



WILDFIRE BASICS

CHAPARRAL AND COASTAL SAGE SCRUB

AT A GLANCE:

- Large, intense fire every 30 - 150 years historically
- Normal for most aboveground vegetation to burn
- Plants have adaptations that allow them to survive or repopulate after a fire
- Native plants need enough time (30+ years) to prepare for the next fire
- Human-caused ignitions are increasing fire frequency
- Overly frequent fire is putting pressure on many species
- Unnaturally short intervals between fires are allowing invasive plants to thrive
- Vegetation clearance can cause ecological damage without reducing risk
- Most effective mitigation solutions are community-based

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NATURAL FIRE REGIME

Our native shrubland ecosystems, **chaparral and coastal sage scrub**, have evolved with fire for millions of years. Plants with unique adaptations that allow them to persist before and after wildfires have managed to survive and even thrive within the natural fire regime that has developed over this long period of time.

Historically, local shrublands experienced **fire every 30 - 150 years**. These were typically **large, intense** fires that covered thousands to hundreds of thousands of acres at a time due to extreme winds. The natural ignition source would have been **lightning**, which has long been rare in our region.

It is entirely normal for a healthy chaparral or coastal sage scrub ecosystem to burn intensely, with only large **blackened stems** left behind. In the days, weeks, and months following a fire, a fascinating and beautiful process of regrowth begins. A few decades after a fire, the landscape looks as it did before. These incredible ecosystems can thrive for decades or even centuries until the next fire.



More on the back!

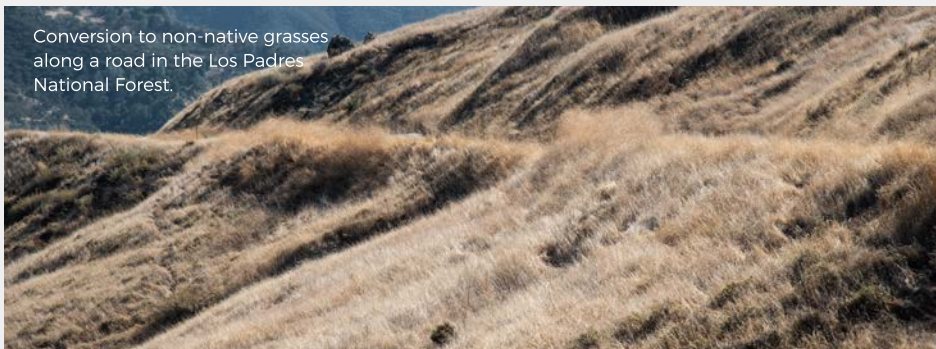
HUMAN-CAUSED CHANGES

Today, the **average time between fires** in chaparral and coastal sage scrub is much lower than it was before Euro-American colonization due to the increased number of human-caused ignitions, the spread of invasive plants, and climate change.

TYPE CONVERSION

Many native plants need several decades between fires to mature and produce enough seed in order to repopulate an area the next time it burns. More time also allows these ecosystems to produce ample vegetation so the next fire burns hot enough to stimulate native seeds.

As native shrubs are lost, **highly flammable invasive grasses and weeds** can become dominant. This shift in vegetation composition is called type conversion. Many invasive plants dry out earlier in the year, are more easily ignited, and spread wildfire more quickly under non-extreme wind conditions. Once they are established, it is difficult to eradicate them.



HOW WE CAN ADAPT

Fires propelled by **extreme winds** (e.g. Santa Ana winds) account for the vast majority of burned acreage and community damage each year. It is during these events that prior vegetation removal or prescribed burns away from homes—actions intended to reduce wildfire risk—are generally ineffective. Such efforts can also cause permanent ecological damage and spread invasive plants, which in turn can make the landscape more flammable.

Wildfire scientists have repeatedly found that the most effective ways to protect communities are to make existing homes more fire-safe, create and maintain smart defensible space immediately around structures, prevent further development in fire-prone areas, and reduce human-caused ignitions. These **science-based solutions** can go a long way in helping us adapt to wildfire.

HOW DO PLANTS COPE?

(A) Obligate Seeders

These plants are killed in a fire, but their seeds germinate after being stimulated by extreme heat, smoke, or charred wood.

(B) Obligate Resprouters

While seeds and young plants are killed, severely burned mature plants can resprout from unharmed roots and burls.

(C) Facultative Seeders

These plants can resprout from unburned roots and burls while their seeds are stimulated similar to those in (A).

(D) Fire Followers

Long-dormant seeds are stimulated when an area burns. They only grow for a few years before disappearing until the next fire.

