



Alejandro Ordonez

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Place of birth: Bogota, Colombia **Gender:** Male **Phone number:** (+45) 8715434

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ABOUT ME

I am a dedicated climate researcher with extensive expertise in understanding how environmental changes drive biodiversity loss and ecosystem service degradation—critical components of the climate crisis. My research directly addresses the interconnections between climate change impacts and nature's capacity to support human well-being, providing essential scientific evidence for climate policy development.

As an active member of the **IPBES scenarios and models task force**, I contribute to developing science-based scenarios that inform global climate and biodiversity policy frameworks. This experience positions me to bridge the critical gap between biodiversity science and climate policy, ensuring that nature-based solutions and ecosystem resilience are integrated into EU climate strategies.

I am committed to supporting the EU's journey to climate neutrality by 2050 through independent, science-based advice that considers both emission reduction and adaptation pathways. My interdisciplinary approach ensures that climate policies account for the full spectrum of environmental and social impacts, promoting fairness, solidarity, and environmental integrity as mandated by the European Climate Law.

Ready for Full Engagement

I am prepared to dedicate the substantial time commitment required (20% FTE over four years) and bring my international experience in scientific assessment to serve the EU's climate ambitions with excellence, independence, and dedication to European values.

WORK EXPERIENCE

Department of Biology, Aarhus University – Aarhus, Denmark

Address: Ny Munkegade 116 Institute of biology, 8000 Aarhus (Denmark) | **Website:** <https://pure.au.dk/portal/en/persons/alejandro.ordonez%40bio.au.dk> | **Email address:** aejandro.ordonez@bio.au.dk | **Name of unit or department:** Biology - **Business or sector:** Education

Associate Professor

[2023 – Current]

I specialise in teaching and conducting research in the fields of ecoinformatics, macroecology, climatology, and invasion ecology. My work is dedicated to understanding how current and future global environmental changes are shaping the structure, function, and resilience of Earth's ecosystems. Through an integrative approach that combines cutting-edge data analysis, fieldwork, and theoretical synthesis, I aim to unravel the complex interactions between biological communities and changing climatic and anthropogenic drivers.

My ultimate goal is to provide rigorous, knowledge-driven solutions to some of today's most pressing environmental challenges. By translating scientific insights into practical strategies, I strive to support conservation efforts, inform environmental policy, and promote sustainable management of our natural resources in a rapidly changing world.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

Name of unit or department: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) - **Business or sector:** Professional, scientific and technical activities

Member IPBES Taskforce on Scenarios and Models

[2024 – Current]

Executed the mandate of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Taskforce by catalysing comprehensive research and analysis on biodiversity and ecosystem function scenarios and modeling frameworks. Developed policy support tools and methodologies for scenario analysis, building on previous IPBES work programme deliverables and incorporating lessons from the 2019–2023 implementation periods. Created fast-track assessment protocols and guidance documents for biodiversity and ecosystem services modeling to ensure alignment with IPBES Plenary decisions and recommendations from subsidiary bodies.

 **Center for Ecological Dynamics in a Novel Biosphere (ECONOVO)**, – Aarhus, Denmark

City: Aarhus | Country: Denmark | Website: <https://bio.au.dk/forskning/forskningscentre/econovo> | Name of unit or department: Department of Biology, Aarhus University (Denmark). - Business or sector: Education

Core member

[2023 – Current]

Assess if there are biosphere-level consequences of global novel ecosystem spread, focusing on global vegetation structure and dynamics, global species richness in plants and vertebrates, and the impact of a novel biosphere on the climate system (e.g., via changes in carbon storage, albedo, and evapotranspiration), assessing if and how the ecological effects of novel ecosystems with and without restoration efforts scales up to affect the biosphere's biodiversity and climate functioning

 **Department of Biology - Aarhus University** – Aarhus, Denmark

City: Aarhus | Country: Denmark | Website: <https://pure.au.dk/portal/en/persons/alejandro.ordonez%40bio.au.dk> | Name of unit or department: Department of Biology, Aarhus University - Business or sector: Education

Assistant Professor

[2018 – 2023]

I specialise in teaching and conducting research in the fields of ecoinformatics, macroecology, climatology, and invasion ecology. My work is dedicated to understanding how current and future global environmental changes are shaping the structure, function, and resilience of Earth's ecosystems. Through an integrative approach that combines cutting-edge data analysis, fieldwork, and theoretical synthesis, I aim to unravel the complex interactions between biological communities and changing climatic and anthropogenic drivers.

My ultimate goal is to provide rigorous, knowledge-driven solutions to some of today's most pressing environmental challenges. By translating scientific insights into practical strategies, I strive to support conservation efforts, inform environmental policy, and promote sustainable management of our natural resources in a rapidly changing world.

 **Queen's University- Belfast (UK)** – Belfast, United Kingdom

City: Belfast | Country: United Kingdom | Name of unit or department: School of Biological Sciences, Queen's University (UK) - Business or sector: Education

Lecturer Global Change Biology

[2017 – 2018]

Teaching and research focused on understanding and predict how species respond to ongoing changes—like rising temperatures, shifting land use, and the movement of species around the globe. I use a mix of models and data analysis to explore how species' life cycles and human activities shape broad ecological patterns.

 **Department of Biology - Aarhus University** – Aarhus, Denmark

City: Aarhus | Country: Denmark | Website: <https://pure.au.dk/portal/en/persons/alejandro.ordonez%40bio.au.dk> | Name of unit or department: Department of Biology - Aarhus University - Business or sector: Education

Postdoctoral researcher

[2013 – 2017]

Advanced understanding of ecosystem functioning and dynamics under environmental change, focusing on historical constraints shaped by biodiversity and past climate. This was done via macroecological Big Data analyses focused on testing long-term effects of historical factors (e.g., past climate change) on ecosystem functioning, using global datasets for major groups such as vascular plants and mammals. This work demonstrated that past climate and historical processes have lasting effects on current biodiversity and ecosystem patterns, highlighting the importance of historical contingencies and disequilibrium dynamics in understanding global change responses.

 **University of Wisconsin Madison** – Madison, United States

City: Madison | Country: United States | Website: <https://ccr.nelson.wisc.edu/> | Name of unit or department: Center for Climatic Research - University of Wisconsin Madison - Business or sector: Education

Postdoctoral researcher

[2011 – 2013]

Pioneered a paleoecological approach to understanding how historical climatic changes shape contemporary woody plant communities by integrating fossil records, trait data, and modelling frameworks.

 **The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).**

Business or sector: Professional, scientific and technical activities

Link <https://www.ipbes.net/ias>

Coordinating Lead Author - IPBES thematic assessment report on Invasive Alien Species and their control

[2019 – 2023]

Coordinating lead author for chapter 6 of the IPBES The thematic assessment report on Invasive Alien Species and their control (2023)

EDUCATION AND TRAINING

PhD

University of Groningen (Netherlands) [2007 – 2011]

City: Groningen | Country: Netherlands | Field(s) of study: Natural sciences, mathematics and statistics | Level in EQF: EQF level 8 | Thesis: Understanding plant invasions : a global scale meta-analysis

Link: <https://research.rug.nl/en/publications/2d6057a4-23d6-4807-a808-a8cd2708b7cf>

The globalisation of human activities has resulted in the intentional and un-intentional movement of species to areas beyond their natural range; ultimately causing biotic homogenisation and irreversible changes to ecosystems. This dissertation addresses the invasiveness and invasibility question by exploring global patterns of trait similarity between co-occurring alien and native plants. To do this, two questions were asked: Can trait similarity between aliens and natives explain aliens success?; and, are the observed similarity patterns a product of evolution?. Aliens were found to display higher leaf traits, lower canopy height and smaller seeds. The magnitude of trait differences between co-occurring aliens and natives remained the same along climatic edaphic and human disturbance gradients. These differences showed a strong dependence to the phylogenetic relation between aliens and the native community; with phylogenetically close co-occurring alien and native plants being more phenotypically similar than expected by chance. These differences in traits were the result of aliens conserving their traits once introduced to a new area; something we suggest emerges from core ecological, evolutionary physiological and genetic constraints. The work presented here is a contribution to the long lasting quest for understanding the causes and mechanisms behind the success of invasive species. Lastly, It is shown how species, community and evolutionary patterns must be accounted together to determine invasion risk.

MSc

University of Groningen (Netherlands) [2005 – 2007]

City: Groningen | Country: Netherlands | Field(s) of study: Natural sciences, mathematics and statistics | Level in EQF: EQF level 8

LANGUAGE SKILLS

Mother tongue(s): Spanish

Other language(s):

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

Dutch

LISTENING A2 READING A2 WRITING A2

SPOKEN PRODUCTION A2 SPOKEN INTERACTION A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Geographical Informational Systems (GIS) / Data Science | Data Collection, Data Processing, Data Analysis, Data Visualisation / Python (computer programming) / Science policy interface (SPI) / People Management / Project Management / R (Computer programming)

PUBLICATIONS

Kerr M, Ordonez A, Riede F, Atkinson J, Pearce E, Sykut M, et al. Widespread ecological novelty across the terrestrial biosphere. *Nat Ecol Evol.* 2025;9(4):21.

Marjakangas E, Dalsgaard B, Ordonez A. Fundamental Interaction Niches: Towards a Functional Understanding of Ecological Networks' Resilience. *Ecol Lett.* 2025;28(6):13.

Link: <https://onlinelibrary.wiley.com/doi/10.1111/ele.70146>

Ordonez A, Riede F, Normand S, Svenning J. Towards a novel biosphere in 2300: rapid and extensive global and biome-wide climatic novelty in the Anthropocene. *Philos Trans R Soc B-Biol Sci.* 2024;379(1902):11.

Link: <https://doi.org/10.1098/rstb.2023.0022>

Svenning J, McGeoch M, Normand S, Ordonez A, Riede F. Navigating ecological novelty towards planetary stewardship: challenges and opportunities in biodiversity dynamics in a transforming biosphere. *Philos Trans R Soc B-Biol Sci.* 2024;379(1902):11.

Link: <https://doi.org/10.1098/rstb.2023.0008>

Svenning J, Kerr M, Mungi N, Ordonez A, Riede F. Defining the Anthropocene as a geological epoch captures human impacts' triphasic nature to empower science and action. *One Earth.* 2024;7(10):1678–81.

Link: <https://doi.org/10.1016/j.oneear.2024.08.004>

Ordonez A, Gill J. Unravelling the functional and phylogenetic dimensions of novel ecosystem assemblages. *Philos Trans R Soc B-Biol Sci.* 2024;379(1902):12.

Link: <https://doi.org/10.1098/rstb.2023.0324>

McGeoch M, Clarke D, Mungi N, Ordonez A. A nature-positive future with biological invasions: theory, decision support and research needs. *Philos Trans R Soc B-Biol Sci.* 2024;379(1902):11.

Link: <https://doi.org/10.1098/rstb.2023.0014>

Kerr M, Ordonez A, Riede F, Svenning J. A biogeographic-macroecological perspective on the rising novelty of the biosphere in the Anthropocene. *J Biogeogr.* 2024;51(4):575–87.

Link: <https://doi.org/10.1111/jbi.14762>

Roy H, Pauchard A, Stoett P, Truong T, Meyerson L, Bacher S, et al. Curbing the major and growing threats from invasive alien species is urgent and achievable. *Nat Ecol Evol.* 2024;8(7):1216–23.

Link: <https://doi.org/10.1038/s41559-024-02412-w>

Xu W, Guo W, Serra-Diaz J, Schrodtt F, Eiserhardt W, Enquist B, et al. Global beta-diversity of angiosperm trees is shaped by Quaternary climate change. *Sci Adv.* 2023;9(14):18.

Link: <https://doi.org/10.1126/sciadv.add8553>

Simová I, Ordonez A, Storch D. The dynamics of the diversity-energy relationship during the last 21,000 years. *Glob Ecol Biogeogr.* 2023;32(5):707–18.

Link: <https://doi.org/10.1111/geb.13649>

Ordonez A, Riede F. Changes in limiting factors for forager population dynamics in Europe across the last glacial-interglacial transition. *Nat Commun.* 2022;13(1):13.

Link: <https://doi.org/10.1038/s41467-022-32750-x>

Garzon-Lopez C, Barcenas E, Ordoñez A, Jansen P, Bohlman S, Olff H. Recruitment limitation in three large-seeded plant species in a tropical moist forest. *Biotropica.* 2022;54(2):418–30.

Link: <https://doi.org/10.1111/btp.13063>

Fricke E, Ordonez A, Rogers H, Svenning J. The effects of defaunation on plants' capacity to track climate change. *Science.* 2022;375(6577):210–+.

Link: <https://doi.org/10.1126/science.abk3510>

Williams J, Ordonez A, Svenning J. A unifying framework for studying and managing climate-driven rates of ecological change. *Nat Ecol Evol.* 2021;5(1):17–26.

Link: <https://doi.org/10.1038/s41559-020-01344-5>

Song H, Ordonez A, Svenning J, Qian H, Yin X, Mao L, et al. Regional disparity in extinction risk: Comparison of disjunct plant genera between eastern Asia and eastern North America. *Glob Change Biol.* 2021;27(9):1904–14.

Link: <https://doi.org/10.1111/gcb.15525>

Zohner C, Mo L, Renner S, Svenning J, Vitasse Y, Benito B, et al. Late-spring frost risk between 1959 and 2017 decreased in North America but increased in Europe and Asia. *Proc Natl Acad Sci U S A.* 2020;117(22):12192–200.

Link: <https://doi.org/10.1073/pnas.1920816117>

White H, León-Sánchez L, Burton V, Cameron E, Caruso T, Cunha L, et al. Methods and approaches to advance soil macroecology. *Glob Ecol Biogeogr.* 2020;29(10):1674–90.

Link: <https://doi.org/10.1111/geb.13156>

Ordonez A, Svenning J. The potential role of species and functional composition in generating historical constraints on ecosystem processes. *Glob Ecol Biogeogr.* 2020;29(2):207–19.

Link: <https://doi.org/10.1111/geb.13033>

Ordonez A. Points of view matter when assessing biodiversity vulnerability to environmental changes. *Glob Change Biol.* 2020;26(5):2734–6.

Link: <https://doi.org/10.1111/gcb.15054>

Knight C, Blois J, Blonder B, Macias-Fauria M, Ordonez A, Svenning J. Community Assembly and Climate Mismatch in Late Quaternary Eastern North American Pollen Assemblages. *Am Nat.* 2020;195(2):166–80.

Link: <https://doi.org/10.1086/706340>

Conradi T, Van Meerbeek K, Ordonez A, Svenning J. Biogeographic historical legacies in the net primary productivity of Northern Hemisphere forests. *Ecol Lett.* 2020;23(5):800–10.

Link: <https://doi.org/10.1111/ele.13481>

Xu W, Svenning J, Chen G, Zhang M, Huang J, Chen B, et al. Human activities have opposing effects on distributions of narrow-ranged and widespread plant species in China. *Proc Natl Acad Sci U S A.* 2019;116(52):26674–81.

Link: <https://doi.org/10.1073/pnas.1911851116>

Feng G, Ma Z, Sandel B, Mao L, Normand S, Ordonez A, et al. Species and phylogenetic endemism in angiosperm trees across the Northern Hemisphere are jointly shaped by modern climate and glacial-interglacial climate change. *Glob Ecol Biogeogr.* 2019;28(10):1393–402.

Link: <https://doi.org/10.1111/geb.12961>

Burke K, Williams J, Brewer S, Finsinger W, Giesecke T, Lorenz D, et al. Differing climatic mechanisms control transient and accumulated vegetation novelty in Europe and eastern North America. *Philos Trans R Soc B-Biol Sci.* 2019;374(1788):13.

Link: <https://doi.org/10.1098/rstb.2019.0218>

Pither J, Pickles B, Simard S, Ordonez A, Williams J. Below-ground biotic interactions moderated the postglacial range dynamics of trees. *New Phytol.* 2018;220(4):1148–60.

Link: <https://doi.org/10.1111/nph.15203>

Ordonez A, Svenning J. Greater tree species richness in eastern North America compared to Europe is coupled to denser, more clustered functional trait space filling, not to trait space expansion. *Glob Ecol Biogeogr.* 2018;27(11):1288–99.

Link: <https://onlinelibrary.wiley.com/doi/10.1111/geb.12785>

Blonder B, Enquist B, Graae B, Kattge J, Maitner B, Morueta-Holme N, et al. Late Quaternary climate legacies in contemporary plant functional composition. *Glob Change Biol.* 2018;24(10):4827–40.

Link: <https://doi.org/10.1111/gcb.14375>

Ordonez A, Svenning J. Consistent role of Quaternary climate change in shaping current plant functional diversity patterns across European plant orders. *Sci Rep.* 2017;7:11.

Link: <https://doi.org/10.1038/srep42988>

Feng G, Ma Z, Benito B, Normand S, Ordonez A, Jin Y, et al. Phylogenetic age differences in tree assemblages across the Northern Hemisphere increase with long-term climate stability in unstable regions. *Glob Ecol Biogeogr.* 2017;26(9):1035–42.

Link: <https://doi.org/10.1111/geb.12613>

Blonder B, Moulton D, Blois J, Enquist B, Graae B, Macias-Fauria M, et al. Predictability in community dynamics. *Ecol Lett.* 2017;20(3):293–306.

Link: <https://doi.org/10.1111/ele.12736>

Ordonez A, Williams J, Svenning J. Mapping climatic mechanisms likely to favour the emergence of novel communities. *Nat Clim Chang.* 2016;6(12):1104–+.

Link: <https://doi.org/10.1038/nclimate3127>

Ordonez A, Svenning J. Strong paleoclimatic legacies in current plant functional diversity patterns across Europe. *Ecol Evol.* 2016;6(10):3405–16.

Link: <https://doi.org/10.1002/ece3.2131>

Ordonez A, Svenning J. Functional diversity of North American broad-leaved trees is codetermined by past and current environmental factors. *Ecosphere.* 2016;7(2):14.

Link: <https://doi.org/10.1002/ecs2.1237>

Veen G, Freschet G, Ordonez A, Wardle D. Litter quality and environmental controls of home-field advantage effects on litter decomposition. *Oikos.* 2015;124(2):187–95.

Link: <https://doi.org/10.1111/oik.01374>

van der Plas F, Janzen T, Ordonez A, Fokkema W, Reinders J, Etienne R, et al. A new modeling approach estimates the relative importance of different community assembly processes. *Ecology.* 2015;96(6):1502–15.

Link: <https://doi.org/10.1890/14-0454.1>

Svenning J, Eiserhardt W, Normand S, Ordonez A, Sandel B. The Influence of Paleoclimate on Present-Day Patterns in Biodiversity and Ecosystems. In: Futuyma DJ, editor. *Annual Review of Ecology, Evolution, and Systematics*, Vol 46. *Annual Review of Ecology Evolution and Systematics.* 46. Palo Alto: Annual Reviews; 2015. p. 551–72.

Link: <https://doi.org/10.1146/annurev-ecolsys-112414-054314>

Ordonez A, Svenning J. Geographic patterns in functional diversity deficits are linked to glacial-interglacial climate stability and accessibility. *Glob Ecol Biogeogr.* 2015;24(7):826–37.

Link: <https://doi.org/10.1111/geb.12324>

Maire V, Wright I, Prentice I, Batjes N, Bhaskar R, van Bodegom P, et al. Global effects of soil and climate on leaf photosynthetic traits and rates. *Glob Ecol Biogeogr.* 2015;24(6):706–17.

Link: <https://doi.org/10.1111/geb.12296>

Lankau R, Zhu K, Ordonez A. Mycorrhizal strategies of tree species correlate with trailing range edge responses to current and past climate change. *Ecology.* 2015;96(6):1451–8.

Link: <https://doi.org/10.1890/14-2419.1>

Garzon-Lopez C, Ballesteros-Mejia L, Ordoñez A, Bohlman S, Olf H, Jansen P. Indirect interactions among tropical tree species through shared rodent seed predators: a novel mechanism of tree species coexistence. *Ecol Lett.* 2015;18(8):752–60.

Link: <https://doi.org/10.1111/ele.12452>

Eiserhardt W, Borchsenius F, Plum C, Ordonez A, Svenning J. Climate-driven extinctions shape the phylogenetic structure of temperate tree floras. *Ecol Lett.* 2015;18(3):263–72.

Link: <https://doi.org/10.1111/ele.12409>

Ordonez A, Martinuzzi S, Radeloff V, Williams J. Combined speeds of climate and land-use change of the conterminous US until 2050. *Nat Clim Chang.* 2014;4(9):811–6.

Link: <https://doi.org/10.1038/nclimate2337>

Cornwell, W. K., Westoby, M., Falster, D. S., FitzJohn, R. G., O'Meara, B. C., Pennell, M. W., ... & Zanne, A. E. (2014). Functional distinctiveness of major plant lineages. *Journal of Ecology*, 102(2), 345-356.

Link: <https://doi.org/10.1111/1365-2745.12208>

Garzon-Lopez, C. X., Jansen, P. A., Bohlman, S. A., Ordonez, A., & Olf, H. (2014). Effects of sampling scale on patterns of habitat association in tropical trees. *Journal of Vegetation Science*, 25(2), 349-362.

Link: <https://doi.org/10.1111/jvs.12090>

Ordonez, A. (2014). Functional and phylogenetic similarity of alien plants to co-occurring natives. *Ecology*, 95(5), 1191-1202.

Link: <https://doi.org/10.1890/13-1002.1>

Ordonez, A. (2014). Global meta-analysis of trait consistency of non-native plants between their native and introduced areas. *Global ecology and biogeography*, 23(3), 264-273.

Link: <https://doi.org/10.1111/geb.12123>

Williams, J. W., Blois, J. L., Gill, J. L., Gonzales, L. M., Grimm, E. C., Ordonez, A., ... & Veloz, S. D. (2013). Model systems for a no-analog future: species associations and climates during the last deglaciation. *Annals of the New York Academy of Sciences*, 1297(1), 29-43.

Link: <https://doi.org/10.1111/nyas.12226>

Ordonez, A., & Williams, J. W. (2013). Projected climate reshuffling based on multivariate climate-availability, climate-analog, and climate-velocity analyses: implications for community disaggregation. *Climatic Change*, 119(3), 659-675.

Link: <https://doi.org/10.1007/s10584-013-0752-1>

Ordonez, A., & Williams, J. W. (2013). Climatic and biotic velocities for woody taxa distributions over the last 16 000 years in eastern North America. *Ecology letters*, 16(6), 773-781.

Link: <https://doi.org/10.1111/ele.12110>

Ordonez, A. (2013). Realized climatic niche of North American plant taxa lagged behind climate during the end of the Pleistocene. *American Journal of Botany*, 100(7), 1255-1265.

Link: <https://doi.org/10.3732/ajb.1300043>

Ordonez, A., & Olff, H. (2013). Do alien plant species profit more from high resource supply than natives? A trait-based analysis. *Global Ecology and Biogeography*, 22(6), 648-658.

Link: <https://doi.org/10.1111/geb.12019>

Ordonez, A., Wright, I. J., & Olff, H. (2010). Functional differences between native and alien species: a global-scale comparison. *Functional Ecology*, 24(6), 1353-1361.

Link: <https://doi.org/10.1111/j.1365-2435.2010.01739.x>