

Postdoctoral Research Opportunity

Modeling future scenarios: Climate Change Assessment and Strategic Habitat Conservation in the Puerto Rico and US Virgin Islands

USDA Forest Service International Institute of Tropical Forestry (IITF)

North Carolina State University (NCSU)

Posted: September 29, 2011.

Postdoctoral position available: A one year joint appointment with the USDA Forest Service International Institute of Tropical Forestry (IITF) and North Carolina State University. The successful applicant will have a Ph.D. in natural sciences and strong skills and interest in computer modeling, statistical analyses, GIS and remote sensing analyses, biodiversity and conservation. The position begins October/November 2011. The opportunity will remain open until filled.

Background: Natural resource management agencies are challenged to predict and respond to the potential effects of a changing climate and land use. Vegetation dynamics, urbanization, sea-level rise, and changes in hydrology will directly and indirectly impact habitat availability and quality and are of concern to agencies seeking to implement long-term conservation strategies. Primary disturbance agents in the Caribbean such as hurricanes, flooding, fire and drought will be impacted by changes in climate and affect vegetation, land cover, and wildlife habitat. Conservation of fish, wildlife, plants, and their habitats will require the development of a conservation system with the ability to predict, evolve, monitor, and adapt to these changing conditions. Modeling the future range of landscape conditions under a variety of policy and land use scenarios is an effective way to provide managers the information they will need to adaptively manage for species conservation.

The goal of this project is to create spatially explicit models of future vegetation cover under different climatic and land use scenarios and to develop scientific products (peer reviewed publications, maps, geospatial datasets) that can serve as a basis on which to model potential species and habitat responses to change. These in turn can serve as tools in developing and assessing conservation management plans that take into account future scenarios.

The postdoctoral position will be based at the USDA Forest Service International Institute of Tropical Forestry, located on the grounds of the University of Puerto Rico Botanical Garden in Río Piedras, Puerto Rico (San Juan Metropolitan area). The selected candidate will work with Dr. William Gould (US Forest Service) and the research team in the IITF GIS and Remote Sensing Laboratory and in collaboration with Dr. Jaime Collazo of North Carolina State University (NCSU). The position will be administered through NCSU and the selected candidate will be an employee of NCSU with an adjunct position at IITF. The position will collaborate closely with the Caribbean Landscape Conservation Cooperative (CLCC).

The selected candidate will work with existing geospatial datasets, create new geospatial information, and assess vegetation dynamics by calibrating existing models, including Vegetation Dynamics Development Tool (VDDT) to local conditions for the ecological processes most relevant to the ecological systems in Puerto Rico and the USVI.

Candidates should have the following skills:

- Educational background (Ph.D.) in computer modeling, geospatial statistical analyses, environmental studies, or related disciplinary areas;
- Experience and proficiency in GIS software and analyses, "R", and other statistical software (e.g., SPSS);
- Familiarity with climate modeling, VDDT helpful;
- Motivation to work independently; and
- Excellent computing and writing skills, motivation to publish in peer-reviewed journals.

Applicants should submit the following to William Gould at wgould@fs.fed.us:

- Cover letter summarizing research interests and academic and professional background
- Resume/CV
- Names and contact information for three references.