

PABLO MEDRANO-VIZCAÍNO

Conservation biologist and macroecologist with expertise in spatial ecology, trait-based modeling, and multidimensional biodiversity analysis (taxonomic, functional, and phylogenetic diversity). I am currently applying Artificial Intelligence tools (Inductive Logic Programming) to study the drivers of wildlife extinction globally. My research focuses on understanding how human pressures shape biodiversity patterns across geographic and taxonomic scales. I am the author of 32 peer-reviewed publications and 2 book chapters. I have international research experience in Europe (UK and Spain), South America, and the United States. I am the founder, PI, and President of [REMFA](#).

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EDUCATION

2023	PhD in Biological Sciences (Ecology and Evolution) - University of Reading (United Kingdom)
2015	Master in Conservation Biology - Pontificia Universidad Católica del Ecuador
2016	Bachelor in Biological and Environmental Sciences - Universidad Central del Ecuador
2010	Bachelor in Ecological Tourism - Universidad Central del Ecuador

WORK EXPERIENCE

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- **Oklahoma State University (Department of Computer Science) - USA. April 2025 – April 2026. Postdoctoral Fellow** (Funded by the U.S. National Science Foundation) – Application of Artificial Intelligence (Inductive Logic Programming) to spatial, morphological, ecological, and human pressure data to develop models that generate interpretable and hierarchical rules on the risk factors for wildlife extinction at a global scale.
 - **Spanish National Research Council (CSIC) - Spain. August 2023-March 2025. Postdoctoral researcher** (Funded by the European Union and the Spanish Ministry of Science and Innovation): 1) Assessment of the spatial and temporal dynamics of European birds' hotspots, and evaluation of the effectiveness of protected areas for conservation. 2) Quantification/mapping of taxonomic, functional, and phylogenetic diversity of steppe birds and their exposure to renewable energy projects.
 - **University of Reading (School of Biological Sciences) - United Kingdom. October 2019-March 2023: PhD Researcher** (Funded by the University of Reading): 1) Analyzed large-scale roadkill datasets across Latin America to identify species traits driving road mortality in wild vertebrates. 2) Mapped priority areas for roadkill research and conservation across Latin America using spatial analyses. 3) Led fieldwork campaign in the Amazon to evaluate the role of landscape features on wildlife mortality on roads. 4) Founded and led a citizen science project in Ecuador to generate national roadkill data.
 - **University of Reading (Henley Business School) - United Kingdom. February-March 2023. Research officer**: Spatial analyses of urban infrastructure in the UK to correlate property costs with location of historical churches.

- **University of Reading (School of Biological Sciences) – United Kingdom. April 2022: Ecology course Demonstrator:** Ecology teaching to undergraduate students.
- **Universidad Central del Ecuador (Biology Center) - Ecuador. February 2018 – July 2019: Lecturer of Life Sciences** (School of Biological Sciences, and Veterinary): Ecology and Cell Biology lectures to undergraduate courses, and elaboration of research projects about the ecology of birds and mammals.
- **United Nations Development Programme - Ecuador. November 2016 – January 2018. Social and environmental technician:** 1) Wildlife camera trapping, aquatic census of Manatees, alligators and paiche. 2) Wildlife occupancy modelling. 3) Elaboration of management plans for human-wildlife conflicts.
- **Agency for Regulation and Control of Electricity – Ecuador. October 2014 – October 2016. Biotic specialist:** 1) Environmental technical inspection to electrical projects. 2) Reviewing of Environmental impact studies. 3) Elaboration of Environmental Licenses and Technical Reports.
- **Ministry of Environment of Ecuador. October 2009 – December 2010. Technician:** Surveys and data systematization related to environmental and social impacts caused by oil activities. Elaboration of the National System of Environmental and Social passives.

SCIENTIFIC PUBLICATIONS (h index: 14, i10 index: 14)

2026

32. González-Pulido, L., Clemente-Orta, G., **Medrano-Vizcaíno, P.,...** Mougeot, F. Low uptake of biodiversity friendly agricultural practices in steppe bird diversity hotspots. *Biological Conservation*, 321, 112011. <https://doi.org/10.1016/j.biocon.2026.112011>
31. **Medrano-Vizcaíno, P.,** Sen, A., Marchiafava, A. Explainable AI reveals the quantitative hierarchical architecture of global bird extinction risk. *bioRxiv*: <https://doi.org/10.64898/2026.05.18.726070>
- 30 **Medrano-Vizcaíno, P.,** Mougeot, F., Arroyo, B., ... & Benítez-López, A. Identifying the exposure of taxonomic, functional and phylogenetic diversity of steppe birds to renewable energy development. *Conservation Biology*, e70291. <https://doi.org/10.1111/cobi.70291>
29. Benítez-López, A., Maeso-Pueyo, L., Martín, C., **Medrano-Vizcaíno, P.,** Mougeot, F. (2026). Current and future exposure of sandgrouse populations to utility-scale photovoltaic power plants in their main breeding range. *Biological Conservation*, 315, 111726. <https://doi.org/10.1016/j.biocon.2026.111726>
29. Coba-Males, M. A., Kostygov, A. Y.,...**Medrano-Vizcaíno, P.,** ...& Poveda, A. (2026). Uncovering parasite diversity in Ecuadorian wildlife: new trypanosomatid species and novel reservoir hosts for *Leishmania amazonensis*. *bioRxiv*: <https://doi.org/10.64898/2026.06.22.733918>

2025

28. **Medrano-Vizcaíno, P.,** Calderón, P., & Brito, D. (2025). Roadkill data reveal new distribution records and possible range shifts for neotropical mammals. *Discover Conservation*, 2(1), 33. <https://doi.org/10.1007/s44353-025-00056-w>
27. Gómez-Catasús, J., Benítez-López, A., Díaz, M., González del Portillo, D., **Medrano-Vizcaíno, P.,** et al. (2025). Alarming conservation status of Western European steppe birds and their habitats: an expert-based review of current threats, traits and knowledge gaps. *Biological Conservation*, 311, 111414. <https://doi.org/10.1016/j.biocon.2025.111414>

26. Grilo, C., Neves, T., Bates, J., Silva, I., Roux, A., **Medrano-Vizcaíno, P.**, ... (2025). Global Roadkill Data: a data set on terrestrial vertebrate mortality caused by collision with vehicles. *Scientific Data* 12, 505. <https://doi.org/10.1038/s41597-024-04207-x>

25. **Medrano-Vizcaíno, P.**, Benítez-López, A., Traba, ... & Mougeot, F. (2025). Spatial shifts in steppe bird hotspots over two decades: Assessing conservation priorities and the role of protected areas. *Biological Conservation*, 305, 111068. <https://doi.org/10.1016/j.biocon.2025.111068>

2024

24. Coba-Males MA, Díaz M, Molina CA, **Medrano-Vizcaíno P**, Brito-Zapata D, Martin-Solano S, et al (2024). Gut Bacterial Communities in Roadkill Animals: A Pioneering Study of Two Species in the Amazon region in Ecuador. *PLoS ONE*, 19(12): e0313263. <https://doi.org/10.1371/journal.pone.0313263>

2023

23. Coba-Males, M. A., **Medrano-Vizcaíno, P.**, ... & Poveda, A. (2023). From roads to biobanks: Roadkill animals as a valuable source of genetic data. *PLoS ONE*, 18(12), e0290836. <https://doi.org/10.1371/journal.pone.0290836>

22. **Medrano-Vizcaíno, P.**, Grilo, C., Brito, D., & González-Suárez, M. (2023). Landscape and road features linked to wildlife mortality in the Amazon. *Biodiversity and Conservation*, 1-16. <https://doi.org/10.1007/s10531-023-02699-4>

21. Rahnal, N., Pinto, F., **Medrano-Vizcaíno, P.**, Francisco, C., and Bruno, S. (2023). Assessing Brazilian reptiles' road-kill risks using trait-based models. *Austral Ecology*. <https://doi.org/10.1111/aec.13383>

20 **Medrano-Vizcaíno, P.**, Brito, D., Rueda, A., ... & González-Suárez, M. (2023). First national assessment of wildlife mortality in Ecuador: an effort from citizens and academia to collect roadkill data at country scale. *Ecology and Evolution*, 13, e9916. <https://doi.org/10.1002/ece3.9916>

19. **Medrano-Vizcaíno, P.**, Grilo, C., & González-Suárez, M. (2023). Research and conservation priorities to protect wildlife from collisions with vehicles. *Biological Conservation*, 280, 109952. <https://doi.org/10.1016/j.biocon.2023.109952>

2022

18. **Medrano-Vizcaíno, P.**, Grilo, C., Pinto, F.... & González-Suárez, M. (2022). Roadkill patterns in Latin American birds and mammals. *Global Ecology and Biogeography*. 31(1756-1783). <https://doi.org/10.1111/geb.13557>

17. Link, A., Alvarez, S., Blake, J., Campos, F., Espinosa, S., **Medrano-Vizcaíno, P.**, ... & Valenzuela, L. (2022). Insights into the habits of the elusive nocturnal curassow (*Nothocrax urumutum*). *Ornitología Neotropical*, 33(1), 74-78. <https://journals.sfu.ca/ornneo/index.php/ornneo/article/view/1051/PDF>

2021

16. **Medrano-Vizcaíno, P.**, & Brito, D. (2021) Filling biogeographical gaps through wildlife roadkills: New distribution records for six snake species from Ecuador. *Neotropical Biodiversity*, 7(1), 554-559. <https://doi.org/10.1080/23766808.2021.2010469>

15. Tipantiza L, **Medrano-Vizcaíno P** (2021) *Bothrocophias campbelli* (Campbell's Toad-headed Pitviper). Male combat. *Herpetological Review*. 52 (3): 658–659. <https://www.researchgate.net/publication/355190452>

14. Tipantiza L, Villareal D, **Medrano-Vizcaíno P** (2021) *Riama unicolor* (Unicolored Lightbulb-lizard). Limb malformation and ectrodactyly. *Herpetological Review*. 52 (3): 653. <https://www.researchgate.net/publication/355190343>

13. **Medrano-Vizcaíno P**, Espinosa, S. (2021) Geography of roadkills within the Tropical Andes Biodiversity Hotspot: Poorly known vertebrates are part of the toll. *Biotropica* 53 (3): 820–830. <https://doi.org/10.1111/btp.12938>
12. Tipantiza L, **Medrano-Vizcaíno P** (2021) *Dendropsophus rhodopeplus* (Red-skirted Treefrog) Cloacal Prolapse. *Herpetological Review*. 52 (2): 369. <https://www.researchgate.net/publication/352471483>

2020

11. Tipantiza L, Auqui E, **Medrano-Vizcaíno P** (2020) *Rhinella marina* (Cane toad). Morphological abnormalities. *Herpetological Review*. 51 (3): 570. <https://www.researchgate.net/publication/344285754>
10. **Medrano-Vizcaíno P**, Gutiérrez P (2020) Current and future suitable habitat areas for *Nasuella olivacea* (Gray, 1865) in Colombia and Ecuador and analysis of its distribution across different land uses. *Biodiversity Data Journal*. 8: e49164. <https://doi.org/10.3897/BDJ.8.e49164>
9. **Medrano-Vizcaíno P**, Bedoya J and Cadena-Ortiz H (2020) Dinámica de la distribución y hospederos de *Molothrus bonariensis* (Passeriformes: Icteridae) en Ecuador. *Caldasia*. 42 (1): 38–49. <https://doi.org/10.15446/caldasia.v42n1.78891>
8. Tipantiza L, **Medrano-Vizcaíno P** (2020) *Pristimantis kichwarum* Predation. *Herpetological Review*. 51 (1): 100. www.researchgate.net/publication/339736924

2019

7. Tipantiza L, **Medrano-Vizcaíno P**, Arguello P and Auqui E (2019) *Erythrolamprus miliaris crysostomus* (Military ground snake). Diet. *Herpetological Review*. 50 (4): 800. <https://www.researchgate.net/publication/338035925>
6. Tipantiza L, Brito D and **Medrano-Vizcaíno P** (2019) *Anolis fitchi* (Fitch's Anole). Tail bifurcation. *Herpetological Review* 50 (4): 781–782. <https://www.researchgate.net/publication/338035980>
5. **Medrano-Vizcaíno, P** (2019) Predating behavior of the Laughing falcon (*Herpetotheres cachinnans*) on the venomous Amazonian pit viper *Bothrops atrox* (the use of roads as a prey source). *BioRisk* 14: 25–30. <https://doi.org/10.3897/biorisk.14.35953>
4. Gutiérrez P; **Medrano-Vizcaíno P** (2019) The effects of climate change on decomposition processes in andean paramo ecosystem—synthesis, a systematic review. *Applied Ecology and Environmental Research* 17: 4957–4970. https://doi.org/10.15666/aeer/1702_49574970

2018

3. **Medrano-Vizcaíno P** (2018) The highest altitudinal record of the Mountain coati *Nasuella olivacea* (Gray, 1865) for Ecuador. *Biodiversity Data Journal* 6: e29160. <https://doi.org/10.3897/BDJ.6.e29160>
2. **Medrano-Vizcaíno P** (2018) Efecto de atributos paisajísticos en los patrones de presencia de *Ateles fusciceps* en el noroccidente ecuatoriano. *Revista Peruana de Biología* 25: 241–248. <http://dx.doi.org/10.15381/rpb.v25i3.13548>
1. **Medrano-Vizcaíno, P**; Rueda, A (2018) Nuevo registro altitudinal del pavón nocturno *Nothocrax urumutum* (Cracidae) y notas sobre su historia natural. *Revista Ecuatoriana de Ornitología* 3: 15–19. <https://doi.org/10.18272/reo.voi3.973>

BOOK CHAPTERS:

- González-Suárez, M., **Medrano-Vizcaíno, P.** & Grilo, C. (2026). Species traits in road ecology: defining intrinsic vulnerability. In D'Amico, M., Barrientos, R., &

Ascensão, F. (Eds.), *Road Ecology: Synthesis and Perspectives*. Springer, Cham. https://doi.org/10.1007/978-3-032-16641-8_39

- Ascensão, F., Barrientos, R., Ford, A.,..., **Medrano-Vizcaíno, P.**,..... & D'Amico, M. (2026). Charting the Path Ahead: Key Research Priorities in Road Ecology. In D'Amico, M., Barrientos, R., & Ascensão, F. (Eds.), *Road Ecology: Synthesis and Perspectives*. Springer, Cham. https://doi.org/10.1007/978-3-032-16641-8_50

IN REVIEW/PREP:

- Guerrero, A., Bolaños, J., Brito, D., **Medrano-Vizcaíno, P.**, Reyes-Puig, C. Roadkill reveals dietary composition in three Neotropical birds. *El Hornero*. **In Review**.
- **Medrano-Vizcaíno, P.** Grilo, C. Global roadkill patterns of mammals. **In prep**.

POPULAR SCIENCE PUBLICATIONS

- **Medrano-Vizcaíno, P.**, Grilo, C. & González Suárez, M. (2023). Priority regions and species to study and protect from road impacts in Latin America. Transport Ecology.info. <https://transportecology.info/research/priority-regions-species-roads-latinamerica>
- **Medrano-Vizcaíno, P.** (2022). Mortalidad de fauna silvestre en las carreteras de Ecuador: una realidad desapercibida que requiere atención. *Catálisis Revista Digital*, 4(8), 22-25. <https://www.catalisisec.com/v4-n8-mortalidad-fauna-vias>
- Espinosa, S; **Medrano-Vizcaíno, P** (2015) ¿Carreteras para el progreso o vías de la muerte?: Efecto de las carreteras en la fauna silvestre del Ecuador. *Nuestra Ciencia* 17: 21–23. <https://www.researchgate.net/publication/323638684>

SCIENTIFIC EDITOR

- Mamíferos grandes y medianos del corredor de conectividad Llanganates-Sangay. Instituto Nacional de Biodiversidad (2024). https://wwflac.awsassets.panda.org/downloads/gmamifero-web_1.pdf

MENTORING

2026-PhD thesis	Co-supervisor of Natsani Brandon Dube (University of Exeter-United Kingdom): Spatial and predictive modelling of wildlife roadkills in Ecuador.
2023-MSc thesis	Co-supervisor of Natã Dutra Fernandes Rahhal (Universidade Federal Fluminense-Brazil): Assessing brazilian reptiles road-kill risks using trait-based models.
2020-BSc thesis	Co-supervisor of Sandra Nogales Mayancha (Universidad Central del Ecuador): Identification of priority areas for studying the Buff-fronted Owl (<i>Aegolius harrisii harrisii</i>) in Ecuador.

AWARDS AND RESEARCH GRANTS. Total grants: ~\$247,550

2023	1st place. Award for academic merit to the most outstanding alumni in two areas: significant and high-quality academic and research production; and international and/or national recognition for their performance – Pontificia Universidad Católica del Ecuador .
2021	Research grant – Corporación Ecuatoriana para el Desarrollo de la Investigación y la Academia (CEDIA) (\$38,250). Project: Studying wildlife parasites and microbiome in two of the most biodiverse regions of the world: The tropical Andes, and Chocó Darién in Ecuador.
2021	Research grant – Universidad Central del Ecuador (\$25,000) . Project: Detection of parasites and microbiome in roadkilled wildlife and potential risk for human health.

2019	Winner of world competition for Full PhD studentship (one scholarship is awarded each year) – University of Reading International Research studentship. Full award covers tuition fees + maintenance grants + research and development allowance = ~ \$172,000 .
2016	Award as the best-spoken presentation in the III Cycle of Scientific research applied to biology. July 2016. Universidad Central del Ecuador.
2015	Best-spoken presentation of the Road Ecology Symposium in the II Colombian Congress and III Latin American Congress of Mammalogy. December 2015. Francisco José de Caldas University – Colombia.
2014	Research grant - Program for the Conservation of Biodiversity - Ecociencia. \$2,500 .
2014	Grant for academic excellence in Universidad Central del Ecuador, Faculty of Medical Sciences, Biological and Environmental Sciences. (Two academic periods) \$1,200 .
2013	Research grant (Master of Conservation Biology) Pontificia Universidad Católica del Ecuador. \$8,000 .
2013	Academic excellence grant in Universidad Central del Ecuador, Faculty of Medical Sciences, Biological and Environmental Sciences. \$600
2001	1st place in the IV National Fair of Science, Technology and Innovation and First Andean Technological Innovation Competition. Universidad Central del Ecuador grant.

PARTICIPATION IN SCIENTIFIC PROJECTS (LAST FIVE YEARS)

2025–2026.	Researcher in the project “CRII: III: Explainable Artificial Intelligence for Biodiversity Science & Conservation” – Funded by the US National Science Foundation -United States of America.
2023–2025	Researcher in the project “ELECTROSTEPPE: Evidence-based solutions for an ecological transition compatible with the conservation of Iberian steppe birds” – Funded by the European Union and the Spanish Ministry of Science and Innovation .
2020–Present	Principal Investigator, Founder, and President of the Ecuadorian Network for Monitoring Roadkilled Fauna (REMFA) – Funded by the University of Reading, United Kingdom .
2021	Researcher in the project “Study of parasites and microbiomes of wildlife in global biodiversity hotspots” – Funded by the Ecuadorian Corporation for the Development of Research and Academia .
2021	Researcher in the project “Detection of parasites and microbiomes in roadkilled fauna and potential risks for human health” – Funded by Central University of Ecuador .
2019–2023	Principal Investigator in the project “Road impacts on tropical wildlife: Predicting risks for different areas and species” – Funded by the University of Reading, UK .

ORAL PRESENTATIONS (LAST FIVE YEARS)

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- *Steppe birds and renewables: Identifying conflict and no-go areas in Spain based on taxonomic, functional and phylogenetic diversity*. International Conference on Palearctic Steppe Birds: ecology and conservation challenges. **Ciudad Real-Spain**. March 2025.
 - *Steppe birds and renewables: Identifying conflict and no-go areas in Spain based on taxonomic, functional and phylogenetic diversity*. XXVI Spanish Congress of Ornithology. SEO/BirdLife. **Valencia-Spain**. February 2025.
 - *How much wildlife is dying on Ecuadorian roads? An effort from academia and citizens to collect roadkill data at country level*. III National Congress of Wildlife Management. Universidad Espíritu Santo. **Guayaquil-Ecuador**. October 2022.

- *Key Species and Areas for Research and Conservation in Road Ecology. A Widely Applicable Approach.* IENE + GCLIE 2022 International Conference. **Cluj-Napoca-Romania**. September 2022.
- *Identifying target areas and taxa for conservation and research in road ecology.* University of Reading - School of Biological Sciences PhD Symposium. **Reading-United Kingdom**. September 2022.
- *Who and where: Wildlife traits as predictors of roadkills of birds and mammals in Latin America.* 6th European Congress of Conservation Biology. **Prague-Czech Republic**. August 2022.
- *Ecuadorian network for monitoring wildlife roadkills at a national scale.* Gran Bioblitz del sur. Universidad San Francisco de Quito. **Quito-Ecuador**. October 2021.
- *Road impacts on tropical wildlife: Predicting risk for different areas and species.* University of Reading - Biological Sciences PhD Symposium. **Reading- United Kingdom**. June 2021.

SOFTWARE/TECHNICAL SKILLS

Spatial Analysis, Statistics and Programming: R, Quantum GIS, ArcMap, Zonation 5, MaxEnt.

Artificial Intelligence: Inductive Logic Programming in ILASP, and CON-FOLD.

MEMBERSHIPS AND ADDITIONAL ACTIVITIES

- **Founder and President** of Red Ecuatoriana para el Monitoreo de Fauna Atropellada – **REMFA** (A citizen science project focused on road ecology research and environmental education). <https://remfa.webnode.co.uk/>
- **SIGMA Xi** – Full membership by invitation in recognition of scholarly achievements and contributions to the advancement of science.
- Member of the Latin American and Caribbean Transport Working Group (**LACTWG**) representing Ecuador. Webpage: <https://latinamericatransportationecology.org/>.
- Member of the **IUCN World Commission on Protected Areas** (WCPA).
- Member of the British Ecological Society (**BES**).

REVIEWER FOR THESE SCIENTIFIC JOURNALS: Nature Ecology & Evolution, Conservation Biology, Biological Conservation, Journal of Applied Ecology, Mammal Review, Scientific Reports, Global Ecology and Conservation, Biology Letters, Diversity and Distributions, Journal of Environmental Management, Science of the Total Environment, Biodiversity and Conservation, OIKOS, PLOS One, PeerJ, Oryx, Landscape and Urban Planning, Transportation Research Part D, European Journal of Wildlife Research, Wildlife Research, Transportation Research Interdisciplinary Perspectives, Environmental Impact Assessment Review, One Ecosystem, Annals of the Brazilian Academy of Sciences, Journal for Nature Conservation, Biologia, Huitzil, Journal of Mexican ornithology, Studies on Neotropical Fauna and Environment, Nature Conservation, Neotropical Biodiversity, Revista Mexicana de Biodiversidad, Mastozoología Neotropical, International Journal of Tropical Biology and Conservation, Revista Ecuatoriana de Ornitología, Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales, Therya Notes.