



My image uses Collection 2 Level-1 data captured by the Landsat 9 OLI TIS satellite. The images were captured on November 24th, 2022 between 18:15:45 and 18:16:17 Greenwich time. The images display WPS Path 039 and WPS Row 035. This study area covers portions of Arizona, California, and Nevada, including the Western end of the Grand Canyon, Lake Mead, the Colorado river, the Mojave Desert, Mount Charleston, Bullhead City, the Hoover Dam, and Las Vegas. The mountains show up very brightly, likely due to snow cover. The snow has high reflectivity and doesn't absorb much of the sun's radiation. Conversely, the desert valleys are a darker orange, the dry sand is a much better absorber of radiation, and can get very hot. Additionally, there are even darker brown areas along water bodies and overlapping urbanized zones. The moisture from the bodies of water has a high specific heat, resulting in higher emissivity of these areas. Additionally, the urban regions appear darker on the map because of the high emissivity of pavement and other impermeable surfaces that result in urban heat islands. This image might be useful for monitoring drought in the region through surface moisture mapping, and how extreme heat events impact vegetation stress.