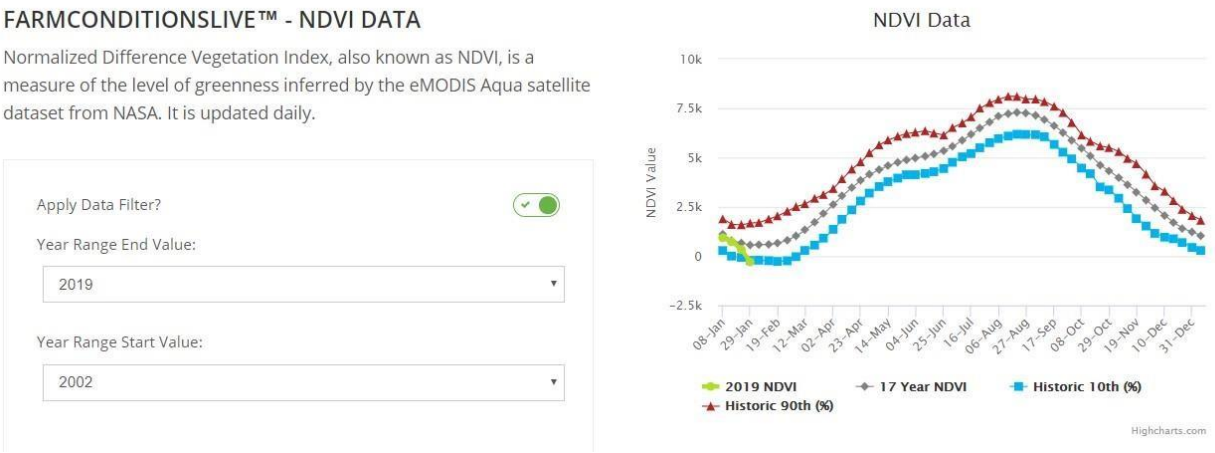
Ag-Analytics

eModis API Documentation *2020*

Overview

This eMODIS API provides a Normalized Difference Vegetation Index (NDVI), which quantifies vegetation by measuring the difference between near-infrared (which vegetation strongly reflects) and red light (which vegetation absorbs). Overall, NDVI is a standardized way to measure healthy vegetation. When you have high NDVI values, you have healthier vegetation. When you have low NDVI, you have less or no vegetation.



eMODIS NDVI API in FarmScope.

API Specifications

Header Parameters

Ocp-Apim-Subscription-Key: **Given upon purchase.**
This key is necessary to access the API and should be passed as a Header.

Execute Type: GET

URL: https://ag-analytics.developer.azure-api.net/api-details#api=emodis&operation=get-request-emodis

Request URL: https://ag-analytics.azure-api.net/eMODIS/?year={year}&shape={shape}&filtered={filtered}&startYear={startYear}

Request Parameters

year: The year of which you would like to receive data up to. (e.g. – 2018)

shape *(ESRI Polygon shape):* The shape information for field in esriGeometryPolygon format. See example request below. Standard open source JavaScript front-end libraries (e.g., Leaflet) can be used to structure the shape.

filtered: (True or False) Filter values using modified SG filter.

startYear: The year you would like the historical range to start. (e.g. 2002 -)

Example

Request

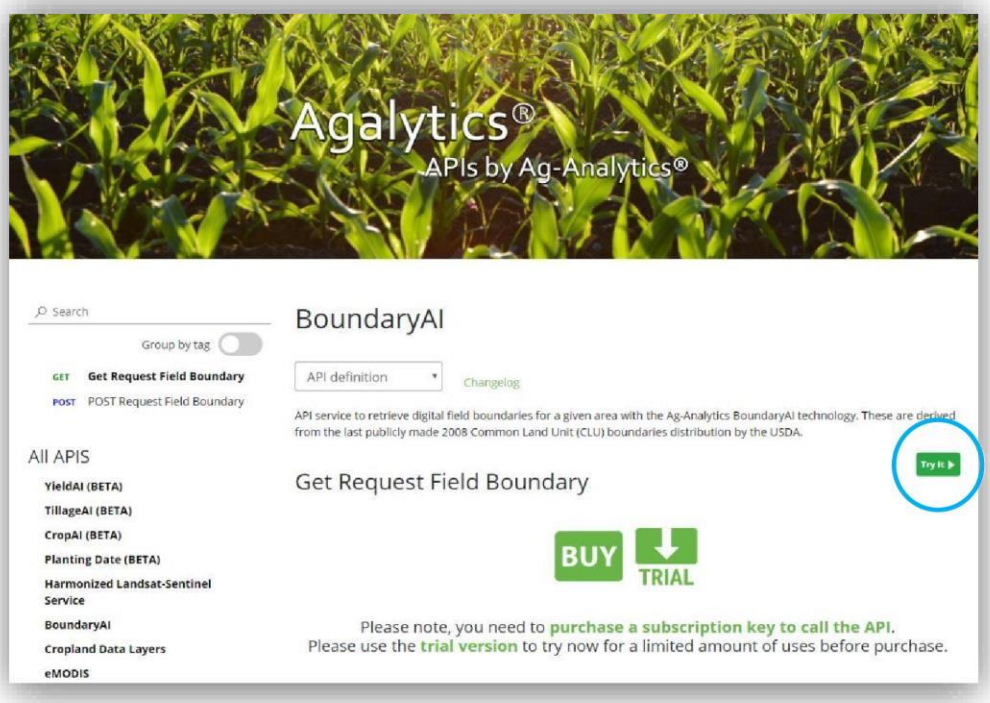
```
GET https://ag-analytics.azure-api.net/eMODIS/?year=2019&shape=%7B%22rings%22%3A%5B%5B%5B
91.42396%2C38.285882%5D%2C%5B-91.424146%2C38.285908%5D%2C%5B-
91.424585%2C38.285883%5D%2C%5B-91.424669%2C38.285878%5D%2C%5B-
91.424981%2C38.2857%5D%2C%5B-91.425093%2C38.285636%5D%2C%5B-
91.425162%2C38.285572%5D%2C%5B-91.425365%2C38.285384%5D%2C%5B-
91.425408%2C38.285312%5D%2C%5B-91.425564%2C38.285048%5D%2C%5B-
91.425676%2C38.284729%5D%2C%5B-91.425753%2C38.284391%5D%2C%5B-
91.425933%2C38.284091%5D%2C%5B-91.426397%2C38.283576%5D%2C%5B-
91.426753%2C38.283242%5D%2C%5B-91.42733%2C38.282874%5D%2C%5B-
91.427799%2C38.28267%5D%2C%5B-91.428179%2C38.282556%5D%2C%5B-
91.428529%2C38.282496%5D%2C%5B-91.428971%2C38.282456%5D%2C%5B-
91.429343%2C38.282461%5D%2C%5B-91.429609%2C38.282529%5D%2C%5B-
91.430162%2C38.282738%5D%2C%5B-91.431095%2C38.283107%5D%2C%5B-
91.431361%2C38.283148%5D%2C%5B-91.431722%2C38.283107%5D%2C%5B-
91.432515%2C38.282696%5D%2C%5B-91.433079%2C38.282402%5D%2C%5B-
91.433506%2C38.281959%5D%2C%5B-91.433796%2C38.28145%5D%2C%5B-
91.433935%2C38.280939%5D%2C%5B-91.434023%2C38.28062%5D%2C%5B-
91.434217%2C38.280247%5D%2C%5B-91.434515%2C38.279884%5D%2C%5B-
91.435083%2C38.279398%5D%2C%5B-91.435737%2C38.278775%5D%2C%5B-
91.435842%2C38.278675%5D%2C%5B-91.436245%2C38.278296%5D%2C%5B-
91.436674%2C38.278036%5D%2C%5B-91.436825%2C38.277933%5D%2C%5B-
91.436832%2C38.278407%5D%2C%5B-91.437145%2C38.278468%5D%2C%5B-
91.437252%2C38.278341%5D%2C%5B-91.437768%2C38.278302%5D%2C%5B-
91.437892%2C38.284998%5D%2C%5B-91.437906%2C38.285771%5D%2C%5B-
91.437906%2C38.285773%5D%2C%5B-91.433113%2C38.285862%5D%2C%5B-
91.423955%2C38.28603%5D%2C%5B-91.423961%2C38.286021%5D%2C%5B-
91.42396%2C38.285882%5D%5D%2C%5B%5B-91.436093%2C38.278766%5D%2C%5B-
91.43616%2C38.278913%5D%2C%5B-91.43631%2C38.278942%5D%2C%5B-
91.436473%2C38.278917%5D%2C%5B-91.436465%2C38.278761%5D%2C%5B-
91.436374%2C38.278687%5D%2C%5B-91.436166%2C38.278647%5D%2C%5B-
91.436093%2C38.278766%5D%5D%5D%2C%22spatialReference%22%3A%7B%22wkid%22%3A4326%7D%7D&filte
red=true&startYear=2002
```

Response (Snippet)

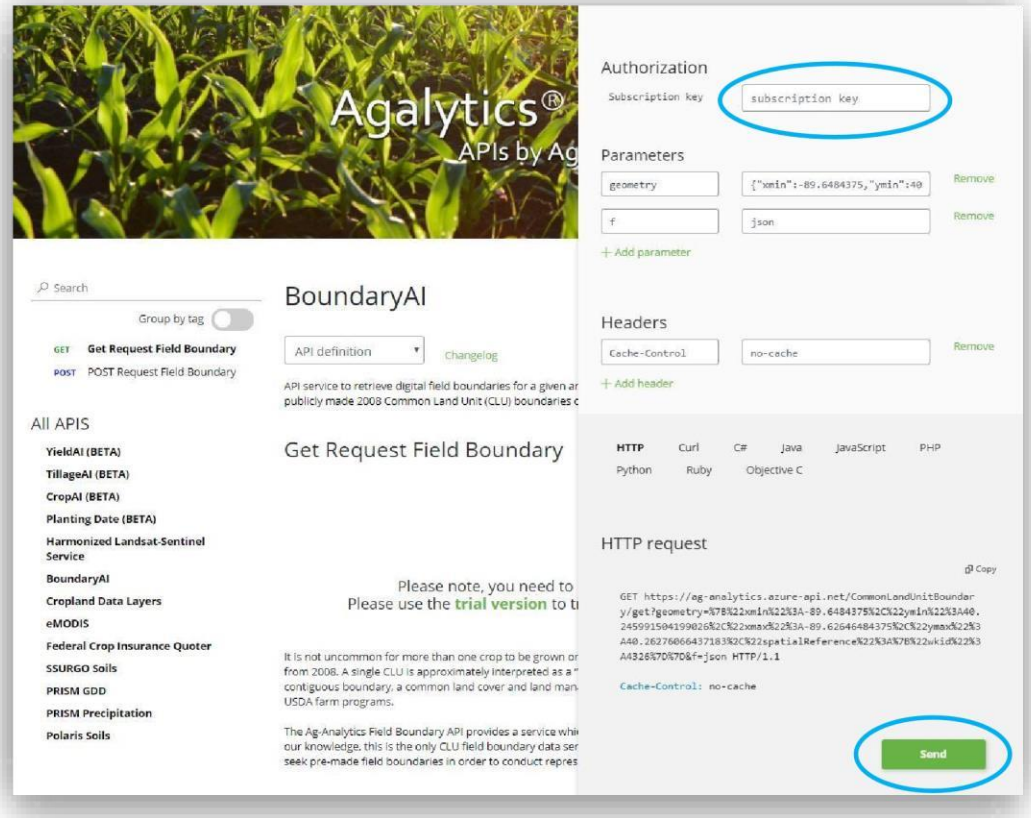

```
[{"CurNDVI":[{"NDVI Value":1791.82495117188,"Week":1},{"NDVI Value":-101.287498474121
,"Week":2},{"NDVI  Value":-56.9625015258789,"Week":3},{"NDVI  Value":-275.6875,"Week":4
},{"NDVI Value":1383.80004882812,"Week":5},{"NDVI Value":2126.86254882812,"Week":6},{
"NDVI Value":2163.625,"Week":7},{"NDVI Value":2167.71240234375,"Week":8},{"NDVI Value
":2081.42504882812,"Week":9},{"NDVI Value":1594.22497558594,"Week":10}, ……
```

Walkthrough Instruction

Step 1: Launch the API **URL,** click **"Try it"**



Step 2: Enter your **subscription key** and click **"Send"**



Citation

Users who use these data in their Applications must use the button provided below.

Users who use in publications or data analysis must cite us in your publications as

"eMODIS NDVI API obtained via Ag-Analytics.Org (Woodard,2016a; Woodard, 2016b)" or similar with the following references:

1.) Woodard, J.D., "Big data and Ag-Analytics: an open source, open data platform for agricultural & environmental finance, insurance, and risk," Agricultural Finance Review, (2016) 76(1):15-26.

2.) Woodard, J.D., "Data Science and Management for Large Scale Empirical Applications in Agricultural and Applied Economics Research," Applied Economic Perspectives and Policy, (2016) 38(3): 373-388.

Each county zip file contains a shapefile, with format clu_public_a_SSFFF where SS is the State abbreviation and FFF is the 3 digit county fips code (e.g., clu_public_a_il001 is Adams County, IL)

Format: vector polygon - Arc shapefiles

Spatial Reference Information: Universal Transverse Mercator (UTM) Dominant Zone, North American Datum 1983

Please contact Joshua Woodard, josh@ag-analytics.org or woodardjoshua@gmail.com, with any comments or questions.