

## X. Ben Wu

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### Education:

Postdoctoral:	The Ohio State University	Wetland Ecology		1992-1995
Graduate:	University of Tennessee	Ecology	Ph.D.	1991
	University of Tennessee	Management Sci.	M.S.	1990
	University of Tennessee	Ecology	M.S.	1988
Undergraduate:	Lanzhou University (China)	Botany	B.S.	1982

### Experience:

1995-present Texas A&M University

Presidential Professor for Teaching Excellence (2009-), Arthur and Wilhelmina Doré Thaman University Professor for Undergraduate Teaching Excellence (2017-2020), John Kincaid University Professor for Undergraduate Teaching Excellence (2012-2015), Associate Dean of Faculties and Director of Center for Teaching Excellence (2009-2014)

Associate Dean for Faculty Affairs, College of Agriculture and Life Sciences (2019-)

Professor (2007-), Associate Department Head for Graduate Programs (2007-2009), Associate Professor (2001-2006), and Assistant Professor (1995-2000), Department of Ecology and Conservation Biology

1992-1995 The Ohio State University

Adjunct Assistant Professor (1994-95), Postdoctoral Research Associate (1993-1995), and University Postdoctoral Fellow (1992-1993), School of Natural Resources

1987-1991 Tennessee Valley Authority

EIS Consultant, Land Between The Lakes (1990-1991); Ecologist, Forest Resources (1989-1990); and Intern, Land Between The Lakes (1987-1988)

1985-1991 The University of Tennessee

Teaching/Research Assistant, Graduate Program in Ecology (1988-1989 and 1986-1987); and Hilton Smith Graduate Fellow, Graduate School (1987-1988)

### Teaching Activities:

#### Undergraduate Courses

- RENR 205 - Fundamentals of Ecology (3 SCH, co-teach with M. Mateos)

This service course with large classes (up to 500 students in 2 sections) uses blended and active learning to help students develop deeper understanding of ecology and the scientific process, and to enhance critical thinking and integrative learning skills.

SimUText Ecology (interactive learning system based on simulations), our own online modules, and (5-week long) authentic ecological inquiry (individual) projects with collaborative learning and peer review approaches are used for online (outside class) learning activities. Peer instruction/think-pair-share activities based on key concepts and common misconceptions of ecology, case studies, and mini-lectures are used for in-class

learning activities. Frequent formative and summative assessments are used for and of learning. Taught since 1995. Over 9,800 students have taken this course.

- RENR 215 - Fundamentals of Ecology Laboratory (1 SCH)

Introduction to the general principles and inquiry process, sampling procedures and equipment, and data analysis and interpretation for field investigations of the biotic and abiotic components of ecosystems and their interactions. This field-oriented lab course is designed to emphasize hands-on experiences and ecological integration using active and collaborative learning and intensive writing approaches. Served as faculty coordinator in 1995-2005 and taught one section in 1995-1998.

### Graduate Courses

- ESSM 660 - Landscape Analysis and Modeling (3 SCH, both in-person and online sections)

Introduction to concepts and quantitative methods of spatial analysis and their applications. This blended course uses weekly lecture videos and online quizzes to develop conceptual understanding, extensive hands-on exercises on methods and software with real-world problems, online and in-class discussions of current literature, research projects based on students' own dissertation/thesis research, and project reports in journal manuscript format with peer review and revision. Taught since 1997 and had over 340 students in the course.

- RLEM 689 - Landscape Ecology and Conservation (3 SCH)

Introduction to landscape ecology and conservation and design lessons to bring current science to high school and undergraduate class. Taught in 2003-2006 for NSF-funded ITS Center for Teaching and Learning's "Landscape Ecology and Conservation" team.

- RLEM 681 - Seminars (1 SCH) on: Quantitative Methods in Landscape Ecology; Spatial Simulation in Landscape Studies; and Ecological Restoration.

### Graduate Student Program

- Served as **chair/co-chair** for 35 graduate students (18 PhD and 18 Masters).

*Current PhD students (4)* - Weiqian Gao (ECCB), Xavier Jaime (ECCB), Jenny Li (ECCB), Jose Mata (ECCB)

*Past PhD students (14)* - Jay Angerer (RLEM, grad. 2008), Edith Bai (RLEM, grad. 2007), Christopher Cheleuitte (RLEM, grad. 2011), Rusty Feagin (RLEM, grad. 2003), Orié Gilad (ZOOL, grad. 2006), Maria R Gutierrez (RLEM, grad. 2009), Feng Liu (RLEM, grad. 2007), Zeynep Okay (URSC, grad. 2004), Humberto Perotto (RLEM, grad. 2005), Paikho Rho (RLEM, grad. 2003), Denise Robledo (RLEM, grad. 2011), Reggie Romo (ESSM), Matt Simmons (RLEM, grad. 2007), Georgina Tena (ESSM), Yong Zhou (ESSM, grad. 2018)

*Current Masters students (1)* - Emily Monroe (ESSM)

*Past Masters students (17)* - Matt Berg (RLEM, grad. 2006), Jarrod Depew (RLEM, grad. 2004), Andrea Farley (RLEM, grad. 2000), Richard Harper (RLEM, grad. 2008), Chandra Heaton (RLEM, grad. 2001), Faisar Jihadi (RLEM, grad. 2009), Emily Kelsch (MNRD, grad. 2011), Michael Margo (RLEM, grad. 2006), Megna Murali (ESSM, grad. 2018), Hall Parrott (MNRD), Eric Redeker (RLEM, grad. 1998), Xiaolian Ren (ELEN, grad. 1999), Stacy VanStipdonk (RLEM, grad. 1996), Erin Wiedower (RLEM, grad. 2008), Andy Wilcox (MNRD, grad. 2011), Shiping Xiong (RLEM, grad. 2000), Chen Yue (RLEM, grad. 2007)

- Served as a **committee member** for 109 graduate students (69 PhD and 40 Masters).

*Current PhD students (9)* - Andrew Evans (GEOG), Mengqu Han (GEOG), Jiyeon Kim (WFSC), Meng Liu (ECCB), Mickey Parker (WFSC), Jordan Rogan (WFSC), Matthew Sifuentes (ESSM), Brody Teare (MEPS), Matthew Wolfe (MEPS).

*Past PhD students (60)*: Mohammad Al-Hamad (RLEM), Mohammad Al-Rabab'ah (FORS), Dianna Alsup (GEOG), Chris Appelt (WFSC), Caroline Arantes (WFSC), Joao Azevedo (FORS), Kristen Baum (ENTO), Russell Blessing (LAUP), Erin Buchholtz (WFSC), Ivan Castro-Arellano (WFSC), Pei-yu Chen (FORS), Kristina Chyn (WFSC), Ricardo Colon (ESSM), April Conkey (WFSC), Diana Cride (WFSC), Gage Dayton (WFSC), Buren Defee (LAUP), Steve DeMaso (WFSC), Rosemary Dwight (GEOG), Will Flatley (GEOG), Jose Franco (ESSM), Justin French (WFSC), Carlos Gonzalez (WFSC), Edith Gonzalez (WFSC), Daniel Kim (WFSC), Daehyun Kim (GEOG), Mike Kjelland (WFSC), Nianwei Ku (ESSM), Maria Lazo (EPSY), Maggie Mieres (WFSC), Katherine Miller (TAMUK), William Mobley (LAUP), Muge Mutlu (ESSM), Lana Narine (ESSM), Joungim Park (LAUP), Brian Pierce (WFSC), Rob Powell (WFSC), Mike Rader (WFSC), Charles Randel (WFSC), Dawn Sherry (WFSC), Rachel Short (ESSM), Ramesh Sivanpillai (FORS), Troy Sparks (WFSC), Mridula Srinivasan (WFSC), Revin Stoker (FORS), Chris Stokes (RLEM), Sherry Sultenfuss (ESSM), Soner Tarim (WFSC), Johann Thorsson (ESSM), Mathias Tobler (WFSC), Dirac Twidwell (ESSM), John Waldron (GEOG), Rose Wang (ESSM), Runzi Wang (LAUP), Yong Wang (SCSC), Ronald Weeks (ENTO), Amy Williams (FORS), Robin Witten-O'Brien (WFSC), Cynthia Wright (ESSM), Bo Yang (LAUP), Kaiguang Zhao (ESSM).

*Current Masters students (1)* - Zach Johnson (WFSC).

*Past Masters students (39)* - Eric Almquist (FORS), Cinda Bonds (FORS), Andrew Bridges (WFSC), Kirby Calhoun (WFSC), Robert Caveny (WFSC), Karen Cummins (RLEM), Gage Dayton (WFSC), Michael Denman (GEOG), Craig Faulhaber (WFSC), Faith Ferreri (ESSM), Yige Gao (GEOG), Stephanie George (WFSC), Julie Groce (WFSC), Ruisi Guo (LAUP), Jennifer Hadley (FORS), Alison Hanson (GEOG), Bryan Harris (GEOG), Paige Hill (WFSC), Paul Johnson (LAUP), Jiyeon Kim (WFSC), Cathy Kobylinski (SCSC), Jing Lei (LAUP), Trent Martin (WFSC), Bryan Mason (Anthropology), Kelsey Neam (WFSC), Humberto Perotto (FORS), Dave Reeves (Water Management), Valerie Reiss (EDCI), Erik Schmude (WFSC), Tarisha Smith (WFSC), Xueqi Song (LAUP), James Stephenson II (WFSC), Amanda Subalusky (WFSC), Geoffrey Tarbox (ESSM), Matthew Vaughan (GEOG), Beau Willsey (WFSC), Noel Wright (FORS), Megan Young (WFSC), Yixun Zhang (LAUP), Rui Zhu (LAUP).

## **Funding:**

*Acquired over \$22,847,000 research funds (over 94% external) as PI or co-PI; directly responsible for directing over \$5,585,000 of these funds.*

- Enhancing Livestock Production from Rangelands in the Great Plains, USDA-NIFA, \$9,994,340, 2019-2024, co-PI.
- Designing an infrastructure and sustainable learning community for integrating data-centric teaching resources in undergraduate biology education, NSF RCN-UBE, \$49,965, 2017-2019, co-PI.
- Ecosystem assessment and restoration at the Memorial Park". Memorial Park Conservancy, \$90,000, 2017-19, co-PI.

- Innovative Pedagogy Grant, TAMU Instructional Technology Services, \$10,000, 2017, PI.
- Math Virtual Learning Center, TAMU Tier-One Program, \$300,000, 2016-2019, co-PI.
- Developing ground penetrating radar (GPR) for enhanced root and soil organic carbon imaging: Optimizing bioenergy crop adaptation and agro-ecosystem services, DoE, \$4,600,000, 2015-2019, co-PI.
- High throughput phenotyping early stage root bulking in cassava using ground penetrating radar, NSF, \$2,490,232, 2015-2018, co-PI.
- Enhancing blended and active learning in a large ecology course, Texas A&M University, \$75,000, 2015-2016, PI.
- Virtual Ecological Inquiry (VEI) - A virtual environment for inquiry-based learning and education research, NSF CCLI/TUSE, \$199,950, 2010-2014, PI.
- Develop and implement an effective process for peer review of teaching, Texas A&M University, \$105,000, 2010-2013, PI.
- Sustaining rangelands in the Southern Great Plains in the 21st century: Adapting to and mitigating for climate change (planning grant), USDA-AFRI, \$50,000, 2010-2011, co-PI.
- A graduate program in forest resources: Developing integrated expertise in forest resource, conservation, and restoration, USDA-AFRI, \$340,000, 2009-2014, co-PI.
- Enhancing the teaching capacity of urban forestry program at Southern University and A&M College, USDA-CSREES, \$200,000, 2008-2010, co-PI.
- Strengthening educational capacities in geospatial science and technology for agricultural and natural resources management, USDA-CSREES, \$290,000, 2008-2010, co-PI.
- Development of data-based validation framework for state-and-transition models, USDA-CSREES, \$464,000, 2007-2010, co-PI.
- Geospatial ecosystem management program, USDA-HSI, \$240,000, 2007-2009, co-PI.
- Building a research bridge between an HSI and a land-grant university for doctoral studies in environmental science, USDA-CSREES, \$300,000, 2005-2007, co-PI.
- Integrating science, education and IT in a cross-cultural setting, NSF, \$89,192, 2004-2007; co-PI.
- Landscape Ecology and Ecological implementations of hydrologic restoration of Bahia Grande wetlands, US Fish and Wildlife Service, \$180,000, 2004-2006, co-PI.
- Landscape Ecology and Conservation, a project of NSF-funded Information Technology in Science (ITS) Center for Teaching and Learning, \$230,000, 2003-2007, PI.
- Cultural impacts on IT-based science education, Texas A&M University, \$25,000, 2003-2004, co-PI.
- Restoring resaca wetlands and associated wet prairie habitats at Palo Alto Battlefield National Historic Site, US National Park Service, \$115,414, 2002-2006. co-PI.
- Developing effective approaches for riparian forested wetland restoration, City of Garland, \$107,542, 2002-2004, PI.
- Scaling soil C and N storage in a changing savanna parkland landscape: Spatial structure, prediction and uncertainty assessment, NSF, \$398,000, 2001-2005, PI.
- Landscape changes as related to Rio Grande wild turkey production and survival in the Edwards Plateau, Texas Parks and Wildlife Department, \$826,000, 2000-2007, co-PI.
- Landscape changes as related to mourning dove call-counts along routes in Texas, Texas Parks and Wildlife Department, \$188,600, 2000-2003, co-PI.
- Develop web-based distance education methods for two large ecology courses, College of Agriculture and Life Sciences, Texas A&M University, \$4,200, 2000, PI.

- Landscape changes related to scaled quail habitat in Texas, Texas Parks and Wildlife Department, \$40,000, 1998-2000, PI.
- Landscape change in lesser prairie chicken habitat in the Texas Panhandle, Texas Parks and Wildlife Department, \$40,000, 1997-99, PI.
- Testing and improvement of predictive models for rare plants on highway rights-of-way, Texas Department of Transportation, \$42,083, 1997-99, PI.
- Effect of spatial vegetation patterns on water yield from Edwards Plateau rangeland, Texas Agriculture Experiment Station, \$39,000, 1996-97, PI.
- Rare plants on highway rights-of-way: distribution, ecological requirements and GIS-based predictive models, Texas Department of Transportation, \$154,000, 1995-97, co-PI.
- Development of a decision support system for forest resource management and environmental assessment”, Tennessee Valley Authority, \$10,000, 1992-93, PI.

### Publications:

- Li W, Hooper D, Wu L, Bakker J, Gianuca A, Wu XB, Taube F, Wang C, Bai Y. 2021. Grazing regime alters plant community structure via patch-scale diversity in semiarid grasslands, *Ecosphere*, 12.6: e03547. doi:10.1002/ecs2.3547.
- Li Z, Angerer JP, Wu XB. 2021. Temporal patterns of large wildfires and their burn severity in rangelands of western United States. *Geophysical Research Letters*, 48, e2020GL091636. doi:10.1029/2020GL091636.
- Wilcox BP, Fuhlendorf SD, Walker JW, Twidwell D, Wu XB, Goodman LE, Treadwell M, Birt A. 2021. Saving Imperiled Grassland Biomes by Recoupling Fire and Grazing: A Case Study from the Great Plains. *Frontiers in Ecology and the Environment*, in press.
- Wu XB, Sandoval C, Knight SL, Jaime XA, Macik M, Schielack JF. 2021. Web-based authentic inquiry experiences in large introductory classes consistently associated with significant learning gains for all students. *International Journal of STEM Education*, 8, 31. doi:10.1186/s40594-021-00290-3.
- Kim J, Popescu SC, Lopez RR, Wu XB, Silvy NJ. 2020. Vegetation mapping of No Name Key, Florida using lidar and multispectral remote sensing. *International Journal of Remote Sensing* 41.24: 9469-9506. doi:10.1080/01431161.2020.1800125.
- Cheleuitte-Nieves C, Perotto-Baldivieso HL, Wu XB, Cooper SM. 2020. Environmental and landscape influences on the spatial and temporal distribution of a cattle herd in a South Texas rangeland. *Ecological Processes* 9:39. doi:10.1186/s13717-020-00245-6.
- Jin B, Sun G, Zhang Y, Zou M, Ni X, Luo K, Zhang X, Cheng H, Li F, Wu XB. 2019. Goat track networks facilitate efficiency in movement and foraging. *Landscape Ecology* 34:2033–2044. doi:10.1007/s10980-019-00877-w.
- Miller KS, Brennan LA, Perotto-Baldivieso HL, Hernandez F, Grahmann ED, Okay AZ, Wu XB, Peterson M, Hannusch H, Mata J, Robles J, Shedd T. 2019. Correlates of habitat fragmentation and northern bobwhite abundance in the Gulf Prairie Landscape Conservation Cooperative. *Journal of Fish and Wildlife Management*. 10:3-18. doi:10.3996/112017-JFWM-094.
- Zhou Y, Boutton TW, Wu XB. 2019. A Three-Dimensional Assessment of Soil  $\delta^{13}\text{C}$  in a Subtropical Savanna: Implications for Vegetation Change and Soil Carbon Dynamics. *Soil Systems* 3(4), 73. doi:10.3390/soilsystems3040073.
- Cheleuitte-Nieves C, Perotto-Baldivieso HL, Wu XB, Cooper SM. 2018. Association patterns reveal congregation-dispersal dynamics among cattle in South Texas rangelands, USA. *Ecological Processes* 7:29. doi:10.1186/s13717-018-0141-9.
- Zhou Y, Boutton TW, Wu XB. 2018. Soil C:N:P stoichiometry responds to vegetation change

- from grassland to woodland. *Biogeochemistry* doi:10.1007/s10533-018-0495-1.
- Zhou Y, Boutton TW, Wu XB. 2018. Woody plant encroachment amplifies spatial heterogeneity of soil phosphorus to considerable depth. *Ecology* 99:136–147.
- Zhou Y, Boutton TW, Wu XB. 2018. Soil phosphorus does not keep pace with soil carbon and nitrogen accumulation following woody encroachment. *Global Change Biology* 24(5):1992–2007.
- Zhou Y, Boutton TW, Wu XB, Wright C, Dion A. 2018. Rooting strategies in a subtropical savanna: a landscape-scale three-dimensional assessment. *Oecologia* 186(4):1127–1135.
- Zhou Y, Mushinski RM, Hyodo A, Wu XB, Boutton TW. 2018. Vegetation change alters soil profile  $\delta^{15}\text{N}$  at the landscape scale. *Soil Biology & Biochemistry* 119:110–120.
- Bonner KM, Fleming-Davies AE, Grayson KL, Hale AN, Wu XB, Donovan S. 2017. Bringing research data to the ecology classroom through a QUBES faculty mentoring network. *Teaching Issues and Experiments in Ecology* 13: <http://tiee.esa.org/vol/v13/issues/commentary.html>.
- Zhou Y, Boutton TW, Wu XB. 2017. Soil carbon response to woody plant encroachment: Importance of spatial heterogeneity and deep soil storage. *Journal of Ecology* 105(6):1738–1749.
- Zhou Y, Boutton TW, Wu XB, Yang C. 2017. Spatial heterogeneity of subsurface soil texture drives landscape-scale patterns of woody patches in a subtropical savanna. *Landscape Ecology* 32(4):915–929.
- González Afanador E, Kjelland ME, Wu XB, Wilkins N, Grant WE. 2016. Ownership property size, landscape structure, and spatial relationships in the Edwards Plateau of Texas (USA): landscape scale habitat management implications. *Environment Systems and Decisions* 36(3):310–328.
- Jin B, Sun G, Zhang Y, Zou M, Ni X, Luo K, Zhang X, Cheng H, Li F, Wu XB. 2016. Livestock tracks transform resource distribution on terracette landscapes of the Loess Plateau. *Ecosphere* 7(3):e01337. 10.1002/ecs2.1337.
- Williamson JC, Bestelmeyer BT, McClaran MP, Robinett D, Briske DD, Wu XB, Fernandez-Gimenez M. 2016. Can ecological land classification increase the utility of long-term monitoring data? *Ecological Indicators* 69:657–666.
- Wu XB, Knight SL, Schielack JF, Robledo DC, Jaime XA, Peterson CA, Griffing LR. 2016. Authentic ecological inquiries using BearCam archives. *CourseSource* doi:10.24918/cs.2016.22.
- Rho P, Wu XB, Smeins FE, Silvy NJ, Peterson MJ. 2015 Regional land cover patterns, changes and potential relationships with scaled quail (*Callipepla squamata*) abundance. *Journal of Ecology and Environment* 38(2):185–193.
- Li W, Zhan S, Lan Z, Wu XB, Bai Y. 2015. Scale-dependent patterns and mechanisms of grazing-induced biodiversity loss: Evidence from a field manipulation experiment in semiarid steppe. *Landscape Ecology* 30:1751–1765.
- DeMaso SJ, Hernandez F, Brennan LA, Silvy NJ, Grant WE, Wu XB, Bryant FC. 2014. Short- and Long-Term Influence of Brush Canopy Cover on Northern Bobwhite Demography in Southern Texas. *Rangeland Ecology and Management* 67:99–106.
- Webb AM, Knight SL, Wu XB, Schielack JF. 2014. Teaching science with web-based inquiry projects: An exploratory investigation. *International Journal of Virtual and Personal Learning Environments* 5(2):57–68.
- Ansley RJ, Mirik M, Heaton CB, Wu XB. 2013. Woody cover and grass production in a mesquite savanna: geospatial relationships and precipitation. *Rangeland Ecology and Management* 66:621–633.

- Bagchi S, Briske DD, Bestelmeyer BT, Wu XB. 2013. Assessing resilience and state-transition models with historical records of cheatgrass *Bromus tectorum* invasion in North American sagebrush-steppe. *Journal of Applied Ecology* 50(5):1131-1141.
- Gilad O, Wu XB, Armstrong F. 2013. Assessing the feasibility for reintroducing desert bighorn sheep to Guadalupe Mountains National Park: Habitat, migration corridors and challenges. *Applied Geography* 41:96-104.
- Bai E, Boutton TW, Liu F, Wu XB, Archer SR. 2013. <sup>15</sup>N isoscapes in a subtropical savanna parkland: spatial-temporal perspectives. *Ecosphere* 4(1):4. <http://dx.doi:10.1890/ES12-00187.1>
- Liu F, Archer SR, Gelwick F, Bai E, Boutton TW, Wu XB. 2013. Woody plant encroachment into grasslands: Spatial patterns of functional group distribution and community development. *PLoS ONE* 8(12): e84364.
- Bagchi S, Briske DD, Wu XB, McClaran MP, Bestelmeyer BT, Fernández-Giménez ME. 2012. Empirical assessment of state-and-transition models with a long-term vegetation record from the Sonoran Desert. *Ecological Applications* 22(2):400–411.
- Bai E, Boutton TW, Liu F, Wu XB, Hallmark CT, Archer SR. 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 & Biochemistry* 44:102-112.
- Bai E, Boutton TW, Liu F, Wu XB, Archer SR. 2012. Spatial patterns of soil  $\delta^{13}\text{C}$  reveal grassland-to-woodland successional processes. *Organic Geochemistry* 42:1512–1518.
- Fowler DA, Matthews PR, Schielack JF, Webb RC, Wu XB. 2012. The power of inquiry as a way of learning in undergraduate education at a large research university, In: Lee VS. (Ed.) *The Power of Inquiry as a Way of Learning in Undergraduate Education*. Jossey-Bass, San Francisco, CA.
- Liu F, Wu XB, Bai E, Boutton TW, Archer SR. 2012. Impact of woody proliferation on soil carbon in subtropical savanna: Spatial distribution, uncertainty and sampling strategy. In: Han X, Wu Y (Eds) *Ecological Vision: Challenge, Response and Strategy*. Higher Education Press, Beijing.
- Simmons ME, Wu XB, Whisenant SG. 2012. Responses of pioneer and later-successional plant assemblages to created microtopographic variation and soil treatments in riparian forest restoration. *Restoration Ecology* 20(3):291–425.
- Wu XB, Griffing L, Herbert B, Acheson G, Knight SL. 2012. Bridging current science and classrooms: The learning community perspective. In: Schielack JF, Knight SL. (Eds) *An Information Technology-based Learning Ecology Model to Promote Science Education Leadership*. Teachers College Press, New York, NY.
- Bestelmeyer BT, Wu XB, Brown JR, Fuhlendorf SD, Fuels GA. 2011. A landscape approach to rangeland conservation practices. pp 337-370 in *Conservation Benefits of Rangeland Practices: Assessment, Recommendations, and Knowledge Gaps*. United States Department of Agriculture, Natural Resources Conservation Service, Washington, DC.
- DeMaso SJ, Hernández F, Brennan LA, Silvy NJ, Grant WE, Wu XB. 2011. A population model to simulate northern bobwhite population dynamics in southern Texas. *Journal of Wildlife Management* 75(2):319–332.
- Knapp CN, Fernández-Giménez ME, Briske DD, Bestelmeyer BT, Wu XB. 2011. An assessment of state-and-transition models: Perceptions following two decades of development and implementation. *Rangeland Ecology & Management* 64(6):598-606.
- Liu F, Wu XB, Bai E, Boutton TW, Archer SR. 2011. Quantifying soil organic carbon in complex landscapes: An example of grassland undergoing encroachment of woody plants. *Global Change Biology* 17:1119–1129.

- Perotto-Baldivieso HL, Wu XB, Peterson MJ, Smeins FE, Silvy NJ, Schwertner TW. 2011. Flooding-induced landscape changes along dendritic stream networks and implications for wildlife habitat. *Landscape and Urban Planning* 99:115–122.
- Simmons ME, Wu XB, Whisenant SG. 2011. Plant and soil responses to created microtopography and soil treatments in bottom land hardwood forest restoration. *Restoration Ecology* 19(1):136-146.
- Liu F, Wu XB, Bai E, Boutton TW, Archer SR. 2010. Spatial scaling of ecosystem C and N in a subtropical savanna landscape. *Global Change Biology* 16:2213–2223.
- Parker AF, Owens PR, Libohova Z, Wu XB, Wilding LP, Archer SR. 2010. Use of terrain attributes as a tool to explore the interaction of vertic soils and surface hydrology in South Texas playa wetland systems. *Journal of Arid Environments* 74:1487-1493.
- Bai E, Boutton TW, Liu F, Wu XB, Archer SR, Hallmark CT. 2009. Spatial variation of the stable nitrogen isotope ratio of woody plants along a topographic gradient in a subtropical savanna. *Oecologia* 159:493–503.
- Bai E, Boutton TW, Wu XB, Liu F, Archer SR. 2009. Landscape-scale vegetation dynamics inferred from spatial patterns of soil  $\delta^{13}\text{C}$  in a subtropical savanna parkland. *Journal of Geophysical Research* 114, G01019, doi:10.1029/2008JG000839.
- Han X, Owens K, Wu XB, Wu J, Huang J. 2009. The Grasslands of Inner Mongolia: A Special Feature. *Rangeland Ecology & Management* 62(4):303-304.
- Song L, Li FM, Fan XW, Xiong YC, Wang WQ, Wu XB, Turner NC. 2009. Soil water availability and plant competition affect the yield of spring wheat. *European Journal of Agronomy* 31(1):51-60.
- Azevedo JC, Wu XB, Messina MG, JR Williams, Fisher RF. 2008. The role of the Sustainable Forestry Initiative in forest landscape changes in Texas, USA. p. 273-296 In Laforteza R, Chen J, Sanesi G, Crow TR (Eds) *Patterns and Processes in Forested Landscapes: Multiple Use and Sustainable Management*. Springer.
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- Middleton BA, Wu XB. 2008. Landscape pattern of seed banks and anthropogenic impacts in forested wetlands of the northern Mississippi River Alluvial Valley. *Ecoscience* 15:231-240.
- Simmons ME, Wu XB, Knight SL, Lopez RR. 2008. Assessing the influence of field- and GIS-based inquiry on student attitude and conceptual knowledge in an undergraduate ecology lab. *CBE-Life Sciences Education* 7:338-345.
- Sivanpillai R, Wu XB, Srinivasan R, Smith CT, Messina MG. 2008. Comparative analyses of East Texas forest cover maps generated from Landsat and AVHRR data. *GeoJournal* 71(4):211-220.
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- Feagin RA, Wu XB, Feagin T. 2007. Edge effects in lacunarity analysis. *Ecological Modelling* 201:262-268.
- Kjelland ME, Kreuter UP, Clendenin GA, Wilkins RN, Wu XB, Afanador EG, Grant WE. 2007. Factors related to spatial patterns of rural land fragmentation in Texas. *Environmental Management* 40:231-244
- Rader ML, Brennan LA, Hernández F, Silvy NJ, Wu XB. 2007. Nest-site selection and nest survival of northern bobwhite in southern Texas. *The Wilson Journal of Ornithology* 119(3):392-399.
- Rader ML, Teinert TW, Brennan LA, Hernández F, Silvy NJ, Wu XB. 2007. Identifying



- predators and nest fates of bobwhites in southern Texas. *Journal of Wildlife Management* 71(5):1626-1630.
- Simmons ME, Wu XB, Whisenant SG. 2007. Bottomland hardwood forest species' responses to flooding regimes along an urbanization gradient. *Ecological Engineering* 29(3):223-231.
- Sivanpillai R, Srinivasan R, Smith CT, Messina MG, Wu XB. 2007. Estimating regional forest cover in east Texas using Advanced Very High Resolution Radiometer (AVHRR) data. *International Journal of Applied Earth Observation and Geoinformation* 9(1): 41-49.
- Wu XB, Liu F, Whisenant SG. 2007. Advances in restoration ecology. In: Wu J, Ge J, Han X, Yu Z, Zhang D (Eds.) *Lectures in Modern Ecology (III): Advances and Key Topics*. Higher Education Press (in Chinese).
- Azevedo JC, Wu XB, Messina MG, Fisher RF. 2006. Effects of the Sustainable Forestry Initiative on the quality, abundance, and configuration of wildlife habitats. *Journal of Sustainable Forestry* 23(1):37-65.
- Feagin RA, Wu XB. 2006. Spatial pattern and edge characteristics in restored terrace versus reference salt marshes in Galveston Bay. *Wetlands* 26(4): 1004–1011.
- Sivanpillai R, Smith CT, Srinivasan R, Messina MG, Wu XB. 2006. Estimation of managed loblolly pine stand age and density with Landsat ETM+ data. *Forest Ecology and Management* 223:247–254.
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## Abstracts

Published 151 abstracts for conference presentations.

Conference	# abstracts
Ecological Society of America	40
Society for Range Management	27
American Geophysical Union	8
Society of Wetland Scientists	7
International Association for Landscape Ecology	6
American Educational Research Association	5
Society for Ecological Restoration	4
Other conferences	54

## Invited Presentations

Gave 85 invited talks on landscape ecology, restoration ecology, ecology education, and faculty professional development in teaching, at regional, national, and international professional conferences and academic institutions.

## Professional Activities:

- Member of: NSF Committees of Visitors (COV) for 4 grant programs under NSF's Division of Undergraduate Education (2016); National Academies Committee on Barriers and Opportunities in Completing 2- and 4-Year STEM Degrees (2013-2016); Steering Committee of NSF-funded Faculty Developer Network for Undergraduate Biology (FDN-UBE) (2014-present); External Review Committee for Oregon State University Natural Resources Undergraduate Program (2016); External Review Committee for University of Puerto Rico Environmental Science Graduate Program (2016); External Review Committee for Lanzhou University Undergraduate Programs (2017).
- Chair, Asian Ecology Section of Ecological Society of America (ESA) (1997-1998); Co-Chair, International Affairs Committee (2006-2008) Society for Range Management (SRM); Member, Steering Committee of *Rangeland Ecology and Management* (2006-2009); Member, Awards Committee of Ecology Society of America (2018-2021).
- Journal editorial board member: *Acta Prataculturae Sinica* (2015-present), *Ecological Processes* (2011-present; Associate Editor), *Chinese Journal of Applied Ecology* (1996-present), *Journal of Integrative Plant Biology* (2005-2007), *Ecological Engineering* (1997-2007).
- Member of grant review panels: NSF (3); USDA (3); USEPA (5).
- Co-chair, Quality Enhancement Plan (QEP) committee for the decennial reaffirmation of accreditation of Texas A&M (2011-2012); Co-chair, Faculty Teaching and Learning Portal committee (2009-2014); Activity Leader, Roadmap workshops for early-career academics, TAMU ADVANCE program (2011-2014); Chair, Search Committee for Associate Dean of Faculties (2011); Chair, Search Committee for Department Head of Agricultural Leadership, Education & Communications (2018-19), Member of over 20 university-level committees.

- Chair, Tenure and Promotion Committee (2015-2019); Project Director (2007-2012), Sloan Minority PhD Program in Ecosystem Science and Management; Chair, Graduate Programs Committee of ESSM (2007-2009); Co-chair, Exploratory Committee for the merger of Departments of Rangeland Ecology and Management and Forest Science (2006); Chair, Committee for Development of BS degree program in Ecological Restoration (2004-2006), Member of 9 search committees.

#### **Faculty Development Activities:**

- Conducted over 40 workshops (1-3 hour) on topics such as active and inquiry-based learning, engaging students with technology, blended learning, teaching large classes, peer review of teaching, decoding the discipline, habits and skills of successful new faculty, and strategies and tactics for recruiting to improve diversity and excellence.
- Served as a member of the Planning Committee (2009-2014) to design and facilitate the annual *Wakonse South Conference on College Teaching*.
- Conducted with C. Sandoval and J. August a 3-day workshop “*Advanced Training Program for Academic Administrators on Teaching and Learning*”, Nov. 24-26, 2014, Nanjing, China.
- Conducted with V. Lee a 5-day workshop “*Academic Leadership in the Learning-centered University*”, Aug. 4-8, 2014, Durham, NC.
- Conducted with B. Harmon a 2-day workshop “*Inquiry-based Approaches in Undergraduate Science Courses: Learning Science through Science Process*”, May 13-14, 2014, at *The Institute for Pedagogy in the Liberal Arts*, Oxford, GA.
- Conducted with V. Lee a 2.5-day workshop “*Teaching & Learning Workshop at Jazan University*”, Feb. 10-12, 2013, Jazan, Saudi Arabia.
- Conducted with V. Lee a 5-day workshop “*Building a Culture of Teaching Excellence at Jazan University*”, July 9-13, 2012, Ann Arbor, MI.

#### **Selected Awards and Honors:**

- US Department of Agriculture National Award for Excellence in College and University Teaching in Food and Agricultural Sciences, 2018.
- Arthur and Wilhelmina Doré Thaman University Professor for Undergraduate Teaching Excellence, Texas A&M University, 2017.
- Dean’s Award for Outstanding Achievement in Teaching, College of Agriculture and Life Sciences, Texas A&M University, 2017.
- Distinguished Achievement Awards for Teaching (University-Level), Association of Former Students of Texas A&M University, 2016.
- SEC Faculty Achievement Award, Southeastern Conference Universities, 2015.
- John Kincaid University Professor for Undergraduate Teaching Excellence, Texas A&M University, 2012.
- Presidential Professor for Teaching Excellence Award, Texas A&M University, 2009.
- Award for Innovative Excellence in Teaching, Learning, and Technology, the International Conference on College Teaching and Learning, 2009.
- Distinguished Achievement Awards for Teaching (College-Level), Association of Former Students of Texas A&M University, 2008.
- Dick Kleberg, Jr. Endowed Lectureship at the King Ranch Institute for Ranch Management, Texas A&M University-Kingsville, 2007
- Michael Breheny Prize for the Best Paper in *Environment and Planning B*, 2006.

- Vice Chancellor's Award in Excellence for Graduate Teaching, Texas A&M Agriculture, Texas A&M University System, 2005.
- Graduate Teacher of the Year Awards, Department of Ecosystem Science and Management, Texas A&M University, 2001, 2002 and 2005.
- V.F. and Gertrude Neuhaus Teaching Scholar, College of Agriculture and Life Sciences, Texas A&M University, 2000.
- Best Student Poster, Society of American Foresters (SAF) National Convention, Richmond, VA, 1992.
- University Postdoctoral Fellowship, The Ohio State University, 1992.
- Science Alliance Fellowship Awards, University of Tennessee Science Alliance Center of Excellence, 1986, 1987, 1988, 1989, 1990 and 1991.
- National Alumni Association Graduate Fellowships, University of Tennessee National Alumni Association, 1988-1989 and 1989-1990.
- Hilton A. Smith Graduate Fellowship, University of Tennessee, 1987-1988.
- Carlos Campbell Memorial Research Fellowship, Great Smoky Mountains Conservation Association, 1986-1987.