

System Indicators

Fire Threat



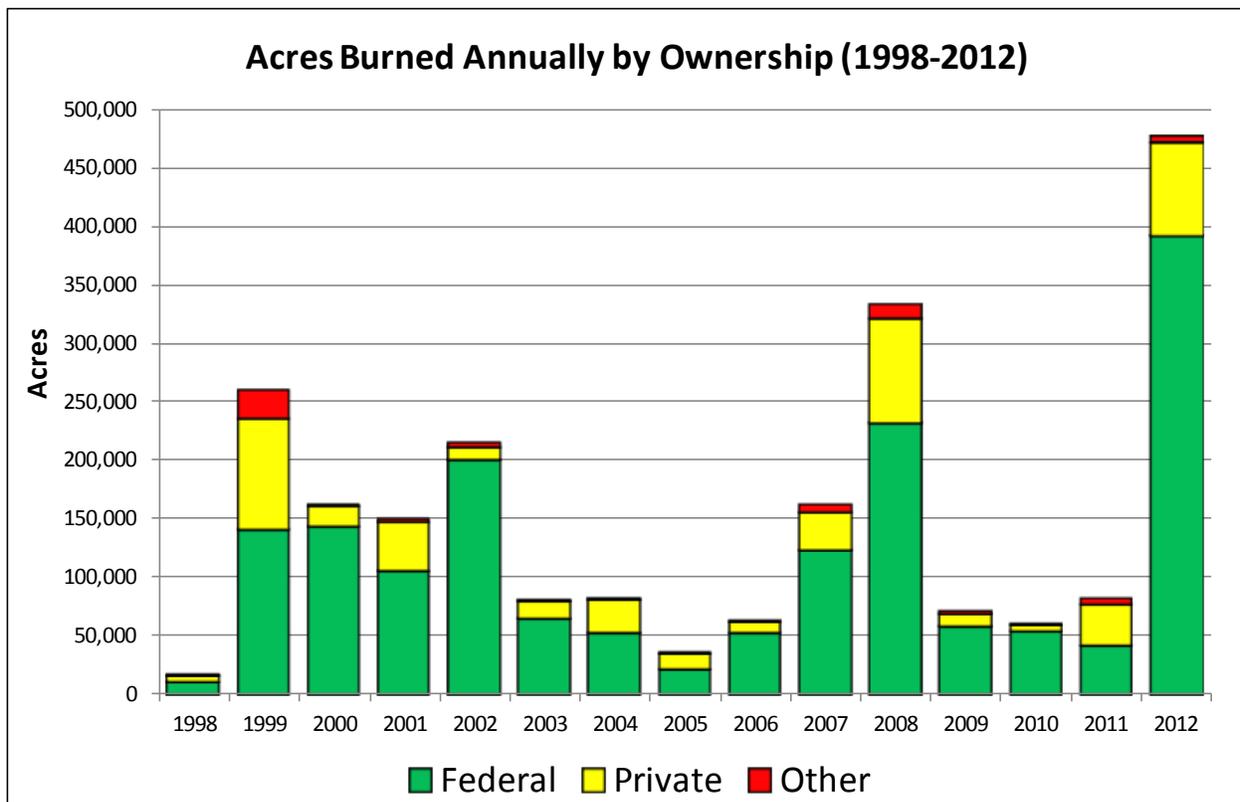
**Number of Acres that
Burn Annually (2012)**

September 2013

Number of Acres that Burn Annually

The number of large fires, and the acreage burned, varies greatly from year to year, primarily due to specific weather conditions. Studies indicate that large fires are increasing in frequency in recent years. One study, (Miller, Safford), analyzed California fire history data from 1908 to 2006. While there were large numbers of fires in the Sierra and total amounts of acreage that burned annually up to about 1940 was comparable to today, average fire size was smaller. With more robust fire suppression after World War II, the number of fires and acreage burned decreased. However, starting in the 1980's, total acreage burned annually started rising. Also, average fire size increased substantially. More dramatically, the largest fires in many of the years since 1960 have been substantially larger than almost any year in the previous era.

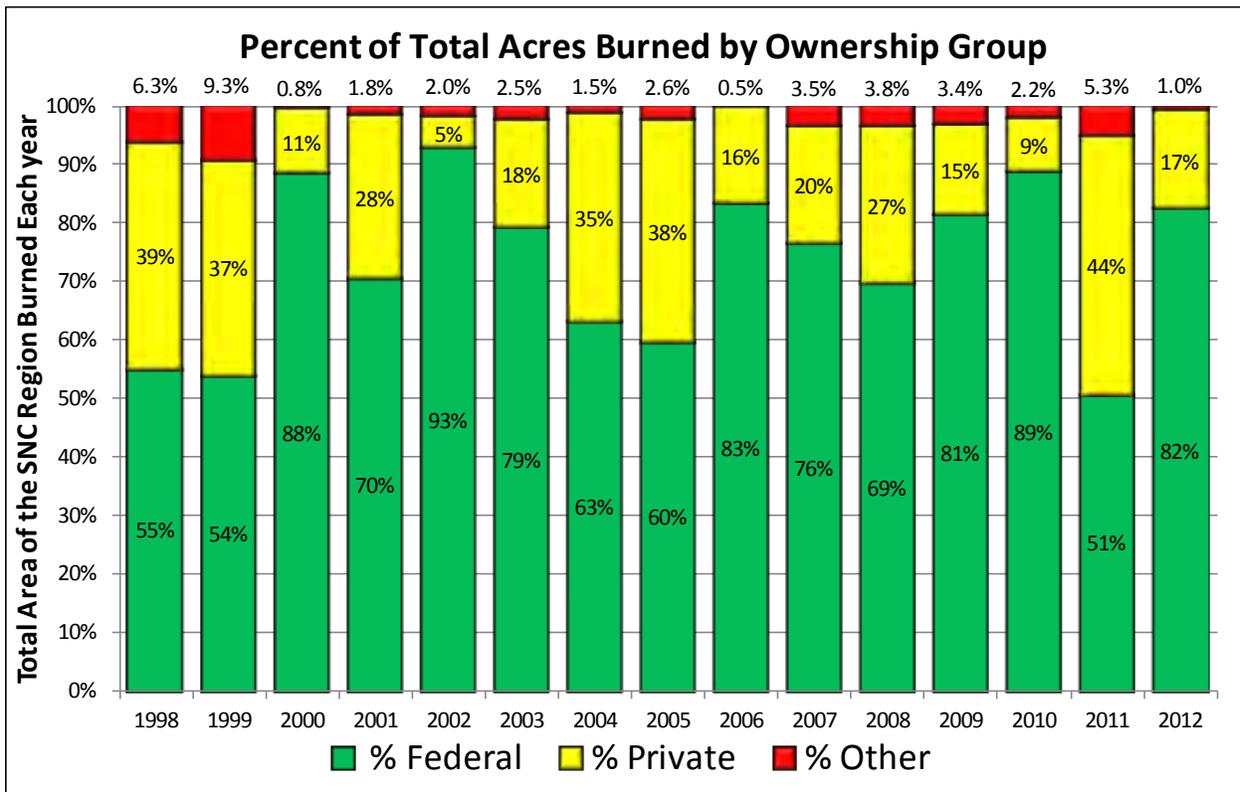
The chart below shows the number of acres that have burned in the SNC Region each year since 1998. (Data provided in [Table 4](#) of the Appendix.) Although, as described above, there is data that extends back much earlier, data that we can tie specifically to the SNC Region, land ownership, and vegetation classifications is only available from 1998 onward. This framework will allow us to track future fire trends and patterns with more detail than the past.



The past 15 years of data doesn't cover a long enough timeframe to clearly support the case that the extent of wildfires is increasing. The hot, dry years of 2008 and 2012 resulted in total acreage burned far above average, but most of the years since 2002 have had modest fire impacts compared to some previous years.

The previous chart also indicates acreage burned by major ownership category. In the past 15 years there have been consistently more acres burned from wildfires on federal lands than private or other ownerships. On the one hand, this might be expected, since there is more federal land area than private in the Sierra Nevada. On the other hand, as discussed before, private land has a higher proportion in the High and Above threat classes. However, while about 60 percent of the SNC Region is in federal ownership, about 75 percent of the total acreage burned over the past 15 years has been on federal lands. There are certainly a number of factors that likely contribute to this outcome. Federal land is generally more remote than private land, making it more difficult to access in order to contain fire size; and fires on federal land often do not pose the same imminent risk to humans and communities. These facts can lead to a different approach from fighting fire on private lands. For example, wildfires on federal lands (of all federal ownerships) are frequently ‘managed’ in order to remove understory vegetation, leading to larger burn areas.

The chart below more clearly shows the relative acreage burned each year by ownership.



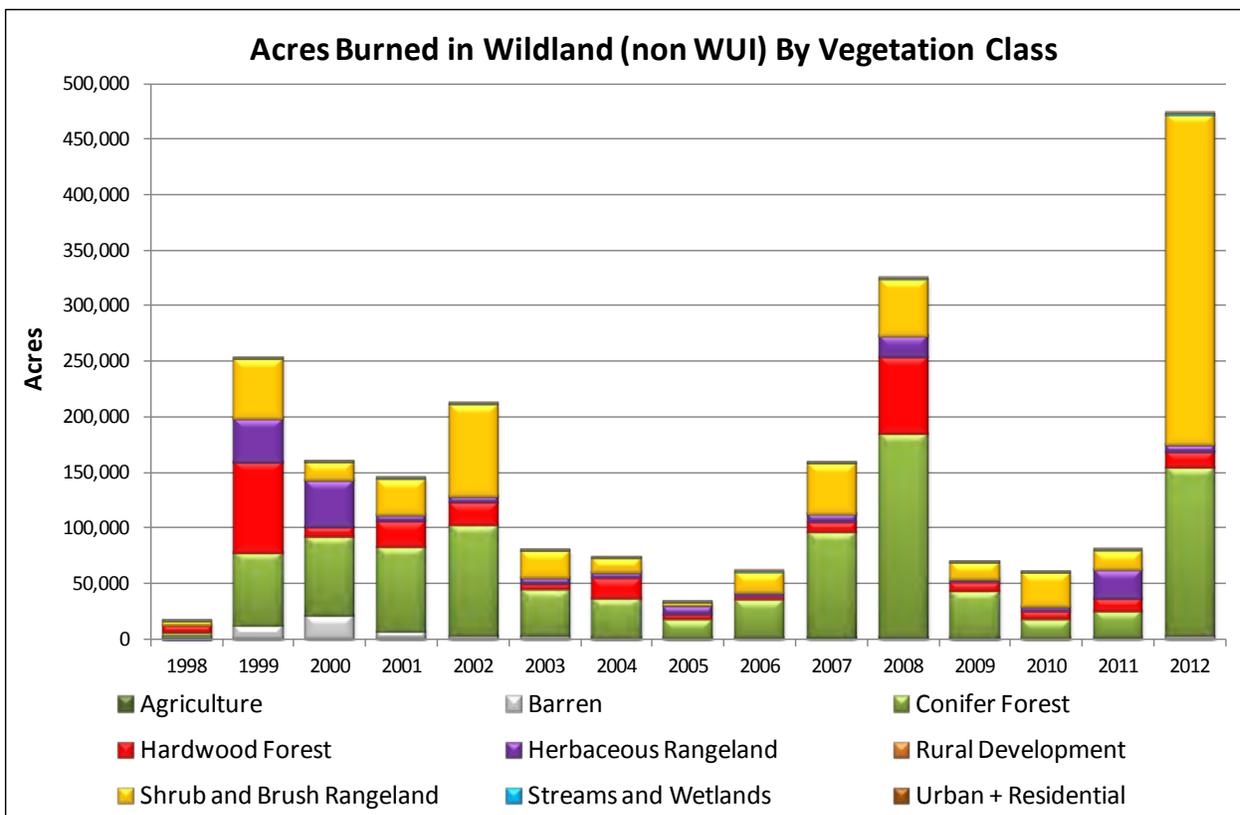
In addition to a larger proportion of acres being burned on federal lands, the Miller, Safford report also documented there is an increasing trend of larger fires and higher fire severity over larger areas within the fires’ perimeters, causing more damage to the watersheds on federal lands. Many of those watersheds are the headwaters of our major rivers in the state.

As expected, because most of the Region is in the High and Above fire threat classes, most of the acreage burned in any year is in that threat category. In both of the big fire years of 2008

and 2012, 88 percent of the total acreage burned was in High and Above fire threat classes. Fire distribution across the Region is particularly variable, owing to the erratic nature of where large fires might occur. The North, North Central, and South Subregions generally experience more fire than the other Subregions. As examples, due to particularly large fires, 71 percent of total acreage burned in 2012 was in the North Subregion. In the big fire year of 2008, 48 percent of acreage burned was in the North Central Subregion, while in 2011 only 88 acres burned in the North Central (1/10th of one percent of the total). Detailed tables for annual acres burned by Subregion and threat class are included in the Appendix ([Tables 5](#) and [6](#)).

Acres Burned by Vegetation Type

The chart below shows annual wildland (non-WUI)* acreage burned by major vegetation classes. (Data provided in [Table 7](#) of the Appendix.) The majority of total acreage burned in any given year is dominated by three vegetation types: conifer forest, hardwood forest, and shrub and brush rangeland. In most years, conifer forest accounts for the largest amount of land burned. However, in 2012, a huge shrub land fire in northeastern California dominated the total acreage burned, even though there were several huge conifer fires that same year.



* As fire in the WUI accounts for a very small amount of total fire overall in any year (see next discussion), this chart can be taken to represent fire history in the Region by vegetation classification generally.