

## Curriculum Vita

### I. Personal Information

Name: Jason B. West  
 Rank: Assistant Professor  
 Address: Dept. of Ecosystem Science & Management  
 Texas A&M University  
 College Station, TX 77843

### II. Education

Ph.D., Botany, University of Georgia, 2002  
 “The effects of dominant bunchgrass species on sandhill longleaf pine savanna ecosystem function: a comparison of wiregrass to the bluestems.”  
 Advisor: Lisa A. Donovan

B.S., Range Science, Utah State University, 1996

### III. Experience

#### *Current position*

Assistant Professor 2008 – present; Department of Ecosystem Science and Management, Texas A&M University; *Current Interdisciplinary Program/Faculty Membership*: Ecology and Evolutionary Biology, Molecular & Environmental Plant Sciences

#### *Previous positions*

Research Assistant Professor, 2006 – 2008

Department of Biology, University of Utah

*Stable isotope modeling, forensic applications, cross-disciplinary development*

Research Associate, 2004 – 2005

Department of Biology, University of Utah

*Stable isotope modeling, forensic applications, cross-disciplinary development*

Postdoctoral Fellow, 2002 – 2004

Department of Ecology, Evolution, and Behavior, University of Minnesota

*Biogeochemistry, global change, elevated CO<sub>2</sub>, biodiversity, nitrogen deposition*

### IV. Grants and contracts

#### *Current funding*

1. National Science Foundation, Division of Biological Infrastructure. 2008-2011. Bowen, GJ, CC Miller, JB West, T Zhang, L Zhao. Enabling end-to-end geospatial data modeling workflows via INPort: The Isotope Networks Portal
2. Wintergarden Groundwater Conservation District. 2010-2013. West, JB, WE Rogers, R Lyons. Effects of brush removal on distributed recharge of the Carrizo-Wilcox aquifer
3. United States Geological Survey/Texas Water Resources Institute. 2011-2012. \*Mattox, A, JB West. Effects of woody vegetation removal on groundwater recharge in the Carrizo-Wilcox aquifer
4. Texas AgriLife Research Cropping Systems Program (State Initiative), Texas A&M University System. 2009-2011. Rowland, DL, TDA Forbes, FM Rouquette Jr, GR Smith, JB West. Enhancement of water conservation and nitrogen efficiency through legume-based cropping systems

5. Rio Grande Basin Initiative (Federal Initiative), 2009-2010. Moore, GW, JB West. Ecohydrological controls on distribution of giant reed (*Arundo donax*) in the Rio Grande valley: Part A & B

*Previous funding*

1. National Science Foundation, 2000-2002. Doctoral Dissertation Improvement Grant, Donovan, LA and JB West. Redundancy of belowground ecosystem function among native C4 perennial bunchgrass species of *Pinus palustris* savannas.

**V. Teaching and student advising**

*Current teaching responsibilities:*

**ESSM 681 – Seminar (Spring 2011)**

**ESSM 689 – Special Topics “Isotopes in Ecology” (co-taught with Jason Vogel; Spring 2011)**

**ESSM 215 – Fundamentals of Ecology Laboratory (Fall 2011)**

**ESSM 621 – Physiological Plant Ecology (to be co-taught with David Briske Fall 2011, West sole instructor thereafter)**

Dr. West currently advises the following graduate students:

1. April Mattox (MS; ESSM) began Fall 2010 and is working on a thesis related to the effect of land management on distributed aquifer recharge, focusing on brush removal and the Carrizo-Wilcox aquifer.
2. Shivani Mittal (MS; CSE) began being co-advised Spring 2011 and is working on a (non-thesis) project that will contribute to the development of the IsoMAP portal and improve efficiencies in computing processes associated with the production and analysis of isoscapes.
3. Li Fan (MS; ESSM) began Fall 2009, was awarded a Regents Fellowship, and is co-advised by Dr. Georgianne Moore. Fan is developing a thesis related to the ecohydrology of *Arundo donax*-dominated riparian systems along the Rio Grande: “Effects of *Arundo donax* L on the Hydrology of a Rio Grande Riparian Zone.”

Dr. West is currently serving on the committees of the following graduate students:

1. Carissa Wonkka (PhD; ESSM)
2. Ricardo Colon-Rivera (PhD; ESSM)
3. Andrew Jackson (MS; WFSC)

Dr. West previously advised the following graduate students:

1. Kui Li (MS; ESSM) Completed summer 2011, co-advisor: Dr. Georgianne Moore; Thesis title: Ecohydrological controls and effects of rhizome integration on the performance of *Arundo donax* in a Rio Grande riparian zone.

**VI. Service**

*Professional improvements and activities*

- Delegate to the Universities Council on Water Resources (2011)

*Texas A&M University System*

- Chair of the Molecular and Environmental Plant Sciences 2012 Symposium Committee
- Member of search committee for Assistant/Associate Professor of Agronomy, Texas AgriLife Research, Uvalde, Texas A&M University System (2008)

- Member of search committee for Assistant Professor of Environmental Soil Chemistry, Texas AgriLife Research, Overton, Texas A&M University System (2009, position on hold)
- Judge for Texas A&M AgriLife Conference Graduate Student Research Poster Competition (2010)

*Organizational and synergistic efforts*

- Co-organizer of an international multi-disciplinary meeting “Isoscapes 2011” ([http://wateriso.eas.purdue.edu/isoscapes2011/index\\_new.html](http://wateriso.eas.purdue.edu/isoscapes2011/index_new.html)). This meeting is funded by the National Science Foundation (DBI grant #0743543, see above) and serves as a follow-up to Isoscapes 2008 as well as a workshop for the project web portal and modeling platform IsoMAP (<http://isomap.org>).
- Co-organizer of an international multi-disciplinary meeting “Isoscapes 2008: Isotope mapping and its applications” (<http://isoscapes2008.org>) funded by the National Science Foundation Research Coordination Networks “Biogeosphere-Atmosphere Stable Isotope Network (BASIN)” and “Migration Interest Group: Research Applied Toward Education (MIGRATE),” April 8-10, 2008
- Co-organizer of a special session in The 6th International Conference on Applications of Stable Isotope Techniques to Ecological Studies (ISOECOL) on “Isotope Mapping to Address Ecological Questions,” August 25-29, 2008
- Co-organizer of American Geophysical Union organized session “Insights on Human Impacts on the Environment from Spatial Variation in Stable Isotope Ratios,” with support from the Biogeosphere-Atmosphere Stable Isotope Network (BASIN; NSF Research Coordination Network), December 11, 2006
- Co-author of response to the Request for Information from the National Ecological Observatory Network (NEON): Williams, D, RD Evans, JB West, JR Ehleringer. 2007. Isotope Network of Ecological Warning Signals (INEWS)

*Editorial contributions and reviews*

- Guest editor for special issue: “Isoscapes 2008: Isotope Mapping and its Applications,” *Journal of Geochemical Exploration* (volume 102, issue 3)
- Manuscript reviewer for the following journals (24 total): *Agricultural and Forest Meteorology, American Fern Journal, Australian Journal of Grape and Wine Research, Ecological Applications, Ecology, Ecology Letters, Functional Ecology, Geophysical Research Letters, Global Change Biology, Journal of Arid Environments, Journal of Forensic Sciences, Journal of Geophysical Research – Atmospheres, Journal of the Torrey Botanical Society, Land Degradation and Development, Methods in Ecology and Evolution, Oecologia, Organic Geochemistry, Pedosphere, Plant and Soil, Plant Ecology, Polish Journal of Environmental Studies, Restoration Ecology, Southwestern Naturalist, Tree Physiology*
- Grant proposal reviews: National Science Foundation, National Institute of Justice (DOJ), United States Department of Agriculture, National Sciences and Engineering Research Council of Canada, Kearney Foundation of Soil Science

*Professional society membership and participation*

- American Association for the Advancement of Science, American Geophysical Union, Ecological Society of America
- Judge for Physiological Ecology section of the Ecological Society of America graduate student presentations (2003, 2004, 2005)

## VII. Publications and professional output

### *Invited presentations*

1. Department of Geology 5050 Seminar Series, Baylor University (2011), Ecohydrological insights across scales, from plant water sources to global isoscapes
2. Distinguished Lecture Series, Water Resources Program, Texas A&M University (2010), Ecohydrology under changing climate
3. Goldschmidt Conference, Knoxville, TN, (2010), session title: Bridging isotope effects in cellular metabolism to environmental scale tracer studies
4. 15th CF-IRMS Workshop, Cornell University (2009) Keynote address: The emergence of isoscapes as tools for studying large-scale processes
5. University of Texas, San Antonio (2008) Ecosystem ecology in a dynamic world
6. Texas A&M University, College Station (2008) Terrestrial ecosystem function and response to change across scales
7. Texas AgriLife Research, Uvalde (2008) Terrestrial ecosystem function and response to change across scales
8. Eastern Nevada Landscape Coalition, Ely (2007) Global change and the ecosystems of the Great Basin
9. University of California, Davis (2007) Biogeochemical insights from spatially explicit stable isotope ratio modeling
10. University of Utah, Salt Lake City (2006) Geographic Information Systems and relational databases as tools for large scale exploration in Biology
11. Pacific Northwest National Laboratory, Richland (2005) Ricin geolocation by global spatial modeling of Castor Bean stable isotope ratios
12. University of New Mexico, Albuquerque (2005) Plant Isotope landscapes: IsoScapes
13. Gustavus Adolphus College, St. Peter (2004) Global change effects on belowground ecosystem function
14. Centre d'Ecologie Fonctionnelle et Evolutive, Montpellier (2003) Evidence for a negative productivity feedback underlying ecosystem response to diversity and N deposition
15. La Selva Biological Station, Costa Rica (2003) Linking plant traits, global change and nitrogen cycling
16. University of Minnesota, St. Paul (2003) Peering into the belowground worlds of the Carolina Sandhills and Minnesota prairies
17. University of North Carolina, Asheville (2001) Divergent nitrogen cycling influences of longleaf pine savanna bunchgrasses

### *Refereed journal articles*

#### *(in review)*

1. \*Colón-Rivera, RJ, RA Feagin, JB West, KM Yeager. *in review*. Salt marsh connectivity and freshwater versus saltwater inflow: Multiple methods including tidal gauges, water isotopes, and LIDAR elevation models. Canadian Journal of Fisheries and Aquatic Sciences.

#### *(published)*

1. Hurley, JM, JB West, JR Ehleringer. 2010. Stable isotope models to predict geographic origin and cultivation conditions of marijuana. Science & Justice 50(2):86-93
2. Hultine, KR, J Belnap, C van Riper III, JR Ehleringer, PE Dennison, ME Lee, PL Nagler, KA Snyder, SM Uselman, JB West. 2010. Tamarisk biocontrol in the western United States: ecological and societal implications. Frontiers in Ecology and the Environment; doi:10.1890/090031
3. Hurley, JM, JB West, JR Ehleringer. 2010. Tracing retail marijuana in the United States: Geographic origin and cultivation patterns. International Journal of Drug Policy 21(3):222-228.

4. West, JB, JM Hurley, FÖ Dudás, JR Ehleringer. 2009. The stable isotope ratios of marijuana. II. Strontium isotopes relate to geographic origin. Journal of Forensic Sciences 54(6):1261-1269
5. Espeleta, JF, JB West, LA Donovan. 2009. Tree species fine-root demography parallels habitat specialization across a sandhill soil resource gradient. Ecology 90(7):1773-1787.
6. Dijkstra, FA, JB West, SE Hobbie, PB Reich. 2009. Antagonistic effects of species on decomposition and net N mineralization in soils from mixed coniferous plantations. Forest Ecology and Management 257:1112-1118
7. West, JB, JM Hurley, JR Ehleringer. 2009. The stable isotope ratios of marijuana. I. Carbon and nitrogen stable isotopes describe growth conditions. Journal of Forensic Sciences 54(1):1-6
8. Bowen, GJ, JB West, TE Dawson, JR Ehleringer, ML Fogel, K Hobson, J Hoogewerff, C Kendall, C-T Lai, CC Miller, D Noone, H Schwarcz, CJ Still, BH Vaughn. 2009. Isoscapes to address large-scale Earth Science challenges. Eos 90(13):109-116
9. West JB, A Sobek, JR Ehleringer. 2008. A simplified GIS approach to modeling global leaf water isoscapes. PLoS ONE 3(6):e2447, doi:10.1371/journal.pone.0002447
10. Dijkstra, FA, JB West, SE Hobbie, PB Reich, J Trost. 2007. Plant diversity, CO<sub>2</sub>, and N influence inorganic and organic N leaching in grasslands. Ecology 88(2):490-500
11. West, JB, JR Ehleringer, TE Cerling. 2007. Geography and vintage predicted by a novel GIS model of wine  $\delta^{18}\text{O}$ . Journal of Agricultural and Food Chemistry 55(17):7075-7083
12. West, JB, GJ Bowen, TE Cerling, JR Ehleringer. 2006. Stable isotopes as one of nature's ecological recorders. Trends in Ecology and Evolution 21(7):408-414
13. West, JB, SE Hobbie, PB Reich. 2006. Effects of plant species diversity, atmospheric [CO<sub>2</sub>], and N addition on gross rates of inorganic N release from soil organic matter. Global Change Biology 12:1400-1408
14. Reich, PB, SE Hobbie, T Lee, D Ellsworth, JB West, D Tilman, J Knops, S Naeem, J Trost. 2006. Nitrogen limitation constrains sustainability of ecosystem response to CO<sub>2</sub>. Nature 440:922-925
15. West, JB, J HilleRisLambers, TD Lee, SE Hobbie, PB Reich. 2005. Legume species identity and soil nitrogen supply determine symbiotic nitrogen-fixation responses to elevated atmospheric [CO<sub>2</sub>]. New Phytologist 167:523-530
16. West, JB, and LA Donovan. 2004. Effects of individual bunchgrasses on potential C and N mineralization of longleaf pine savanna soils. Journal of the Torrey Botanical Society 131(2):120-125
17. Espeleta, JF, JB West, and LA Donovan. 2004. Species-specific patterns of hydraulic lift in co-occurring adult trees and grasses in a sandhill community. Oecologia 138(3):341-349
18. West, JB, JF Espeleta, and LA Donovan. 2004. Fine root production and turnover across a complex edaphic gradient of a *Pinus palustris*-*Aristida stricta* savanna ecosystem. Forest Ecology and Management 189:397-406
19. West JB, JF Espeleta, and LA Donovan. 2003. Root longevity and phenology differences between two co-occurring savanna bunchgrasses with different leaf habits. Functional Ecology 17:20-28
20. Donovan, LA, JB West, and KW McLeod. 2000. *Quercus* species differ in water and nutrient characteristics in a resource-limited fall-line sandhill habitat. Tree Physiology 20:929-936
21. Donovan, LA, DJ Gris , JB West, RA Pappert, NN Alder and JH Richards. 1999. Predawn disequilibrium between plant and soil water potentials in two cold-desert shrubs. Oecologia 120:209-217

*Other journal articles, published abstracts, etc.*

1. West, J. B., H. W. Kreuzer, and J. R. Ehleringer. 2010. Dissecting the large-scale spatiotemporal variation in *Ricinus communis* (Castor Bean) seed oil delta H-2. Geochimica et Cosmochimica Acta 74:A1127-A1127.

2. Bowen, GJ, JB West, J Hoogewerff. 2009. Isoscapes: Isotope mapping and its applications. Journal of Geochemical Exploration 102(3):v-vii

#### *Books*

1. West, JB, GJ Bowen, TE Dawson, KP Tu (editors). 2010. Isoscapes: Understanding movement, pattern, and process on Earth through isotope mapping, 487 pgs. Springer, Dordrecht. ISBN 978-90-481-3353-6.

#### *Book chapters*

1. West, JB, HW Kreuzer-Martin, JR Ehleringer. 2010. Approaches to plant hydrogen and oxygen isoscapes generation in West, JB, GJ Bowen, TE Dawson, KP Tu (editors). Isoscapes: Understanding movement, pattern, and process on Earth through isotope mapping, Springer, Dordrecht
2. Bowen, GJ, JB West, TE Dawson. 2010. Isoscapes in a rapidly changing and increasingly interconnected world in West, JB, GJ Bowen, TE Dawson, KP Tu (editors). Isoscapes: Understanding movement, pattern, and process on Earth through isotope mapping, Springer, Dordrecht
3. Ehleringer, JR, TE Cerling, JB West, DW Podlesak, LA Chesson & GJ Bowen. 2008. Spatial considerations of stable isotope analyses in environmental forensics, pgs. 38-43. in Hester, RE and RM Harrison (editors) Environmental Forensics: Principles and Applications. The Royal Society of Chemistry, Cambridge, UK
4. Bowen, GJ, and JB West. 2008. Isotope landscapes for terrestrial migration research. in Hobson, KA and LI Wassenaar (editors) Tracking animal migration with stable isotopes, Elsevier, Burlington, MA
5. Kelly, JF, S Bearhop, GJ Bowen, KA Hobson, DR Norris, LI Wassenaar, JB West, MB Wunder. 2008. Future directions and challenges for using stable isotopes in advancing terrestrial animal migration research. in Hobson, KA and LI Wassenaar (editors) Tracking animal migration with stable isotopes, Elsevier, Burlington, MA
6. Ehleringer, JR, TE Cerling, and JB West. 2007. Forensic science applications of stable isotope ratio analysis, pgs. 399-422. in Blackledge, RD (editor) Forensic analysis on the cutting edge: New methods for trace evidence analysis. John Wiley & Sons, Inc., Indianapolis, IN
7. Williams, DG, RD Evans, JB West, JR Ehleringer. 2007. Applications of stable isotope measurements for early-warning detection of ecological change, pgs. 383-398. in Dawson, TE and RTW Siegwolf (editors) Isotopes as Tracers of Ecological Change. Elsevier Academic Press, San Diego, CA

#### *Contract reports*

1. Ehleringer JR, JB West, JM Hurley. 2006. A Marijuana Signature Program: Report on Using Stable Isotopes in Marijuana to Predict Geographic Origin. Executive Office of the President, Office of National Drug Control Policy, Washington, DC, 61 pages
2. Ehleringer, JR, JB West, HM Kreuzer-Martin. 2006. Stable Isotope Ratio Analyses of Castor Bean: A Ricin Signature Program, Project final report, BAA Solicitation Number: BAA-0034104, Federal Bureau of Investigation, 465 pages

#### *Abstracts for scientific conferences*

1. \*†TeraGrid '11(2011) Lee, H, L Zhao, G Bowen, C Miller, A Kalangi, T Zhang, J West. Enabling online geospatial isotopic model development and analysis.
2. The Roles of Stable Isotopes in Water Cycle Research (2011) Zhang, T, Z Liu, A Kalangi, H Lee, C Miller, J West, L Zhao, G Bowen. An Automated Geostatistical Toolkit for Mapping Stable Isotope Ratios of Precipitation over Space and Time

3. The Roles of Stable Isotopes in Water Cycle Research (2011) Miller, C, T Zhang, Z Liu, A Kalangi, H Lee, J West, L Zhao, G Bowen. The IsoMAP CI Stack: The Open Source, Grid-Enabled Technologies Behind the IsoMAP Project
4. \*The Roles of Stable Isotopes in Water Cycle Research (2011) Mittal, S, J West, G Bowen, A Kalangi, H Lee, T Zhang, L Zhao. Web-based leaf water isoscapes in IsoMAP using raster modeling
5. \*The Roles of Stable Isotopes in Water Cycle Research (2011) Li, F, L Kui, J West, G Moore. Causes and consequences of variable access to shallow groundwater by *Arundo donax* in a Rio Grande riparian zone
6. \*Ecological Society of America annual meeting (2011) Kui, L, F Li, J West, G Moore. Clonal integration of *Arundo donax* in a riparian zone.
7. \*Ecological Society of America annual meeting (2011) Li, F, L Kui, J West, G Moore. Causes and consequences of variable access to shallow groundwater by *Arundo donax* in a Rio Grande riparian zone
8. American Society of Limnology and Oceanography Aquatic Sciences meeting (2011) Feagin, RA, RJ Colón-Rivera, JB West, and KM Yeager. Hydrological connectivity in salt marsh ponds: a stable isotope approach
9. \*Ecological Society of America annual meeting (2010) Kui, L, F Li, JR Shallock, GW Moore, JB West. Ecohydrological controls on the distribution and performance of giant reed in the Rio Grande Valley
10. Goldschmidt Conference (2010) West, JB, HW Kreuzer, JR Ehleringer. Dissecting the large-scale spatiotemporal variation in *Ricinus communis* (Castor Bean) seed oil  $\delta^2\text{H}$
11. Fourth Forensic Isotope Ratio Mass Spectrometry Conference. (2010) West, JB, JR Ehleringer, HM Kreuzer, JM Hurley, TE Cerling. Provenancing plant materials from isoscapes
12. \*TeraGrid '09 (2009) Rapolu, N, G Bowen, L Zhao, C Miller, J West. Building IsoMAP (Isoscape Modeling, Analysis, and Prediction) on TeraGrid
13. American Geophysical Union (2009) West, JB, JR Shallock, R Cooper. Survey of groundwater isotopic composition ( $\delta^2\text{H}$  and  $\delta^{18}\text{O}$ ) from the southwestern Edwards Aquifer and regionally associated aquifers
14. American Geophysical Union (2009) Miller, CC, GJ Bowen, T Zhang, L Zhao, JB West, Z Liu, N Rapolu. IsoMAP (Isoscape Modeling, Analysis, and Prediction)
15. Millennium Conference 2009: Water Ecosystem Services, Drought, and Environmental Justice. (2009) West, JB. Survey of the hydrogen and oxygen isotopic composition ( $\delta^2\text{H}$  and  $\delta^{18}\text{O}$ ) of the southwest region of the Edwards aquifer and associated major and minor aquifers
16. ISOECOL VI (2008) West, JB, J Hurley, JR Ehleringer, TE Cerling. Inferring sources of plant materials from stable isotope ratios
17. American Geophysical Union (2007) West, JB, JR Ehleringer, JM Hurley, TE Cerling. Geospatial modeling of plant stable isotope ratios - the development of isoscapes
18. American Geophysical Union Fall meeting (2006) West, JB, TE Cerling, JR Ehleringer. Towards more accurate isoscapes – encouraging results from wine, water and marijuana data/model and model/model comparisons
19. Terroir wine conference, University of California, Davis (2006) West, JB, TE Cerling, JR Ehleringer. A wine region-of-origin signature program based on GIS and stable isotopes
20. National Science Foundation LTER All Scientists Meeting (2006) West, JB, SE Hobbie, T Lee, PB Reich. Inter-annual response of legume N dynamics in response to elevated  $[\text{CO}_2]$  and N addition
21. American Geophysical Union Fall meeting (2005) West, JB, GJ Bowen, JR Ehleringer. Predicting hydrogen and oxygen stable isotope ratios of plants across terrestrial surfaces: Plant isoscapes
22. Ecological Society of America annual meeting (2005) West, JB, GJ Bowen, JR Ehleringer. Predicting stable isotope ratios of  $\delta^2\text{H}$  and  $\delta^{18}\text{O}$  in plants across terrestrial surfaces (ISOSCAPES)

23. Ecological Society of America annual meeting (2004) West, JB, F Dijkstra, SE Hobbie, PB Reich. Global change effects on microbial activity: The carbon connection and beyond
24. Ecological Society of America annual meeting (2003) West, JB, D Wedin, SE Hobbie, PB Reich. The dominant role of plant species in controlling the response of N mineralization to altered plant diversity, atmospheric CO<sub>2</sub>, and N deposition
25. National Science Foundation LTER All Scientists Meeting (2003) West, JB, D Wedin, SE Hobbie, PB Reich. Mechanistic linkages between global change, plant species traits, and nitrogen mineralization
26. Ecological Society of America annual meeting (2001) West, JB and LA Donovan. The unique functional role of wiregrass in longleaf pine savannas
27. Ecological Society of America annual meeting (2000) West, JB and LA Donovan. The divergent effects of understory species assemblages on nitrogen cycling in longleaf pine (*Pinus palustris*) savannas
28. Ecological Society of America annual meeting (1999) West, JB and LA Donovan. A glasshouse comparison of *Aristida stricta* and *A. beyrichiana* and their putative ecotypes
29. Ecological Society of America annual meeting (1998) West, JB, L Donovan, and K McLeod. Ecophysiological characteristics of three co-occurring oak species on a resource limited fall line sandhill site

*\*Student presentations/publications*

*‡Peer-reviewed*