

subunit is located in Shasta County north of Cayton Valley and Lake Britton east of Route 89. The area includes the northwestern portion of the watershed boundary for Fort Mountain along Red Mountain Road. The subunit is located in the Shasta National Forest. The Timbered Crater subunit is located on the Shasta/Modoc/Siskiyou County border near Little Hot Springs Valley. The subunit includes the area adjacent to Timbered Crater up to the Whitehorse Mountains and Day Road. The Timbered Crater subunit includes an area which has been proposed to be designated by the BLM as a Research Natural Area for vernal pools.

*Unit 2A, B, and C, Stillwater Plains Unit, Shasta County (10,364 ac (4,194 ha))*

This unit is comprised of old alluvial terraces above the Sacramento River associated with Igo, Tuscan, Moda, and Redding soils (CNDDDB 2002), which provide an important diversity of vernal pool habitat (criterion 2) for the species. This unit represents the northernmost extent of the range of *Orcuttia tenuis* in the Sacramento Valley (criterion 1). The majority of the lands included within this unit are privately owned. The BLM owns 81 ac (33 ha) in the unit, while the NRCS holds conservation easements or agreements on an additional 130 ac (52 ha) through its WRP program.

The Stillwater Plains Unit 2 contains three subunits. These are located in the area east and south of the city of Redding near the Redding Municipal Airport encompassing Stillwater Plains to the confluence of the Sacramento River and Cow Creek.

*Unit 3, Inskip Hill, Tehama and Shasta Counties (48,820 ac (19,757 ha))*

This unit supports occurrences of *Orcuttia tenuis* within vernal pools on Guenon, Inskip, Inks, and Toomes soils (CNDDDB 2002). It is important for maintaining a diversity of habitats for the species (criterion 2), and to maintain the geographic distribution of the species (criterion 1) because it supports over 40 percent of the known species occurrences (CNDDDB 2002). This unit is also geographically important (criterion 1) because it contains large vernal pool complexes that represent some of the last remaining lower elevation vernal pool habitats in the northern Sacramento Valley.

Land ownership within this unit includes BLM (14,839 ac (6,005 ha)), and the State owns 709 ac (287 ha). TNC has conservation easements on 15,575 ac (6,230 ha) within this unit. The remaining lands included within this unit are privately owned. This unit

occupies the area south of the Tehama/Shasta County line south to Sevenmile Creek near the Tuscan Buttes. The eastern boundary encompasses the vernal pool habitats along the lower elevation bordering the Sacramento River. The western boundary roughly follows the Sacramento River. Table Mountain west of the Sacramento River north of Paynes Creek and Red Bluff is included in this unit.

*Unit 4, Vina Plains Unit, Tehama and Butte Counties (25,102 ac (10,159 ha))*

This unit supports *Orcuttia tenuis* occurrences within vernal pools on Tuscan loam and Inks soils (CNDDDB 2002). It is geographically noteworthy (criterion 1) for being the southernmost area occupied by the species in the Northeastern Sacramento Valley vernal pool region, as defined by Keeler-Wolf *et al.* (1998). The unit is over 100 mi (160 km) from the nearest area occupied by *O. tenuis* to the south.

This unit contains TNC's 4,600 ac (1,862 ha) Vina Plains preserve, which will help assure that the species persists at the location into the future (criterion 4). The majority of the lands included within this unit are privately owned. Property ownership and protection within this unit includes CDFG (1 ac (0.4 ha)), CDFG administered land (1 ac (0.4 ha)), TNC (192 ac (77 ha)), TNC easements (11,653 ac (4,661 ha)), and private land under WRP easements or agreements (142 (57 ha)).

This unit for *Orcuttia tenuis* occupies the area south of Toomes Creek, and north of Pine Creek and the Cana Highway. State Route 99 bisects this unit and the western boundary generally parallels the Southern Pacific Railway line in southeastern Tehama and northern Butte Counties.

*Unit 5A and B, Bogg's Lake Unit, Clear Lake Area, Lake County (4,191 ac (1,696 ha))*

This unit is ecologically important (criterion 2) because it is the only place where *Orcuttia tenuis* occurrences occupy Northern Volcanic Ashflow vernal pools (Keeler-Wolf *et al.* 1998; CNDDDB 2002). This area is geographically important (criterion 1) because it represents the western extent of the range of *Orcuttia tenuis*, and some of the last remaining vernal pool habitats in Lake County. The unit is over 84 mi (135 km) from the nearest units to the north and west.

The majority of lands within this unit are privately owned. TNC has protected the area around Bogg's Lake south of Clear Lake, but most of the area is not protected. Property ownership and protection within this unit includes

CDFG (13 ac (5 ha)) and TNC (192 ac (77 ha)) lands. This unit consists of two subunits that are both located south of Clear Lake. The southernmost subunit includes Little High Valley.

*Tuctoria mucronata*

Solano grass is found in two naturally occurring scattered vernal pool complex areas in Solano and Yolo counties in the Sacramento Valley. The specific vernal pool characteristics that determine the suitability for Solano grass germination and growth are unknown; however, it appears that the species seems to favor somewhat larger and deeper vernal pools as compared to other vernal pool plants.

Solano grass occurrences are known from with an elevational variation of near 5 m (15 ft) to near 11 m (35 ft). Conserving the distribution of Solano grass across its geographical and elevational distribution protects the natural environmental processes for the species and provides the best chance for retaining the species across the full extent of the species range. The vernal pool types and soils associated with the two areas of concentration of Solano grass differ across the geographic range of the species and leads to different species compositions and environmental conditions between Solano grass occurrences. Providing for a mosaic of habitat types both between and among vernal pool species occurrences is essential to the species conservation because it would include the full extent of the physical and environmental conditions for the species (Fugate 1992, Fugate 1998, Gonzales *et al.* 1996, Ikeda and Schlising 1990, Noss *et al.* 2002a, Platenkamp 1998, Zedler *et al.* 1979). The distribution of Solano grass reflects a diversity of vernal pool habitat types and sizes that provide habitat for the species. Vernal pool complexes that provide suitable habitat for this species include similar physiographic and edaphic settings-claypan soils of saline-alkali flood basin rims basins soils. The parent material of vernal pools greatly influences species composition and hydrologic functioning of the vernal pool (Hanes and Stromberg 1998, Holland and Jain 1981, 1988). Soils beneath vernal pools are extremely variable and are not the same as soils mapped by soil surveys, but are usually undescribed hydric inclusions that vary upon location (Holland and Dain 1990). The primary constituent elements of critical habitat for *Tuctoria mucronata* are the habitat components that provide:

(i) Vernal pools, swales, and other ephemeral wetlands and depressions of appropriate sizes and depths and the