

A. CARLA STAVER

Assistant Professor

Ecology and Evolution Biology

Yale University

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RESEARCH INTERESTS

I am interested in the roles of top-down versus bottom-up drivers in the ecology of savanna and forest systems, with an emphasis on interactions between climate, fire, and herbivory and their feedbacks with trees and grasses. This includes considering dynamics on multiple time and spatial scales. My research has spanned the fields of theoretical ecology, remote sensing, biogeochemistry, community ecology, and paleoecology.

PROFESSIONAL APPOINTMENTS

- April 2015- Secondary Appointment, Forestry and Environmental Studies, Yale University
- July 2014- Assistant Professor, Ecology and Evolutionary Biology, Yale University
- 2012-2014 Prize Postdoctoral Fellow in Ecology, Evolution, and Environmental Biology
Columbia University
- 2012 Postdoctoral Researcher in Ecology and Evolutionary Biology
Princeton University

EDUCATION AND TRAINING

- 2008-2012 Ph.D. in Ecology and Environmental Biology
Princeton University
- 2006-2008 M.Sc. in Botany, with distinction
University of Cape Town
- 2001-2005 B.A. in Ecology, Evolution, and Environmental Biology
Columbia University

HONORS AND AWARDS

- 2015 Runner-up for Harper Prize, British Ecological Society
- 2013 Jasper Loftus-Hills Young Investigators Award, American Society of Naturalists
- 2012 George Mercer Award, Ecological Society of America
- 2011-2012 The William G. Bowen Merit Fellowship, Princeton University
- 2005-2006 Fulbright US Student Fellowship

TEACHING

- 2015 The Ecology of Global Change (EEB 720; seminar), Yale University

- 2014-present General Ecology (EEB 220), Yale University
 2014 Field Ecology in Savanna, Columbia University
 2007, 2012 Supervised Undergraduate Student Projects
 University of Cape Town and Princeton University
 2011-2012 Statistics Tutor, Princeton University
 Senior Thesis Writing Group (EEB)
 2008, 2010 Assistant in Instruction, Princeton University
 Population and Community Ecology (EEB 321)
 2006-2009 Teaching Assistant, University of Cape Town
 Field Botany (BOT 309)

RESEARCH AND FIELD EXPERIENCE

- 2004-present Rainforest ecosystems Brazil, Bolivia, and Peru
 Tropical forest responses to fire under anthropogenic global change
 2005-present Savanna ecosystems South Africa, Brazil, Bolivia
 Individual- and population-level responses of trees to resources and disturbance
 2002-2003 Natural resource-driven violent conflict CIFOR, Bogor, Indonesia
 Violent conflict and forests in Nicaragua and the Democratic Republic of Congo

PEER-REVIEWED PUBLICATIONS

- Staver**, A.C. and S. Koerner. In press. Chapter 4: Top-Down and Bottom-Up Interactions Determine Tree and Herbaceous Layer Dynamics in Savanna Grasslands. In LaPierre, K. and T. Hanley (eds). *Trophic Ecology: Bottom-Up and Top-Down Interactions across Aquatic and Terrestrial Systems*. Cambridge UP: Cambridge.
- Pellegrini, A.F.A., L. Hedin, A.C. **Staver**, and N. Govender. 2015. Effects of fire-nutrient interactions on the long-term savanna carbon sink. *Ecology* (online).
- Staver**, A.C., and M. Hansen. 2015. Analysis of stable states in global savannas: is the CART pulling the horse? – a comment. *Global Ecology and Biogeography* (online).
- Schertzer, E., A.C. **Staver**, and S.A. Levin. 2015. Implications of the spatial dynamics of fire spread for the bistability of savanna and forest. *Journal of Mathematical Biology* 70:329-341.
- Staver**, A.C., and W.J. Bond. 2014. Is there a ‘browse trap’? Dynamics of herbivore impacts on trees and grasses in an African savanna. *Journal of Ecology* 102: 595-602.
- Pérez-Harguindeguy, N. *et al.* 2013. New handbook for standardised measurement of plant functional traits worldwide. *Australian Journal of Botany* 61:167–234.
- Staver**, A.C., and S.A. Levin. 2012. Integrating theoretical climate and fire effects on savanna and forest systems. *The American Naturalist* 180: 211-224.
- Staver**, A.C., W.J. Bond, M. J. Cramer, and J. L. Wakeling. 2012. Top-down determinants of niche structure and adaptation among African Acacias. *Ecology Letters* 15: 673–679.
- Archibald, S., A.C. **Staver**, and S.A. Levin. 2012. The evolution of human-driven fire regimes in Africa. *Proceedings of the National Academy of Sciences, USA* 109: 847–852.

- Staver**, A.C., S. Archibald, and S.A. Levin. 2011. The global extent and determinants of savanna and forest as alternative biome states. *Science* 334: 230-232. (Subject of a *Science* perspective.)
- Wakeling, J.L., A.C. **Staver**, and W.J. Bond. 2011. Simply the best: the transition of savanna saplings to trees. *Oikos* 120: 1448-1451.
- Staver**, A.C., S. Archibald, and S.A. Levin. 2011. Tree cover in sub-Saharan Africa: rainfall and fire constrain forest and savanna as alternative stable states. *Ecology* 92: 1063-1072.
- Staver**, A.C., E.C. February, and W.J. Bond. 2011. History matters: tree establishment variability and species turnover in an African savanna. *Ecosphere* 2: art49.
- Staver**, A.C., W.J. Bond, W.D. Stock, S.J. van Rensburg, and M.S. Waldram. 2009. Browsing and fire interact to suppress tree density in an African savanna. *Ecological Applications* 19: 1909-1919.

OTHER PUBLICATIONS

- Debroux, L., T. Hart, D. Kaimowitz, A. Karsenty and G. Topa (eds). 2007. Forests in post-conflict Democratic Republic of Congo: analysis of a priority agenda. A joint report by teams of the World Bank, CIFOR, CIRAD, AWF, CNONGD, CI, GTF, LINAPYCO, SNV, REPEC, WCS, Woods Hole Research Center, ICRAF, and WWF. xxii, 82p.
- Staver**, A.C., W. de Jong, and D. Kaimowitz. 2007. Nicaragua's Frontier: the Bosawas Biosphere Reserve. In De Jong, W., D. Donovan, and A.K. Ichi (eds). *Extreme conflicts and tropical forests*. Springer: Berlin.

INVITED PRESENTATIONS

- AGU, San Francisco* (December 2014): Global fire-related functional traits (invited).
- Stanford University, Biology, Departmental Seminar* (December 2014)
- Columbia University, Schools of Arts and Sciences, Invited Colloquium* (April 2014)
- Duke University, Mathematics, Departmental Seminar* (April 2014).
- College de France, Center for Interdisciplinary Research in Biology, Invited Seminar* (December 2013).
- UC Berkeley, Environmental Science, Policy, and Management, Departmental Seminar* (March 2013).
- University of Maryland, Biology, Departmental Seminar* (January 2013).
- UC Davis, Ecology and Evolution, Departmental Seminar* (January 2013).
- Yale University, Ecology and Evolutionary Biology, Departmental Seminar* (November 2012).
- Columbia University, Ecology, Evolution, and Environmental Biology, Departmental Seminar* (February 2012).
- NIMBioS, 'Disturbance Regimes & Climate-Carbon Feedbacks'* (February 2012).
- ESA, Austin, TX* (August 2011): Resource limitation, fire and tree growth in savanna systems (invited).
- ATBC/SCB Africa Section, Arusha, Tanzania* (June 2011): Tree cover in sub-Saharan Africa: rainfall and fire constrain forest and savanna as alternative stable states (invited).

