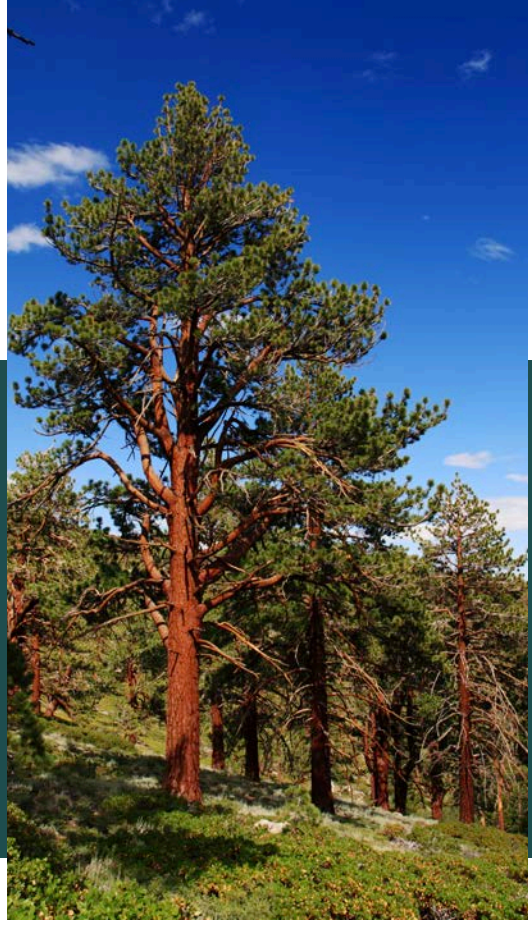
Forest Management Workshop: Managing Today's Forests for Tomorrow's Challenges

Climate considerations for management in the Black Hills, South Dakota



This workshop is designed to equip managers with the information and strategies necessary to incorporate climate adaptation into their silvicultural planning. Workshop participants will consider climate impacts and vulnerabilities specific to dry-mixed conifer forests in the Black Hills, and identify silvicultural strategies that increase resilience to expected future environmental shifts within these forests, while continuing to meet project goals and objectives.

Anticipated Future Stressors

Warming Temperatures

An increase in average temperature will cause shifts in the abundance and distribution of vegetation, and heighten the prevalence and negative impacts of disturbances including drought, wildfire, and insect outbreaks.

Greater Fire Risk

Warmer temperatures, drier conditions, and fuel buildup is shifting fire regimes toward more frequent, high-severity fires. Post-fire, lack of surviving seed sources and unsuitable climate conditions can lead to vegetation-type conversion from forest to non-forested landscapes in high-severity burn patches.

More Frequent Pest and Pathogen Outbreaks

Warmer termperatures will lead to greater instances of forest pests and pathogens, including mountain pine beetle and ticks. Fewer frost-free days can increase bark beetle life cycles. Drought stress can weaken trees, leading to higher susceptibility to diseases and pests.

Shifting Precipitation Trends

Extreme precipitation events (>1") are projected to increase, leading to heightened flood risk. Projected increases in hail events will lead to higher damage potential. Increases in the frequency and magnitude of drought will have impacts to vegetation and ecosystem function, and can amplify the risk of wildfire or pest outbreaks.