

## Baker's Navarretia

(*Navarretia leucocephala* ssp. *bakeri*)

### Legal Status

Federal: None

State: None



© Doreen L. Smith

*Global and State Conservation Status:* G4T2S2.1: Global Rank, G4 = Apparently Secure: Uncommon but not rare; some cause for long-term concern due to declines or other factors; T-Rank, T2 = Same as state rank but related only to the status of the subspecies throughout its range; State Rank S2 = Imperiled: Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; State ranks in California often also contain a threat designation attached to the S-rank, S2.1 = very threatened.

*CNPS List:* 1B.1; 1B: Rare, threatened, or endangered in California and elsewhere. 0.1: Seriously endangered in California.

*Recovery Plan:* None.

### Species Description and Life History

Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*) is an annual 2 to 10 cm tall erect herbaceous plant in the phlox family (Polemoniaceae) (Hickman 1993). It has one to two-pinnately compound leaves with linear leaflets, reflexed white hairs on the stem, and white five-petaled flowers (Hickman 1993; UCANR 2001). The flowers are in dense terminal clusters with leaf-like bracts (Hickman 1993; UCANR 2001). This subspecies is an intermediate between *leucocephala* and *pliantha* (Hickman 1993). Baker's navarretia is distinguished from those subspecies by bracts that are less than twice as long as the heads are wide, white flowers, an included floral tube, and an erect stem with ascending branches (Hickman 1993; UCANR 2001). White-headed navarretia (*Navarretia leucocephala* ssp. *leucocephala*) is a more common subspecies with bracts greater than twice as long as the heads are wide, white flowers, and an exerted floral tube (Hickman 1993; UCANR 2001). Many-flowered navarretia (*Navarretia leucocephala* ssp. *pliantha*) is another special-status subspecies that is distinguishable by its prostrate stem with spreading branches, blue flowers, and an included floral tube (Hickman 1993; UCANR 2001). Very little is known about the pollination ecology of this taxon, but various native and non-native Hymenoptera (wasps and bees) and day-flying Lepidoptera (butterflies, skippers and moths) have been observed visiting this species (Witham 1993, Witham unpublished data). Seed dispersal is limited as members of this section of *Navarretia* hold their seeds until becoming wet (Hickman 1993).

## **Habitat Requirements and Ecology**

Baker's navarretia occurs on clay texture or alkaline clay soils and is found in vernal pools and swales within cismontane woodland, lower montane coniferous forest, meadows and seeps, and valley and foothill grassland from 15 to 1,740 m (49 to 5,709 ft) in elevation (CNPS 2001; CDFG 2007). The species blooms from May to July (CNPS 2001).

## **Species Distribution and Population Trends**

### *Distribution*

Baker's navarretia is endemic to California and its distribution, as defined by Calflora 2007, is based on 88 recorded observations. The known occurrences in Yolo County are located west of the Yolo Bypass on the CDFG Tule Ranch Preserve (CDFG 2007, Witham 2003, J.Gerlach pers. comm. 2007). The range of Baker's navarretia extends from Modoc and Lassen counties in the east, to San Joaquin, Merced, and Madera counties in the south, to Humboldt, Trinity, Tehema, Mendocino, Glenn, Lake, Colusa, Sutter, Yolo, Napa, Solano, Sonoma, and Marin counties in the northwest (Calflora 2007).

### *Population Trends*

Population trends of Baker's navarretia have not been documented. Occurrences of Baker's navarretia in California are highly limited and the species is at risk throughout its range (CNPS 2001). Given the reductions in vernal pool area this species is likely to be in decline, but according to the CNPS (2001) it may be more widespread than once thought.

## **Threats to the Species and Other Conservation Issues**

The primary threat to Baker's navarretia is the loss of vernal pool and swale habitat on adobe or alkaline soils. The predominant threats to this habitat include development and agriculture (CNPS 2001). The known locations in Yolo County are currently grazed; therefore, prior to any management recommendations to alter the grazing regime, research should be conducted to determine if the change in management would have a positive effect on Bakers navarretia.

## **Contributors to this species account:**

Cathy Little, HT Harvey & Associates  
John Gerlach, TAIC

## References

Photo Credit: Copyright © 2003 Doreen L. Smith

Calflora: Information on California plants for education, research and conservation. (web application). 2007. Berkeley, California: The Calflora Database (a non-profit organization). Available: <http://www.calflora.org/>.

California Department of Fish and Game (CDFG). 2007. Rarefind. California Natural Diversity Data Base (CNDDB). Electronic Database.

California Native Plant Society (CNPS). 2001. Inventory of Rare and Endangered Plants of California (6<sup>th</sup> edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society. Sacramento, California.

Hickman, J.C. (ed.). 1993. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley, CA.

University of California Agriculture & Natural Resources (UCANR). 2001. Illustrated field guide to selected rare plants of Northern California. Edited by Gary Nakamura and Julie Kierstead Nelson. Publication 3395.

Witham, C.W. 1993. The role of vernal pools in the 1992 mass dispersal of *Vanessa cardui* (Nymphalidae) with new larval host plant records. *J. Res. Lepidoptera* 30(3-4):302-304.

Witham, C.W. 2003. Tule Ranch vernal pools botanical resources survey report. Yolo Basin Foundation, Davis, CA.