

M e m o r a n d u m

Date : September 17, 1998

To : Naser Bateni

From : Fraser Sime
Environmental Services Section
Department of Water ResourcesSubject: Survey of Potential Special-Status Shrimp Habitat at Potential Offstream
Storage SitesIntroduction

This report presents the methods and results of the surveys for potential special-status shrimp habitat at the Red Bank, Thomes-Newville, Sites, and Colusa potential offstream storage sites. Four reservoir scenarios were evaluated: Red Bank Project, Thomes/Newville Reservoir, Sites Reservoir, and Colusa cell of the Colusa Reservoir. Jones & Stokes Associates' invertebrate ecologists and DWR staff performed reconnaissance-level surveys for potential special-status shrimp habitat at these potential reservoir sites. Special-status shrimp include species in the following categories:

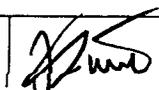
- shrimp listed as threatened or endangered under the federal Endangered Species Act (50 CFR 17.11 for listed animals and various Federal Register notices for proposed species) and:
- other shrimp species meeting the definition of rare, threatened, or endangered under the California Environmental Quality Act (State CEQA Guidelines, Section 15380).

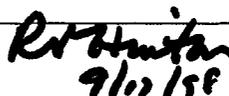
The surveys focused on identifying potential habitat for the federally listed as threatened vernal pool fairy shrimp (*Branchinecta lynchi*), the federally listed as endangered Conservancy fairy shrimp (*Branchinecta conservatio*), the federally listed as endangered vernal pool tadpole shrimp (*Lepidurus packardii*), and the rare non-listed "Mid-Valley" fairy shrimp. Three non-special-status fairy shrimp species also have the potential to occur within the proposed project areas: *Branchinecta coloradensis*, *Branchinecta lindahli*, and *Linderiella occidentalis*.

Surveys were performed between March 16 and May 7, 1998. Twenty-six days were spent in the field. Aerial photographs and existing data from DWR were used to select areas most likely to support special-status shrimp habitat. An effort was made to focus surveys in these areas. Because of delays in obtaining property

SURNAME

DWR 155 (Rev. 2/86)

 9/17/98

 9/17/98

D - 0 1 1 6 7 4

D-011674

access from private landowners, much of the potential habitat was dry at the time of survey; therefore potential habitat was mapped conservatively and it is likely that the results of this study represent a high estimate of habitat extent. Surveys conducted using the approved U. S. Fish and Wildlife Service protocol could result in identification of a lesser amount of potential special-status shrimp habitat.

Potential special-status shrimp habitat for the purpose of this study is defined as:

- seasonal wetlands of sufficient size (depth and area) or supporting specific vegetation that indicate the potential for ponding for a sufficient duration to allow special-status shrimp species to complete their life cycles and to maintain water temperatures conducive to special-status shrimp species, or
- seasonal stock ponds or other artificial wetlands that become dry in late spring or early summer and support the above conditions.

Habitats fulfilling the above criteria were mapped on U. S. Geological Survey 7.5-minute quadrangle maps.

Findings

The Red Bank project area is approximately 20 miles west of Red Bluff. The terrain is generally too sloped to support habitat suitable for special-status shrimp species. DWR staff conducting the botanical, wetlands, and wildlife studies indicated that there was very little to no potential habitat in any of the reservoirs of this project area (Table 1). Additionally, this site is considered to be outside the known range of the special-status shrimp species.

The Thomes-Newville Reservoir area is characterized by grassland and vernal pools on clay soils and Lodo shale, in foothill-type terrain. Cattle grazing is the primary agricultural practice. Approximately 26 acres of potential habitat were mapped in this area (Table 1). Potential habitat consisted of vernal pools and ephemeral stock ponds.

The Sites Reservoir area is characterized by grasslands and vernal pools on heavy clay soils in basin terrain, with low ridge lines near the valley margins. Clay slumps are common along the ridges and clay flats occur in low-lying areas. The land is currently used for cattle and sheep grazing. In this reservoir area,

approximately 73 acres of potential habitat were mapped (Table 1). Potential habitat consisted mainly of vernal pools, alkali flats, clay flats, and ephemeral stock ponds.

The Colusa cell of the Colusa Reservoir area is located in the Antelope Valley. Here, the terrain is characterized by grassland and vernal pools on heavy clay soils in basin terrain with low ridge lines near the valley margins. Clay slumps are common along the ridges and clay flats occur in low-lying areas. Cattle grazing is the main agricultural practice in the area. In the Colusa cell, approximately 12 acres of potential habitat were mapped (Table 1), predominantly vernal pools, clay flats, and ephemeral stock ponds.

Table 1. Extent of suitable habitat (in acres) by project

Potential Reservoir	Extent of Potential Habitat (acres)
Red Bank Project	0.0
Thomes-Newville Reservoir	25.56
Sites Reservoir	73.04
Colusa Cell	11.84

The greatest extent of potential special-status shrimp habitat occurs within the Sites Reservoir area. However, this habitat has been degraded by land use activities and erosion. The potential shrimp habitat areas within the Colusa cell have also been similarly degraded by land use activities, although not to the extent of the Sites area. The highest quality habitat is at the Thomes-Newville Reservoir area.

Implementation of the proposed Red Bank project would probably not result in any impacts to the special-status shrimp or their habitat.

Future intensive field surveys will be required to determine presence or absence of special status shrimp species at these project areas including conveyance facilities not addressed in this report. At that time, the surveys must fully comply with all protocols specified by State Department of Fish and Game and Federal USFWS regulatory agencies (i.e. the Interim Survey Guidelines to Permittees for Recovery Permits under Section 10(a)(1)(A) of the Endangered Species Act for Listed Vernal Pool Branchiopods - USFWS).