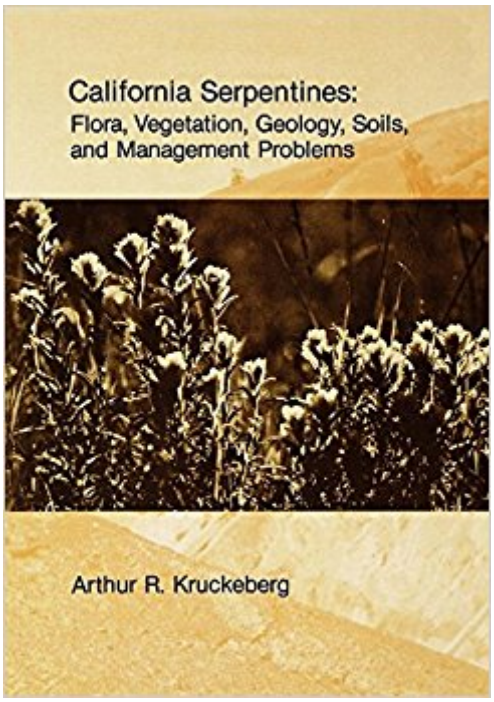
California Serpentines: Flora, Vegetation, Geology, Soils, And Management Problems (UC Publications In Botany)



Synopsis

This is the first comprehensive treatment of an important segment of the flora of California: native plants that have varying degrees of fidelity to serpentine rock and soil that make up over 1100 square miles in the Coast Ranges and the Sierra Nevada. Many of California's unique endemic plants are found nowhere else but on serpentine; over 200 species, subspecies, and varieties of native plants are restricted to some degree to serpentine. The author describes the geology, soils, and mineral nutrition of serpentines (low in normal essential nutrients, high in magnesium, iron, and toxic heavy metals, nickel, and chromium), the vegetation and flora that tolerate this inhospitable habitat, the fauna on serpentines, and management/conservation problems associated with serpentines. This is an essential guide to an important aspect of the flora of California.

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Customer Reviews

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To the eyes of someone from southern Australia, serpentine lands constitute a strange anomaly because they are the only soils in the Enriched World that are of anything approaching the typical fertility (more correctly, of course, the typical infertility) of soils today in Australia and Southern Africa, and indeed of all soils in most geological eras. Their lack of the normal climatic zonality of Enriched World soils creates a number of unique species and communities, which constitute some

of the most poleward "biodiversity hotspots" in the world.Outside of the tropics, California contains the largest concentration of serpentines in the world, and likeÂ New Caledonia, its environment to some extent is shaped by the character of these toxic soils, which contain unusual concentrations of siderophile metals nickel, chromium and cobalt. Serpentine soils, like those of Australia and Southern Africa, are very deficient in phosphorus, nitrogen and sulfur, though there are important differences in that they lack the severe deficiency in chalcophile elements found in almost all Australian and Southern African soils. Serpentine soils, as author Artur Kruckebrgs shows, also often have some unique physical problems because of their shallowness and very high erosion risk, a trait also found on soils derived from other ultramafics. Despite this, as I have recently read, the poisonous and infertile character of serpentine soils allows the northern California coast, where they are most dense, to in some respects appear a region of much lower latitude than it is. Examples can be seen in the duetting towhees, which are almost the most northerly birds with this trait.In "California Serpentines: Flora, Vegetation, Geology, Soils, and Management Problems", Arthur Kruckeberg does a very good job of outlining the occurrence of serpentines in California and the vegetation found on them. He looks at how various well-known taxa from the state differ in their tolerance to serpentine - from complete avoiders like Sequoia to a variety of endemic taxa in both familiar and unfamiliar genera. In some drier parts of California, serpentine areas are almost barren (hence the term "barren") and in others they are well vegetated, though the book could do a somewhat better job than it does of explaining the cause of these differences. There are detailed summaries of statistical details regarding taxa on serpentine, and in the genus Strepera there is an outline of how endemism to serpentine soils has evolved, along with a simple classification of plant species occurring on serpentine according to whether they are woody or herbaceous and whether they can tolerate other substrates. There could perhaps for the beginner by more details of taxa which are useful to indicate serpentine - these "indicator" taxa are merely mentioned.Extensive tables cover about half of "California Serpentines: Flora, Vegetation, Geology, Soils, and Management Problems" and they are valuable even if they could have been arranged for easier reading to supplement a fairly simple text.All in all, this is an interesting book about a quite specialised yet - for someone of my background - fascinating topic. There are a few flaws, but not enough to avoid a recommendation.

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