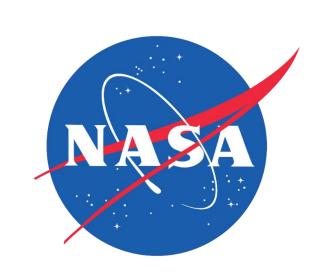


Great Salt Lake Health & Air Quality

Monitoring Lakebed Exposure and its Impact on Air Quality and Environmental Hazards in the Great Salt Lake Watershed



The Great Salt Lake (GSL) is a terminal saline lake located in northern Utah, USA. Water inflow has declined rapidly over the last forty years due to human withdrawals and climate change. Lake levels have been lowered which has exposed over 50% of the lakebed to erosion. There is a public health risk tied to the subsequent increased frequency and intensity of regional dust storms caused by airborne lakebed dust under specific meteorological

conditions.



Climate Change



Public Health



Air Quality

Lakebed management practices **Community Needs** State government,

Targeted air Advocacy monitoring efforts for GSL efforts stewardship

academic, non-profit, local

organization partnerships

Aerosol Optical Depth (AOD) **ENVIRONMENTAL** Nitrogen Dioxide (NO2) **VARIABLES** Formaldehyde (HCHO) Race Income SOCIAL Age < 5 **VARIABLES** Age > 64

Preexisting Medical Conditions

Redlining legacy results in inequitable pollution exposure

Multiple point-source pollutants impact those near GSL

GSL dust exacerbates environmental health disparities

ENVIRONMENTAL JUSTICE

Redlining

GSL Dust

Industry Pollution

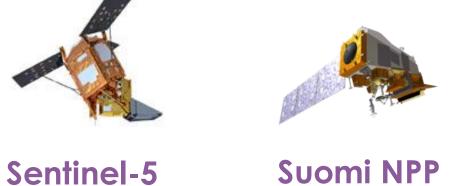
NASA DEVELOP is using Earth observations to better understand dust, air quality, lakebed exposure, alongside community vulnerability, at the Great Salt Lake.

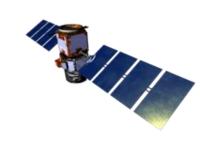












CALIPSO

MODIS 5, 7, 8 **MODIS** SATELLITE IMAGERY, GROUND SENSOR ENVIRONMENTAL DATA, DEMOGRAPHIC DATA

Seasonal Trends

Dust and Air Quality Indicators



Case Studies

Dust Event Days (DEDs) Analysis



Pollution & Social Vulnerability

Dust and Air Quality Vulnerability

Declining lake levels are associated with elevated AOD from dust seasons







High (2011 in light blue) & Low (2021 in dark blue) Lake Surface Area during the study period.

Team Members









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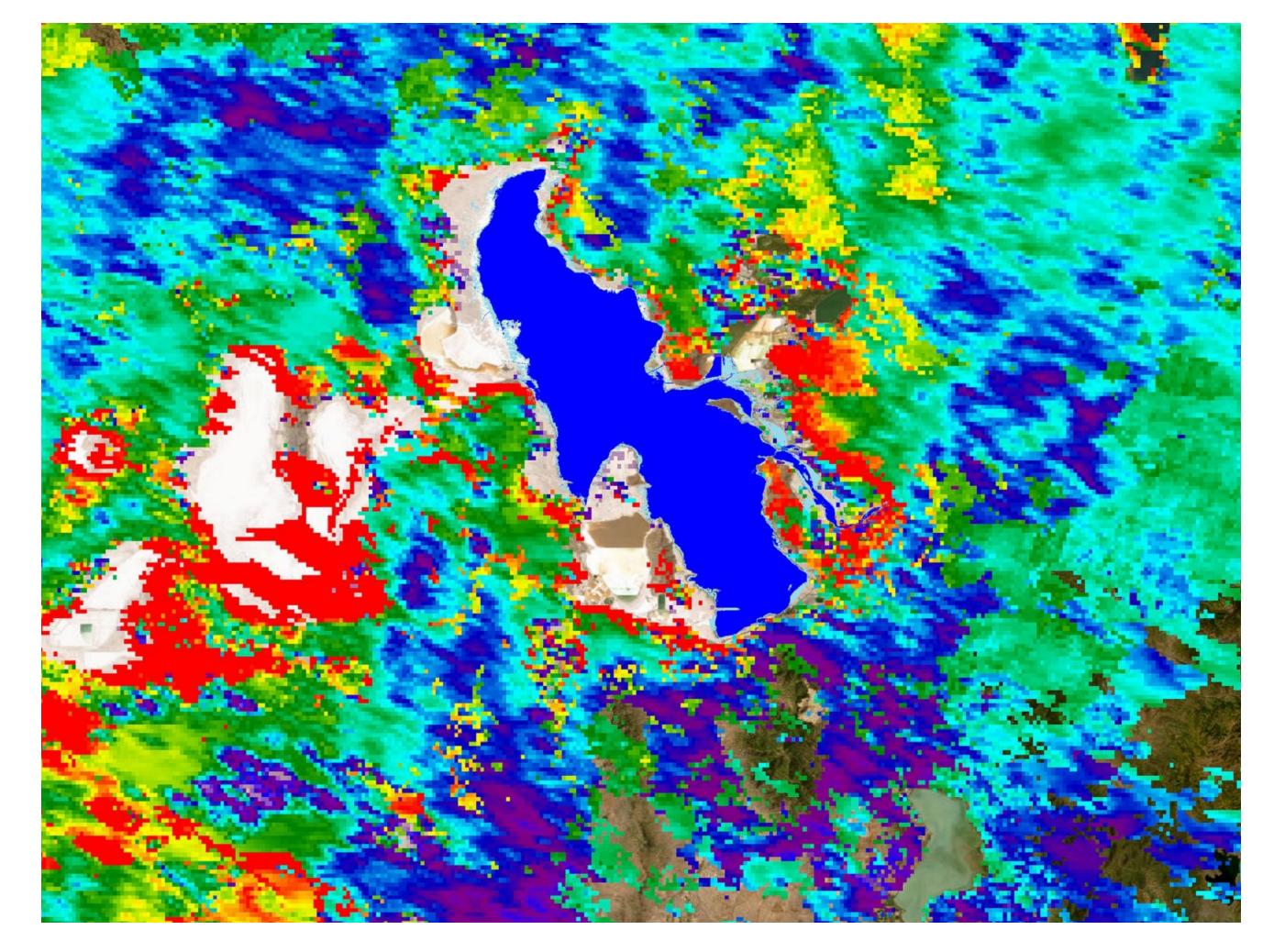
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Project Partners

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<u>LUEVELUP</u>