

# Memorandum

Date : October 2, 1998

To : Naser J. Bateni, Chief  
Northern District

From : Dave Bogener  
Northern District  
Department of Water Resources

Subject: Progress Report Offstream Storage Avian Studies

## INTRODUCTION

The Department of Water Resources is investigating offstream water supply reservoir alternatives at four locations on the west side of the Sacramento Valley. These locations include the Red Bank Project in western Tehema County, Thomes-Newville Reservoir in western Tehama and Glenn counties, Colusa Reservoir in western Glenn and Colusa counties, and Sites Reservoir in western Colusa County.

## OBJECTIVE

The objective of the wildlife assessment for the investigation is to determine the occurrence, distribution, and density of State and federally listed wildlife species within the project areas. Also, we are to develop comparable information on the presence of State and federally "listed" avian species at the Red Bank Project, Sites Reservoir, and Colusa Cell as that previously developed at Thomes-Newville Reservoir. The purpose of this report is to provide the information necessary to evaluate and compare the potential project effects on State and federally "listed" avian species and their habitats at the four offstream water supply reservoir locations.

## AUTHORITY

Evaluation of potential project impacts on these species is required under the California Environmental Quality Act and the National Environmental Policy Act. Further, the State and federal Endangered Species Acts require that any analyses of a project that could result in "take" of a State or federally "listed" species include an evaluation of alternatives, consultation with respective regulatory agencies, and development of mitigation and avoidance measures.

## SCOPE

This investigation's avian studies are primarily confined to the area of the reservoir footprint. A three-year wildlife population study which included a variety of

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avian studies was conducted near the proposed Thomes-Newville Reservoir during the early 1980s. No additional data collection at the proposed Thomes-Newville Reservoir was conducted as part of this investigation. At the remaining three locations, assessment of the presence or absence of listed species, California Species of Special Concern, and federal candidate species was also conducted. Reservoir developments generally have long time lines between planning and construction. Several of the Species of Special Concern or federal candidate species that could occur within the project areas may become formally listed during the project planning phases. It is prudent to identify these candidate species' presence and population levels within the project area early in the planning process.

## METHODS

A list of State and federal "listed" species, California Species of Special Concern, and federal Candidate species which could potentially occur within the proposed reservoirs was developed from several sources including Natural Diversity Data Base, California Wildlife Habitat Relationships Program, literature review, landowner interviews, U.S. Fish and Wildlife Service County Lists, and consultation with species experts.

Three methodologies were used to determine presence, density, and distribution of State and federally "listed" species at the proposed reservoir locations including monthly line transects, bank swallow surveys, and owl surveys.

Line transects were established in representative habitat within Sites Reservoir, Colusa Cell, and Red Bank Project as access was acquired using standard avian line transect methodology (Emlen, 1971). Transect locations are identified in Figure 1 and 2. Transect length and initiation dates are identified in Table 1.

Reservoir Location	Transect Length	Date of Sampling Initiation
Sites Reservoir	12.5 miles	March 1997
Funks Reservoir	2.5 miles	October 1997
Colusa Cell	11 miles	October 1997
Schoenfield Reservoir	6 miles	October 1997
Lanyan and Bluedoor Reservoirs	4 miles	April 1998
Dippingvat Reservoir	6 miles	April 1998

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Transects were surveyed either by foot or from a vehicle at a rate of 20 to 30 minutes per mile. All state and federally "listed" avian species detected were recorded. The distance from the transect line at the point of detection was recorded using a Tasco Lasersite Rangefinder. Detections were recorded onto field datasheets (Appendix A) in 100 yard increments. Maximum range of the rangefinder of 800 yards (either side of the transect line) was used as the outer limit of the transect. State and federally "listed" species detected outside of the 800-yard limit were noted (presence) but not included in density estimates. Both 10X40 binoculars and a 15X60 spotting scope were used for field identification.

Bank swallow surveys involved walking all permanent and ephemeral stream reaches with downcut channels during the bank swallow breeding season (May through July). All vertical banks were inspected for the presence of bank swallow burrows. All foraging swallows were identified to species. All detections of burrows or foraging bank swallows were recorded.

Owl surveys were conducted at night along the previously identified line transect routes. Methodology involved broadcasting pre-recorded calls using a tape recorder with external speaker at half-mile intervals. Each species call (burrowing owl, short-eared owl, and long-eared owl) was broadcast for 30 seconds followed by 30 seconds of silence to detect return calls. Three repetitions of each call/listen cycle were conducted for each species at each one-half mile interval along the line transects. All owl detections were logged.

## RESULTS AND DISCUSSION

The species detected at each reservoir location are identified in Table 2. Thomes-Newville Reservoir detections are per California Department of Fish and Game surveys from the early 1980s. Funks Reservoir, a small regulatory reservoir on the Tehema Colusa Canal immediately downstream from the Golden Gate Damsite was inventoried to document the potential occurrence and density of State and federally "listed" species that a reservoir in this habitat and location could support.

Eight State or federally "listed" avian species occur in Tehema, Glenn, and Colusa counties including bald eagle (*Haliaeetus leucocephalus*), bank swallow (*Riparia riparia*), greater sandhill crane (*Grus canadensis tabida*), Swainson's hawk (*Buteo swainsoni*), willow flycatcher (*Empidonax trailii*), northern spotted owl (*Strix occidentalis caurina*), American peregrine falcon (*Falco peregrinus anatum*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*). The habitats

present at the proposed reservoirs have no potential to support either northern spotted owl or western yellow billed cuckoo. All of the remaining species except peregrine falcon have been detected at or near one or more of the proposed reservoirs.

Thirty-two additional avian species classified as either California Species of Special Concern or federal Migratory Non-game Birds of Management Concern also occur in Tehama, Glenn, and Colusa counties. Of these species all but four species have been detected at or near one or more of the proposed reservoirs.

Wintering bald eagles have been detected at all four of the proposed reservoir locations. Funks Reservoir supports the greatest density of wintering bald eagles followed by Thomes Creek below the proposed reservoir. Surviving DFG data do not indicate whether any wintering bald eagles were detected within the proposed Thomes-Newville Reservoir inundation zone. Both Sites Reservoir and Colusa Cell, support relatively minor wintering bald eagle use. An adult bald eagle was observed foraging within the footprint of Dippingvat Reservoir on several occasions during the breeding season. Use of the South Fork Cottonwood Creek by mature bald eagles during the breeding season has been reported for over a decade (Dave Smith, Department of Fish and Game Biologist, personal communication). No nests have been detected. Potentially suitable nest trees within the inundation zone are lacking. Most bald eagle nesting currently occurs on either lakes or reservoirs in California. Disproportionately greater wintering bald eagle use occurs on large waterbodies which support either concentrations of waterfowl or fish.

Bank swallows have been detected along Thomes Creek below the proposed reservoir. Two active colonies were detected during 1982. Both colonies were small with less than 30 burrows counted at each colony. Although a substantial amount of downcut stream channel with vertical banks exists within both Sites Reservoir and Colusa Cell, no bank swallows have been observed. All of the streams within these reservoirs are ephemeral (little or no flow after June 1st) with clay soils. Several potentially suitable bank swallow nest sites (large vertical banks, loamy soil, and perennial streams) are present within the Red Bank Project. However, no bank swallows were detected during field surveys on either Red Bank or South Fork Cottonwood creeks. Bank swallow populations can be effected by reservoir construction either through direct habitat loss (inundation) or upstream control of flood flows which create and maintain the vertical banks required for nesting.

No actual habitat use by sandhill cranes has been observed at any of the proposed reservoirs. Five adult sandhill cranes were observed in flight over the proposed Colusa Cell area during the winter. Local weather conditions (dense fog in the Sacramento Valley) may have been a factor in this detection. Little or no sandhill

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crane wintering habitat exists within any of the four proposed reservoirs. DFG detected no sandhill crane use at the proposed Thomes-Newville Reservoir location during three years of intensive survey.

Swainson's hawks have not been detected within any of the proposed reservoirs. One observation of an adult and an immature perched along Thomes Creek (well below the proposed reservoir) was documented during the breeding season. Habitat quality is generally poor for this species in Sites, Colusa, and Thomes-Newville reservoirs and totally unsuitable within the Red Bank Project.

Willow flycatchers have been observed only at the proposed Thomes-Newville Reservoir and only during migration. This species does not currently nest within the Sacramento Valley. The DFG report does not identify the location of these observations. However, the only suitable willow flycatcher habitat is probably along Thomes Creek.

Attachments

Figure 1. Red Bank Project Avian Transect Routes

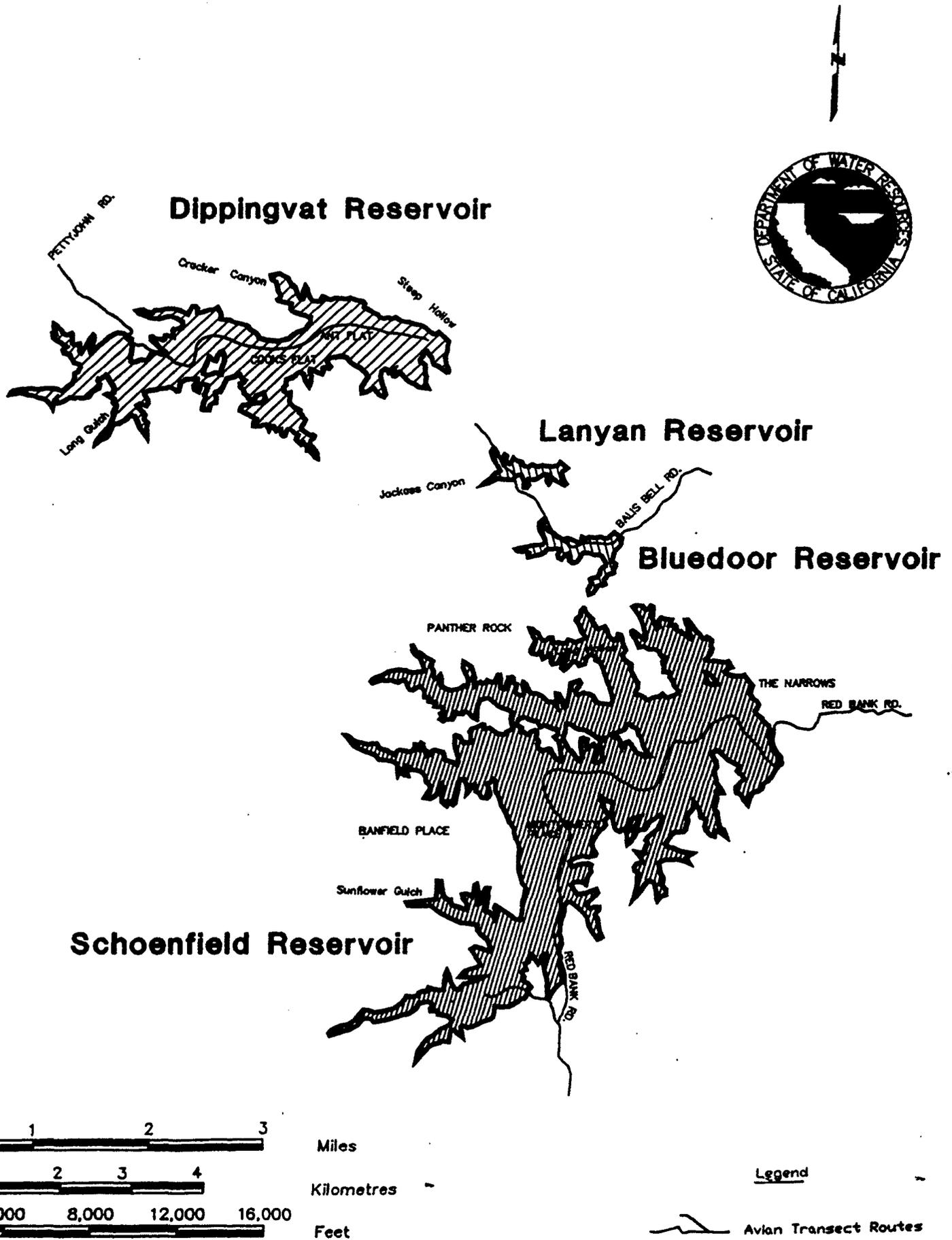
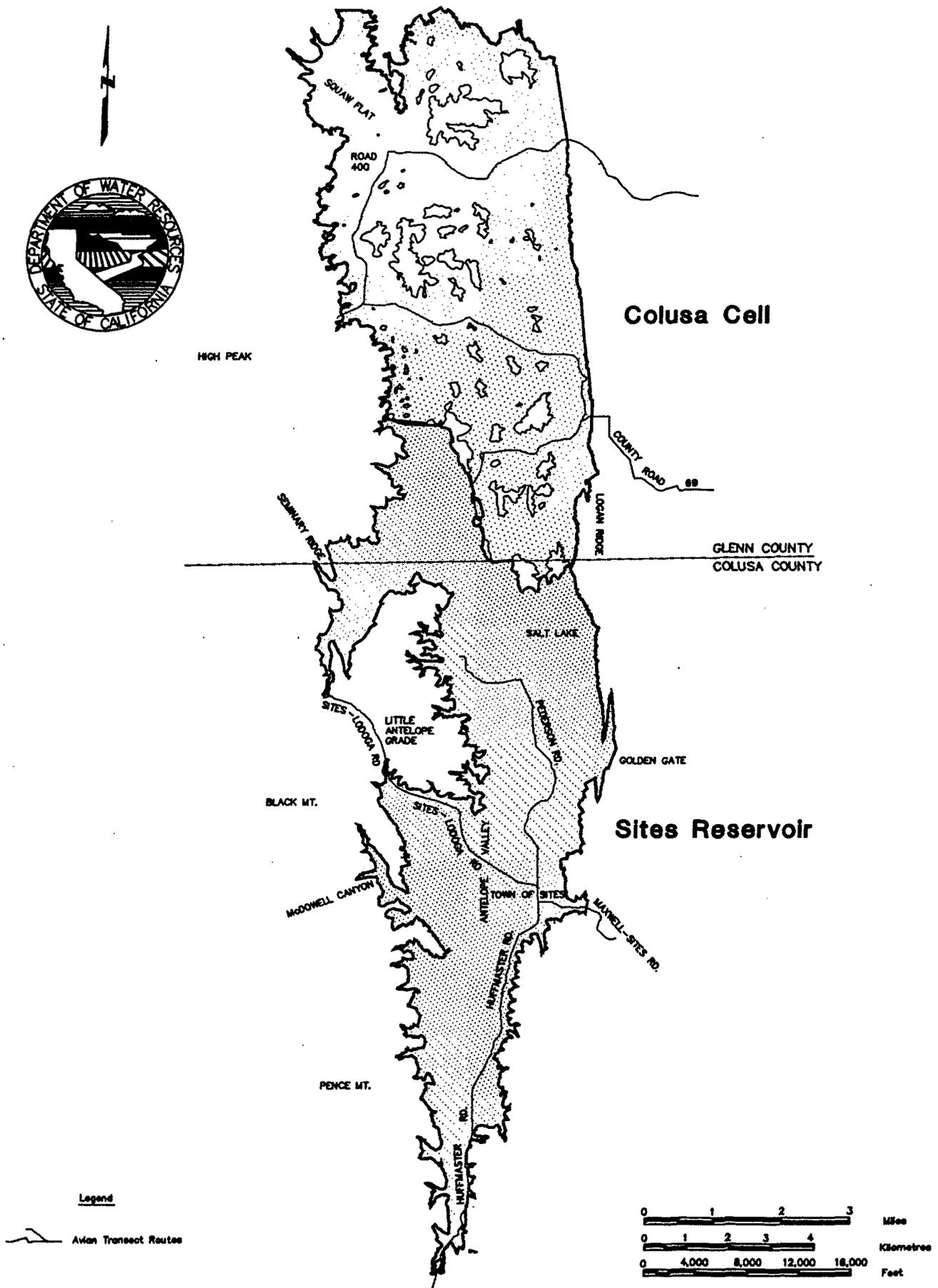


Figure 2. Sites and Colusa Reservoir Avian Transect Routes



**Table 2. State and federally "listed" avian species observed at the Off-Stream Storage Reservoirs**

Species	Status	Funks	Thomes*	Sites	Colusa***	Red Bank	Dippingvat
bald eagle	SE, FT	X	X	X	X	X	X
bank swallow	ST		X**				
sandhill crane	ST				X		
Swainson's hawk	ST		X**				
willow flycatcher	SE		X				
Not Detected							
northern spotted owl	FE, SE						
peregrine falcon	SE, FE						
western yellow-billed cuckoo	SE, MNBMC						
<p><b>KEY</b>            SE=State Endangered            ST=State Threatened            FE=Federal Endangered            FT=Federal Threatened            MNBMC=Migratory Nongame Birds of Management Concern (USF&amp;WS)            *Note Thomes-Newville Reservoir observations per DFG 1980s surveys            ** Observation outside of the reservoir footprint            *** Colusa Cell inundation area of Colusa Reservoir (does not include the Sites Reservoir area)</p>							

