



KANSASVIEW 2022 - 2023

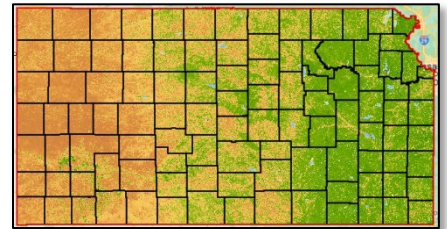
AmericaViewSM
Empowering Earth Observation Education
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KANSASVIEW 2022 - 2023 ACTIVITIES

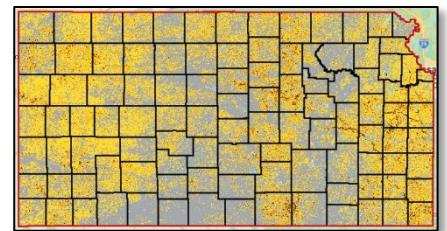
The Sentinel GreenReport is a Google Earth Engine (GEE) application that monitors vegetation condition and change across the United States. The Sentinel GreenReport uses Sentinel-2 imagery to visualize a vegetation index called NDVI. NDVI is a surrogate for photosynthetically active vegetation.

Four greenness maps are generated in this application and include the Current greenness (NDVI), Greenness change from the previous period, Difference from the same time last year, and Difference from the long-term average greenness. These maps can be used to monitor cropland and forage productivity as well as assess vegetation damage due to natural disasters such as drought, flooding, fire, and hail.

In FY22, KansasView enhanced the Sentinel GreenReport to allow users to define areas of interest to visualize and explore vegetation condition and change (shown below). First, the users define an area of interest (AOI) using rectangle, polygon, point, or line geometries. Second, the data are dynamically summarized in the GEE cloud to produce a chart showing a smoothed interannual NDVI time-series for the AOI. And third, the proportion of land cover are calculated for the AOI and presented as a chart series using the annual USDA NASS Cropland Data Layer land cover product.



Greenness map of Kansas from June 2022. Eastern Kansas is greener than western Kansas due to higher precipitation levels.



A map of Kansas showing the difference in greenness from June 2022 compared to the long-term average greenness or NDVI. Orange and brown areas may indicate drought conditions.

1. User Defines Area of Interest using Rectangle, Polygon, Point, or Line.

5) Crop Land cover changes

1. Select a drawing mode

- Rectangle
- Polygon
- Point
- Line

2. Draw a geometry.

3. Wait for chart to render.

4. Repeat 1-3 or edit/move geometry for a new chart

2. Smoothed Interannual NDVI Profile Extracted for Area of Interest

3. Land Cover Pie Charts for Area of Interest

2022 Land cover distribution

2021 Land cover distribution

2020 Land cover distribution

2019 Land cover distribution

Legend:

- 1 Corn
- 2 Cotton
- 3 Rice
- 4 Sorghum
- 5 Soybeans
- 6 Sunflower
- 10 Peanuts
- 11 Tobacco
- 12 Sweet Corn
- 13 Pop or Orn Corn
- 14 Mint
- 17 Barley
- 22 Durum Wheat
- 23 Spring Wheat
- 24 Winter Wheat
- 25 Other Small Grains
- 26 Dist Crop W/with/Soybeans
- 27 Rye
- 28 Oats

The enhanced functionality of the Sentinel GreenReport. Users define an area of interest and the interannual NDVI profile and land cover proportions are calculated and displayed.

KansasView 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 KANSASVIEW

- KansasView maintains connections with Kansas stakeholders and consortium members for potential collaborations in outreach, education, and research.
- KansasView participated in the annual Ecosystems of Kansas Summer Institute to educate middle school Kansas biology and environmental science teachers on resources to integrate remote sensing and GIS into their classrooms.
- KansasView participated in Science Sundays at the KU Field Station to educate the public about Mapping Kansas Ecosystems using field and satellite Earth Observations. The ESRI StoryMap created by KansasView was highlighted.
- KansasView is represented at the GIS Policy Board, a consortium for promoting geospatial technology, acquiring critical geospatial datasets, and funding database development that support the mission and objectives of the Kansas Water Office.



KansasView participated in the 2023 Ecosystems of Kansas Summer Institute to work with Kansas science teachers.



Presenting Mapping Kansas Ecosystems StoryMap at Science Sundays.

KANSASVIEW CONSORTIUM MEMBERSHIP



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