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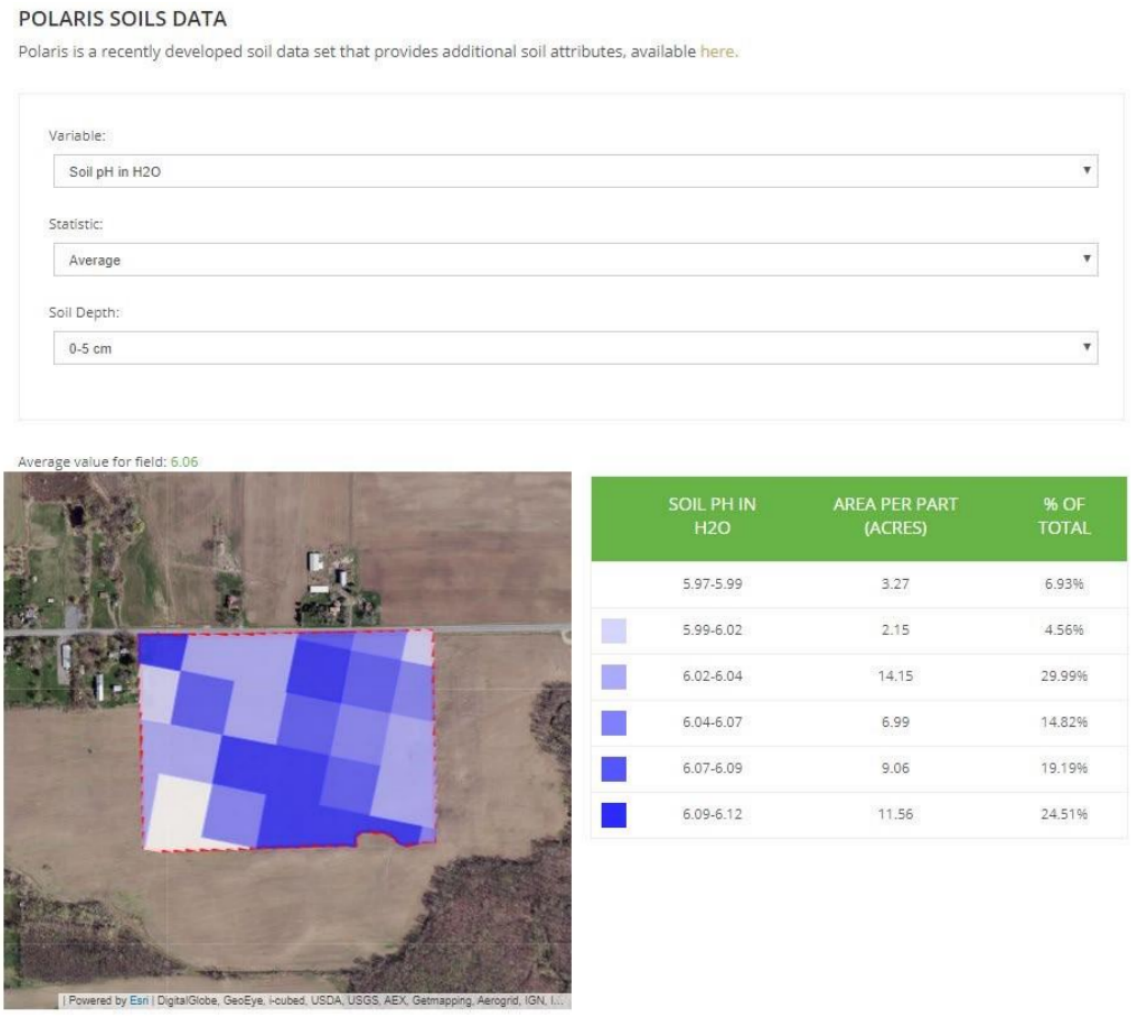
Ag-Analytics

Polaris Soils Data Layers API Documentation

2020

Overview

Polaris is a recently developed soil data set that provides additional soil attributes. The POLARIS Soils Data Layers API provides a spatially continuous, internally consistent, quantitative prediction of soil series at a 30 m spatial resolution for the contiguous United States.



Polaris API in FarmScope

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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=polaris-soils-data-layers&operation=get-request-polaris-soils-data-layers

Request URL:

https://ag-analytics.azure-api.net/PolarisSoilsDataLayers/get[?inputShape][&SoilValue][&Statistics][&SoilHorizon]

Request Parameters

inputShape: The shape information for field in esriGeometryPolygon format

SoilValue: Define desired Soil Value to display (e.g. pH)

Statistics: Statistics; options are: min, max, mean, and variance

SoilHorizon: Soil depth in CM

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Example

Request

https://ag-analytics.azure-api.net/PolarisSoilsDataLayers/get?inputShape=%7B%22geometryType%22%3A%22esriGeometryPolygon%22%2C%22features%22%3A%5B%7B%22geometry%22%3A%7B%22rings%22%3A%5B%5B%5B-88.509566%2C39.598643%5D%2C%5B-88.509484%2C39.593239%5D%2C%5B-88.509476%2C39.589665%5D%2C%5B-88.514219%2C39.589738%5D%2C%5B-88.518608%2C39.589742%5D%2C%5B-88.518855%2C39.589739%5D%2C%5B-88.518868%2C39.593309%5D%2C%5B-88.518864%2C39.594773%5D%2C%5B-88.518898%2C39.596357%5D%2C%5B-88.518899%2C39.596927%5D%2C%5B-88.518909%2C39.59738%5D%2C%5B-88.518911%2C39.59765%5D%2C%5B-88.518913%2C39.597752%5D%2C%5B-88.518871%2C39.597807%5D%2C%5B-88.518732%2C39.597818%5D%2C%5B-88.517513%2C39.597823%5D%2C%5B-88.51559%2C39.597826%5D%2C%5B-88.514642%2C39.597827%5D%2C%5B-88.514569%2C39.597811%5D%2C%5B-88.514558%2C39.597596%5D%2C%5B-88.51454%2C39.597346%5D%2C%5B-88.514512%2C39.597276%5D%2C%5B-88.514447%2C39.597266%5D%2C%5B-88.514343%2C39.597238%5D%2C%5B-88.514326%2C39.596633%5D%2C%5B-88.514087%2C39.596636%5D%2C%5B-88.514097%2C39.597291%5D%2C%5B-88.514139%2C39.597401%5D%2C%5B-88.514217%2C39.59744%5D%2C%5B-88.514272%2C39.59754%5D%2C%5B-88.514257%2C39.597693%5D%2C%5B-88.514223%2C39.597828%5D%2C%5B-88.514263%2C39.597956%5D%2C%5B-88.514263%2C39.598009%5D%2C%5B-88.514247%2C39.598188%5D%2C%5B-88.514232%2C39.598432%5D%2C%5B-88.514214%2C39.598504%5D%2C%5B-88.514163%2C39.598561%5D%2C%5B-88.514046%2C39.598634%5D%2C%5B-88.513967%2C39.59866%5D%2C%5B-88.512896%2C39.598661%5D%2C%5B-88.509937%2C39.598649%5D%2C%5B-88.509566%2C39.598643%5D%5D%5D%2C%22spatialReference%22%3A%7B%22wkid%22%3A4326%7D%7D%7D%5D%7D&SoilValue=ph&Statistics=mean&SoilHorizon=0_5

Response

{"results":[{"paramName":"MeanFieldValue","dataType":"GPString","value":"6.17"},{"paramName":"PolygonOutput","dataType":"GPFeatureRecordSetLayer","value":{"displayFieldName":"","geometryType":"esriGeometryPolygon","spatialReference":{"wkid":4326,"latestWkid":4326},"fields":[{"name":"FID","type":"esriFieldTypeOID","alias":"FID"},{"name":"ID","type":"esriFieldTypeInteger","alias":"ID"},{"name":"GRIDCODE","type":"esriFieldTypeInteger","alias":"GRIDCODE"},{"name":"val_float","type":"esriFieldTypeDouble","alias":"val_float"},{"name":"Shape_Length","type":"esriFieldTypeDouble","alias":"Shape_Length"},{"name":"Shape_Area","type":"esriFieldTypeDouble","alias":"Shape_Area"}],"features":[{"attributes":{"FID":1,"ID":1,"GRIDCODE":6179237,"val_float":6.1792369999999996,"Shape_Length":0.0025317420608140925,"Shape_Area":2.0972534543453469e-007},"geometry":{"rings":[[[-88.513221989999977,39.598409325000034],[-88.514217762999976,39.598469014000045],[-88.51420851599994,39.598557971000048],[-88.514149940999971,39.598554460000059],[-88.514145317999976,39.598598938000066],[-88.514086742999995,39.598595427000078],[-88.514082118999966,39.598639906000074],[-88.513964968999971,39.59863288400004],[-88.513960344999987,39.598677363000036],[-88.513316019999991,39.598638740000069],[-88.513311395999949,39.598683219000065],[-88.513194245999955,39.598676196000042],[-88.513221989999977,39.598409325000034]]]}},{"attributes":{"FID":2,"ID":2,"GRIDCODE":6209930,"val_float":6.2099299999999999,"Shape_Length":0.0028558977982848887,"Shape_Area":3.1983131838778713e-007},"geometry":{"rings":[[[-88.512109069999951,39.598342605000028],[-88.513221989999977,39.598409325000034],[-88.513194245999955,39.598676196000042],[88.512549919999969,39.598637570000051],[-88.512545295999985,39.598682048000057],[-88.512076695999951,39.598653955000032],[-88.512109069999951,39.598342605000028]]]}},{"attributes":{"FID":3,"ID":3,"GRIDCODE":6133198,"val_float":6.1331980000000001,"Shape_Length":0.0028279723898758553,"Shape_Area":3.6177576394967585e-007},"geometry":{"rings":[[[-88.511054725999941,39.598279388000037],[-88.512109069999951,39.598342605000028],[-88.512076695999951,39.598653955000032],[-88.511725245999969,39.598632880300005],[-88.511720620999938,39.598677361000057],[-88.511017721999963,39.598635215000058],[-88.511054725999941,39.598279388000037]]]}},{"attributes":{"FID":4,"ID":4,"GRIDCODE":6148544,"val_float":6.1485440000000002,"Shape_Length":0.0031242047257856857,"Shape_Area":4. 5615151166673748e-007},.....

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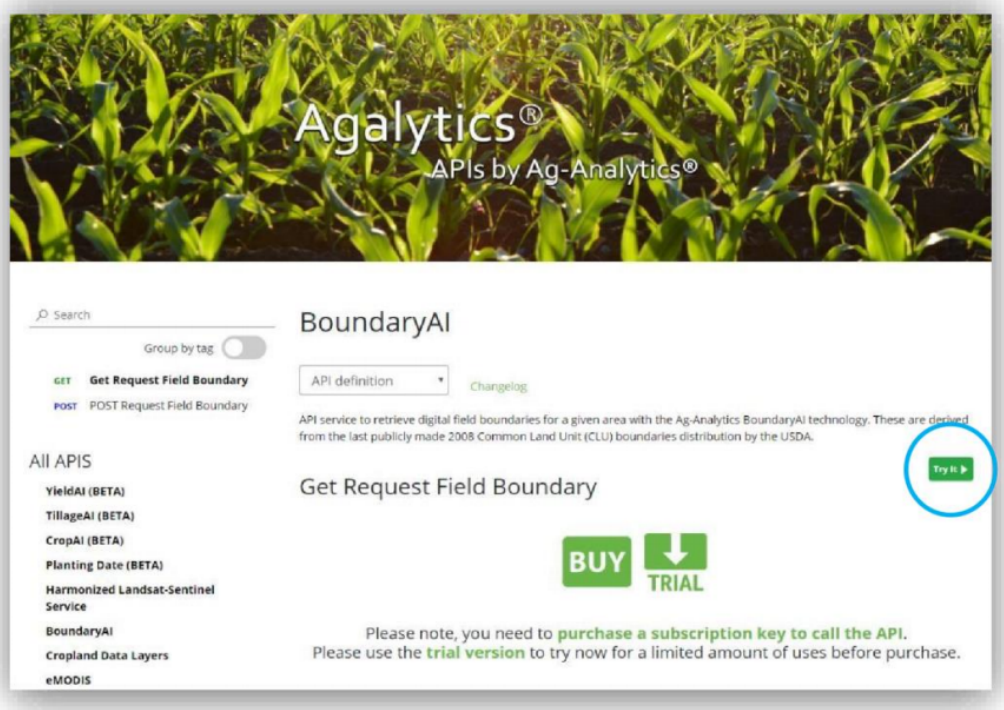
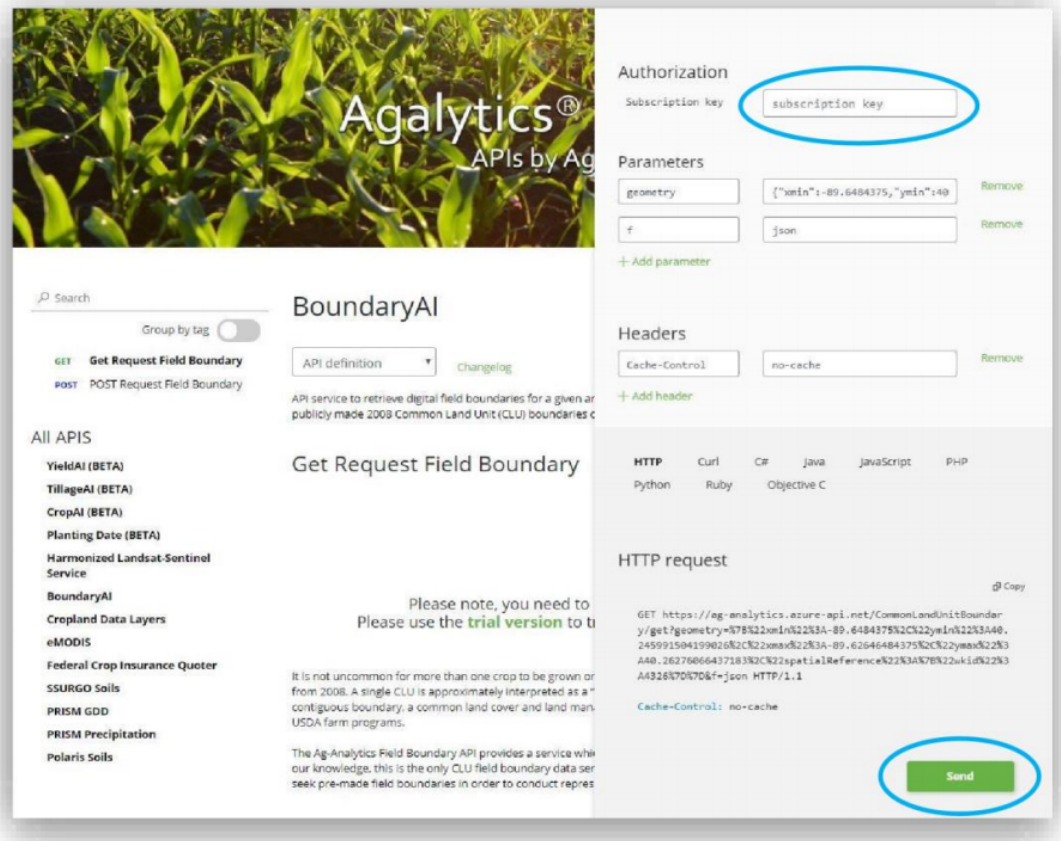
Walkthrough Instruction

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



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



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Citation

Users who use this 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

"Polaris Soils Data Layers 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.