
**RESEARCH FOCUS:** The successful candidate will evaluate existing red spruce map products and integrate field and satellite data with previous products to achieve two objectives. For **Objective 1**, multiple red spruce data products (map, models, and data layers) will be identified, catalogued, and evaluated via an evidence review; results will be synthesized into a decision tree describing applicable uses for each product. For **Objective 2**, a data integration approach will be used to update and refine the current WV Department of Natural Resources Red Spruce (*Picea rubens*) Cover In West Virginia 2013 data layer in order to address knowledge gaps impeding effective management decision-making. The proposed synthesis is significant as it would guide decision-making and identify the specific circumstances under which each map product is most useful for management, conservation, and restoration activities. Furthermore, the products generated above through Objectives 1 and 2 will provide critical and fundamental baseline knowledge that could be used for ecological forecasting of red spruce forest responses to climate change. The project will integrate field data collection, image analysis, and data synthesis.

**PREFERRED QUALIFICATIONS:** A background, including relevant course work, in ecology and remote sensing, strong communication and written skills, and quantitative skills or an interest in learning them.

**EXPECTATIONS:** The successful candidate will be expected to conduct high-quality research in collaboration with Dr. Axel and Dr. Palmquist, serve as a teaching assistant within the Department of Biological Sciences, present their research to the scientific community at regional and national meetings, and publish in peer-reviewed scientific journals.

**TIMELINE:** The position is available now and ideally the student would join us this summer to begin research on the project. However, a August 2021 or January 2022 start date are also possible.

**FUNDING:** Funding will consist of a combination of research and teaching assistantships for two years. A 12-month competitive stipend ($17,000), and full tuition waiver will be provided.

**HOW TO APPLY:** Interested students should apply by submitting the following to Dr. Anne Axel ([axel@marshall.edu](mailto:axel@marshall.edu)) and Dr. Kyle Palmquist ([palmquist@marshall.edu](mailto:palmquist@marshall.edu)): 1) cover letter indicating research interests, career goals, and your availability to start the position (no longer than 1 page), 2) CV or resume, 3) unofficial transcripts, 4) GRE scores, and 5) contact information for three professional references.
Review of applications will begin immediately and continue until a candidate is selected. We will contact you to discuss your research interests and goals for graduate school to determine if you would be a good fit for the position. If selected, a full application must be submitted to the Department of Biological Sciences at Marshall University, Huntington, WV. More information about the Department and its programs can be found here: https://www.marshall.edu/biology/. Application requirements for admission to the graduate program can be found here: https://www.marshall.edu/biology/admission/.

Marshall University is in a fantastic, affordable college town, located on the Ohio River in the beautiful state of West Virginia. The town is small enough to get around on foot and bike, but large enough to support a variety of restaurants and other cultural activities. Huntington is a vibrant community with a lively downtown with a variety of locally-owned restaurants and a burgeoning craft beer industry. The city of 50,000 hosts festivals throughout the year and boasts several large parks with hiking and biking trails. Huntington and the surrounding area offer ample recreational opportunities (hiking, skiing, rafting), along with proximity to larger cities, including Louisville, KY, Cincinnati, OH, and Columbus, OH. The Department of Biological Sciences contains expertise in a variety of biological fields, including but not limited to ecology, evolution, herpetology, and physiology.

We strongly encourage students from diverse backgrounds and experiences to apply. Feel free to contact us with questions at any time.

Best,

Kyle

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Kyle Palmquist

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