

The La Sal Mountains host a range of ice-bearing (or periglacial) landforms that contribute water to the stressed Colorado River. It is fascinating in and of itself that ice is present in the La Sal sky island above the desert of the Colorado Plateau. Yet in the La Sals we do not know how much ice there is and where ice persists. So, we are working to estimate how much ice is buried under loose rock in the La Sals Mountains. We mapped the extents of periglacial landforms across the range and have estimates of the movement of these landforms from satellite data. To calibrate our ice volume estimates across the La Sals, we will produce a detailed map of the thickness and ice content of a single rock glacier (one type of ice-bearing landform) north of Mount Tukuñivatz. We are using multiple geophysical methods and Bayesian inversion techniques to image the 3D ice content of this rock glacier. To test the resilience of this rock glacier to climate change we will simulate its evolution with a numerical model, constrained by the geophysical data we collect. We expect that our ice volume estimates will be included in projections of future water resources downstream of the La Sals.