

## JENNIFER HUSHAW

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*Career Interests:* Sustainable resource management; forest and working lands conservation; stakeholder engagement.

### EDUCATION

**Master of Forestry**, SAF accredited, December 2010

**Master of Environmental Management**, December 2010

**Certificate in Geospatial Analysis**, May 2010

*Trained in:* Forest ecosystem structure and function, including forest carbon cycling; geospatial analysis (GIS and remote sensing); silvicultural systems and forest management for multiple-use and conservation; soil resources; land conservation strategies; forest policy; forest certification systems, standards, and impacts; public participatory techniques and conflict resolution; professional ethics.

Nicholas School of the Environment, Duke University, Durham, NC

**Bachelor of Science, Biology** (*magna cum laude*), May 2008

Saint Michael's College, Colchester, VT

### PROFESSIONAL EXPERIENCE

**Innovative Natural Resource Solutions LLC**, *Forest Analyst/Modeler*, Peterborough, NH, 2011 - present

Acting in a technical capacity to provide data processing and modeling expertise for the construction of a decision support tool designed to aid the North East *State* Foresters Association with addressing questions related to regional wood energy sustainability. Providing GIS mapping and analysis for a variety of company projects. Developing effective written and verbal presentation materials.

**The Nature Conservancy**, *Longleaf Pine Restoration*, Southern Pines, NC, 2010

Worked independently in the field to inventory 200 acres of longleaf pine ecosystem on the Calloway Forest Preserve using a systematic, fixed-radius plot sampling scheme. Collected data on basal area, dbh, height, crown ratio, and ground cover. Created a database of individual tree records in Excel. Analyzed data and made projections using US Forest Service Forest Vegetation Simulator (FVS). Proposed appropriate management action to achieve restoration and conservation goals into the future.

**Duke Forest**, *Data Management and GIS Assistant*, Durham, NC, 2009-10

Created maps of the 7,060 acre Duke Forest for communicating information to the public and volunteers. Provided GIS assistance for project planning on the forest. Managed and updated an Access database of teaching and research projects conducted on the Duke Forest by hundreds of students, faculty, and inter-institutional researchers over the 75 year history of the forest.

**Southern Appalachian Forest Coalition**, *Old Growth Inventory*, Asheville, NC, 2009

Proposed and developed a management tool to increase the efficiency of old-growth delineation in the Southern Appalachians using LiDAR-derived metrics of forest stand structure, including canopy height and vegetation density developed from raw LiDAR data processed with FUSION/LDV software. Hiked off-trail in National Forests with a project advisor identifying old-growth stands, coring trees, and collecting GPS data.

**Northern Forest Canoe Trail**, *Program Intern*, Waitsfield, VT, 2008

Efficiently managed a variety of management, membership, and outreach tasks. Responded effectively to inquiries about the 740-mile water trail stewarded by the organization. Devised and implemented a system for organizing digital media.

**Society of American Foresters**, *Duke University Student Chapter Co-chair*, 2010

Acted in a leadership role to organize the 4<sup>th</sup> annual Duke Forestry Symposium with 3 panel discussions focused on prominent forest issues and over 100 attendees, including students, foresters, and other natural resource professionals. Collaborated with co-chairs to delegate tasks, organize and execute chapter meetings, activities, and fundraising events.

## **SELECTED ACADEMIC PROJECTS**

### **Invasion Potential for Emerald Ash Borer, Great Smoky Mountains National Park**

Modeled potential Emerald Ash Borer (EAB) infestation using ArcGIS 9.3 and a Generalized Linear Model (GLM) developed with over 2,500 EAB presence points collected by the USDA APHIS program in the Great Lakes Region and a variety of land cover, topographic, and climate variables. Results of the model were subsequently used to create a map of potential EAB distribution in Great Smoky Mountain National Park. Also created a weighted infestation threat map based on potential infestation sources in GIS, including campsites, roads, and development.

### **Modeling Eastern Old Growth Forest Using Terrain Attributes and Multispectral Satellite Imagery**

Utilized Landsat TM imagery, digital elevation data, and other GIS variables to model old growth forest in the southern Appalachians using Classification and Regression Tree (CART) and Maximum Entropy (MaxEnt) analyses. Performed georectification, radiometric, and atmospheric correction on raw Landsat 7 TM images, and performed Normalized Difference Vegetation Index (NDVI), Enhanced Vegetation Index (EVI), Principle Components Analysis (PCA), and Tasseled Cap Brightness, Greenness, and Wetness using ERDAS Imagine 9.3.

### **Forest Parcel Management Plan**

Worked in a team setting to conduct a 10% timber cruise on a parcel of the Duke Forest in Durham, North Carolina using a systematic, fixed-radius plot sampling scheme. Used Forest Vegetation Simulator (FVS) to predict future timber volumes under different management scenarios. Proposed multiple-use management options to satisfy landowner goals related to recreation, wildlife management, or timber harvest.

## **ADDITIONAL INFORMATION**

- Trained in ArcGIS 9.3/10, ERDAS IMAGINE 9.3, FUSION/LDV, FVS.
- Proficient in Microsoft Office Suite (Word, Excel, PowerPoint, Access).
- Participated in field classes to meet with land managers and examine natural resource issues related to forestry, fisheries, mining, wildlife, and watershed management in Oregon, Washington, Idaho, Montana, and North Carolina.
- Member, Society of American Foresters. Attended National Convention in 2009 and 2010 and Appalachian Winter Meeting in 2009 and 2010.
- Excellent written and verbal communication skills, including scientific writing, oral presentations, writing press releases and policy memos.
- Adept at communicating complex scientific information in a clear and effective manner, as well as identifying the policy and management implications of scientific research.