

KATIE MCDOWELL PEEK, P.G.

762 LITTLE ELLIJAY ROAD--FRANKLIN, NC 28734

828-227-2790

kmcdowell@wcu.edu

LICENSED PROFESSIONAL GEOLOGIST IN NORTH CAROLINA

EDUCATION

- Graduate Certificate in Geospatial Information Science, 2017
North Carolina State University, Raleigh, NC 27695
- M.S., Geology, 2009
East Carolina University, Greenville, NC 27858
Concentration: Coastal Geology
- B.S., Geology, 2007
Western Carolina University, Cullowhee NC 28734
Concentration: Environmental Hydrology

EXPERIENCE

- Coastal Research Scientist, 2010-present
Program for the Study of Developed Shorelines, Western Carolina University
<http://psds.wcu.edu>
- Graduate Research Assistant, 2007-2009
East Carolina University Geology Department
- Research Technician, 2005-2007
Western Carolina University Geology Department
- AmeriCorps Intern, National Park Service, 2005
Natural Resource Division at Twin Creeks, Forest Ecology
Great Smoky Mountains National Park

MAJOR PROJECT INVOLVEMENT

- Lead Scientist: National Park Service Climate Change and Coastal Hazards Asset Vulnerability Assessment Protocol, 2013-present
Program for the Study of Developed Shorelines, Western Carolina University
- Cumberland Island National Seashore Vulnerability Assessment, 2013-present
Program for the Study of Developed Shorelines, Western Carolina University
- Adapting to Climate Change in National Parks: Sea-level Rise Exposure of Coastal Parks, 2011-present
Program for the Study of Developed Shorelines, Western Carolina University

- Storm Surge Study & Database, 2010-present <http://stormsurge.wcu.edu>
Program for the Study of Developed Shorelines, Western Carolina University
- Quaternary Geologic History of North Carolina, 2007-2009
North Carolina Coastal Geology Cooperative, East Carolina University
- Elwha River Restoration & Dam Removal, 2007-present
Western Carolina University
- Channel Islands National Park Wetlands Restoration Project, 2006-2007
Western Carolina University
- River Cane Restoration Project, 2006-2007
Western Carolina University

PROFESSIONAL PUBLICATIONS & TECHNICAL REPORTS

Peek, K.M., Coburn, A., Stafford, E.S., Tormey, B., Young, R.S., Thompson, H., Bennett, L., and Fowler, A., 2015. Marine Vulnerability Assessment of Cumberland Island National Seashore: Determining the vulnerability of marine habitats at Cumberland Island National Seashore to climate change stressors. Natural Resource Technical Report, in *press*.

Peek, K. M., Young, R.S., Beavers, R. L., Hoffman, C. H., Diethorn B. T., & Norton, S., 2014. Adapting to climate change in coastal national parks: Estimating the exposure of FMSS-listed park assets to 1 m of sea-level rise. Natural Resource Technical Report NPS/NRSS/GRD/NRTR—2014/916. National Park Service, Fort Collins, Colorado. http://www.nature.nps.gov/geology/coastal/coastal_assets_report.cfm

Griffith, A.D., Coburn, A., **Peek, K.M.** & Young, R.S., 2014. Hurricane Sandy: did beach nourishment save New Jersey? In Farmer, E.C. & Bennington, J.B. (Eds.), Learning from the Impacts of Superstorm Sandy (p 57-69). Elsevier.

Peek, K. M. & Young, R.S., 2013. Understanding the controls on storm surge through the building of a national storm surge database. Journal of Coastal Research, v. 29, 17-24.
<http://www.jcronline.org/doi/abs/10.2112/JCOASTRES-D-12-00249.1>

Peek, K.M., Mallinson, D.J., Culver, S.J., & Mahan, S.A., 2013, Holocene Geologic Development of the Cape Hatteras Region, Outer Banks, North Carolina, USA. Journal of Coastal Research, v. 30, 41-58.
<http://www.jcronline.org/doi/abs/10.2112/JCOASTRES-D-12-00192.1>

Mallinson, D.J., Smith, C.W., Mahan, S., Culver, S.J., & **McDowell, K.**, 2011. Barrier island response to late Holocene climate events, North Carolina, USA. Quaternary Research, v. 76, 46-57.
<http://www.sciencedirect.com/science/article/pii/S0033589411000640>

Griffith, A.D., **McDowell, K.**, & Young, R.S., 2007. Rivercane restoration project: recovering an ecologically & culturally significant species (North Carolina): Ecological Restoration, v. 25, p. 144-145.

PROFESSIONAL PRESENTATIONS & ABSTRACTS

Young, R.S., **Peek, K.M.**, Tormey, B.R., Norton, S., & Binns, B., 2015. Standardizing vulnerability assessments for infrastructure in national parks. 23rd Biennial Coastal and Estuarine Research Foundation Conference, Portland Oregon, November 2015. **[Presenter]**.

Tormey, B.R., **Peek, K.M.**, & Young, R.S., 2015. Assessing Climate Change & Hazard Vulnerability in the Built Environment: A Methodology for Coastal National Parks. Geological Society of America Abstracts with Programs. <https://gsa.confex.com/gsa/2015AM/webprogram/Paper267982.html>

Peek, K.M., Stafford, E.S., Coburn, A., Young, R.S., Tormey, B.R., Fowler, A., & McCreedy, C. 2015. Determining the vulnerability of marine habitats at Cumberland Island National Seashore to climate change stressors. Geological Society of America Abstracts with Programs. Vol. 47, No. 2, p.89. **[Presenter]**. <https://gsa.confex.com/gsa/2015SE/webprogram/Paper252976.html>

Peek, K. M., Young, R.S., Beavers, R. L., Hoffman, C. H., Diethorn B. T., 2014. Adapting to Climate Change in Coastal National Parks: estimating the exposure of all park assets to 1m of sea-level rise. Geological Society of America Abstracts with Programs. **[Presenter]**. https://gsa.confex.com/gsa/2014AM/finalprogram/abstract_248909.htm

Tormey, B.R., & **Peek, K.M.**, 2014. Balancing Field-based Learning with Field-based Risk: Introductolk;mlry Marine Geology at the Gerace Research Centre, San Salvador Island, Bahamas: GSA Abstracts with Programs, Vol. 46 No. 6. https://gsa.confex.com/gsa/2014AM/finalprogram/abstract_249550.htm

Griffith, A.D., Coburn, A., **Peek, K.M.**, & Young, R.S., 2013. Hurricane Sandy: Did beach nourishment save New Jersey? Geological Society of America Abstracts with Programs. Vol. 45, No. 7, p.53 <https://gsa.confex.com/gsa/2013AM/webprogram/Paper232590.html>

McDowell, K.L., Young, R.S., Holliday, M.A., Gaskey, R.T., Korb, C.E., Lenau, B.M., Dalton, A.R., & Krehling, W., 2011. The National Storm Surge Database: Public access through the storm surge view & mobile application. Geological Society of America Abstracts with Programs, v. 43, no. 5, p.619. **[Presenter]**. https://gsa.confex.com/gsa/2011AM/finalprogram/abstract_196934.htm

Young, R.S., & **McDowell, K.L.**, 2011. Cataloging all available storm surge measurements for the state of North Carolina: The National Storm Surge Database: Geological Society of America Abstracts with Programs, v. 43, no. 1, p.78. https://gsa.confex.com/gsa/2011SE/finalprogram/abstract_185547.htm **[Presenter]**.

Johnson, J.R., Petruccelli, R.F., Bush, D.M., Young, R.S., Maloof, A., & **McDowell, K.L.**, 2010. Historical storm surge tables: one-stop shopping for all your storm surge data needs, Geological Society of America Abstracts with Programs, v. 42, no. 5, p. 290. https://gsa.confex.com/gsa/2010AM/finalprogram/abstract_181247.htm

McDowell, K., Mallinson, D., Culver, S., & Walsh, J.P., 2010. Holocene Geologic Development of the Cape Hatteras Region, Outer Banks, North Carolina: Geological Society of America Abstracts with Programs, v. 42, no.1, p. 130. **[Presenter]**. https://gsa.confex.com/gsa/2010NE/finalprogram/abstract_170361.htm

McDowell, K.L., Mallinson, D., Culver, S., & Walsh, J.P., 2009. Holocene Geologic Development of Central Hatteras Flats & Buxton Beach Ridges, Outer Banks, North Carolina: Geological Society of America Abstracts with Programs, v. 41, no. 1, p. 51. **[Presenter]**. https://gsa.confex.com/gsa/2009SE/finalprogram/abstract_154596.htm

Griffith, A.D., Kinner, D., **McDowell, K.L.**, Tanner, B., & Young, R.S., 2007. Soil Characterization for Rivercane (*Arundinaria gigantea* (Walter) Muhl.) Restoration in Western North Carolina: Geological Society of America Abstracts with Programs, v. 39, no. 6, p. 243. **[Presenter]**.

https://gsa.confex.com/gsa/2007AM/finalprogram/abstract_130333.htm

McDowell, K.L., Griffith, A.D., Kinner, D.A., Tanner, B.R., & Young, R.S., 2007. Restoration of River Cane *Arundinaria gigantea* in western NC: A Step towards the Identification of Ideal Environmental Conditions: Geological Society of America Abstracts with Programs, v. 39, no. 2, p. 29.

https://gsa.confex.com/gsa/2007SE/finalprogram/abstract_119101.htm

McDowell, K.L., Griffith, A., Young, R.S., 2006. Restoring River Cane *Arundinaria gigantea* to the Landscape in Western North Carolina: An Environmental & Cultural Restoration: Geological Society of America Abstracts with Programs, v. 38, no. 7, p. 6.

MEDIA PUBLICATIONS & MENTIONS

Asheville Citizen Times: WCU scientists co-author national sea-level risk report

<http://www.citizen-times.com/story/girls-gone-outdoors/2015/06/25/wcu-scientists-co-author-us-doi-report-on-sea-level-rise/29270095/>

Smoky Mountain News: Shorelines program receives grant to conduct coastal workshops

<http://www.smokymountainnews.com/archives/item/15746-wcu-researchers-making-their-mark>

Coastal Care Beach of the Month: Isle's Bay Beach, Montserrat, March 2012, **Katie Peek** & Rob Young

<http://coastalcare.org/2012/03/isles-bay-beach-montserrat/>

The Montserrat Reporter: A Study of Isle's Bay Beach-relating to sand mining, March 9, 2012

Katie Peek & Rob Young

<http://www.themontserratreporter.com/a-study-of-isles-bay-beach-relating-to-sand-mining/>

Scientific American: Dial-a-Flood: A New Smartphone App Helps Residents & Researchers Predict Storm Surges
Sid Perkins

<http://www.scientificamerican.com/article/smartphone-app-predict-storm-surges/>

Coastal Care Beach of the Month: Padre Island National Seashore, Texas, **Katie Peek**

<http://coastalcare.org/2012/09/padre-island-national-seashore-texas/>

TEACHING

Spring 2011: Geology 140, Investigations in Environmental Geology

Spring 2012: Geology 140 Honors, Investigations in Environmental Geology

Spring 2013: Geology 140, Investigation in Environmental Geology

May Travel Course 2013: Geology 140, Investigation in Environmental Geology, San Salvador, Bahamas (co-instructor)

Fall 2014: Geology 140, Investigation in Environmental Geology

Fall 2016: Geology 140, Investigation in Environmental Geology

RESEARCH SKILLS & TECHNICAL BACKGROUND

Experience with:

Global Positioning System

Ground Penetrating Radar

Seismic Data collection

Optically Stimulated Luminescence dating

Geoprobe & vibracore core collection

Cluster Analysis

Foraminifera preparation & identification

Arc GIS software

-ESRI Arc GIS II, May 2007, Charlotte, NC

Canvas X: graphics program

Systat & SAS: statistical programs

Seismic Micro-Technology

Kingdom Suite: seismic software

Radan 6: Ground Penetrating Radar software