

*Navarretia ojaiensis*  
– a new rare species



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CNPS Conservation Conference -  
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# Abstract

*Navarretia ojaiensis*, an annual in the *Navarretia pubescens* complex of the Polemoniaceae, was described as a new species in 2007 by Leigh Johnson in *Novon* based on collections made by Henry M. Pollard in 1948 through 1970 from the Ojai area of Ventura County, California. Pollard had identified his collections from the Ojai Valley as *N. jaredii*, which has been subsumed in part under *N. ojaiensis* and *N. mitricarpha*. Others have found it on the Newhall Ranch within Ventura County. The author rediscovered the Type Locality for *N. ojaiensis* and one other Pollard collection site extant, and found additional populations in the Ojai Valley and in the Santa Monica Mountains. *N. ojaiensis* has been nominated for listing on CNPS' List 1B as a rare and endangered species in California and elsewhere.





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# History of *Navarretia ojaiensis*

- Leigh Johnson revised the taxonomy of the *Navarretia pubescens* complex
- *Navarretia jaredii* is no longer a valid taxon
- Ojai area material usually referred to as *N. jaredii* were unique from other taxa in the complex
- Determined that Henry M. Pollard's collections of *Navarretia* from the Ojai area of Ventura County warranted recognition as a new species, *N. ojaiensis*
- Johnson published results in *Novon* in 2007





# The Search Began

- A new species in my home town!
- Had to find/examine Type Locality
- Had to see *Navarretia ojaiensis* for myself
- Had to gather info on it for my Flora of Ventura County
- Needed to determine its rarity and vulnerability for CNPS



# Methods and Tasks

- Read Johnson's *Novon* article
- Reviewed collection records of Pollard and others to determine locations of populations
- Discussed species with those knowledgeable (David Gowen, Mark Elvin, Leigh Johnson)
- Went looking during spring & summer of 2008



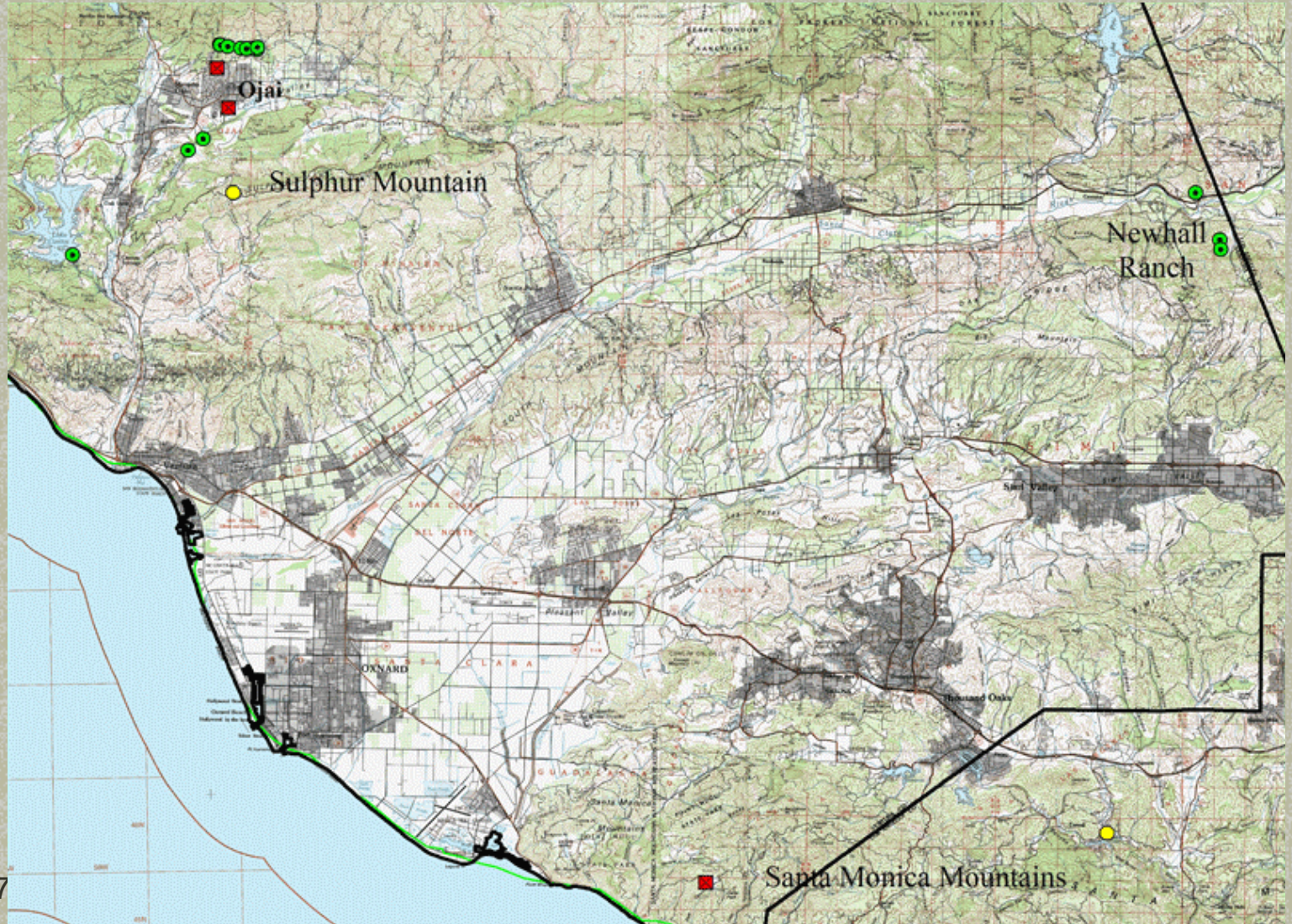
# Results of Search

- Type Locality (paratype) population rediscovered, extant (near east end of Foothill Trail on south slope of Nordhoff Ridge above Ojai), on private property
- Additional subpopulations found along Foothill Trail
- Historic (Pollard) population near Camp Comfort found extant
- My collection near Lake Casitas from 1998 is *N. ojaiensis*
- My collection from 2005 in western Santa Monica Mountains also *N. ojaiensis*
- Additional population found in Ojai Valley





# Population/Distribution Map







# Results of Search

- 11 (maybe 12) populations (~10,000 plants)
- 22 specific subpopulations
  - 2 with unknown status
  - 3 extirpated by development (including Type)
  - 17 extant
- Added to CNPS List 1B.1
- Habitat is:
  - on clayey soils
  - usually at base of north-facing slope, but not always,
  - in chaparral, herblands, or Coast Live Oak woodland



# Habitat Conditions



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# Formal Taxonomic Description

- ***Navarretia ojaiensis* Elvin, J.M. Porter & L.A. Johnson**

- [*Navarretia jaredii* Eastwood in part, *Navarretia mitracarpa* Greene ssp. *jaredii* (Eastwood) H. Mason in part]

- **Ojai Navarretia.** Taprooted annual herb 4.2-32.5 cm tall, low & spreading. Stems hirsute to glandular-pilose, 0.9-2 mm diam.; tawny yellow, pale green suffused w/purple to strongly anthocyanic; branching from base w/lower branches 4.4-18.2 cm long. Leaves 12-32 mm, bipinnately dissected, bright green, glandular-pilose; lateral lobes 3.5-7.5 mm, narrow & often acerose; terminal lobe 12-18 X 1.5-4 mm, narrowly rhombic to narrowly obovate, dentate-aculeate; teeth to 3 mm. Leaves slightly reduced in size on distal stems. Inflorescence glandular-pilose, terminating primary & secondary branches, capitate, bracteose; bracts pungent. Flowers in cymose dichasia; head 8-32 mm diam. Inflorescence bracts like upper cauline lvs, 10-17 mm, bipinnately dissected, glandular-pilose; lateral lobes 1-4.5 mm, usually acerose; terminal lobe 7.13 X 0.5-2 mm, linear to narrowly rhombic, dentate-aculeate; floral bracts 6-10 mm, pinnately dissected, glandular-pilose w/2-3 lateral lobes, lobes narrow, acute to acerose; terminal lobe 2.5-3.5 mm, linear, acerose. Calyx campanulate to tubular, 6.5-9-6 mm, glandular-pilose; lobes unequal in length & usually polymorphic, 3-6.5 mm, linear & entire to pinnatifid w/3-5 acute to acerose lobes; calyx tube short, 2-3.3 mm, the green costae of lobes much broader than hyaline portion of calyx tube; sinuses V-shaped. Corolla funnelform, 5.9-10.3 mm; tube 3-5.8 mm, white, glandular-pilose externally, sparsely V-shaped; corolla funnelform, 5.9-10.3 mm; tube 3-5.8 mm, white, glandular-pilose, externally, sparsely hairy internally on distal tube; throat 1.5-2.6 mm, flaring, yellowing green to whitish green, glandular-pilose on external throat, glabrous internally; lobe 1.4-2.2 mm x 0.9-1.3 mm, lanceolate, acute & somewhat cuspidate, sparsely glandular-puberulent on abaxial surface, white w/violet patch along vasculature at juncture of proximal lobe & distal throat. Stamens epipetalous; filaments diverging from corolla subequally; free portion subequal in length, 2.2-3.9 mm, sparsely hairy proximally, otherwise glabrous. Anther 0.7-1 mm; pollen spheroidal, variable in size, 35.2-54.3 um diam., pantocolporate; apertures 22 to 28; ora circular, 3-5.2 um in diam., sexine overlapping or w/irregularly angular colpi, 2.5-4.4 um in diam.; exine ca. 2.5 um thick, microreticulate, heterobrochate; lumina 0.2-1 mm diam. Pollen cream-colored. Ovary 0.9-1.9 mm tall, 0.4-0.7 mm broad, obovoidal w/thickened styler base, glabrous. Style 5.4-8 mm, glabrous, stigma lobes 2, 0.3-9.4 mm, spreading when receptive, ovules 1/locule, only one maturing & locules not remaining distinct, nectary disk forming 5-lobed collar at ovary base, 0.4-0.6 mm diam., rising 0.3 mm along the ovary, & 0.1-0.2 mm deep, pale green in color. Fruit 2.2-3.2 mm tall, 0.8-1.1 mm diam., straw yellow; capsule dehiscent loculicidally & septically from base, obovoidal, apiculate, apicule 0.3-0.7 mm. Seed solitary, 2-3 mm long, 0.5-0.9 mm broad, narrowly obovoidal, golden to tan in color; seed surface smooth; anticlinal walls of seed coat only weakly visible; seed surface ornamentation not evident; seed coat becoming mucilaginous when wetted; outer periclinal walls separating, sometimes in large patches, each cell of the seed coat bearing a single, massive, helical spiracle. Cotyledons 3, each deeply 2-lobed.



# Other Important Information

- Uncommon/scarce; CNPS List 1B.1, G1, S1.1
- open, grassy openings in chaparral, dry clay soils; Mixed Chaparral, grasslands, oak woodlands
- Elevation range: 200-500 m
- Blooming period: May through July
- Type Locality: meadow between Calif. Prep. School & Ojai (*H.M. Pollard sn 15-Jun-1948 UC*).
- Distribution: Western Transverse Ranges – Ventura County endemic.





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