

BIOGRAPHICAL SKETCH: Steven R. Archer

ENR2-N358
School of Natural Resources and the Environment
University of Arizona
Tucson, AZ 85721-0043

Email: sarcher@email.arizona.edu
Phone: (520) 626-8791
Fax: (520) 621-8801

PROFESSIONAL PREPARATION

Augustana College	Biology	BA, 1975
Colorado State University	Rangeland Ecosystem Science	MS, 1980
Colorado State University	Rangeland Ecosystem Science	PhD, 1983

APPOINTMENTS

2002 - Present Professor, School of Natural Resources, The University of Arizona
2015 - Present Adjunct Professor, Sch Sustainable Engineering & the Built Environment, Arizona State
2014 - Present Adjunct Professor, School Life Sciences/School Sustainability, Arizona State University
2007 -2015 Adjunct Professor, Biology Department, New Mexico State University
2011- 2012 Visiting Professor, Dept. Environmental Science, Policy, & Management University of California, Berkeley (sabbatical)
2011-2011 Visiting Scientist, USGS Earth Resources Observation & Science (EROS) Center, Sioux Falls, SD
1993-2002 Professor and Associate Department Head (Research/Graduate Programs), Department of Rangeland Ecology & Management, Texas A&M University
1991-1992 Visiting Scientist, National Center for Atmospheric Research, Boulder
1988-1993 Associate Professor, Dept. Rangeland Ecology & Management, Texas A&M
1983-1988 Assistant Professor, Department of Range Science, Texas A&M University

- **Graduate Mentors:** M.J. Trlica (MS) & J.K. Detling (PhD), Colorado State University
- **Total number of graduate students advised:** 17 PhD, 11 MS completed; currently advising 5 PhD & 1 MS
- **Total number of Post-Docs sponsored:** 15 (currently mentoring 4)

PROFESSIONAL SOCIETIES

Certification: Certified Senior Ecologist, Ecological Society of America

Membership: Ecological Soc America, American Inst Biological Scientists, American Geophysical Union, Intl Assn Vegetation Science, International Ass Landscape Ecologists, Soc Range Management

HONORS AND DISTINCTIONS

- Fellow, Ecological Society of America (2016-present)
- Fellow, American Association for the Advancement of Science (AAAS) (2009-Present)
- EJ Dyksterhuis Distinguished Lecture, Texas A&M University (2015)
- Plenary speaker, “Stewardship for Future Drylands” Symposium, Mexican Scientific Ecological Society & Socioecosystems and Sustainability, San Luis Potosi, Mexico (2015)
- Plenary speaker, International workshop on “Abrupt grass-woodland transitions: Determinants and consequences for ecosystem services”, Punta del Este, Uruguay (2012)

- Plenary Speaker, 2nd National Congress on Silvopastoral Systems, Santiago del Estero, Argentina (2012)
- Todd Spieker Colloquium Lecture, University of California at Los Angeles (2012)
- R.D. Watt Centenary Lecture, Faculty of Agriculture, Food and Natural Resources, University of Sydney (2011)
- Leaders in Agriculture Lecture, Sul Ross State University (2009)
- Scholarly Achievement Award (2008), School of Natural Resources, Univ. Arizona
- Invited speaker, Wild Rangelands: Conservation in the World's Grazing Ecosystems Workshop, The Zoological Society of London, Regents Park (January 2006)
- Davidson Lecture, Baylor University (2003)
- Leu Distinguished Lecture, University of Nebraska (1999)
- Distinguished Achievement Award, Alumni Council, Augustana College (1996)
- Publication Award (Technical Writing), Society for Range Management (1995)
- Outstanding Achievement Award, Society for Range Management (1995)
- Stobbs Lecture, James Cook University (1993)
- Keynote Paper, 7th Australian Rangelands Conference (1992)
- Elroy Rice Lecture, University of Oklahoma (1986)

SYNERGISTIC ACTIVITIES (selected)

- Editorial Board, *Ecosphere* (2011-2012); *Journal of Arid Environments* (2006-present),
- Grasslands Indicators Technical Team, US Global Change Research Program National Climate Assessment (2012-present)
- Invited participant, Sustainable Grazing Metrics and Standards (workshop organized by Natural Resources Defense Council, UC Davis and Cornell University), Davis, CA (June 2013)
- Writing Team, National CEAP (Conservation Evaluation Assessment Project), USDA-NRCS; lead writer on 'Woody Plant Management' section of the national report (2007-2009).
- Steering Committee, Challenges and Opportunities in Remote Sensing of Global Savannas: A Scoping Study for new NASA Terrestrial Ecology Field Campaign (2010-2011)
- Writing Team, US Climate Change Science Program Synthesis: "Effects of global change on agriculture, biodiversity, land, and water resources" (2006/2007)
- Writing Team, NEON Consortium for Connectivity at Continental Scales Invasive Species and Infectious Disease theme RFI.
- Writing Team, NEON Desert Southwest Domain RFI
- Invited speaker, Earth System Partnership Global Carbon Project Workshop "Earth System Feedbacks: Vulnerability of the Carbon Cycle to Drought & Fire" (Canberra, Australia, 2006)
- SCOPE/FAO Global Biogeochemistry Consequences subgroup, "Livestock in a changing landscape" initiative (Rome, March 2006; Bangkok Nov 2006)
- Invited participant, CUAHSI (Consortium of Universities for Advancement of Hydrologic Science, Inc.) Visioning Workshop: Ecohydrology of Arid/Semiarid Environs (2004-2005)
- Program Review Team, Joseph W. Jones Ecology Center (Feb 2003)
- National Science Foundation, Ecology Program Panel (1994-1999)

FEDERAL GRANTS RECEIVED (2001-2016): \$17,000,000

PUBLICATION SUMMARY

Published Abstracts: 336 Invited Papers/Presentations: 177

Refereed Publications:	106	Non-refereed Publications:	42
Book Chapters:	28	Workshop/Symposium Proceedings:	25
Edited Volumes:	2	Popular Articles:	7

SELECTED REFEREED JOURNAL PUBLICATIONS
(since 2010; students/post-docs underlined)

- Stokes, CJ, Archer, SR. 2010. Niche differentiation and neutral theory: an integrated perspective on shrub assemblages in a parkland savanna. *Ecology* 91:1152-1162. Impact Factor 4.9
- Liu, F., X. Ben Wu, E Bai, TW Boutton, SR Archer. 2010. Spatial scaling of ecosystem C and N in a subtropical savanna landscape. *Global Change Biology* 16: 2213-2223.
- Liu, F. XB Wu, E Bai, TW Boutton, SR Archer. 2011. Quantifying soil organic carbon in complex landscapes: an example of grassland undergoing encroachment of woody plants. *Global Change Biology* 17: 1119-1129.
- Browning, DM, Archer, SR. 2011. Protection from livestock fails to deter shrub proliferation in a desert landscape with a history of heavy grazing. *Ecological Applications* 21:1629–1642.
- Bestelmeyer, BT, DP Goolsby, and SR Archer. 2011. Spatial perspectives in state-and-transition models: a missing link to land management? *Journal of Applied Ecology* 48:746-757.
- Barger, NN, SR Archer, JL Campbell, CH Huang, J. Morton, AK Knapp. 2011. Woody plant proliferation in North American drylands: a synthesis of impacts on ecosystem carbon balance. *Journal Geophysical Research – Biogeosciences* 116, G00K07, doi:10.1029/2010JG001506.
- Bai, E., T. W. Boutton, F. Liu, X. B. Wu, C. T. Hallmark, and S. R. Archer. 2012. Spatial variation of soil $\delta^{13}\text{C}$ and its relation to carbon input and soil texture in a subtropical lowland woodland. *Soil Biology and Biochemistry* 44:102-112.
- Throop, HL, SR Archer, HC Monger, S Waltman. 2012. When bulk density methods matter: implications for estimating soil organic carbon pools in coarse soils. *Journal of Arid Environments* 77:66-71.
- Throop, HL, LG Reichman, OE Sala, SR Archer. 2012. Response of dominant grass and shrub species to water manipulation: An ecophysiological basis for shrub invasion in a Chihuahuan Desert Grassland. *Oecologia* 169:373–383.
- Bai, E, TW Boutton, F Liu, XB Wu, SR Archer. 2012. Spatial patterns of soil $\delta^{13}\text{C}$ reveal grassland-to-woodland successional processes. *Organic Geochemistry* 42: 1512-1518
- Barnes, PB, HL Throop, ML Abbene[§], SR Archer. 2012. Soil coverage reduces photodegradation and promotes development of soil-microbial films on dryland leaf litter. *Ecosystems* 15:311-321. DOI: 10.1007/s10021-011-9511-1
- von Arx, G, SR Archer, Hughes, MK (2012). Long-term functional plasticity in plant hydraulic architecture in response to release from drought stress. *Annals of Botany* 109:1091-1100
- Hewins, DB, SR Archer, GS Okin, RL McCulley, HL Throop. 2012. Soil-litter mixing accelerates decomposition in a Chihuahuan Desert grassland. *Ecosystems* 16:183-195.
- Bai, E, TW Boutton, F Liu, XB Wu, SR Archer. 2013. ^{15}N isoscapes in a subtropical savanna parkland: spatial-temporal perspectives. *Ecosphere* 4(1):4. <http://dx.doi.org/10.1890/ES12-00187.1>.
- Liu, F., SR Archer, SR, F Gelwick, E Bai, TW Boutton, X Wu. 2013. Woody plant encroachment into grasslands: spatial patterns of functional group distribution and community development. *PLOS One* 8(12): e84364. doi:10.1371/journal.pone.0084364.
- Lee, H., J Fitzgerald, DB Hewins, RL McCulley, SR Archer, T Rahn, HL Throop. 2014. Soil moisture and soil-litter mixing effects on surface litter decomposition: A controlled environment assessment. *Soil Biology & Biochemistry* 72:123-132.
- Browning, DM, J Franklin, SR Archer, JK Gillan, DP Guertin. 2014. Spatial patterns of grassland-shrubland state transitions: a 74 year record on grazed and protected areas. *Ecological Applications* 24:1421-1433

Archer, SR, Predick, KI. 2014. Woody plant proliferation and the ecology of “brush management” from an ecosystem services perspective. *Journal of Ecology* 102:1394-1407.

Bestelmeyer, BT, GS Okin, MC Duniway, SR Archer, NF Sayre, JC Williamson, JE Herrick. 2015. Desertification, land use and the transformation of global drylands. *Frontiers in Ecology and the Environment* 13:28-36.

Peters, DPC, KM Havstad, SR Archer, OE Sala. 2015. Beyond desertification: new paradigms for dryland landscapes. *Frontiers in Ecology and the Environment* 13:4-12.