

1.32 Parry's Tetracoccus (*Tetracoccus dioicus*) – Category SS

Management Units with Known Occurrences

Parry's tetracoccus is a shrub endemic to Orange, Riverside, and San Diego Counties, and northern Baja California, Mexico (Reiser 1994). This species is found in chamise chaparral vegetation with moderately deep canopy cover. It is restricted to Las Posas soils and uncommon gabbro derived soils (Reiser 2001).

There are 8 recent occurrences within the MSPA in MUs 3 and 8 (see Table of Occurrences). Parry's tetracoccus occurs in MU3 at South Crest Properties, McGinty Mountain (2 occurrences), and Sycuan Peak. There is 1 large occurrence with thousands of plants in MU8 in the northern San Marcos Mountains that is partially on lands protected by an easement. Other locations in MU8 include Monserate Mountain Preserve south of Rainbow, Wilderness Gardens Preserve, and the southern end of the Miriam Mountains in Escondido Open Space. Most of this latter occurrence of 50 plants is mapped on private lands and the number of plants on Conserved Lands is unknown. In 1997, this species was mapped along trails and the road to Wilderness Gardens Preserve and were detected in the AECOM 2015 surveys (CDFW 2012). There are 7 occurrences on private lands in MUs 4 and 8 (see online map: <http://arcg.is/2iBHyPW>).

Management Categorization Rationale

Parry's tetracoccus should be managed as a Species Management Focus Category SS Species due to a moderate risk of loss from Conserved Lands in the MSPA and because managing chamise chaparral vegetation alone will not ensure its persistence (see Vol. 1, Table 2-4). Parry's tetracoccus is at moderate risk of loss from the MSPA because only 8 occurrences are conserved in the MSPA, with most small or unknown in size (see Vol. 3, App. 1, Species Profiles). Although it is a rare shrub with limited distribution, it does not appear to face a high degree of immediate threat and thus is categorized as an SS species.

This species is a fire follower and could be impacted by an altered fire regime, either from too short or too long fire return intervals (County of San Diego 2010; CBI et al. 2012). Invasive nonnative plants and recreational activities can also adversely affect occurrences (CBI et al. 2012). Additionally, this species is particularly susceptible to orchard expansion where chaparral is cleared for avocado or citrus (Reiser 1994).

Management and Monitoring Approach

The overarching goal for Parry's tetracoccus is to maintain or enhance existing occurrences to ensure multiple conserved occurrences with self-sustaining populations to increase resilience to environmental and demographic stochasticity, maintain genetic diversity, and ensure persistence over the long term (>100 years) in chaparral and coastal sage scrub vegetation communities.

For the planning cycle of 2017–2021, the management and monitoring approach is to:

- (1) Begin field research into soils and habitat relationships and conduct habitat suitability and climate change modeling for Parry's tetracoccus and other edaphic endemic plants. This will lead to a better understanding of habitat requirements and to identifying and prioritizing geographic areas important for connectivity, restoration, and range shifts due to climate change and other threats.
- (2) Inspect Parry's tetracoccus occurrences on Conserved Lands (see Table of Occurrences) using the regional rare plant IMG monitoring protocol to record abundance and collect habitat and threats covariate data to determine management needs.
- (3) Conduct routine management actions identified through the IMG monitoring at Parry's tetracoccus occurrences on Conserved Lands (see Table of Occurrences). Depending on the type and level of threat, management should be conducted as needed, not necessarily every year, and using BMPs with precautions to do no harm.

For details and the most up-to-date goals, objectives, and actions, go to the MSP Portal Parry's tetracoccus summary page: https://portal.sdmmp.com/view_species.php?taxaid=28420.

Parry's Tetracoccus References

CBI (Conservation Biology Institute), California Invasive Plant Council, and Dendra 2012. *Management Priorities for Invasive Non-Native Plants: A Strategy for Regional Implementation, San Diego County, California*. Prepared by CBI,

California Invasive Plant Council, and Dendra for the San Diego Association of Governments. Contract No. 5001322.

CDFW (California Department of Fish and Wildlife). 2012. California Natural Diversity Database. Species occurrences shapefile, accessed 2012 and 2013.

County of San Diego. 2010. *Draft North County Multiple Species Conservation Plan Conservation Analysis*.

Reiser, C. H. 1994. *Rare Plants of San Diego County*. Imperial Beach, CA.

Reiser, C. H. 2001. *Rare Plants of San Diego County*. San Diego, CA: Aquifer Press.