



UTAHVIEW 2019 - 2020



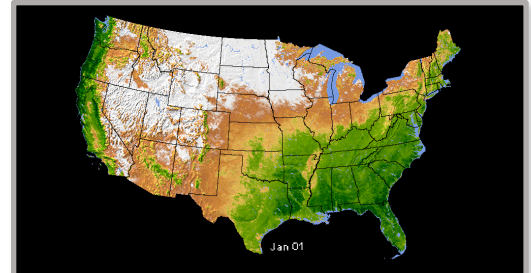
UTAHVIEW 2019 - 2020 ACTIVITIES

UtahView is hosted by the Remote Sensing/GIS Laboratory in the Quinney College of Natural Resources at Utah State University in Logan, Utah. Dr. R. Douglas Ramsey is the UtahView Principal Investigator and Ellie Leydsman McGinty is the UtahView State Coordinator. During GY19, UtahView continued to develop scripts in [Google Earth Engine](#) and continued to create maps for the Utah As Art collection.

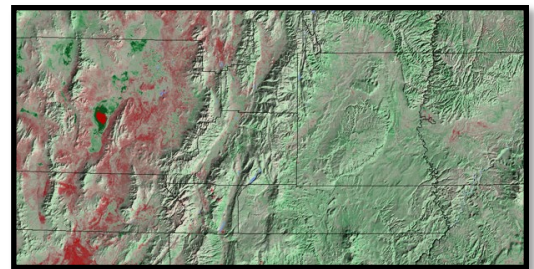
The following **Google Earth Engine** scripts were developed by Dr. R. Douglas Ramsey:

- 1) **Landsat/Sentinel Mosaic:** This script generates an up-to-date state mosaic using Landsat OLI or Sentinel-2 imagery. The mosaic is fused with a hillshade and then sharpened using a 3x3 convolution filter.
- 2) **Green Wave Visualization:** This script generates a 17-year average NDVI for 46 8-day periods that represent the average photosynthetic activity across one year. The green wave visualization combines Terra and Aqua MODIS 13Q1 products. The output is an [animated image](#) that is visualized over a shaded relief.
- 3) **Landscape Disturbance Index:** This script applies a disturbance index developed by [Mildrexler et al. \(2007\)](#) to the Landsat 5, 7 and 8 time series to identify deviations of a selected year from average normal values. The disturbance index (DI) is based on a ratio between yearly maximum surface temperature (LST) and yearly maximum NDVI. The index for a given year is generated and then compared to the average index of the preceding years. Further details can be found [here](#).
- 4) **Steady-State Plot:** This script generates a “steady-state” plot for a defined polygon. The plot is based on the average NDVI and the standard deviation of NDVI, both of which are calculated on a yearly basis for a selected month. The outputs can indicate if a landscape disturbance has forced a permanent transition to another land cover state. An example of the script output can be found [here](#).

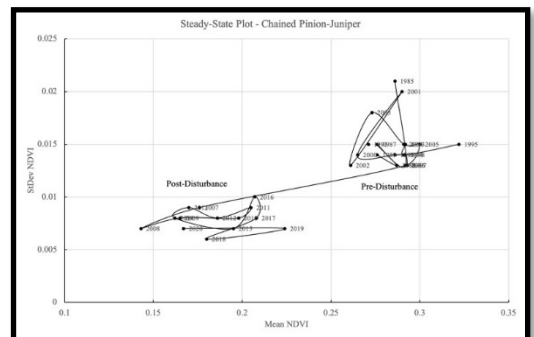
The **Utah As Art map collection**, a localized version of the [USGS Earth As Art program](#), uses Landsat and Sentinel-2 imagery to create maps that increase geographic awareness and literacy, demonstrate one of the many values of satellite imagery, and display the diverse landscapes of Utah. The following 10 maps have been created by Ellie Leydsman McGinty: Bonneville Basin, Canyonlands, Capitol Reef, Goosenecks, Great Salt Lake, Lake Powell, San Rafael Swell, Uinta Mountains, Utah Lake, and Zion Canyon. These maps are currently located on Google Drive and are available for download at https://bit.ly/UtahView_UtahAsArt.



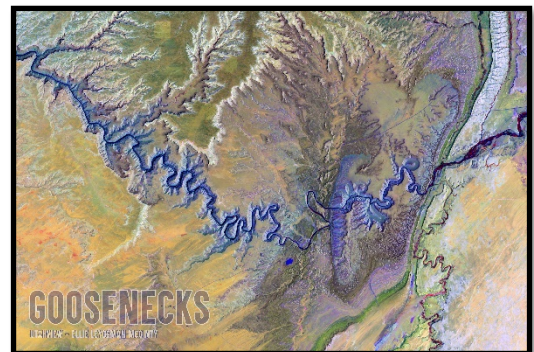
Output from Green Wave Visualization script.



Output from Landscape Disturbance Index script.



Steady-state plot for chained pinyon-juniper area.



Utah As Art – Goosenecks (San Juan River).

UtahView is a member of the AmericaView Consortium, a nationally coordinated network of academic, agency, non-profit, and industry partners and cooperators that share the vision of promoting and supporting the use of remote sensing data and technology within each state. AmericaView is funded by USGS grant agreement G18AP00077.



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BENEFITS TO UTAH

During the past few years, UtahView has participated in a series of educational events and outreach activities that promote and further the understanding of geospatial science and applications. In terms of education, UtahView has coordinated with local schools to work with primary, secondary, and higher education students. These events include Earth Observation Day (EOD) activities as well as hourly and daily workshops. Additionally, UtahView continues to partner with the Utah Geographic Information Council (UGIC) Education Committee during the annual UGIC Conference to develop a GIS Day for local high school students. Through these events, UtahView has assisted educators and teachers by providing instruction on how to best incorporate geospatial tools in the classroom. In terms of outreach, UtahView has participated in several activities and programs aimed at engaging community members and land managers. These events have not only provided unique learning opportunities, but they have assisted people in identifying tools and programs which can provide value to management practices.



UTAHVIEW CONSORTIUM MEMBERSHIP

The UtahView consortium membership consists of [Dr. R. Douglas Ramsey](#), Professor in the Quinney College of Natural Resources and Director of the Remote Sensing/GIS Laboratory at Utah State University; [Dr. Phoebe McNeally](#), Research Associate Professor and Director of the [DIGIT Laboratory](#) at the University of Utah; [Dr. Sowmya Selvarajan](#), Assistant Professor of Geomatics at Utah Valley University; [Ellie Leydsman McGinty](#), Researcher III in the Remote Sensing/GIS Laboratory and UtahView State Coordinator; and the [Utah Geographic Information Council \(UGIC\)](#). Collectively, these consortium members bring a wealth of scientific, outreach, and technical experience to the urban, rural, and wildland regions of Utah.



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