

i15_Crop_Mapping_2018

SDE Feature Class

Tags

Imagery, Survey, State of California, Multispectral analysis, Crop, Raster, Image classification, Boundaries, Vector, Land use, Urban, Satellite imagery, 2018, Ground truth, Land cover, Agriculture, Irrigated land, Digital imagery, Planning, Aerial photography, Landsat

Summary

Understanding the impacts of land use, crop location, acreage, and management practices on environmental attributes and resource management will be an integral step in the ability of Groundwater Sustainability Agencies (GSAs) to produce Groundwater Sustainability Plans (GSPs) and implement projects to attain sustainability. For these purposes, as well as many others, a spatial mapping base layer is essential for effective decision-making and other applications. In response to this need for information, Land IQ was contracted by DWR to develop a comprehensive and accurate spatial land use database for Water Year 2018, covering over 9.4 million acres of Irrigable agriculture on a field scale and additional areas of urban extent. The primary objective of this effort was to produce a comprehensive and accurate spatial land use database with overall accuracies exceeding 95% using remote sensing, statistical, and temporal analysis methods. DWR reviewed and revised the data in some cases. Detailed reviews and revisions of individual fields were determined by DWR Land Use staff in Regional Offices, therefore it is important to contact individual Senior Land Use Supervisors within Regional Offices for local details. For Northern Regional Office you may contact Tito Cervantes at Tito.Cervantes@water.ca.gov; North Central Regional Office, Jeff Smith at Jeff.A.Smith@water.ca.gov; South Central Regional Office, Steve Ewert at Steve.Ewert@water.ca.gov; and Southern Regional Office, Robert Fastenau at Robert.Fastenau@water.ca.gov.

The associated data are considered DWR enterprise GIS data, which meet all appropriate requirements of the DWR Spatial Data Standards, specifically the DWR Spatial Data Standard version 3.1, dated September 11, 2019.

This data set was not produced by DWR. Data were originally developed and supplied by Land IQ, LLC, under contract to California Department of Water Resources. DWR makes no warranties or guarantees - either expressed or implied - as to the completeness, accuracy, or correctness of the data. DWR neither accepts nor assumes liability arising from or for any incorrect, incomplete, or misleading subject data.

The official DWR GIS steward for the statewide compilation of this data is Bekele Temesgen, who may be contacted at 916-651-9679, or at Bekele.Temesgen@water.ca.gov. Comments, problems, improvements, updates, or suggestions should be forwarded to the official GIS steward as available and appropriate.

Description

Land use data is critically important to the work of the Department of Water Resources (DWR) and other California agencies. Understanding the impacts of land use, crop location, acreage, and management practices on environmental attributes and resource management is an integral step in the ability of Groundwater Sustainability Agencies (GSAs) to produce Groundwater Sustainability Plans (GSPs) and implement projects to attain sustainability. Land IQ was contracted by DWR to develop a comprehensive and accurate spatial land use database for the Water Year 2018, covering over 9.4 million acres of Irrigable agriculture on a field scale and additional areas of urban extent. The primary objective of this effort was to produce a spatial land use database with accuracies exceeding 95% using remote sensing, statistical, and temporal analysis methods. This project is an extension of the 2014 and 2016 land use mapping,

which classified over 14 million acres of land into Irrigable agriculture and urban area. Unlike the 2014 and 2016 datasets, the Water Year 2018 dataset includes multi-cropping and incorporates ground-truth data from Siskiyou, Modoc, Lassen and Shasta counties. Land IQ integrated crop production knowledge with detailed ground truth information and multiple satellite and aerial image resources to conduct remote sensing land use analysis at the field scale. Individual fields (boundaries of homogeneous crop types representing true Irrigable area, rather than legal parcel boundaries) were classified using a crop category legend and a more specific crop type legend. A supervised classification algorithm using a random forest approach was used to classify delineated fields and was carried out county by county where training samples were available. Random forest approaches are currently some of the highest performing methods for data classification and regression. To determine frequency and seasonality of multiple-cropped fields, peak growth dates were determined for annual crops. Fields were attributed with DWR crop categories and included citrus/subtropical, deciduous fruits and nuts, field crops, grain and hay, idle, pasture, rice, truck crops, urban, vineyards, young perennials and wetland. These categories represent aggregated groups of specific crop types in the Land IQ dataset. Accuracy was calculated for the crop mapping using both DWR and Land IQ crop legends. The overall accuracy result for the crop mapping statewide was 96.5% using the Land IQ legend and 98.3% using the DWR legend. Accuracy and error results varied among crop types. In particular, some less extensive crops that have very few validation samples may have a skewed accuracy result depending on the number and nature of validation sample points. Revised crops and conditions were encoded using standard DWR land use codes added to feature attributes, and each modified classification is indicated by the value 'r' in the 'DWR_revised' data field. The value 'n' in the 'DWR_REWISE' data field indicates a Regional Office added a boundary and attributes where none was included in the Land IQ data set. Each polygon classification is consistent with DWR attribute standards, however some of DWR's traditional attribute definitions are modified and extended to accommodate unavoidable constraints within remote-sensing classifications, or to make data more specific for DWR's water balance computation needs. The original Land IQ classifications reported for each polygon are preserved for comparison, and are also expressed as DWR standard attributes. Comments, problems, improvements, updates, or suggestions about local conditions or revisions in the final data set should be forwarded to the appropriate Regional Office Senior Land Use Supervisor. Revisions were made if: - DWR corrected the original crop classification based on local knowledge and analysis, - young versus mature stages of perennial orchards and vineyards were identified (DWR added 'Young' to Special Condition attributes), - DWR determined that a field originally classified 'Idle' was actually cropped one or more times during the year, - the percent of cropped area was less than 100% of the original acres reported by Land IQ (values indicated in DWR 'Percent' column), - DWR determined that the field boundary should have been split to better reflect separate crops within the same polygon ('Mixed' was added to the MULTIUSE column; the crop classification and corresponding area percentages were indicated), - DWR determined that the crop was not irrigated. - DWR identified a distinct early or late crop on the field before the main season crop ('Double' was added to the MULTIUSE column); if the 1st and 2nd sequential crops occupied different portions of the total field acreage, the area percentages were indicated for each crop). DWR added Adjusted Day Of Year (ADOY) for peak NDVI date corresponding to CROPTYP category. The date received by Land IQ was delivered in a Julian date format (YYYYDDD) and was converted into the ADOY by DWR for statistical purposes. Land use boundaries delineated by Land IQ were not revised by DWR.

Credits

Land IQ, www.LandIQ.com, California Department of Water Resources, Division of Regional Assistance Regional Offices: Northern, North Central, South Central and Southern Regional Offices, and Water Use Efficiency Branch (Sacramento Headquarters).

Use limitations

There are no access and use limitations for this item.

Extent

West -124.375251 **East** -114.132542
North 42.001780 **South** 32.540499

Scale Range

Maximum (zoomed in) 1:5,000
Minimum (zoomed out) 1:150,000,000

ArcGIS Metadata ►

Topics and Keywords ►

THEMES OR CATEGORIES OF THE RESOURCE farming, planningCadastre, imageryBaseMapsEarthCover, boundaries

*** CONTENT TYPE** Downloadable Data

PLACE KEYWORDS State of California

THEME KEYWORDS Imagery, Survey, Multispectral analysis, Crop, Raster, Image classification, Boundaries, Vector, Land use, Urban, Satellite imagery, 2018, Ground truth, Land cover, Agriculture, Irrigated land, Digital imagery, Planning, Aerial photography, Landsat

Hide Topics and Keywords ▲

Citation ►

TITLE i15_Crop_Mapping_2018
PUBLICATION DATE 2021-02-08

EDITION 2021.02.08

PRESENTATION FORMATS digital map
FGDC GEOSPATIAL PRESENTATION FORMAT vector digital data

OTHER CITATION DETAILS

CDWR Land Use Viewer: <https://gis.water.ca.gov/app/CADWRLandUseViewer/>
Statewide Crop Mapping on California Natural Resources Agency (CRNA) Open Data Portal: <https://data.cnra.ca.gov/dataset/statewide-crop-mapping>. SGMA Data Viewer: <https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#waterbudget>

Hide Citation ▲

Citation Contacts ►

RESPONSIBLE PARTY

ORGANIZATION'S NAME Joel Kimmelshue, Land IQ, LLC, Owner (Originator), Land IQ, LLC, Owner (Originator), Owner
CONTACT'S ROLE originator

Hide Citation Contacts ▲

Resource Details ►

DATASET LANGUAGES English (UNITED STATES)

STATUS completed

SPATIAL REPRESENTATION TYPE vector

SUPPLEMENTAL INFORMATION

Land-Use Data Quality Control This dataset is the final copy of Crop_Mapping_2018. Digital surveys published on this site are designated as either 'Final', or 'Provisional', depending upon its status in a peer review process. Each survey has been zipped into a downloadable folder which contains the survey shapefile and other documentation that further explains how that specific survey was processed, and how the information is interpreted. 'Final' surveys are peer reviewed with extensive quality control methods to confirm that field polygon attributes reflect the most detailed and specific land-use classification available, using the standard DWR Land Use Legend specific to the survey year. Data sets are considered 'final' following the reconciliation of peer review comments and confirmation by the originating Regional Office. During final review, individual polygons are evaluated using a combination of aerial photointerpretation, satellite image multi-spectral data and time series analysis, comparison with other sources of land use data, and general knowledge of land use patterns at the local level. 'Provisional' data sets have been reviewed for conformance with DWR's published data record format, and for general agreement with other sources of land use trends. Comments based on peer review findings may not be reconciled, and no significant edits or changes are made to the original survey data.

PROCESSING ENVIRONMENT Version 6.2 (Build 9200); Esri ArcGIS 10.8.1

CREDITS

Land IQ, www.LandIQ.com, California Department of Water Resources, Division of Regional Assistance Regional Offices: Northern, North Central, South Central and Southern Regional Offices, and Water Use Efficiency Branch (Sacramento Headquarters).

ARCGIS ITEM PROPERTIES

- * NAME atlas_prd.SDE.i15_Crop_Mapping_2018
- * LOCATION Server=dwrmsdb0172; Service=sde:sqlserver:dwrmsdb0172; Database=atlas_prd; User=atlas_prd; Version=sde.DEFAULT
- * ACCESS PROTOCOL ArcSDE Connection

[Hide Resource Details ▲](#)

Extents ►

EXTENT

DESCRIPTION
unknown

TEMPORAL EXTENT

BEGINNING DATE 2017-10-01
ENDING DATE 2018-09-30

VERTICAL EXTENT

* MINIMUM VALUE 0.000000
* MAXIMUM VALUE 0.000000

EXTENT

GEOGRAPHIC EXTENT

BOUNDING RECTANGLE

WEST LONGITUDE -124.4692
EAST LONGITUDE -113.4995
SOUTH LATITUDE 32.4317
NORTH LATITUDE 42.0709

VERTICAL EXTENT

* MINIMUM VALUE 0.000000
* MAXIMUM VALUE 0.000000

EXTENT

GEOGRAPHIC EXTENT

BOUNDING RECTANGLE

EXTENT TYPE Extent used for searching
* WEST LONGITUDE -124.375251
* EAST LONGITUDE -114.132542
* NORTH LATITUDE 42.001780
* SOUTH LATITUDE 32.540499
* EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM

* WEST LONGITUDE -124.375251
* EAST LONGITUDE -114.132542
* SOUTH LATITUDE 32.540499
* NORTH LATITUDE 42.001780
* EXTENT CONTAINS THE RESOURCE Yes

[Hide Extents ▲](#)

Resource Points of Contact ►

POINT OF CONTACT

INDIVIDUAL'S NAME Jeff A. Smith
ORGANIZATION'S NAME California Department of Water Resources, North Central Regional Office
CONTACT'S POSITION Senior Environmental Scientist (Supv)
CONTACT'S ROLE point of contact

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[Hide Contact information ▲](#)

[Hide Resource Points of Contact ▲](#)

Resource Maintenance ►

RESOURCE MAINTENANCE

UPDATE FREQUENCY irregular

[Hide Resource Maintenance ▲](#)

Resource Constraints ►

LEGAL CONSTRAINTS

LIMITATIONS OF USE

Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data on any other system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty.

[Hide Resource Constraints ▲](#)

Spatial Reference ►

ARCGIS COORDINATE SYSTEM

* TYPE Geographic

* GEOGRAPHIC COORDINATE REFERENCE GCS_North_American_1983

* COORDINATE REFERENCE DETAILS

GEOGRAPHIC COORDINATE SYSTEM

WELL-KNOWN IDENTIFIER 4269

X ORIGIN -400

Y ORIGIN -400

XY SCALE 999999999.99999988

Z ORIGIN -100000

Z SCALE 10000

M ORIGIN -100000

M SCALE 10000

XY TOLERANCE 8.9831528411952133e-09

Z TOLERANCE 0.001

M TOLERANCE 0.001

HIGH PRECISION true

LEFT LONGITUDE -180

LATEST WELL-KNOWN IDENTIFIER 4269

WELL-KNOWN TEXT

GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433],AUTHORITY["EPSG",4269]]

REFERENCE SYSTEM IDENTIFIER

* VALUE 4269

* CODESPACE EPSG

* VERSION 9.8(3.0.1)

[Hide Spatial Reference ▲](#)

Spatial Data Properties ►

VECTOR ►

* LEVEL OF TOPOLOGY FOR THIS DATASET geometry only

GEOMETRIC OBJECTS

FEATURE CLASS NAME atlas_prd.SDE.i15_Crop_Mapping_2018

* OBJECT TYPE composite

* OBJECT COUNT 408290

[Hide Vector ▲](#)

ARCGIS FEATURE CLASS PROPERTIES ►

FEATURE CLASS NAME atlas_prd.SDE.i15_Crop_Mapping_2018

* FEATURE TYPE Simple

* GEOMETRY TYPE Polygon

* HAS TOPOLOGY FALSE

* FEATURE COUNT 408290

* SPATIAL INDEX TRUE

* LINEAR REFERENCING TRUE

[Hide ArcGIS Feature Class Properties ▲](#)

[Hide Spatial Data Properties ▲](#)

Data Quality ►

SCOPE OF QUALITY INFORMATION ►

RESOURCE LEVEL dataset

[Hide Scope of quality information ▲](#)

DATA QUALITY REPORT - CONCEPTUAL CONSISTENCY ►

MEASURE DESCRIPTION

Data are considered logically consistent.

[Hide Data quality report - Conceptual consistency ▲](#)

DATA QUALITY REPORT - COMPLETENESS OMISSION ►

MEASURE DESCRIPTION

Data are complete as of final delivery 2021/02/22

[Hide Data quality report - Completeness omission ▲](#)

DATA QUALITY REPORT - QUANTITATIVE ATTRIBUTE ACCURACY ►

MEASURE DESCRIPTION

The overall accuracy result for the crop mapping statewide was 96.5% using the Land IQ legend and 98.3% using the DWR legend. Accuracy and error results varied among crop types. In particular, some less extensive crops that have very few validation samples may have a skewed accuracy result depending on the number and nature of validation sample points.

[Hide Data quality report - Quantitative attribute accuracy ▲](#)

DATA QUALITY REPORT - ABSOLUTE EXTERNAL POSITIONAL ACCURACY ►

DIMENSION horizontal

MEASURE DESCRIPTION

Locational quality for this mapping dataset was determined to be no better than +/- 8.0 meters.

[Hide Data quality report - Absolute external positional accuracy ▲](#)

[Hide Data Quality ▲](#)

Lineage ►

PROCESS STEP ►

DESCRIPTION

DATA COLLECTION IMAGERY Both aerial and satellite data resources were used for the crop classification. Aerial imagery provided by the United States Department of Agriculture (USDA) National Agriculture Imagery Program (NAIP) was collected throughout the summer of 2018 by the USDA and used for field delineation, classification, and QA/QC of the final product. Multiple Landsat 8 images were used for the initial crop classification. Imagery from the Landsat 8 satellite is free of charge, available every 16 days, and allowed temporal analysis throughout the growing season. Satellite-based imagery provided by Sentinel was also utilized during the QA/QC process. While lower resolution than NAIP imagery, the overpass frequency of Sentinel is multiple times per month, which is valuable for a visual analysis of the temporal characteristics (i.e., growing season) for each crop.

[Hide Process step ▲](#)

PROCESS STEP ►

DESCRIPTION

DATA COLLECTION GROUND TRUTH DATA To generate and validate a land use map using remotely sensed imagery, a representative sample of reference points in the imagery with known class values (or known land use types) is needed for two reasons. Some of the data are used to calibrate or train the remote sensing model that generates land use results. The training process results in an algorithm that is used to determine land use on all analyzed fields. Another set of reference data is needed to independently validate the accuracy of the remote sensing model. Currently, Land IQ collects reference data for model training and validation from cropped areas in California by conducting "on-the-ground" survey truth data collection areas are selected to best represent the cropping systems in mapped areas across the state. In Water Year 2018, with the expansion of mapping to capture multiple cropping seasons, ground truth efforts were expanded to include Siskiyou, Modoc, Lassen and Shasta counties, the central coast, north coast, southern coast and the low desert. Information from ground truth areas is compiled and applied regionally across the state. In this way the image classification approaches used in all areas are informed by training data from representative crops. Ground truth data collection approaches are continually refined as cropping and crop timing details are determined through mapping efforts.

[Hide Process step ▲](#)

PROCESS STEP ►

DESCRIPTION

CROP FREQUENCY AND PEAK DATES Prior to Water Year 2018, only summer crops were classified. The Water Year 2018 dataset includes multiple crop attributes for some fields depending on the time of year. These fields are referred to as multi-cropped fields. Mapping frequency was determined in coordination with DWR personnel to represent areas understood to have higher frequency crop production. These areas were delineated from existing DWR Detailed Analysis Unit (DAU) maps and incorporated all or portions of DAUs expected to have multiple cropping. Three levels of multiple cropping were defined (double, triple, and quadruple) using knowledge about regional production practices. All fields within a given multicropping area were mapped at the cropping frequency designated for that region. The timing of multi cropping varies among crops and regions. Rather than defining set seasons such as spring, summer, fall and winter, an assessment of peak crop production date was conducted. Peak dates were determined for each crop by assessing field Normalized Difference Vegetative Index (NDVI), which represents crop vigor, and evaluating index patterns and maximum points. The average of the dates of these maximum points was determined to be the peak date for a particular crop season and a peak date was determined for each annual crop. A maximum of four crops per field were mapped depending on the targeted mapping frequency. Fields were attributed with more than one crop when more than one peak date was found. When a permanent crop such as alfalfa or almonds was removed, the mid-point between the removal date and the end date of the Water Year (October 2018) was recorded as the peak date, which can be used to calculate the crop's timeframe for crop water use.

[Hide Process step ▲](#)

PROCESS STEP ►
DESCRIPTION

PERCENT CROPPED This attribute represents the percentage of a field that is cropped. Staggered or strip planting, where a field is not planted uniformly but rather in stages during a season, is a common practice in crops such as lettuce/leafy greens, cole crops, carrots, and miscellaneous truck crops. To provide more accurate acreages for these crops, the percent cover attribute represents approximately what proportion of a field was in production for that mapped season. This is used to calculate more specific acreage for these crops while allowing outer field boundaries to remain relatively consistent over multiple years.

[Hide Process step ▲](#)

PROCESS STEP ►
DESCRIPTION

ANALYSIS The Land IQ mapping scale is focused on all cropped fields greater than 2 acres across the state. In some cases, fields smaller than two acres were included if they were adjacent, the same crop and clearly associated as a part of a broader group of fields cultivated together. More than 408,000 delineated fields were classified in Water Year 2018 utilizing ground training examples and multiple image sources and dates. These images and ground truth data were used to develop classification algorithms for crop identification. Multiple selected image sources and timeframes served as input data for the remote sensing classification process, along with comprehensive ground truth training samples. In some more sparsely cropped counties, photo interpretation methods are used for initial crop mapping.

[Hide Process step ▲](#)

PROCESS STEP ►
DESCRIPTION

GROUND TRUTH TRAINING DATA Field data from over 21% of all Water Year 2018 cropped land in California were collected, which represented 83,038 data points and 55,043 fields. The ground truthing data were stratified based on Land IQ's classification schema, with approximately 75% of the data selected for model building and calibration, and the remaining approximately 25% dedicated to independent validation and accuracy assessment. These independent data were set aside from the modeling process and used in the final accuracy assessment discussed later. The two datasets were reviewed and evaluated statistically to identify any repeated points within a single field or samples considered unrepresentative (crops that were very stressed, intercropped or abandoned, for example). These data points were flagged and removed from the training and validation samples.

[Hide Process step ▲](#)

PROCESS STEP ►
DESCRIPTION

CROP CLASSIFICATION MODEL Multiple geoprocessing tools and methods were employed to assess the model dataset, including ArcGIS, and other open-source statistical tools. These tools were used to generate spectral characteristics, textural characteristics, and temporal representations that are related to the specific attributes of each crop or land use. Supervised classification was used to classify delineated fields. Selected ground truth data and feature data were applied to the algorithm for model building and calibration. A portion of these data were used for model calibration and the remainder was used to train the models. Multiple remote sensing models are assessed and compared to determine the highest performing for classification. The preferred model was then applied to all delineated fields to predict land cover type, as well as prediction confidence, which is used to inform QA/QC efforts.

Hide Process step ▲

PROCESS STEP ►
DESCRIPTION

QUALITY REVIEW Photo interpretation methods were used to review imagery of classified fields with a low confidence level. Results were also cross-validated with ancillary data sources such as the coinciding USDA Crop Data Layer and county agricultural surveys and county crop reports, to assess and evaluate significant differences. Differences do not always indicate incorrect classification but are used both to evaluate the classification result and explain deviation from other data sources if any exists.

Hide Process step ▲

PROCESS STEP ►
DESCRIPTION

CROP MAP PRODUCT The geospatial database was attributed with field size (acres), relevant county, and the appropriate crop classification categories per both the Land IQ and DWR legends.

Hide Process step ▲

SOURCE DATA ►

SOURCE CITATION ►

TITLE Land IQ California 2018
ALTERNATE TITLES DWR

PUBLICATION DATE 2021-03-25

[Hide Source citation ▲](#)

EXTENT OF THE SOURCE DATA

TEMPORAL EXTENT

BEGINNING DATE 2017-10-01

ENDING DATE 2018-09-30

[Hide Source data ▲](#)

[Hide Lineage ▲](#)

Distribution ►

DISTRIBUTOR ►

CONTACT INFORMATION

INDIVIDUAL'S NAME Bekele Temesgen

ORGANIZATION'S NAME California Department of Water Resources

CONTACT'S POSITION Chief, Land and Water Use Section

CONTACT'S ROLE distributor

CONTACT INFORMATION ►

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[Hide Distributor ▲](#)

DISTRIBUTION FORMAT

* NAME SDE Feature Class

[Hide Distribution ▲](#)

Fields ►

DETAILS FOR OBJECT [atlas_prd.SDE.i15_Crop_Mapping_2018](#) ►

* TYPE Feature Class

* ROW COUNT 408290

FIELD OBJECTID ►

* ALIAS OBJECTID
* DATA TYPE OID
* WIDTH 4
* PRECISION 10
* SCALE 0

FIELD DESCRIPTION

Internal feature number.

DESCRIPTION SOURCE

Esri

DESCRIPTION OF VALUES

Sequential unique whole numbers that are automatically generated.

Hide Field OBJECTID ▲

FIELD Shape ►

* ALIAS Shape
* DATA TYPE Geometry
* WIDTH 4
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

Feature geometry.

DESCRIPTION SOURCE

Esri

DESCRIPTION OF VALUES

Coordinates defining the features.

Hide Field Shape ▲

FIELD Acres ►

* ALIAS ACRES
* DATA TYPE Double
* WIDTH 8
* PRECISION 38
* SCALE 8

FIELD DESCRIPTION

Total land acreage for each individual polygon, given in U.S. acres. Note that land acres are not necessarily equal to the summation of crop acres if multiple crops were planted through the year.

DESCRIPTION SOURCE

California Department of Water Resources

Hide Field Acres ▲

FIELD **DWR_REVERSE** ►

* ALIAS DWR_REVERSE

* DATA TYPE String

* WIDTH 1

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

Indicator that the original polygon classification was revised or modified by DWR Regional Land Use staff. Revised polygons are indicated by the letter 'r'.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Revised polygons are indicated by the code 'r'. New polygons are indicated by the letter 'n'

Hide Field DWR_REVERSE ▲

FIELD **SYMB_CLASS** ►

* ALIAS SYMB_CLASS

* DATA TYPE String

* WIDTH 2

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

Class code used for Main Season (summer) symbology.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See CLASS 2 for detail

Hide Field SYMB_CLASS ▲

FIELD **MULTIUSE** ►

* ALIAS MULTIUSE

* DATA TYPE String

* WIDTH 1

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

This field indicates whether sequential or concurrent land uses are mapped within the area represented by a polygon.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Polygons where a sequence of one to four crops were planted in succession are coded as:

S - a single land use or crop

D - double cropped: two crops grown in sequence

T - triple cropped: three crops grown in sequence.

Q - quadruple cropped: four crops grown in sequence.

Polygons where crops or land uses are spatially mixed within the polygon at the same time are coded as:

I - intercropped: orchards or vineyards with an annual crop planted between the rows,
M - mixed use: A single polygon area that represents a mixture of two or three land uses.

The percentages representing each multiuse type are coded in the PCNT1, PCNT2, PCNT3, and PCNT4 fields.

Hide Field MULTIUSE ▲

FIELD CLASS1 ►

* ALIAS CLASS1

* DATA TYPE String

* WIDTH 2

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

This is the class for the first land use group on the field, and the first level of detail for land use identification. All class codes are letters, not numerals. In the statewide 2018 data set, all Main Season summer crop data begins in column CLASS2; only distinct early crops (MULTIUSE = 'D', or Mixed Use fields (MULTIUSE = 'M') will have a code in CLASS1. All agricultural class codes except for 'YP' are right justified with a leading space. All non-agricultural codes are left justified, and may have a trailing space.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Class codes are:

G - Grain and hay crops (' G'),

R - Rice (' R'),

F - Field crops (' F'),

P - Pasture (' P'),

T - Truck, nursery, and berry crops (' T'),

D - Deciduous fruits and nuts (' D'),

C - Citrus and subtropical (' C'),

V - Vineyards (' V'),
 I - Idle (' I'),
 S - Semi-agricultural and incidental to agriculture ('S '),
 U - Urban - residential, commercial, and industrial, unsegregated ('U '),
 UR - Urban residential - single and multi-family units, includes trailer parks ('UR'),
 UC - Urban commercial ('UC'),
 UI - Urban industrial ('UI'),
 UV - Urban vacant ('UV'),
 NC - Native classes, unsegregated ('NC'),
 NV - Native vegetation ('NV'),
 NR - Native riparian vegetation ('NR'),
 NW - Water surface ('NW'),
 NB - Barren and wasteland ('NB'),
 NS - Not surveyed ('NS'),
 E - Entry denied - area within the study area that was not mapped because entry into the area was denied ('E ') and
 Z - Outside of the study area ('Z ').

Following CLASS codes were used to align Land IQ values with the DWR Standard Land Use Legend:

'X ' - Unclassified fallow (Idle status could not be determined solely within the 2018 calendar),

'YP' - Young Perennial

[Hide Field CLASS1 ▲](#)

FIELD SUBCLASS1 ►

* ALIAS SUBCLASS1
 * DATA TYPE String
 * WIDTH 2
 * PRECISION 0
 * SCALE 0

FIELD DESCRIPTION

This is the subclass associated with the CLASS1, in combination, CLASS and SUBCLASS provide the most specific level of detail for land use identification in the DWR Standard Land Use Legend. It is not mandatory to have a subclass code after a CLASS code. All subclasses are text numerals, and associated with each class. A specific subclass value represents different crops or other land uses depending upon the class associated with it. The subclass list was extended to accommodate Land IQ classifications for remote-sensing purposes.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Subclasses used in this 2018 statewide data set are:

CLASS G - Grain and hay crops: 1 - Barley, 2 - Wheat, 3 - Oats, 6 - Miscellaneous grain and hay, 7 - Mixed grain and hay. (' 1', ' 2', ' 3', ' 6', ' 7', '**')

CLASS R - Rice: 1 - Rice, 2 - Wild Rice. (' 1', ' 2', '**')

CLASS F - Field crops: 1 - Cotton, 2 - Safflower, 3 - Flax, 4 - Hops, 5 - Sugar beets, 6 - Corn (field & sweet), 7 - Grain sorghum, 8 - Sudan, 9 - Castor beans, 10 - Beans (dry), 11 - Miscellaneous field, 12 - Sunflowers, 13 - Hybrid sorghum/sudan, 14 - Millet, 15, Sugar cane, 16 - Corn, Sorghum or Sudan grouped for remote sensing only. (' 1', ' 2', ' 3', ' 4', ' 5', ' 6', ' 7', ' 8', ' 9', '10', '11', '12', '13', '14', '15', '16', '**')

CLASS P - Pasture: 1 - Alfalfa & alfalfa mixtures, 2 - Clover, 3 - Mixed pasture, 4 - Native pasture, 5 - Induced high water table native pasture, 6 - Miscellaneous grasses, 7 - Turf farms, 8 - Bermuda grass, 9 - Rye grass, 10 - Klein grass. (' 1', ' 2', ' 3', ' 4', ' 5', ' 6', ' 7', ' 8', ' 9', '10', '**')

CLASS T - Truck, nursery & berry crops: 1 - Artichokes, 2 - Asparagus, 3 - Beans (green), 4 - Cole crops (mixture of 22-25), 6 - Carrots, 7 - Celery, 8 - Lettuce (all types), 9 - Melons, squash, and cucumbers (all types), 10 - Onions & garlic, 11 - Peas, 12 - Potatoes, 13 - Sweet potatoes, 14 - Spinach, 15 - Tomatoes (processing), 16 - Flowers, nursery & Christmas tree farms, 17 - Mixed (four or more), 18 - Miscellaneous truck, 19 - Bush berries, 20 - Strawberries, 21 - Peppers (chili, bell, etc.), 22 - Broccoli, 23 - Cabbage, 24 - Cauliflower, 25 - Brussels sprouts, 26 - Tomatoes (market), 27 - Greenhouse, 27 - Greenhouse, 28 - Blueberries, 29 - Asian leafy vegetables, 30 - Lettuce or Leafy Greens grouped for remote sensing only, 31 - Potato or Sweet potato grouped for remote sensing only. (' 1', ' 2', ' 3', ' 4', ' 5', ' 6', ' 7', ' 8', ' 9', '10', '11', '12', '13', '14', '15', '16', '17', '18', '19', '20', '21', '22', '23', '24', '25', '26', '27', '28', '29', '30', '**')

CLASS D - Deciduous fruits and nuts: 1 - Apples, 2 - Apricots, 3 - Cherries, 5 - Peaches and nectarines, 6 - Pears, 7 - Plums, 8 - Prunes, 9 - Figs, 10 - Miscellaneous deciduous, 11 - Mixed deciduous, 12 - Almonds, 13 - Walnuts, 14 - Pistachios, 15 - Pomegranates, 16 - Plums, Prunes or Apricots grouped for remote sensing only. (' 1', ' 2', ' 3', ' 5', ' 6', ' 7', ' 8', ' 9', '10', '11', '12', '13', '14', '15', '16', '**')

CLASS C - Citrus and subtropical: 1 - Grapefruit, 2 - Lemons, 3 - Oranges, 4 - Dates, 5 - Avocados, 6 - Olives, 7 - Miscellaneous subtropical fruit, 8 - Kiwis, 9 - Jojoba, 10 - Eucalyptus, 11 - Mixed subtropical fruits. (' 1', ' 2', ' 3', ' 4', ' 5', ' 6', ' 7', ' 8', ' 9', '10', '11', '**')

CLASS V - Vineyards: 1 - Table grapes, 2 - Wine grapes, 3 - Raisin grapes. (' 1', ' 2', ' 3', '**')

CLASS YP - no subclass (**')

CLASS I - Idle: 1 - Land not cropped the current or previous crop season, but cropped within the past three years, 2 - new lands being prepared for crop production, 4 - long term, land consistently idle for four or more years. (' 1', ' 2', ' 4', '**')

CLASS X - Not cropped or unclassified, no subclass (**')

CLASS S - Semi-agricultural & incidental to agriculture: 1 - Farmsteads (includes a farm residence), 2 - Livestock feed lot operations, 3 - Dairies, 4 - Poultry farms, 5 - Farmsteads (without a farm residence), 6 - Miscellaneous semi-agricultural (small roads, ditches, non-planted areas of cropped fields). (' 1', ' 2', ' 3', ' 4', ' 5', '**')

CLASS U - Urban - generic nomenclature with no subclass. (**')

CLASS UR - Urban residential: 1 - Single family dwellings with lot sizes greater than 1 acre up to 5 acres (ranchettes, etc.), 2 - Single family dwellings with a density of 1 unit/acre up to 8+ units per acre, 3 - Multiple family (apartments, condominiums, townhouses, barracks, bungalows, duplexes, etc.), 4 - Trailer courts. WATER USE FACTOR (% of total area irrigated - will be the second digit of the UR subclass when water factor is used): 1 - 0% to 25% area irrigated, 2 - 26% to 50% area irrigated, 3 - 51% to 75% area irrigated, 4 - 76% to 100% area irrigated. (' 1', '11', '12', '13', '14', ' 2', '21', '22', '23', '24', ' 3', '31', '32', '33', '34', ' 4', '41', '42', '43', '44', '**')

CLASS UC - Commercial: 1. Offices, retailers, etc. 2. Hotels, 3. Motels, 4. Recreation vehicle parking, camp sites, 5. Institutions (hospitals, prisons, reformatories, asylums, etc., having a reasonably constant 24-hour resident population), 6. Schools (yards to be mapped separately if large enough), 7. Municipal auditoriums, theaters, churches, buildings and stands associated with race tracks, football stadiums, baseball parks, rodeo arenas, amusement parks, etc., 8. Miscellaneous highwater use (to be used to indicate a high water use condition not covered by the above categories.). (' 1', ' 2', ' 3', ' 4', ' 5', ' 6', ' 7', ' 8', '**')

CLASS UI - Industrial: 1. Manufacturing, assembling, and general processing, 2. Extractive industries (oil fields, rock quarries, gravel pits, rock and gravel processing plants, etc.), 3. Storage and distribution (warehouses, substations, railroad marshalling yards, tank farms, etc.), 6. Saw mills, 7. Oil refineries, 8. Paper mills, 9. Meat packing plants, 10. Steel and aluminum mills, 11. Fruit and vegetable canneries and general food processing, 12. Miscellaneous highwater use (to be used to indicate a high water use condition not covered by other categories.), 13. Sewage treatment plant including ponds, 14. Waste accumulation sites (public dumps, sewage sludge sites, landfill and hazardous waste sites, etc.), or 15. Wind farms, solar collector farms, etc. (' 1', ' 2', ' 3', ' 6', ' 7', ' 8', ' 9', '10', '11', '12', '13', '14', '15', '**')

CLASS - UL: 1. Lawn area - irrigated, 2. Golf course - irrigated, 3. Ornamental landscape (excluding lawns) - irrigated, 4. Cemeteries - irrigated, or 5. Cemeteries - not irrigated. (' 1', ' 2', ' 3', ' 4', ' 5', '**')

CLASS UV - Vacant: 1. Unpaved areas (vacant lots, graveled surfaces, play yards, developable open lands within urban areas, etc.), 3. Railroad right of way, 4. Paved areas (parking lots, paved roads, oiled surfaces, flood control channels, tennis court areas, auto sales lots, etc.), 6. Airport runways, or 7. Land in urban area that is not developable. (' 1', ' 3', ' 4', ' 6', ' 7', '**')

CLASS NC - Native class - generic nomenclature with no subclass ('**') CLASS NV - Native vegetation: 1. Grassland, 2. Light brush, 3. Medium brush, 4. Heavy brush, 5. Brush and timber, 6. Forest, or 7. Oak woodland. (' 1', ' 2', ' 3', ' 4', ' 5', ' 6', ' 7', '**')

CLASS NR - Riparian vegetation: 1. Marsh lands, tules and sedges, 2. Natural highwater table meadow, 3. Trees, shrubs or other larger stream side or watercourse vegetation, 4. Seasonal duck marsh, dry or only partially wet during summer, or 5. Permanent duck marsh, flooded during summer. (' 1', ' 2', ' 3', ' 4', ' 5', '**')

CLASS NW - Water Surface: 1. River or stream (natural fresh water channels), 2. Water channel (all sizes - ditches and canals - delivering water for irrigation and urban use - e.g. State Water Project, Central Valley Project, water district canals, etc.), 3. Water channel (all sizes - ditches and canals - for removing on-farm drainage water - surface runoff and subsurface drainage - e.g. Colusa drain, drainage ditches in Imperial), 4. Freshwater lake, reservoir, or pond (all sizes, includes ponds for stock, recreation, groundwater recharge, managed wetlands, on-farm storage, etc.), 5. Brackish and saline water (includes areas in estuaries, inland water bodies, the ocean,

etc.), 6. Wastewater pond (dairy, sewage, cannery, winery, etc.), or 7. Paved water conveyance channels within urban areas (mainly for flood control). (' 1', ' 2', ' 3', ' 4', ' 5', ' 6', ' 7', '**')

CLASS NB - Barren and Wasteland: 1. Dry stream channels, 2. Mine tailings, 3. Barren land, 4. Salt flats, or 5. Sand dunes. (' 1', ' 2', ' 3', ' 4', ' 5', '**')

CLASS E - Entry denied - no subclass (**')

CLASS Z - Outside of study area - no subclass (**')

[Hide Field SUBCLASS1 ▲](#)

FIELD SPECOND1 ►

* ALIAS SPECOND1
* DATA TYPE String
* WIDTH 1
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

SPECIAL CONDITIONS (only one can be used per parcel) This is a special condition for the first land use, which is a letter.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

It is not mandatory to have a special condition code after a class code:

A - ABANDONED ORCHARDS AND VINEYARDS Trees or vines must be in such a condition that renewal of cultural practices would restore economic production. Example: D1-A indicates an apple orchard previously in production but now abandoned. ('A')

B - BURNED OVER AREAS Indicated by "B". The type and density of natural cover destroyed by fire may be obtained by examination of aerial photographs or satellite imagery. Example: NV7-B indicates oak grassland recently burned over. ('B')

C - GREEN CHOPPED Grain or field crops harvested early for livestock feed ('C')

D - HIGH DENSITY ORCHARDS Indicates the density of trees is higher than normally expected (used with D and C classes). ('D')

E - ECOSYSTEM RESTORATION Native vegetation or riparian areas that have undergone restoration (used with NV and NR classes). ('E')

F - FALLOW LANDS Land not cropped during the current crop season, but cropped during the previous crop season. (1) If no crop residue is apparent or identifiable then the "F" symbol will follow the agricultural class symbol for the crop most representative of those grown in the area. Example: T-F indicates fallow land within a truck crop area (with facilities for irrigation). (2) If the crop residue is apparent and identifiable but is not from the current crop season covered by the survey then the

field is considered fallow and mapped as the class of the crop residue. Example: Surveyor found old sugar beet residue not from current season. Land would be mapped F-F. (3) If the crop residue is identifiable as that of a crop which was grown during the survey period, then the field is mapped as though the crop existed. Example: Surveyor found carrot residue from current growing season. Land would be mapped T6. ('F')

G – COVER CROP Indicates where grain, field, or pasture type crops have been planted for soil stabilization or for cover crops grown between rows of deciduous and subtropical trees and vines. ('G')

H – HARVESTED CROP Indicates the identified crop was harvested at the time of the survey (used with truck, field, and grain crops). ('H')

K - FREEWAYS The area within the freeway right of way. Examples: UV-K indicates urban vacant, unsegregated, with a freeway special condition (all areas within the freeway right of way). UV4-K indicates the urban vacant paved areas with a freeway special condition (the paved portion within the freeway right of way.) UL3-K indicates irrigated urban landscape with a freeway special condition (irrigated landscape portion within the freeway right of way). ('K')

R - RECREATIONAL To be used with urban residential, commercial, and vacant (recreational vehicle parks and camp sites) within primarily a seasonal recreational area. ('R')

S - SEED CROP Indicates any crop grown for seed. Example: P1-S indicates an irrigated alfalfa seed crop. ('S')

T - TILLED LANDS Land prepared for immediate planting, or just newly planted, including the appearance of seed lines or unidentifiable tiny seedlings. Example: T-T indicates tilled land (either prepared for planting or just planted) in a predominately truck crop area. ('T')

U – INTERPRETED LANDUSE Indicates that the land use was determined using other means than visual field verification. ('U')

W - THIRD PARTY DATA SOURCE

X - PARTIALLY IRRIGATED CROPS Crops irrigated for only part of their normal irrigation season. Example: P3-X indicates partially irrigated mixed pasture. ('X')

Y - YOUNG CROPS Indicates the identified crop is at early stages of growth (used with non-bearing orchards and vineyards, and truck, field, and grain crops). Example: C3-Y indicates young non-bearing oranges. ('Y')

Z - RECLAMATION Land being leached for the removal of harmful salts. This symbol will be used following either the "Idle" symbol or symbols of crops grown as a step in the reclamation process. Example: I2-Z indicates new lands being leached in preparation for crop production. ('Z')

FIELD IRR_TYP1PA ►

* ALIAS IRR_TYP1PA
* DATA TYPE String
* WIDTH 1
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

This field is the irrigation status for the first land use (either irrigated or non-irrigated).

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

The letter codes are "i" for irrigated, and "n" for non-irrigated.

This code refers to the status of the land, so a fallowed field will be mapped as "irrigated" if the field is usually irrigated when a crop has been planted, even if no water has been applied this year.

Hide Field IRR_TYP1PA ▲

FIELD IRR_TYP1PB ►

* ALIAS IRR_TYP1PB
* DATA TYPE String
* WIDTH 1
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

This field is the type of irrigation system.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Types of irrigation system codes are:

C - Center Pivot Sprinkler
L - Linear Move Sprinkler
R - Side Roll Sprinkler
H - Hand Move Sprinkler
P - Permanent Sprinkler
T - Solid Set Sprinkler
F - Furrow Irrigation
B - Border Strip Irrigation
N - Basin Irrigation
W - Wild Flooding
S - Subirrigation
D - Surface Drip Irrigation
A - Buried Drip Irrigation
M - Micro Sprinkler
E - LEPA (Low Energy Precision Application)
U - Unknown or not mapped.

[Hide Field IRR_TYP1PB ▲](#)

FIELD PCNT1 ►

- * ALIAS PCNT1
- * DATA TYPE String
- * WIDTH 2
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

This is the percentage of cropped area associated with the first land use, using text numerals.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

The code "50" means 50%, the code "00" means 100%. A single, double, triple, quadruple, and intercropped ("S", "D", "T", "Q", and "I") land use will display their true percentage value in this field and not necessarily "00" (100%) .A mixed land use ("M") will always have a code in this field, but it will be less than 100% (for further details, see MULTIUSE definition, above).

[Hide Field PCNT1 ▲](#)

FIELD CLASS2 ►

- * ALIAS CLASS2
- * DATA TYPE String
- * WIDTH 2
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

The Main Season (summer) crop classified on the field, or the second crop component in a Mixed Use field (See CLASS1 for list details and descriptions).

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See CLASS1 for detail

[Hide Field CLASS2 ▲](#)

FIELD SUBCLASS2 ►

- * ALIAS SUBCLASS2

* DATA TYPE String

* WIDTH 2

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

See SUBCLASS1 for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See SUBCLASS1 for detail

Hide Field SUBCLASS2 ▲

FIELD SPECOND2 ►

* ALIAS SPECOND2

* DATA TYPE String

* WIDTH 1

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

See SPECOND1 for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See SPECOND1 for detail

Hide Field SPECOND2 ▲

FIELD IRR_TYP2PA ►

* ALIAS IRR_TYP2PA

* DATA TYPE String

* WIDTH 1

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

See IRR_TYP1PA for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See IRR_TYP1PA for detail

[Hide Field IRR_TYP2PA ▲](#)

FIELD IRR_TYP2PB ►

- * ALIAS IRR_TYP2PB
- * DATA TYPE String
- * WIDTH 1
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

See IRR_TYP1PB for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See IRR_TYP1PB for detail

[Hide Field IRR_TYP2PB ▲](#)

FIELD PCNT2 ►

- * ALIAS PCNT2
- * DATA TYPE String
- * WIDTH 2
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

Percentage of the area covered by the crop for CLASS2 crop.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Percentage of the area covered by the crop for CLASS2 (ranging from 0 - 100%). See PCNT1 for details.

[Hide Field PCNT2 ▲](#)

FIELD CLASS3 ►

- * ALIAS CLASS3
- * DATA TYPE String
- * WIDTH 2
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

This field is the third crop or other land use identified on a field. (See CLASS1 for list details and descriptions)

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See CLASS1 for list detail

Hide Field CLASS3 ▲

FIELD SUBCLASS3 ►

* ALIAS SUBCLASS3

* DATA TYPE String

* WIDTH 2

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

See SUBCLASS1 for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See SUBCLASS1 for detail

Hide Field SUBCLASS3 ▲

FIELD SPECOND3 ►

* ALIAS SPECOND3

* DATA TYPE String

* WIDTH 1

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

See SPECOND1 for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See SPECOND1 for detail

Hide Field SPECOND3 ▲

FIELD IRR_TYP3PA ►

* ALIAS IRR_TYP3PA
* DATA TYPE String
* WIDTH 1
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

See IRR_TYP1PA for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See IRR_TYP1PA for detail

Hide Field IRR_TYP3PA ▲

FIELD IRR_TYP3PB ►

* ALIAS IRR_TYP3PB
* DATA TYPE String
* WIDTH 1
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

See IRR_TYP1PB for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See IRR_TYP1PB for detail

Hide Field IRR_TYP3PB ▲

FIELD PCNT3 ►

* ALIAS PCNT3
* DATA TYPE String
* WIDTH 2
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

Percentage of the area covered by the crop for CLASS3 crop.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Percentage of the area covered by the crop for CLASS3 (ranging from 0 - 100%). See PCNT1 for details.

[Hide Field PCNT3 ▲](#)

FIELD CLASS4 ►

- * ALIAS CLASS4
- * DATA TYPE String
- * WIDTH 2
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

The fourth crop or other land use identified on a field. (See CLASS1 for list details and descriptions)

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See CLASS1 for list detail

[Hide Field CLASS4 ▲](#)

FIELD SUBCLASS4 ►

- * ALIAS SUBCLASS4
- * DATA TYPE String
- * WIDTH 2
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

See SUBCLASS1 for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See SUBCLASS1 for detail

[Hide Field SUBCLASS4 ▲](#)

FIELD SPECOND4 ►

- * ALIAS SPECOND4
- * DATA TYPE String
- * WIDTH 1
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

See SPECOND1 for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See SPECOND1 for detail

Hide Field SPECOND4 ▲

FIELD IRR_TYP4PA ►

* ALIAS IRR_TYP4PA

* DATA TYPE String

* WIDTH 1

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

See IRR_TYP1PA for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See IRR_TYP1PA for detail

Hide Field IRR_TYP4PA ▲

FIELD IRR_TYP4PB ►

* ALIAS IRR_TYP4PB

* DATA TYPE String

* WIDTH 1

* PRECISION 0

* SCALE 0

FIELD DESCRIPTION

See IRR_TYP1PB for details.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See IRR_TYP1PB for detail

Hide Field IRR_TYP4PB ▲

FIELD PCNT4 ►

- * ALIAS PCNT4
- * DATA TYPE String
- * WIDTH 2
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

Percentage of the area covered by the crop for CLASS4 crop.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Percentage of the area covered by the crop for CLASS4 (ranging from 0 - 100%). See PCNT1 for details.

Hide Field PCNT4 ▲

FIELD UCF_ATT ►

- * ALIAS UCF_ATT
- * DATA TYPE String
- * WIDTH 37
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

This field is 37 characters string concatenation of all field survey attributes starting from the MULTIUSE field to the PCNT4 field. The summary string is used for analysis and review in the QA/QC process and for processing data in some raster formats. Beginning character positions of attribute substrings within the UCF_ATT text are listed below:

- 1 MULTIUSE
- 2 CLASS1
- 4 SUBCLASS1
- 6 SPECOND1
- 7 IRR_TYP1PA
- 8 IRR_TYP1PB
- 9 PCNT1
- 11 CLASS2
- 13 SUBCLASS2
- 15 SPECOND2
- 16 IRR_TYP2PA
- 17 IRR_TYP2PB
- 18 PCNT2
- 20 CLASS3
- 22 SUBCLASS3
- 24 SPECOND3
- 25 IRR_TYP3PA
- 26 IRR_TYP3PB

27 PCNT3
29 CLASS4
31 SUBCLASS4
33 SPECOND4
34 IRR_TYP4PA
35 IRR_TYP4PB
36 PCNT4

Columns CLASS2 through PCNT2 reflect Main season (summer) attributes.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Concatenation of fields from MULTIUSE through PCNT4.

Hide Field UCF_ATT ▲

FIELD CROPTYP1 ►

* ALIAS CROPTYP1
* DATA TYPE String
* WIDTH 4
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

This field is a four character string from the concatenation of CLASS1 and SUBCLASS1, stripped of all spaces and asterisks (**).

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Concatenation of CLASS1 and SUBCLASS1, stripped of all spaces and asterisks (**).

Hide Field CROPTYP1 ▲

FIELD ADOY1 ►

* ALIAS ADOY1
* DATA TYPE Double
* WIDTH 8
* PRECISION 38
* SCALE 8

FIELD DESCRIPTION

This is a number value representing the Adjusted Day Of Year for peak NDVI (Normalized Difference Vegetation Index) date corresponding to CROPTYP1. The date received by Land IQ was delivered in a Julian date format (YYYYDDD) and was converted into the ADOY by DWR for statistical purposes. Negative numbers represent year 2017 peak dates, and positive numbers represent year 2018 peak date. For example:

-92 = Crop peak NDVI date of October 1, 2017
-1 = Crop peak NDVI date of December 31, 2017
1 = Crop peak NDVI date of January 1, 2018
273 = Crop peak NDVI date of September 30, 2018

A <NULL> value was used when no peak date was determined by Land IQ.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Codes for this field are as following:

Positive ADOY values correspond to year 2018 Julian date (1 = January 1, 2018 through 273 = September 30, 2018) for peak NDVI. However, negative values correspond to Julian date prior to year (-92 = October 1, 2017 through -1 = December 31, 2017)

A <NULL> value was used when no peak date was determined by Land IQ.

[Hide Field ADOY1 ▲](#)

FIELD CROPTYP2 ►

* ALIAS CROPTYP2
* DATA TYPE String
* WIDTH 4
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

This field is a four character string from the concatenation of CLASS2 and SUBCLASS2, stripped of all spaces and asterisks (**).

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Concatenation of CLASS2 and SUBCLASS2, stripped of all spaces and asterisks (**).

[Hide Field CROPTYP2 ▲](#)

FIELD ADOY2 ►

* ALIAS ADOY2
* DATA TYPE Double
* WIDTH 8
* PRECISION 38
* SCALE 8

FIELD DESCRIPTION

This is a number value representing the Adjusted Day Of Year for peak NDVI (Normalized Difference Vegetation Index) date received by Land IQ. The date This is a

number value representing the Adjusted Day Of Year for peak NDVI (Normalized Difference Vegetation Index) date corresponding to CROPTYP2. The date received by Land IQ was delivered in a Julian date format (YYYYDDD) and was converted into the ADOY by DWR for statistical purposes. Negative numbers represent year 2017 peak dates, and positive numbers represent year 2018 peak date. For example:

-92 = Crop peak NDVI date of October 1, 2017
-1 = Crop peak NDVI date of December 31, 2017
1 = Crop peak NDVI date of January 1, 2018
273 = Crop peak NDVI date of September 30, 2018

A <NULL> value was used when no peak date was determined by Land IQ.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See ADOY1 for detail.

Hide Field ADOY2 ▲

FIELD CROPTYP3 ►

* ALIAS CROPTYP3
* DATA TYPE String
* WIDTH 4
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

This field is a four character string from the concatenation of CLASS3 and SUBCLASS3, stripped of all spaces and asterisks (**).

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Concatenation of CLASS3 and SUBCLASS3, stripped of all spaces and asterisks (**).

Hide Field CROPTYP3 ▲

FIELD ADOY3 ►

* ALIAS ADOY3
* DATA TYPE Double
* WIDTH 8
* PRECISION 38
* SCALE 8

FIELD DESCRIPTION

This is a number value representing the Adjusted Day Of Year for peak NDVI (Normalized Difference Vegetation Index) date received by Land IQ. The date This is a

number value representing the Adjusted Day Of Year for peak NDVI (Normalized Difference Vegetation Index) date corresponding to CROPTYP3. The date received by Land IQ was delivered in a Julian date format (YYYYDDD) and was converted into the ADOY by DWR for statistical purposes. Negative numbers represent year 2017 peak dates, and positive numbers represent year 2018 peak date. For example:

-92 = Crop peak NDVI date of October 1, 2017
-1 = Crop peak NDVI date of December 31, 2017
1 = Crop peak NDVI date of January 1, 2018
273 = Crop peak NDVI date of September 30, 2018

A <NULL> value was used when no peak date was determined by Land IQ.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See ADOY1 for detail.

Hide Field ADOY3 ▲

FIELD CROPTYP4 ►

* ALIAS CROPTYP4
* DATA TYPE String
* WIDTH 4
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

This field is a four character string from the concatenation of CLASS4 and SUBCLASS4, stripped of all spaces and asterisks (**).

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

Concatenation of CLASS4 and SUBCLASS4, stripped of all spaces and asterisks (**).

Hide Field CROPTYP4 ▲

FIELD ADOY4 ►

* ALIAS ADOY4
* DATA TYPE Double
* WIDTH 8
* PRECISION 38
* SCALE 8

FIELD DESCRIPTION

This is a number value representing the Adjusted Day Of Year for peak NDVI (Normalized Difference Vegetation Index) date received by Land IQ. The date This is a

number value representing the Adjusted Day Of Year for peak NDVI (Normalized Difference Vegetation Index) date corresponding to CROPTYP4. The date received by Land IQ was delivered in a Julian date format (YYYYDDD) and was converted into the ADOY by DWR for statistical purposes. Negative numbers represent year 2017 peak dates, and positive numbers represent year 2018 peak date. For example:

-92 = Crop peak NDVI date of October 1, 2017
-1 = Crop peak NDVI date of December 31, 2017
1 = Crop peak NDVI date of January 1, 2018
273 = Crop peak NDVI date of September 30, 2018

A <NULL> value was used when no peak date was determined by Land IQ.

DESCRIPTION SOURCE

California Department of Water Resources

DESCRIPTION OF VALUES

See ADOY1 for detail.

Hide Field ADOY4 ▲

FIELD REGION ►

* ALIAS REGION
* DATA TYPE String
* WIDTH 4
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

DWR Regional Office associated with the polygon.

DESCRIPTION SOURCE

California Department of Water Resources

Hide Field REGION ▲

FIELD County ►

* ALIAS COUNTY
* DATA TYPE String
* WIDTH 25
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

Indicates the county that the centroid of each crop field resides in. Due to the size of the urban areas we did not attribute the county/counties for these features because some extended beyond a single county.

DESCRIPTION SOURCE

Land IQ

Hide Field County ▲

FIELD UniqueID ►

- * ALIAS UniqueID
- * DATA TYPE String
- * WIDTH 80
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

Unique Identifier for each polygon

DESCRIPTION SOURCE

Land IQ

Hide Field UniqueID ▲

FIELD LIQ_REPORT ►

- * ALIAS LIQ_REPORT
- * DATA TYPE String
- * WIDTH 20
- * PRECISION 0
- * SCALE 0

FIELD DESCRIPTION

This is a 19 character string concatenation of the multicropping classification by Land IQ for Water Year 2018. Each crop is represented by four characters based on the combination of CLASS and SUBCLASS stripped of all '*' and ' ' (space) characters, with a ' ' (space) between each crop. The code '*****' represents no crop reported by Land IQ for that season. Original Land IQ classifications reported for each polygon are preserved for comparison.

DESCRIPTION SOURCE

California Department of Water Resources

Hide Field LIQ_REPORT ▲

FIELD Shape.STArea() ►

- * ALIAS Shape.STArea()
- * DATA TYPE Double
- * WIDTH 0
- * PRECISION 0
- * SCALE 0

Hide Field Shape.STArea() ▲

FIELD Shape.STLength() ►

- * ALIAS Shape.STLength()
- * DATA TYPE Double
- * WIDTH 0
- * PRECISION 0

* SCALE 0

[Hide Field Shape.STLength\(\)](#) ▲

[Hide Details for object atlas_prd.SDE.i15_Crop_Mapping_2018](#) ▲

[Hide Fields](#) ▲

Metadata Details ►

METADATA LANGUAGE English (UNITED STATES)
METADATA CHARACTER SET utf8 - 8 bit UCS Transfer Format

SCOPE OF THE DATA DESCRIBED BY THE METADATA dataset
SCOPE NAME * dataset

LAST UPDATE 2021-02-22

ARCGIS METADATA PROPERTIES

METADATA FORMAT ArcGIS 1.0
STANDARD OR PROFILE USED TO EDIT METADATA FGDC
METADATA STYLE FGDC CSDGM Metadata

CREATED IN ARCGIS FOR THE ITEM 2021-03-16 18:14:18
LAST MODIFIED IN ARCGIS FOR THE ITEM 2021-03-17 13:46:57

AUTOMATIC UPDATES

HAVE BEEN PERFORMED Yes
LAST UPDATE 2021-03-17 13:38:27

[Hide Metadata Details](#) ▲

Metadata Contacts ►

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ORGANIZATION'S NAME California Department of Water Resources
CONTACT'S POSITION Chief, Land and Water Use Section
CONTACT'S ROLE point of contact

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Thumbnail and Enclosures ►

THUMBNAIL

THUMBNAIL TYPE JPG

Hide Thumbnail and Enclosures ▲