

Asteraceae	<i>Madia minima</i>	Dwarf madia	Caryophyllaceae	<i>Cerastium viscosum</i>	Mouse-ear chickweed
Asteraceae	<i>Madia subspicata</i>	Spiked tarweed	Caryophyllaceae	<i>Petrorhagia dubia</i>	Grass-pink
Asteraceae	<i>Micropus californicus</i>	Slender cotton-weed	Caryophyllaceae	<i>Silene gallica</i>	Windmill-pink
Asteraceae	<i>Picris echinoides</i>	Ox tongue	Caryophyllaceae	<i>Spergularia rubra</i>	Ruby sand-spurry
Asteraceae	<i>Psilocarphus brevissimus</i>	Woolly marbles	Caryophyllaceae	<i>Stellaria media</i>	Common chickweed
Asteraceae	<i>Rigtopappus leptocladus</i>	Rigtopappus	Cistaceae	<i>Helianthemum scoparium</i>	Rock rose
Asteraceae	<i>Senecio aronicoides</i>	California ragwort	Cistaceae	<i>Helianthemum suffrutescens</i>	Bisbee Peak rush-rose
Asteraceae	<i>Senecio layneae</i> **	Layne's butterweed	Convolvulaceae	<i>Calystegia occidentalis</i>	Morning glory
Asteraceae	<i>Senecio vulgaris</i>	Old man in the spring	Convolvulaceae	<i>Calystegia purpurata</i>	Morning glory
Asteraceae	<i>Solidago californica</i>	California goldenrod	Convolvulaceae	<i>Calystegia stebbinsii</i> **	Stebbin's morning glory
Asteraceae	<i>Solvia sessilis</i>	Lawn burweed	Convolvulaceae	<i>Convolvulus arvensis</i>	Bindweed
Asteraceae	<i>Sonchus asper</i>	Spiny-leaved sow thistle	Cuscutaceae	<i>Cuscuta ceanothi</i>	Dodder
Asteraceae	<i>Sonchus oleraceus</i>	Common sow-thistle	Cuscutaceae	<i>Cuscuta subinclusa</i>	Dodder
Asteraceae	<i>Stebbinoseris heterocarpa</i>	Stebbin's chicory	Ericaceae	<i>Arctostaphylos viscida</i>	White-leaf manzanita
Asteraceae	<i>Stephanomeria virgata</i>	Wand stephanomeria	Euphorbiaceae	<i>Eremocarpus setigerus</i>	Turkey mullein
	<i>pleurocarpa</i>		Euphorbiaceae	<i>Euphorbia crenulata</i>	Spurge
Asteraceae	<i>Uropappus lindleyi</i>	Silverpuffs	Euphorbiaceae	<i>Euphorbia spathulata</i>	Spurge
Asteraceae	<i>Wyethia angustifolia</i>	Narrow-leaved mule's-ears	Fabaceae	<i>Astragalus gambelianus</i>	Milkveitch
Asteraceae	<i>Wyethia bolanderi</i>	Bolander's mule's-ears	Fabaceae	<i>Cercis occidentalis</i>	Redbud
Asteraceae	<i>Wyethia reticulata</i> **	El Dorado County mule's-ears	Fabaceae	<i>Hoita macrostachya</i>	Large leather-root
Berberidaceae	<i>Berberis aquifolium</i> var. <i>dichyola</i>	Oregon grape	Fabaceae	<i>Lathyrus jepsonii</i> ssp. <i>californicus</i>	California pea
Boraginaceae	<i>Amsinckia intermedia</i> var. <i>menziesii</i>	Fiddleneck	Fabaceae	<i>Lathyrus nevadensis</i> var. <i>nevadensis</i>	Sierra pea
Boraginaceae	<i>Cryptantha muricata</i>	Cryptantha	Fabaceae	<i>Lathyrus sulphureus</i>	Snub pea
Boraginaceae	<i>Cynoglossum grande</i>	Western hounds tongue	Fabaceae	<i>Lotus humistratus</i>	Foothill lotus
Boraginaceae	<i>Plagiobothrys fulvus</i>	Fulvous popcorn-flower	Fabaceae	<i>Lotus micranthus</i>	Small-flowered lotus
Boraginaceae	<i>Plagiobothrys nothofulvus</i>	Common popcorn-flower	Fabaceae	<i>Lotus purshianus</i> var. <i>purshianus</i>	Spanish lotus
Brassicaceae	<i>Athysanus pusillus</i>	Athysanus	Fabaceae	<i>Lotus scoparius</i> var. <i>scoparius</i>	California broom
Brassicaceae	<i>Capsella bursa-pastora</i>	Shepard's purse	Fabaceae	<i>Lotus wrangelianus</i>	Wrangel lotus
Brassicaceae	<i>Hirschfeldia incana</i>	Mediterranean hoary-mustard	Fabaceae	<i>Lupinus albus</i>	Bush lupine
Brassicaceae	<i>Lepidium nitidum</i> var. <i>nitidum</i>	Shining peppergrass	Fabaceae	<i>Lupinus bicolor</i>	Bicolored lupine
Brassicaceae	<i>Sisymbrium altissimum</i>	Tumble-mustard	Fabaceae	<i>Lupinus latifolius</i> var. <i>colombianus</i>	Broad-leaved lupine
Brassicaceae	<i>Sisymbrium officinale</i>	Hedge-mustard	Fabaceae	<i>Lupinus nanus</i>	Sky lupine
Brassicaceae	<i>Thysanocarpus curvipes</i>	Fringepod	Fabaceae	<i>Lupinus polyphyllus</i>	Meadow lupine
Brassicaceae	<i>Cardamine oligosperma</i>	Western bitter cress	Fabaceae	<i>Medicago polymorpha</i>	Common bur-clover
Campanulaceae	<i>Githopsis pulchella</i>	bluecup	Fabaceae	<i>Trifolium albopurpureum</i> var. <i>albopurpureum</i>	Indian clover
Campanulaceae	<i>Githopsis specularioides</i>	Common bluecup	Fabaceae	<i>Trifolium bifidum</i> var. <i>bifidum</i>	Notch-leaved clover
Caprifoliaceae	<i>Lonicera hispidula</i> var. <i>vacillans</i>	Trip vine	Fabaceae	<i>Trifolium bifidum</i> var. <i>deceptans</i>	Deceptive clover
Caprifoliaceae	<i>Lonicera interrupta</i>	Chaparral honeysuckle	Fabaceae	<i>Trifolium ciliolatum</i>	Foothill clover
Caprifoliaceae	<i>Sambucus mexicana</i>	Elderberry			
Caprifoliaceae	<i>Symphoricarpos rivularis</i>	Snowberry			
Caryophyllaceae	<i>Cerastium glomeratum</i>	Mouse-ear chickweed			

Fabaceae	<i>Trifolium depauperatum</i> var (?)	Cowbag clover	Malvaceae	<i>Sidalcea mahaeiflora</i> ssp <i>asprella</i>	Harsh checkerbloom
Fabaceae	<i>Trifolium dubium</i>	Little hop clover	Onagraceae	<i>Clarkia biloba</i>	Two-lobed clarkia
Fabaceae	<i>Trifolium gracilentum</i>	Clover	Onagraceae	<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	Clarkia
Fabaceae	<i>Trifolium incarnatum</i>	Crimson clover	Onagraceae	<i>Clarkia unguiculata</i>	Elegant clarkia
Fabaceae	<i>Trifolium microcephalum</i>	Small-headed clover	Onagraceae	<i>Epilobium paniculatum</i>	Willow herb
Fabaceae	<i>Trifolium pratense</i>	Red clover	Orobanchaceae	<i>Orobanche bulbosa</i>	Broom-rape
Fabaceae	<i>Trifolium subterraneum</i>	Subterranean clover	Orobanchaceae	<i>Orobanche fasciculata</i>	Clustered broom-rape
Fabaceae	<i>Trifolium variegatum</i>	White-tipped clover	Orobanchaceae	<i>Orobanche uniflora</i>	Naked broom-rape
Fabaceae	<i>Trifolium willdenovii</i>	Tomcat clover	Papaveraceae	<i>Eschscholzia caespitosa</i>	Foothill poppy
Fabaceae	<i>Vicia americana</i> var. <i>americana</i>	American vetch	Papaveraceae	<i>Eschscholzia californica</i>	California poppy
Fabaceae	<i>Vicia sativa</i>	Garden vetch	Plantaginaceae	<i>Plantago erecta</i>	Erect plantain
Fabaceae	<i>Vicia villosa</i>	Winter vetch	Plantaginaceae	<i>Plantago lanceolata</i>	English plantain
Fagaceae	<i>Quercus berberidifolia</i>	Scrub oak	Polemoniaceae	<i>Allophylllum divaricatum</i>	Pink allophylum
Fagaceae	<i>Quercus douglasii</i>	Blue oak	Polemoniaceae	<i>Gilia capitatum</i>	Globe gilia
Fagaceae	<i>Quercus durata</i>	Leather oak	Polemoniaceae	<i>Linanthus androsaceus</i>	Common linanthus
Fagaceae	<i>Quercus kelloggii</i>	Black oak	Polemoniaceae	<i>Linanthus bicolor</i>	Bicolored linanthus
Fagaceae	<i>Quercus lobata</i>	Valley oak	Polemoniaceae	<i>Linanthus ciliatus</i>	Whiskerbrush
Fagaceae	<i>Quercus wislizenii</i>	Interior live oak	Polemoniaceae	<i>Navarretia filicaulis</i>	Thread-stemmed navarretia
Fagaceae	<i>Quercus X morehus</i>	Oracle oak (hybrid)	Polemoniaceae	<i>Navarretia viscidula</i>	Sticky navarretia
Fagaceae	<i>Centaurium floribundum</i>	Centaury	Polemoniaceae	<i>Phlox gracilis</i>	Slender phlox
Gentianaceae	<i>Swerbia albicaulis</i>	Green gentian	Polygalaceae	<i>Polygala cornuta</i> var. <i>cornuta</i>	Sierra milkwort
Gentianaceae	<i>Erodium botrys</i>	Stork's bill	Polygonaceae	<i>Chorizanthe polygonoides</i>	Spineflower
Geraniaceae	<i>Erodium cicutarium</i>	Red-stemmed filaree	Polygonaceae	<i>Rumex acetocella</i>	Common sheep-sorrel
Geraniaceae	<i>Erodium moschatum</i>	Filaree	Polygonaceae	<i>Rumex crispus</i>	Curly dock
Geraniaceae	<i>Geranium dissectum</i>	Wild geranium	Polygonaceae	<i>Rumex pulcher</i>	Fiddle dock
Geraniaceae	<i>Geranium molle</i>	Geranium	Polygonaceae	<i>Rumex crispus</i>	Red maids
Geraniaceae	<i>Geranium molle</i>	California buckeye	Portulacaceae	<i>Claytonia ciliata</i>	Little miner's lettuce
Hippocastanaceae	<i>Aesculus californica</i>	Whispering bells	Portulacaceae	<i>Claytonia exigua</i> ssp. <i>exigua</i>	Sm-flowered miners lettuce
Hydrophyllaceae	<i>Emmenanthe penduliflora</i>	Yerba santa	Portulacaceae	<i>Claytonia parviflora</i> ssp. <i>parviflora</i>	Common miner's lettuce
Hydrophyllaceae	<i>Eriodictyon californicum</i>	Variable-leaved nemophila	Portulacaceae	<i>Claytonia parviflora</i>	Shooting star
Hydrophyllaceae	<i>Nemophila heterophylla</i>	Baby blue eyes	Primulaceae	<i>Dodecatheon hansenii</i>	Shooting star
Hydrophyllaceae	<i>Nemophila menziesii</i>	Gold wire	Primulaceae	<i>Dodecatheon hendersonii</i>	Virgins-bower
Hypericaceae	<i>Hypericum concinnum</i>	Klamath weed	Ranunculaceae	<i>Clematis lasiantha</i>	Hansen's larkspur
Hypericaceae	<i>Hypericum perforatum</i>	Henbit	Ranunculaceae	<i>Delphinium hansenii</i>	Larkspur
Lamiaceae	<i>Lamium amplexicaule</i>	Pitcher sage	Ranunculaceae	<i>Delphinium patens</i>	California buttercup
Lamiaceae	<i>Lepechinia calycosa</i>	Hairy coyote-mint	Ranunculaceae	<i>Ranunculus californicus</i> (?)	Prickle-seed buttercup
Lamiaceae	<i>Monardella villosa</i> ssp. <i>villosa</i>	Pogogyne	Ranunculaceae	<i>Ranunculus muricatus</i>	Western buttercup
Lamiaceae	<i>Pogogyne serpylloides</i>	Creeping sage	Ranunculaceae	<i>Ranunculus occidentalis</i>	Buck brush
Lamiaceae	<i>Salvia sonomensis</i>	Yerba Buena	Rhamnaceae	<i>Ceanothus cuneatus</i>	Lemmon's ceanothus
Lamiaceae	<i>Satureja douglasii</i>	California skullcap	Rhamnaceae	<i>Ceanothus lemonii</i>	Pine Hill ceanothus
Lamiaceae	<i>Scutellaria californica</i>	Western dwarf flax	Rhamnaceae	<i>Ceanothus roderickii</i> **	
Linaceae	<i>Hesperolinon micranthum</i>	Pale flax			
Linaceae	<i>Linum bienne</i>	Hartweg's sidalcea			
Malvaceae	<i>Sidalcea hartwegii</i>				

Poaceae	<i>Cynosurus echinatus</i>	Hedgehog dogtail
Poaceae	<i>Danthonia californica</i> var. <i>americana</i>	California oatgrass
Poaceae	<i>Danthonia unispicata</i>	One-spiked oatgrass
Poaceae	<i>Deschampsia danthanooides</i>	Annual hairgrass
Poaceae	<i>Elymus glaucus</i> ssp. <i>glaucus</i>	Blue wild-rye
Poaceae	<i>Elymus multisetus</i>	Big squirreltail
Poaceae	<i>Gastridium ventricosum</i>	Nitgrass
Poaceae	<i>Hordeum depressum</i>	Low barley
Poaceae	<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley
Poaceae	<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Hare wall barley
Poaceae	<i>Koeleria macrantha</i>	Junegrass
Poaceae	<i>Lolium multiflorum</i>	Annual ryegrass
Poaceae	<i>Lolium temulentum</i>	Darnel
Poaceae	<i>Melica californica</i>	California melic
Poaceae	<i>Melica torreyana</i>	Torrey's melic
Poaceae	<i>Nassella cernua</i> (?)	Needlegrass
Poaceae	<i>Nassella pulchra</i>	Purple needlegrass
Poaceae	<i>Phalaris aquatica</i>	Harding-grass
Poaceae	<i>Piptatherum miliaceum</i>	Smilgrass
Poaceae	<i>Poa annua</i>	Annual bluegrass
Poaceae	<i>Poa bulbosa</i>	Bulbous bluegrass
Poaceae	<i>Poa secunda</i> ssp. <i>secunda</i>	One-sided bluegrass
Poaceae	<i>Polypogon monspeliensis</i>	Annual beardgrass
Poaceae	<i>Taeniantherum caput-medusae</i>	Medusa-head
Poaceae	<i>Vulpia microstachys</i> var. <i>ciliata</i>	Fringed fescue
Poaceae	<i>Vulpia microstachys</i> var. <i>pauciflora</i>	Few-flowered fescue
Poaceae	<i>Vulpia myuros</i> var. <i>hirsuta</i>	Foxtail fescue
Poaceae	<i>Vulpia myuros</i> var. <i>myuros</i>	Rattail fescue

The Pine Hill Rare Plants

The Pine Hill Rare Plants are a collection of eight rare plant species that share the unusual growing conditions of a small area of western El Dorado County. They grow in a roughly oval area centering around Green Valley Road and stretching from Folsom Lake in the north to Highway 50 in the south. Three of these rare plants are endemic to the Pine Hill region, meaning that they grow nowhere else in the world. Another two species are nearly endemic, with only a few small colonies of the plants found elsewhere.

This surprising assemblage of rare species is part of a unique plant community confined to soils known as the Rescue soils series, named after the nearby community of Rescue. These soils are associated with the broader classification of gabbro soils, and cover approximately 30,000 acres in the area described above. Gabbro soils have unusual properties derived from the underlying gabbro rock : they are generally red, mildly acidic, rich in iron and magnesium, and often contain other heavy metals such as chromium.

The gabbro rock from which these soils are derived was originally formed deep in the earth's crust from molten rock about 165 million years ago. Through uplift of the crust and erosion of the ancestral Sierra Nevada, these rocks eventually became exposed at the earth's surface. Gabbro rocks contain mostly dark minerals and visible crystals are common. Exposed surfaces often weather to a reddish color due to the iron content of the rocks. Outcrops of another unusual rock type, serpentinite, also occur in the Pine Hill area. The soils that result from the weathering of serpentinite, known as serpentine soils, have similarities to the soils from gabbro rocks and support some of the same species.

740 distinct plant species have been recorded in the Rescue soil series and adjoining serpentine and metamorphic rocks. This means that almost 10% of the native plant species known in California are represented within this tiny fraction of the state, making it a nationally significant site of species diversity.

Fire Ecology and Fuels Management

An important part of the Preserve's overall management includes wildfire risk reduction and control of the amount of vegetation, or "fuels", present. This is called fuels management.

Periodic fire has been a natural part of the foothill chaparral ecology in the Pine Hill area for thousands of years. These relatively frequent fires cleared out accumulated vegetation without threatening the health of the natural plant community. Native Americans living in the foothills were known to have set fires purposely, mimicking the natural fire patterns.

The rare plants of the Pine Hill Preserve have evolved with such a fire regime and they have adapted to periodic fires. The types of plants that live in the Preserve respond to fire by sprouting and by germination of seeds stimulated by the fire. Soon after burning, new sprouts grow from the root, dormant bulbs and root crowns of many plants. Then, fall and winter rains trigger prolific germination of non-woody plants, often resulting in a colorful array of wildflowers in the Spring.

Many of the rare plants in the Preserve require for their survival clearings in the vegetation to allow sufficient light to penetrate to their often low-lying leaves. Periodic fire also tends to reduce competition from larger shrubs for scarce water and nutrients in the soil.

Due to wide-spread fire suppression efforts, however, the natural occurrence of fire has been largely absent for over 100 years, resulting in a dangerous buildup of fuels. If a wildfire were to occur today, it could pose a serious threat to nearby property as well as to the plants and animals living there.

This is why the agencies managing the Preserve are developing a Fuels Management Plan. This Plan will determine the safest, most effective ways of protecting the area from catastrophic fire while also considering the biological needs of the rare plants. Prior to completion of a Fuels Management Plan, all the issues will be analyzed and reviewed by specialists within the member agencies. Neighboring landowners will be contacted and consulted before actions are taken on adjacent Preserve lands

Information from:
<http://www.co.el-dorado.ca.us/phpreserve/>