Pine Hill Preserve – a Biodiversity Hotspot in El Dorado County

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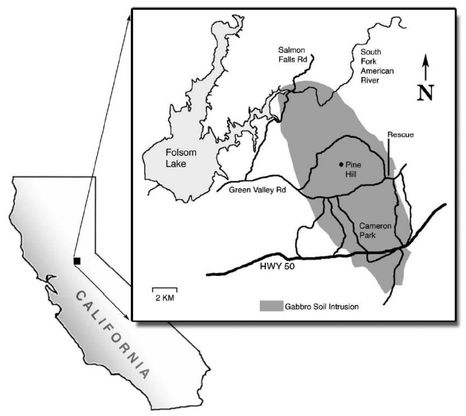
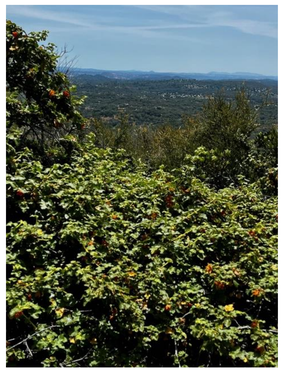
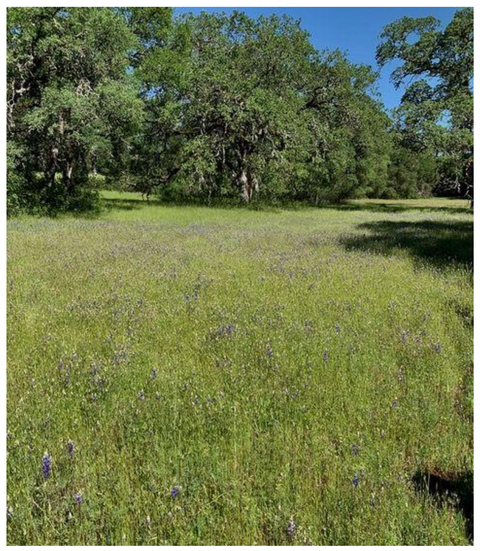


Map from : Wilson JL, Ayres DR, Steinmaus S, and Baad M. 2009. Vegetation and flora of a biodiversity hotspot: Pine Hill, El Dorado County, California. Madrono, Vol. 56: 246–278



The Pine Hill Preserve was established to protect rare native plants in El Dorado County, California that occur on a particular soil type known as gabbro. The 30,000 acre gabbro “island” stretches north from Cameron Park to Folsom Lake. This volcanically-derived soil forms an ecological island sandwiched between valley soils to the west, and mountain soils to the east. Plant communities in the Pine Hill preserve include:

Chaparral **Grassland** **Oak Woodland**



Why is this community important?

740 plant species (native and exotic) have been recorded on the gabbro island and adjacent soils - almost 7% of the plant species known in California are represented within this tiny fraction of the state, making it a nationally significant site of plant species diversity. Eight plant species are rare or extremely rare; 5 are federally listed; 4 occur nowhere else in the world. El Dorado County gabbro plant communities are threatened by residential development and the suppression of the natural fire regime in the chaparral.

For more information go to: http://www.pinehillpreserve.org/
https://www.eldoradocnps.org/education-and-outreach/science-in-the-county/pine-hill-research
https://www.eldoradocnps.org/plant-places/plant-hotspots/pine-hill

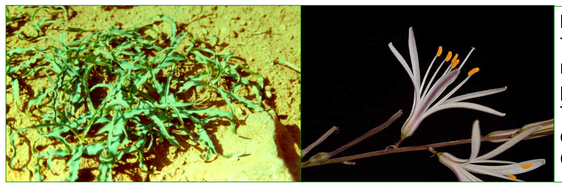
The Pine Hill Preserves currently encompass 4,756 acres of rare plant habitat spread over 6 sites. Most preserves are managed by Bureau of Land Management. The goal is to protect 5,000 acres when the Preserves are completed.

Fire is an integral dynamic in this community. Plants can be killed outright by fire, like whiteleaf manzanita, or can sprout from underground roots (Pine Hill flannelbush), rhizomes (El Dorado mule-ears), or stems (chamise) that are insulated by the soil from the full heat of the fire. Plants that are killed by fire, or by competition during the shrub-phase, can have seeds buried in the soil that germinate after fire. Some seeds, like those from Stebbins’ morning glory, Pine Hill Ceanothus, and Pine Hill flannelbush require the heat of a fire, or charate (ash) to germinate.

The Pine Hill Eight – rare plants of the gabbro island

Stebbins’ Morning-Glory - *Calystegia stebbinsii*
The spring-blooming flowers of this trailing, vining perennial look like common morning glory, but the species is distinctive because its leaves are divided into 5 to 7 narrow lobes. Stebbins' morning-glory is found in openings in the chaparral in both the northern and southern portions of the gabbro island, but appears to be absent from the central area around Pine Hill. Its seeds germinate following fire. Federally listed as endangered. CNPS Rare Plant Rank - RPR 1B.1.

Pine Hill Ceanothus - *Ceanothus roderickii*
This species is a prostrate shrub that flowers in early spring. The white flowers sometimes have a faintly bluish or pinkish tinge. The leaves are small, tough, and thick. This chaparral species only grows on the gabbro island in western El Dorado County. Plants are killed by fire, but its seeds germinate following fire. Federally listed as endangered. RPR 1B.1.



Red Hills Soaproot - *Chlorogalum grandiflorum*
This perennial herb is a member of the Agave family and grows from a bulb that resprouts after fire. Several linear and wavy leaves radiate from the base of the plant. The flowers, which open in the evening, bloom along stalks that are 1-2 ft tall. The Red Hills soaproot occurs almost entirely on gabbro and serpentine soils in open chaparral in western El Dorado County, and the Red Hills in Tuolumne County. Not listed as T or E. RPR 1B.2.

Pine Hill Flannelbush - *Fremontodendron decumbens*
Pine Hill flannelbush is a low-growing, often sprawling shrub, with many branches arising from the base. The orange-bronze flowers, which appear in May, are one to two inches in diameter. The lobed leaves are roughly an inch long, and are covered with short, soft hairs. This plant is entirely confined to the immediate vicinity of Pine Hill. Seeds germinate, and roots sprout shoots after fire. Federally listed as endangered. RPR 1B.2.

Bisbee Peak Rush-Rose - *Crocanthemum suffrutescens* (formerly *Helianthemum*)
A low growing subshrub, this species is 15 to 30 inches tall, with many straight, slender densely hairy stems. Yellow flowers appear in June. This species is very similar in appearance to the common rush-rose which also grows in chaparral habitat in El Dorado County. Occurrences of Bisbee Peak rush-rose have been found in Amador and Calaveras counties as well as within the gabbro soil island. Not listed as T or E. RPR 3.2.

Layne’s Butterweed - *Packera layneae* (formerly *Senecio*)
An herbaceous perennial in the sunflower family, Layne's butterweed grows 1 -2 ft tall, and resprouts after fire from underground rhizomes and caudices. Flowering in May, each flowering head is a collection of disk and ray flowers. The ray flowers appear to be located randomly around the edge of the disk flowers causing each head to have an asymmetric appearance. This species is found under mature chaparral canopies, in open, rocky areas within chaparral, and in woodland habitats on gabbro and serpentine soils in western El Dorado County, in the Red Hills in Tuolumne County, and in Yuba County. Federally listed as threatened. RBR 1B.2.

El Dorado Mule-Ears - *Wyethia reticulata*
El Dorado mule-ears is a perennial sunflower that spreads widely by underground rhizomes that resprout and flower prolifically after fire or grading. Sunflowers appear in June. Large, triangular leaves grow along the length of the stem. El Dorado mule-ears grows only in the gabbro soil island of El Dorado County. It occurs in openings and beneath the canopies of trees and shrubs in both chaparral and oak woodland habitats. A Federal “Species of Concern”. RBR 1B.2.

El Dorado Bedstraw - *Galium californicum* ssp. *sierrae*
A hard-to-see low-growing rhizomatous perennial, El Dorado bedstraw grows in loose tufts of weak, slender stems two to four inches long; it resprouts after fire. This plant is known only from several sites scattered throughout the gabbro soils in western El Dorado Count, mostly on Pine Hill itself. It grows in the understory of live oak or black oak woodlands, often on north facing slopes. Federally listed as endangered. RBR 1B.2.

Flaming whiteleaf manzanita – Prescribed fire at Salmon Falls, October 1994.

After fire seeds germinate and plants resprout from underground structures.