

James R. Kellner

Assistant Professor

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I. Education

B.S. School of Tropical Biology: James Cook University (Queensland, Australia). 2000.

M.S. Ecology and Evolutionary Biology: Dartmouth College (Hanover, New Hampshire). 2005.
Thesis advisor: David R. Peart.

Ph.D. Plant Biology: University of Georgia (Athens, Georgia). 2008. Thesis advisor: Stephen P. Hubbell.

II. Employment

Post-doc. Global Ecology: Carnegie Institution for Science (Stanford, California). 2008 – 2011.
Advisor: Gregory P. Asner.

Assistant Professor. Department of Geographical Sciences, University of Maryland, College Park.
2011 – present.

III. Refereed publications and manuscripts (* denotes graduate advisee)

1. **Kellner, J. R.** and R. A. Alford. 2003. The ontogeny of fluctuating asymmetry. *American Naturalist* 161:931-947.
2. Hubbell, S. P., F. He, R. Condit, L. Borda-de-Agua, **J. Kellner**, and H. ter Steege. 2008. How many tree species are there in the Amazon and how many of them will go extinct? *Proceedings of the National Academy of Sciences of the United States of America* 105:11498-11504.
3. Hubbell, S. P., F. He, R. Condit, L. Borda-de-Agua, **J. Kellner**, and H. ter Steege. 2008. Reply to Feeley and Silman: Extinction risk estimates are approximations but are not invalid. *Proceedings of the National Academy of Sciences of the United States of America* 105:E122-E122.
4. **Kellner, J. R.**, D. B. Clark, and S. P. Hubbell. 2009. Pervasive canopy dynamics produce short-term stability in a tropical rain forest landscape. *Ecology Letters* 12:155-164.
5. **Kellner, J. R.** and G. P. Asner. 2009. Convergent structural responses of tropical forests to diverse disturbance regimes. *Ecology Letters* 12:887-897.
6. **Kellner, J. R.**, D. B. Clark, and M. A. Hofton. 2009. Canopy height and ground elevation in a mixed-land-use lowland Neotropical rain forest landscape. *Ecology* 90:3274.

7. **Kellner, J. R.**, D. B. Clark, and M. A. Hofton. 2009. Canopy height and ground elevation in a mixed-land-use lowland Neotropical rain forest landscape. *Ecological Archives* E090-233.
8. Vitousek, P. M., M. A. Tweiten, **J. Kellner**, S. C. Hotchkiss, O. A. Chadwick, and G. P. Asner. 2010. Top-Down Analysis of Forest Structure and Biogeochemistry across Hawaiian Landscapes. *Pacific Science* 64:359-366.
9. **Kellner, J. R.**, G. P. Asner, K. M. Kinney, S. R. Loarie, D. E. Knapp, T. Kennedy-Bowdoin, E. J. Questad, S. Cordell, and J. M. Thaxton. 2011. Remote analysis of biological invasion and the impact of enemy release. *Ecological Applications* 21:2094-2104.
10. **Kellner, J. R.**, G. P. Asner, P. M. Vitousek, M. A. Tweiten, S. Hotchkiss, and O. A. Chadwick. 2011. Dependence of forest structure and dynamics on substrate age and ecosystem development. *Ecosystems*. DOI: 10.1007/s10021-011-9472-4
11. Clark, D. B. and **J. R. Kellner**. 2012 in press. Tropical forest biomass estimation and the fallacy of misplaced concreteness. *Journal of Vegetation Science*.
12. **Kellner, J. R.**, G. P. Asner, J. Thaxton, K. M. Kinney, T. Kennedy-Bowdoin, D. Knapp, E. J. Questad, and S. Ambagis. 2012 in press. Historical land-cover classification for conservation and management in Hawaiian subalpine drylands. *Pacific Science* **66**.
13. Kinney, K. M.*, **J. R. Kellner**, S. Cordell, G. Asner, S. Hotchkiss, O. Chadwick, E. Questad, and J. Thaxton. unpublished manuscript. Fire and the pathways of primary succession in Hawaiian drylands.
14. Questad, E. J., **J. R. Kellner**, K. Kinney, S. Cordell, G. P. Anser, J. Thaxton, J. Diep, A. Uowolo, S. Brooks, N. Inman-Narahari, S. Evans, and B. Tucker. unpublished manuscript. Mapping habitat suitability for at-risk plants and its implications for restoration and reintroduction. submitted to *Conservation Biology* on 9/15/2012.
15. Silva, C. E.*, **J. R. Kellner**, D. B. Clark, and D. A. Clark. unpublished manuscript. Response of an old-growth Neotropical rain forest to persistent high temperature and drought. submitted to *Global Change Biology* on 10/15/2012.
16. Thomas, R. Q., **J. R. Kellner**, D. B. Clark, and D. R. Peart. in press. Low mortality in tall tropical trees. *Ecology*.
17. Tweiten, M., S. Hotchkiss, P. M. Vitousek, **J. R. Kellner**, O. Chadwick, and G. P. Asner. unpublished manuscript. Volcanic substrate and canopy disturbance influence the species composition and resilience of a Hawaiian montane wet forest. submitted to *Journal of Vegetation Science* on 9/25/12.

18. Levy, O., B. A. Ball, B. Bond-Lamberty, K. S. Cheruvilil, A. O. Finley, N. Lottig, S. Punyasena, J. Xiao, J. Zhou, L. B. Buckley, J. Clark, C. T. Filstrup, T. Keitt, **J. R. Kellner**, A. K. Knapp, A. Richardson, C. Stow, D. Tcheng, M. Toomey, R. Vargas, J. W. Voordeckers, T. Wagner, and J. W. Williams. unpublished manuscript. Approaches for advancing scientific understanding of macrosystems. submitted to *Frontiers in Ecology and the Environment* on 9/21/2012.

29. Heffernan, J. B., P. Soranno, M. Angilletta, L. Buckley, W. K. Dodds, D. Gruner, T. Keitt, **J. R. Kellner**, J. Kominoski, A. Rocha, J. Xiao, T. Harms, S. Goring, L. Koenig, B. McDowell, H. Powell, A. Richardson, C. Stow, R. Vargas, and K. Weathers. unpublished manuscript. What is macrosystems ecology? submitted to *Frontiers in Ecology and the Environment* on 10/4/2012.

IV. Grants and funding

1. Collaborative research: Remote sensing of foliar chemistry to reconstruct the genealogy of canopy trees in a Neotropical rain forest. National Science Foundation. \$134,954 (2012 – 2015). Lead investigator: Kellner, James R. (\$399,662 for total collaborative project, with Co-PIs Gregory P. Asner, Brant Faircloth and Stephen P. Hubbell).

2. Remote sensing technology for threatened and endangered plant species recovery. Department of Defense SERDP-ESTCP. \$328,346 (2012 – 2016). Lead investigator: Questad, E. J. (\$1,422,766 for total collaborative project, with James R. Kellner and Susan Cordell).

3. Collaborative research: Multi-scale drivers and effects of biotic change in the global mangrove saltmarsh ecotone. National Science Foundation. \$61,510 (2012 – 2016). Lead investigator: Feller, Ilka (\$1,713,162 for total collaborative project, with Daniel Gruner, James Kellner, Richard Osman and John Parker).

4. Causes and consequences of fire regimes through space and time in tropical dryland ecosystems. USDA Forest Service Joint Venture Agreement. \$80,000 (2011 – 2013). Lead investigator: Kellner, James R.

5. Dissertation research: Remote analysis of canopy gap dynamics and limiting similarity in a lowland Neotropical rain forest. National Science Foundation Doctoral Dissertation Improvement Program. \$9875 (2007). Lead investigator: Hubbell, Stephen P. This proposal was prepared by J. R. Kellner.

5. Student Travel Grant (2007). International Biogeography Society and National Science Foundation.

6. Dartmouth College Graduate Alumni Research Award (2004).

V. Invited presentations

1. **Kellner, J. R.** 2010. Remote sensing landscape fuel loads and an annual forb invasion. Western Society of Weed Science Annual Meeting. Waikoloa, HI.

2. **Kellner, J. R.** and G. P. Asner. 2010. Transient canopy dynamics and the future of tropical forests. Ecological Society of America Annual Meeting. Pittsburgh, PA.

3. **Kellner, J. R.** 2012. Remote sensing of tropical forests: new opportunities to characterize relationships between genomes, the environment, and individuals. Smithsonian Institution Center for Tropical Forest Science / Smithsonian Institution Global Earth Observatory Genomics Workshop.

VI. Other presentations and symposia

4. **Kellner, J. R.**, R. Q. Thomas, D. R. Peart, M. L. Clark, and D. B. Clark. 2005. Small-footprint LiDAR for individual-based tree demography in a Central American rain forest. SilviScan: LiDAR applications in forest assessment and inventory. Blacksburg, VA.

5. **Kellner, J. R.** and S. P. Hubbell. 2006. Short-term population dynamics for a rain forest canopy tree. Ecological Society of America, Annual Meeting. Memphis, TN.

6. **Kellner, J. R.** and S. P. Hubbell. 2007. Landscape controls on adult population dynamics for a rain forest canopy tree. Biennial meeting of the International Biogeography Society. Puerto de la Cruz, Spain.

7. **Kellner, J. R.**, S. P. Hubbell, and D. B. Clark. 2007. Remote analysis of forest structure and dynamics using time series small footprint LiDAR in a lowland Neotropical rain forest. International Symposium on Remote Sensing of Environment, San Jose, Costa Rica.

8. Cordell, S., G. P. Asner and J. M. Thaxton (presented by **J. R. Kellner** and S. Cordell). Annual report to funding agency. Strategic Environmental Research and Development Program, 2008. Washington DC.

9. **Kellner, J. R.**, G. P. Asner, K. M. Kinney, S. R. Loarie, D. E. Knapp, T. Kennedy-Bowdoin, E. J. Questad, S. Cordell, and J. M. Thaxton. 2009. Seasonal phenology and vegetation community type mediate canopy phenology and fire fuel risks in tropical drylands. 2009. Strategic Environmental Research and Development Program Symposium. Washington DC.

10. Cordell, S. and **J. R. Kellner**. 2010. The potential of restoration to break the grass/fire cycle in Dryland Ecosystems in Hawaii. Pacific Islands Region Threatened, Endangered and At-risk Species Workshop. Hosted by the Department of Defense and Strategic Environmental Research and Development Program. Honolulu, HI.

VII. Honors and Awards

1. Dartmouth College Filene Teaching Award. 2005. "Awarded annually to the graduate teaching assistant who best exemplifies the qualities of a college educator."

2. Best student poster at International Biogeography Society biennial meeting, Puerto de la Cruz, Spain (shared with one other student).
3. Dr. R. Palmerston Rundle Prize for Biological Sciences at James Cook University. 1999
4. GeoEYE Award (2007) Short-term population dynamics for a rain forest canopy tree using time series satellite remote sensing.

VIII. Teaching

1. Teaching assistant, Field Biology and Adaptation, James Cook University. Fall, 1999.
2. Teaching assistant, Zoology, James Cook University. Spring, 1999.
3. Teaching assistant, Biometry, James Cook University. Spring, 1999.
4. Teaching assistant, Vertebrate Biology, Dartmouth College. Winter, 2004.
5. Teaching assistant, Biodiversity, Dartmouth College. Spring, 2004.
6. Teaching assistant, Tropical Biology Foreign Studies Program in Costa Rica and Jamaica, Dartmouth College. January – March 2005.
7. Teaching assistant, Molecular and Cellular Biology, The University of Georgia. Fall, 2005.
8. Teaching assistant, Organismal Biology, The University of Georgia. Spring 2006.
9. Instructor, GEOG442 (Advanced Biogeography). University of Maryland. Fall 2011
10. Instructor, GEOG342 (Biogeography). University of Maryland. Spring 2011, 2012
11. Instructor, GEOG788N (Nature and Practice of Science). University of Maryland. Fall, 2012

IX. Reviews (journals and number of reviews)

Acta Zoologica Fennica (1), Ecology (1), Ecological Applications (1), Ecosystems (1), Environmental Monitoring and Assessment (1), Journal of Ecology (1), Remote Sensing of Environment (6), Science (1), Manuscript reviews for colleagues on papers for which I am not a coauthor (7)

X. Graduate and postdoctoral advisees

Kealohanuiopuna M. Kinney (PhD), Carlos E. Silva (PhD), Kyle Cavanaugh (Post-doc)

XI. Service

1. Volunteer instructor for *Ka imi ike*, a program administered by the University of Hawaii to promote and retain Native Hawaiian and Pacific Islanders in STEM disciplines (2009, 2010).

James R. Kellner: Curriculum Vitae – February 1, 2013

2. NASA Airborne Science in Terrestrial Ecology Steering Group (2011, 2012)

3. Reviewer for National Science Foundation