JOAN CASANELLES ABELLA

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Google Scholar ID: https://scholar.google.com/citations?hl=ca&user=UHThWFIAAAAJ

ResearchGate: https://www.researchgate.net/profile/Joan-Casanelles-Abella Publons: https://publons.com/researcher/4652850/joan-casanelles-abella/

OrcID: https://orcid.org/0000-0003-1924-9298
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EDUCATION

05.2017 –01.2022 PhD in Environmental Sciences. Swiss Federal Institute WSL, Switzerland & Swiss Federal Institute of Technology Zurich ETHZ, Switzerland

Thesis: "Looking at cities with novel lenses: studying urban biodiversity across spatial

and ecological scales"

Committee: Dr. Marco Moretti, Prof. Dr. Loïc Pellissier, Prof. Dr. Monika Egerer and Dr.

Anthony D. Vaudo

Defense date: 28.01.2022

08.2015 – 08.2017 M.Sc. in Ecology and Evolution. University of Amsterdam, The Netherlands & Vrije

Universiteit Amsterdam, The Netherlands

Thesis 1: "Strategies for applying a robust measure of effect size in microbiome studies" *Thesis 2*: "Bee (Hymenoptera: Anthophila) and hoverfly (Diptera: Syrphidae) responses to

three types of urban nature in the area of Amsterdam, the Netherlands"

Thesis 3: "Fire as the fuel of the evolutionary engine: a review in the Mediterranean

oiome"

Advisors: Dr. James Weedon, Dr. JGB (Gerard) Oostermeijer and Dr. GJJ (Gerard)

Driessen, Prof. Dr. JHC (Hans) Cornelissen

Awarded cum laude distinction.

09.2010 – 07.2015 B.Sc. in Biology. Minor in Biodiversity. University of Barcelona, Spain

Thesis: "Pollinator diversity and abundance in highly intensified agroecosystems"

Advisor: José Manuel Blanco

Research stays

02.2022 Visiting scholar (PhD) at Universidad Nacional de Córdoba, Argentina.

Hosts: Dr. Silvina Fenoglio and Dr. Martín Villena

EMPLOYMENT HISTORY

Current position

02.2024-02.2026 SNF Postdoc.Mobility fellow, TUM, Germany

Project: BiodiverCITIES

Supervisor: Prof. Dr. Monika Egerer

Former positions

03.2023-11.2023 Postdoctoral researcher, EAWAG, Switzerland.

Project: "PAPPUS"

Supervisors: Dr. Laurent Cook

03.2022-02.2023 Postdoctoral researcher, WSL & ETH Zurich, Switzerland.

Project: "BioVEINS: Connectivity of urban green infrastructure, the living veins of a

healthy city"

Supervisors: Dr. Marco Moretti and Prof. Dr. Loïc Pellissier

07.2020 11.2020 Research staff, WSL, Switzerland

Project: "Stadtbäume der Zukunft. Forschungsbericht des Vorprojekts zH Grün Stadt

Zürich"

Supervisors: Dr. Marco Moretti and Dr. Silvia Tobias

06.2020- 06.2021 Research staff, WSL, Switzerland

Project: "City4Bees"

Supervisors: Dr. Marco Moretti & Dr. Debora Zaugg

03.2014 - 07.2015 Intern. Documentation Center of Vegetal Biodiversity (CEDOCBIV), Spain.

Supervisor: Dr. Roser Guàrdia

RESEACH SUPPORT AND FUNDING

Fellowships

2023 SNF Postdoc.Mobility

Duration: 2 years Institution: TUM

Grant number: 217754
Funds: 102.00 CHF

2023 **Humboldt fellowship** (declined for another grant, SNF Postdoc.Mobility)

Duration: 2 years
Institution: TUM
Funds: ca. 65'000 €

Research grants

03.2020 – 02.2023 Project City4Bees (Project number 2019-2917/1.1)

Co-PI with Dr. Marco Moretti (WSL)

Funders: Federal Office for the Environment FOEN and Ernst Göhner Stiftung

Funds: ca. 100'000 CHF

Awards

2017 **Cum laude** award for the Master degree

2020 Winning project in Climathon Zurich 2020 14.11.2020 "Green it!"

PUBLICATIONS

Total publications: 17, First author or first shared-co-authorship: 10, Citations (ISI): 263, h-index (ISI): 9

Publications in international peer-reviewed scientific journals

Casanelles-Abella, J.; ..., Moretti, M. 2025. Data on the diet and nutrition of urban and rural bumblebees. Scientific Data 2, 286 (2025). https://doi.org/10.1038/s41597-025-04585-w

Casanelles-Abella, J.; Egerer, M. 2024. Special Issue: The ecology of future cities. Basic and Applied Ecology. Accepted doi: 10.1016/j.baae.2025.01.002

Martinez-Nuñez, C.; Casanelles-Abella, J.; Frey, D.; Zanetta, A.; Moretti, M. 2024. Local and landscape factors shape alpha and beta trophic interaction diversity in urban gardens. Proceedings Royal Society B, 291, 20232501. doi: 10.1098/rspb.2023.2501

Casanelles-Abella, J.; A., Aleixo, C.; Orti, M.A.; Chiron, F.; Deguines, N.; Hallikma, T.; Laanisto, L.; Pinho, P.; Samson, R.; Tryjanowski, P.; Mensel, A. Van; Pellissier, L. & Moretti, M. 2024. Habitat amount, temperature and biotic interactions drive community structure, life-history traits, and performance traits of cavity-nesting bees and wasps and their natural enemies in cities. Insect Conservation and Diversity, 17(2), 243–258. doi: 10.1111/icad.12728

Chiron, F., Lorrillière, R., Bessa-Gomes, C., Tryjanowski, P., Casanelles-Abella, J., Laanisto, L., ... & Deguines, N. 2024. How do urban green space designs shape avian communities? Testing the area—heterogeneity trade-off. Landscape and Urban Planning, 242, 104954, doi: https://doi.org/10.1016/j.landurbplan.2023.104954

Rossi-Rotondi, B.; <u>Casanelles-Abella, J.</u>; Fontana, S.; Moretti, M.; Videla, M.; Fenoglio, M. S. 2023. Floral species evenness is the major driver of wild bee communities in urban gardens. Urban Ecosystems, 27, 159–171. doi: 10.1007/s11252-023-01440-x

Casanelles-Abella J.; Moretti, M.; Fontana, S.; Fournier, B. 2023. Countrywide wild bee taxonomic and functional diversity reveal a spatial mismatch between alpha and beta-diversity facets across multiple ecological gradients. Conservation Biology, 37, e14082. doi:10.1111/cobi.14082

Van Melsen, A.; Wuyts, K.; Pinho P.; Muyshondt, B.; Aleixo, C.; Alos Orti, M.; Casanelles-Abella, J.; Chiron, F.; Hallikma, T.; Laanisto, L.; Moretti, M.; Niinemets, U.; Tryjanowski, P.; Samson, R. 2023. Magnetic signal of urban trees' trunk bark catches the variation in particulate matter exposure within and across six European cities. Environmental Science and Pollution Research, 30 (17), 50883-50895. doi: 10.1007/s11356-023-25397-8

Casanelles-Abella, J.; Fontana, S.; Fournier, B.; Frey, D.; Moretti, M. 2022. Low resource availability drives feeding niche partitioning between wild bees and honey bees in cities. Ecological applications, 33(1), 1-17. doi: 10.1002/eap.2727.

Casanelles-Abella, J.; Keller, A.; Müller, S., Aleixo, C., Alós-Orti, M., Chiron, F., Laanisto, L., Myczko, L., Pinho, P., Tryjanowski, Van Mensel, L., Villarroya-Villalba, L., Pellissier, L., Moretti, M. 2022. Wild bee larval food composition in five European cities. Ecology, 103(9), 2-3. doi: 10.1002/ECY.3740

Muyshondt, B., Wuyts, K., Van Mensel, A., Smets, W., Lebeer, S., Aleixo, C., Casanelles-Abella J.; ... & Samson, R. 2022. Phyllosphere bacterial communities in urban green areas throughout Europe relate to urban intensity. FEMS Microbiology Ecology, 98(10), fiac106. doi: 10.1093/femsec/fiac106

Rocha, B.; Matos, P.; Giordani, P.; Piret, L.; Branquinho, C.; Casanelles-Abella, J.; Aleixo, C.; Deguines, N.; Hallikma, T.; Laanistom L.; Moretti, M.; Alós Ortí, M.; Samson, R.; Tryjanowski, P.; Pinho, P. 2022. Testing lichens as ecological indicators of the effects of multiple global change drivers in European cities at the broad spatial scale. Environmental pollution, 315, 120330, doi: 10.1016/j.envpol.2022.120330

Alós Ortí, M.; Casanelles-Abella, J.; Chiron, F.; Deguines, N.; Hallikma, T.; Jaksi, P.; Kwiatkowska, P.K.; Moretti, M.; Muyshondt, B.; Niinemets, Ü.; Pinho, P.; Pinto, M.J.; Saar, P.; Samson, R.; Tryjanowski, P.; Van Mensel, A. & Laanisto, L. 2022. Negative relationship between woody species density and urban green areas in seven European cities. Urban Greening and Urban Forestry, 74, 127650. doi: 10.1016/j.ufug.2022.127650

Casanelles-Abella, J. and Moretti, M., 2022. Challenging the sustainability of urban beekeeping: evidence from Swiss cities. npj Urban Sustainability, 2(1), 3. doi: 10.1038/s42949-021-00046-6

Casanelles-Abella, J.; Müller, S.; Keller, A.; Aleixo, C.; Orti, M.A.; Chiron, F.; Deguines, N.; Hallikma, T.; Laanisto, L.; Pinho, P.; Samson, R.; Tryjanowski, P.; Mensel, A. Van; Pellissier, L. & Moretti, M., 2022. How wild bees find a way in European cities: pollen metabarcoding unravels multiple feeding strategies and their effects on distribution patterns in four wild bee species. Journal of Applied Ecology, 59(2), 457-470. doi: 10.1111/1365-2664.14063

Casanelles-Abella, J.; Frey, D.; Müller, S.; Aleixo, C.; Alós Ortí, M.; Deguines, N.; Hallikma, T.; Laanisto, L.; Niinemets, Ü.; Pinho, P.; Samson, R.; Villarroya-Villalba, L.; Moretti, M., 2021. A dataset of the flowering plants (Angiospermae) in urban green areas in five European cities. Data in Brief, 37, 107243. doi: 10.1016/j.dib.2021.107243

Pinho, P.; Casanelles-Abella, J.; Luz, A.C.; Kubicka, A.M.; Branquinho, C.; Laanisto, L.; Neuenkamp, L.; Alós Ortí, M.; Obrist, M.K.; Deguines, N.; Tryjanowski, P.; Samson, R.; Niinemets, Ü.; Moretti, M., 2021. Research agenda on biodiversity and ecosystem functions and services in European cities. Basic and Applied Ecology, 54, 123-133. doi: 10.1016/j.baae.2021.02.014

Casanelles-Abella, J.; Chauvier, Y.; Zellweger, F.; Villiger, P.; Frey, D.; Ginzler, C.; Moretti, M.; Pellissier, L., 2021. Applying predictive models to study the ecological properties of urban ecosystems: a case study in Zürich, Switzerland. Landscape and Urban Planning, 214, 104137 doi: 10.1016/j.landurbplan.2021.104137

Villarroya-Villalba, L.; Casanelles-Abella, J.; Moretti, M.; Pinho, P.; Samson, R.; Van Mensel, A.; Chiron, F.; Zellweger, F.; Obrist, M.K., 2021. Response of bats and nocturnal insects to urban green areas in Europe. Basic and Applied Ecology, 51, 59-70. doi: 10.1016/j.baae.2021.01.006

Shared first co-authorship

Submitted but not yet accepted or published publications

Casanelles-Abella, J.; ..., Chauvier, Y. Urban biogeography to enhance city ecosystems for people and nature. Nature Cities. In review.

Selva, S.; ..., Casanelles-Abella, J. Urban bumblebees diversify their foraging strategy to maintain nutrient intake. Proceedings Royal Society B. In review

Chako, M.; Albouy, C.; Altermatt, F.; Casanelles-Abella, J.; ...; Pellissier, L. trophiCH -a national species-level trophic metaweb of 23k species for Switzerland. Scientific Data. In review

Casanelles-Abella, J.; ..., Egerer, M. Honeybee dominance patterns across cities worldwide. The American Naturalist. In review.

Reports for the government

Casanelles-Abella, J.; Müller, S.; Moretti, M.; Tobias, S.; Saluz, A.; Heinrich, A.; Tausendpfund, D.; Krieger, M.; Schindler, A., 2021. Stadtbäume der Zukunft. Forschungsbericht des Vorprojekts zH Grün Stadt Zürich. 65 p.

Casanelles-Abella, J.; Frey, D.; Moretti, M., 2021. City4Bees. Wild bees and honeybees and their resources in cities. Final report for the Federal Office for the Environment (FOEN). 34 p.

Outreach publications

Leimgruber, M.; Casanelles-Abella, J.; Moretti, M., 2020. N+L.

Casanelles-Abella, J. 2018: La conservació d'abelles en zones urbanes. Brots, 9, 22: 18-21.

Casanelles-Abella, J. 2021: Uncovering what urban wild bees are feeding on to better promote them in cities. The Applied Ecologist

Outreach documentaries

Fröhlich, B. Das Imkern in der Stadt boomt. NANO. https://www.3sat.de/wissen/nano/220520-bienen-nano-104.html Press releases

Galliker, F., 2022. Excessive beekeeping in Swiss cities could be detrimental for wild bees and honeybees. WSL News

Casanelles-Abella, J. Ed. Kusma, S., 2021. What urban bees feed on. News WSL. Link:

https://www.wsl.ch/en/news/2021/11/what-urban-bees-feed-on.html

 $Bose, L., 2021. \ Zurich \ home \ to \ some \ rare \ species. \ WSL \ News. \ Link: \ https://www.wsl.ch/en/news/2021/09/zurich-home-to-some-rare-species.html$

Outreach interviews

Interview for dezeen: Hahn, J., 2022. "Study finds cities lack green spaces to support "unsustainable" beekeeping boom". Link: https://www.dezeen.com/2022/01/27/urban-beekeeping-sustainabilty-study/

Interview for Bloomberg CityLab: Matteucci, L., 2022. "**Urban bees face a flower deficit, says Swiss study**". Link: https://www.bloomberg.com/news/articles/2022-01-14/urban-bees-lack-pollen-says-new-study-of-14-swiss-cities

Interview for Corriere del Ticino: Mantovan, J., 2021. "**Le città sono vive, lo sappiamo grazie alle api**" by Jona Mantovan. Link: https://www.cdt.ch/news/le-citta-sono-vive-lo-sappiamo-grazie-alle-api-270970

Interview for Horizon. The EU Research & Innovation Magazine: Ceurstemont, S., 2021. "What urban nature really means for insect biodiversity". Link: https://ec.europa.eu/research-and-innovation/en/horizon-magazine/what-urban-nature-really-means-insect-biodiversity

Interview for Swiss Info: Misicka, S., 2021. "What soil sounds like and why it matters". Link:: https://www.swissinfo.ch/eng/podcast--what-soil-sounds-like-and-why-it-matters/47291260

INSTITUTIONAL RESPONSIBILITIES

09.2022-02.2023 Co-organizer WSL Biodiversity Center Journal Club

SUPERVISION OF JUNIOR RESEARCHERS

Supervision of PhD students

02.2024-02.2026	Niclas Hoegel.	TIM	Cermany
UZ.ZUZ4-UZ.ZUZU	Micias moegei.	I UIVI.	Germany

Role: Second supervisor

Project: StreuKlim

03.2024-03.2028 Alexandra Zink, TUM, Germany

Role: Mentor Project: CityBees

Supervision of internships

10.2021 - 12.2021	Simonetta Selva, WSL, Switzerland
	Project: "Bumblebee diets".
07.2021-10.2021	Stefanie Müller, WSL, Switzerland
	Project: "Urban trees".
07.2019 - 01.2020	Miriam Leimgruber, WSL, Switzerland
	Project "City4Bees".
04.2019 - 08.2019	Stefanie Müller, WSL, Switzerland
	Project: "BioVEINS".
10.2018 - 12.2018	Lucía Villarroya Villalba, WSL, Switzerland
	Project: "BioVEINS".

Supervision of master students

Supervision of master students		
10.2022 - 04.2023	Simonetta Selva, WSL and ETH Zurich, Switzerland	
	Thesis: To Bee or Not to Bee Diverse: Exploring the Role of Floral Richness in Shaping	
	Urban and Rural Bumblebees' Diet	
12.2020 - 12.2021	Stefanie Müller, WSL and University of Zürich, Switzerland.	
	Thesis: "Feeding behavior of urban bees".	
04.2018 - 09.2018	Lucía Villarroya Villalba, WSL, Switzerland and Université de Montpellier, France.	
	Thesis: "Multi-scale connectivity of urban green infrastructures for bats and nocturnal	
	:	

insects".

Supervision of bachelor students

11.2019 – 02.2021 Aurelia Kuster, Bachelor student. WSL & ETH Zurich, Switzerland.

Thesis: "Using the synergy of the adaptation to climate change and the facilitation of

biodiversity through urban green within the city of Zurich".

01.2019 – 08.2019 Petrissa Villiger, Bachelor student. WSL & ETH Zurich, Switzerland.

Thesis: "Modelling invertebrate species distribution in Zurich".

Supervision of Civil Servants

07.2019 – 01.2020 **Pascal Bischof. WSL, Switzerland.** 10.2017 – 01.2018 **Kevin Kilchhofer. WSL, Switzerland.**

TEACHING ROLES

04.2025-09.2025	Co-lecturer at Advanced Concepts and Methods in Urban Ecosystems course at TUM
12.2024	Invited lecturer at Urban Agriculture course at TUM
	Ca. 3 hour of lectures
	Master level
	Ca. 20 students
04.2024-09.2024	Co-lecturer at Project Landscape Planning 3 ("Ecological Concepts") course at TUM
	Ca. 4 hours of lectures and 6 hours group supervision
	Bachelor and Master level
	Ca. 30 students
04.2024	Co-lecturer at Advanced Concepts and Methods in Urban Ecosystems course at TUM
	Ca. 4 hour of lectures
	Master level
11.2022	Teaching assistant course Landscape Biodiversity Modelling at ETHZ.
	Ca. 8 hours of lecture material preparation
	Master level
04.2022	Teaching assistant at R statistic course (Visualisations using R) at WSL.
	Ca. 6 hours of practical supervision and course material preparation
	Master, PhD, Postdoc level
06.2021	Teaching assistant at R statistic (Advanced data management in R) course at WSL.
	Ca. 6 hours of practical supervision and course material preparation
	Master, PhD, Postdoc level
10. 2020	Teaching assistant at R statistic course (Visualisations using R) at WSL.
	Ca. 6 hours of practical supervision and course material preparation
	Master, PhD, Postdoc level
09.2019 - 01.2020	Teaching assistant at Landscape Ecology course at ETHZ. Student project desing and
	supervision of student projects.
	Ca. 15 group supervision
§	Master level
09.2018 - 01.2019	Teaching assistant at Landscape Ecology course at ETHZ. Student project design and
	supervision of student projects.
	Ca .15 hours group supervision
	Master level

PRESENTATIONS

2024	Speaker presentation. When honeybees come to town. PATHWAYS Europe 2024. Cordoba, Spain.
2024	Speaker presentation. Urban Biogeography to enhance city ecosystems for people and nature. 53 rd Annual Meeting of the GfÖ. Freising, Germany.
2023	Poster presentation: Wild bee diversity patterns in Switzerland. 53 rd annual meeting of the GfÖ. Leipzig, Germany.
2022	Poster presentation: Challenging the sustainability of urban beekeeping. Urbio meeting 2022 . Leipzig, Germany.
2022	Speaker presentation. Low Resource Availability Drives Feeding Niche Partitioning Between Wildbees And Honeybees In A European City. Urbio meeting 2022 . Leipzig, Germany.
2022	Speaker presentation. Responses of cavity-nesting bees and wasps and their natural enemies across European cities. International Conference on Ecological Sciences & Evolution, Metz, France.
2022	Poster presentation: Wild bee diversity patterns in Switzerland. International Conference on Ecological Sciences & Evolution, Metz, France.
2022	Speaker presentation. Spatial mismatch between wild bee diversity and protected areas. INTECOL 2022. Geneve, Switzerland.
2022	Poster presentation: Challenging the sustainability of urban beekeeping. INTECOL 2022. Geneve, Switzerland.
2022	Speaker presentation. How wild bees find a way in European cities. World Biodiversity Forum. Davos, Switzerland.
2020	Speaker presentation. Modelling Biodiversity in Cities: Opportunities for Ecology and Management. World Biodiversity Forum. Davos, Switzerland.
2019	Speaker presentation. Species distribution models in urban ecology. GfÖ Annual Meeting. Münster, Germany.
2019	Poster presentation. Preliminary results on the effect of urbanization on biodiversity in five European cities. 1st Meeting of the Iberian Ecological Society & XIV AEET Meeting: Ecology an integrative science in the Anthropocene. Barcelona, Spain.
2018	Poster presentation. Responses of bees and wasps to urbanization. Research day D-USYS ETHZ. Zurich, Switzerland.
2018	Poster presentation. Responses of bees and wasps to urbanization. Biology18. Neuchâtel, Switzerland.
Invited talks	
2023	Invited Speaker at a Master Lecture. How urban bees find a way. ETHZ, Zurich, Switzerland.
2022	Invited Speaker at a department Seminar. Looking at cities through novel lenses. TUM Munich, Munich, Germany.
2022	Invited Speaker at a Research Symposium. University of Lausane, Lausane, Switzerland.
2022	Invited Speaker at a department Seminar. Looking at cities through novel lenses. Universidad Nacional de Cordoba, Codoba, Argentina.
2018	Invited Speaker at Master Lecture. The conservation of wildlife in an urbanizing world. Urban ecology: the green within the city. University of Lisbon, Lisbon, Portugal.
2017	Invited speaker at a Research Symposium. The conservation of pollinators in urban areas. Pollinators: will they survive the threads? Polytechnic University of Barcelona, Barcelona, Spain.

Organisation of conferences

2024 Co-convener of the session: Urban biodiversity: how to assess the social-ecological value of urban environments at the 53rd Annual Meeting of the GfÖ, Freising, Germany. 2024 Co-convener of the session: Evaluating protected areas for biodiversity conservation currently and in the future at the 53rd Annual Meeting of the GfÖ, Freising, Germany. Co-convener of the session: Urban Ecology at the 52nd Annual Meeting of the GfÖ, Leipzig, 2023 Germany. 2023 Co-convener of the session: New perspectives on plant-pollinator-people interactions in cities at the Annual Meeting of the British Ecological Society, Belfast, UK.

2022 Co-convener of the session: Ecology for future cities at the International Conference on Ecological

Sciences & Evolution, Metz, France.

EDITORIAL ROLES

Co-Guess Editor: Basic and Applied Ecology

VSI Ecology for Future Cities

With Monika Egerer

REVIEWER DUTIES

Basic and Applied Ecology (1)

Diversity & Distributions (2)

Ecological Applications (6)

Ecological Entomology (1)

Ecological Solutions & Evidence (1)

Ecology and Evolution (1)

Floral (1)

Frontiers in Ecology & Evolution (1)

Frontiers in Sustainable Cities (1)

Insect conservation & diversity (2)

International Journal of Digital earth (1)

Journal of Applied Ecology (2)

Journal of Insect Conservation (2)

Landscape & Urban planning (2)

PloS ONE (2)

Science of the Total Environment (2)

Scientific Data (2) Urban ecosystems (6)

MEMBERSHIPS

Active

Since 2018 Member of the Spanish Ecological Society (AEET) Since 2018 Member of the Iberian Ecological Society (SIBECOL)

Member of the Ecological Society of Germany, Austria and Switzerland (GfÖ) Since 2024

Past

British Ecological Society (BES) 2022-2024

PERSONAL SKILLS

Languages: Catalan (native)

> Spanish (native) English (fluent)

German, French and Italian (basic)

Programming languages: R (advanced) Javascript (basic)

Image and video: Adobe Illustrator

GIS QGIS

Arc-GIS

Google Earth Engine

Fieldwork

sampling

Plant and vegetation releves, floral resource measurements, insect sampling, soil

Labwork: Species identifications (plants and several insect orders), pollen extractions,

functional trait measurements

Driving licence