



Research Brief for Resource Managers

Release:

June 2016

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Why Should Old-growth Chaparral Be Protected?

Halsey, R.W., and J.E. Keeley. 2016. *Conservation issues: California Chaparral. Reference Module in Earth Systems and Environmental Sciences*. Elsevier Inc. 12pp.
[doi:10.1016/B978-0-12-409548-9.09584-1](https://doi.org/10.1016/B978-0-12-409548-9.09584-1)

Because they are biodiversity hotspots, the protection of chaparral communities is essential to protecting global biodiversity. Arguments for chaparral protection are aligned with the Convention on Biological Diversity (CBD1992)—an international treaty signed by 198 countries signaling ecosystem conservation worthiness—and based on existence value alone. The ecosystem services provided by intact, old-growth chaparral communities, like water quality protection and recreation, are also essential for maintaining the healthy human communities around them.

The problem is that protecting chaparral systems means we need to truly understand them. This learning module solves that problem by simply describing the variety of chaparral found in five Mediterranean Type Climate (MTC) regions globally. These include: California chaparral (Fig. 1, USA), Central Chilean chaparral, Mediterranean Basin chaparral, South African Fynbos, and southwestern Australian heathlands. Of these, the California, Central Chilean, & Mediterranean Basin systems have relatively younger soils and develop closed canopy

Management Implications

- Old-growth chaparral systems are biodiversity hotspots for endemic plants and animals that need to be protected for legal, functional, and ethical reasons.
- The unique combinations of soils, variable topographies, climates, and predictable fire regimes have shaped at least 44 functionally remarkable chaparral plant communities in five regions around the world.
- Being in close proximity to people makes chaparral systems more vulnerable to all major biodiversity threats, especially habitat degradation, invasive species, altered fire regimes (i.e. overburning for chaparral) and climate change.

systems upon maturity. In contrast, the South African Fynbos and southwestern Australian heathlands are characterized by relatively older, nutrient poor soils and open canopies with maturity. All of these systems burn relatively infrequently, but when they do, the conflagrations are spectacular, stand-replacing crown fires. Unless disrupted by mismanagement or neglect, normal recovery of these fragile systems to an old-growth state may take as long as 30 to 150 years or more.

In California, the unique combinations of soils and steep topographies shaped by tectonic

plate movement—in conjunction with regular summer droughts and fall fires—have resulted in some remarkable functional adaptations by chaparral plants. In contrast, endemic animal adaptations to these same evolutionary pressures remain fairly unknown, and demonstrations of their complete recovery from any fire in a crown fire regime have been poorly documented.

Because California chaparral systems are traditionally neglected, biodiversity hotspots in close proximity to people, they remain disproportionately vulnerable to all the major

global threats to biodiversity. These threats especially include habitat degradation, invasive species, altered fire regimes (i.e. increased fire frequencies for chaparral) and climate change. Unless local and federal agencies act quickly, this increased vulnerability will likely minimize future opportunities to observe and protect fully healthy and functioning chaparral communities in the future.

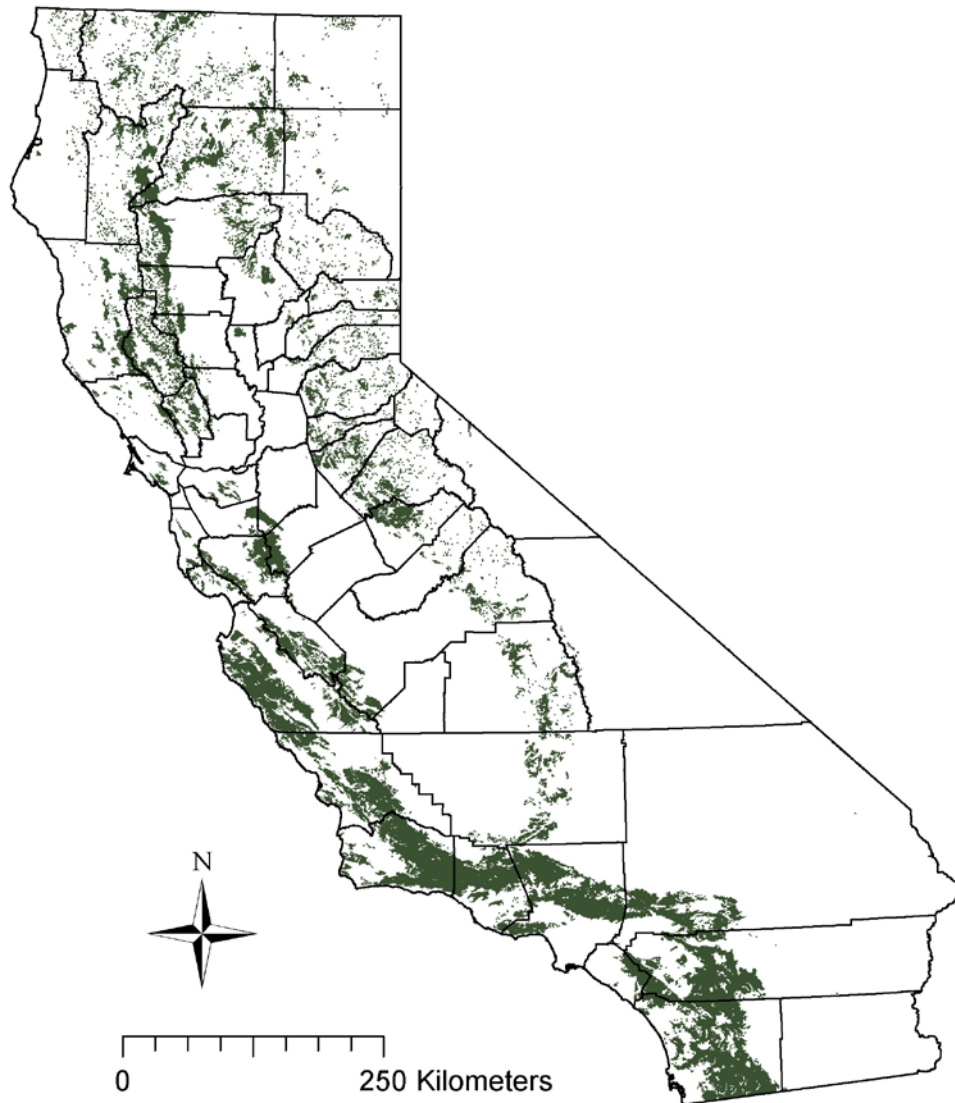


Figure 1. Distribution of Californian chaparral within the state