

State Highway 65, generally south of Hammonton Road and north of South Beale Road and 6th Street adjacent to Beale AFB.

*Unit 12, Western Placer County Unit (32,230 ac (13,043 ha))*

The Western Placer Unit contains numerous occurrences of the species (CNDDDB 2002) within functionally intact vernal pool complexes. Vernal pool fairy shrimp within this unit occur in both Northern Hardpan and Northern Volcanic Mudflow vernal pools as described by Sawyer and Keeler-Wolf (1995). This unit also supports vernal pool fairy shrimp found in vernal pools on Exchequer soils on the Mehrten geologic formation, a rare type of Northern Volcanic Mudflow vernal pool which has been reduced to only a few acres within Placer County (criterion 2). The pools are relatively short-lived and do not provide habitat for most other species of fairy shrimp (CNDDDB 2002).

This unit includes a large number of conservation areas established specifically to contribute to the recovery of vernal pool fairy shrimp, and partly established through conservation efforts under section 7 of the Act. It is, therefore, more likely to maintain its occupied habitat over time (criterion 4). These protected areas include the Ahart Preserve, one of the few remaining examples of Northern Volcanic Mudflow vernal pools in the region (criterion 2), as well as the Orchard Creek Conservation Bank. This conservation bank was established for the protection of vernal pool fairy shrimp, and to compensate for the loss of thousands of acres of vernal pool grassland habitats throughout Placer and Sacramento Counties. Additional smaller conservation areas in this unit are located within the cities of Lincoln and Roseville, and in Placer County. Approximately 20 percent of all mitigation areas established for the long-term protection of vernal pool fairy shrimp are found within this unit. Placer County is currently developing a NCCP/HCP for the conservation of vernal pool fairy shrimp in this area. A WRP easement of 157 ac (63 ha) for the protection of wetland resources occurs within this unit.

The Western Placer Unit contains 70 percent of the remaining vernal pool habitats in Placer County. TNC identified this area as one of the outstanding vernal pool sites remaining in the Sacramento Valley (criterion 4). This unit generally occurs in western Placer County immediately north of the Sacramento County line, north of the City of Roseville, and northeast of the City of Rocklin. The northern boundary

occurs just north of the City of Lincoln. This unit occurs mostly west of State Highway 65.

*Unit 17, Napa River Unit, Napa and Sonoma Counties (1,554 ac (629 ha))*

The Napa River unit represents the western extent of the species' range (criterion 1). This unit represents the only area where vernal pool fairy shrimp occur in vernal pool habitats forming a transition zone with tidal marshes (criterion 2). The boundaries of this unit were designed to include vernal pool complexes mapped by Holland (1998) and within the Fagan Marsh Ecological Area owned by CDFG (901 ac (420 ha)).

The Napa River parallels the western boundary of this unit. This unit is located on private and CDFG land, including the Napa-Sonoma Marsh and Fagan Marsh Wildlife Areas. Most of this unit is situated south and southwest of the City of Napa, primarily west of Highway 29, south of Highway 12, and east of Highway 121. This unit forms a narrow strip following the northwestern banks of the Napa River and extending westward along Hudeman and Schell sloughs.

*Unit 18, San Joaquin Unit, San Joaquin County (14,343 ac (5,805 ha))*

This unit contains vernal pool habitats identified by Holland (1998) and San Joaquin County (1998) that support populations of vernal pool fairy shrimp (CNDDDB 2002) found within Northern Volcanic Mudflow vernal pools on the Laguna geologic formation, as well as high terrace pools on the Valley Springs geologic formation. The Northern Volcanic Mudflow vernal pools tend to be short-lived, and are a relatively rare habitat type for vernal pool fairy shrimp (criterion 2). This unit contains the largest vernal pool complex remaining in San Joaquin County and the southern Sacramento Valley (criterion 1).

This unit occupies the area from the Calaveras River south to Duck Creek. The eastern boundary extends to near Valley Springs at the intersection of State routes 12 and 26. The western boundary extends to near Tully Road east of the City of Lodi.

*Unit 19A, B, and C, Altamont Hills Unit, Contra Costa, and Alameda Counties (7,902 ac (3,198 ha))*

This unit contains vernal pool habitats mapped by Holland (1998) and East Bay Regional Parks District (2001) supporting vernal pool fairy shrimp occurrences identified by CNDDDB (2002) within unique sandstone outcrops. These habitats include very small (less

than 3.3 ft (1 m) in diameter) clear water depression pools in sandstone outcrops which provide the necessary inundation to support vernal pool fairy shrimp (Eriksen and Belk 1999). The unit represents the only known location that supports vernal pool fairy shrimp within sandstone outcrop pools (criterion 2) (Eriksen and Belk 1999).

The unit is comprised of three subunits in the general vicinity of Mount Diablo and Morgan Territory Regional Park. The unit primarily consists of private land, with 108 ac (44 ha) owned by the State, and an additional 711 ac (288 ha) administered by the CDFG for conservation purposes.

The unit lies north of Corral Hollow Road, west of Clifton Court Forebay, east of the City of Danville, southeast of Concord, and south of Antioch. It includes vernal pool habitat within the Altamont Hills, around the northern and eastern boundaries of the City of Livermore, and east of the Altamont Hills and west of Clifton Court Forebay.

*Unit 21, Stanislaus Unit, Stanislaus and Merced Counties (48,599 ac (19,668 ha))*

This unit contains occurrences of the species within large, relatively intact, and contiguous vernal pool complexes ranging from the floor of the valley to the low-elevation foothills (Holland 1998; CNDDDB 2001). These areas are essential to the conservation of vernal pool fairy shrimp because they provide relatively undisturbed, hydrologically intact vernal pool habitats that will likely continue to support natural vernal pool ecosystem processes and maintain suitable habitat conditions for vernal pool fairy shrimp (criterion 4). This unit contains vernal pool fairy shrimp living within hardpan pools that occur on soils of alluvial fans and terraces forming numerous small pools and swales on mima mound topography. Soils supporting these vernal pools are typically older than those of the alluvial terraces in the Sacramento area.

The Stanislaus Unit is in the northern portion of the chain of vernal pools that runs through the southern Sierra Nevada foothills, within the Southern Sierra Foothill vernal pool region described by Keeler-Wolf *et al.* (1998). This vernal pool region contains 35 percent of all remaining vernal pool habitat in the Central Valley, and is extremely important to the conservation of vernal pool fairy shrimp and other vernal pool species (criterion 1 and 2). Land ownership within this unit includes the BLM (7 ha (17 ac)) and California State Parks (61 ac (25 ha)). The well-known Hickman vernal pool complex is located within this unit as well as Hickman Pool, one of the largest