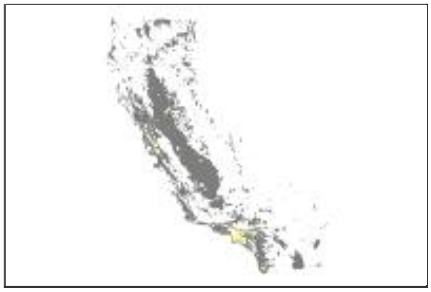
i15_Crop_Mapping_2016

File Geodatabase Feature Class



Tags

Imagery, Urban, boundaries, Planning, Satellite imagery, Ground truth, Crop, Raster, Landsat, Land cover, environment, 2016, State of California, Irrigated land, 2016, farming, Multispectral analysis, Vector, Digital imagery, Image classification, Aerial photography, Land use, Survey, Boundaries, Agriculture

Summary

This dataset represents a statewide, comprehensive, field-scale assessment of agricultural land use, as well as urban and wetland boundaries for the 2016 year. This dataset is meant to provide information for resource planning and assessments across multiple agencies and serves as a consistent base layer for a broad array of potential users and multiple end uses. 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 (see 'Contacts'). 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 Muffet Wilkerson, who may be contacted at 916-651-9650, or at Muffet.Wilkerson@water.ca.gov. Comments, problems, improvements, updates, or suggestions should be forwarded to the official GIS steward as available and appropriate.

Description

This dataset represents the 2016 main season agricultural land use, wetlands, and urban boundaries for all 58 counties in California. This data was originally prepared by Land IQ, LLC and provided to the California Department of Water Resources (DWR) and other resource agencies involved in work and planning efforts across the state for current land use information. The Land IQ base data was reviewed, and in some cases revised, by DWR Regional Office Land Use staff using additional analyses based on a combination of aerial photography, remote sensing multi-spectral imagery, agronomic analysis and ground verification. 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. Each polygon classification is consistent with DWR attribute standards, however some of DWR's traditional attribute definitions are modified and extended to accomodate 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 (see 'Contacts').

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 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).

Land use boundaries were delineated by Land IQ from 2016 NAIP Imagery and 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 -124.469095 **East** -113.499687
North 42.069558 **South** 32.431666

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 imageryBaseMapsEarthCover, environment, farming, boundaries, planningCadastre

* CONTENT TYPE Downloadable Data

PLACE KEYWORDS State of California

TEMPORAL KEYWORDS 2016

THEME KEYWORDS boundaries, environment, farming

THESAURUS ►
TITLE ISO 19115 Topic Category

Hide Thesaurus ▲

THEME KEYWORDS Imagery, Urban, Planning, Satellite imagery, Ground truth, Crop, Raster, Landsat, Land cover, Irrigated land, 2016, Multispectral analysis, Vector, Digital imagery, Image classification, Aerial photography, Land use, Survey, Boundaries, Agriculture

Hide Topics and Keywords ▲

Citation ►

TITLE i15_Crop_Mapping_2016
PUBLICATION DATE 2019-11-22

EDITION 2019.11.22

PRESENTATION FORMATS digital map
FGDC GEOSPATIAL PRESENTATION FORMAT vector digital data

OTHER CITATION DETAILS
CDWR (2019). 2016 California Statewide Agricultural Land Use , California Department of Water Resources, website: https://gis.water.ca.gov/app/CADWRLandUseViewer/

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)
DATASET CHARACTER SET utf8 - 8 bit UCS Transfer Format

STATUS completed
SPATIAL REPRESENTATION TYPE vector

SUPPLEMENTAL INFORMATION
A full report is available as submitted by Land IQ. Please contact Muffet Wilkerson for a file copy.

* PROCESSING ENVIRONMENT Version 6.2 (Build 9200) ; Esri ArcGIS 10.5.1.7333

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 cpyLIQ2016_LandUse_fromAtlas
* LOCATION file://\\DSIWM-249551\F$_StatewideLandUseGDBs\StatewideLU_LIQ_all.gdb
  * ACCESS PROTOCOL Local Area Network

Hide Resource Details ▲

Extents ►

EXTENT

DESCRIPTION

Unknown

TEMPORAL EXTENT

BEGINNING DATE 2016-01-01
ENDING DATE 2016-12-31

VERTICAL EXTENT

* MINIMUM VALUE 0.000000
* MAXIMUM VALUE 0.000000

EXTENT

GEOGRAPHIC EXTENT

BOUNDING RECTANGLE

WEST LONGITUDE -124.469095
EAST LONGITUDE -113.499687
SOUTH LATITUDE 32.325102
NORTH LATITUDE 42.069558

VERTICAL EXTENT

* MINIMUM VALUE 0.000000
* MAXIMUM VALUE 0.000000

EXTENT

GEOGRAPHIC EXTENT

BOUNDING RECTANGLE

EXTENT TYPE Extent used for searching
* WEST LONGITUDE -124.469095
* EAST LONGITUDE -113.499687
* NORTH LATITUDE 42.069558
* SOUTH LATITUDE 32.431666
* EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM

* WEST LONGITUDE -370900.970300
* EAST LONGITUDE 539923.239500
* SOUTH LATITUDE -603628.040200
* NORTH LATITUDE 450139.576700
* 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

CONTACT INFORMATION ▶
PHONE
VOICE (916) 376-9660

ADDRESS
TYPE both
DELIVERY POINT 3500 Industrial Blvd.
CITY West Sacramento
ADMINISTRATIVE AREA CA
POSTAL CODE 95691
E-MAIL ADDRESS Jeff.A.Smith@water.ca.gov

Hide Contact information ▲

POINT OF CONTACT
INDIVIDUAL'S NAME Tito Cervantes
ORGANIZATION'S NAME California Department of Water Resources, Northern Regional Office
CONTACT'S POSITION Senior Environmental Scientist (Supv)
CONTACT'S ROLE point of contact

CONTACT INFORMATION ▶
PHONE
VOICE 530-529-7389

ADDRESS
TYPE both
DELIVERY POINT 2440 Main Street
CITY Red Bluff
ADMINISTRATIVE AREA California
POSTAL CODE 96080
E-MAIL ADDRESS Tito.Cervantes@water.ca.gov

Hide Contact information ▲

POINT OF CONTACT
INDIVIDUAL'S NAME Steve Ewert
ORGANIZATION'S NAME California Department of Water Resources, South Central Regional Office
CONTACT'S POSITION Senior Environmental Scientist (Supv)
CONTACT'S ROLE point of contact

CONTACT INFORMATION ▶
PHONE
VOICE 559-230-3334

ADDRESS
TYPE both
DELIVERY POINT 3374 East Shields Avenue
CITY Fresno

ADMINISTRATIVE AREA California
POSTAL CODE 93726
E-MAIL ADDRESS Steve.Ewert@water.ca.gov

Hide Contact information ▲

POINT OF CONTACT
INDIVIDUAL'S NAME Robert Fastenau
ORGANIZATION'S NAME California Department of Water Resources, Southern Regional Office
CONTACT'S POSITION Senior Environmental Scientist (Supv)
CONTACT'S ROLE point of contact

CONTACT INFORMATION ►
PHONE
VOICE 818-549-2319

ADDRESS
TYPE both
DELIVERY POINT 770 Fairmont Avenue, Suite 102
CITY Glendale
ADMINISTRATIVE AREA California
POSTAL CODE 91203-1035
E-MAIL ADDRESS Robert.Fastenau@water.ca.gov

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
None

SECURITY CONSTRAINTS
CLASSIFICATION unclassified
CLASSIFICATION SYSTEM Public Domain

ADDITIONAL RESTRICTIONS
Available upon request

Hide Resource Constraints ▲

Spatial Reference ►

ARCGIS COORDINATE SYSTEM

* TYPE Projected
* GEOGRAPHIC COORDINATE REFERENCE GCS_NAD_1983_2011
* PROJECTION NAD_1983_2011_California_Teale_Albers
* COORDINATE REFERENCE DETAILS

PROJECTED COORDINATE SYSTEM

WELL-KNOWN IDENTIFIER 102962
X ORIGIN -16909700
Y ORIGIN -8597000
XY SCALE 10000
Z ORIGIN -100000
Z SCALE 10000
M ORIGIN -100000
M SCALE 10000
XY TOLERANCE 0.001
Z TOLERANCE 0.001
M TOLERANCE 0.001
HIGH PRECISION true
LATEST WELL-KNOWN IDENTIFIER 6414
WELL-KNOWN TEXT PROJCS["NAD_1983_2011_California_Teale_Albers",GEOGCS["GCS_NAD_1983_2011",DATUM["D_NAD_1983_2011",SPHEROID["GRS_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Albers"],PARAMETER["False_Easting",0.0],PARAMETER["False_Northing",-4000000.0],PARAMETER["Central_Meridian",-120.0],PARAMETER["Standard_Parallel_1",34.0],PARAMETER["Standard_Parallel_2",40.5],PARAMETER["Latitude_Of_Origin",0.0],UNIT["Meter",1.0],AUTHORITY["EPSG",6414]]

REFERENCE SYSTEM IDENTIFIER
* VALUE 6414
* CODESPACE EPSG
* VERSION 8.2.10(10.3.1)

Hide Spatial Reference ▲

Spatial Data Properties ►

VECTOR ►
* LEVEL OF TOPOLOGY FOR THIS DATASET geometry only

GEOMETRIC OBJECTS
FEATURE CLASS NAME cpyLIQ2016_LandUse_fromAtlas
* OBJECT TYPE composite
* OBJECT COUNT 390666

Hide Vector ▲

ARCGIS FEATURE CLASS PROPERTIES ►
FEATURE CLASS NAME cpyLIQ2016_LandUse_fromAtlas
* FEATURE TYPE Simple
* GEOMETRY TYPE Polygon
* HAS TOPOLOGY FALSE
* FEATURE COUNT 390666
* 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 10/18/2018

Hide Data quality report - Completeness omission ▲

DATA QUALITY REPORT - QUANTITATIVE ATTRIBUTE ACCURACY ►
MEASURE DESCRIPTION
Statewide attribute accuracy for crop classification is considered to be between 93.8% (mean) and 97.5% (median) for all crops combined. Accuracy varies between geographic regions.

EVALUATION METHOD
Land IQ accuracy assessment results.

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.

EVALUATION METHOD
Locational quality was estimated at +/- 2.0 meters at a 95% confidence level when registered against NAIP reference imagery. Offset was measured in a randomly selected subset of approximately 10% of all fields. The NAIP reference image has a reported

positional accuracy of 6.0 meters. Therefore, the combined locational quality is 8.0 meters.

Hide Data quality report - Absolute external positional accuracy ▲

Hide Data Quality ▲

Lineage ►

PROCESS STEP ►

WHEN THE PROCESS OCCURRED 2018-10-01 00:00:00

DESCRIPTION

2.1 DATA COLLECTION Both aerial and satellite data resources were used for the overall classification. Aerial imagery provided by the United States Department of Agriculture (USDA) National Agriculture Imagery Program (NAIP) was collected throughout the summer of 2016 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 and available every 16 days and provided for temporal analysis throughout the growing season. Other satellite- based imagery provided by Sentinel was also utilized during the QA/QC process. While lower resolution than NAIP imagery, the overpass frequency is multiple times per month which is valuable for a visual analysis of the temporal characteristics for each crop (i.e. growing season). Ground truth data were collected during the 2016 growing season. These data were used for training and validation of the mapping analysis. Field data from over 17% of all irrigated land in California was collected. This represented 43,934 data points and 59 crop classes. This dataset was QA/QC'd to remove any repeated points within a single field or unrepresentative sample points (e.g., a declining orchard or intercropped field) and then split to provide for data training and to maintain a separate, independent validation dataset. Twenty five percent of the QA/QC'd ground truth data were then set aside for independent validation. Ground truth data was primarily collected in the Central Valley. However, for the first time, crop data was also collected in Siskiyou, Modoc, Lassen and Shasta counties. Analysis in areas that lacked ground truth data (coastal valleys and southern California) was performed using photo interpretation techniques in addition to imagery and classification approaches established in areas that were informed by training data.

Hide Process step ▲

PROCESS STEP ►

WHEN THE PROCESS OCCURRED 2018-10-01 00:00:00

DESCRIPTION

2.3 ACCURACY ASSESSMENT After completion of the final classification dataset, a comprehensive accuracy assessment is completed. Independent ground truthing samples set aside for this purpose (25% of the final ground truth data) are used in this process. A stratified random sampling method is used for accuracy assessment sample selection. The datasets are stratified by land cover type and county boundary. In the 2016 analysis, more than 10,100 samples were selected for accuracy assessment. These sites are not used to train the classification algorithm and therefore represent unbiased reference information.

Hide Process step ▲

PROCESS STEP ▶

WHEN THE PROCESS OCCURRED 2018-10-01 00:00:00

DESCRIPTION

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. The mapping approach employs advanced spatial statistical analysis approaches to determine prediction probabilities and inform QA/QC efforts. A rigorous QA/QC and analysis refinement process is employed to improve predictions on all lower probability fields. Individual fields (boundaries of homogeneous crop types representing true irrigated area, rather than legal parcel boundaries) are used so that each independent field could be analyzed independently and assigned to a crop class. The result represents the true irrigated area and not legal or other less detailed boundaries that may be available elsewhere. The classification legend was developed in coordination with DWR with consideration of the known crop variation, existing DWR legends used in current models, and Land IQ mapping classes. Two legend levels were selected in order to retain the detail in Land IQ's base mapping while providing a rolled-up legend consistent with DWR's classification that groups some crops into categories. The legends and crop classes can be related and cross-referenced.

Hide Process step ▲

PROCESS STEP ▶

WHEN THE PROCESS OCCURRED 2018-10-01 00:00:00

DESCRIPTION

2.2 ANALYSIS The Land IQ land use mapping unit is a field-scale layer focused on agricultural production areas greater than 2 acres across the state. More than 390,000 delineated fields are classified utilizing ground training examples and multiple image sources and dates. These images and ground truth data are used to develop classification algorithms for crop identification. Multiple selected image sources and timeframes serve as input data for the remote sensing classification process, along with comprehensive ground truth training samples. Ground truth data are reviewed and evaluated statistically to identify any samples considered unrepresentative (crops that are very stressed or sparse, for example). These data points are flagged and not used for training samples. The ground truthing data is then stratified based on Land IQ's classification schema, with 75% of the data selected for model building and calibration, and the remaining 25% dedicated to independent accuracy assessment. These independent data are set aside and are not used during any stage of modeling process. A supervised classification algorithm was applied to classify delineated fields. The supervised classification used a random forest approach and is carried out county by county where training samples are available. Random Forest approaches are currently some of the highest performing for data classification and regression. They are advantageous because of their ability to classify large amounts of data with high accuracy. Random Forest approaches have other advantages over some more traditional classification methods like maximum likelihood algorithms and Classification and Regression Tree (CART). Random Forest algorithms are non-parametric and require no assumption of input data being normally distributed. They are flexible and can incorporate categorical and continuous input data and complex relationships within the dataset. Multiple geoprocessing tools were employed to assess the model dataset, including ArcGIS, ERDAS Imagine, and other open source statistical tools. These tools are used to generate spectral characteristics, textural characteristics, and temporal representations that are related to the specific attributes of each crop or land use. The input features are produced using satellite imagery from Landsat 8 OLI/TIRS sensors and NAIP collected during the growing season. Additional satellite

imagery and ancillary inputs were used in some counties to supplement and improve the classification. These additional sources include the United States Geological Survey (USGS) National Elevation Dataset (NED) and the USDA Crop Data Layer (CDL 2016). Selected ground truth data and feature data are fed into the Random Forest algorithm for model building and calibration. A portion of these data are used for model calibration and the remainder is used for training Random Forest models. Multiple Random Forest models are assessed and compared to determine which is the highest performing for classification. The preferred Land IQ model is applied to all delineated fields to predict land cover type, as well as prediction confidence, which is used to inform QA/QC efforts. Classified fields with a lower confidence level are carefully reviewed by reviewing image resources using photo interpretation methods. Results are 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. The geospatial database is attributed with field size in acres, relevant county, and the appropriate crop classification category per the Land IQ legend.

Hide Process step ▲

SOURCE DATA ▶
DESCRIPTION
contract, dataset stewards

SOURCE CITATION ▶
TITLE Land IQ California 2016
ALTERNATE TITLES DWR

Hide Source citation ▲

Hide Source data ▲

Hide Lineage ▲

Distribution ▶

DISTRIBUTOR ▶
CONTACT INFORMATION
INDIVIDUAL'S NAME Muffet Wilkerson
ORGANIZATION'S NAME California Department of Water Resources
CONTACT'S POSITION Senior Environmental Scientist (Supervisor)
CONTACT'S ROLE distributor

CONTACT INFORMATION ▶
PHONE
VOICE 916-651-9650

ADDRESS
TYPE postal
DELIVERY POINT PO Box 942836
CITY Sacramento

ADMINISTRATIVE AREA CA
POSTAL CODE 94236-0001
E-MAIL ADDRESS Muffet.Wilkerson@water.ca.gov

Hide Contact information ▲

Hide Distributor ▲

DISTRIBUTION FORMAT
* NAME File Geodatabase Feature Class

Hide Distribution ▲

Fields ►

DETAILS FOR OBJECT cpyLIQ2016_LandUse_fromAtlas ►
* TYPE Feature Class
* ROW COUNT 390666

FIELD OBJECTID_1 ►
* ALIAS OBJECTID_1
* DATA TYPE OID
* WIDTH 4
* PRECISION 0
* SCALE 0
* FIELD DESCRIPTION
Internal feature number.

* DESCRIPTION SOURCE
Esri

* DESCRIPTION OF VALUES
Sequential unique whole numbers that are automatically generated.

Hide Field OBJECTID_1 ▲

FIELD Shape ►
* ALIAS Shape
* DATA TYPE Geometry
* WIDTH 0
* 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 0
* SCALE 0

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_revise ►
* ALIAS DWR_revise
* 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
Department of Water Resources

Hide Field DWR_revise ▲

FIELD Symb_class ►
* ALIAS Symb_class
* DATA TYPE String
* WIDTH 4
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION
Class code used for Main Season (summer) symbology.

DESCRIPTION SOURCE
Department of Water Resources

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

S - a single land use or crop
D - double cropped: two crops grown in sequence, or
T – triple cropped: three 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.

DESCRIPTION SOURCE
California Department of Water Resources

LIST OF VALUES
VALUE S
DESCRIPTION A single land use or crop. '00', '**', '**' where PCNT1 is usually100%, PCNT2 and PCNT3 are 0%.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE D
DESCRIPTION Double cropped: two crops grown in sequence. '00', '00', '**' where PCNT1, PCNT2 are usually 100%, PCNT3 is 0%.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE T
DESCRIPTION Triple cropped: three crops grown in sequence. '00', '00', '00' where PCNT1, PCNT2, PCNT3 are usually 100%.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE I
DESCRIPTION Intercropped: orchards or vineyards with an annual crop planted between the rows. '00', '50', '**' where PCNT1 is always 100%, PCNT2 is always 50 % and PCNT3 is 0%.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE M
DESCRIPTION Mixed use: A single polygon area that represents a mixture of two or three land uses. PCNT1, PCNT2 and PCNT3 values are proportional to corresponding land use codes and the sum always equals 100%. PCNT3 may be '**' if the mixture consists of only two land uses.
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

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 2016 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. 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 ').

Two new 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 2016 calendar),

'YP' - Young Perennial

DESCRIPTION SOURCE
DWR

LIST OF VALUES
VALUE R
DESCRIPTION R - Rice (' R')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE G
DESCRIPTION Grain and hay crops (' G)
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE F
DESCRIPTION F - Field crops (' F')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE P
DESCRIPTION P - Pasture (' P')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE T

DESCRIPTION T - Truck, nursery, and berry crops (' T')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE D
DESCRIPTION D - Deciduous fruits and nuts (' D')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE C
DESCRIPTION C - Citrus and subtropical (' C')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE V
DESCRIPTION V - Vineyards (' V')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE I
DESCRIPTION I - Idle (' I')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE S
DESCRIPTION S - Semi-agricultural and incidental to agriculture ('S ')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE U
DESCRIPTION U - Urban - residential, commercial, and industrial, unsegregated ('U ')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE UR
DESCRIPTION UR - Urban residential - single and multi-family units, includes trailer parks ('UR')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE UC
DESCRIPTION UC - Urban commercial ('UC')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE UI
DESCRIPTION UI - Urban industrial ('UI')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE UV
DESCRIPTION UV - Urban vacant ('UV')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE NC
DESCRIPTION NC - Native classes, unsegregated ('NC')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE NV
DESCRIPTION NV - Native vegetation ('NV')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE NR
DESCRIPTION NR - Native riparian vegetation ('NR')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE NW
DESCRIPTION NW - Water surface ('NW')

ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE NB
DESCRIPTION NB - Barren and wasteland ('NB')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE NS
DESCRIPTION NS - Not surveyed ('NS')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE E
DESCRIPTION E - Entry denied - area within the study area that was not mapped because entry into the area was denied ('E ')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE Z
DESCRIPTION Z - Outside of the study area ('Z ')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE X
DESCRIPTION X - Not cropped, or unclassified ('X ')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

VALUE YP
DESCRIPTION YP - Young Perennial orchard or vineyard ('YP')
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR

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 accomodate Land IQ classifications for remote-sensing purposes. Subclasses used in this 2016 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 ('**')

DESCRIPTION SOURCE

California Department of Water Resources, Standard Land Use Legend (2016)

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. 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')

DESCRIPTION SOURCE
California Department of Water Resources

LIST OF VALUES

VALUE A
DESCRIPTION 'A' - Abandoned orchards and vineyards
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE B
DESCRIPTION 'B' - Burned over areas
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE C
DESCRIPTION 'C' - Green chopped
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE D
DESCRIPTION 'D' - High density orchards
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE E
DESCRIPTION 'E' - Ecosystem restoration
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE F
DESCRIPTION 'F' - Fallow lands
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE G
DESCRIPTION 'G' - Cover crop
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE H
DESCRIPTION 'H' - Harvested crop
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE K
DESCRIPTION 'K' - Freeways
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE P
DESCRIPTION 'P' - Fallowing program land
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE R
DESCRIPTION 'R' - Recreational
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE S
DESCRIPTION 'S' - Seed crop
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE T
DESCRIPTION 'T' - Tilled land
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE U
DESCRIPTION 'U' - Interpreted landuse
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE X
DESCRIPTION 'X' - Partially irrigated crop
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE Y
DESCRIPTION 'Y' - Young crop
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE Z
DESCRIPTION 'Z' - Reclamation
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

Hide Field SPECOND1 ▲

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

FIELD DESCRIPTION

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

i - The letter “i” is used if the land use is irrigated, ('i')

n - The letter “n” is used if the land use is non-irrigated. ('n')

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.

DESCRIPTION SOURCE

California Department of Water Resources

LIST OF VALUES
VALUE i
DESCRIPTION 'i' - Irrigated
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE n
DESCRIPTION 'n' - Non-irrigated
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

Hide Field IRR_TYP1PA ▲

FIELD IRR_TYP1PB ►
* ALIAS IRR_TYP1PB
* DATA TYPE String
* WIDTH 1
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
This is the type of irrigation system at the time of survey. If the land use is not irrigated (IRR_TYP1PA ='n'), this field will contain '*'. If the land use is irrigated (IRR_TYP1PA ='i'), one of the following codes is required:

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

DESCRIPTION SOURCE
California Department of Water Resources

LIST OF VALUES
VALUE A
DESCRIPTION 'A' - Buried drip irrigation
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE B
DESCRIPTION 'B' - Border strip irrigation
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE C
DESCRIPTION 'C' - Center pivot sprinkler
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE D

DESCRIPTION 'D' - Surface drip irrigation
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE E
DESCRIPTION 'E' - LEPA (Low Energy Precision Application)
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE F
DESCRIPTION 'F' - Furrow irrigation
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE H
DESCRIPTION 'H' - Hand move sprinkler
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE L
DESCRIPTION 'L' - Linear move sprinkler
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE M
DESCRIPTION 'M' - Micro sprinkler
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE N
DESCRIPTION 'N' - Basin irrigation
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE P
DESCRIPTION 'P' - Permanent sprinkler
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE R
DESCRIPTION 'R' - Side roll sprinkler
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE S
DESCRIPTION 'S' - Subsurface irrigation
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE T
DESCRIPTION 'T' - Solid set sprinkler
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE U
DESCRIPTION 'U' - Unknown or not mapped
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

VALUE W
DESCRIPTION 'W' - Wild flooding
ENUMERATED DOMAIN VALUE DEFINITION SOURCE DWR Land Use Legend (August 2016)

Hide Field IRR_TYP1PB ▲

FIELD PCNT1 ▶
* ALIAS PCNT1
* DATA TYPE String
* WIDTH 2

* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

This is the percentage of land associated with the first land use, using text numerals. The code “50” means 50%, the code “00” means 100%. A mixed land use (“M”) will always have a code in this field also, but it will be less than 100%.

DESCRIPTION SOURCE

DWR

RANGE OF VALUES

MINIMUM VALUE 0
MAXIMUM VALUE 100
UNITS OF MEASURE Percentile
MEASUREMENT RESOLUTION 1

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

DWR

Hide Field CLASS2 ▲

FIELD SUBCLASS2 ►

* ALIAS SUBCLASS2
* DATA TYPE String
* WIDTH 2
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

The Main Season (summer) crop subclass on the field, or the second crop component in a Mixed Use field (See SUBCLASS1 for list details and descriptions).

DESCRIPTION SOURCE

DWR

Hide Field SUBCLASS2 ▲

FIELD SPECOND2 ►

* ALIAS SPECOND2
* DATA TYPE String
* WIDTH 1
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

for the Main Season (summer) crop. See SPECOND1 for details.

DESCRIPTION SOURCE
DWR

Hide Field SPECOND2 ▲

FIELD IRR_TYP2PA ►
* ALIAS IRR_TYP2PA
* DATA TYPE String
* WIDTH 1
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
for the Main Season (summer) crop. See IRR_TYP1PA for details.

DESCRIPTION SOURCE
DWR

Hide Field IRR_TYP2PA ▲

FIELD IRR_TYP2PB ►
* ALIAS IRR_TYP2PB
* DATA TYPE String
* WIDTH 1
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
for the Main Season (summer) crop. See IRR_TYP1PB for details.

DESCRIPTION SOURCE
DWR

Hide Field IRR_TYP2PB ▲

FIELD PCNT2 ►
* ALIAS PCNT2
* DATA TYPE String
* WIDTH 2
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
for the Main Season (summer) crop. See PCNT1 for details.

DESCRIPTION SOURCE
DWR

RANGE OF VALUES
MINIMUM VALUE 0
MAXIMUM VALUE 100
UNITS OF MEASURE Percentile
MEASUREMENT RESOLUTION 1

Hide Field PCNT2 ▲

FIELD CLASS3 ►

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

FIELD DESCRIPTION

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

DESCRIPTION SOURCE

DWR

Hide Field CLASS3 ▲

FIELD SUBCLASS3 ►

* ALIAS SUBCLASS3
* DATA TYPE String
* WIDTH 2
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

See SUBCLASS1 for details.

DESCRIPTION SOURCE

DWR

Hide Field SUBCLASS3 ▲

FIELD SPECOND3 ►

* ALIAS SPECOND3
* DATA TYPE String
* WIDTH 1
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

See SPECOND1 for details.

DESCRIPTION SOURCE

DWR

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

DWR

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
DWR

Hide Field IRR_TYP3PB ▲

FIELD PCNT3 ►
* ALIAS PCNT3
* DATA TYPE String
* WIDTH 2
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
See PCNT1 for details.

DESCRIPTION SOURCE
DWR

RANGE OF VALUES
MINIMUM VALUE 0
MAXIMUM VALUE 80
UNITS OF MEASURE Percentile
MEASUREMENT RESOLUTION 10

Hide Field PCNT3 ▲

FIELD UCF_ATT ►
* ALIAS UCF_ATT
* DATA TYPE String
* WIDTH 28
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
A string concatenation of all field survey attributes starting from the MULTIUSE field to the PCNT3 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
3 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

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

DESCRIPTION SOURCE
DWR

DESCRIPTION OF VALUES
Concatenation of prior fields: MULTIUSE through PCNT3.

Hide Field UCF_ATT ▲

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

FIELD DESCRIPTION
CROPTYP1 represents the earliest season crop before Main Season (CROPTYP2), or one crop within a Mixed field.The specific crop or land use code is based on the combination of CLASS1 and SUBCLASS1 fields, with all leading or trailing spaces removed. For example, the CROPTYP code for Cotton is "F1" from the concatenation of CLASS1 = " F" and SUBCLASS1 = " 1".

DESCRIPTION SOURCE
DWR

Hide Field CROPTYP1 ▲

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

FIELD DESCRIPTION
This code represents the Main Season (summer) crop classified in 2016, See CROPTYP1 for details.

DESCRIPTION SOURCE
DWR

Hide Field CROPTYP2 ▲

FIELD CROPTYP3 ►
* ALIAS CROPTYP3
* DATA TYPE String
* WIDTH 4
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
see CROPTYP1 for details.

DESCRIPTION SOURCE
DWR

Hide Field CROPTYP3 ▲

FIELD Shape_Length ►
* ALIAS Shape_Length
* DATA TYPE Double
* WIDTH 8
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
Length of feature in internal units.

DESCRIPTION SOURCE
Esri

DESCRIPTION OF VALUES
Positive real numbers that are automatically generated.

Hide Field Shape_Length ▲

FIELD Shape_Area ►
* ALIAS Shape_Area
* DATA TYPE Double
* WIDTH 8
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
Area of feature in internal units squared.

DESCRIPTION SOURCE
Esri

DESCRIPTION OF VALUES
Positive real numbers that are automatically generated.

Hide Field Shape_Area ▲

FIELD Region ►
* ALIAS Region
* DATA TYPE String
* WIDTH 4

* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

DWR Regional Office associated with the polygon.

DESCRIPTION SOURCE

DWR

Hide Field Region ▲

FIELD County ►

* ALIAS County
* DATA TYPE String
* WIDTH 50
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

Indicates the county in California that the centroid of each crop field resides in. Due to the size of many managed wetland and 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 Comments ►

* ALIAS Comments
* DATA TYPE String
* WIDTH 125
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

Any user-provided comments

DESCRIPTION SOURCE

DWR

Hide Field Comments ▲

FIELD Source ►

* ALIAS Source
* DATA TYPE String
* WIDTH 50
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION

Source of the boundary and original attribute information.

DESCRIPTION SOURCE

DWR

Hide Field Source ▲

FIELD Crop2016 ►

* ALIAS Crop2016
* DATA TYPE String
* WIDTH 50
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION
Land IQ crop classification for the year 2016

DESCRIPTION SOURCE
Land IQ

Hide Field Crop2016 ▲

FIELD Modified_By ►
* ALIAS Modified_By
* DATA TYPE String
* WIDTH 25
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION
Name of person who last modified the record

DESCRIPTION SOURCE
DWR

LIST OF VALUES
VALUE Zhongwu Wang
DESCRIPTION Name of last modifier pre-delivery
ENUMERATED DOMAIN VALUE DEFINITION SOURCE LandIQ

Hide Field Modified_By ▲

FIELD GlobalID ►
* ALIAS GlobalID
* DATA TYPE GlobalID
* WIDTH 38
* PRECISION 0
* SCALE 0

Hide Field GlobalID ▲

FIELD Date_Data_Refers_To ►
* ALIAS Date_Data_Refers_To
* DATA TYPE String
* WIDTH 25
* PRECISION 0
* SCALE 0

FIELD DESCRIPTION
Date the data refers to

DESCRIPTION SOURCE
DWR

LIST OF VALUES
VALUE October, 2018
DESCRIPTION last date of analysis

ENUMERATED DOMAIN VALUE DEFINITION SOURCE LandIQ

Hide Field Date_Data_Refers_To ▲

FIELD Last_Modified_Date ►
* ALIAS Last_Modified_Date
* DATA TYPE Date
* WIDTH 8
* PRECISION 0
* SCALE 0
FIELD DESCRIPTION
Date record was last modified

DESCRIPTION SOURCE
DWR

LIST OF VALUES
VALUE 10/18/2018
DESCRIPTION date of last pre-delivery modification
ENUMERATED DOMAIN VALUE DEFINITION SOURCE LandIQ

Hide Field Last_Modified_Date ▲

Hide Details for object cpyLIQ2016_LandUse_fromAtlas ▲

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 2019-12-20

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

CREATED IN ARCGIS FOR THE ITEM 2019-12-05 10:28:39
LAST MODIFIED IN ARCGIS FOR THE ITEM 2019-12-20 14:24:20

AUTOMATIC UPDATES
HAVE BEEN PERFORMED Yes
LAST UPDATE 2019-12-20 14:24:20

ITEM LOCATION HISTORY
ITEM COPIED OR MOVED 2019-11-19 08:40:45
FROM C:\Users\sbaker\Documents\ArcGIS\i15_Crop_Mapping_2016_Final
TO \\CNRASTORE-SIWM\LandUse4
\LandUseSurveysOfficialLibrary\i15_Crop_Mapping_2016_Final

Hide Metadata Details ▲

Metadata Contacts ►

METADATA CONTACT
INDIVIDUAL'S NAME Muffet Wilkerson
ORGANIZATION'S NAME California Department of Water Resources
CONTACT'S POSITION Senior Environmental Scientist (Supervisor)
CONTACT'S ROLE point of contact

CONTACT INFORMATION ►
PHONE
VOICE 916-651-9650

ADDRESS
TYPE postal
DELIVERY POINT PO Box 942836
CITY Sacramento
ADMINISTRATIVE AREA CA
POSTAL CODE 94236-0001
E-MAIL ADDRESS Muffet.Wilkerson@water.ca.gov

Hide Contact information ▲

Hide Metadata Contacts ▲

Metadata Maintenance ►

MAINTENANCE
UPDATE FREQUENCY unknown

OTHER MAINTENANCE REQUIREMENTS
Last metadata review date: 20191115

Hide Metadata Maintenance ▲

Metadata Constraints ►

SECURITY CONSTRAINTS
CLASSIFICATION unclassified
CLASSIFICATION SYSTEM Public Information (Government Code Section 6250-6265)

ADDITIONAL RESTRICTIONS
Unclassified - No special procedures currently needed, 2013-April-25

Hide Metadata Constraints ▲

Thumbnail and Enclosures ►

THUMBNAIL

THUMBNAIL TYPE JPG

ENCLOSURE
ENCLOSURE TYPE File
DESCRIPTION OF ENCLOSURE original metadata
ORIGINAL METADATA DOCUMENT, WHICH WAS TRANSLATED yes
SOURCE METADATA FORMAT fgdc

Hide Thumbnail and Enclosures ▲

FGDC Metadata (read-only) ▼