

Analyzing Conifer Encroachment and Aiding Grazing Management Decisions in Science-Management Partnerships

Abstract:

The Rocky Mountain Research Station has partnered with the Kaibab National Forest and the Geospatial Technology Applications Center to quantify encroachment pinyon and juniper in the Southwestern US. The application being developed is based on tree cover estimates from 1986 to 2023 derived from the Thematic Mapper and Sentinel archives and airborne lidar. This partnership and corresponding application creates a highly useful and detailed depiction of encroachment by size class enabling treatment decisions to be made with precision and cost effectiveness.

Similarly, using forage and fractional cover estimates from the Thematic Mapper and Sentinel archives in rangelands of the western US have led to the development of a cutting-edge stocking rate decision support tool. The user driven tool automatically engages the forage and cover data, and landscape parameters to interact with water sources and topography in tandem with estimated forage preferences and suggested land management goals to provide ranges of stocking rates by native and domestic ungulates. The tool is found at Stock-Smart.com and neither of these projects would be possible without the ubiquitous availability of spaceborne land observations.

Bio:

Matt Reeves is a Research Ecologist with the Rocky Mountain Research Station in Missoula. There he specializes in applying remote sensing and modeling to characterize ecological dynamics of rangelands in a manner relevant to managers. His research follows two basic themes including climate change, and vegetation and fuel dynamics.

