

## Heckard's Pepper-Grass

(*Lepidium latipes* var. *heckardii*)

### Legal Status

Federal: None

State: None.



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*Global and State Conservation Status:* G4T1S1.2: Global Rank, G4 = Apparently Secure: Uncommon but not rare; some cause for long-term concern due to declines or other factors; T-ranks, T1 = Same as state rank but related only to the status of the subspecies throughout its range; State rank, S1 = Critically Imperiled: Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; State ranks in California often also contain a threat designation attached to the S-rank. S1.2 = Threatened.

*CNPS List:* 1B.2; 1B: Rare, threatened, or endangered in California and elsewhere. 0.2: Fairly endangered in California.

*Recovery Plan:* None.

### Species Description and Life History

Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*) is a 3- to 25-cm (1- to 10-in) tall herbaceous annual plant in the mustard family (Brassicaceae). It is differentiated from dwarf pepper-grass (*L. latipes* var. *latipes*) based on height, distance between leaf nodes, and lack of a basal rosette (Hickman 1993, Rollins 1993). Heckard's pepper-grass has dense foliage with 5- to 10-cm (2- to 4-in) long linear leaves. Small, greenish flowers with ciliate (edges having hair-like projections) petals occur in dense spikes and the flat, oval fruits are deeply notched at the top (Hickman 1993, Rollins 1993). Heckard's pepper-grass flowers March through May (CNPS 2005). The dispersal patterns and seed germination requirements of Heckard's pepper-grass are poorly understood.

### Habitat Requirements and Ecology

Heckard's peppergrass generally occurs in alkaline flats and alkaline grasslands along the edges of vernal pools on Pescadero Silty Clay, Pescadero Saline-alkali, Marvin soils, and Willows Clay soil types across a range of disturbed sites near Woodland. In the Central Valley, it appears restricted to alkaline soils along the rims of basins in areas that are subject to periodic flooding (CNDDDB 2005). On the Tule Ranch it occurs on Capay Silty

Clay and Clearlake Clay which are deeply cracked vertisols (Witham unpublished data). Data suggest that Heckard's pepper-grass is closely associated with Sacramento Valley populations of alkali milk-vetch (*Astragalus tener* var. *tener*), which is found on alkaline soils that are seasonally flooded or subjected to overland flows. Heckard's pepper-grass is ubiquitous in vernal mesic grasslands at the Tule Ranch Vernal Pools site in Yolo County (Witham 2003). Very little is known about the biology and germination requirements of this taxon.

## **Species Distribution and Population Trends**

### *Distribution*

The distribution of Heckard's pepper-grass in California is based on 15 observations, as defined by Calflora 2007. Heckard's pepper-grass has been collected in Glenn, Solano, and Yolo Counties (CNDDDB 2005) and it recently has been discovered in Merced County (Calflora 2007). Populations of Heckard's pepper-grass in Yolo and Glenn Counties range in size from 10 to 500 plants (CNDDDB 2005). The Yolo County distribution of adult plants includes the City of Woodland Preserve, the Woodland Regional Park, and the CDFG Tule Ranch Reserve (CNDDDB 2005, Showers 1996, Witham 2003).

### *Population Trends*

Heckard's pepper-grass is extremely rare in California (CalFlora 2007, CNPS 2005) and is expected to continue to decline, although data on population trends are lacking.

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

Development, waterfowl management, agricultural conversion, urban development, and exotic plant species are considered the primary threats to the subspecies in Yolo County (Showers 1996, Showers 1988, CNDDDB 2005). All of these threats lead to loss of habitat or degradation of conditions the plant requires to survive.

This species occurrences in Yolo County are entirely within vernal pool complexes and alkali sink vegetation types. Consequently, surveys should be conducted in those vegetation types to update occurrence data. The Tule Ranch population is grazed and any management recommendations to alter the grazing regime should include studies to determine if the change in management would have any potential positive or negative impacts on Heckard's pepper-grass. Studies on the pollination ecology and seed dispersal mechanisms, plus responses to disturbance regimes would aid in formulating adaptive management strategies.

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

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## References

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