodiversa – *Scientific collaboration*

### **LIBERATION - Linking farmland biodiversity to ecosystem services effective eco-functional intensification**

(2013 – 2016)

FP7 EU project – *Scientific collaboration*

**STEP - Status and trends of European pollinators**

(2015)

FP7 EU project – *Scientific collaboration*

**Understanding the effects of landscape and hedgerow fragmentation on plant and animal diversity using a multiscale approach**

(2013 – 2014)

Senior Research Grant University of Padova – *Project Coordinator*

**Classification and biodiversity patterns in pasture of province of Trento**

(2007 – 2009)

Fondazione Edmund Mach – *Scientific collaboration*

**SURE - Successful restoration and rehabilitation accompanying infrastructural interventions**

(2005)

EU INTERREG IIIB CADSES – *Scientific collaboration*

**PUBLICATIONS**

1. **Dainese, M.**, Crepaz, H., Bottarin, R., Fontana, V., Guariento, E., Hilpold, A., Obojes, N., Paniccia, C., Scotti, A., Seeber, J., Steinwandter, M., Tappeiner, U., & Niedrist, G. (2024). Global change experiments in mountain ecosystems: A systematic review. ***Ecological Monographs*** (in press)
2. Wan, N. F., **Dainese, M.**, Wang, Y. Q., & Loreau, M. (2024). Cascading social-ecological benefits of biodiversity for agriculture. ***Current Biology***, 34(12), R587-R603.
3. Zanini, S., **Dainese, M.**, Kopf, T., Leitinger, G., & Tappeiner, U. (2024). Maintaining habitat diversity at small scales benefits wild bees and pollination services in mountain apple orchards. ***Ecological Solutions and Evidence***, 5(2), e12320.
4. Zou, Y., Zhao, P., Bianchi, F. J., Gong, S., Li, L., Li, J., ..., **Dainese, M.**, ... & Wanger, T. C. (2024). Relationship between landscape complexity and ecosystem services from the perspective of smallholder agroecosystems in China—A review. ***Cell Reports Sustainability***, 1(2), 100014.
5. Giménez-García, A., Allen-Perkins, A., Bartomeus, I., Balbi, S., Knapp, J. L., Hevia, V., ..., **Dainese, M.**, ... & Magrach, A. (2023). Pollination supply models from a local to global scale. ***Web Ecology***, 23(2), 99-129.

6. Engel, T., Bruelheide, H., Hoss, D., Sabatini, F. M., Altman, J., Arfin-Khan, M. A., ..., **Dainese, M.**, ... & Pillar, V. (2023). Traits of dominant plant species drive normalized difference vegetation index in grasslands globally. *Global Ecology and Biogeography*, 32(5), 695-706.
7. Díaz, S., Kattge, J., Cornelissen, J. H., Wright, I. J., Lavorel, S., Dray, S., ..., **Dainese, M.**, ... & Zotz, G. (2022). The global spectrum of plant form and function: enhanced species-level trait dataset. *Scientific Data*, 9(1), 755.
8. Wan, N. F., Fu, L., **Dainese, M.**, Hu, Y. Q., Pødenphant Kiær, L., Isbell, F., & Scherber, C. (2022). Plant genetic diversity affects multiple trophic levels and trophic interactions. *Nature communications*, 13(1), 7312.
9. Wan, N. F., Cavalieri, A., Siemann, E., **Dainese, M.**, Li, W. W., & Jiang, J. X. (2022). Spatial aggregation of herbivores and predators enhances tri-trophic cascades in paddy fields: Rice monoculture versus rice-fish co-culture. *Journal of Applied Ecology*, 59(8), 2036-2045.
10. Alexandridis, N., Marion, G., Chaplin-Kramer, R., **Dainese, M.**, Ekroos, J., Grab, H., ... & Martin, E. A. (2022). Archetype models upscale understanding of natural pest control response to land-use change. *Ecological Applications*, e2696.
11. Ji, X. Y., Wang, J. Y., **Dainese, M.**, Zhang, H., Chen, Y. J., Cavalieri, A., ... & Wan, N. F. (2022). Ground cover vegetation promotes biological control and yield in pear orchards. *Journal of Applied Entomology*, 146(3), 262-271.
12. Allen-Perkins, A., Magrach, A., **Dainese, M.**, Garibaldi, L. A., Kleijn, D., Rader, R., ... & Bartomeus, I. (2021). CropPol: a dynamic, open and global database on crop pollination *Ecology*, 103(3), e3614.
13. Wan, N.-F., **Dainese, M.**, Zhu, F., Xiao, L.-B., Zhang, W., Ma, J., ... & Li, B. (2021). Decline of three farmland pest species in rapidly urbanizing landscapes. *iScience*, 24(9) 103002.
14. Alexandridis, N., Marion, G., Chaplin-Kramer, R., **Dainese, M.**, Ekroos, J., Grab, H., ... & Poppenborg Martin, E. M. (2021). Models of natural pest control: towards predictions across agricultural landscapes. *Biological Control*, 163, 014761
15. Saiz, H., **Dainese, M.**, Chiarucci, A., & Nascimbene, J. (2021). Networks of epiphytic lichens and host trees along elevation gradients: Climate change implications in mountain ranges. *Journal of Ecology*, 109(3), 1122-1132.

16. Roy, J., Rineau, F., De Boeck, H. J., Nijs, I., Pütz, T., Abiven, S., ..., **Dainese, M.**, ... & Milcu, A. (2021). Ecotrons: powerful and versatile ecosystem analysers for ecology, agronomy and environmental science. *Global Change Biology*, 27(7), 1387-1407.
17. Tamburini, G., Santoiemma, G., E. O'Rourke, M., Bommarco, R., Chaplin-Kramer, R., **Dainese, M.**, ... & Marini, L. (2020). Species traits elucidate crop pest response to landscape composition: a global analysis. *Proceedings of the Royal Society B*, 287(1937), 20202116.
18. Albrecht, M., Kleijn, D., Williams, N. M., Tschumi, M., Blaauw, B. R., Bommarco, R., ..., **Dainese, M.**, ... & Sutter, L. (2020). The effectiveness of flower strips and hedgerows on pest control, pollination services and crop yield: a quantitative synthesis. *Ecology Letters*, 23(10), 1488-1498.
19. González-Chang, M., Wratten, S. D., Shields, M. W., Costanza, R., **Dainese, M.**, Gurr, G. M., ... & Zhou, W. (2020). Understanding the pathways from biodiversity to agro-ecological outcomes: A new, interactive approach. *Agriculture, Ecosystems & Environment*, 301, 107053.
20. Wan, N. F., Zheng, X. R., Fu, L. W., Kiær, L. P., Zhang, Z., Chaplin-Kramer, R., ..., **Dainese, M.**, ... & Li, B. (2020). Global synthesis of effects of plant species diversity on trophic groups and interactions. *Nature Plants*, 6(5), 503-510.
21. Thomas, H. J., Bjorkman, A. D., Myers-Smith, I. H., Elmendorf, S. C., Kattge, J., Diaz, S., ..., **Dainese, M.**, ... & De Vries, F. T. (2020). Global plant trait relationships extend to the climatic extremes of the tundra biome. *Nature Communications*, 11(1), 1-12.
22. Van der Sande, M. T., Bruelheide, H., Dawson, W., Dengler, J., Essl, F., Field, R., ..., **Dainese, M.**, ... & Knight, T. M. (2020). Similar factors underlie tree abundance in forests in native and alien ranges. *Global Ecology and Biogeography*, 29(2), 281-294.
23. Kattge, J., Bönisch, G., Díaz, S., Lavorel, S., Prentice, I. C., Leadley, P., ..., **Dainese, M.**, ... & Cuntz, M. (2020). TRY plant trait database–enhanced coverage and open access. *Global Change Biology*, 26(1), 119-188.
24. **Dainese, M.**, Martin, E. A., Aizen, M. A., Albrecht, M., Bartomeus, I., Bommarco, R., ... & Steffan-Dewenter, I. (2019). A global synthesis reveals biodiversity-mediated benefits for crop production. *Science Advances*, 5(10), eaax0121.
25. Chiarucci, A., Nascimbene, J., Campetella, G., Chelli, S., **Dainese, M.**, Giorgini, D., ... & Canullo, R. (2019). Exploring patterns of beta-diversity to test the consistency of

- biogeographical boundaries: A case study across forest plant communities of Italy. *Ecology and Evolution*, 9(20), 11716-11723.
26. Martin, E. A., **Dainese, M.**, Clough, Y., Báldi, A., Bommarco, R., Gagic, V., ... & Steffan-Dewenter, I. (2019). The interplay of landscape composition and configuration: new pathways to manage functional biodiversity and agroecosystem services across Europe. *Ecology Letters*, 22(7), 1083-1094.
  27. Sitzia, T., Campagnaro, T., **Dainese, M.**, Dallabrida, F., Mattedi, S. M., & Portaccio, A. (2019). Altitudinal Shift of *Tetrao urogallus* in an Alpine Natura 2000 Site: Implications for Habitat Restoration. *Applied Sciences*, 9(6), 1164.
  28. Thomas, H. J., Myers-Smith, I. H., Bjorkman, A. D., Elmendorf, S. C., Blok, D., Cornelissen, J. H., ..., **Dainese, M.**, ... & van Bodegom, P. M. (2019). Traditional plant functional groups explain variation in economic but not size-related traits across the tundra biome. *Global Ecology and Biogeography*, 28(2), 78-95.
  29. Bruelheide, H., Dengler, J., Purschke, O., Lenoir, J., Jiménez-Alfaro, B., Hennekens, S. M., ..., **Dainese, M.**, ... & Jandt, U. (2018). Global trait–environment relationships of plant communities. *Nature Ecology & Evolution*, 2(12), 1906-1917.
  30. Bjorkman, A. D., Myers-Smith, I. H., Elmendorf, S. C., Normand, S., Rüger, N., Beck, P. S., ..., **Dainese, M.**, ... & Weiher, E. (2018). Plant functional trait change across a warming tundra biome. *Nature*, 562(7725), 57-62.
  31. **Dainese, M.**, Riedinger, V., Holzschuh, A., Kleijn, D., Scheper, J., & Steffan-Dewenter, I. (2018). Managing trap-nesting bees as crop pollinators: Spatiotemporal effects of floral resources and antagonists. *Journal of Applied Ecology*, 55(1), 195-204.
  32. **Dainese, M.**, Aikio, S., Hulme, P. E., Bertolli, A., Prosser, F., & Marini, L. (2017). Human disturbance and upward expansion of plants in a warming climate. *Nature Climate Change*, 7(8), 577-580.
  33. **Dainese, M.**, Isaac, N. J., Powney, G. D., Bommarco, R., Öckinger, E., Kuussaari, M., ... & Marini, L. (2017). Landscape simplification weakens the association between terrestrial producer and consumer diversity in Europe. *Global Change Biology*, 23(8), 3040-3051.
  34. Sitzia, T., **Dainese, M.**, Krüsi, B. O., & McCollin, D. (2017). Landscape metrics as functional traits in plants: Perspectives from a glacier foreland. *PeerJ*, 5, e3552.
  35. **Dainese, M.**, Schneider, G., Krauss, J., & Steffan-Dewenter, I. (2017). Complementarity among natural enemies enhances pest suppression. *Scientific Reports*, 7(1), 1-8.

36. Nascimbene, J., Mayrhofer, H., **Dainese, M.**, & Bilovitz, P. O. (2017). Assembly patterns of soil-dwelling lichens after glacier retreat in the European Alps. *Journal of Biogeography*, 44(6), 1393-1404.
37. **Dainese, M.**, Montecchiari, S., Sitzia, T., Sigura, M., & Marini, L. (2017). High cover of hedgerows in the landscape supports multiple ecosystem services in Mediterranean cereal fields. *Journal of Applied Ecology*, 54(2), 380-388.
38. Sitzia, T., Campagnaro, T., **Dainese, M.**, Cassol, M., Cortivo, M. D., Gatti, E., ... & Nascimbene, J. (2017). Contrasting multi-taxa diversity patterns between abandoned and non-intensively managed forests in the southern Dolomites. *iForest-Biogeosciences and Forestry*, 10(5), 845.
39. Nascimbene, J., Ackermann, S., **Dainese, M.**, Garbarino, M., & Carrer, M. (2016). Fine-scale population dynamics help to elucidate community assembly patterns of epiphytic lichens in alpine forests. *Fungal Ecology*, 24, 21-26.
40. Holzschuh, A., **Dainese, M.**, González-Varo, J. P., Mudri-Stojnić, S., Riedinger, V., Rundlöf, M., ... & Steffan-Dewenter, I. (2016). Mass-flowering crops dilute pollinator abundance in agricultural landscapes across Europe. *Ecology Letters*, 19(10), 1228-1236.
41. Inclán, D. J., **Dainese, M.**, Cerretti, P., Paniccia, D., & Marini, L. (2016). Spillover of tachinids and hoverflies from different field margins. *Basic and Applied Ecology*, 17(1), 33-42.
42. **Dainese, M.**, Luna, D. I., Sitzia, T., & Marini, L. (2015). Testing scale-dependent effects of seminatural habitats on farmland biodiversity. *Ecological Applications*, 25(6), 1681-1690.
43. **Dainese, M.**, Lepš, J., & de Bello, F. (2015). Different effects of elevation, habitat fragmentation and grazing management on the functional, phylogenetic and taxonomic structure of mountain grasslands. *Perspectives in Plant Ecology, Evolution and Systematics*, 17(1), 44-53.
44. Nascimbene, J., Nimis, P. L., & **Dainese, M.** (2014). Epiphytic lichen conservation in the Italian Alps: the role of forest type. *Fungal Ecology*, 11, 164-172.
45. Nascimbene, J., Tretiach, M., Corana, F., Schiavo, F. L., Kodnik, D., **Dainese, M.**, & Mannucci, B. (2014). Patterns of traffic polycyclic aromatic hydrocarbon pollution in mountain areas can be revealed by lichen biomonitoring: A case study in the Dolomites (Eastern Italian Alps). *Science of the Total Environment*, 475, 90-96.



46. Sitzia, T., **Dainese, M.**, & McCollin, D. (2014). Environmental factors interact with spatial processes to determine herbaceous species richness in woody field margins. ***Plant Ecology***, 215(11), 1323-1335.
47. Sitzia, T., Pizzeghello, D., **Dainese, M.**, Ertani, A., Carletti, P., Semenzato, P., ... & Cattaneo, D. (2014). Topsoil organic matter properties in contrasted hedgerow vegetation types. ***Plant and Soil***, 383(1), 337-348.
48. Sitzia, T., **Dainese, M.**, Clementi, T., & Mattedi, S. (2014). Capturing cross-scalar variation of habitat selection with grid sampling: an example with hazel grouse (*Tetrastes bonasia* L.). ***European Journal of Wildlife Research***, 60(2), 177-186.
49. **Dainese, M.**, Kühn, I., & Bragazza, L. (2014). Alien plant species distribution in the European Alps: influence of species' climatic requirements. ***Biological Invasions***, 16(4), 815-831.
50. **Dainese, M.**, & Sitzia, T. (2013). Assessing the influence of environmental gradients on seed mass variation in mountain grasslands using a spatial phylogenetic filtering approach. ***Perspectives in Plant Ecology, Evolution and Systematics***, 15(1), 12-19.
51. Nascimbene, J., **Dainese, M.**, & Sitzia, T. (2013). Contrasting responses of epiphytic and dead wood-dwelling lichen diversity to forest management abandonment in silver fir mature woodlands. ***Forest Ecology and Management***, 289, 325-332.
52. **Dainese, M.** (2012). Using natural gradients to infer a potential response to climate change: an example on the reproductive performance of *Dactylis Glomerata* L. ***Biology***, 1(3), 857-868.
53. Sitzia, T., Campagnaro, T., **Dainese, M.**, & Cierjacks, A. (2012). Plant species diversity in alien black locust stands: A paired comparison with native stands across a north-Mediterranean range expansion. ***Forest Ecology and Management***, 285, 85-91.
54. **Dainese, M.**, & Poldini, L. (2012). Does residence time affect responses of alien species richness to environmental and spatial processes?. ***NeoBiota***, 14, 47.
55. **Dainese, M.**, Scotton, M., Clementel, F., Pecile, A., & Lepš, J. (2012). Do climate, resource availability, and grazing pressure filter floristic composition and functioning in Alpine pastures?. ***Community Ecology***, 13(1), 45-54.
56. Sitzia, T., Trentanovi, G., **Dainese, M.**, Gobbo, G., Lingua, E., & Sommacal, M. (2012). Stand structure and plant species diversity in managed and abandoned silver fir mature woodlands. ***Forest Ecology and Management***, 270, 232-238.

57. **Dainese, M.**, & Bragazza, L. (2012). Plant traits across different habitats of the Italian Alps: a comparative analysis between native and alien species. *Alpine Botany*, 122(1), 11-21.
58. **Dainese, M.**, & Poldini, L. (2012). Plant and animal diversity in a region of the Southern Alps: the role of environmental and spatial processes. *Landscape Ecology*, 27(3), 417-431.
59. **Dainese, M.** (2011). Impact of land use intensity and temperature on the reproductive performance of *Dactylis glomerata* populations in the southeastern Alps. *Plant Ecology*, 212(4), 651-661. (IF 1.985)
60. Semenzato, P., Cattaneo, D., & **Dainese, M.** (2011). Growth prediction for five tree species in an Italian urban forest. *Urban Forestry & Urban Greening*, 10(3), 169-176.
61. Scotton, M., Piccinin, L., **Dainese, M.**, & Sancin, F. (2009). Seed production of an *Arrhenatherion elatioris* hay-meadow in the eastern Italian Alps. *Grass and Forage Science*, 64(2), 208-218.
62. Scotton, M., Piccinin, L., **Dainese, M.**, & Sancin, F. (2009). Seed harvesting for ecological restoration: efficiency of haymaking and seed-stripping on different grassland types in the eastern Italian Alps. *Ecological Restoration*, 27(1), 66-75.

## PROFESSIONAL SERVICE

### PROJECT EVALUATOR

- BiodivERsA ERA-NET
- ETAg (Estonian Research Council)
- FONDECYT (National Fund for Scientific and Technological Development of Chile)
- FWO (Research Foundation - Flanders)
- NOW (Dutch Research Council)
- SNSF (Swiss National Science Foundation)

### REVIEWER

Acta Oecologica; Agricultural and Forest Entomology; Agriculture, Ecosystems & Environment; African Journal of Ecology; Alpine Botany; Ambio; Animal Conservation; Applied Vegetation Science; Basic and Applied Ecology; Biodiversity and Conservation; Biological Agriculture & Horticulture; Biological Conservation; Biological Reviews; Botanical Review; Community Ecology; Diversity; Diversity and Distributions; Ecography;

Ecohydrology; Ecological Entomology; Ecological Applications; Ecological Modelling; Ecological Solutions and Evidence; Ecology and Evolution; Ecology Letters; Ecosphere; Environmental and Experimental Botany; Environmental Management; Flora; Forest Ecology and Management; Forests; Genetics and Molecular Biology; Global Change Biology; Global Ecology and Biogeography; iForest; International Journal of Plant & Soil Science; Insect Conservation and Diversity; Insects; Journal of Applied Ecology; Journal of Biogeography; Journal of Ecology; Journal of Mountain Science; Journal of Pest Science; Journal of Vegetation Science; Landscape Ecology; Methods in Ecology and Evolution; Nature Communications; NeoBiota; Oecologia; Oikos; PeerJ; Plant Biology; Plant Ecology; Plant Ecology & Diversity; PLoS ONE; PNAS; Proceedings of the Royal Society B: Biological Sciences; Science of the Total Environment; Trends in Ecology and Evolution.

## EDITORIAL ACTIVITY

### **Gateway Advisor – F1000**

Research Gateway: *Ecology and Global Change*

### **Associate Editor – Frontiers in Sustainable Food Systems**

Section: *Agroecology and Ecosystem Services*