TITLE: Postdoctoral Research Associate

DEPARTMENT: Department of Wildlife, Fisheries, and Conservation Biology

DATE: September 2022

**REPORTS TO:** Associate Professor

**Purpose:**  The postdoctoral associate will conduct research to incorporate disturbance through time and remote sensing into a scaling framework of forest structure and functional diversity using in-situ and remotely sensed data, as well as assisting with other projects to provide research support for the PI.

**Essential Duties and Responsibilities:**

Specific objectives may include:

1) *Spatio-temporal modeling of forest structure and diversity*. We will link our theoretical framework with time series of *in-situ* forest data and RS disturbance and climate/geodiversity data to build predictive models of the abundance of woody vegetation functional types and species richness from the canopy to the forest floor.

2) *Using RS data inputs in Obj. I models to make predictions across space.* We will input RS data on size structure, disturbance, and climate/geodiversity into the models from Obj. I to predict the abundance of woody vegetation functional types and species richness from the canopy to the forest floor across space to fill in the gaps in unsampled areas.

*3) Using Obj. I models to make predictions across time* We will use models from Obj. I to forecast the abundance of woody vegetation functional types and species richness into the near future in Smithsonian ForestGEO plots. This third objective will require some field work, likely at Harvard Forest.

4) Prepare manuscripts for peer review that address objectives 1 – 3.

5) Co-mentor a MS student on the project.

6) Pursue other lines of questioning with available data, depending on candidate interest.

7) Assist PI with other research-related tasks as needed and time allows.

8) In completing these objectives, the postdoctoral associate will be responsible for data curation and management, writing and archiving analytical code to conduct analyses and present findings, report writing and manuscript preparation, presentations to stakeholders, and providing assistance to the funding agency in implementing findings of research into policy.

9) Develop and maintain professional relationships that reflect courtesy, civility, and mutual respect.

10) Build productive relationships with internal and external constituencies.

11) Utilize coaching and mentoring methods which provide an environment that is anticipatory, supportive, and encourages constructive feedback on performance.

12) Commit to organizational improvement by identifying opportunities to improve, and recommending possible alternatives for a situation.

13) Perform other reasonably related duties as assigned.

**Knowledge and Skills Qualifications:**

**Required:**

* PhD in Ecology, Geography, Data Science, or related field (e.g. Ecology and Environmental Sciences) at time of hire.
* Experience with management of big data sets (e.g., USFS Forest Inventory and Analysis, remotely sensed data, such as LiDAR).
* Experience with analyses in R, Python, and STAN (e.g., deep learning, Bayesian regression models, spatial analyses)
* Experience running analyses on a high-performance computing cluster.
* Demonstrated record of publishing peer-reviewed manuscripts.
* Demonstrated record of seeing projects through from start to finish.

**Supervisory Responsibilities:** The incumbent will be responsible for assisting graduate and undergraduate students in area of expertise.

**Work Environment:** Work may be performed in a laboratory, classroom, office or remote  
field site. Workload priorities may need to be shifted and schedules changed in order to meet multiple deadlines.

**Work Year:** Full-time, fiscal year.

**Work Schedule:** Normal University of Maine business hours are Monday through Friday  
8:00 am to 4:30 pm. Work outside of normal business hours will be necessary in order to complete the requirements of the position.

**Position Type:** Soft money grant funded. Contingent on external funding and performance.

**Schedule for Evaluation:** In accordance with UMPSA agreement.

Appropriate background checks are required.

All UMS employees are required to comply with applicable policies and procedures, as well as to complete applicable workplace related screenings, and required employee trainings, such as Information Security, Safety Training, Workplace Violence, and Sexual Harassment.