

**Rare Plant Survey Results
for
Orange Grove Energy Project
San Diego County, California
May 2008**

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Introduction

Virginia Moran with Ecological Outreach Services (EOS) conducted a rare plant survey during May 2008 for the Orange Grove Energy Project (i.e., a proposed electrical plant, gas line, and underground electrical transmission line) to be constructed near Pala (San Diego County, California). The general project location is at latitude/longitude 117° 06' 41", 33° 21' 36" on the Pala 7.5" topographic quadrangle.

The electrical plant will be constructed at a site adjacent to Pala Del Norte Road that currently supports an abandoned orchard. Soils on the project site are primarily gabbroic Las Posas series soils. The approximate 1.5 mile (2.4 km) gas line originates adjacent to Pala Del Norte Road, extends south to State Route 76, and then extends to the west (mostly along State Route 76) where it terminates at Rice Canyon Road.

Methods

Project maps and project information (including maps of previously identified sensitive plant species on the project site) were obtained from TRC prior to the rare plant survey. However, EOS also conducted a search of the CNDDDB, USFWS, and BIOS databases for additional information on local rare and sensitive plants.

The entire project footprint (based on the aerial project maps obtained from TRC ["Figure 2 Aerial Overview Orange Grove Project, San Diego County, California"]) was surveyed on foot. Approximately 40 hours of survey time was conducted within the project footprint during May 19 to 22, 2008.

Results

The herbaceous layer had senesced and was past anthesis at the time of the survey. Therefore, the most representative layers of vegetation for the time of year during which the survey was conducted were the tree and shrub layers. The only sensitive plant species recorded for the project site was found in these layers. Parry's or San Diego tetracoccus (*Tetracoccus dioicus*), an evergreen shrub, was observed during the survey. The species is known from Los Angeles, Orange, San Diego, and Riverside counties area and occurrences are recorded in the California Natural Diversity Database (CNDDDB) (DFG 2008).

Parry's tetracoccus is not a state or federally-listed species. However, it currently is ranked by the CNDDDB as a G3/S2.2 species and is included on List 1B.2 of the California Native Plant Society's (CNPS) rare plant inventory. A global CNDDDB ranking of G3 correlates to 21 to 80 element occurrences, 3,000 to 10,000 individuals, or 10,000 to 50,000 acres of occupied habitat, while a state CNDDDB ranking of S2.2 correlates to threatened status for 6 to 20 element occurrences, 1,000 to 3,000 individuals, or 2,000 to 10,000 acres of occupied habitat. List 1B.2 species are rare throughout their range (fairly endangered in California [20 to 80% of occurrences are threatened]). All but a few List 1B species are endemic to California. All of them are judged to be vulnerable under present circumstances or to have a high potential for becoming so because of their limited or vulnerable habitat, their low

numbers of individuals per population (even though they may be wide ranging), or their limited number of populations. Most of the plants on List 1B have declined significantly over the last century.

Parry's tetracoccus is an evergreen shrub in the Euphorbiaceae or Spurge Family. It can be up to 6+ feet (2 m) in height. It has spreading branches with small unisexual flowers. Shrubs are dioecious meaning male or female flowers are borne on separate plants. The epithet "dioicus" is Greek for separate "oikos" or "houses."

The number of individual Parry's tetracoccus on the project site was estimated because it can be difficult to identify individuals of this species. Parry's tetracoccus plants send up multiple stems from one root system and often grow close together in clumps. Specific location information for the Parry's tetracoccus found during the survey is included in Attachment A.

Recommended Mitigation for Impacts to Tetracoccus dioicus

In keeping with the axiom, "avoid, minimize, or mitigate," impacts to Parry's tetracoccus should be avoided if at all possible. If avoidance is not possible then mitigation options for the species may include:

- Immediately prior to construction, flag all Parry's tetracoccus shrubs on the project site or in the vicinity of the project site. Include a preconstruction conference with all on-the-ground construction staff and the project foreman to insure they are aware of these occurrences and to avoid impacts to these occurrences if necessary.
- Relocate shrubs out of the impact area using equipment that may be on site for construction. In some cases, whole root masses can be uplifted and moved using a light-duty construction vehicle such as a front-end loader. Retrieving as much of the intact root system as possible would be necessary to insure survival. Ideally Parry's tetracoccus plants should be transplanted quickly to insure survival and should not be stored on pallets for any long period of time. Roots could possibly be balled if done quickly and kept moist throughout the waiting period. If a transplantation option is selected, a transplantation plan should be written in cooperation with project managers and the construction foreman.
- Collect seed from affected shrubs or from shrubs in the area, grow out the seeds, and transplant them in an appropriate location.
- Alternatively, acquire and protect lands with existing occurrences of Parry's tetracoccus and possibly other sensitive plant species to compensate for the destruction of in-situ plants.

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cover: Parry's tetracoccus from project site

Attachment A

| Survey Data for Parry's Tetracoccus at the Orange Grove Energy Project Site May 19-22, 2008 | | | |
|--|------------------|---------------------|-----------------------------------|
| Plants on East Side of Pala Del Norte Road Within Project Vicinity | | | |
| Eastings | Northings | GPS Accuracy | Estimated Number of Plants |
| 0489654 | 3691245 | 16 ft (4.9 m) | 4 |
| 0489621 | 3691242 | 16 ft (4.9 m) | 3 |
| 0489577 | 3691240 | 17 ft (5.2 m) | 6 |
| 0489577 | 3691315 | 16 ft (4.9 m) | 1 |
| 0489583 | 3691333 | 15 ft (4.6 m) | 9 |
| 0489602 | 3691366 | 15 ft (4.6 m) | 4 |
| 0489691 | 3691300 | 15 ft (4.6 m) | 4 |
| 0489590 | 3691272 | 16 ft (4.9 m) | 6 |
| Plants on West Side of Pala Del Norte Road Within Project Vicinity/Fuel Mod Zone | | | |
| 0489509 | 3691221 | 14 ft (4.3 m) | 11 |
| 0489516 | 3691144 | 14 ft (4.3 m) | 4 |