

COLUSA GRASS

Neostapfia colusana

USFWS: Threatened

CDFG: Endangered

CNPS: List 1B

Species Account

Status and Description. Colusa grass (*Neostapfia colusana*) was federally-listed as threatened on March 26, 1997 (USFWS 1997) and state-listed as endangered in November, 1979. It is on CNPS's List 1B. Critical habitat was designated for this species on August 6, 2003 (USFWS 2003a), but Solano County is excluded. Colusa grass is a robust, annual, 1 to 3 dm tall grass in the Orcutt tribe (Orcuttieae) of the grass family (Poaceae). This tribe contains only three genera, *Neostapfia*, *Orcuttia*, and *Tuctoria*, all of which are vernal pool or wetland grasses endemic to California. The stems of Colusa grass are ascending, *i.e.*, the lower portions lie flat on the ground and the upper portions are erect, ending in dense, cylindrical spikes that resemble small ears of corn. The plant is sticky from glandular secretions and turns brown with age (Baldwin 2012, USFWS 2003b).



Tim Lacy

Range and Distribution. Currently, forty-four occurrences of Colusa grass remain extant with populations in Glenn, Merced, Solano, Stanislaus and Yolo counties (CNPS 2011, CNDDDB 2011). The majority of the extant occurrences are in the Southern Sierra Foothills Vernal Pool Region, northeast of the City of Merced in Merced County and east of Hickman in Stanislaus County (USFWS 2005). It has been extirpated from Colusa County (CNPS 2011) and at least seven populations have been eliminated in Merced and Stanislaus counties (USFWS 2003b).

Habitat and Ecology. Colusa grass grows in large or deep vernal pools, in lakes and shallow playas, in saline/alkaline adobe clay soils. It has the broadest ecological range of the Orcuttieae. It occurs on alkaline and acidic soils, from 5 to 105 meters in elevation, in Northern Claypan and Northern Hardpan vernal pool types, and in pools from 0.01 to 250 hectares in size and 41 cm in depth (from a single pool measurement). In the Solano-Colusa Vernal Pool Region, Colusa grass grows on clay, silty clay, or silty clay loam soils in the Marvin, Pescadero, and Willow series (USFWS 2005). Colusa grass usually grows in single-species stands. Thus, associated species in this case are plants that occur in different zones of the same pools, but are generally present in the same season. In alkaline sites such as Solano County, is typically associated with late blooming species such as salt grass (*Distichlis spicata*) and alkali-heath (*Frankenia salina*), and another rare grass, Solano grass (*Tuctoria mucronata*). Colusa grass blooms May through August, depending on environmental conditions (Barbour et al. 2007, CNDDDB 2011, CNPS 2011).

Population Levels and Occurrence in Plan Area. Colusa grass is found growing within the deeper vernal pools of the Plan Area's Valley Grasslands and Vernal Pools Natural Community. Two

populations of Colusa grass are reported from Solano County, one at Olcott Lake on Jepson Prairie Preserve and one in the “next largest pool” southwest of Olcott Lake, where this grass was last seen in 1986 (no plants were observed in 1989, 1991, 1992 [CNDDDB 2008]). Two additional populations within the Plan Area are located within the Davis Communications Tower Annex area. Population sizes vary greatly from year to year, from 100’s of plants in 1982 to 3 million in 1985 at Olcott Lake (CNDDDB 2011, CNPS 2011). Tens of thousands of plants were observed by LSA in July of 2004 at Olcott Lake. As population numbers are greatly variable from year to year, a potential seedbank exists at the “next largest pool”, even though no plants have been observed for more than a decade.

Threats to the Species. In Solano County, Colusa grass is protected on Jepson Prairie Preserve, which is managed by Solano Land Trust. The population outside the preserve is on private land. Colusa grass is threatened primarily by conversion of habitat to agricultural uses, development, flood control, over-grazing, and non-native plants (CNPS 2011). In addition, inundation by poultry manure, damage by herbicide applications, contamination by industrial chemicals, vandalism, grasshopper outbreaks and small population size each threaten some populations of Colusa grass (USFWS 2005). Conservation efforts include a designation of critical habitat in 2005, botanical surveys on preserved land (4 occurrences), and fencing and invasive species management on Federal land (3 occurrences). The population in Olcott Lake in the Jepson Prairie has been monitored annually since 1989 (C. Witham *in litt.* 1992, CNDDDB 2011).

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