The VegDRI is calculated using a data mining technique that incorporates complex information from climate-based drought indices, satellite-based data (1-km Moderate Resolution Imaging Spectroradiometer (MODIS) based normalized difference vegetation index [NDVI] data), and environmental data sets that summarize land use/land cover (LULC) and soil characteristics.

A Drought Monitoring Tool

The Vegetation Drought Response Index (VegDRI) is a drought indicator that integrates climate, satellite and biophysical variables. VegDRI was developed through a collaboration between the National Drought Mitigation Center, the U.S. Geological Survey's National Center for Earth Resources Observation and Science, the High Plains Regional Climate Center and the U.S. Department of Agriculture’s Risk Management Agency.

Background

Monitoring drought using modern techniques can help reduce the drought impacts that affect many sectors of society. Traditionally, drought monitoring has taken a climate-based approach using meteorological observations as the primary data source. Most climate-based maps depict general spatial patterns of drought severity but lack the spatial detail to adequately characterize local to regional-scale variations in drought conditions.

Satellite-based vegetation index (VI) data, which has been widely used to assess vegetation conditions, has the regularity, broad geographic coverage and high spatial resolution ideal for characterizing more localized drought patterns than traditional climate-based methods. However, the common VI-based approaches do not discriminate between vegetation stress induced by drought versus that driven by other processes such as flooding, fire, delayed greenup and land cover change.

Climate information enables the drought-related vegetation anomalies expressed in VI data to be distinguished from those driven by other factors. As such, the integration of climate and satellite-derived VI information in VegDRI allows for the identification and monitoring of vegetation stress caused by drought with fine detail.

VegDRI Methodology

The VegDRI is calculated using a data mining technique that incorporates complex information from climate-based drought indices, satellite-based data (1-km Moderate Resolution Imaging Spectroradiometer (MODIS) based normalized difference vegetation index [NDVI] data), and environmental data sets that summarize land use/land cover (LULC) and soil characteristics.
VegDRI Products Available Online  [https://vegdri.unl.edu](https://vegdri.unl.edu)

A 1-km VegDRI map is produced weekly to provide timely regional to subcounty-level information about drought effects on vegetation, which can be used by agricultural producers and decision makers for a variety of planning and mitigation activities.

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**VegDRI Complete Map**
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**VegDRI Change Map**
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**VegDRI Animation**
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**VegDRI Cropland Map**
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**VegDRI Statistics by State**
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**VegDRI Rangeland Map**
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**Time-Series Maps – State or Local**

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**Related Tools**

- Quick Drought Response Index (QuickDRI) [https://quickdri.unl.edu/](https://quickdri.unl.edu/)
- Forest Drought Response Index (ForDRI) Coming Soon

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