

Forest Climate Change Initiative (FCCI)



The University of Maine's **Center for Research on Sustainable Forests** has initiated an effort to better coordinate regional research and scientists working on the potential effects of climate change on forests. The University of Maine has significant expertise on climate and forest resources, which exists across academics units, centers, and institutes. The FCCI web portal is intended to serve as a point of access to these resources and encourage networking among university expertise as well as external stakeholders.

crsf.umaine.edu/forest-climate-change-initiative/

FCCI Scientist Profile



Daniel Hayes

Assistant Professor

Director, Wheatland Geospatial Laboratory

Institutional Affiliations: School of Forest Resources, Center for Research on Sustainable Forests

Research Focus: Terrestrial ecology, carbon cycle science, remote sensing, ecosystem modeling

Daniel Hayes is Assistant Professor in the School of Forest Resources at the University of Maine. His research involves the science and tools for understanding the impacts of climate change and disturbance on forest carbon cycle processes and carbon-climate feedbacks at regional to global scales. Dan holds degrees in forestry from the SUNY College of Environmental Science and Forestry (B.S.), University of Maine (M.S.), and Oregon State University (PhD.). Dan has been a faculty member since 2015 after doing his post-doctoral research at the University of Alaska and being a research scientist at the Oak Ridge National Laboratory.

Forest Climate Change Research Focus

Climate Change and the Forest Carbon Budget

Globally, forests represent the largest terrestrial sink for CO₂, effectively slowing the rate of buildup of greenhouse gases in the atmosphere. Forests face serious threats from climate change, disturbances, and land use conversion that could lessen their critical role in curbing future climate warming.

- Managing forests with the goal of enhancing carbon stores as a strategy for mitigating future climate change is a growing challenge that requires new environmental monitoring tools and data streams.
- Remote sensing technologies (spanning the range of photos from unmanned aerial vehicles, airborne laser scanning and satellite imagery) are revolutionizing the way we inventory and monitor changes in the uptake and storage of biomass carbon in our managed and unmanaged forests.
- Ecosystem modeling for assimilating these data streams, and using process-level understanding to predict how forest ecosystems will respond to future changes.



A map of forest biomass derived from airborne laser scanning data sets (Ayrey et al.).