



Planning and Resource Management for Our Communities and the Environment

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Subject: **Preliminary Draft**
Technical Memorandum Number 11 –2002 Silver Lake Waterfowl Survey

Dear Dr. Shewbridge and Mr. Floch:

As part of the relicensing of the El Dorado Irrigation District FERC Project #184, and at the request of the U.S. Forest Service (USFS), waterfowl surveys were conducted at Silver Lake, in Amador County, California. Biologists from EIP Associates made 3 trips to Silver Lake to survey waterfowl activity, and to identify potential nesting habitat around the lake. The first survey was conducted on 30 May 2002. The second survey was conducted on 12 June 2002 and the third survey was conducted on 2 July 2002. Silver Lake is located near Kirkwood Ski Resort, approximately seven miles west of Caples Lake, in the Silver Fork of the American River drainage. The lake is at an elevation of approximately 7,261 feet above mean sea level.

The purpose of this study is to identify which waterfowl species utilize the lake during the spring and early summer, and to determine if the waterfowl are actively nesting during this time. This information will be used to help evaluate how waterfowl could potentially be affected by Project No. 184 activities.

EIP Associates

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Should you have any questions or wish to discuss this report please contact me.

Sincerely,

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EL DORADO IRRIGATION DISTRICT FEDERAL ENERGY REGULATORY COMMISSION PROJECT NUMBER 184

2002 SILVER LAKE WATERFOWL SURVEY

Introduction

As part of the relicensing of the El Dorado Irrigation District's (EID) El Dorado Hydroelectric Project (FERC Project No. 184), and at the request of the U.S. Forest Service, waterfowl surveys were conducted at Silver Lake, in Amador County, California. Silver Lake is located near Kirkwood Ski Resort, approximately seven miles west of Caples Lake, in the Silver Fork of the American River drainage. The lake is at an elevation of approximately 7,261 feet above mean sea level. Originally, the lake was smaller than its present size. The first dam on Silver Lake was completed in 1876 and provided approximately 5,000 acre-feet of storage. The dam was enlarged in the early 1920s bringing it up to its current maximum capacity of 13,280 acre feet, and a surface area of 502 acres. The lake lies within a 15.2 square mile drainage, and is feed by several unnamed perennial creeks. The maximum depth is about 71 feet. Water released from its spillway feeds into the Silver Fork of the American River, a tributary to the South Fork American River. Water is drafted from the lake in early September. When the active storage of the lake is depleted, the remaining natural pool has a surface area of approximately 250 acres.

Purpose

The purpose of this study is to document waterfowl species utilizing the lake during the spring and early summer, and to determine if any species are actively nesting at Silver Lake during this time period. This information will be used to help evaluate how the waterfowl could potentially be affected by Project No. 184 activities.

Methods

Biologists from EIP Associates made three trips to Silver Lake to survey waterfowl activity, and to identify potential nesting habitat around the lake. Surveys were conducted by boat and all waterfowl species observed were identified. All the surveys started at the boat launch at Kayes Resort near the north end of the lake. Biologists skirted along the entire lakeshore by boat identifying all waterfowl seen on land, on the water, and/or flying. Approximately two to four hours were spent during each survey.

Three species of waterfowl were observed utilizing the lake during the three surveys: Canada geese (*Branta canadensis*), common merganser (*Mergus merganser*), and mallard (*Anas platyrhynchos*). Biologists recorded the species type, the time and the activity of all the waterfowl that were observed. Their activities included flying, foraging, bathing, diving, swimming, nesting, preening, loafing, and courtship. The gender of the species was recorded whenever possible, however, the sex of the Canada geese was not recorded because the males and females are indistinguishable at a distance. The sex of the mallards and mergansers was easily determined because of differences in coloration between males and females of those species. However, it was sometimes impossible to determine the sex of the bird if they were in flight or extremely far away. These birds are recorded “undetermined.”

The first survey was conducted on 30 May 2002. During this first visit, a morning survey and an evening survey were conducted. The morning survey began at sunrise, at approximately 0530 PDT and ended at 0915. The evening survey began at just before sunset over the lake, at approximately 1730, and ended just after sunset over the lake at 1930. The second survey was conducted on 12 June 2002. The survey began at approximately 0515, and ended at 0900. The third survey occurred on 2 July 2002. This survey began at approximately 0500 and ended at 0830.

Potential nesting habitat was mapped in concert with the waterfowl survey. Pockets of riparian vegetation that were associated with small foraging areas on land were considered potential habitat. These areas were generally smaller than 2,500 square feet, and usually consisted of several partially submerged willow trees in small protected coves on the lakeshore.

Results

As previously mentioned, only three species of waterfowl were observed utilizing the lake during the surveys: Canada geese, common mergansers, and mallards (Table 1).

Canada geese generally prefer lacustrine fresh emergent wetlands, moist grasslands, croplands, pastures, and meadows. They will feed on green shoots and seeds of cultivated grains and wild grasses and forbs, as well as on aquatic plants. Their nest sites are highly variable but usually are found on firm, dry, and slightly elevated sites near water and feeding areas. Most nests are placed to provide partial concealment for the incubating female without restricting her view. A nearby loafing site for the male is essential. Nesting occurs from March to June. Clutch size is 2-9 eggs per clutch, usually about 5. Incubation lasts 27-28 days, and precocial young are tended by both parents. The birds will fly at 8-9 weeks after hatching, and will remain with the parents until the following spring (California Department of Fish and Game, 1990). Canada geese were by far the most common species at the lake, numbering in the hundreds (Table 1). The geese were concentrated at the southern end of the lake near Plasse Meadow. The flock rested and foraged within the wet meadow area next to the lake. Young Canada geese were observed during the second visit. Their presence indicates that some nesting activity is occurring at the lake.

Common mergansers were the next most abundant species observed during the surveys. Male and female mergansers were occasionally seen in pairs, and would sometimes mingle with the larger flocks of Canada geese. Generally mergansers will forage in clear bodies of water 1.5-6.1 feet deep, swimming on the surface, and diving for fish. They will also probe among submerged rocks to flush out prey. They breed in deciduous riparian habitats in later forest stages, along streams, rivers and lakes. Mergansers will nest in cavities or in dark recesses in trees, snags, and stumps near water, and they especially like to use old cavities of palliated woodpeckers. They may also nest in caves in cliffs, in tangles of roots, beneath rocks, or in nest boxes, 0-200 feet above the ground. Migration between large bodies of water is usually nocturnal. They breed from late March through late September, with peak activity in June. Clutch size ranges from 6-17 eggs, averaging 9 eggs. Females will incubate the eggs for 28-32 days. The male of the species will leave as soon as incubation begins. The precocial young are tended by the females

only, and become independent at about 5 weeks (California Department of Fish and Game, 1990). No young mergansers were seen during the surveys.

Mallards were the least abundant species observed at Silver Lake. Male and female mallards were sometimes seen in pairs, however, no mallards were observed during the second visit and only two females were observed during the third visit. Mallards are California's most abundant breeding waterfowl. Found throughout the State in fresh emergent wetlands, estuarine, lacustrine, and riverine habitats, ponds, pastures, croplands, and urban parks, their diet consists of approximately 90 percent plant material, mostly grains, seeds and leaves of aquatic plants, grasses, and other green vegetation. They will also consume snails, small crustaceans, earthworms, tadpoles and small fish. The birds find cover in dense emergent wetland vegetation, and typically nest on drier sites in tall, dense herbaceous vegetation or low shrubbery. Nesting occurs from March to July. Monogamous pairs nest singly or in the vicinity of other pairs. The birds will lay 6-12 eggs per clutch, and incubate them for 23-29 days. Precocial young are cared for by the female, and the young learn to fly within 40-60 days after hatching (California Department of Fish and Game 1990). No young mallards were seen during the surveys.

Small pockets of nesting habitat were located scattered around the lakeshore (Figure 1). Partially submerged willow thickets along the shore provide small areas of potential nesting habitat. These areas usually had small grassy areas associated with them, where the birds could forage. The largest area of potential nesting habitat was located near the southern end of the lake at Plasse Meadow. This is where the large flocks of Canada Geese were observed on all three visits.

References

California Department of Fish and Game. California's Wildlife. Vol. II- Birds. California Statewide Wildlife Habitat Relationships System. 1990.

Table 1. Number of birds observed during the Silver Lake waterfowl survey.

Survey Date	Male Mallards	Female Mallards	Undetermined Mallards	Juvenile Mallards	Male Mergansers	Female Mergansers	Undetermined Mergansers	Juvenile Mergansers	Canadian Geese	Juvenile Canadian Geese
5/30/02 Morning	5	3			1	1	~17		~92	
5/30/02 Evening	7	6	4			3	9		~171	
6/12/02 Morning					12	10			~389	7
7/2/02 Morning		2				8	1		272	