MINISTERIO DE CIENCIA E INNOVACIÓN

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Plan de Recuperación, Transformación y Resiliencia

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

CV date	03/12/2025

Part A. PERSONAL INFORMATION

First name	Carlos		
Family name	Martínez Núñez		
Gender	Male	Date of Birth (dd/mm/yyyy)	10/01/1989
Social Security, Passport, ID number	76423217J		
e-mail	cmnunez@ujaen.es	Google Scholar: https://scholar.google.com/citations?user=MmbdMO4AAAAJ&hl=es Personal Website: www.sciencefornature.com	
Open Researcher and Contributor ID (ORCID)		0000-0001-7814-4985	

A.1. Current position

Position	Postdoctoral Fellow (Junta de Andalucía Postdoctoral Fellowship)		
Initial date	01/05/2025		
Institution	Estación Biológica de Doñana (CSIC)		
Department/Centre	Department of Ecology and Evolution/ EBD (CSIC)		
Country	Spain/Seville	Phone number	+34605955987
Keywords	Agroecology; Arthropods; Biodiversity; Conservation; Monitoring; Pollinators; Trait-based Ecology		

A.2. Previous positions (arranged by starting date)

Period	Position/Institution/Country/Cause of the interruption
06/2024 – 10/2024	Paternity leave
04/2023 – 08/2023	Postdoctoral Fellowship (JSPS) / Japan / End of project
01/2023 – 03/2025	Juan de la Cierva Fellowship/ EBD (CSIC)/ Spain/ Start other fellowship
05/2021 – 12/2022	Postdoc/ Agroscope/ Switzerland/ Start in EBD (extension offered)
09/2020 – 12/2020	Visiting Researcher/ University of Wageningen/ The NL/ End of stay
12/2018 – 03/2019	Visiting Researcher/ University of Würzburg/ Germany/ End of stay
05/2017 – 04/2021	PhD / University of Jaen / Spain / End of grant
08/2016 – 04/2017	Researcher/ private Foundation (Matrix)/ Spain/ Ended work contract to start PhD at the University of Jaen (extension offered)

A.3. Education

PhD, Graduate Degree	University/Country	Year
PhD	University of Jaen (Spain)	2021
Master	University of Granada (Spain)	2015
Degree	University of Granada (Spain)	2013

Part B. CV SUMMARY

I am a **community ecologist** studying how global change drivers alter the spatial and temporal distribution of species, shape functional traits, modify biotic interactions, and ultimately affect ecosystem functioning. My long-term **goal is to generate actionable ecological knowledge that supports biodiversity conservation** and sustainable agricultural landscapes.

I obtained an international PhD (*cum laude*) at the University of Jaen, where I examined how agricultural intensification and landscape complexity jointly influence biodiversity and ecosystem services in Andalusian olive farms. **This work resulted in nine first-author publications and two international research stays in leading groups**, producing impactful collaborations with Prof. David Kleijn (Wageningen University) and Prof. Ingolf Steffan-Dewenter (University of Würzburg).

Following my PhD, I started an **international postdoctoral fellowship at a leading Swiss Research Institution in agroecology (Agroscope),** where I studied the long-term effects of agriculture on arthropod traits and functional diversity. I was later awarded a **Juan de la Cierva Postdoctoral Fellowship,** followed by a **Junta de Andalucía Postdoctoral Fellowship** at the Estación Biológica de Doñana (CSIC), where I am developing independent research lines that examine ecological patterns across large spatial and temporal scales. Over the past three years, **I have published in top-tier journals**, including Nature Communications (x2), Nature Sustainability, Nature Ecology & Evolution, Ecology Letters (x2), Conservation Biology, Global Ecology and Biogeography, Proceedings B, and the Journal of Animal Ecology, among others. My contributions span conceptual advances in trait-based ecology and applied insights for pollinator conservation in agroecosystems. **I have published** a book chapter and **37 peer-reviewed articles, including 16 as first author and 5 as senior/supervising author,** reflecting my increasing scientific independence and leadership. Most of my first-author papers appear in leading journals (first decile) in ecology and global change research, and **my work has been cited over 830 times (h-index 17; i10 = 21**; Google Scholar**)**. Beyond these citation-based metrics, the influence of my work is reflected in its **uptake by international research networks**, its integration into collaborative biodiversity monitoring and agroecology projects, and its use by conservation practitioners.

I contribute actively to major European projects such as H2020 SHOWCASE, H2020 SAFEGUARD, and Biodiversa+ ANTENNA, reinforcing my international visibility and my role in coordinated efforts to safeguard pollinators and agroecosystem resilience.

I have secured funding from competitive national and international sources, which has been pivotal in supporting my independent research. My funding track record includes **five prestigious and highly competitive awards totalling over 323,000 €.** I have participated in 10 projects (six national and four international) and **led two small, independent projects (~20,000€ in total), including a grant from the Japanese Government,** demonstrating my ability to generate and manage research resources.

I serve as Associate Editor for *Ecological Applications* (Ecological Society of America) **and *Insect Conservation and Diversity*** *(Royal Entomological Society)*, and **I regularly review manuscripts for leading journals** (>30), including *Nature Communications*, *Global Change Biology*, *Ecology Letters*, etc. **I strongly support open science**: I am an **advanced R user**, and I share data and code whenever possible to enable transparent and reproducible research. **I am also deeply committed to outreach and scientific communication**. I have coordinated activities for the European Night of Scientists, authored outreach articles (e.g., *Quercus*), and participated in radio and TV programs (e.g., Canal Sur Noticias). **I served four years as coordinator of the Early Career Researcher Commission of AEET** and helped organise symposia, strengthening my engagement with the ecological community.

I have supervised two PhD theses (one completed, one ongoing), **seven Master's theses**, a **JAE-intro fellow**, **an international visiting researcher**, and **an undergraduate student**. Mentoring has become an integral component of my academic profile, and several of my supervised works have resulted in high-quality publications, highlighting my ability to support early-career scientists.

My **research programme** for the coming years will integrate **trait-based ecology**, **biodiversity monitoring**, and **predictive modelling** to develop scalable frameworks for **understanding how land-use change and agricultural practices reshape ecological communities**. This research will provide practical insights to **promote biodiversity-friendly management at multiple spatial scales**, contributing to **European and global conservation goals**.

Part C. RELEVANT MERITS

C.1. Publications *(selection of 10 items).* I am the first and corresponding author in all of them.

1.- Martinez-Nuñez, C., et al. Tailored policies for perennial woody crops are crucial to advance Sustainable Development. ***Nature Sustainability,*** 8, 133–141(2025). https://doi.org/10.1038/s41893-024-01483-8. (1/19 authors).

2.- Martínez-Núñez, C., Martínez-Prentice, R. & García-Navas, V. Land-use diversity predicts regional bird taxonomic and functional richness worldwide. ***Nature Communications,*** 14, 1320 (2023). https://doi.org/10.1038/s41467-023-37027-5. (Editor's Choice).

3.- Martínez-Núñez, C., Gossner, M.M., Maurer, C., Neff, F., Obrist, M.K., Bollmann, K., Herzog, F., Knop, E., Luka, H., Cahenzli, F., Albrecht, M. (2024). Land-use change in the past 40 years explains shifts in arthropod community traits. ***Journal of Animal Ecology***, 00, 1–14. https://doi.org/10.1111/1365-2656.14062. (shortlisted for the Elton Prize).

4.- Martínez-Núñez, 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 B.*** 29120232501. http://doi.org/10.1098/rspb.2023.2501.

5.- Martínez-Núñez, C., Kleijn, D., Ganuza, C., Heupink, D., Raemakers, I., Vertommen, W. & Fijen, T. P. (2022). Temporal and spatial heterogeneity of semi-natural habitat, but not crop diversity, is correlated with landscape pollinator richness. ***Journal of Applied Ecology***, 59, 1258–1267. https://doi.org/10.1111/1365-2664.14137.

6.- Martínez-Núñez, C., Martínez-Prentice, R., & García-Navas, V. (2023). Protected area coverage of vulnerable regions to conserve functional diversity of birds. ***Conservation Biology***, 37, e14131. https://doi.org/10.1111/cobi.14131.

7.- Martínez-Núñez, C., Rey, P. J., Salido, T., Manzaneda, A. J., Camacho, F. M., & Isla, J. (2021). Ant community potential for pest control in olive groves: Management and landscape effects. ***Agriculture Ecosystems and Environment***, 305, 107185. https://doi.org/10.1016/j.agee.2020.107185.

8.- Martínez-Núñez, C., Rey, P. J., Manzaneda, A. J., Tarifa, R., Salido, T., Isla, J., … Molina, J. L. (2020). Direct and indirect effects of agricultural practices, landscape complexity, and climate on insectivorous birds, pest abundance, and damage in olive groves. ***Agriculture Ecosystems and Environment***, 304, 107145. https://doi.org/10.1016/j.agee.2020.107145.

9.- Martínez-Núñez, C., Manzaneda, A.J., Isla, J., Tarifa, R., Calvo, G., Molina, J.L., Rey, P.J., (2020). Low-intensity management benefits solitary bees in olive groves. ***Journal of Applied Ecology***, 57 (1), 111–120. https://doi.org/10.1111/1365-2664.13511.

10.- Martínez-Núñez, C., Lendínez, S., Pérez, A. J., Ruiz-Valenzuela, L., & Rey, P. J. (2019). Interacting effects of landscape and management on plant-solitary bee networks in olive orchards. ***Functional Ecology***, 1365-2435.13465. https://doi.org/10.1111/1365-2435.13465.

C.2. Congresses *(from recent to old; 4 selected).*

1.- 12/2025, Edinburgh. Oral presentation at an international congress (BES). Title: 3D-printed flowers for standardised pollinator monitoring. **Martínez-Núñez C.**, et al. [1/4].

2 and 3.- 08/2022 in the Czech Republic and 09/2022 in Switzerland. Oral presentations at international congresses (ECCB and INTECOL, respectively). Title: "Local and landscape drivers of long-term arthropod trends in Switzerland". **Martínez-Núñez C.**, et al. [1/9].

4.- 02/2019, Spain. Oral presentation at an international conference (SIBECOL). Title: "Differential effects of local and landscape environmental heterogeneity on properties of bipartite vs. tripartite networks in olive orchards". **Martínez-Núñez C.**, et al. [1/4].

C.3. Research projects *(from recent to old starting date; 8 selected)*

1) DECODE (Asociación Española de Ecología Terrestre, AEET). Budget: € 4 000. Title: Decoding the role of floral cues in plant-pollinator interactions Date: 2025. **Role: PI.**

2) ANTENNA (Biodiversa +). Budget: € 1 500 000. Title: Making technology work for monitoring pollinators. Date: 2024-2027. Coordinator: Oliver Schweiger. Role: Postdoctoral fellow in the work team associated with WP2 and WP3.

3) TRAIT (JSPS Postdoctoral Fellowship; Grant ID: PE23014). Budget: € 15 000. Title: Trait-driven roles of Apidae and Syrphidae in plant-pollinator interaction networks. Date: 2023. **Role: PI.**

4) COMEVO (PID2021-123304NA-I00, MIN CIENCIA E INNOVACION). Budget: €48 000. Title: The ecological theatre and the evolutionary play: integrating ecological interactions and macroevolution in a community context. Date: 2021-2025. P.I: Vicente García-Navas. Role: Postdoctoral fellow in the work team.

5) SAFEGUARD SC5-32-2020; European Union 3.5.2. H2020. Budget: €7 850 403,75. Title: Safeguarding European wild pollinators. Date: 2021-2025. Coordinator: Ingolf Steffan-Dewenter (University of Würzburg, Germany). Role: Postdoctoral fellow associated with WP2 and WP3.

6) RECOVECOS (PID2019-108332GB-I00, MICIN, Gobierno de España and FEDER). Budget: ~ €180 000. Title: Recovering ecosystem services provided by the fauna in permanent croplands: effects of the land use intensification and landscape complexity in olive grove landscapes. Date: 2020-2024. P.I: Pedro J. Rey. Role: Postdoctoral fellow in the work team and co-supervisor of a PhD candidate.

7) AGRABIES (CGL2015-68963-C2, MINECO, Gobierno de España and FEDER; coordinated project); Budget: ~ € 230 000. Title: Filtros macroecológicos y antropogénicos sobre la biodiversidad animal en agroecosistémas arbóreos ibéricos: efectos multiescalados sobre funciones y servicios ecosistémicos; Date: 2016-2020. Coordinators: Pedro J. Rey (University of Jaen) & Daniel García (University of Oviedo). Role: PhD candidate associated to the project (FPI).

8) LIFE OLIVARES VIVOS (LIFE14 NAT/ES/001094, European Commission). Budget: € 2 856 005. Title: Olives Alive. Date: 2015-2021. Coordinator: SEO/Birdlife Spain and Pedro J. Rey. Role: Researcher.

C.4. Technology/Knowledge transfer

My research frequently has direct implications for the development of conservation strategies and policies, particularly in the context of sustainable agriculture. For instance, my PhD research aimed to contribute to the socioeconomic sustainability of olive oil production. In particular, it supported the development of the "Olives Alive" certification (https://www.olivaresvivos.com/certificado/), which identifies biodiversity-friendly olive farms and enhances farmers' profitability. Some of my publications also hold the potential for shaping international agricultural policies. For example, in a recent article published in *Nature Sustainability*, we highlight the urgent need for tailored policies to enhance the sustainability of perennial woody crops worldwide. Building on this work, we prepared a policy brief as part of the H2020 SHOWCASE project to maximise its political impact. Lastly, I collaborated with the Andalusian Government to evaluate the pollination ecosystem service in Andalusia, generating knowledge to inform regional conservation policies (https://zenodo.org/records/11530784).