# Exploring Fire History with WFIPS

WFIPS Words:

Exclusions: WFIPS does not analyze all the fires in the historical fire record. Areas in WFIPS that are not analyzed are "Excluded". Excluded areas can be viewed by selecting "View >> Raster Layers >> Exclusions" from the WFIPS menu.

Annual: Statistics calculated using the yearly values. So the Annual Average Percent Contained is the average of the Percent Contained for each year.

Overall: Statistics calculated using all the fires. So the Overall Average Percent Contained is number of contained fires divided by the number of fires times 100.
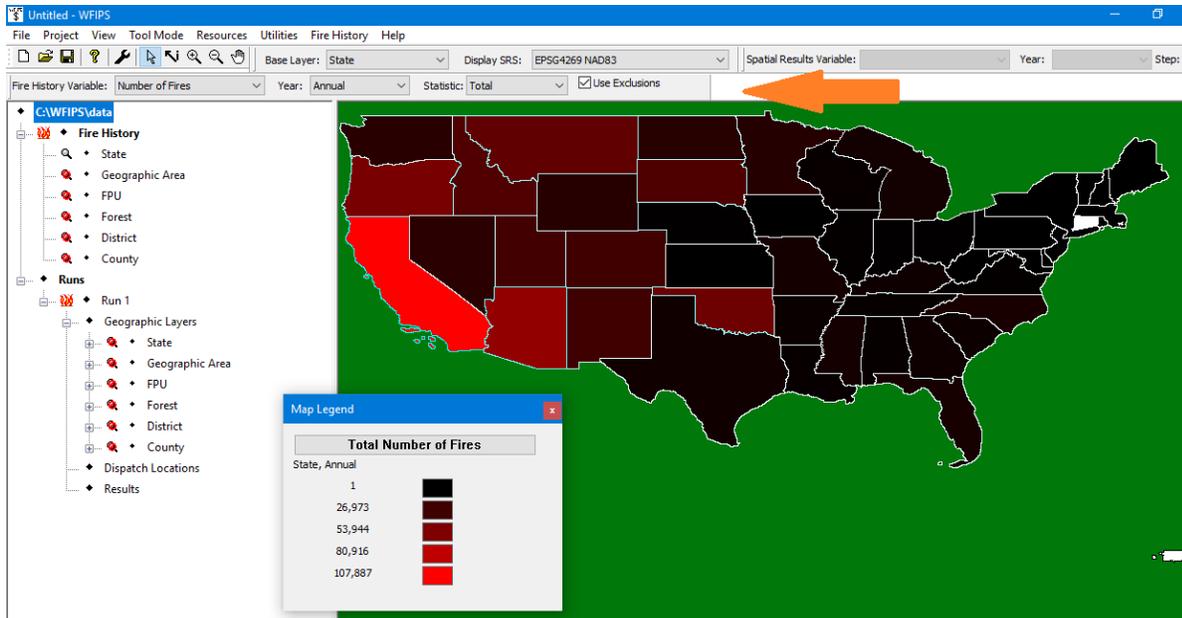
Fire History:

The Historical Fire database needs to be loaded in order to view the Fire History in WFIPS. To do this select "Fire History >> Load Fires" from the WFIPS menu or right click on "Fire History" in the side menu and select "Load Fires".
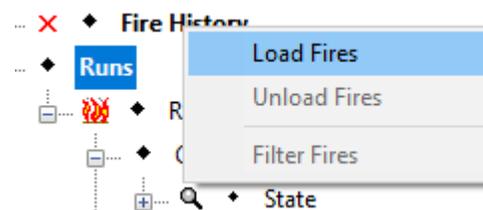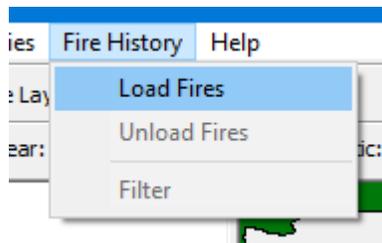
It takes a few minutes to load the fires. You will know they are loaded when the hour glass in front to Fire History changes to flames.


To start viewing the fire history information click on "Fire History" in the side menu.

WFIPS displays a spatial map of the centennial US, the map legend, and Fire History Statistic selection bar. The Fire History Statistics selection bar designates what variable, statistic and data range are displayed on the spatial map. The "Use Exclusions" check box filters the data so only fires in the areas that will be analyzed in WFIPS are used for the calculations. When unchecked all the fires in the historical fire database are used for the calculations.

The Fire History Variables available are the "Number of Fires", "Acres", "Duration" of the fires as determined by their start and end date in the fire history database. (Note that many fires have missing and unreasonable end dates. Only fires with reasonable end dates are used), "ERC Percentile" determined from the 4 km Gridded Fire Danger Climatology, and "Percent Contained" which is determined by using fire's final size and the escape fire size in WFIPS for the fire's location.
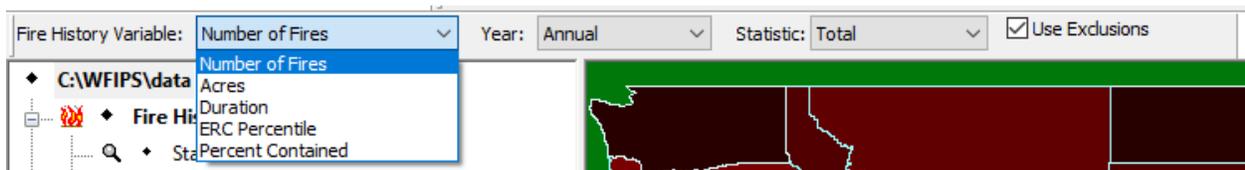

Results for individual years can be displayed. Also the "Annual" results, calculated from the yearly values, and "Overall" results, calculated using individual fires, can be displayed.
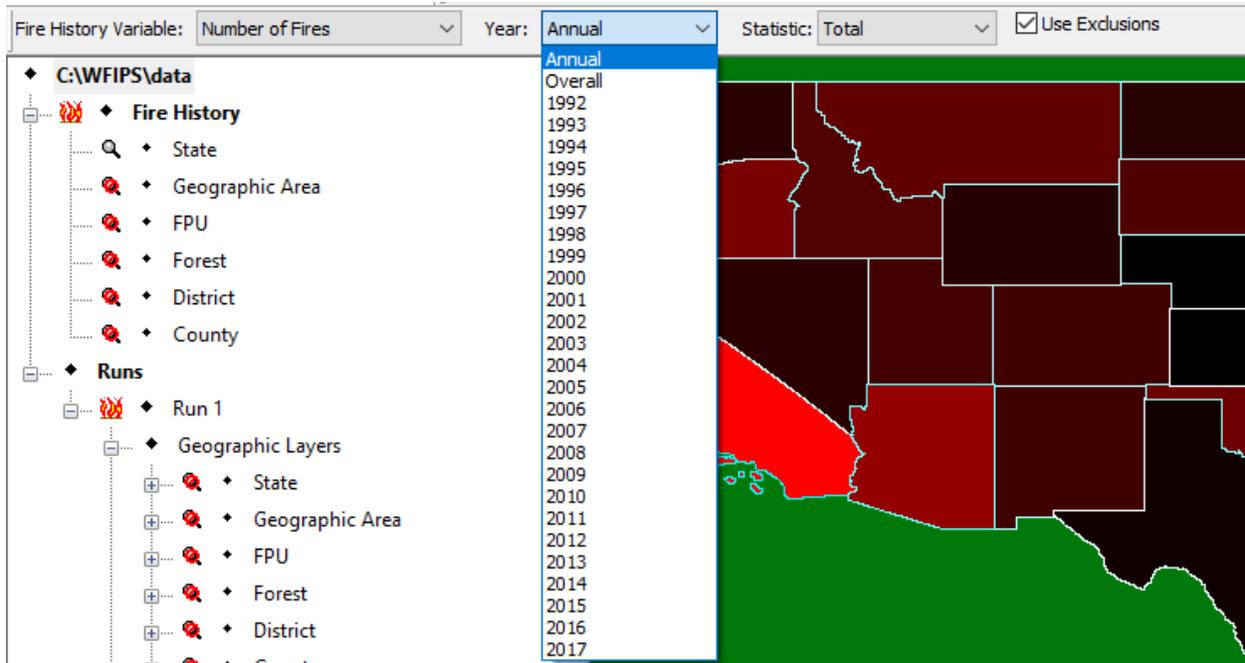
The displayable statistics are the "Total" (Note: Although the Total ERC Percentile and Total Percent Contained can be displayed they may be interesting to interpret.), "Average", "Minimum", "1st Quantile", "Median", "3rd Quantile", and "Maximum".
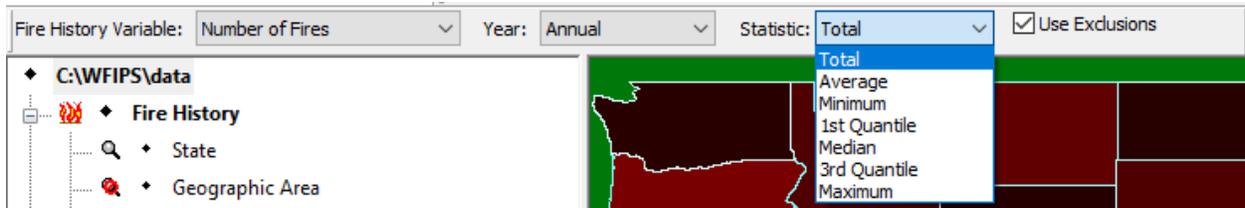
The "Use Exclusions" check box filters the data so only fires in the areas that will be analyzed in WFIPS are used. When the "Use Exclusions" check box is unchecked all the fires in the historical fire database are used for the calculations.
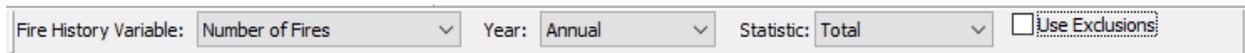

Different Spatial Layers can be displayed. The Spatial layer can be selected by choosing it from the "Base Layer:" box below the WFIPS menu bar or by double clicking on the desired layer under "Fire History" in the side menu.
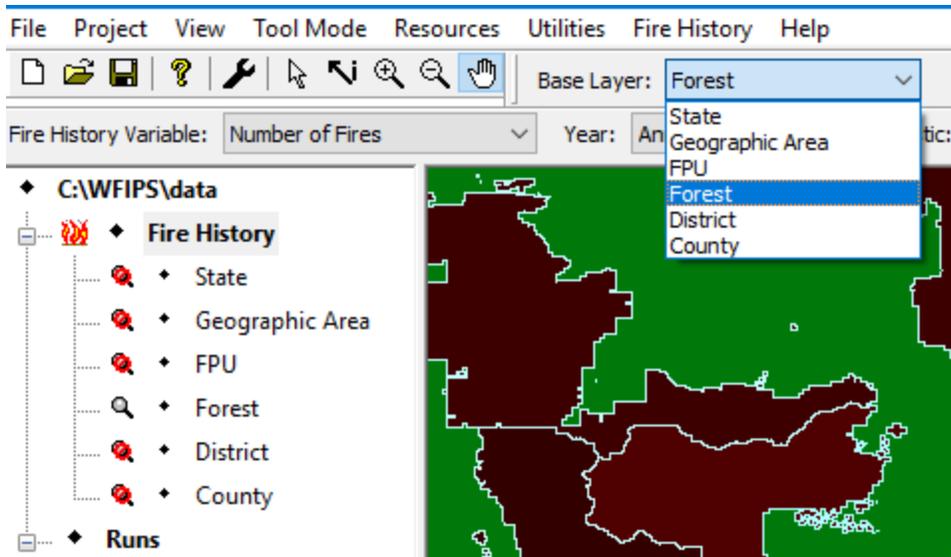
The Fire History Filter Dialog, "Fire History >> Filter Fires" in the WFIPS menu or by right clicking "Fire History" then selecting "Filter Fires" in the side menu, allows for analysis of a subset of the Historical Fire database.

Fire History years or specific periods of the year can be selected along with whether or not to include fires in the WFIPS Exclusion areas.
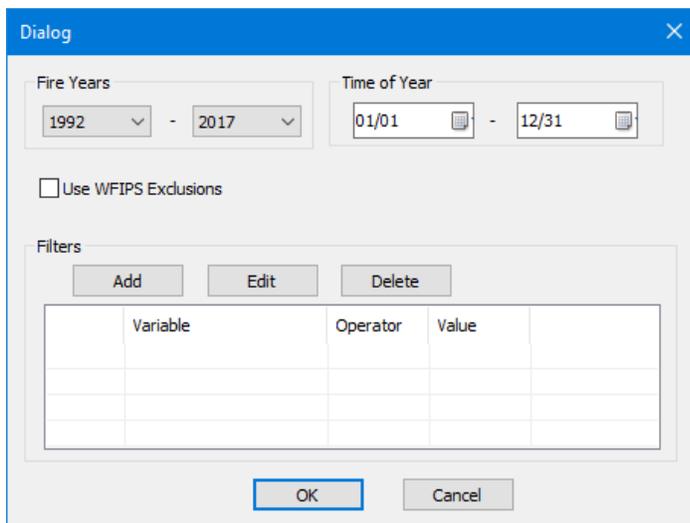
The Historical Fire dataset can also be filtered by a combination of filters for different ranges of fire "Acres", "Duration", and/or "ERC Percentile".
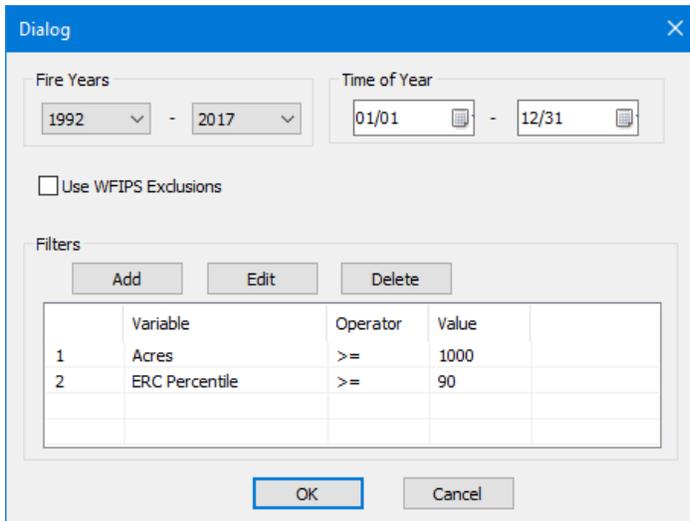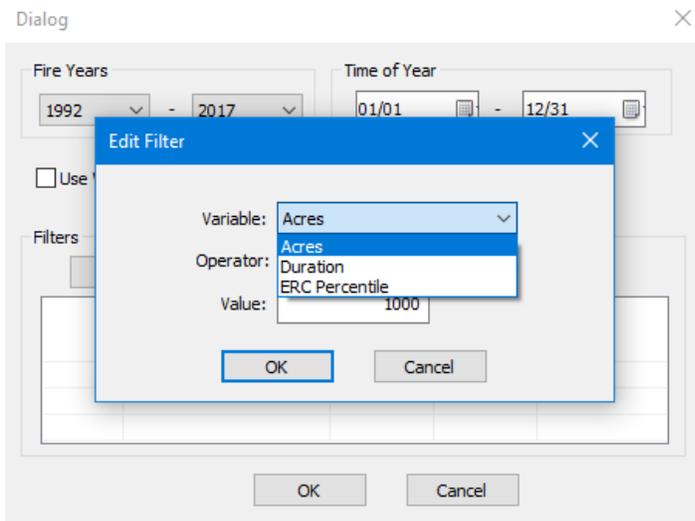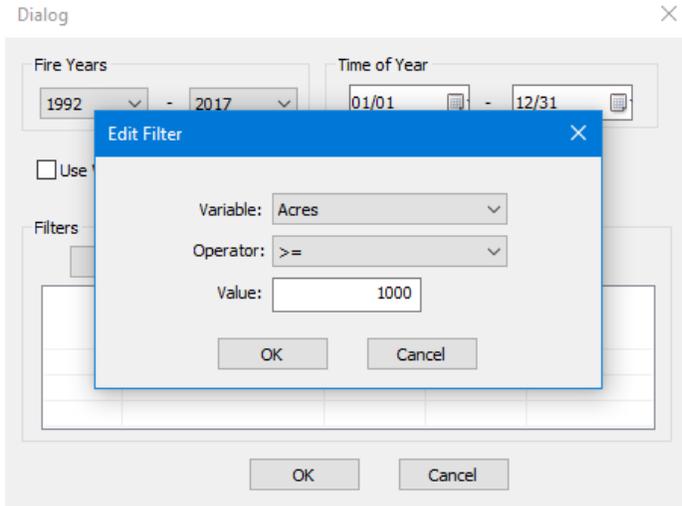
Tables and Graphs of the historical fire data for a spatial area can be viewed by right clicking on the spatial area and selecting "Fire History Table" or "Fire History Graphs".

The Fire History Table shows the data values that are used for the spatial analyses.

California Fire History

Fire Years: 1992 - 2017
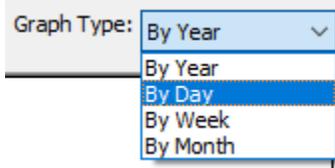Time Of Year: 01/01 - 12/31

Statistic: Average

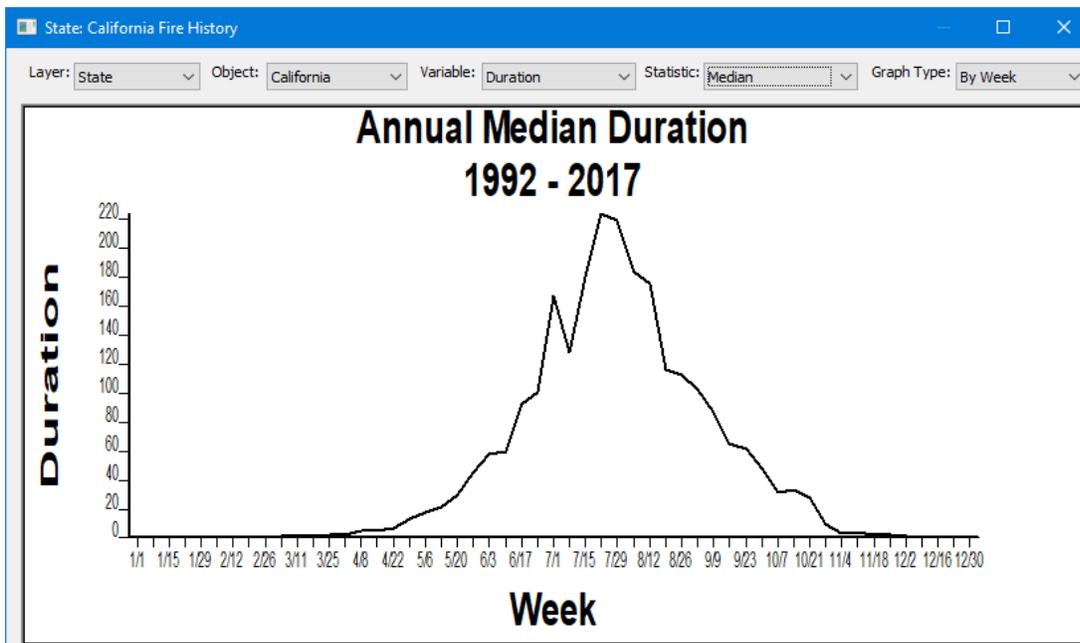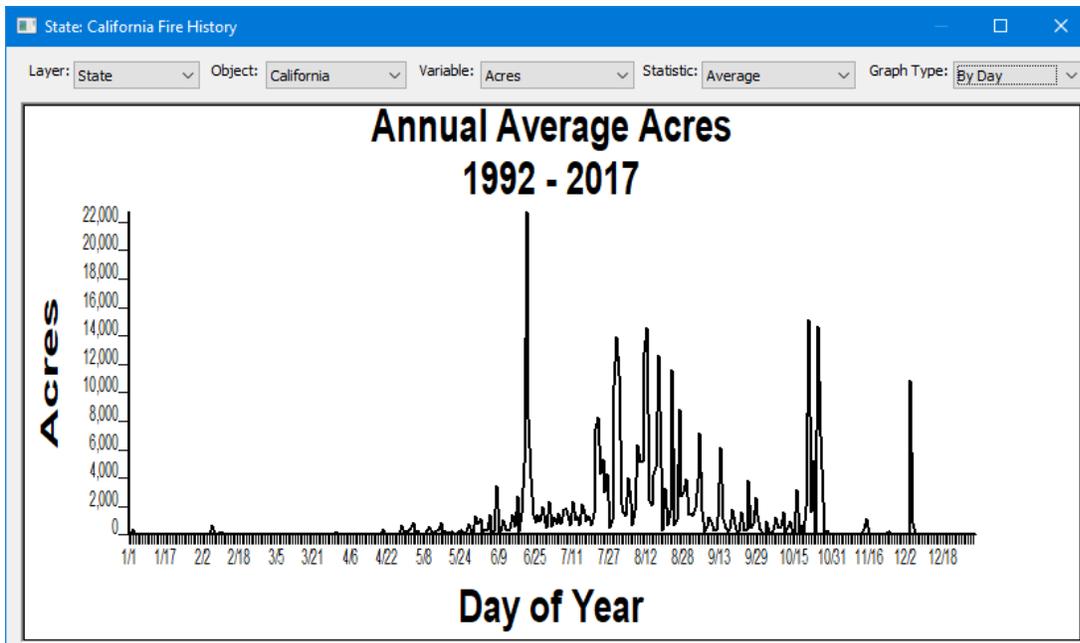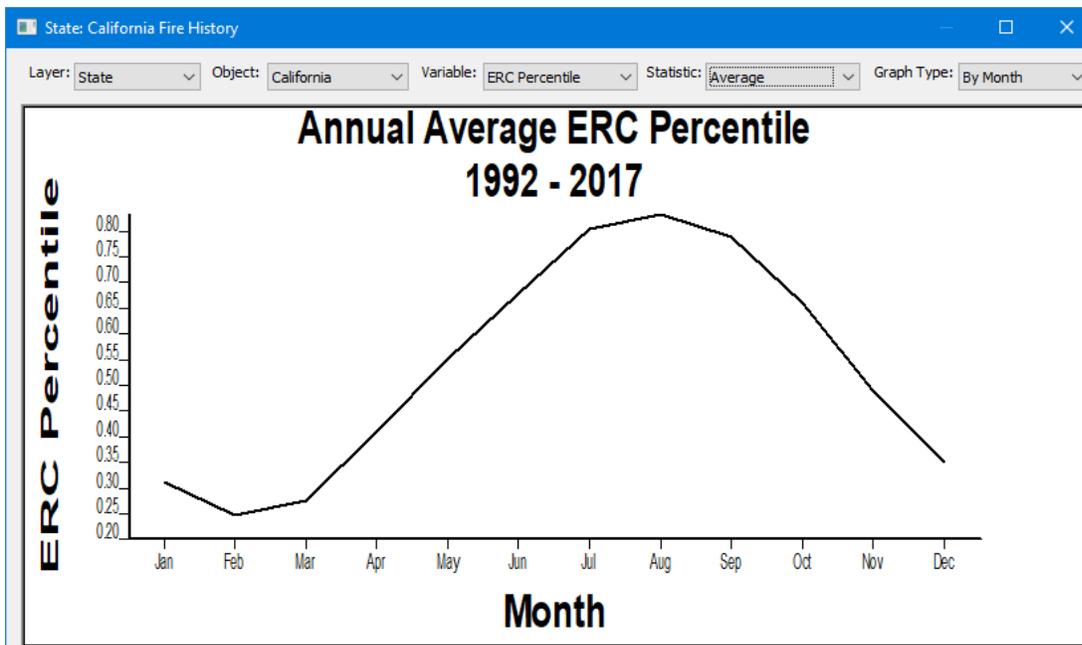| Year		Acres	Duration (Hrs)	ERC Percentile	Percent Contain
Total		27.29	8.7	67.2	98.7
Average		39.08	6.4	65.8	98.4
Minimum		48.57	12.1	72.5	98.3
1st Quantile					
Median		29.04	7.6	66.9	98.5
3rd Quantile					
Maximum					
1995	7,356				
1996	9,162	77.13	11.1	71.4	97.3
1997	7,925	40.92	8.5	68.3	98.7
1998	6,856	23.32	8.9	60.6	98.6
1999	8,892	90.39	12.4	70.4	98.3
2000	6,982	36.18	11.2	69.1	98.8
2001	8,143	42.94	11.6	76.0	98.8
2002	7,143	72.08	11.4	73.7	98.4
2003	7,897	130.70	18.6	74.0	98.2
2004	7,416	40.60	10.2	75.4	98.6
2005	6,667	38.17	13.8	69.6	98.4
2006	8,271	98.27	20.5	76.2	97.9
2007	10,126	103.14	18.3	74.7	98.9
2008	7,733	184.95	58.4	82.8	97.3
2009	6,935	67.24	22.1	78.2	98.7

OK

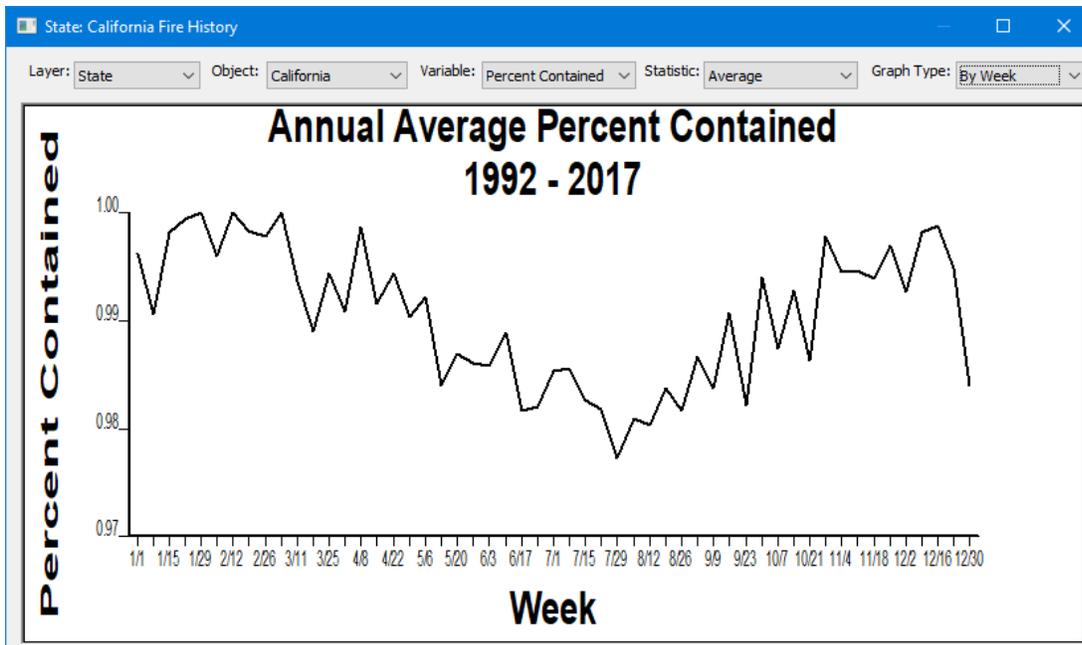The Fire History Graphs display the information graphically. The Graph Type: "By Year" graphs show the Number of Fires for each year in the background.
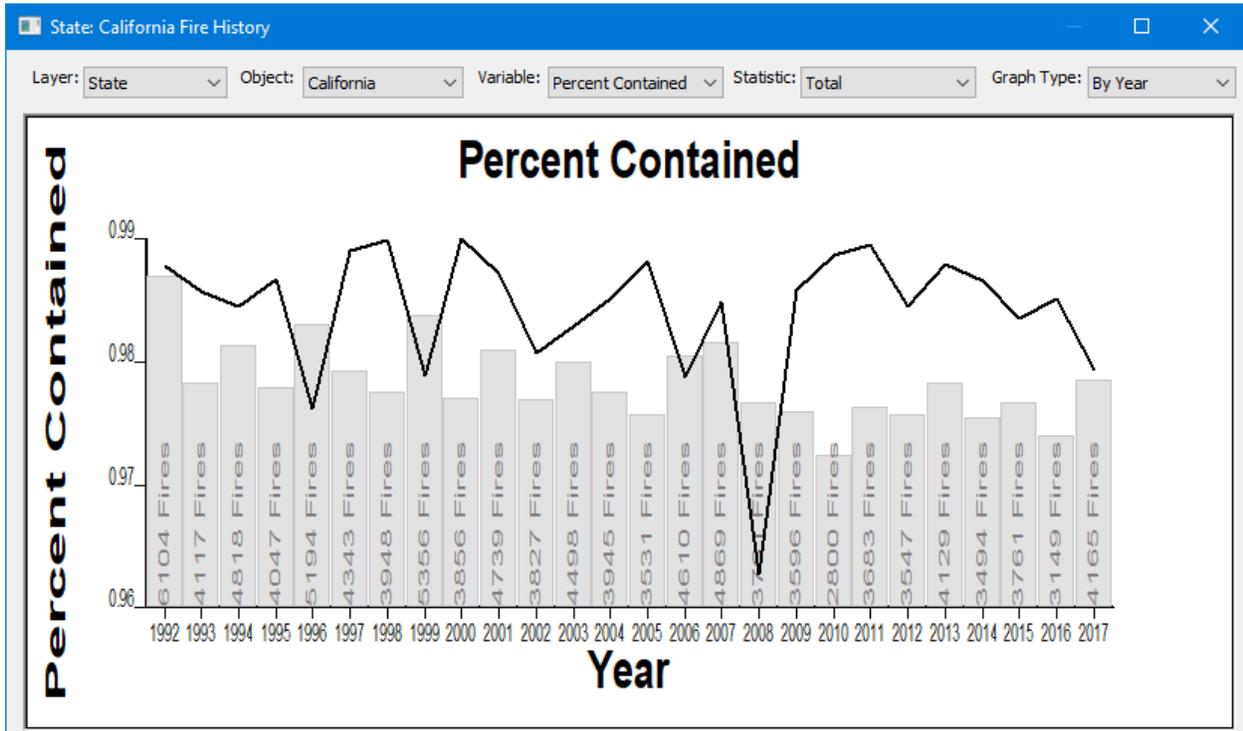
In addition to the usual spatial areas, variables, and statistics that are selectable, the graph type can also be selected to provide additional information about the fire history for the spatial area. The data can be displayed "By Year", "By Day", "By Week", and "By Month".

State: California Fire History

Layer: State Object: California Variable: Acres Statistic: Average Graph Type: By Day

**Annual Average Acres
1992 - 2017**

Acres / Day of Year

State: California Fire History

Layer: State Object: California Variable: Duration Statistic: Median Graph Type: By Week

**Annual Median Duration
1992 - 2017**

Duration / Week

Annual Average Percent Contained 1992 - 2017

Annual Average ERC Percentile 1992 - 2017

The Fire History data can be removed from memory by selecting "Fire History >> Unload Fires" in the WFIPS menu or by right clicking on "Fire History" and selecting "Unload Fires" in the side menu.