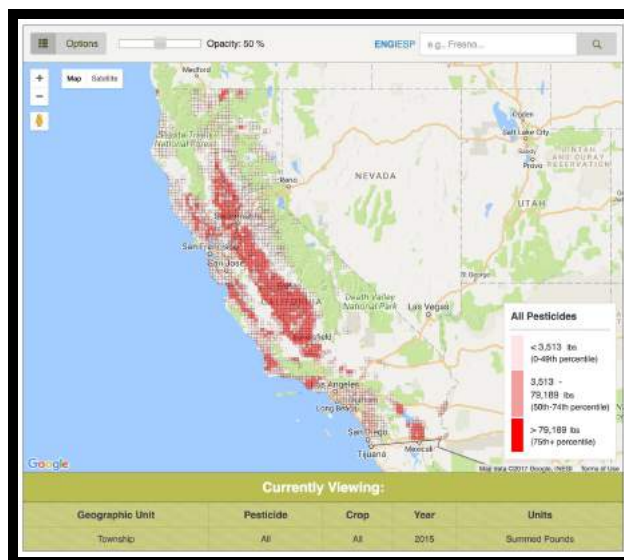


Agricultural Pesticide Mapping Tool User Guide

[VISIT THE PESTICIDE MAPPING TOOL](http://www.trackingcalifornia.org/pesticidetool)
[\[www.trackingcalifornia.org/pesticidetool\]](http://www.trackingcalifornia.org/pesticidetool)



The Agricultural Pesticide Mapping Tool was developed by Tracking California, formerly the California Environmental Health Tracking Program to help users explore the California Department of Pesticide Regulation's Pesticide Use Reporting data.

Read this User Guide to learn how to use features available in the Pesticide Mapping Tool. With the tool users can learn about pesticide use in a specified area, how pesticide use in that area compares with other areas in California, and changes in use over time. This guide is divided into three sections:

Getting started

- ◆ Geographic units available
- ◆ Map colors and how categories are calculated
- ◆ Find location on the map
- ◆ Adjust map view (opacity, satellite)
- ◆ View map in Spanish

Customize your map

- ◆ Open the pesticide selection menu
- ◆ Select a pesticide or pesticide category
- ◆ Select a crop or crop group
- ◆ Select pesticide units/metrics
- ◆ Select geographic unit
- ◆ Select year

Viewing the map

- ◆ View data for a specific location
- ◆ Compare with the rest of the state
- ◆ View trends over time
- ◆ View top ten pesticides

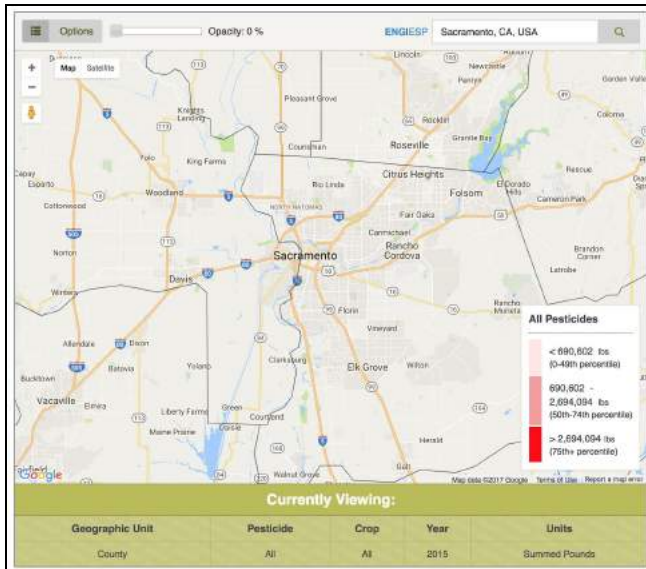
SUGGESTED CITATION: Please use the following citation when using mapping results:

Tracking California, a program of the Public Health Institute. Agricultural Pesticide Mapping Tool. Data from CDPR Pesticide Use Reports. 2019. Online at www.trackingcalifornia.org/pesticidetool.

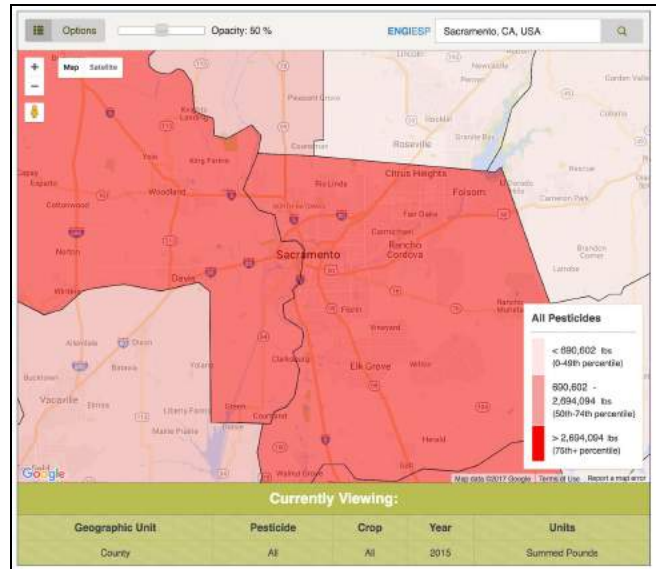
Getting Started

1. Geographic units available

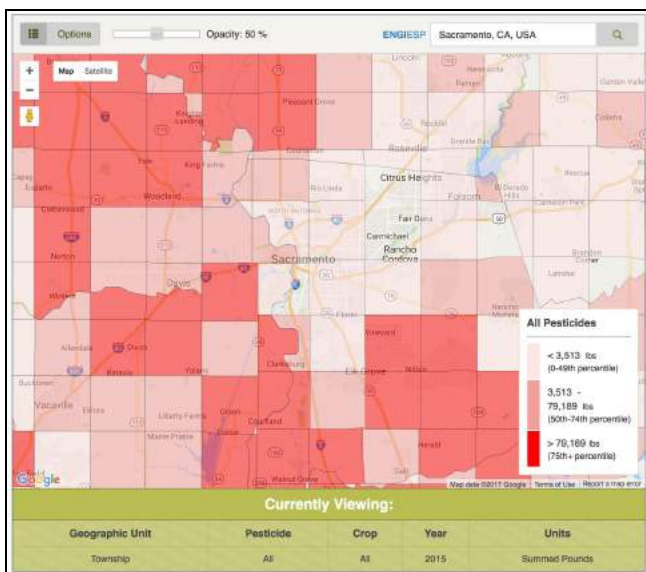
Three geographic units can be viewed with the map: counties, townships, and sections. Township and section boundaries are designated by the Public Land Survey System. Townships are approximately 6-mile by 6-mile squares. Each township is divided into 36 1-mile by 1-mile squares, and these square-mile units are known as sections. See below for the three geographic selections in the Sacramento area:



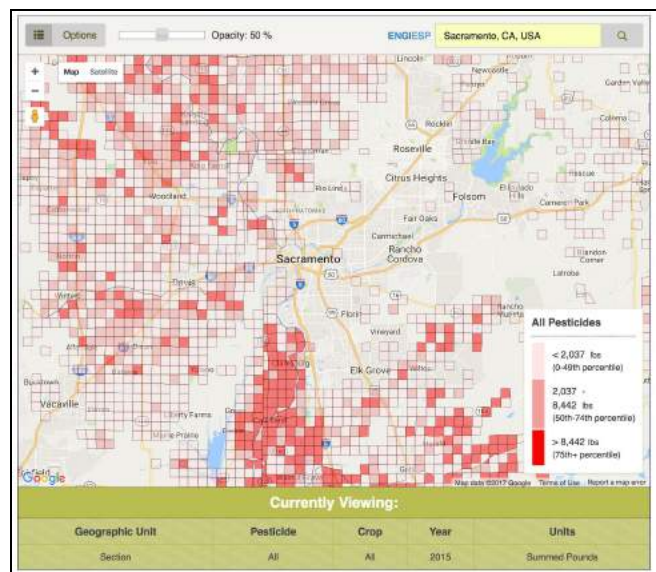
Viewing Sacramento, CA in the Pesticide Mapping Tool (Transparency/Opacity: 0%).



Geographic Unit: County
(Transparency/Opacity: 50%).



Geographic Unit: Township
(Transparency/Opacity: 50%)



Geographic Unit: Section
(Transparency/Opacity: 50%)

Multiple views of pesticide use near Sacramento, CA

2. Map colors and how categories are calculated

The map colors are grouped in three categories of pesticide use: lower (light red), medium (red) and higher (dark red). These categories allow you to quickly identify areas with higher pesticide use. The categories are defined by a relative ranking of pesticide use in the geographic areas compared to one another. Comparisons apply to the three types of pesticide use selections: summed pounds, acres treated, and pounds per acre. Examining the underlying data—by clicking on the map—will help provide additional information.

Interpretations for the map displayed below:

- Lower use-- counties in light red, like Los Angeles, use fewer pesticides when compared to other counties in California. When ranked with all other counties, pesticide use is in the bottom 50%.
- Medium use-- counties in red, like Sonoma, fall in the middle. When ranked, with all other counties, pesticide use in these counties is above the bottom 50% and below the top 25%.
- Higher use-- counties that are dark red, like Fresno, use more pesticides when compared to other counties in California. When ranked with all other counties, pesticide use in these counties is in the top 25%.

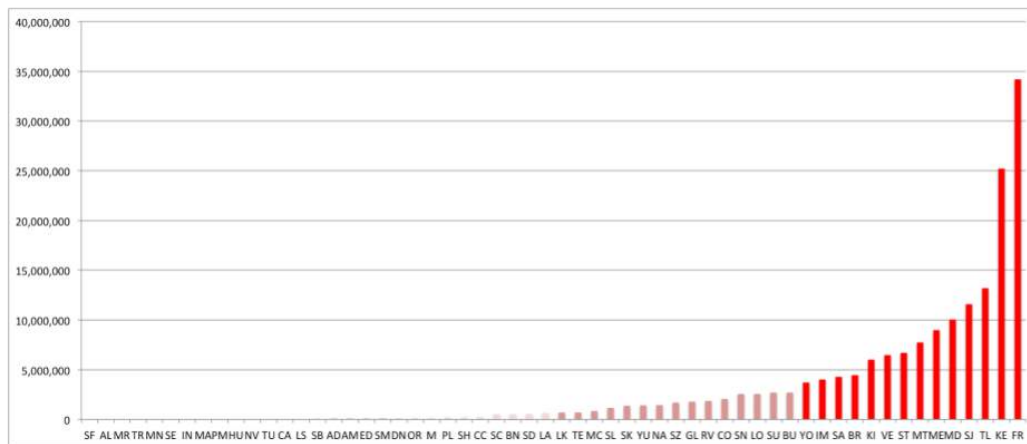
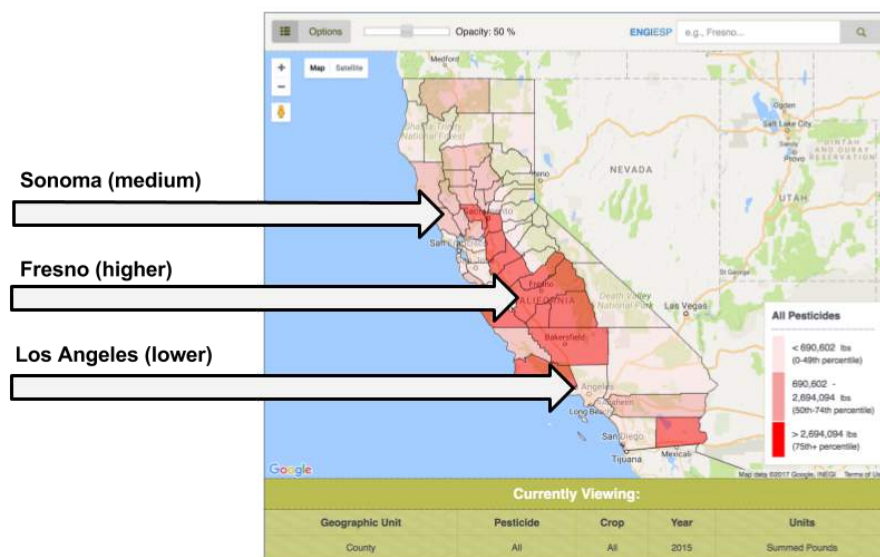
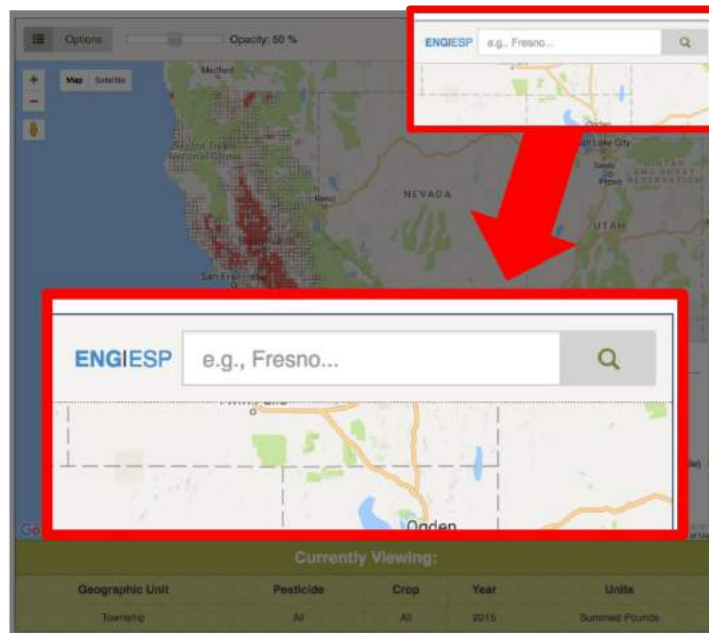


Chart displays pesticide use data displayed in the map above: all pesticides used, summed by pounds, by county for all crop sites in 2015.

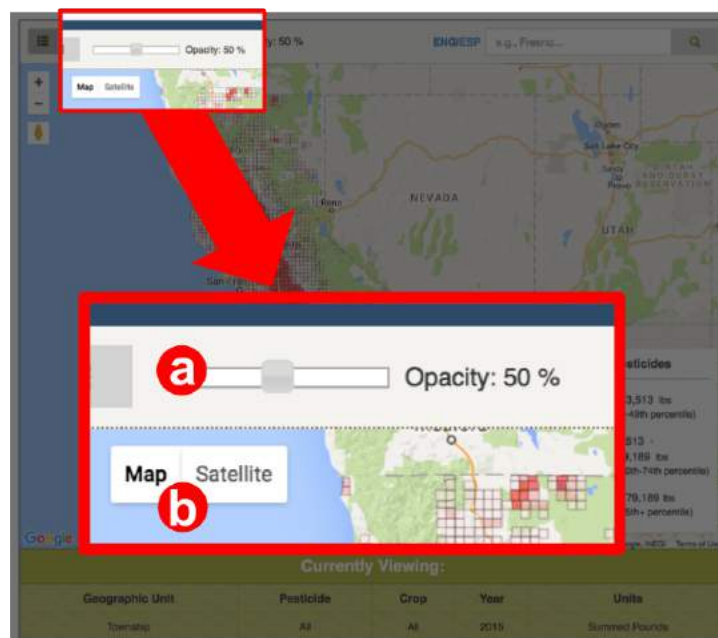
3. Find location on the map

Type in the name of the county, city, or zip code of interest, or zoom in to the location of interest. When zooming in, the tool will automatically select the geographic unit (county, township, or section) and display this information in the box labeled “Currently Viewing.”



4. Adjust map view (opacity, satellite)

- a. Opacity (transparency)-- adjust the opacity slider for a better view of geographic features behind the map layer.
- b. Map/Satellite-- switch the map's base layer to highlight different geographic features including a road map view, terrain view, and satellite view.

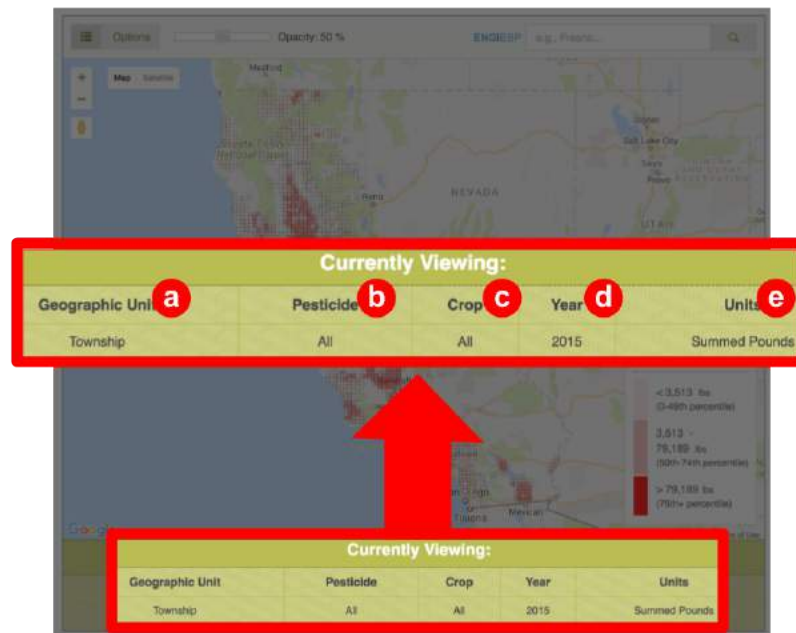


C.

5. Current map selections

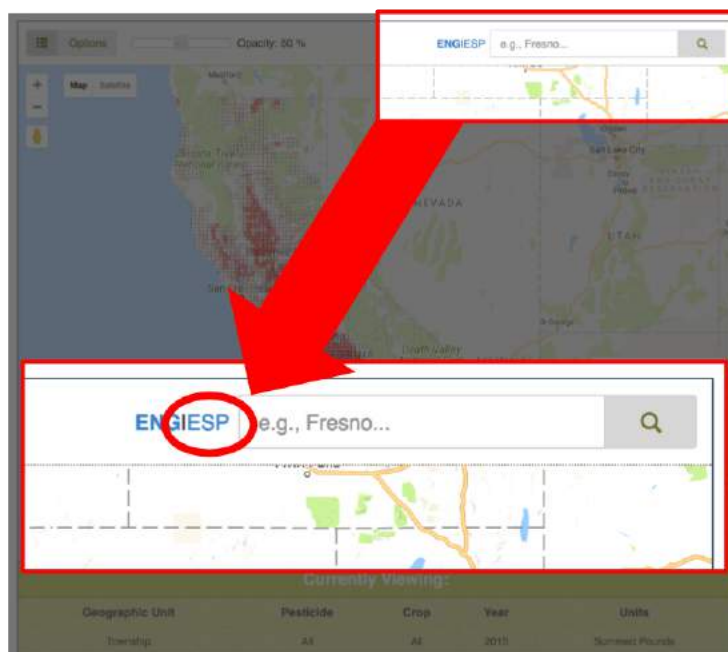
The data being displayed can be seen in the “Currently Viewing” section at the bottom of the screen.

- Geographic Unit-- geographic area for which pesticide metrics are being calculated.
- Pesticide-- individual pesticide or category of pesticides.
- Crop-- type of crop or group of crops.
- Year-- year of data.
- Units-- metric of pesticide use.



6. View in map in Spanish

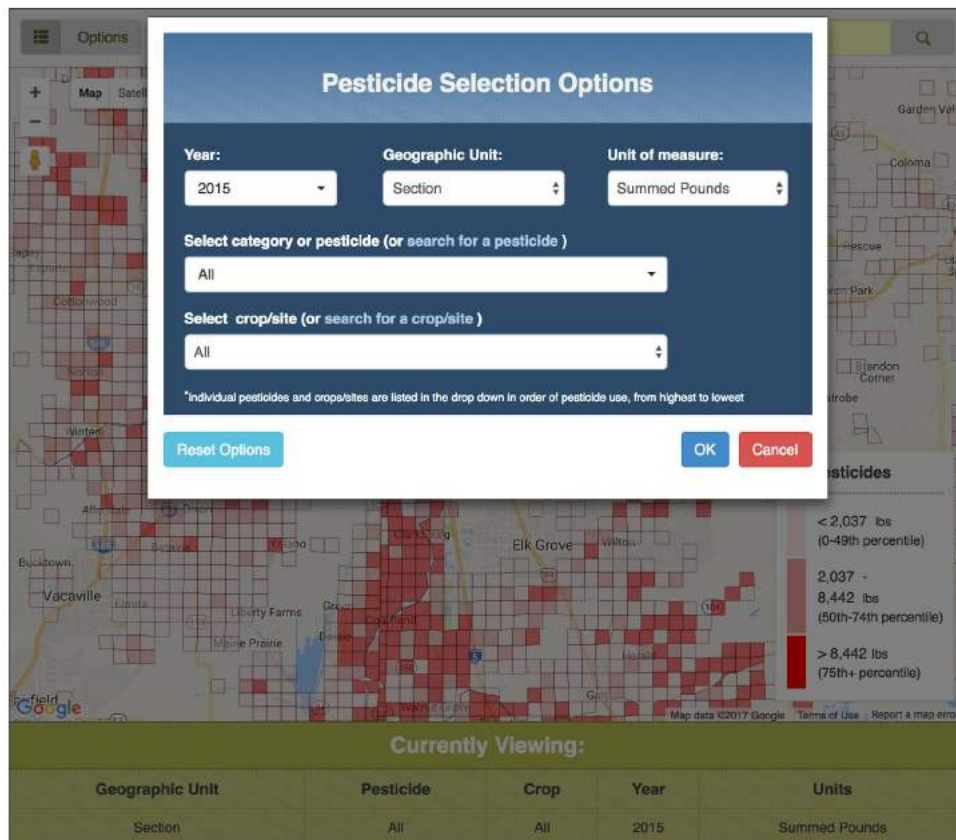
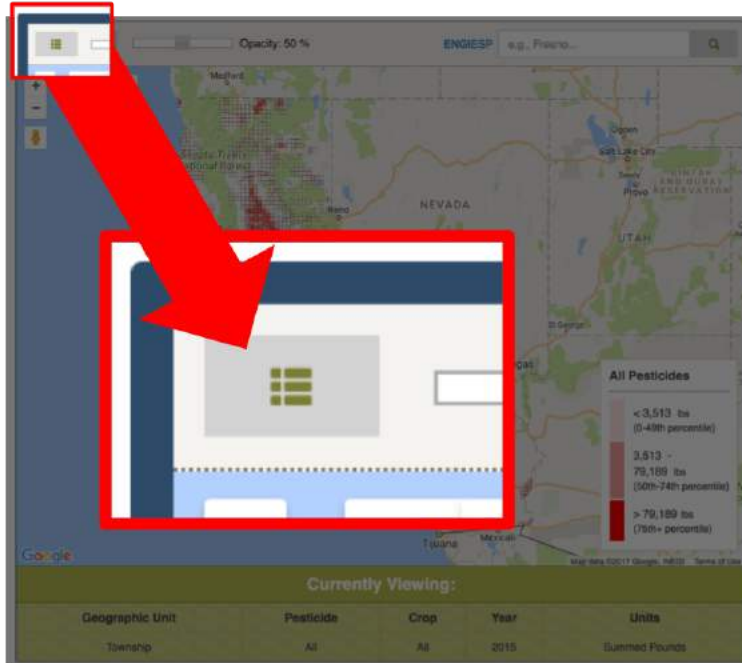
Click “ESP” right new to the address field in the upper right to view the map in Spanish. Click “ENG” to return to the English view of the map.



Customizing your map

A. Open the pesticide selection menu

In the upper left, click on the small gray box to reveal the “Pesticide Selections” menu.



B. Select a pesticide or pesticide category

Select the [type of pesticide or category of pesticide](#). To make a selection use one of two methods to select an individual pesticide or category of pesticides:

- **Option 1:** Select from the pesticide category dropdown menu that displays seven categories (listed below) and the top 10 individual pesticides ranked by pesticide metric selected. As you change selections within the menu for “Pesticide and crop” selections, other dropdown menus change dynamically.
 - All-- all agricultural pesticide use
 - Carcinogens-- chemicals “Known,” “Probable,” or “Likely” to be carcinogenic in humans, based on evaluations by the [US EPA](#) and [CalEPA’s OEHHA](#)
 - Cholinesterase Inhibitors-- chemicals that interfere with the nervous system ([U.S. EPA, CDPH, or the World Health Organization](#))
 - Endocrine Disruptors-- chemicals that interfere with the endocrine system ([European Commission](#))
 - Fumigants-- pesticides applied in gaseous form, and they have higher potential to distribute into the air and drift
 - Neonicotinoids-- a class of pesticides that affects the central nervous system of insects ([US EPA](#))
 - Reproductive and Developmental Toxicants-- chemicals known to cause birth defects or other reproductive harms ([California’s Proposition 65](#))
 - Toxic Air Contaminants-- chemicals which may cause or contribute to an increase in mortality, cancer, or serious illness, such as respiratory disease ([California Air Resources Board](#))
- **Option 2:** Click “search for chemical” next to the pesticide dropdown menu and type the name of an individual pesticide. Suggestions will appear in the dropdown menu as you type.

C. Select a crop or crop group

Select the type of crop (e.g. almonds, strawberries, spinach, corn) or a group of crops (e.g. nuts, leafy vegetables, legumes). Use one of two methods to select a crop or group of crops:

- a. Select a crop from the dropdown menu that displays the 20 crops with highest pesticide use.
- b. Click “search for a crop/site” next to the crop dropdown menu and type the name of the crop of interest. Suggestions will appear in the dropdown menu as you type.

D. Select pesticide units/metrics

Select from three options:

- a. Summed pounds-- pounds of pesticides applied
- b. Acres treated-- number of acres treated with pesticides
- c. Pounds per acre-- the rate of pesticides applied

E. Select geographic unit

Select from three options described on [page 2](#) for more.

F. Select year

Select the year of data of interest. Data are available for 1991-2017.

Viewing the map

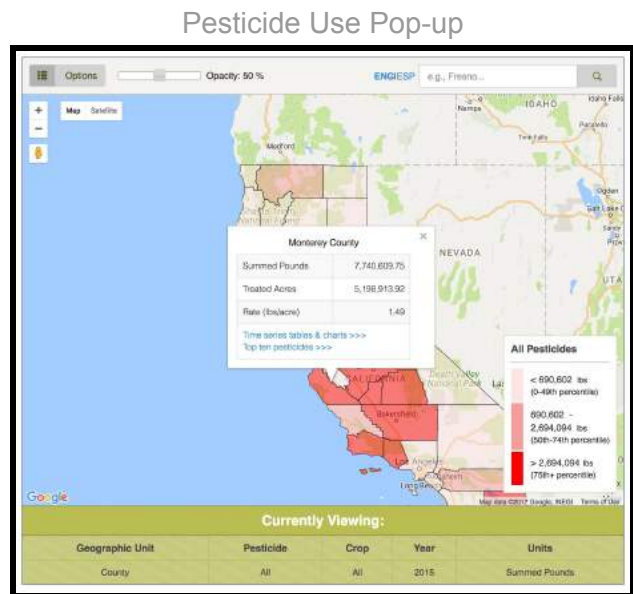
A. View data for a specific location

Click on the section of interest. In this example, the user clicked on Monterey County. The “Pesticide Use Pop-up” shows:

1. Treated Acres (acreage treated with pesticides)
2. Rate (pounds of pesticides applied per acre)
3. Summed Pounds (total pounds of pesticides used in that area).

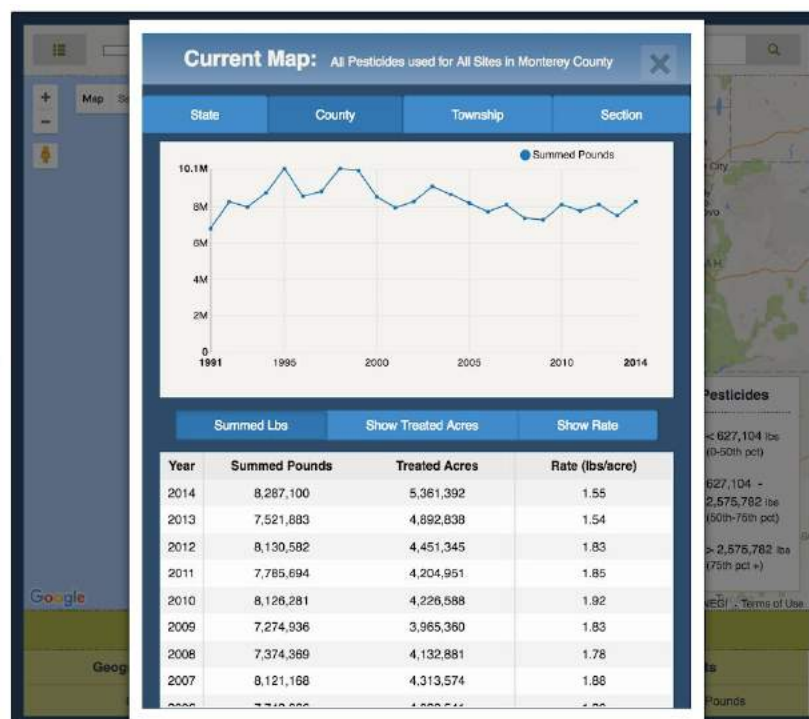
B. Compare with the rest of the state

The color of the geographic unit indicates how it compares to other areas in CA. In this example, Monterey County is colored darker red, meaning this county was among the top 25% of counties in total agricultural pesticide use in California in 2015. See [page 3](#) for more details.



C. View trends over time

In the “Pesticide Use Pop-up,” click on the “Time Series Tables & Charts >>>” link to see how pesticide use has changed in this location. To see time trends for other geographic units click on “State” (for all California), “County” (for counties), “Township” (for 6-mile by 6-mile squares), or “Sections” (for 1-mile by 1-mile squares). The chart will first display “Summed Pounds.” Click on “Treated Acres” and “Rate” to view trends for these metrics.



D. View top ten pesticides

In the “Pesticide Use Pop-up,” click on the “Time Series Tables & Charts >>>” link to see the top ten pesticides used in the selected geographic region (state, county, township, section). You can view the top ten pesticides for a category (e.g., carcinogens) by selecting the desired category from the “Pesticide Category” drop down menu.

The default view shows the top ten pesticides by summed pounds used. By changing the selection (beneath the table), users can also view the top ten pesticides by treated acres or by rate.

Top Pesticides in Monterey See time series

Used for All Sites

Year: 2015 Pesticide Category: All

	State	County	Township	Section	
	Pesticide Name	Categories	Summe...	Treated ...	Rate (lb...
1	Chloropicrin	F,T	1,996,392	8,917	223.90
2	Sulfur	--	973,534	209,135	4.66
3	1,3-Dichloropropene	C,F,T	753,728	7,404	101.80
4	Petroleum Distillates, Refined	--	577,534	136,180	4.24
5	Potassium N-Methylthiocarb...	C,F,R,T	575,414	2,286	251.72
6	Potassium Phosphite	--	376,705	116,750	3.23
7	Mineral Oil	--	229,708	28,716	8.00
8	Methyl Bromide	F,R,T	215,952	1,218	177.29
9	Mancozeb	C,T	174,899	115,025	1.52
10	Fosetyl-Al	--	150,409	54,033	2.78

C - Carcinogens, CI - Cholinesterase Inhibitors, ED - Endocrine Disruptors, F - Fumigants, N - Neonicotinoids, R - Reproductive and Developmental Toxicants, T - Toxic Air Contaminants

Summed Lbs Show Treated Acres Show Rate