

California Supply Well Impact Analysis Results Layers: Domestic Wells

Based on data shared with CWC – May 2019

Metadata*: DomesticWells_DF_05.shp
DomesticWells_DF_075.shp
DomesticWells_DF_10.shp
DomesticWells_DF_merged.shp

| | |
|------------------------------|-----------------------|
| Projected Coordinate System: | NAD_1983_UTM_Zone_10N |
| Projection: | Transverse_Mercator |
| False_Easting: | 500000.00000000 |
| False_Northing: | 0.00000000 |
| Central_Meridian: | -123.00000000 |
| Scale_Factor: | 0.99960000 |
| Latitude_Of_Origin: | 0.00000000 |
| Linear Unit: | Meter |

| | |
|-------------------------------|-------------------------|
| Geographic Coordinate System: | GCS_North_American_1983 |
| Datum: | D_North_American_1983 |
| Prime Meridian: | Greenwich |
| Angular Unit: | Degree |

**This metadata document covers four different shapefiles, a data layer for each Drought Scenario (0.50 or 50%; 0.75 or 75%; 1.0 or 100%) and a final layer that combines results into one shapefile.*

Methodology:

A drought scenario in this tool is a scenario of groundwater level decline that is based on observations from the 2012 to 2016 drought. Groundwater level declines for each scenario were based on a scaled version of the 2012 to 2016 drought. These scaling factors (0.5, 0.75 and 1.0) reflect the Drought Scenarios of 50%, 75% and 100%. The drought scenario analysis considers how declining groundwater elevations might reduce well production potential as well as what mitigation measures might be required to maintain supplies. The starting groundwater levels for the analysis are fall 2014, and the 2012 to 2016 drought groundwater levels were defined by fall 2011 (pre-drought) and fall 2016 (late drought) levels. Impact and cost calculations were performed for each Public Land Survey System (PLSS) section (approximately 1×1 mile grid square) where information is available for both a well's depth and groundwater levels during the 2012 to 2016 drought. This set of data layers are feature classes with polygons that represent 6,909 section included in the analysis. Please consult this final report for more information: [Gailey 2020](#).

If using for analysis or reporting, please cite the dataset as:

Gailey, R. (2020) California Supply Well Impact Analysis for Drinking Water Vulnerability Webtool.

Each shapefile has the same attributes; the shapefile names identify which scenario result it includes:

- **DomesticWells_DF_05.shp: 50% Drought Scenario, a scaling drought factor of 0.5**
- **DomesticWells_DF_075.shp: 75% Drought Scenario, a scaling drought factor of 0.75**
- **DomesticWells_DF_10.shp: 100% Drought Scenario, a scaling drought factor of 1.0**

Attributes:

| Header | Type | Description |
|-------------|-------------------|--|
| FID | ObjectID | GIS generated |
| Shape | Geometry | GIS generated |
| OBJECTID | ObjectID | GIS generated |
| MTRS | String / Length 9 | PLSS Section Number |
| Shape_Leng | Double | GIS generated |
| Shape_Area | Double | GIS generated |
| Sum Impact | Double | Count of impacted domestic wells per section |
| Cost Impact | Double | Sum of the cost of pump lowering, screen cleaning, and/or well replacement per section |
| Cost XLift | Double | Extra pumping lift costs per section |

DomesticWells_DF_merged.shp

This shapefile provides a summary of Drought Scenario results (Gailey 2020) as they are viewable in the Drinking Water Tool at the level of PLSS section (1x1 mile square): total number of impacted wells and total mitigation or remediation costs, for each of the available scenarios. This layer was created by GreenInfo Network, based on the Private Domestic Well Results provided by Dr. Gailey to Community Water Center.

Attributes:

| Header | Type | Description |
|-----------|-----------------------|--|
| FID | ObjectID | GIS generated |
| Shape | Geometry | GIS generated |
| MTRS | String / Length 9 | PLSS Section Number |
| Wells_50 | Double / Precision 15 | 50% Scenario: Number of Impacted Domestic Wells |
| Cost_50 | Double / Precision 15 | 50% Scenario: Number of Impacted Domestic Wells |
| Wells_75 | Double / Precision 15 | 75% Scenario: Number of Impacted Domestic Wells |
| Cost_75 | Double / Precision 15 | 75% Scenario: Number of Impacted Domestic Wells |
| Wells_100 | Double / Precision 15 | 100% Scenario: Number of Impacted Domestic Wells |
| Cost_100 | Double / Precision 15 | 100% Scenario: Cost to Remediate Impacted Domestic Wells |

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Gailey, R. (2020) California Supply Well Impact Analysis for Drinking Water Vulnerability Webtool.