

KENNETH J FEELEY

Assistant Professor of Biology

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Department of Biological Sciences
Florida International University
Miami, FL 33199

Center for Tropical Plant Conservation
Fairchild Tropical Botanic Garden
11935 Old Cutler Road
Coral Gables, FL 33156

EDUCATION

Ph.D. Biology, Duke University (2005)

* Committee: John Terborgh (chair), Jim Clark, Bill Morris, Stuart Pimm, Miles Silman

* Dissertation: The effects of habitat fragmentation on tropical floral and faunal communities as mediated through trophic interactions

B.S. Biology, Wake Forest University (1998)

* Summa Cum Laude; Phi Beta Kappa

PROFESSIONAL APPOINTMENTS

Assistant Professor of Plant Conservation Biology, Department of Biological Sciences, Florida International University (2009-present)

Research Associate, Center for Tropical Plant Conservation, Fairchild Tropical Botanic Garden (2009-present)

Postdoctoral Research Fellow, Andes Biodiversity and Ecosystem Research Group (2007-2009)

Postdoctoral Research Fellow, Center for Tropical Forest Science, Harvard University Arnold Arboretum (2005-2007)

GRANTS and AWARDS

Pending:

CAREER: Measuring the thermal tolerances of individuals, populations, and species and predicting plant species' responses to climate change in the tropical Andes

Funding organization: NSF CAREER

Award Amount: \$1,209,619

Role on grant: PI

Collaborative Research: Using stochastic biogeographical models to link regional processes with continental patterns and the past with the future

Funding organization: NSF EF Macrosystems Biology

Award Amount: \$549,300 to KJF; \$2,000,894 total

Role on grant: PI

Active:

Collaborative Research: Understanding range limits and plant migration in response to climate change in neotropical montane forests: moving from observational models to mechanisms

Funding organization: NSF DEB Population and Community Ecology Cluster

Award Amount: \$160,000 to KJF; \$380,000 total

Project Duration: 2013-2016

Role on grant: PI

Strengthening local capacity for prioritizing conservation research and action in the Colombian Andean-Amazon: A networked approach

Funding organization: USAID HED Initiative for Conservation in the Andes/Amazon

Award Amount: \$750,000

Project Duration: 2013-2016

Role on grant: Co-PI

Tropical Rainforest Ecology and Conservation

Funding organization: Fairchild Tropical Botanic Garden

Award Amount: \$185,000

Project Duration: 2010-2013

Role on grant: PI

Completed:

Horizontal refugia and the effects of climate change on plant species distributions in the Peruvian Andes.

Funding organization: National Geographic Society Committee for Research and Exploration

Award Amount: \$22,400

Project Duration: 2012 & 2013

Role on grant: PI

The impacts of climate change on distributions of Andean tree species

Funding organization: Amazon Conservation Association

Award Amount: \$18,950

Project Duration: 2007 & 2008

Role on grant: PI

PEER-REVIEWED PUBLICATIONS

50. **Feeley K.J.**, Hurtado J., Saatchi S., Silman M.R., and Clark D.B. In Press. Compositional shifts in Costa Rican forests due to climate-driven species migrations. *Global Change Biology*.
49. Girardin C.A.J., Farfan W., Garcia K., **Feeley K.J.**, Jørgensen P.M., Araujo Murakami A., Cayola Pérez L., Renate S., Narel P., Fuentes Carlos A., Maldonado C., Silman M., Salinas N., Reynel C., Neill D., Serrano M., Caballero J., La Torre-Cuadros M.A., Macía M., Killeen T., and Malhi, Y. In Press. Spatial patterns of above-ground structure, biomass and composition in a network of six Andean elevation transects. *Plant Ecology and Diversity*.
48. Machovina B. and **Feeley K.J.** In Press. Climate change driven shifts in the extent and location of areas suitable for export banana production. *Ecological Economics*.

47. Oleas N.H., Meerow A.W., **Feeley K.J.**, Gebelein J., and Francisco-Ortega J. In Press. Using species distribution models as a tool to discover new records of *Phaedranassa brevifolia* Meerow, 1987 (Liliopsida: Amaryllidaceae) in Northern Ecuador. *Checklists*.
46. TerSteege H. and 200+ coauthors including **Feeley K.J.** In Press. Hyper-dominance in the Amazonian tree flora. *Science*.
45. Ding Z., **Feeley K.J.**, Wang S., Wang Y., and Ding P. 2013. Patterns of bird functional diversity on land-bridge island fragments. *Journal of Animal Ecology*. 82: 781-790.
44. Rehm E.M. and **Feeley K.J.** 2013. Forest patches and the upward migration of timberline in the southern Peruvian Andes. *Forest Ecology and Management*. 305: 204-211.
43. **Feeley K.J.** 2012. Distributional migrations, expansions, and contractions of tropical plant species as revealed in dated herbarium records. *Global Change Biology*. 18: 1335-1341.
42. **Feeley K.J.**, Malhi Y., Zelazowski P., and Silman M. 2012. The relative importance of deforestation, precipitation change, and temperature sensitivity in determining the future distributions and diversity of Amazonian plant species. *Global Change Biology*. 18: 2636-2647.
41. **Feeley K.J.** and Rehm E. 2012. Amazon's vulnerability to climate change heightened by deforestation and man-made dispersal barriers. *Global Change Biology*. 18: 3606-3614.
40. **Feeley K.J.**, Rehm E.M., and Machovina B. 2012. **COVER:** The responses of tropical forest species to global climate change: acclimate, adapt, migrate, or go extinct? *Frontiers in Biogeography*. 4:69-82.
39. Hu G., Xu X., Wang Y., Lu G., **Feeley K.J.**, Yu M. 2012. Regeneration of different plant functional types in a Masson pine forest following pine wilt disease. *PLoS ONE*. 7: e36432.
38. Hu G., Wu J., **Feeley K.J.**, Xu G., Yu M. 2012. The effects of landscape variables on the species-area relationship during late-stage habitat fragmentation. *PLoS ONE*. 7: e43894.
37. Yu M., Y., Hu G., **Feeley K.J.**, Wu J., and Ding P. 2012. Richness and composition of plants and birds on land-bridge islands: effects of island attributes and differential responses of species functional groups. *Journal of Biogeography*. 39: 1124-1133.
36. **Feeley K.J.**, Davies S.J., Perez P., Hubbell S., Foster R. 2011. **COVER:** Directional changes in the species composition of a tropical forest. *Ecology*. 92: 871-82.
35. **Feeley K.J.** and Silman M.R. 2011. **COVER:** Keep collecting: accurate species distribution modeling requires more collections than previously thought due to temporally autocorrelated collection biases. *Diversity and Distributions*. 17: 1132-1140.
34. **Feeley K.J.** and Silman M.R. 2011. The data void in modeling current and future distributions of tropical species. *Global Change Biology*. 17: 626-630.
33. **Feeley K.J.** and Silman M.R., Bush M., Farfan W., Garcia Cabrera K., Malhi Y., Meir P., Salinas Revilla N., Raurau Quisiyupanqui M.N., Saatchi S. 2011. Upward migration of Andean trees. *Journal of Biogeography*. 38: 783-791.

32. Hu G., **Feeley K.J.**, Wu J., Xu G., Yu M. 2011. Determinants of plant species richness and nestedness in fragmented landscapes: evidence from land-bridge islands. *Landscape Ecology*. 26: 1405-1417.
31. Maness T.J., Westbrock M.A., **Feeley K.J.**, and Anderson D.J. 2011. Offspring sex does not influence duration of post-fledging parental care in the sexually size dimorphic Nazca Booby (*Sula granti*). *Ornitologia Neotropical* 22: 347–359.
30. **Feeley K.J.** 2010. The conservation value of secondary forests for tropical nocturnal bird species. *Animal Conservation* 13: 16-18.
29. **Feeley K.J.** and Silman M.R. 2010. Land-use and climate change effects on population size and extinction risk of Andean plants. *Global Change Biology* 16: 3215-3222.
28. **Feeley K.J.** and Silman M.R. 2010. Biotic attrition from tropical forests correcting for truncated temperature niches. *Global Change Biology* 16: 1830-1836.
27. Girardin C.A.J., Malhi Y., Aragao L.E.O.C., Mamani M., Huaraca W., Durand L., **Feeley K.J.**, Rapp J., Silva-Espejo J.E., Silman M., Salinas N., Whittaker R.J. 2010 Net primary productivity allocation and cycling of carbon along a tropical forest elevational transect in the Peruvian Andes. *Global Change Biology* 16: 3176-3192.
26. Li P., Ding P., **Feeley K.J.**, Zhang J., and Jiang P. 2010. Patterns of species diversity and functional diversity of breeding birds in Hangzhou across an urbanization gradient. *Chinese Birds* 1:1–8.
25. Peres C.A., Gardner T.A., Barlow J., Zuanon J., Michalski F., Lees A.C., Vieira I.C., Moreira F.M.S., and **Feeley K.J.** 2010. Biodiversity conservation in human-modified Amazonian forest landscapes. *Biological Conservation* 143: 2314-2327.
24. Terborgh J.W. and **K.J. Feeley**. 2010. Propagation of trophic cascades via multiple pathways in tropical forests. In: Terborgh J. W. and J. A. Estes (eds.). Pp. 125-140 in *Trophic cascades: Predators, prey, and the changing dynamics of nature*. Island Press, Washington, DC.
23. Farfan W. and **K.J. Feeley**. 2009. Deforestacion y el mercado de carbono en los bosques tropicales. *Xilema* 26: 11-16.
22. **Feeley K.J.** and Silman M.R. 2009. Extinction risks of Amazonian plant species. *Proceedings of the National Academy of Sciences* 106, 12382-12387.
21. **Feeley K.J.** and Silman M.R. 2009. Modelling Andean and Amazonian plant species responses to climate change: the effects of geo-referencing errors and the importance of data filtering. *Journal of Biogeography* 37: 733-740.
20. **Feeley K.J.** 2009. “Relaxation [sensu the process of species loss from islands or fragments]” in *Encyclopedia of Islands* (R. Gillespie and D. Clague, eds.). University of California Press. Pp 787-788.
19. Wang Y., Zhang J., **Feeley K.J.**, Jiang P., Ding P. 2009. Life-history traits associated with fragmentation vulnerability of lizards in the Thousand Island Lake, China. *Animal Conservation* 12: 329-337.

18. Zimmermann M., Meir P., Silman M.R., Fedders A., Gibbon A., Malhi Y., Urrego D., Bush M., **Feeley K.J.**, Garcia K., Dargie G., Farfan W., Goetz B., Johnson W., Kline K., Modi A., Rurau N., Staudt B., and Zamora F. 2009. No Differences in soil carbon stocks across the tree line in the Peruvian Andes. *Ecosystems* 13: 62-74.
17. Chave J., Condit R., Muller-Landau H.C., Thomas S.C., Ashton P.S., Bunyavejchewin S., Co L.L., Dattaraja H.S., Davies S.J., Esufali S., Ewango C.E.N., **Feeley K.J.**, Foster R.B., Gunatilleke N., Gunatilleke S., Hall P., Hart T.B., Hernandez C., Hubbell S.P., Itoh A., Kiratiprayoon S., LaFrankie J.V., Loo de Lao S., Makana J-R., Noor M.N.S., Kassim A.R., Samper C., Sukumar R., Suresh H.S., Tan S., Thompson J., Tongco M.D.C., Valencia R., Vallejo M., Villa G., Yamakura T., Zimmerman J.K., and Losos E.C. (2008) Assessing evidence for a pervasive alteration in tropical tree communities. *PLoS Biology* 6: e45.
16. **Feeley K.J.** and Silman M.R. 2008. Letter: Unrealistic assumptions invalidate extinction estimates. *Proceedings of the National Academy of Sciences USA* 106: e121.
15. **Feeley K.J.** and Terborgh J.W. 2008 Direct vs. indirect effects of habitat reduction on the loss of avian species from tropical forest fragments. *Animal Conservation* 11: 353-360.
14. **Feeley K.J.** and Terborgh J.W. 2008 Response: Trophic drivers of species loss from fragments. *Animal Conservation* 11: 366-368.
13. Terborgh J.W. and **Feeley K.J.** 2008. "Ecosystem decay in closed forest fragments" in *Tropical Forest Community Ecology* (W.P. Carson and S.A. Schnitzer, eds.). Blackwell Publishing. pp 308-321.
12. **Feeley K.J.**, Wright S.J., Davies S., Noor M.N.S., and Kassim A.R. 2007. Decelerating growth in tropical forest trees. *Ecology Letters* 10: 461-469.
11. **Feeley K.J.**, Davies S.J., Ashton P.S., Bunyavejchewin S., Noor M.N.S., Kassim A.R., Tan S., and Chave J. 2007 The role of gap-phase processes in the biomass dynamics of tropical forests. *Proceedings of the Royal Society of London B*. 274: 2857-2864.
10. **Feeley K.J.**, Gillespie T.W., Lebbin D.J., and Hart H.S. 2007 Species characteristics associated with extinction vulnerability and nestedness rankings of birds in tropical forest fragments. *Animal Conservation* 10: 493-501.
9. **Feeley K.J.**, Davies S., Noor M.N.S., Kassim A.R., and Tan S.. 2007. Do current stem size distributions predict future population changes? An empirical test of intraspecific patterns in tropical trees across two spatial scales. *Journal of Tropical Ecology* 23: 191-198.
8. **Feeley K.J.** and Terborgh J.W. 2006 Habitat fragmentation and the effects of herbivore (red howler monkey) abundances on bird diversity. *Ecology* 87: 144-150.
7. Ibanez I., Clark J., Dietze M.C., **Feeley K.J.**, Hersh M., LaDeau S., McBride A., Welch N.E., and Wolosin M.S.. 2006. Predicting biodiversity change: outside the climate envelope, beyond the species-area curve. *Ecology* 87: 1896-1906.
6. Terborgh J.W, **Feeley K.J.**, Nuñez P., Balukjian B., and Silman M.R. 2006. Vegetation dynamics of predator-free land-bridge islands. *Journal of Ecology* 94: 253-263.

5. **Feeley K.J.** 2005. The role of clumped defecation in the spatial distribution of nutrients and the availability of nutrients for plant uptake. *Journal of Tropical Ecology* 21: 99-102.
4. **Feeley K.J.** and Terborgh J.W. 2005. The effects of herbivore density on soil nutrients and tree growth in tropical forest fragments. *Ecology* 86: 116-124.
3. **Feeley K.J.**, Gillespie T.G., and Terborgh J.W. 2005. The utility of spectral indices from Landsat ETM+ for measuring the structure and composition of tropical dry forests. *Biotropica* 37: 508-519.
2. **Feeley K.J.** 2004. The effects of forest fragmentation and increased edge exposure on leaf litter accumulation. *Journal of Tropical Ecology* 20: 709-714.
1. **Feeley K.J.** Analysis of the avian communities of Lake Guri, Venezuela, using multiple assembly rule models. *Oecologia* 137: 104-113.

In Review

3. Duque A., Feeley K.J., Cabrera E., Callejas R., Idarraga A. Undesired impacts of REDD on diversity: a case study in the tropical Andes mountains. *Frontiers in Ecology and the Environment*.
2. Girardin C.A.J., Malhi Y., Mamani M., **Feeley K.J.**, Rapp J., Aragão L.E.O.C., Silva-Espejo J.E., Silman, M., Salinas N., Metcalfe D.B., and Rowland L. Spatial and seasonal variation of above ground net primary productivity and its components in tropical forests along an elevation transect in the Peruvian Andes. *Biotropica*.
1. Oleas N.H., **Feeley K.J.**, Gebelein J., Meerow A.W., and Francisco-Ortega J., Muddy boots beget wisdom: A cautionary tale for species distribution models of endangered species. *Diversity and Distributions*.

POPULAR PUBLICATIONS (non-peer reviewed)

7. J Hortal J. Faller K., **Feeley K.J.**, Field R., Graham C., Guilhaumon F., Gavin D. 2012. Conference program and abstracts. International Biogeography Society 6th Biennial Meeting—9-13 January 2013, Miami, Florida, USA. *Frontiers of Biogeography*. 4(5).
6. Rehm E. and **Feeley K.J.**, 2012. Saving the forests in the clouds. *The Tropical Garden*. In Press.
5. **Feeley K.J.**, 2012. Back to the Future: old herbarium collections are our newest tool in the fight to protect tropical diversity *The Tropical Garden*. 70: 19-23.
4. Machovina B. and **Feeley K.J.**, 2011. Conserving earth from Space. *The Tropical Garden*. 68: 28-32
3. **Feeley K.J.** 2010. Where will the tropical rainforest be in 100 years? *The Tropical Garden*. 66: 30-33.
2. **Feeley K.J.** 2009. “The effects of global change on tropical forests” in Encyclopedia of Life Science (K.E. Cullen, ed.). Facts on File Press.
1. **Feeley K.J.** 2009. The effect of CO₂ on tropical forests. *The Tropical Garden*. 64: 42-45.

PROFESSIONAL PRESENTATIONS

Conference Presentations

- * **Keynote address:** Science Symposium of the Global Biodiversity Information Facility (2013)
- * **Keynote address:** Coloquio Estudiantil, Instituto de Ecología, México (INECOL) (2011)
- * **Keynote address:** The International Biogeography Society's Early Career Conference (2011)
- * Annual Meeting of the International Biogeography Society (2011)
- * Annual Meeting of the Ecological Society of America (2001, '03, '05, '07, '10, '12)
- * Annual Meeting of the Association of Tropical Biology and Conservation (2002, '06, '08, '09, '13)
- * Annual Meeting of the Andes Biodiversity and Ecosystems Research Group ('08, '09, '10, '12, '13)
- * Student Conference on Conservation Science (2005)

University Seminars

- * Smithsonian Tropical Research Institute, Center for Tropical Forest Science (2012)
- * Smithsonian Tropical Research Institute, Tupper Seminar Series (2012)
- * University of Minnesota, Department of Plant Sciences (2012)
- * Florida Atlantic University, Department of Biology (2012)
- * Universidad Nacional de San Antonio Abad del Cusco, Peru (2012)
- * Servicio Nacional de Areas Naturales Pretegidas por el Estado, Peru (2012)
- * Duke University, Nicholas School of the Environment (2011)
- * University of Miami, Department of Biology (2010)
- * University of Florida, Tropical Research and Education Center (2010)
- * Florida International University, Environmental Studies Program (2010)
- * Florida International University, Plant Talk Seminar Series (2010)
- * Instituto Nacional de Recursos Naturales, Peru (2009)
- * Florida International University, Department of Biology Marine Science Program (2009)
- * Zhejiang University China, Department of Biology, 2x (2009)
- * Fundación Instituto Botánico de Venezuela, 2x (2009)
- * Florida International University, Department of Biology (2009)
- * Portland State University, Department of Biology (2009)
- * Harvard University, Department of Organismal and Evolutionary Biology (2008)
- * University of California Davis, Department of Plant Sciences (2008)
- * University of California San Diego, Department of Biology (2008)
- * Florida Institute of Technology, Department of Biology (2008)
- * Wake Forest University, Department of Biology (2007)
- * Harvard University, Harvard University Herbarium (2007)
- * SUNY Stony Brook, Department of Ecology and Evolutionary Biology (2006)
- * University of California LA, Department of Ecology and Evolutionary Biology (2006)
- * University of Rhode Island, Department of Biological Sciences (2006)
- * Duke University, Department of Biology, Program in Ecology (2005)
- * Wake Forest University, Department of Biology (2005)
- * Harvard University, Arnold Arboretum (2004)
- * Rice University, Department of Ecology and Evolutionary Biology (2004)

COURSES TAUGHT at FLORIDA INTERNATIONAL UNIVERSITY

- Ecology PCB3043 (every Fall semester, average enrollment = 200)
- Ecology Lab PCB3043L (every Fall semester, average enrollment = 100 [4 sections])
- Plant Conservation Biology BOT4401 (every Spring semester, average enrollment = 35)
- Advanced Plant Conservation Biology PCB5046 (every Spring semester, average enrollment = 10)
- Species Distribution Modeling Workshop (every other Spring semester, average enrollment = 15)

GRADUATE STUDENTS

Current:

Brian Machovina (PhD)

- * Dissertation: Patterns and conservation implications of land use conversion to banana plantations.
- * Matriculated Fall 2010; Expected completion: Spring 2015.

Evan Rehm (PhD)

- * Dissertation: Role of seed dispersal in setting treeline in the high tropical Andes Mountains.
- * Matriculated Fall 2010; Expected completion: Spring 2015.

James Stroud (PhD)

- * Dissertation: Testing adaptive radiation theory using introduced species of *anolis* lizards
- * Matriculated Fall 2012; Expected completion: Spring 2017.

Alumni:

Catherine Bravo Avila (MSc)

- * Thesis: Biomass allocation in tropical cloudforest seedlings.
- * Graduated Spring 2013.

ADDITIONAL TEACHING EXPERIENCE

Wake Forest University: *Conservation Biology* (included field component in Nicaragua); 2009. *Tropical Field Ecology* (taught in Peru); 2008.

Organization for Tropical Studies: *Ecosistemas Amazónicos y Cambios Globales* (taught in Spanish in Peru); 2008.

Universidad de la Amazonia: “*Diseño de Muestreo y Técnicas de Campo para la Conservación de la Biodiversidad de la Amazonía Colombiana*” (taught in Spanish in Colombia); 2013.

SYNERGISTIC ACTIVITIES

Local Host and Organizer for the 6th Biennial Conference of the International Biogeography Society held in Miami in January 2013 (<http://www.biogeography.org/html/Meetings/2013/index.html>). This meeting included approximately 350 presentations by 450 attendees representing 46 different countries.

Founder and Co-Organizer of the Fairchild Tropical Botanic Garden’s annual symposium on Tropical Biology held in 2011, 2012 and 2013. Each of these symposium included speakers from multiple academic and professional institutions, attracted >120 attendees, and led to several new inter-institutional collaborations.

Co-Organizer and Instructor of a series of field courses in “*Diseño de Muestreo y Técnicas de Campo para la Conservación de la Biodiversidad de la Amazonía Colombiana*” taught in summer 2013 (in Spanish) and annually thereafter in collaboration with the Universidad de la Amazonia (Colombia).

Instructor for the Organization for Tropical Studies’ 2008 course on *Ecosistemas Amazónicos y Cambios Globales*. This was a field-based course in Peru for 15 Latin American students from 5 different countries with all instruction in Spanish.

Florida International University's Representative on the Organization for Tropical Studies' Assembly of Delegates.

Advisor to the Prince of Wales' Rainforest Project.

Faculty Sponsor for the GLADES student ecologist group at FIU. This group is a chapter of ESA's Strategies for Ecology Education, Diversity and Sustainability (SEEDS) program and has the explicit goal of encouraging Hispanic and other minority students from FIU to pursue graduate school and careers in the ecological sciences.

Member of the Science and Education Advisory Committee of the Amazon Center for Environment Education and Research (ACEER); Chair of sub-committee on scholarships.

Manuscript Reviewer for over 30 top journals and multiple NSF/NERC/NASA Grant proposals panel reviewer for NSF's 2010 Climate Change Education Program presidential initiative grants.

PROFESSIONAL REFERENCES

John W. Terborgh (Doctoral advisor)
Research Professor Emeritus and Director, Center for Tropical Conservation
Duke University
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Stuart Davies (Postdoctoral supervisor)
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