

Maria Isabel Loza Rivera, Ph.D.

The Morton Arboretum, Lisle IL, USA | 314-933-6784 | ilozarivera@mortonarb.org

Personal Summary

- ❖ Plant ecologist with 10+ years of experience working in neotropical forests with expertise in community ecology, biogeography and evolution with application to conservation initiatives resulting in 3 first author papers and 11 co-authored papers.
- ❖ Effective team leader and manager with 5+ years of experience executing and managing research-expeditions to remote sites resulting in collaborations with diverse working groups such as stakeholders and governmental agencies.
- ❖ Strong expertise in quantitative research methods, grant writing, trained in spatial analysis using R software and large data sets, trained field biologist with experience working with local communities.

Education

2019	Ph.D. , Ecology Evolution and Systematics, University of Missouri-Saint Louis/Missouri Botanical Garden.
2014	M.S. , Ecology Evolution and Systematics, University of Missouri-Saint Louis/Missouri Botanical Garden.
2009	B.S. Biology, Universidad Mayor de San Andrés, La Paz-Bolivia / Herbario Nacional de La Paz-Bolivia.
2007	Geographic information systems and remote sensing certification , Universidad Mayor de San Andrés, La Paz-Bolivia.

Professional Experience

2022- present	Postdoctoral Researcher , Global Tree Conservation Program department at The Morton Arboretum
2020 - 2022	Post-Doctoral Experience/ Project Manager , Ciudadanos del Karso in collaboration with the USDA Forest Service - International Institute of Tropical Forestry
2020 Spring	Teaching Instructor , University of Missouri-Saint Louis
2020 - present	Research Associate , Missouri Botanical Garden
2012 - 2019	Graduate research fellow and research assistant , University of Missouri-Saint Louis / Missouri Botanical Garden
2008 - 2012	Researcher for the Madidi project, Herbario Nacional de La Paz-Bolivia/ Missouri Botanical Garden

Peer Reviewed Publications

- Mateo R. G., Arellano G., Gomez-Rubio V., Tello J. S., Fuentes A. F., Cayola L., **Loza M.I.**, Cala V. and Macia M. J. 2022. Insights on biodiversity drivers to predict species richness in tropical forests at the local scale. *Ecological Modelling* 473 (2022) 110133
- Baez S., Cayuela L., Macia M.J., Alvarez-Davila E., Apaza-Quevedo A., Arnelas I., Bacca Cortes N., Bañares de Dios G., Bauters M., Saadi C. B., Blundo, Cabrera M., Castaño F., Cayola L., Aledo J., Espinosa C. I., Fadrique B., Farfan-Rios W., Fuentes A., Garnica-Diaz C., Gonzalez M., Gonzalez D., Hensen I., Hurtado-M A., Jadan O., Lippok D., **Loza M.I.**, Maldonado C., Oliveras Menor I., Pierick K., Ramirez-Angulo H., Salgado-Negret B., Schleuning M., Silman M., Solarte M. E., Tello J. S., Verbeeck H., Vilanova E., Weithmann G., and Homeier J. 2022. FunAndes – A functional trait database of Andean plants. *Nature Sci Data* 9, 511
- Linan A. G., Myers J. A., Edwards C. E., Zanne A. E., Smith S. A., Arellano G., Cayola L., Farfan-Rios W., Fuentes A. F., Garcia-Cabrera K., Gonzales-Caro S., **Loza M.I.**, Macia M. J., Malhi Y., Nieto-Ariza B., Salinas N., Silman M. R., Tello S. 2021. The evolutionary assembly of forest communities along environmental gradients: recent diversification or sorting of pre-adapted clades. *New Phytologist*
- Duque A., Peña M. A., Cuesta F., Gozales-Caro S., Kennedy P., Phillips O. L., Calderon-Loor M., Blundo C., Carilla J., Cayola L., Farfan-Rios W., Fuentes A., Grau R., Homeier J., **Loza M.I.**, Yadvinder M., Malizia A., Malizia L., Martinez-Villa J. A., Myers J. A., Osinaga-Acosta O., Peralvo M., Pinto E., Saatchi S., Silman M., Tello J. S., Teran-Valdez A., and Feeley K. J. 2021. Mature Andean forests as globally important carbon sinks and future carbon refuges. *Nature Communications* (2021) 12:2138
- Malizia A., Blundo C., Carilla J., Acosta O. O., Cuesta F., Duque A., Aguirre N., Aguirre Z., Ataroff M., Baez S., Calderon-Loor M., Cayola L., Cayuela L., Ceballos S., Cedillo H., Farfan-Rios W., Feeley K. J., Fuentes A. F., Alvarez L. E. G., Grau R. Homeire J., Jadan O., Llambi L. D. **Loza M. I.**, Macia M. J., Malhi Y., Malizia L., Peralvo M., Pinto E., Tello S., Silman M., and Young K. R. 2020 Elevation and latitude drives structure and tree species composition in Andean forests: Results from a large-scale plot network. *Plos One* 15 (4)
- Loza M.I.**, Jiménez I., Jørgensen, P. M., Arellano, G., Macia, M.J., Torrez, V. and R.E. Ricklefs. 2017. Phylogenetic patterns of rarity in a regional species pool of tropical woody plants. *Global Ecology and Biogeography* 26(9): 1043-1054.
- Hernández-Yáñez, H., Kos, J., Bast, M.D., Griggs, J.L., Hage, P.A., Killian, A., **Loza, M.I.**, Whitmore, M.B. and Smith, A.B. 2016. A systematic assessment of threats affecting the rare plants of the United States. *Biological Conservation* 203: 260-267.
- Arellano G., Umana M.N., Macia, M.J., **Loza, M. I.**, Fuentes, A., Cala V. and Jørgensen, P. M. 2016. The role of niche overlap, environmental heterogeneity, landscape roughness and productivity in shaping species abundances distribution along the Amazon-Andes gradient. *Global Ecology and Biogeography* 26(2): 191-202
- Arellano G., Tello J.S., Jørgensen, P. M., Fuentes, A., **Loza, M. I.**, Torrez V. and Macia, M. J. 2016 Disentangling environmental and spatial processes of community assembly in tropical forest from local to regional scales. *Oikos* 125:326-335
- Arellano G., Jørgensen, P. M., Fuentes, A., **Loza, M. I.**, Torrez V. and Macia, M. J. 2015. Oligarquit patterns in tropical forests: role of the spatial extent, environmental heterogeneity and diversity. *Journal of Biogeography* 43(3): 616-626

- Fernandez, M., Navarro L. M., Apaza A., **Loza, M.I.**, et al., 2015. Challenges and opportunities for the Bolivian Biodiversity Observation Network. *Biodiversity*, 16:1-13
- Tello, J. S., Myers, J. A., Macia, M.J., Fuentes, A. F., Cayola, L., Arellano, G., **Loza, M.I.**, Torrez, V., Cornejo, M., Miranda, T. B. and Jørgensen, P. M. 2015. Elevation gradients in B-diversity reflect variation in the strength of local community assembly mechanism across spatial scales. *PlosOne*
- Arellano, G., **Loza, M.I.**, Tello, J. S. and Macia M. J. 2014. Commonness and rarity determinants of woody plants in different types of tropical forest. *Biodiversity Conservation*. 24:1073-1087
- Arellano, G., Cayola, L., **Loza, M.I.**, Torrez, V., and Macia M. J. 2014. Commonness patterns and the size of the species pool along a tropical elevational gradient: insights using a new quantitative tool. *Ecography* 37:536-543.
- Loza, M. I.**, M. Moraes and P.M. Jørgensen. 2010. Variación de la diversidad y composición florística en relación a la elevación en un bosque montano boliviano. (PNANMI Madidi). *Ecología en Bolivia* 45: 87–100.
- Loza, M.I.** and P.M. Jørgensen. 2010. *Siphoneugena minima* y *S. glabrata* (Myrtaceae) dos nuevas especies de Bolivia. *Novon* 20: 292–297.
- Loza, M.I.**, P. Amurrio and G. Rodrigo. 2005. Evaluación Genotoxicológica de suelos expuestos a plaguicidas por el test de micronúcleos. *Biofarbo* 13:39-43

In Revision

- Loza M.I.**, Jiménez I., and R.E. Ricklefs. Enrichment of local tree assemblages by unfiltered regional species pools in Neotropical Forest. *The American Naturalist*
- Loza M.I.**, Jiménez I., and R.E. Ricklefs. Spatial Legacies of the Great American Biotic Interchange in Central American tree floras. *Journal of Biogeography*

Other products

- Reid, J.L., Young, E.I., Acha, S.M., Blecknell, R.E, Domene, F., Figueiredo, A., Haake, D., Huang, W.T., **Loza, M.I.**, Mashburn, B., Moreira, J. I., Pilgram-Kloppe, K. and Young, E. 2017. Book Review: Foundations of Restoration Ecology (second edition) – edited by Margaret A. Palmer, Joy B. Zedler and Donald A. Falk. *Restoration Ecology* 25: 844-845.
- Cornejo-Mejía, M., P.M. Jørgensen, M.J. Macía, **M.I. Loza**, A.F. Fuentes and L. Cayola. 2011. Memorias de los 10 años de investigación botánica realizada en la Región Madidi: “Conociendo una de las regiones más biodiversas del mundo”. Herbario Nacional de Bolivia. Missouri Botanical Garden. La Paz.
- Jørgensen, P.M., F. Zenteno, **M.I. Loza**, S. Beck, A. Fuentes, R. Seidel, L. Cayola, T. Miranda, A. Poma and H. Cabrera. 2012. Las plantas vasculares de Madidi. Pp. 24–45. En: E. Salinas & R.B. Wallace (Eds). Conocimientos científicos y prioridades de investigación en Madidi. S ERNAP and WCS. La Paz, Bolivia

Grants, Fellowships and Awards

2023-2026	“A Chicago Based Hub for Assessment, Planning, And Action For Saving Threatened Trees” Walder Foundation (1,000,000) Co-PI
2014-2019	Missouri Botanical Garden Fellowship (\$76,000) Whitney R. Harris World Ecology Center
2019	McGrath Memorial Award (\$500) Whitney R. Harris World Ecology Center
2016	McGrath Memorial Award (\$500) Whitney R. Harris World Ecology Center
2013	Christensen Fellowship (\$15,000) Whitney R. Harris World Ecology Center
2012	Davidson Family Fellowship (\$10,000) Missouri Botanical Garden, St. Louis, Missouri, USA.

University Teaching Experience

2019	Instructor , Introduction to R (Workshop), Missouri Botanical Garden
2018	Guest Lecturer , Biometry - Using R program for statistical analysis-, University of Missouri-Saint Louis
2018	Teaching Assistant , Introduction to R (Workshop), Missouri Botanical Garden
2016	Guest Lecturer , Restoration Ecology, University of Missouri Saint Louis
2017	Guest Lecturer , Introductory Biology- Organisms and the Environment -, University of Missouri-Saint Louis
2016 -2017	Teaching Assistant , Introductory Biology: Organisms and the Environment, University of Missouri-Saint Louis

Mentoring

Undergraduate Students supervised at the Universidad Mayor de San Andrés, La Paz-Bolivia

Pricila Calvi- Biology Major

Thesis: "Preferencia de hábitat de la familia Moraceae dentro de la Región del Madidi". Graduated 2013

Marcelo Reguerin: Agronomy Major

Thesis: "Distribución Potencial de las especies de la familia Araliaceae de la r egión Madidi en Bolivia". Graduated 2012

Araceli Laura Moya Huanca: Agronomy major

Thesis:"Composición florística y estructura del bosque montano pluvial de yungas en el sector de Tocoaque, Parque Nacional Madidi, Bolivia". Graduated 2011.

Committee member for undergraduate students at the Universidad Mayor de San Andrés, La Paz-Bolivia

Alejandra Palmenia Bravo Iriarte – Biology Major

Thesis: “Estructura y composición de la vegetación leñosa en relación a factores ambientales en bosques andinos basimontanos húmedos de la región del Madidi, La Paz-Bolivia”. 2021

Presentations

Invited talks

- Loza M.I.**, Jiménez I., Jørgensen, P. M., Arellano, G., Macia, M.J., Torrez, V. and R.E. Ricklefs. 2017. Woody plant communities in Neotropical forests: Where being rare is common. A. Watson Armour Seminar Series, Chicago, Illinois, USA. November 2022
- Loza M.I.**, Jiménez I., and Ricklefs E. R. Spatial legacies of the Great American Biotic Interchange in Central American tree floras. 9th Annual St. Louis Ecology, Evolution and Conservation Retreat (SLEEC), Saint Louis, Missouri, USA. September 2019
- Loza M.I.**, Jiménez I., Jørgensen P. M., Arellano G., Macia J. M., Torrez V.W., and Ricklefs E. R. Patrones de distribución espacial de árboles neotropicales - aspectos importantes para la conservación de especies de plantas. Seminario en la Universidad Mayor de San Andrés. La Paz, Bolivia. August 2019

Contributed conference presentations

- Loza M.I.**, Jiménez I. and Ricklefs E. R. Spatial legacies of the Great Biotic Interchange in Central American tree floras. Humbolt 250th meeting, International Biogeography Society, Quito-Ecuador. August 5th to 9th, 2019.
- Loza M.I.**, Jiménez I. and Ricklefs E. R. The effect of regional species pool definitions on the local regional species pool richness relationship. 103th meeting of the Ecological Society of America (ESA), New Orleans, Louisiana, USA. August 5, 2018.
- Loza M.I.**, Jørgensen P.M., Jiménez I. and Ricklefs E. R. The relative influence of local environment and regional enrichment on local woody plant species richness. 8th Biennial Conference of the International Biogeography Society (IBS), Tucson, Arizona, USA. January 9, 2017
- Loza M.I.**, Jørgensen P.M., Jiménez I. and Ricklefs E. R. Phylogenetic patterns of rarity in a regional species pool of tropical woody plants. 101st meeting of the Ecological Society of America (ESA), Fort Lauderdale, Florida, USA. August 11, 2016.
- Loza M.I.**, P.M. Jørgensen and Cornejo M. 2010. Patrones de diversidad y rareza de plantas leñosas para la región del Madidi. X Congreso Latinoamericano de Botánica, La Serena, Chile. Octubre 4, 2010.

Courses

- | | |
|------|--|
| 2014 | Tropical Biology: An Ecological approach, Organization for Tropical Studies - Costa Rica |
| 2010 | Economic Tools for the Conservation of the Tropical Andes, Conservation Strategy Found- Colombia |
| 2008 | Species Distribution Modeling with MAXENT, Instituto de Ecología-Bolivia |

Working groups

- 2019 - 2018 A synthesis of patterns and mechanisms of diversity and forest change in the Andes: A global biodiversity hotspot, Living Earth Collaborative Center, Washington University in Saint Louis
- 2010 Identificando vacíos de información en la región del Madidi - Bolivia Herbario Nacional de Bolivia, Missouri Botanical Garden and Wildlife Conservation Society

Service and Outreach

- 2017-2019 **Coordinator and mentor**, UMSL-Jennings Mentorship Program (JUMP), Whitney R. Harris World Ecology Center, University of Missouri-Saint Louis.
- 2017-2018 **Student Committee member**, The Whitney R. Harris World Ecology Center, University of Missouri-Saint Louis.

Languages

Spanish (Fluent)
English (Fluent)

Professional Affiliations

Ecological Society of America, International Society of Biogeography, Sociedad Boliviana de Botánica

Reviewer for Professional Journals

Ecologia en Bolivia, Ecologia Aplicada Peru, Oikos, Scientific Reports

References

Dr. Robert E. Ricklefs
Department of Biology
University of Missouri-Saint Louis
8001 Natural Bridge Road
St. Louis, MO 63121-4499 USA
Email: ricklefs@umsl.edu
Phone: +1 (314) 516-5101

Dr. Iván Jiménez.
Center for Conservation and Sustainable Development
Missouri Botanical Garden
4344 Shaw Blvd.
St. Louis, MO 63110 USA

Email: ivan.jimenez@mobot.org
Phone: +1 (314) 577-5100 ext. 6566

Dr. Leighton Reid

School of Plant and Environmental Sciences
Virginia Tech
Blacksburg, VA 24061 USA
Email: jlreid@vt.edu
Phone: +1 (540) 231-4224

Dr. Patricia Parker

The Whitney R. Harris World Ecology Center
Department of Biology
University of Missouri-Saint Louis
8001 Natural Bridge Road
St. Louis, MO 63121-4499 USA
Email: pparker@umsl.edu
Phone: +1 (314) 516-7269

Dr. Mónica Moraes

Instituto de Ecología
Universidad Mayor de San Andrés
Campus Universitario, Calle 27 de Cota-Cota
La Paz Bolivia
Email: monicamoraes45@gmail.com
Phone: +591-2-2792416

Dr. Sebastian Tello.

Center for Conservation and Sustainable Development
Missouri Botanical Garden
4344 Shaw Blvd.
St. Louis, MO 63110 USA
Email: JuanSebastian.Tello@mobot.org
Phone: +1 (314) 577-5100 ext. 846

Olga Martha Montiel

Center for Conservation and Sustainable Development
Missouri Botanical Garden
4344 Shaw Blvd.
St. Louis, MO 63110 USA
Email: olgamartha.montiel@mobot.org
Phone: +1 (314) 577-9412

