



Paul Robinson, the force behind the installation, hiking up to the ridge top..... behind the mules.

MOUNTAINOUS ECOSYSTEM SENSOR ARRAY (MESA)

Taylor Wilderness Research Station Project

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Wilderness areas are some of the most pristine environments we have in the lower 48. One key function they serve is to provide us with a benchmark as the more human-dominated ecosystems undergo rapid change.

However, wilderness areas are generally underutilized in this regard due to a lack of access and biophysical data. We hope to improve the value of wilderness ecosystems to the greater scientific community by providing a long-term data base of climate and other biophysical data.

To accomplish this we are installing a 3D wireless sensor network that is designed to operate unattended for up to one year. The data will be transmitted on a wireless network to the Taylor Wilderness Research Station and then be made available to the public through the satellite uplink at the station and the world wide web. The sensor network will measure atmospheric CO₂, temperature, precipitation, relative humidity, incoming and outgoing radiation, snow depth, leaf wetness, soil moisture and tree growth.



Power will be provided using renewable wind and solar systems. The sensors will be arrayed within a forest canopy at three elevations, the mouth of Cliff Cr, 1500m, and 1840m up the south west face of Cliff Creek. The name of the sensor network is the Mountainous Ecosystem Sensor Array (MESA). MESA is designed to measure environmental conditions in the steep terrain that defines so much of the western USA. Using this sensor network, scientists from multiple disciplines will be better equipped to use wilderness areas as a benchmark and to contribute to the sustainability of such a precious and unique resource.

Mules pack the heavy equipment up to the higher research sites across from Taylor on the top ridge, for crew to install sensors in tops of trees.

