

The Pikes Peak Forest Dynamics Plot Long-term Forest Resilience

Part of the McIntire-Stennis Cooperative Forestry Research Program A trend of warmer and drier conditions in the western U.S. has accelerated changes in Colorado's forests during the 21st century. In the past 20 years, over five million acres in the state have been affected by pine and spruce beetle epidemics, with millions more burned by wildfire. Large, long-term research sites can address cross-scale dynamics of these changing forest environments and their disturbance regimes. Since 2016, the Pikes Peak Forest Dynamics Plot has provided opportunities to develop innovative research methods, build collaborative partnerships and cultivate the next generation of scientists and professionals in forest management and restoration.



Collaboration

A collaborative, interdisciplinary group of students, Colorado State University researchers, USDA scientists and land managers have characterized the plot. They are undertaking mutually beneficial forest management actions to generate new understanding. This human coproduction of knowledge will help Rocky Mountain forests and their surrounding communities adapt to a new future.

Cultivation

This intensive inventory of trees and understory vegetation will be used for long-term comparisons of actual and simulated treatments to the plot. This pivotal research will fill critical knowledge gaps about forest resilience to disturbance, and reveal the mechanisms driving wildland fire behavior and how it spreads through complex environments. Advancing technologies in forest research include the use of remote sensing, computer simulation and meteorological technology. These have the potential to transform monitoring of treatments and forest community development. Without long-term McIntire-Stennis support, the development of these new field monitoring techniques and technologies would be vastly limited.

Innovation

Establishing the Pikes Peak Forest Dynamics Plot has led to numerous educational and outreach opportunities.

7	Research publications
14	Presentations
8	Grant submissions





These drone-based structures from motion point clouds use over 600 georectified images, and can advance decision support tools for monitoring and adaptive management.



2016 Monitoring

Patterns

Processes

Dynamics









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