

## **Spatial and Temporal Distribution of Snowmelt and Snow Persistence on the Grand Mesa**

*Meghan Cline, Environmental Science Student, Colorado Mesa University and Joel Sholtes, Instructor, Civil Engineering CMU - CU Boulder Partnership Program*

Snow is the major form of precipitation within the Upper Colorado River Basin. Current snow data collection comes from Snow Telemetry or SNOTEL sites, which are run by the Natural Resources Conservation Service (NRCS). SNOTEL sites are sparse and do not cover the wide varieties of topography, elevation, and vegetation that all influence snow water content and persistence. This project examines potential patterns of snowmelt through satellite technology (MODIS), contributing to the state snow data creating a more accurate yearly water assessment. The MODIS (Moderate Resolution Imaging Spectroradiometer) data used for this project is MOD10A1 fractional Terra product 8- day land cover. Assessing these factors, which influence the rate of snowmelt, snow water content, and snow persistence, outside of SNOTEL sites will provide more precise data pertaining to the amount and variability of snowmelt precipitation that reaches the Colorado River headwaters.

### **Biography:**

Meghan Cline is a 4<sup>th</sup> year student at Colorado Mesa University studying environmental science. She has worked as a research assistant studying water yield sensitivity due to snow loss, flown over the Upper Colorado River Basin studying the connection between community and water, and takes students on rafting trips to help power their passion for protecting the environment. She hopes to find a career following and studying the hydrologic cycle with the changing environment. A perfect day at work could be on a pair of skis or a pair of oars.