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Ag-Analytics

Cropland Data Layers API Documentation

2020

Overview

The Cropland Data Layer (CDL), produced by the USDA, provides a raster, geo-referenced, crop- specific land cover map for the continental United States. The CDL also includes a crop mask layer and planting frequency layers, as well as boundary, water and road layers. The Boundary Layer options provided are County, Agricultural Statistics Districts (ASD), State, and Region. The data is created annually using moderate resolution satellite imagery and extensive agricultural ground truth.

The purpose of the Cropland Data Layer Program is to use satellite imagery to (1) provide planted acreage estimates to the Agricultural Statistics Board for each state's major commodities and (2) produce digital, crop-specific, categorized geo-referenced output products (data.nal.usda.gov).

API Specifications

URL: https://ag-analytics.developer.azure-api.net/api-details#api=cropland-data-layers&operation=get-request-crop-data-layers

Request URL: https://ag-analytics.azureapi.net/CroplandDataLayers/get?year={year}&inputShape={inputShape}[&env:outSR]

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

Request Parameters

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

year (integer): Year of desired result.

env:outSR (optional): Output Spatial Reference. Return features in the specified spatial reference by supplying specific wkid (eg. 4326).

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Example Request

```
GET https://ag-analytics.azure-
api.net/CroplandDataLayers/get?year=2016&inputShape=%7B%22geometryType%22%3A%22esriGeom
etryPolygon%22%2C%22features%22%3A%5B%7B%22geometry%22%3A%7B%22rings%22%3A%5B%5B%5B-
108.44617366790773%2C38.864639721054544%5D%2C%5B-
108.41922283172609%2C38.862534532409406%5D%2C%5B-
108.42145442962646%2C38.851539756807774%5D%2C%5B-
108.44282627105714%2C38.85254239036426%5D%2C%5B-
108.43523025512697%2C38.85722116008798%5D%2C%5B-
108.44617366790773%2C38.864639721054544%5D%5D%5D%2C%22spatialReference%22%3A%7B%22wkid%
22%3A4326%7D%7D%7D%5D%7D&env:outSR=4326
```

Example Response


```
{"results":[{"paramName":"output2","dataType":"GPFeatureRecordSetLayer","value":{"dis
playFieldName":"","geometryType":"esriGeometryPolygon","spatialReference":{"wkid":432
6,"latestWkid":4326},"fields":[{"name":"FID","type":"esriFieldTypeOID","alias":"FID"}
,{"name":"OBJECTID","type":"esriFieldTypeInteger","alias":"OBJECTID"},{"name":"Shape_
Leng","type":"esriFieldTypeDouble","alias":"Shape_Leng"},{"name":"FID_08077","type":"
esriFieldTypeInteger","alias":"FID_08077"},{"name":"ID","type":"esriFieldTypeInteger"
,"alias":"ID"},{"name":"GRIDCODE","type":"esriFieldTypeInteger","alias":"GRIDCODE"},{
"name":"acres","type":"esriFieldTypeSingle","alias":"acres"},{"name":"Shape_Length","
type":"esriFieldTypeDouble","alias":"Shape_Length"},{"name":"Shape_Area","type":"esri
FieldTypeDouble","alias":"Shape_Area"}],"features":[{"attributes":{"FID":1,"OBJECTID"
:0,"Shape_Leng":0,"FID_08077":294150,"ID":294151,"GRIDCODE":142,"acres":1.708353,"Sha
pe_Length":0.0049166479059928056,"Shape_Area":7.1753702205756623e-007},"geometry":{"r
ings":[[[-108.44450487509988,38.864509367613266],[-108.44449055069833,38.864425950996
917],[-108.44414454643362,38.86446089955092],[-108.44414808346727,38.864481498522366]
,[-108.4437912918346,38.864453628532203],[-108.44375297442019,38.864230483350184],[-1
08.44533435579586,38.864070749365624],…….
```

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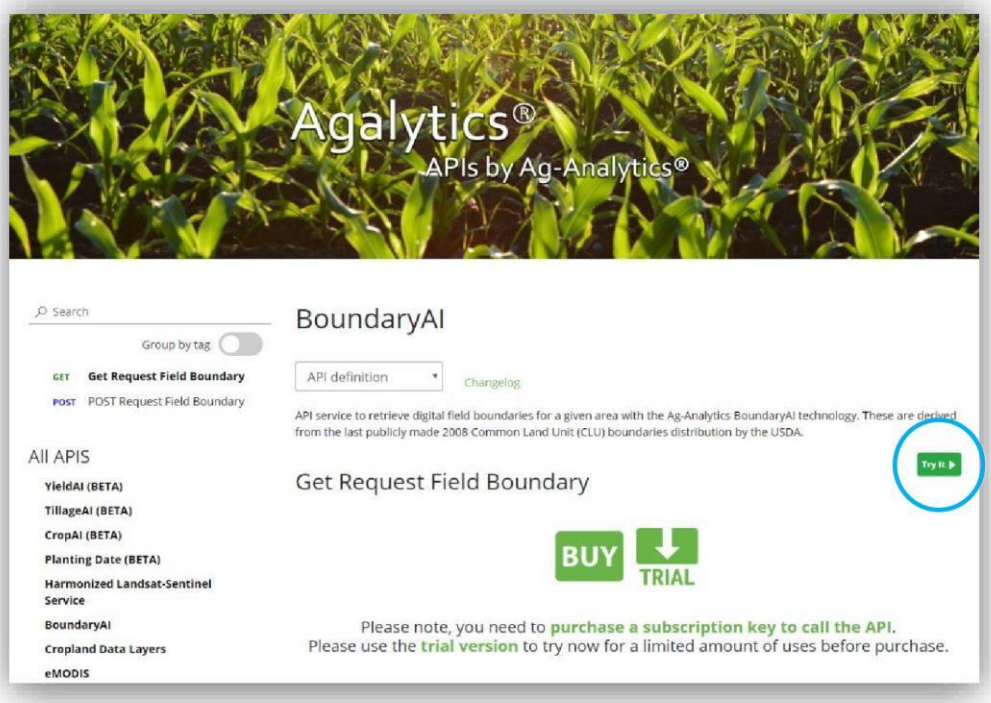
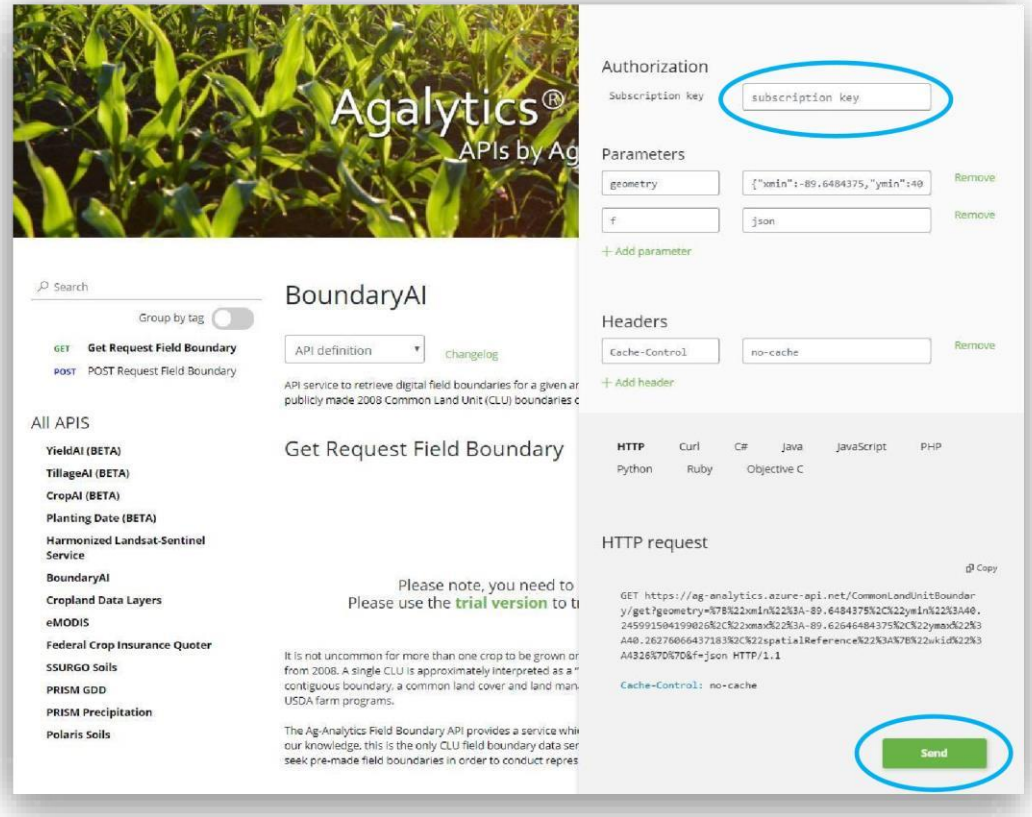
Walkthrough Instruction

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



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



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CDL GRIDCODE – CROP NAME TABLES

Grid Code	CropName	Grid Code	CropName	Grid Code	CropName
1	Corn	55	Caneberries	207	Asparagus
2	Cotton	56	Hops	208	Garlic
3	Rice	57	Herbs	209	Cantaloupes
4	Sorghum	58	Clover/Wildflowers	210	Prunes
5	Soybeans	59	Sod/GrassSeed	211	Olives
6	Sunflower	60	Switchgrass	212	Oranges
10	Peanuts	61	Fallow/IdleCropland	213	HoneydewMelons
11	Tobacco	63	Forest	214	Broccoli
12	SweetCorn	64	Shrubland	216	Peppers
13	PoporOrnCorn	65	Barren	217	Pomegranates
14	Mint	66	Cherries	218	Nectarines
21	Barley	67	Peaches	219	Greens
22	DurumWheat	68	Apples	220	Plums
23	SpringWheat	69	Grapes	221	Strawberries
24	WinterWheat	70	ChristmasTrees	222	Squash
25	OtherSmallGrains	71	OtherTreeCrops	223	Apricots
26	DblCropWinWht/Soybeans	72	Citrus	224	Vetch
27	Rye	74	Pecans	225	DblCropWinWht/Corn
28	Oats	75	Almonds	226	DblCropOats/Corn
29	Millet	76	Walnuts	227	Lettuce
30	Speltz	77	Pears	229	Pumpkins
31	Canola	81	Clouds/NoData	230	DblCropLettuce/DurumWht
32	Flaxseed	82	Developed	231	DblCropLettuce/Cantaloupe
33	Safflower	83	Water	232	DblCropLettuce/Cotton
34	RapeSeed	87	Wetlands	233	DblCropLettuce/Barley
35	Mustard	88	Nonag/Undefined	234	DblCropDurumWht/Sorghum
36	Alfalfa	92	Aquaculture	235	DblCropBarley/Sorghum
37	OtherHay/NonAlfalfa	111	OpenWater	236	DblCropWinWht/Sorghum
38	Camelina	112	PerennialIce/Snow	237	DblCropBarley/Corn
39	Buckwheat	121	Developed/OpenSpace	238	DblCropWinWht/Cotton
41	Sugarbeets	122	Developed/LowIntensity	239	DblCropSoybeans/Cotton
42	DryBeans	123	Developed/MedIntensity	240	DblCropSoybeans/Oats
43	Potatoes	124	Developed/HighIntensity	241	DblCropCorn/Soybeans
44	OtherCrops	131	Barren	242	Blueberries
45	Sugarcane	141	DeciduousForest	243	Cabbage
46	SweetPotatoes	142	EvergreenForest	244	Cauliflower
47	MiscVegs&Fruits	143	MixedForest	245	Celery
48	Watermelons	152	Shrubland	246	Radishes
49	Onions	176	Grassland/Pasture	247	Turnips
50	Cucumbers	190	WoodyWetlands	248	Eggplants
51	ChickPeas	195	HerbaceousWetlands	249	Gourds
52	Lentils	204	Pistachios	250	Cranberries
53	Peas	205	Triticale	254	DblCropBarley/Soybeans
54	Tomatoes	206	Carrots		

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Citation

Users who use these CLU 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

"Cropland 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.