

Daily precipitation, near-surface air temperature, and snow conditions for the Upper Colorado River Basin (UCRB) were derived from the European Centre for Medium-Range Weather Forecasts (ECMWF) ERA5-Land Daily Aggregated dataset (ECMWF/ERA5_LAND/DAILY_AGGR) using Google Earth Engine (GEE). The extraction covered January 2, 1950 through December 31, 2025. The spatial domain was defined using the U.S. Geological Survey Watershed Boundary Dataset boundary for the Upper Colorado Region (HUC2 14). ERA5-Land variables were spatially averaged across the complete HUC2 polygon for each day, producing a single basin-wide daily value for each variable.

Variables extracted included 2-m air temperature (temperature_2m), total precipitation (total_precipitation_sum), snow cover (snow_cover), snow depth (snow_depth), and snow water equivalent (snow_depth_water_equivalent). Near-surface air temperature was converted from Kelvin to degrees Celsius. Daily precipitation depth was converted from meters to millimeters per day, and snow water equivalent was converted from meters of water equivalent to millimeters. Snow cover was retained as percent cover, and snow depth was retained in meters. Thus, precipitation represents the spatially averaged daily precipitation depth across the HUC2 rather than a basin-total precipitation volume.

Spatial reductions were performed at a nominal scale of 11,132 m using the EPSG:4326 coordinate reference system to maintain a consistent grid alignment throughout the extraction period. For each daily ERA5-Land image, GEE calculated the spatial mean of each variable within the HUC2 boundary. Pixel-count diagnostics were retained for quality assurance and to document the number of valid ERA5-Land grid cells contributing to each daily basin-wide estimate. The final dataset contains one record per day and includes date fields, basin-average precipitation, near-surface air temperature, snow-cover percentage, snow depth, snow water equivalent, and associated valid-pixel counts. Basin geometry was used only to define the spatial reduction domain and was not included in the exported tabular dataset.

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