



Nomination Letter for Dr. Kimberly Meitzen

Dear Committee Members,

I am writing on behalf of providing a self-nomination to be considered for the Ecological Modeling Expert to serve on the Edwards Aquifer Habitat Conservation Plan (EAHCP) Adaptive Management Science Committee. I am an Assistant Professor with the Geography Department at Texas State University. I teach undergraduate courses in Fluvial Processes, River Basin Management, and Landscape Biogeography. I also teach a graduate seminar in Applied Environmental Geography that focuses on the science and policy for the management and conservation of riverine resources.

My research has included several environmental flow projects where I have been involved with developing ecological models for understanding instream and riparian species flow needs and species responses to flow changes. For part of my dissertation research (2007-2011), I developed a 1D/2D hydrodynamic flow model that was used by the Ecological Sustainable Water Management (ESWM) stakeholders in South Carolina to determine flow needs for 12 flow-dependent indicator species representing a range of guild-based habitat needs and flow conditions. This work was for the Congaree River and floodplain, a large (>9,000 km<sup>2</sup>) Coastal Plain river basin in the Southeast US. I recently completed a post-doctoral position (2012 -2013) with Duke University and The Nature Conservancy where I helped provide ecological flow recommendations to the North Carolina Ecological Flows Science Advisory Board (NC EFSAB) for statewide water allocation models for all 17 major basins in the state. I worked with stakeholders to analyze ecological based flow-habitat models for a range of stream sizes from headwaters to mainstems, and included considerations for a variety of aquatic guilds.

In the fall of 2013 I joined the Texas State Geography Department faculty, and am interested in becoming involved with freshwater issues in Texas, particularly those that involve flow-dependent species and habitat conservation goals, such as those addressed by the EAHCP.

This nomination letter confirms my willingness and interest to serve as the Ecological Modeling Expert for the EAHCP Adaptive Management Science Committee. I do not have a direct affiliation to any of the ecological model team members. I am an acquaintance of Dr. Thomas Hardy, we met at the South Atlantic Landscape Conservation Cooperative (SALCC) Instream Flow Resource Workshop, held in Savannah Georgia in 2012, and we have since interacted casually through his position with the Meadows Center for Water and the Environment at Texas State University.

Thank you for considering my self-nomination, I look forward to hearing from the Science Committee. Please contact me if you need any additional information.

Sincerely,

Kimberly M. Meitzen, Ph.D.

Assistant Professor, Department of Geography  
[kmeitzen@txstate.edu](mailto:kmeitzen@txstate.edu), (512) 245-8353

DEPARTMENT OF GEOGRAPHY

601 UNIVERSITY DRIVE | SAN MARCOS, TEXAS 78666-4684 | *phone* 512.245.2170 | *fax* 512.245.8353 | [WWW.TXSTATE.EDU](http://WWW.TXSTATE.EDU)

*Texas State University-San Marcos was founded in 1899.*

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**Curriculum Vitae for Dr. Kimberly M. Meitzen****I. ACADEMIC/PROFESSIONAL BACKGROUND**

**A. Name:**  
Kimberly M. Meitzen

[Kmeitzen@txstate.edu](mailto:Kmeitzen@txstate.edu)

**Title:**  
Assistant Professor  
Department of Geography  
Texas State University  
San Marcos, TX 78666-4616

**B. Educational Background**

<i>Degree</i>	<i>Year</i>	<i>University</i>	<i>Major</i>
Ph.D.	2011	University of South Carolina	Geography
Dissertation: <i>“Flood Processes, Forest Dynamics, and Disturbance in the Congaree River Floodplain, South Carolina”</i>			
M.S.	2006	University of South Carolina	Geography
Thesis: <i>“Development, Disturbance, and Maintenance: Process-Pattern Relationships in Riparian Environments, Congaree River, Congaree National Park, South Carolina”</i>			
B.A.	2003	University of Texas at Austin	Geography
Undergraduate Honors Thesis: <i>“Spatial and Textural Variability in Overbank Deposits in Response to a Large Flood Event, Lower Guadalupe River, Texas”</i>			

**C. University Experience**

<i>Position</i>	<i>University</i>	<i>Dates</i>
Assistant Professor	Texas State University	Aug. 2013 – present
Post-Doctoral Research Associate Environmental Flows Fellow for The Nature Conservancy North Carolina Chapter	Duke University	Jan. 2012 – Jul. 2103
Research Assistant: South Carolina Applied Landscape Ecology Lab	University of South Carolina	Sept. 2010 – Dec. 2011
Instructor: Intro. Physical Geography	University of South Carolina	Jan. 2010 – May 2010
Instructor: Intro. Physical Geography	University of South Carolina	Sept. 2009 – Dec. 2009
Instructor: Intro. Physical Geography	University of South Carolina	Jan. 2009 – May 2009

Instructor: Intro. Physical Geography	University of South Carolina	Sept. 2008 – Dec. 2008
Research Assistant: River Research Group	University of South Carolina	Sept. 2007 – Aug. 2008
Research Assistant: South Carolina Applied Landscape Ecology Lab	University of South Carolina	Jan. 2007 – Sept. 2007
Lab Instructor: Landforms GEOG 201	University of South Carolina	Sept. 2006 – Dec. 2006
Research Assistant: River Research Group	University of South Carolina	May 2005 – May 2006
Research Assistant: Climate Research Lab	University of South Carolina	Sept. 2004 – May 2005
Research Assistant: Applied Geomorphology Lab	University of Texas at Austin	May 2002 – May 2004

**D. Relevant Professional Experience**

<i>Position</i>	<i>Entity</i>	<i>Dates</i>
Expert Witness	American Rivers, Inc., Coastal Conservation League, and Southern Environmental Law Center	Dec. 2009 – Dec. 2010
Geologic Technician	South Carolina Geological Survey	May. 2006 – Dec. 2010 (part-time, project-based)
Ecological Consultant	Earth and Ocean Sciences, University of South Carolina	Jun. 2006 - Nov. 2007 (part-time, project based)
GIS Technician	Army National Guard, McCrary Training Center, SC	Jan. 2005 – May 2005

**II. TEACHING**

**A. Courses Taught:**

- GEOG 4316: Landscape Biogeography (Texas State University)
- GEOG 4314: River Basin Management (Texas State University)
- GEOG 4325: Fluvial Processes (Texas State University)
- GEOG 104: Introductory Physical Geography (University of South Carolina)
- GEOG 201: Lab sessions for Landforms (University of South Carolina)

**B. Graduate Theses/Dissertations, Honors Theses, or Exit Committees:**

**PhD Committees:**

<b>Year / Role</b>	<b>Student</b>	<b>University</b>
2012 External Thesis Examiner	Rajendra J. Shilpaker	University of New England, Armidale, Australia
2014 Committee Chair	Erin Dascher	Texas State University, San Marcos, Texas

**MS Committees:**

<b>Year /Role</b>	<b>Student</b>	<b>University</b>
2014 Committee Member	Kristen Newcomer	Texas State University, San Marcos, Texas
2014 Committee Member	Rachel Cavin	Texas State University, San Marcos, Texas
2014 Committee Chair	Elizabeth Wrenn	Texas State University, San Marcos, Texas

**III. SCHOLARLY/CREATIVE**

**A. Works in Print**

**Refereed Journal Articles “in-print” or “accepted”:**

Kupfer, J.A., **Meitzen, K.M.** and Gao P. *accepted*, 2014. *Flooding and surface connectivity of Taxodium-Nyssa stands in a southern floodplain forest ecosystem*. River Research and Application.

**Meitzen, K.M.** *accepted*, 2014. *Victor E. Shelford (1954) Some Lower Mississippi Valley Flood Plain Biotic Communities: Their Age and Elevation*. *Ecology* 35:2 126-142. Progress in Physical Geography.

**Meitzen, K.M.** *accepted*, 2014. *Applied Geomorphology*. In *The International Encyclopedia of Geography: People, the Earth, Environment, and Technology*, Eds. Marston, R.A. and Butler, D.R

**Meitzen, K.M.**, Doyle, M.W., Thoms, M.C., and C.E. Burns. 2013. *Geomorphology in the Interdisciplinary Context of Environmental Flows*. *Geomorphology*. 200: 143-154. <http://dx.doi.org/10.1016/>

Kupfer, J. A. **Meitzen, K. M.**, and A. R. Pipkin. 2010. *Controls of early post-logging successional pathways in a southern floodplain forest*. *Forest Ecology and Management*. 259: 1880 – 1889.

**Meitzen, K. M.** 2009. *Lateral Chanel Migration Effects on Riparian Forest Structure and Composition, Congaree River, South Carolina, USA*. *Wetlands* 29(2): 465 – 475.

**Meitzen, K.M.** 2005. *Overbank Flooding and Sedimentation Patterns in a Floodplain Environment, Lower Guadalupe River, Texas*. *University of Texas Undergraduate Research Journal* 4(1): 34 – 47.

### **Abstracts and Papers Presented at Professional Meetings:**

**Meitzen, K.M.**, Kupfer, J.A., Gao, P. 2014. *Application of a 2D hydrodynamic flood model for quantifying river and floodplain process interactions*. Joint Aquatic Sciences Meeting, Portland Oregon. [Presentation]

**Meitzen, K.M.** 2014. *Streamflow changes across North Carolina from 1955-2012 with implications for environmental flow management*. 110<sup>th</sup> Annual meeting of the Association of American Geographers (AAG), Tampa, Florida. CD-ROM [Presentation]

**Meitzen, K.M.**, Burns, C.A. 2012. *Flows as an indicator of ecosystem resilience – comparing historic, current, and future flows to identify resilient freshwater systems for conservation*, Society for Conservation Biologists North American Congress for Conservation Biology, Oakland, CA. CD-ROM [Presentation]

**Meitzen, K.M.** 2011. *Forest Dynamics of Abandoned Meander Wetlands in a Large Floodplain, South Carolina*, United States International Association of Landscape Ecology (US-IALE) 2011 Annual Symposium, Portland Oregon. CD-ROM [Presentation]

**Meitzen, K.M.** 2011. *Hydrogeomorphology and Vegetation Ecology of Abandoned Meander Wetlands in a Large Floodplain, South Carolina*, 107<sup>th</sup> Annual Meeting of the Association of American Geographers (AAG), Seattle, Washington. CD-ROM [Presentation]

**Meitzen, K.M.** 2010. *Hydrogeomorphic Heterogeneity of a Large Coastal Plain Floodplain, Congaree River, South Carolina*, 106<sup>th</sup> Annual Meeting of the Association of American Geographers (AAG), Washington DC. CD-ROM [Poster]

Kupfer, J.A., **Meitzen, KM.** 2009. *Hydrogeomorphic controls of post-logging successional pathways in a southern floodplain forest*. Binghamton Geomorphology Symposium, Blacksburg, VA. [Poster]

**Meitzen, K.M.** 2008. *Congaree floodplain decision support project: assessing the extent of river regulation effects on resources within and around Congaree National Park, South Carolina*, 104<sup>nd</sup> Annual Meeting of the Association of American Geographers (AAG), Boston, Massachusetts CD-ROM [Presentation]

**Meitzen, K.M.** 2008. *The Effects of Lateral Channel Migration Rates on Riparian Forest Structure and Composition, Congaree River, Congaree National Park, South Carolina.* Floodplain Ecosystem Symposium, Little Rock, Arkansas [Presentation]

**Meitzen, K.M.** 2007. *The hydrologic effects of Saluda Dam on downstream flows in the Lower Congaree River during the 1998-2002 drought.* Annual Meeting of the Southeastern Division of the AAG, Charleston, South Carolina [Presentation]

**Meitzen, K.M.** 2007. *Downstream Effects of Saluda Dam Flow Alterations on Congaree River Flows During the 1998-2002 Drought.* 38<sup>th</sup> Annual Binghamton Geomorphology Symposium, Durham, North Carolina [Poster]

**Meitzen, K.M.** 2007. *Congaree River Floodplain Inundation Model: Developing a GIS-Based Decision Support System for Congaree National Park, South Carolina.* Digital Mapping Techniques (DMT) Meeting, Columbia, South Carolina. [Poster]

**Meitzen, K.M.** 2006. *Development, Disturbance, and Maintenance: Process-Pattern Relationships in Riparian Environments, Congaree River, Congaree National Park, South Carolina.* 102nd Annual Meeting of the AAG, Chicago, Illinois. CD-ROM [Poster]

**Meitzen, K.M.** Shelley, D.R. 2006. *Preliminary GIS Assessment of Near-Channel Floodplain Development, Congaree National Park, South Carolina,* 26<sup>th</sup> Annual International Wetland Meeting, Society of Wetland Scientists, Charleston, South Carolina [Poster]

**Meitzen, K.M.** 2005. *Planform Channel Changes on the Congaree River, South Carolina, 1820-2001.* 101<sup>st</sup> Annual Meeting of the AAG, Denver, Colorado CD-ROM [Poster]

**Meitzen, K.M.,** Hudson P.F. 2004. *Spatial Variability in Flood Deposits, Lower Guadalupe River, Texas.* 100<sup>th</sup> Annual Meeting of the AAG, Philadelphia, Pennsylvania. [Poster]

### **Professional Reports:**

Benner, R., Barnett, A., Sheldon, A.O., **Meitzen, K.M.,** Hoenke, K., and Fields, M. 2014. North Carolina's Freshwater Resilience. North Carolina Chapter of the Nature Conservancy, Field Office: Durham, NC.

**Meitzen, K.M.** 2013. The Nature Conservancy's Environmental Flows Project for North Carolina. Final Report for the North Carolina Chapter of the Nature Conservancy, Field Office: Durham, NC

**Meitzen, K.M.** 2010. Expert Report of Kimberly Meitzen for State of South Carolina Administrative Law Court. Docket No. 09-ALJ-07-0377-CC. Columbia, South Carolina.

Kupfer, J.A., **Meitzen, K.M.** and Graf, W.L. 2009. *Forest recovery and hydrologic modeling on new park lands.* Final Report for Project H5000030930, Congaree NP, Hopkins, SC.

Graf, W. L. and **Meitzen, K. M.** 2006. *Congaree floodplain decision support project: assessing the extent of river regulation effects on resources within and around Congaree National Park, Part II: Floodplain inundation modeling using HEC-RAS and GIS.* National Park Service. NPS/COSW/R5240050013.

### **Other Works in Print:**

**Meitzen, K.M.** 2011. *Geologic Map of the Fort Jackson South 7.5 Minute Quadrangle, Richland and Calhoun Counties, South Carolina,* United States Geological Survey, Geologic Quadrangle Map Series 52.

**Meitzen, K.M.** 2010. *Geologic Map of the Southwest Columbia 7.5 Minute Quadrangle, Lexington, Richland, and Calhoun Counties, South Carolina,* United States Geological Survey, Geological Quadrangle Map Series 50.

**Meitzen, K.M.,** Kupfer, J.A., and W.L. Graf. 2010. *Can one foot of relief really make that much of a difference?* Field trip guide for the 41<sup>st</sup> Annual Binghamton Geomorphology Symposium hosted by Geography Department, University of South Carolina Columbia.

SCDNR Publication, Mary Crockett and **Kimberly M. Meitzen.** 2010. Little Pee Dee Scenic River Water Trail Guide. South Carolina Department of Natural Resources (SCDNR), Columbia, South Carolina. Pp.65.

**Meitzen, K.M.,** Howard, C.S., and Paul G. Nystrom, Jr. 2009. *Geologic Map of the Poinsett State Park 7.5 Minute Quadrangle, Sumter County, South Carolina,* United States Geological Survey, Geological Quadrangle Map Series 46.

SCDNR Publication, Mary Crockett and **Kimberly M. Meitzen.** 2009. Lynches Scenic River Water Trail Guide. South Carolina Department of Natural Resources (SCDNR), Columbia, South Carolina. Pp.95.

### **B. Works not in Print**

#### **Invited Talks, Lectures, and Presentations:**

2013: **Meitzen, K.M.** *Flood Processes, Forest Dynamics, and the Legacy of Historic Logging on the Congaree Floodplain,* presentation to the Department of Geography and the Environment, University of Texas at Austin, Austin, Texas

2013: **Meitzen, K.M.,** Doyle, M.D., Benner, R. *The Nature Conservancy's Environmental Flows Project for North Carolina: Final Report and Flow Recommendations,* presentation to the North Carolina Ecological Flows Science Advisory Board, Lake Jordan Education Center, Chapel Hill, North Carolina

2013: **Meitzen, K.M.,** Doyle, M.D., Benner, R. *The Nature Conservancy's Environmental Flows Project for North Carolina: Freshwater Resilience,* presentation to the North Carolina Ecological Flows Science Advisory Board, Lake Jordan Education Center, Chapel Hill, North Carolina

2012: **Meitzen, K.M.**, Doyle, M.D., Thoms, M.C., Burns, C.A. *Geomorphology in the Interdisciplinary Context of Environmental Flows*, 43<sup>rd</sup> Annual Binghamton Geomorphology Symposium, Jackson Hole, Wyoming

2012: **Meitzen, K.M.**, Doyle, M.D., Burns, C.A. *The Nature Conservancy's Environmental Flows Project for North Carolina: Study for Four River Basins*, presentation to the North Carolina Ecological Flows Science Advisory Board, Lake Jordan Education Center, Chapel Hill, North Carolina

2012: **Meitzen, K.M.** Environmental Flows Science and Policy Lecture, Nicholas School of the Environment, Duke University

2011: **Meitzen, K.M.** *Flood Processes, Forest Dynamics, and Disturbance in the Congaree River Floodplain, South Carolina*, dissertation presentation to Congaree National Park superintendent, resource managers, educational director, park ranger staff, and visitors.

2008: **Meitzen, K.M.** *Congaree Floodplain Decision Support Project Phase II: GIS Floodplain Inundation Modeling, Congaree National Park, South Carolina*. Congaree National Park Research Symposium, Columbia, South Carolina.

2008: **Meitzen, K.M.** *Development, Disturbance, and Maintenance: Process-Pattern Relationships in Riparian Environments, Congaree River, Congaree National Park, SC*. Congaree National Park Research Symposium, Columbia, South Carolina.

2008: **Meitzen, K.M.** *Modeling Floodplain Inundation for the Ecologically Sustainable Water Management of Congaree National Park*, Invited Speaker for the Southeastern Friends of the Pleistocene (SEFOP) Meeting, Columbia, SC

2007: **Meitzen, K.M.**, Graf, W.L. *Floodplain Decision Support Project: Flood Inundation Modeling of the Congaree River and Floodplain, Congaree National Park, South Carolina*. Ecologically Sustainable Water Management (ESWM) workshop, Columbia, South Carolina.

2006: **Meitzen, K.M.** *Congaree River Floodplain Process and Forest Ecology, Congaree National Park*. Nature fest Event at Congaree National Park.

2006: **Meitzen, K.M.** Fluvial Geomorphology lecture: GEOG 201: Landforms, Geography Department, University of South Carolina

### **Workshops:**

2012: Ecological Limits of Hydrologic Alteration workshop for Great Lakes regions of New York and Pennsylvania. Participant in stakeholder workshop for recommending environmental flows to the New York Department of Environmental Conservation, [participant].



2012: South Atlantic Landscape Conservation Cooperative (SALCC) Instream Flow Resource Workshop, Savannah Georgia, [presenter and participant].

2007-2008: Ecologically Sustainable Water Management Process for the Congaree and Saluda Rivers. Participant in multi-stakeholder workshop for recommending flows to the Federal Energy Regulatory Commission relicensing of Saluda Dam, South Carolina, [presenter and participant].

### C. Other Works not in Print:

#### Works “submitted”, “under review”

Julian, J.P. Doyle, M.D., Ensign, S., Hester, E., Manners, R., **Meitzen, K.M.**, Podolak, C., and Wilgruber, N. *in review*, 2014. *Bio-Hydro-Geomorphic Connections in Stream Channels*, In *Streams in a Changing Environment*, Eds. Jones, J. and Stanley, E.

#### Works “in progress”

**Meitzen, K.M.** *in progress*, 2014. *Streamflow changes across North Carolina from 1955-2012 with implications for environmental flow management*. In preparation for Geomorphology.

#### Funded External Grants and Contracts:

2010 -2013. US Department of the Interior, National Park Service. Climate change-induced changes in flow regime, floodplain inundation and species habitats at Congaree National Park. (PI: J.A. Kupfer, and CoPIs: **K. M. Meitzen**, G. Carbone, D. Tufford). \$310, 614.

2010. *Friends of Congaree Swamp Research Grant*, Friends of Congaree Swamp \$500

2010. *Society of Wetland Scientist Student Research Grant*, Society of Wetland Scientists \$500

2010. *Biogeography Specialty Group PhD Student Research Grant*, Biogeography Specialty Group of the Association of American Geographers \$700

2010. *Student Travel Grant*, Geography Department, University of South Carolina

2008. *Student Travel Grant*, Geography Department, University of South Carolina

2004-2006. US Department of the Interior National Park Service. Lateral channel migration patterns and forest response in near-channel riparian environment, Congaree National Park, South Carolina (PI: **K.M. Meitzen** and W.L. Graf) \$2,614

**Funded Internal Grants and Contracts:**

2013. *Research Enhancement Proposal*, Texas State University. Reconstructing an Old-Growth Cypress Forest from Legacy Effects of Historic Logging (PI: **K.M. Meitzen**)  
\$8,000

**D. Fellowships, Awards, Honors:**

2011: *NASA-MSU Professional Enhancement Award*, United States International Association of Landscape Ecology (US-IALE)

2009: *SPOT Award*, South Carolina Department of Natural Resources, Geological Survey

2008: *Paul E. Lovingood Research Excellence Award*, Geography, USC – Columbia

2006: *Reds Wolman Student Research Award*, Geomorphology Specialty Group of the Association of American Geographers

2003: *Undergraduate Excellence Award*, University of Texas, Geography

2003: *Erich Zimmerman, Holz-English Undergraduate Award*, University of Texas, Geography

**IV. SERVICE**

**A. Institutional or Departmental:**

Committee Member, Recruiting and Communications Committee, Texas State University, 2013-present

Committee Member, Graduate Student Committee, Texas State University, 2013-present

Vice President, Geography Graduate Student Association, Univ. of SC, 2008-2009

Secretary, Geography Graduate Student Association, Univ. of SC, 2006-2007

Secretary, Undergraduate Geographical Society, Univ. of TX, 2003-2004

**B. Professional:**

**Manuscript Review:**

The Southwestern Geographer (2014)

Earth Surface Processes and Landforms (2013)

Geomorphology (2012)

Ecological Applications (2012)

Geography Compass (2012)

Southeastern Geographer (2009)

**Book Proposal Review:**

Cambridge University Press (2009)

**Organization Member:**

Association of American Geographers (AAG)  
US International Association of Landscape Ecology (US-IALE)  
Society for Freshwater Science (SFS)  
Society of Wetland Scientists (SWS)

**Organized Conference Fieldtrips:**

2010: Co-organized and led a fieldtrip to Congaree National Park, South Carolina for the 41<sup>st</sup> Annual Binghamton Geomorphology Symposium hosted by Geography Department, University of South Carolina Columbia, with Kupfer, J.A. and Graf, W.L.

2006: Co-organized and hosted a field trip stop along the Congaree River, South Carolina for the 37<sup>th</sup> Annual Binghamton Geomorphology Symposium hosted by the Geography Department, University of South Carolina Columbia, Graf, W.L. and 740 Grad. Seminar

**Community Involvement:**

2005-2011: Annually co-organized and participated with River Sweep trash clean-up events for the Broad, Saluda, and Congaree Rivers, South Carolina  
2005-2011: Congaree National Park, South Carolina, assisted staff with citizen-scientist fieldtrips (hiking and kayaking) and data collection (butterfly, spider, and fish surveys)  
2005: South Carolina ETV: co-hosted nature show on Table Rock State Park and Jones Gap State Park, projected audience 5<sup>th</sup>-8<sup>th</sup> grade, South Carolina  
2003: Living Lab: 5<sup>th</sup> grade outdoor ecological science labs Hornsby Bend waste-water treatment facility, Hornsby Elementary, Del Valle, Texas  
2002: UT Environteering: 5<sup>th</sup> grade science labs, Riley Elementary School, Austin, Texas