



Environmental Investigations Reports

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Memorandum

Date : September 21, 1998

To : Naser Bateni

From : Jenny Marr
Joyce Lacey Rickert
Department of Water Resources

Subject: Offstream Storage Report: Botanical Resources

This memo is a summary of the 1998 botanical resources investigations of the Offstream Storage Reservoir Alternatives Investigation. In order to complete the 1998 surveys, field investigations will continue until the end of October, therefore, the findings presented in this memo reflect the most recent data available.

BOTANICAL RESOURCES

Methodology

General Vegetation

The California Native Plant Society and the California Department of Fish and Game have classified natural plant communities in California for broad scale resource inventory and assessment. The classification system provides definition of the parameters of general vegetation types, and rare communities. The Manual of California Vegetation classifications were used to define the natural communities which would potentially be affected by the offstream storage alternatives. Plant communities were delineated on aerial photos (1:1600). These photos were field verified and mapped.

Sensitive Plants

The CNPS, CDFG, and USFWS have all developed classifications systems for sensitive plants. For this study sensitive plant species are categorized as high priority, priority, and low priority. High priority species are defined as either State or federally threatened, endangered, proposed threatened or candidate species. Priority species are either federal Species of Concern, or CNPS List 1A, 1B, 2 or 3 species. The CNPS categories are for species that are either believed to be extinct, may become listed, or are rare throughout their range. Low priority species are defined as plants of limited distribution (CNPS List 4).

The following references were consulted to determine documented occurrences of or the potential for occurrence of prioritized species, and rare communities.

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OWR 155 (Rev. 2/86)

Lacey Rickert
10/2/98

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CDFG, California Natural Diversity Data Base
CDFG Lists of Endangered and Threatened Species, April 1998
CNPS Electronic Inventory, 1997
United States Fish and Wildlife Service list of federally endangered,
threatened, proposed and candidate species, March 1998
A Manual of California Vegetation

The reference search included the project area, and adjacent USGS 7.5 minute quadrangles. Ten high priority plant species were identified in the search. Thirty-two priority species, and twenty-two low priority species are also identified in the reference search of the study area.

Preserved specimens of prioritized species were examined, by field personnel, at the Cal Academy of Sciences, UC Berkeley, and California State University Chico herbaria. The Jepson Manual and A California Flora and Supplement were consulted for habitat descriptions and flowering periods for each species. For the species with known edaphic associations, Natural Resource Conservation Service data were used to generate ARCVIEW maps of lodo shale and clay soils.

Field surveys were conducted, for prioritized species, within the proposed inundation elevations of the reservoirs according to guidelines and protocol established by DFG (1994), and the USFWS (1996). Habitat specific surveys, using a wandering line transect method, were conducted within the flowering and fruiting periods for each species. Transects were spaced five to ten meters apart in homogeneous habitat, and one meter or less apart in vernal pools, swales, wetlands, riparian, and other distinct microhabitats. All plant species were identified and recorded in the field whenever possible, or preserved for identification at a later date. All newly encountered populations of prioritized species were recorded in a DWR botanical inventory database.

Summary of Findings

General Vegetation

The following natural communities and vegetation types occur within the reservoir alternatives.

Grassland	California annual (includes vernal pools and swales) nodding needlegrass purple needlegrass
Chaparral	chamise chamise-wedgeleaf ceanothus wedgeleaf ceanothus interior live oak
Riparian	mixed willow Fremont cottonwood
Woodland	valley oak woodland blue oak woodland mixed oak woodland foothill pine
Ruderal	(house, barn, stock yards)
Cultivated grains	
Wetlands	

The dominant natural community in the Sites, Colusa and Thomes-Newville reservoirs is California annual grassland. Special microhabitats occurring within these annual grasslands which support unique native annual species, are the northern clay hardpan vernal pools, swales, and seasonal wetlands. While the annual grasslands are highly variable with respect to species composition, the dominant species are european forage grasses such as Italian ryegrass (*Lolium* sp.) and wild oats (*Avena* sp.) and the forb, yellow star thistle (*Centaurea solstitialis*).

Approximately 6 percent (840 acres) of the total inundation area of the Sites Reservoir is covered by oak woodlands. In comparison, almost 11 percent (1,820 acres) of the Thomes-Newville reservoir site is covered by this natural community.

The Red Bank project is dominated by blue oak (*Quercus douglasii*), mixed oak (*Quercus* sp.), foothill pine (*Pinus sabiniana*), and chaparral habitat. While the total inundation area of the four reservoirs of this project is just over 4,900 acres, oak woodlands are expected to be the dominate natural community within the project area (acreages of individual communities types are not available at this time).

Acreages of the majority of the mapped natural communities are not finalized at the present time. The expected date of completion is December 1998.

Sensitive plants

No State or federally listed species were found in the reservoir areas during the 1998 field surveys (Table 1). Three priority species and two low priority species were found at Red Bank in chaparral and annual grassland habitats. Several priority and low priority species were found at Thomes-Newville in annual grassland and chaparral. Two low priority species were identified from the Sites Reservoir area and Colusa cell area of the Colusa Reservoir, also in annual grassland. Some habitats within the Sites Reservoir and Colusa cell area, were expected to have a high potential for sensitive plant species. For example, alkaline wetlands (including the Salt Lake area situated in the northern portion of the Sites Reservoir area) were surveyed throughout the field season, but no sensitive plant species were located.

Table 1. Summary of Prioritized Plant Species Identified from the Offstream Storage Reservoirs

Reservoir	Common Name (scientific name) ¹	Status ²
		State/USFWS/CNPS
RED BANK	Dimorphic snapdragon (<i>Antirrhinum subcordatum</i>)	--/--/1B
	Jepson's milkvetch (<i>Astragalus rattanii</i> var. <i>jepsonianus</i>)	--/--/1B
	Brandegee's eriastrum (<i>Eriastrum brandegeae</i>)	--/SC/1B
	adobe lily (<i>Fritillaria pluriflora</i>)	--/SC/1B
	Tehama navarretia (<i>Navarretia heterandra</i>)	--/--/list 4
THOMES- NEWVILLE	Dimorphic snapdragon (<i>Antirrhinum subcordatum</i>)	--/--/1B
	Jepson's milkvetch (<i>Astragalus rattanii</i> var. <i>jepsonianus</i>)	--/--/1B
	Stony Creek spurge (<i>Chamaesyce ocellata</i> ssp. <i>rattanii</i>)	--/--/list 4
	adobe lily (<i>Fritillaria pluriflora</i>)	--/SC/1B
	Tehama Co. western flax (<i>Hesperolinon tehamense</i>)	--/SC/1B
	Tehama navarretia (<i>Navarretia heterandra</i>)	--/--/list 4
SITES	hoary navarretia (<i>Navarretia eriocephala</i>)	--/--/list 4
	Tehama navarretia (<i>Navarretia heterandra</i>)	--/--/list 4
COLUSA CELL	hoary navarretia (<i>Navarretia eriocephala</i>)	--/--/list 4
	Tehama navarretia (<i>Navarretia heterandra</i>)	--/--/list 4

¹ Nomenclature according to Hickman, 1995.

² USFWS 1997 SC (Species of Concern, Species at Risk)
 Skinner and Pavlik, 1994. CNPS 1B (Plants rare, threatened or endangered in California and elsewhere)
 CNPS List 4 (Plants of limited distribution; uncommon)

Note: No State or federally listed species were identified from the project alternatives in 1998 surveys