

Science and Education at Congaree National Park

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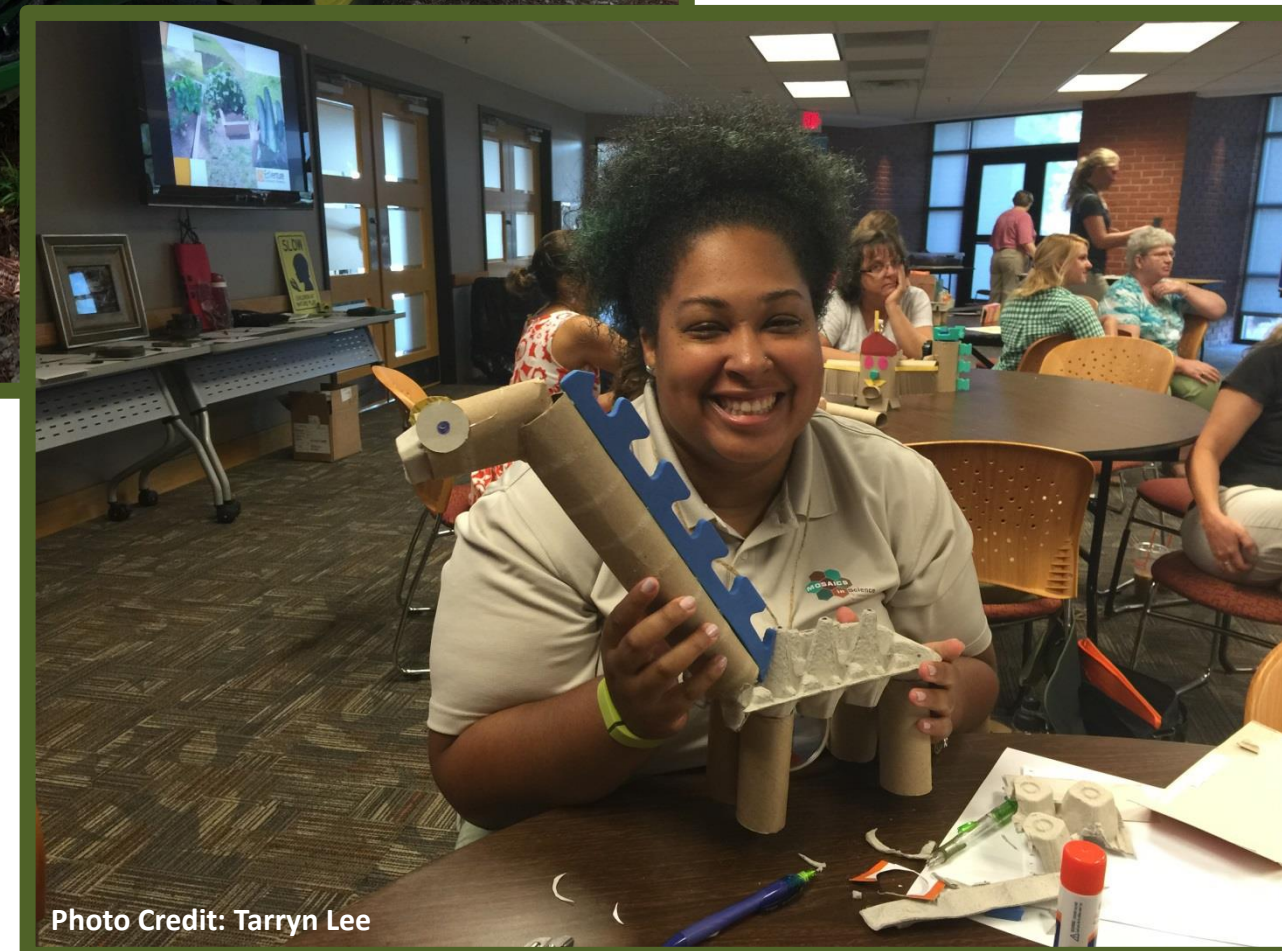
Introduction

Congaree National Park is located just outside of Columbia, South Carolina. The park comprises of the largest remaining spans of old-growth forest in the country. Congaree is home to a number of national and state champion trees, as well as a biologically diverse floodplain ecosystem.

The park's setting and resources offer unique opportunities for education and research.

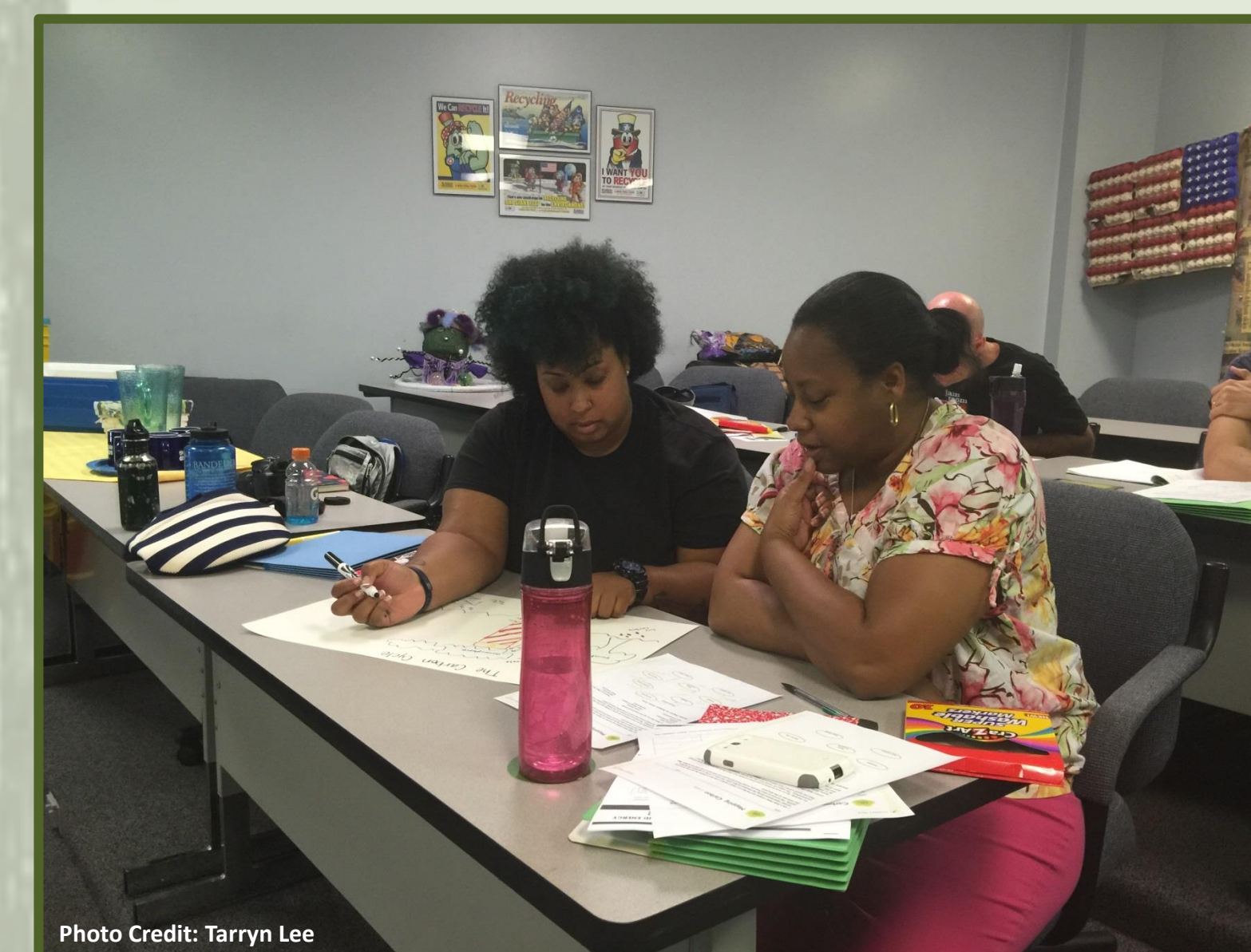
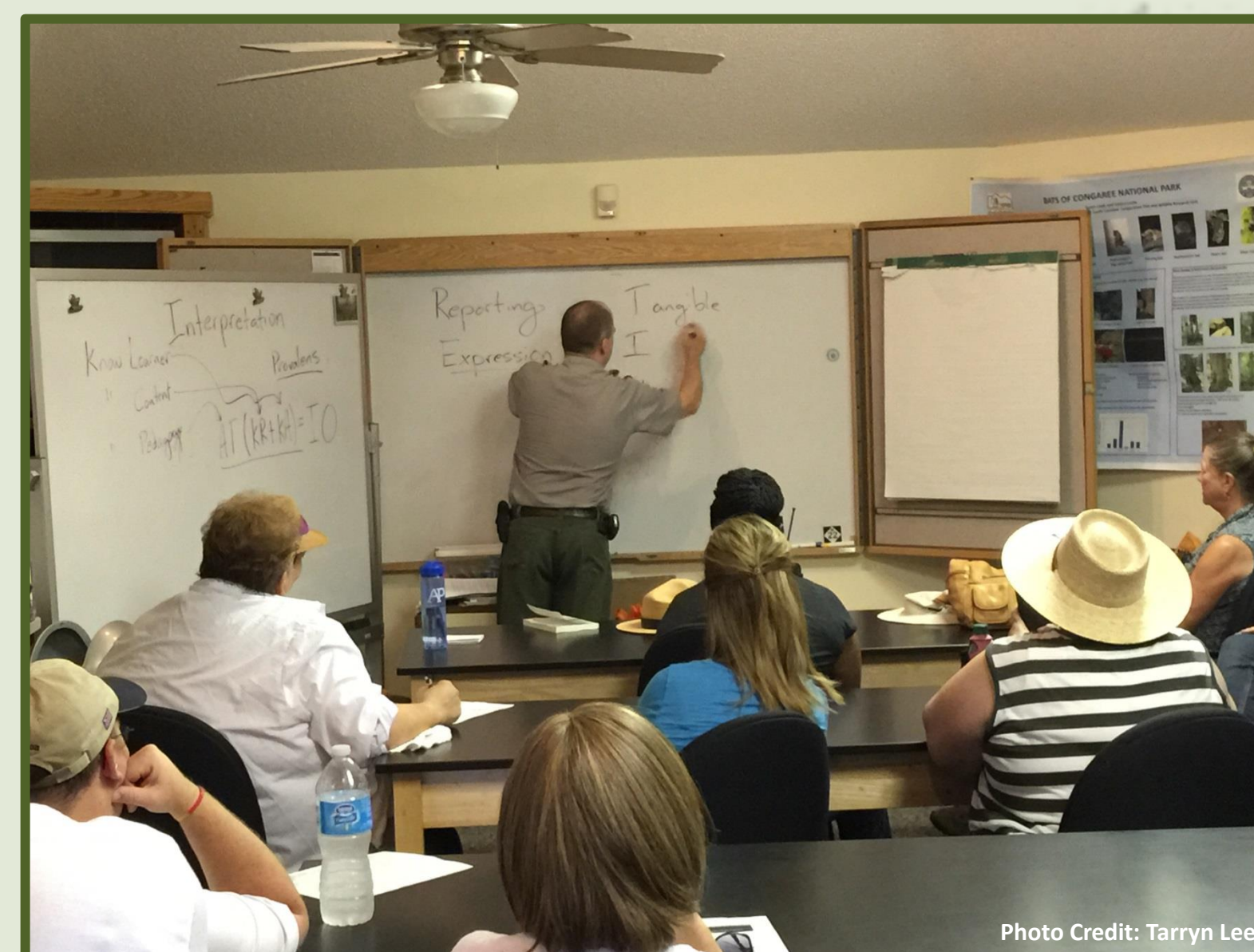
My internship consists of 3 major projects summarized in this poster:

- K-12 education workshop
- dragonfly larvae sampling
- climate data compilation



K-12 Education Workshop & Science Standards

My education project consisted mainly of a week-long K-12 teacher's workshop. This course, *The Science of Sustainability: A Multidisciplinary Conversation*, is presented to promote understanding and appreciation of floodplain forests through investigations of the water cycle, the carbon cycle, and climate change in Congaree National Park. The goal of the workshop is to engage teachers in the forest and floodplain science, with emphasis on the Framework for K-12 Science Education and the new South Carolina science standards, as well as extensions to ELA, social studies, math, art, and physical education standards and performance expectations. In addition to the education workshop, I was tasked with condensing the state's new science standards into note cards relating to the science of Congaree National Park for the use of park staff for educational programming.

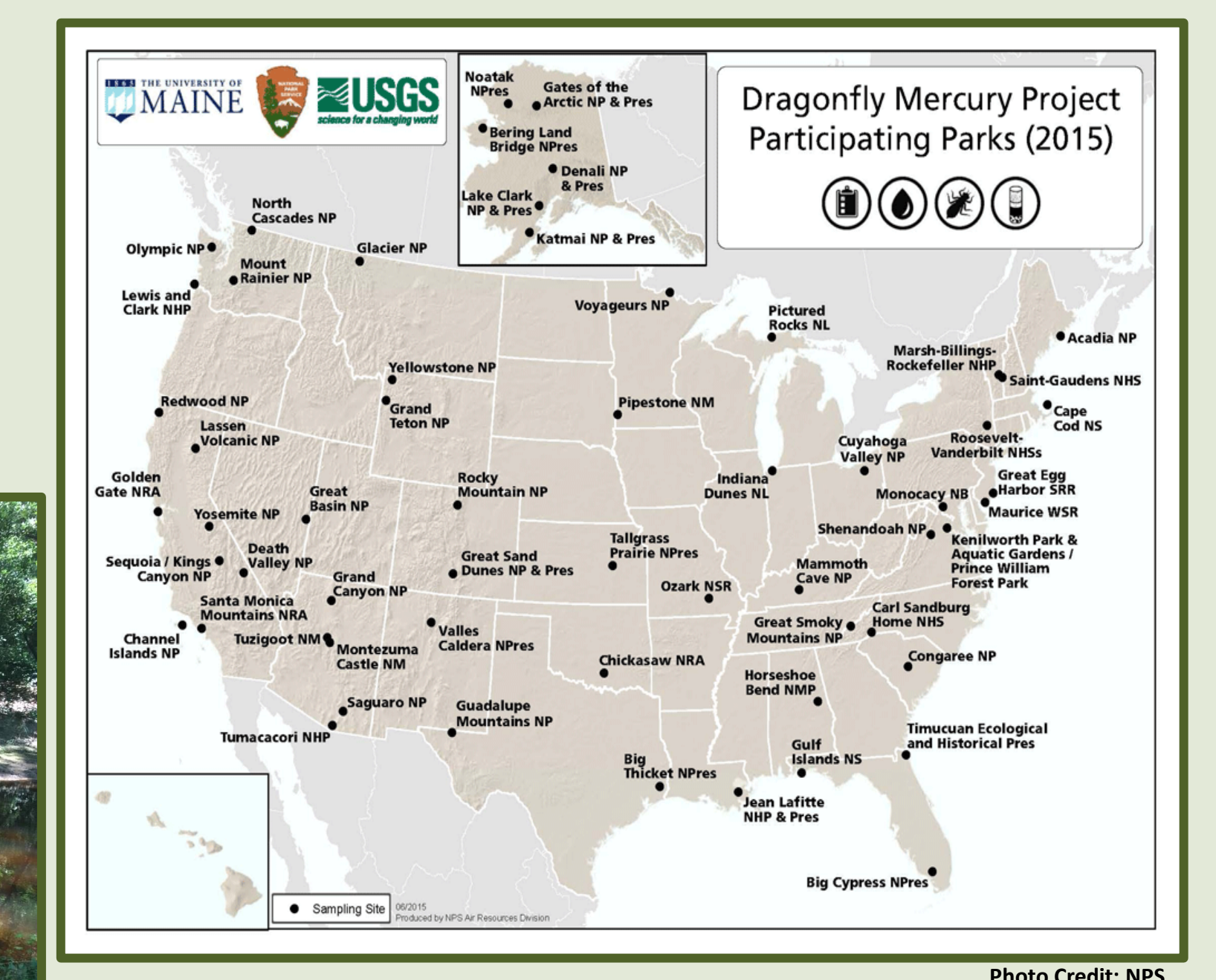
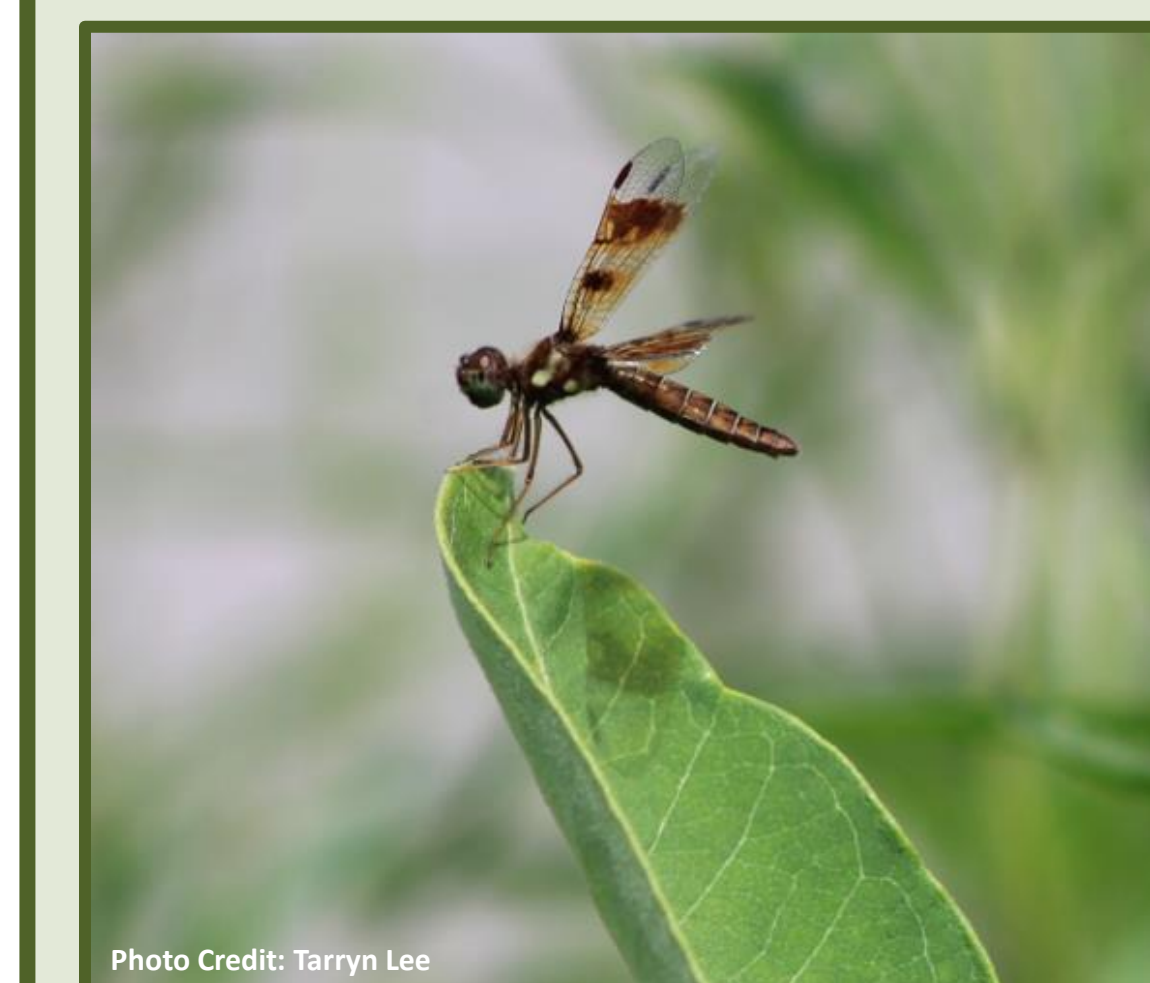


Dragonfly Mercury Project

Mercury is a toxic pollutant that can harm human and wildlife health and threaten the natural resources the NPS is charged with protecting.

Dragonfly larvae are currently being sampled for mercury levels in more than 40 national parks. This project engages students and visitors in national parks to collect dragonfly larvae from sampling sites to then be sent to the laboratories of the University of Maine, US Geological Survey, or Dartmouth College for mercury analyses. Water, sediment, and dragonfly larvae samples were taken from 3 sites at Congaree National Park and shipped to the University of Maine for analysis.

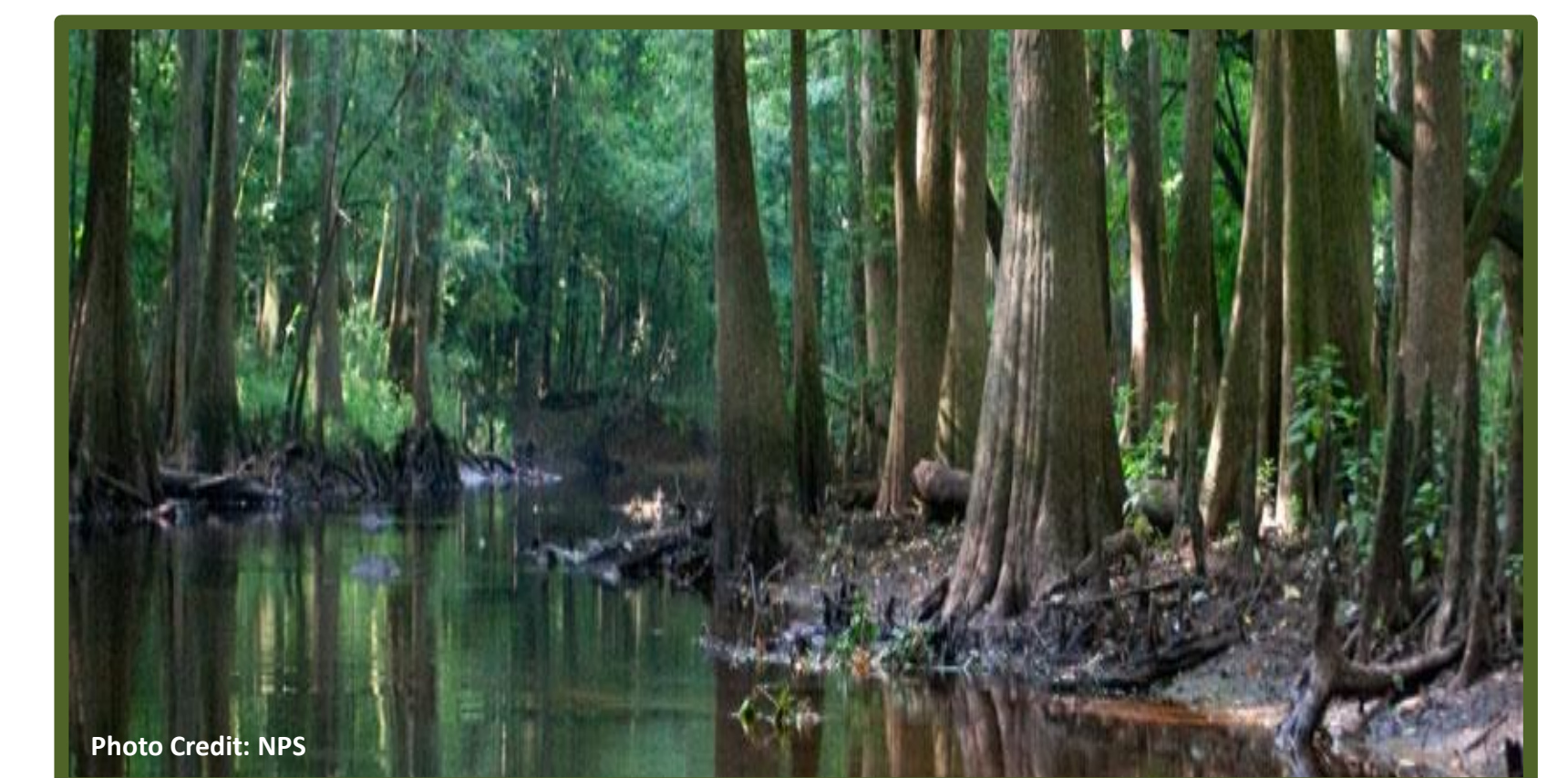
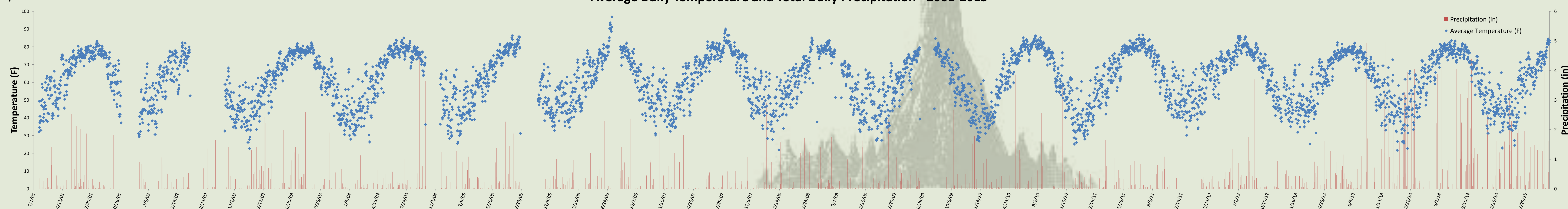
More information on this project can be found at www.nature.nps.gov



Climate Data Management

The Fire Weather Station at Congaree National Park is a Remote Automated Weather Station operated through a partnership with the South Carolina DNR and is used for resource management and prescribed burn planning within the park. The equipment includes a solar panel, an air temperature and relative humidity sensor, a fuel temperature and moisture stick, a rain gauge, a tower with wind speed and direction sensors, and a Geostationary Operational Environmental Satellite (GOES) antenna. The purpose of the data management project is to compile – for the first time ever – a composite, long-term weather data time series that can be used to begin to assess climate norms. This required compilation, processing, cleaning, and metadata documentation for a number of separate data sets. This data will be used for ongoing projects in the park relating to hydrology and phenology as well as to identify data gaps and future needs.

Average Daily Temperature and Total Daily Precipitation - 2001-2015



Acknowledgements

I would like to thank the Geologic Society of America and the National Park Service for this opportunity, I am honored to have been a part of this program. I would also like to thank my mentor, David Shelley, for the leadership and support that he has provided me throughout the course of this project.

