

REBECCA J. COLE

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RESEARCH AND TEACHING INTERESTS

Ecosystem restoration and management, community ecology, invasive species ecology, animal-plant interactions, soil-plant interactions, global change biology

EDUCATION

Ph.D. Environmental Studies Department, University of California- Santa Cruz, CA 2009

B.S. Biology, University of Nevada- Reno, NV 1996

PROFESSIONAL EXPERIENCE

2014-present Junior Research Faculty, University of Hawaii-Manoa

2011-present Science Committee, American Climber Science Program

2011-2013 NSF Postdoctoral Fellow in Biology, University of Colorado- Boulder

2010 Postdoctoral Research Associate, University of Hawaii- Manoa

2004-2009 Pre-doctoral Research Associate, University of California- Santa Cruz

1998-2003 Educator, High School Math and Sciences

FUNDED GRANTS, AWARDS, AND FELLOWSHIPS (SINCE 2005)

Litton, C.M. **Cole, R.J.**, Sparks, J and C.P. Giardina. 2013. Recovery of native plant communities and ecological processes following removal of nonnative, invasive ungulates from Pacific Island forests. Strategic Environmental Research and Development Program (SERDP) – Department of Defense. \$1,094,560

All, J. D. and **R.J. Cole**. 2013. Tropical Andean climate change adaptation and ecosystem services monitoring, Cordillera Blanca, Peru. USAID, Climate Adaptation Small Grants Program. \$100,000

Cole, R.J. 2013. USAID High Mountain Glacial Watershed Program Travel Grant. \$1500

Cole, R.J. 2013. American Alpine Club Research Grant: co-funded with five collaborators. \$1000

Cole, R.J. 2011. NSF Postdoctoral Research Fellowship in Biology. \$189,000

Cole, R.J. 2011. NSF Leading Innovation and Discovery Workshop Travel Award. \$1075

Cole, R.J. 2010. Smithsonian Tropical Research Institute Conference Travel Award. \$1000

Cole, R.J. 2009. President's Dissertation Year Fellowship. \$30,000

Cole, R.J. 2008. Organization for Tropical Studies Workshop Travel Award. \$750

Cole, R.J. 2005-2007. Marilyn C. Davis Fellowship. \$3500

Cole, R.J. 2005-2006. Environmental Studies Graduate Research Grant: UC-Santa Cruz. \$4500

Cole, R.J. 2005. Center for Tropical Research in Ecology Fellowship: UC-Santa Cruz. \$1000

TEACHING AND MENTORING EXPERIENCE

- 2014 Mentor: Pacific Internship Programs for Exploring Science (PIPES)
- 2014 Thesis mentor: Universidad Nacional Santiago Antúnez de Mayolo, Huaraz, Peru
- 2013-present Research director: American Climber Science Program. Managed field research experience for 28 US and Peruvian undergraduate and 7 US and Peruvian graduate students.
- 2008-2013 Field research manager: Mentored 12 undergraduate and 4 graduate research experiences in the Costa Rica
- 2011-2013 Guest lecturer: Universidad Nacional Santiago Antúnez de Mayolo, Huaraz, Peru
- 2010 Guest instructor: University of Hawaii- Hilo
- 2009 Co-instructor: Tropical Ecology and Conservation
- 2006-2008 Guest instructor: University of California- Santa Cruz
- 2006-2008 Teaching assistant: *Agroecology, Restoration Ecology, Chemical and Physical Environment*
- 1998-2003 High school and middle school Math and Sciences Teacher: *Outstanding teacher award 2002*- Boulder Valley School District

PUBLICATIONS

16. Cole, R.J., J.D. All, C.G. Schmitt, and M.F. Lopez, 2014. Remote sensing and ground-based measurements across a remote rainforest transect. **Photogrammetric Engineering & Remote Sensing**, Feature article, September issue.
15. Schmitt, C.G., J.D. All, R.J. Cole, A. Celestian, and W.P. Arnott, 2014: The remote detection of black carbon on tropical glaciers. **Photogrammetric Engineering & Remote Sensing**, Feature article, May issue.
14. Cole, R.J., and C.M. Litton. 2014. Vegetation response to removal of nonnative feral pigs from Hawaiian tropical montane wet forest. **Biological Invasions** 16:125-140.
13. Lindell, A.C., J.L. Reid, and R.J. Cole. 2013. Planting design effects on avian seed dispersers in a tropical forest restoration experiment. **Restoration Ecology** 21 (4):515-522.
12. Loik, M., R.J. Cole, K.D. Holl, and G. Sady. 2013. Nitrogen-fixing trees facilitate photosynthesis of later-successional tropical seedlings planted to restore abandoned pasture in Costa Rica. **Revista de Biología Tropical**. 61(3):493-1507.
11. Zahawi, R. A., K. D. Holl, R. J. Cole, and J. L. Reid. 2013. Testing applied nucleation as a strategy to facilitate tropical forest recovery. **Journal of Applied Ecology** 50:88-96.
10. Cole, R. J., C. M. Litton, M. J. Koontz, and R. K. Loh. 2012. Vegetation recovery 16 years after feral pig removal from a wet Hawaiian forest. **Biotropica** 44:463-471.
9. Lindell, C. A., R.J. Cole, K.D. Holl, and R.A. Zahawi. 2012. Migratory bird species in young tropical forest restoration sites: effects of vegetation height, planting design, and season. **Bird Conservation International** 22:94-105.
8. Cole, R.J., K.D. Holl, C.L. Keene, and R.A. Zahawi. 2011. Direct seeding of late-successional trees to restore tropical montane forest. **Forest Ecology and Management** 261:1590-1597.
7. Celentano, D., R.A. Zahawi, B. Finegan, R. Ostertag, R.J. Cole, and K.D. Holl. 2011. Litterfall dynamics under different tropical forest restoration strategies in Costa Rica. **Biotropica** 43:279-287.

6. Celentano, D., R.A. Zahawi, B. Finegan, F. Casanoves, R. Ostertag, **R.J. Cole**, and K.D. Holl. 2011. Tropical forest restoration in Costa Rica: the effect of several strategies on litter production, accumulation and decomposition. *Revista de Biología Tropical* 59:1323-1336.
5. Holl, K.D., R.A. Zahawi, **R.J. Cole**, R. Ostertag, and S. Cordell. 2011 Planting seedlings in tree islands versus plantations as a large-scale tropical forest restoration strategy. *Restoration Ecology* 19:470-479.
4. **Cole, R.J.**, K.D. Holl, and R.A. Zahawi. 2010 Seed rain under tree islands planted to restore degraded lands in a tropical agricultural landscape. *Ecological Applications* 20:1255-1269.
3. **Cole, R.J.** 2010 Social and environmental impacts of payments for environmental services for agroforestry on small-scale farms in southern Costa Rica. *International Journal of Sustainable Development and World Ecology* 17:208-216.
2. **Cole, R.J.** 2009. Postdispersal seed fate of tropical montane trees in an agricultural landscape, Southern Costa Rica. *Biotropica* 41:319-327.
1. Sady, G.G., K.D. Holl, **R.J. Cole**, and R.A. Zahawi. 2009. Germination and survival of tree seeds in a tropical montane forest restoration study, Costa Rica. *Ecological Restoration* 28:121-124.

MANUSCRIPTS IN REVIEW AND PREPARATION

- Taylor, P.T., G. Asner; K. Dahlin, C. Anderson; D. Knapp, R. Martin, J. Mascaro; R.Chazdon, **R.J. Cole**, W. Wanek, F. Hofhansel, E. Malavassi, B. Vilchez-Alvarado, and A. Townsend. Landscape-scale controls on aboveground forest carbon stocks on the Osa Peninsula, Costa Rica. Plos One. *In review*
- Schmitt, C.G., J. All, J.D. All, K.D. Froyd, J.P. Schwarz, J. Liao, W.P. Arnott, **R.J. Cole**, and A. Celestian. Measurements of light absorbing particulates on the glaciers in the Cordillera Blanca, Peru. The Cryosphere. *In review*
- Cole, R. J. and Selmants, P.C. The role of macroinvertebrates in litter decomposition and nutrient release across a chronosequence of lowland tropical forest succession. *In preparation*
- Cole, R.J., K.D. Holl, and R.A. Zahawi. Effects of tropical forest restoration approaches on the recovery of ground-dwelling arthropod communities. *In preparation*
- Cole, R. J. and S. Khan. Effects of soil biota on growth of tropical trees during forest succession. *In preparation*

SELECTED PRESENTATIONS

16. **Cole, R.J.** 2014. Restauración a través de diversos ecosistemas tropicales: Costa Rica, Hawái, Perú. Climate Change Adaptation and Ecosystem Services Monitoring in Andean Mountain Communities Workshop, Huaraz, Peru
15. **Cole, R.J.** and C.M. Litton. 2014. Effects of non-native ungulate removal on vegetation and ecological processes in Pacific Island forests. Hawaii Conservation Conference, Honolulu, HI.
14. **Cole, R.J.** 2014. Recovery of native plant communities & ecological processes following removal of non-native, invasive ungulates from Pacific Islands forests. Hawaii Ecosystems Annual Meeting, Hilo, HI.

13. Invited: **Cole, R.J.** and J.D. All. 2013. Differentiating climatic and anthropogenic drives of alpine vegetation change 1972-2012 in the Cordillera Blanca, Peru: USAID High Mountain Glacial Watershed Program Conference, Huaraz, Peru.
12. **Cole, R.J.** 2013. Recovery of macroinvertebrate communities and their influence on litter decomposition during tropical forest succession. Association for Tropical Biology and Conservation, San Jose, Costa Rica.
11. All, J.D., **R.J. Cole**, C.G. Schmitt, R. Sofield, P. Arnott, and E. Lapham. 2013. Integrative high alpine research. Foro Internacional Glaciares Conference, Huaraz, Peru
10. All, J.D., C.G. Schmitt, A. Celestian, W.P. Arnott, and **R.J. Cole**. 2012. New measurements of particulates in glacial snow and ice in the Cordillera Blanca of Peru. American Geophysical Union Fall Meeting, San Francisco, CA.
9. **Cole, R.J.** and C.M. Litton. 2012. Vegetation response to removal of feral pigs from tropical montane wet Hawaiian forest. Ecological Society of America Conference, Portland, OR.
8. **Cole, R.J.** and C.M. Litton. 2011. Vegetation recovery 16 years after feral pig removal from a wet Hawaiian forest. Ecological Society of America Conference, Austin, TX.
7. **Cole, R.J.**, C.M. Litton, and C.P. Giardina. 2010. Effects of feral pigs on ecosystem structure in Hawaiian wet forests. Hawaii Ecosystems Annual Meeting, Hilo, HI.
6. **Cole, R.J.** 2010. Planting tree islands and direct seeding late-successional species as strategies to restore montane tropical forest in Costa Rica. Smithsonian Tropical Research Institute Conference. The Ecology and Ecosystem Services of Native Trees: Implications for Reforestation and Land Restoration in Mesoamerica. Panama City, Panama.
5. **Cole, R.J.**, K.D. Holl and R.A. Zahawi. 2009. Seed rain under different restoration strategies in a complex tropical agricultural landscape. Ecological Society of America Conference, Albuquerque, NM.
4. **Cole, R.J.** 2009. Secondary seed dispersal of tropical trees in degraded habitats. Front Range Student Ecology Symposium, Fort Collins, CO.
3. **Cole, R.J.** 2008. Seed dispersal in successional habitats, southern Costa Rica. Tropical Restoration and Conservation Workshop, Las Cruces Biological Station, Costa Rica.
2. **Cole, R.J.**, K.D. Holl, R.A. Zahawi, C.A. Lindell, and J.A. Rosales. 2008. Restauración de Bosque en Coto Brus. Tropical Restoration and Conservation Workshop, Las Cruces Biological Station, Costa Rica.
1. **Cole, R.J.** and K.D. Holl. 2007. Post-dispersal seed fate of large-seeded tropical montane trees in an agricultural landscape. Ecological Society of America Conference, San Jose, CA.

PROFESSIONAL SERVICE AND LEADERSHIP ACTIVITIES

Reviewer: *Biotropica, Canadian Journal of Forest Research, Ecological Applications, Forest Ecology and Management, Journal of Applied Ecology, Journal of Arid Environments, Journal of Tropical Ecology, Land Degradation and Development, Plant and Soil, Restoration Ecology, Revista de Biología Tropical, Sustainability*

- 2014 Workshop Coordinator: Climate Change Adaptation and Ecosystem Services Monitoring in Andean Mountain Communities, Huaraz, Peru
- 2013-present Expedition Co-leader: The American Climber Science Program, a not-for profit organization.

2009-present Director: Loma Linda Forest Reserve, a privately owned and managed forest reserve and biological station in Costa Rica.

PROFESSIONAL AFFILIATIONS

American Geophysical Union

Association for Tropical Biology and Conservation

Ecological Society of America

Society for Ecological Restoration