Andrew T. Tredennick

CONTACT INFORMATION

Postdoctoral Fellow
Department of Wildland Resources and
The Ecology Center, Utah State University

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RESEARCH INTERESTS

stability of populations, communities, and ecosystems; data–model assimilation; ecology of savannas and forests; coexistence of species and functional groups; ecological forecasting

EDUCATION

Colorado State University, Fort Collins, CO
Doctor of Philosophy ECOLOGY **2014**

Texas Tech University, Lubbock, TX
Bachelor of Sciences BIOLOGY **2006**

PROFESSIONAL APPOINTMENTS

Utah State University, Dept. of Wildland Resources, Logan, UT **2014 – Pres.**
Postdoctoral Fellow

Colorado State University, Natural Resource Ecology Lab, Ft. Collins, CO **2011 – 2014**
Graduate Research Fellow

Colorado State University, Natural Resource Ecology Lab, Ft. Collins, CO **2009 – 2011**
Graduate Research Assistant

USFS Rocky Mountain Research Station, Ft. Collins, CO **2009**
Research Assistant

Colorado State University, FRWS, Ft. Collins, CO **2008**
Graduate Teaching Assistant

FELLOWSHIPS AND AWARDS

NSF Postdoctoral Research Fellowship in Biology **2014**
1st Place Oral Presentation, Front Range Student Ecology Symp. **2013**
NSF FORECAST Research Coordination Network Travel Award **2012**
Sustainability Leadership Fellow, School of Global Environmental Sustainability, CSU **2012**
NASA Earth and Space Science Graduate Fellowship **2011**
James E. Ellis Memorial Scholarship, Natural Resource Ecology Lab **2010**
NSF Graduate K-12 Fellowship, Natural Resource Ecology Lab **2009**

PUBLICATIONS *in review*

Tredennick, A.T., Karembe, M., Dembele, F., Dohn, J., and Hanan, N.P. In Review. Weak effects of fire, large herbivores, and their interaction on regrowth of harvested trees in two West African savannas. (preprint:)

PUBLICATIONS *in press and published*

Tredennick, A.T., Hanan, N.P. in press. Effects of tree harvest on the stable-state dynamics of savanna and forest. *American Naturalist* (open access)

Hanan, N. P., **Tredennick, A.T.**, Prihodko, L., Bucini, G., and Dohn, J.. 2014. Analysis of stable states in global savannas: Is the CART pulling the horse? *Global Ecology and Biogeography* (open access)

Tredennick, A. T., L. P. Bentley, and N. P. Hanan. 2013. Allometric convergence in savanna trees and implications for the use of plant scaling models in variable ecosystems. *PLoS One* 8(3):e58241 (open access)

Rice, J., **Tredennick, A.T.**, and Joyce, L.. 2011. The climate of the Shoshone National Forest: A synthesis of past changes, future projections, and ecosystem implications. USDA National Forest Service General Technical Report 264

Sutton, A.E., Dohn, J., Loyd, K., **Tredennick, A.T.**, Bucini, G., Solrzano, A, Prihodko, L. and Hanan, N.P. 2010. Does warming increase the risk of civil war in Africa? *Proceedings of the National Academy of Sciences* 107(25):E102 (open access)

Competitive Funding

External: $297,000
Internal: $16,000

"Diversity-stability relationships and coexistence: new theory and empirical tests", NSF Postdoctoral Research Fellowship in Biology, $207,000 (2014-2017)

"Effective Science Communication and Public Relations at NREL through EcoPress," Natural Resource Ecology Lab, $6,000 (Co-I) (2013)

"NESSF: Fuelwood, Savannas, and Climate Change: Integrating Modeling, Field Experimentation, and Optical and Radar Remote Sensing," NASA, $90,000 (2011-2014)

"Building a WCNR 'Partnership for International Research and Education' in African Savannas: Undergraduate and Graduate Field-Based Education in Mali, West Africa," Warner College of Natural Resources, $10,000 (PI–Hanan; collaborative proposal of the Hanan lab group) (2010)

Data Products

Tredennick AT, Bentley LP, Hanan NP (2013) Data from: Allometric convergence in savanna trees and implications for plant scaling models in variable ecosystems. Dryad Digital Repository. http://dx.doi.org/10.5061/dryad.4s1d2

Tredennick AT, Hanan NP, Martinez K, Keita, L (2014) Data from: Effects of tree harvest on the stable-state dynamics of savanna and forest. Dryad Digital Repository. http://dx.doi.org/10.5061/dryad.vg121

Teaching Experience

Colorado State University **2013**
Plant Ecology
Guest Lecture on Tree-Grass Coexistence

Colorado State University **2012**
NREL Skills for Undergraduate Participation in Ecological Research
Data Analysis/Visualization Workshop Leader

Colorado State University **2011**
RS 351, Ecosystem Processes in a Changing World
Co-Instructor

Colorado State University **2009, 2010, 2012**
RS 351, Wildland Ecosystems
Guest Lecture on Ecosystem Modeling

Irish Elementary School Ft. Collins, CO **2010-2011**
5th and 4th Grade Science and Advanced Science Program
NSF GK-12 Fellow

Colorado State University **2008**
RS 351, Wildland Ecosystems
Graduate Teaching Assistant

Professional Service

Reviewer
Proceedings of the National Academy of Sciences; *Ecology*; *Ecological Applications*; *Forest Ecology and Management*; *PLoS One*; *Agriculture, Ecosystems, and Environment*; *Environmental Management*; *National Research Foundation, South Africa*

University Service and Public Outreach
Director of Social Media, *NREL EcoPress*
Student Review Committee, New Ecology Faculty Search, CSU
Organizing Committee, Global Savanna Workshop, CSU
Advertising and Outreach Committee, Front Range Student Ecology Symposium
Graduate Student Representative, Natural Resource Ecology Lab

Professional Society Membership
Ecological Society of America
American Society of Naturalists

Other Leadership Activities
Co-organizer, *Data Visualization in R*, ESA 2013 and 2014 Workshop

Select Presentations

"Forecasting climate change impacts on plant population dynamics at large spatial extents: a test case with sagebrush (*Artemisia*) species." 2014 Annual Meetings of the Ecological Society of America.

"The sustainability and biome-level impacts of fuelwood harvesting in sub-Saharan Africa." Invited seminar, Geospatial Science Center of Excellence, South Dakota State University.

"Tree harvest, fire, and drought can drive state transitions in savanna." 2013 Annual Meetings of the Ecological Society of America.

"Using diverse multi-scale data to assess patterns and sustainability of fuelwood harvest in sub-Saharan Africa." 2012 NSF FORECAST RCN Meeting.