

# Sisimac A. Duchicela

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Department of Geography & Institute of Arctic and Alpine Research  
University of Colorado Boulder

## EDUCATION

- 2022 Ph.D. Geography and the Environment, The University of Texas at Austin.  
Dissertation: “Land-use transitions in Andean highlands: Ecological and socioeconomic perspectives on landscape restoration”
- 2015 M.Sc. Natural Resources and Environment, University of Michigan-Ann Arbor.  
Project: “Kruzof and Baranof Islands Integrated Natural Resource Management Assessment”
- 2011 B.S. Biological Sciences, Pontifical Catholic University of Ecuador-Quito.  
Thesis: “Radial tree growth, leaf exchange and decomposition of three species of *Polylepis* (ROSACEAE) in two sites of the Ecuadorian Andes”

## PROFESSIONAL APPOINTMENTS

- 2025-Present **Assistant Professor**, Department of Geography & Institute of Arctic and Alpine Research, University of Colorado Boulder
- 2022- 2024 **NSF Postdoctoral Research Fellow**, Department of Evolution, Ecology and Organismal Biology, University of California, Riverside, Supervisor: Dr. Marko Spasojevic
- 2021-2023 **Consultant**, Consortium for the Sustainable Development of the Andean Ecoregion, Lima, Peru
- 2015-2016 **Specialist of Andean Forests Consultant**, Consortium for the Sustainable Development of the Andean Ecoregion, Quito, Ecuador
- 2014-2015 **Student Ecological Restoration Consultant**, Natural Areas Preservation Program, Ann Arbor, MI
- 2014 **Science Research Intern**, Amazon Conservation Association, Washington D.C.
- 2010-2012 **Program Support Specialist**, Consortium for the Sustainable Development of the Andean Ecoregion, Quito, Ecuador
- 2011 **Botanist Consultant**, Ecuadorian Department of the Environment
- 2011-2012 **Taxonomic Editor**, QCA Herbarium, Pontifical Catholic University of Ecuador, Quito, Ecuador
- 2008-2010 **Assistant Curator**, QCA Herbarium, Pontifical Catholic University of Ecuador, Quito, Ecuador

## HONORS & AWARDS

- 2020 **Dissertation Competition Honorable Mention**, Ford Foundation Fellowship Program
- 2019 **Best Student Presentation, PhD Competition**, AAG Washington D.C. Conference, Biogeography Specialty Group

## RESEARCH FUNDING AND GRANTS

- National Science Foundation* – Broadening Participation of Groups Under-represented in Biology, **Postdoctoral Research Fellowship**, “How do dominant species mediate elevational range shifts for subordinate species?” 2022

- University of Texas at Austin* –The Graduate School, **Graduate Dissertation Writing Fellowship**, 2021
- University of Texas at Austin* –The Graduate School, **Graduate Continuing Fellowship**, 2019
- National Geographic Society*, **Early Career Grant (EC-56298C-19)**, “Ecological restoration practices in high Andean ecosystems: Evaluating vegetation dynamics and land-use transitions,” 2019
- University of Texas at Austin* –The Graduate School, **Graduate Continuing Bruton Fellowship**, 2018
- University of Texas at Austin* – International Office, **Global Research Fellowship**, 2017
- Conference of Latin Americanist Geographers*, **Student Field Study Award**, 2017
- University of Texas at Austin* – Department of Geography and the Environment, **Robert E. Veselka Endowed Fellowship for Graduate Research Travel**, 2017
- U.S. Agency for International Development*, **Initiative for Conservation in the Andean Amazon (ICAA)**, “Understanding Patterns, Drivers, and Biodiversity Impacts of Deforestation in the Peruvian Amazon,” 2014
- Ecuadorian Ministry of Higher Education, Science, Technology, and Innovation’s (SENESCYT)*, **Excellency Scholarship for Postgraduate Studies**, 2013
- Pontifical Catholic University of Ecuador* – QCA Herbarium, **Training Fellowship**, 2006

## PUBLICATIONS

### Peer-Reviewed Research Articles

6. **Duchicela, S.A.**, Llambí, L.D., Bonnesoeur, V., Roman, F. Pastoralism in the high tropical Andes: a review of the effect of grazing intensity on plant diversity and ecosystem services. *Applied Vegetation Science*, 27, e12791. doi.org/10.1111/avsc.12791
5. Cuesta, F., Carilla, J., LLambí, L. D., Muriel, P., Lencinas, M. V., Meneses, R. I., Feeley, K. J., Pauli, H., Aguirre, N., Beck, S., Bernardi, A., Cuello, S., **Duchicela, S. A.**, Eguiguren, P., Gamez, L. E., Halloy, S., Hudson, L., Jaramillo, R., Peri, P. L. ... Tovar, C. (2023). Compositional shifts of alpine plant communities across the high Andes. *Global Ecology and Biogeography*, 32, 1591–1606. doi.org/10.1111/geb.13721
4. **Duchicela, S.A.**, Cuesta, F., Tovar, C., Muriel, P., Jaramillo, R., Salazar, E., Pinto, E. 2021. Microclimatic warming leads to a decrease in species and growth form diversity: insights from a tropical alpine grassland. *Front. Ecol. Evol.* 9:673655. doi: 10.3389/fevo.2021.673655
3. Young, K. & **Duchicela, S.A.** 2020. Abandoning Holocene Dreams: Proactive Biodiversity Conservation in a Changing World. *Annals of the American Association of Geographers*, doi: 10.1080/24694452.2020.1785833
2. Bein, R., Wilkie, R., Lovell, W.G., Doolittle, B., Biles, J., Offen, K., ...**Duchicela, S.A.**, ... Wood Dickerson, P. (2020). Fifty Years of Fieldwork in Latin America. *Journal of Latin American Geography* 19 (1), 115-131. doi:10.1353/lag.2020.0011.
1. **Duchicela, S.A.**, Cuesta, F., Pinto, E., Gosling, W., Young, K. 2019. Indicators for assessing tropical alpine rehabilitation practices. *Ecosphere* 10(2): e02595. 10.1002/ecs2.2595

### Book Chapters

2. Young, K.R., & **Duchicela, S.A.** 2024. “Biodiversity and the Anthropocene.” In *Reference Module in Life Sciences*. Elsevier. doi.org/10.1016/B978-0-12-822562-2.00035-9.
1. Suárez Robalino, E., Encalada, A.C., Chimbolema, S., Jaramillo, R., **Duchicela, S.**, Segovia-Salcedo, C., Caiza, J., Pazmiño, G., Guamán, M., Riveros-Iregui, D., Hofstede, R. 2023. “Ecología de los páramos: un paisaje altoandino integrado por múltiples ecosistemas.” In: *Los páramos del Ecuador: pasado, presente y future*. USFQPress. 10.18272/usfqpress.71.c26

## TEACHING EXPERIENCE

**Instructor**, Department of Geography and the Environment, The University of Texas at Austin.

Fall 2021. 31 students. Course: *Introduction to Sustainability Studies*

**Graduate Teaching Assistant**, Department of Geography and the Environment, The University of Texas at Austin. 2016-2022. Courses: *Capstone Experience in Sustainability Studies (Spring 2022)*, *Landscape Ecology (Fall 2021)*, *Advanced Geographic Information Systems (Fall 2018)*, *South America: Nature, Society and Sustainability Maymester (Summer 2018)*, *Field Techniques and Landscapes of Mexico and Caribbean America (Fall 2017)*, *Environmental Geographic Information Systems (Spring 2017)*, *This Human World: Introduction to Human Geography (Fall 2016, Spring 2018)*

**Instructor**, Department of Geography and the Environment, The University of Texas at Austin.

Fall 2020. 92 students. Course: *The Natural Environment-Introduction to Physical Geography*

## PRESENTATIONS

### Invited Talks and Guest Lectures

- 2023 “Land-use transitions and global environmental change in high elevation landscapes.” Guest lecture (Spring 2023; UT Austin) in the course Landscape Ecology taught by Dr. Kenneth Young.
- 2022 “Efectos de cambios ambientales y de uso de suelo en ecosistemas de montaña.” Guest lecture (Fall 2022; Universidad San Francisco de Quito) in the course Ecología de Montañas taught by Dr. Esteban Suárez Robalino.
- 2022 “Land-Use Transitions in Andean Highlands: Ecological and Socioeconomic Perspectives on Landscape Restoration.” Invited Speaker (Fall 2022): BIOL 252 Seminar Series, Evolution, Ecology and Organismal Biology Department, University of California at Riverside.
- 2021 “Ecological restoration for changing mountain ecosystems: Institutions and goals.” Guest lecture (Spring 2021; UT Austin) in the course the Anthropocene taught by Dr. Kenneth Young.
- 2019 “The art and science of ecological restoration.” Guest lecture (Spring 2019; UT Austin) in the course Landscape Ecology taught by Dr. Molly Polk.
- 2018 “The art and science of ecological restoration.” Guest lecture (Fall 2018; UT Austin) in the course Landscape Ecology taught by Dr. Molly Polk.
- 2018 “Indigeneity and environmentalism: The quest for autonomy.” Guest lecture (Summer 2018; UT Austin) in the course South America: Nature, Society and Sustainability taught by Dr. Gregory Knapp.

### Contributed Presentations

- 2024 Ecological Society of America Annual Meeting, Long Beach, U.S.A. (August 4-9): Poster titled: “*How does plant functional diversity change along environmental gradients?*”
- 2024 1<sup>st</sup> Latin American Congress on the Ecology and Conservation of High Andes Ecosystems, Quito, Ecuador (July 30-August 2): Oral presentation titled: “*Functional biogeography in the Andes: plant responses to climate change using ecological theory.*”
- 2024 International Biogeography Society 11<sup>th</sup> Biennial Conference, Prague, Czech Republic (January 7-11): Poster titled: “*How does plant functional diversity change along environmental gradients?*”
- 2023 National Diversity in STEM-SACNAS (October 25-28): Lightning Talk titled: “*How do dominant species mediate elevational range shifts for subordinate species?*”
- 2023 Annual Meeting of the American Association of Geographers, online (March 23-27):

- Oral presentation titled: “*Land-use transitions in Andean highlands: Ecological and socioeconomic perspectives on landscape restoration.*”
- 2021 Annual Meeting of the American Association of Geographers, online (April 8-11): Oral presentation titled: “*Ecological restoration for changing mountain ecosystems: Institutions and goals.*”
- 2019 International Biogeography Society, Humboldt Meeting (August 5-9): Oral presentation titled: “*Effects of experimental climate warming and nutrient addition on plant community and productivity in tropical mountain grasslands.*”
- 2019 Annual Meeting of the American Association of Geographers, Washington, D.C., U.S.A. (April 3-7): Oral presentation titled: “*Effects of interacting anthropogenic stressors on páramo ecosystems in the Ecuadorian Andes.*”
- 2018 35<sup>th</sup> Conference of Latin Americanist Geographers (May 20-22): Oral presentation titled: “*Ecological restoration for sustaining alpaca pastoralism in the Andean highlands.*”
- 2018 Annual Meeting of the American Association of Geographers, New Orleans, U.S.A. (April 10-14): Oral presentation titled: “*Dynamics of Polylepis forests in the Ecuadorian Andes.*”
- 2017 7<sup>th</sup> World Conference on Ecological Restoration, Foz do Iguassu, Brazil (August 27-September 1): Oral presentation titled: “*Evaluation of peatland restoration methods as a means for sustaining alpaca pastoralism in the Peruvian highlands.*”
- 2008 32<sup>nd</sup> Ecuadorian National Biology Conference, Loja, Ecuador (November 20-22): Poster titled: “*Dynamics of Polylepis forests in two sites of the Ecuadorian Andes.*”

## ACADEMIC SERVICE

- Ad Hoc Reviewer**, Revista peruana de Biología, Ecography (2), Journal of Latin American Geography, Annals of the American Association of Geographers, Oikos
- Early Career Advisory Board**, Education Committee, International Biogeography Society (2023-Present)
- Co-Founder**, International Páramo and Puna Experiment (2019-2020; 2024)
- Andes Hub Coordinator**, National Geographic Society (2020-2022; 2024)
- Founder, Organizer and Member**, Ecology, Sustainability, Human-Environment Interactions (E.S.H.I.), University of Texas-Austin, Austin, TX (2019-2022)
- Publication Committee Member**, 5<sup>th</sup> International Conference of Ecology and Conservation of *Polylepis* forests, Quito, Ecuador (2019)
- Co-president**, Graduate Association of Geography and the Environment (GAGE), Austin, TX (2019-2020)
- Vice-president**, Graduate Association of Geography and the Environment (GAGE), Austin, TX (2018-2019)
- Co-organizer**, Ecolunch Series Seminar, University of Texas-Austin (Fall 2018)
- Historian**, Graduate Association of Geography and the Environment (GAGE), Austin, TX (2017-2018)

## MEMBERSHIPS, SKILLS & TECHNIQUES

- Computer Skills:** Microsoft Office (Word, Excel, PowerPoint), SPSS, SAS, R, Adobe Software, ArcGIS, ERDAS Imagine, Python Programming Language.
- Language Skills:** Spanish (native), English (native), French (intermediate)
- Professional Society Memberships:** Ecological Society of America (since 2018), American Association of Geographers (since 2016), Society of Ecological Restoration (since 2018), International Society of Biogeography (2019), Society for Advancement of

Chicanos/Hispanics & Native Americans in Science (2020).

**Volunteer Work:** coordinated tourism promotional packages to Ecuador with Tsaitami Travel (2013); translated educational material from English to Spanish for Rainforest Alliance in New York (2009).

#### **MEDIA AND PRESS INTERVIEWS**

**Pease Park Conservancy.** 2023. Latinos in Conservation. <https://peasepark.org/news/latino-conservation-week>

**Science.** 2019. Global warming has made iconic Andean peak unrecognizable (Fire on the mountain). Written by: Tim Appenzeller. Vol. 365, Issue 6458. <https://www.sciencemag.org/news/2019/09/global-warming-has-made-iconic-andean-peak-unrecognizable>