Bald Eagle Monitoring Report

Sacramento Municipal Utility District

Hydro License Implementation • June 2018

Upper American River Project

FERC Project No. 2101

Powering forward. Together.

SMUD®

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Acronyms and Abbreviations

Acronym	Definition
CDFW	California Department of Fish and Wildlife
FERC	Federal Energy Regulatory Commission
GPS	Global Positioning System
SMUD	Sacramento Municipal Utility District
SWRCB	State Water Resources Control Board
UARP	Upper American River Project
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service

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1.0 INTRODUCTION AND BACKGROUND

This Bald Eagle Monitoring Report (Report) addresses monitoring requirements set forth in Sacramento Municipal Utility District's (SMUD) Bald Eagle Monitoring Plan (SMUD 2015). The requirements for this Plan are found in State Water Resources Control Board (SWRCB) Condition 8.L, and U.S. Forest Service (USFS) 4(e) Condition 31, located in Appendices A and B, respectively, of the Federal Energy Regulatory Commission's (FERC) Order Issuing New License for the Upper American River Project (UARP), dated July 23, 2014 (FERC 2014, Attachments 1 and 2). The Plan was developed in consultation with the SWRCB, USFS, California Department of Fish and Wildlife (CDFW), and U.S. Fish and Wildlife Service (USFWS). FERC approved the Plan on July 2, 2015. Results of bald eagle monitoring conducted in late 2016 and the first half of 2017 are provided in this Report.

The UARP lies within El Dorado and Sacramento counties, primarily within lands of the Eldorado National Forest. The UARP consists of three major storage reservoirs: Loon Lake, Union Valley, and Ice House (with a combined capacity of approximately 379,000 acre-feet), eight smaller regulating or diversion reservoirs, and eight powerhouses. The UARP also includes recreation facilities containing over 700 campsites, five boat ramps, hiking paths, and bicycle trails at the reservoirs.

2.0 MONITORING PLAN OBJECTIVES

As described in USFS 4(e) Condition 31 and SWRCB WQC Condition 8.L (Attachments 1 and 2), the primary objectives and rationale for the bald eagle monitoring program are to coordinate with the CDFW, USFS, and USFWS to continue monitoring bald eagle nest sites and to ensure that bald eagle nest sites are not being adversely affected by activities related to the UARP. The results of the monitoring are intended to inform future bald eagle management in the UARP area.

3.0 STUDY AREA AND SURVEY FREQUENCY

The Bald Eagle Monitoring Plan (SMUD 2015) specifies that surveys will be conducted at Union Valley Reservoir, Loon Lake Reservoir, and Ice House Reservoir (Figure 1) at the frequencies described below:

- Nesting surveys will be conducted at Union Valley Reservoir annually. In addition, two winter night roost surveys will be conducted at Union Valley Reservoir during the 2015/2016 and 2016/2017 winter seasons.

- Nesting surveys will be completed at Ice House Reservoir once every three years (starting in 2016). If no nesting activity is observed at Ice House Reservoir, surveys will continue to be conducted once every three years. If nesting activity is observed at Ice House Reservoir, monitoring will be conducted annually until there are three consecutive years without nesting activity.

- Nesting surveys will be completed at Loon Lake annually for the first three consecutive years of license issuance (2016, 2017, and 2018). If any nesting activity is observed at this reservoir during these three years of surveys, regardless of nesting success, nesting surveys will continue annually until there are three consecutive years without nesting activity. If no nesting activity is observed during the three consecutive years of surveys, nesting survey frequency at Loon Lake Reservoir will be reduced to once every three years.

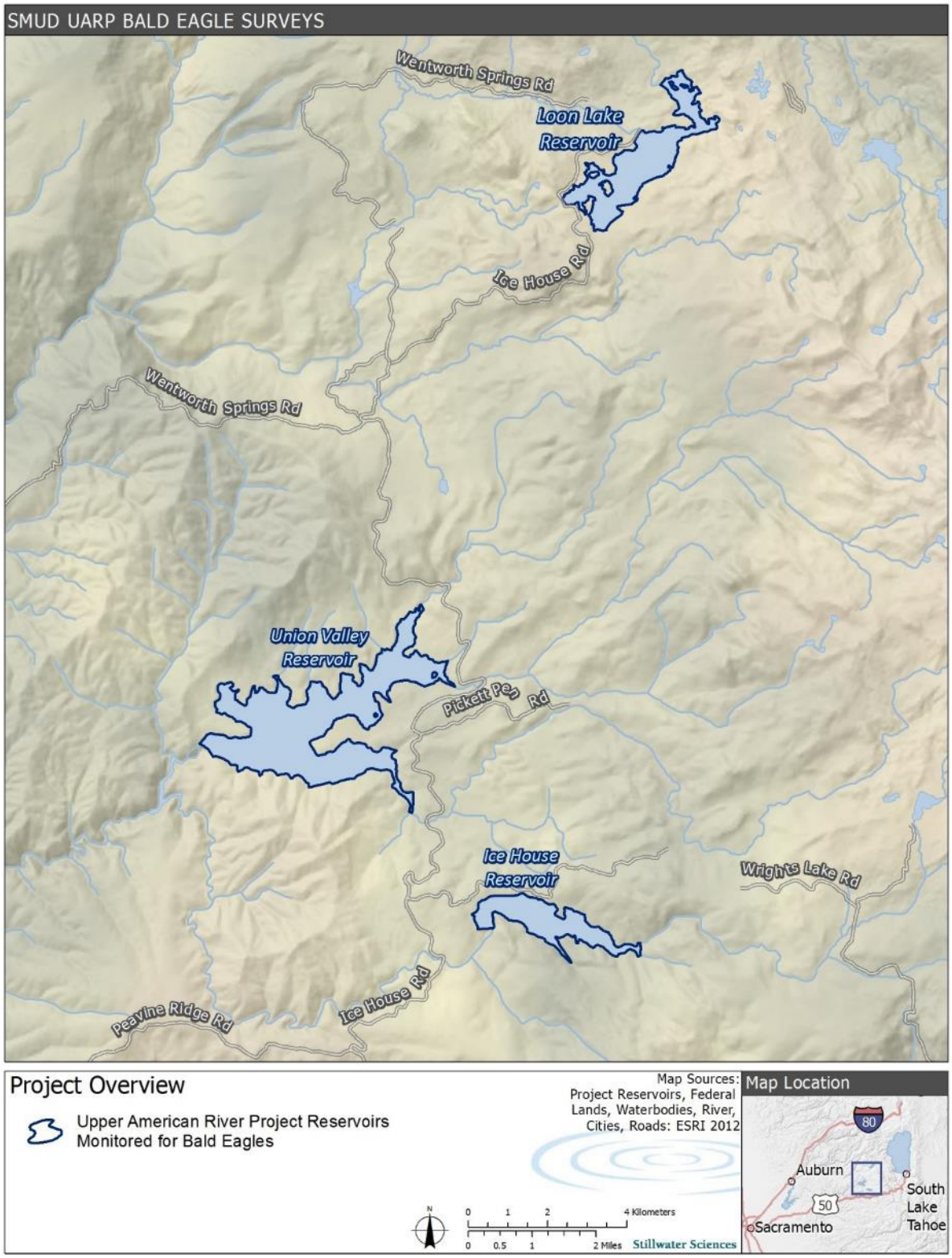

Figure 1. Bald eagle monitoring study area overview.

4.0 METHODS

4.1 WINTER NIGHT ROOST SURVEYS

Winter night roost surveys were conducted in December 2016 and February 2017 at Union Valley Reservoir in accordance with methods described in the *Protocol for Evaluating Bald Eagle Habitat and Populations in California* (Jackman and Jenkins 2004). Surveys were conducted in the afternoon/early evening and were focused on Granlees Point and Fashoda Sunset Peninsula, where night roosting of a territorial pair of bald eagles was previously observed during surveys conducted between 2002 and 2004 (SMUD 2004). Observations were made using binoculars and/or a spotting scope from a boat and land-based vantage points accessed by vehicle and/or foot (Figure 2). If additional activity was observed, the potential roost area was visited on foot to search for signs of bald eagle use. Detailed data regarding the location, age class, activity, movement, and behavior of bald eagles were recorded and notes were taken on incidental observations of other avian species and recreational activities on the day of the survey.

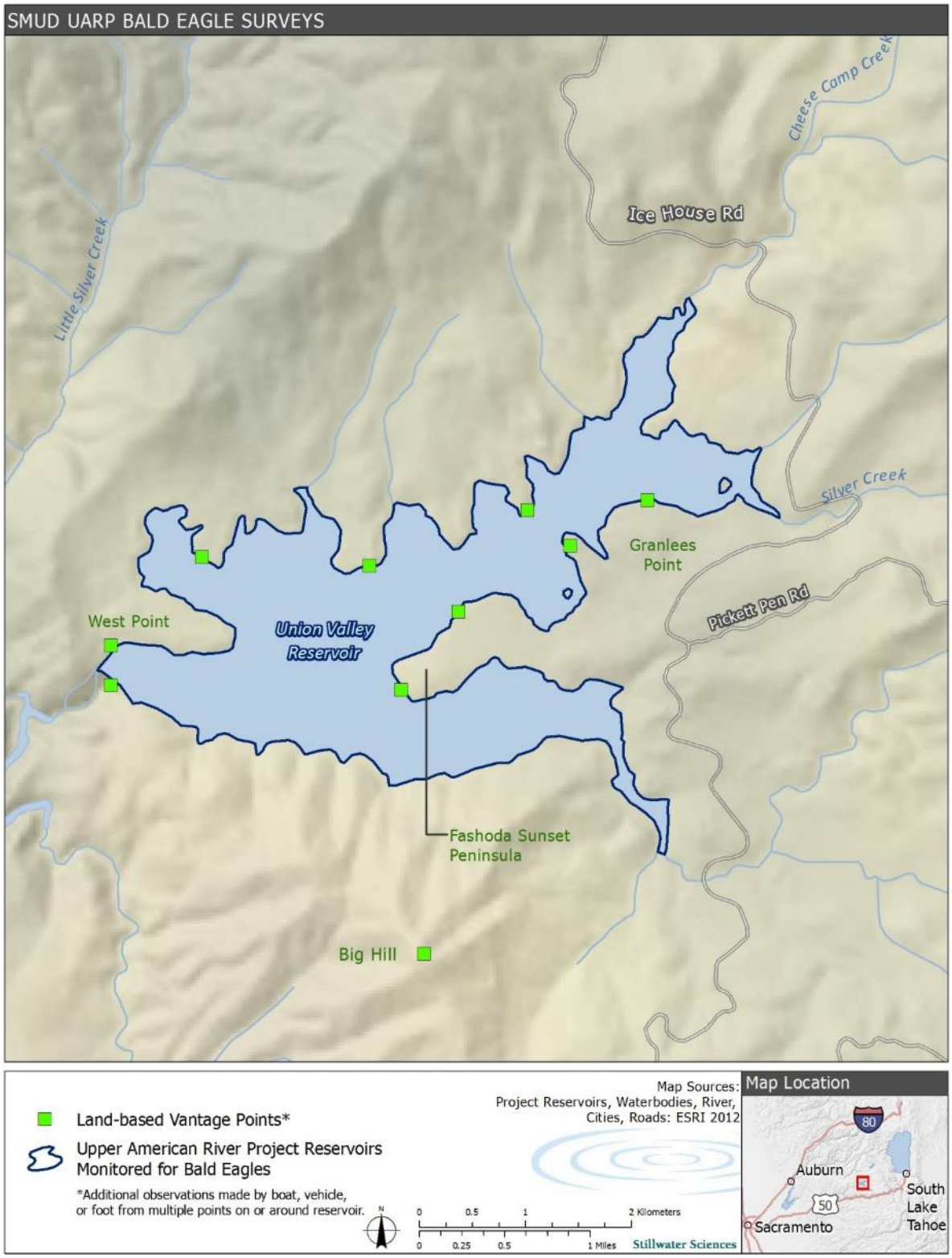

Figure 2. Land-based vantage points used for bald eagle monitoring on Union Valley Reservoir.

4.2 BREEDING SEASON SURVEYS

Surveys for bald eagle were conducted during the 2017 breeding season at Union Valley Reservoir and Loon Lake Reservoir; Ice House Reservoir was not surveyed because bald eagle nesting was not documented at this location in 2016 (see Section 3.0 for additional detail on frequency and duration of surveys by reservoir). Surveys for new nests and at known nest sites were conducted in accordance with protocols described in the *Protocol for Evaluating Bald Eagle Habitat and Populations in California* (Jackman and Jenkins 2004) and *Bald Eagle Breeding Survey Instructions* (CDFG 2010). Where possible (i.e., weather-related conditions permitting), surveys were conducted at each reservoir during the following time periods: late February through March (early breeding season), late April through May (mid-breeding season), and early June to early July (late breeding season). If weather conditions precluded surveying during the early breeding season, an additional survey was performed during the mid- or late breeding season so that three total surveys were performed during the breeding season at each reservoir.

Surveys began at dawn and concluded in the late afternoon. Nest sites documented during the previous year of surveys were revisited (SMUD 2016) and other areas with suitable habitat surrounding each reservoir, including historical nest sites documented during relicensing surveys (SMUD 2004), were evaluated for signs of bald eagle nesting activity. Observations were made using binoculars and/or a spotting scope from a boat and land-based vantage points accessed by vehicle and/or foot (Figures 2 and 3). Detailed data regarding the location, age class, activity, movement, and behavior of bald eagles were recorded and notes were taken on incidental observations of other avian species and recreational activities on the day of the survey. Bald eagle perches and nests located during the surveys were mapped using a handheld Global Positioning System (GPS) unit. Using the California Bald Eagle Nesting Territory Form (CDFG 2010), a detailed summary of all bald eagle observations at each reservoir was submitted to CDFW at the end of the breeding season.

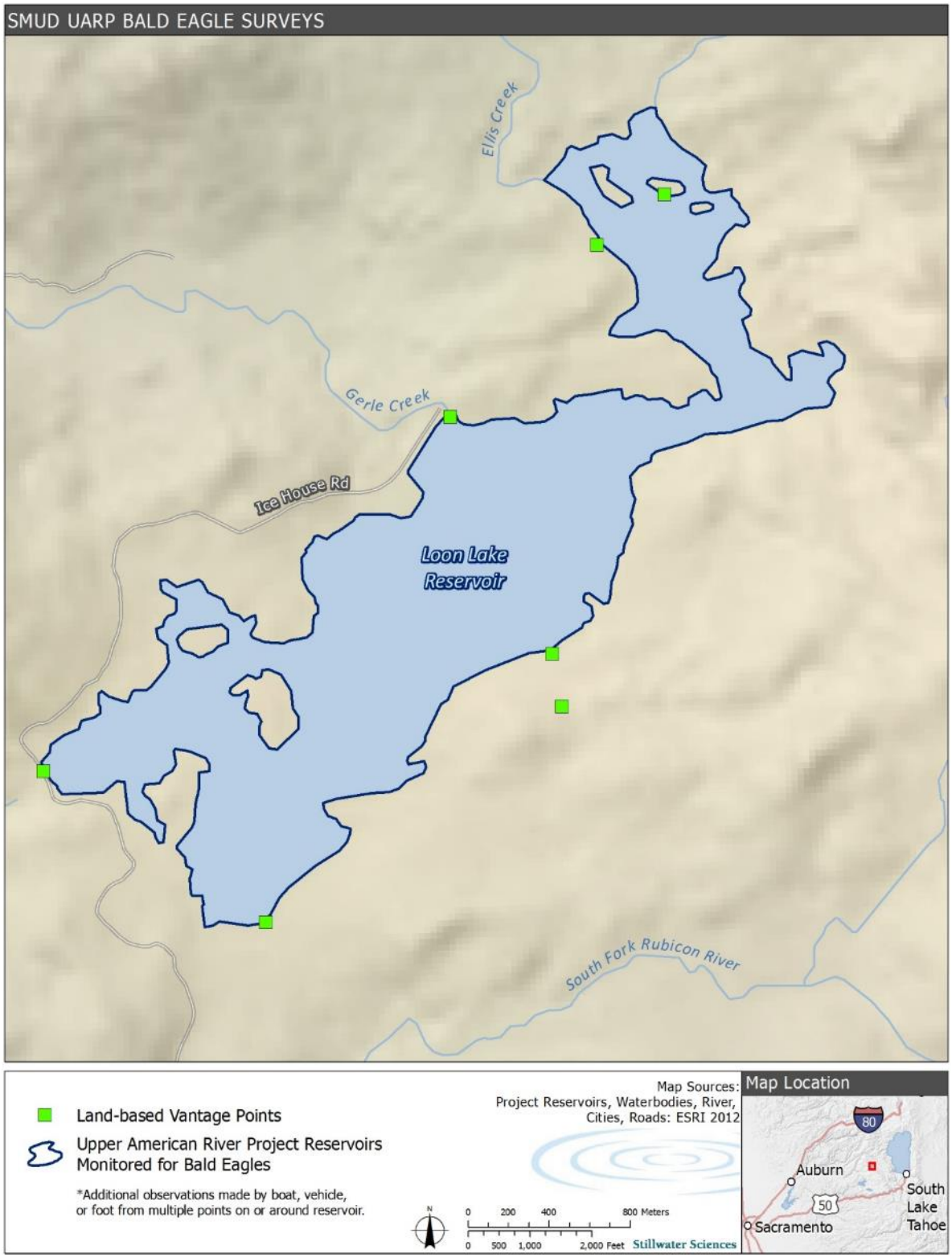

Figure 3. Land-based vantage points used for bald eagle monitoring on Loon Lake Reservoir.

5.0 RESULTS

5.1 WINTER NIGHT ROOST SURVEYS

The first winter night roost survey at Union Valley Reservoir was conducted on December 20, 2016. Two adult bald eagles were observed and a roost tree was located on Fashoda Sunset Peninsula during this survey (Table 1, Figures 4 and 5). No bald eagle activity was observed on Granlees Point during this visit. A second night roost survey was performed on February 15, 2017. Three bald eagles (two adult and one juvenile) were observed and a roost tree was located on Granlees Point during this survey (Table 1, Figures 4 and 6). No bald eagle activity was observed on Fashoda Sunset Peninsula during this visit.

Table 1. Bald eagle Observations During 2016/2017 Winter Night Roost Surveys at Union Valley Reservoir.

Date (Time)	Number of Eagles	Age Class	Notes
12/20/16 (15:25)	1	Adult*	Adult female perched in dominant ponderosa pine in Sunset Campground (2016 nest tree), departed southeast to dominant sugar pine (roost tree)
12/20/16 (17:07)	1	Adult*	Adult male perched in dominant sugar pine (roost tree) near Site 21 in Sunset Campground, remained in tree until nightfall
2/15/17 (16:10)	1	Juvenile (3rd year)	Flying northwest over Granlees Point
2/15/17 (16:12)	2	Adults*	Pair flying north and landing in snag on Granlees Point approximately 50 feet northeast of the USFS nest platform, remained in snag until nightfall

*Based on proximity and point of origin of observations, the adult bald eagles seen on each visit are believed to be the same pair.

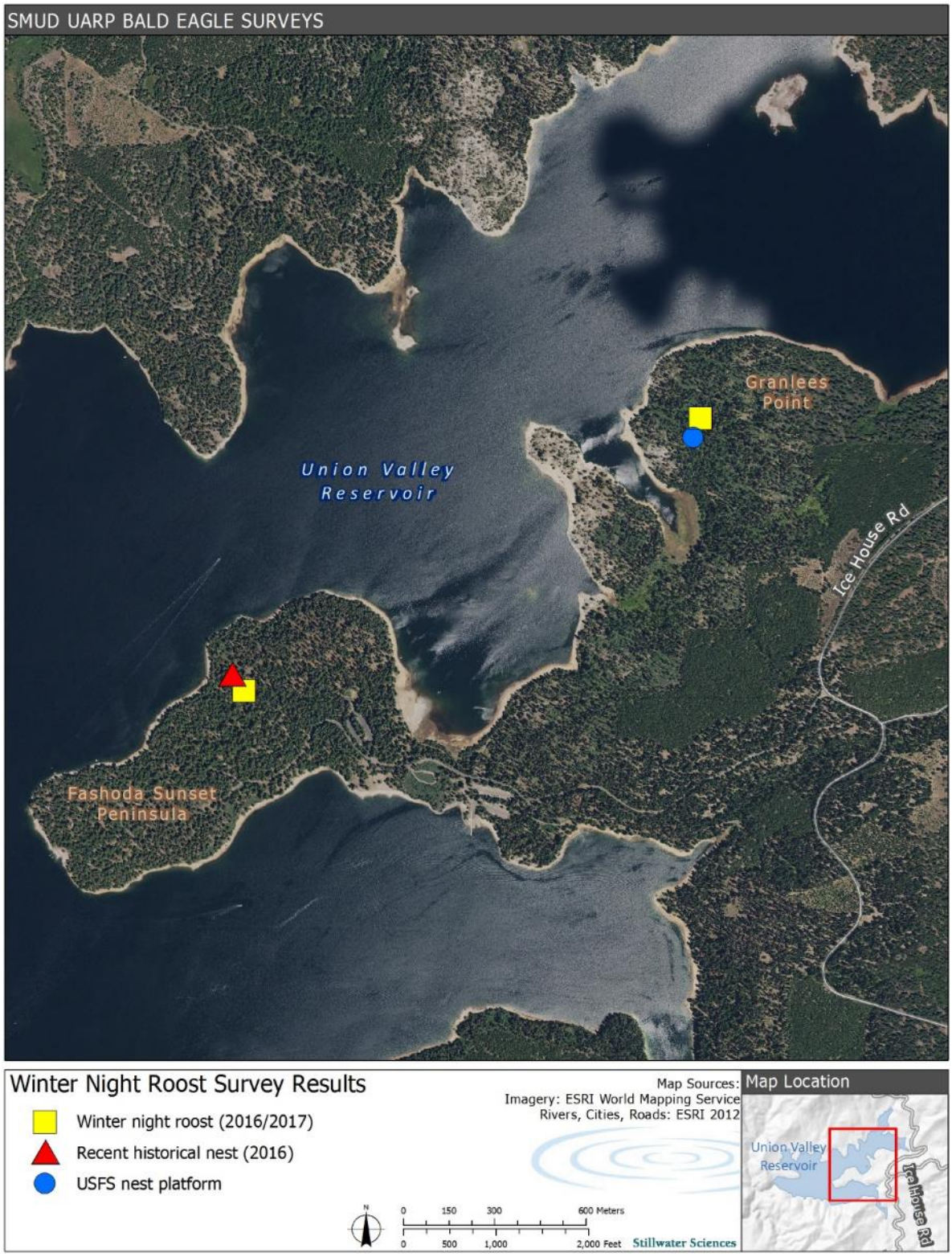

Figure 4. Bald eagle winter night roost activity sites at Union Valley Reservoir.

Figure 5. Bald eagle in nest tree on Fashoda Sunset Peninsula during winter night roost surveys at Union Valley Reservoir (December 2016).

Figure 6. Bald eagles in roost tree on Granlees Point during winter night roost surveys at Union Valley Reservoir (February 2017).

5.2 BREEDING SEASON SURVEYS

5.2.1 Union Valley Reservoir

Surveys for bald eagles during the breeding season were conducted at Union Valley Reservoir on the following dates in 2017: March 13, May 24, and June 21. An additional reproductive status check was performed on July 07, 2017 by surveyors who were in the area for the final breeding season survey at Loon Lake (see Section 5.2.2). Table 2 summarizes bald eagle observations made during the surveys. Since the reservoir was visited on four separate occasions during the breeding season, it is assumed that many of these observations are repeat detections of birds observed during previous visits.

Table 2. Bald Eagle Observations During the 2017 Breeding Season Surveys at Union Valley Reservoir.

Date (Time)	Number of Eagles	Age Class	Notes
03/13/17 (13:00)	1	Juvenile (2nd year)	Flying north from Fashoda Sunset Peninsula
03/13/17 (13:45)	2	Adults	Female departing nest tree (dominant ponderosa pine) in Sunset Campground, flying south, and landing in roost tree to receive food delivery from male
05/24/17 (07:15)	1	Adult	Female departing nest tree in Sunset Campground, flying east
05/24/17 (07:30)	1	Juvenile	Nestling visible in and heard begging from nest tree in Sunset Campground
05/24/17 (12:10)	1	Adult	Female returning from the north to nest tree in Sunset Campground with food delivery (fish)
05/24/17 (12:55)	2	Adults	Female temporarily departing nest in Sunset Campground to receive food delivery (fish) from male
06/21/17 (07:15)	2	Juveniles	Two nestlings visible in Sunset Campground nest and heard intermittently begging for next several hours
06/21/17 (12:55)	1	Adult	Female returning from the north to nest tree in Sunset Campground with food delivery
06/21/17 (13:05)	1	Adult	Female departing Sunset Campground nest, flying north
07/07/17 (17:00)	2	Juveniles	Juveniles with flight feathers observed on branches of nest tree in Sunset Campground

Results of the breeding season surveys conducted in 2017 documented successful bald eagle reproduction at the nest tree located in 2016, a dominant ponderosa pine located in Sunset Campground (Figure 7). During the early breeding season survey an adult bald eagle (female) was observed occupying the nest (Figure 8) and subsequently receiving a food delivery from another adult bald eagle (male). One nestling was observed in the nest during the mid-breeding season survey (Figure 9) and, during the late breeding season survey, two nestlings were observed branching and begging. When surveyors returned to the nest for a reproductive status check in early July, both juveniles were observed and had not yet fledged(Figure 10). Surveyors visited the historical nest site (2015) and the USFS nest platform (Figure 7 and Figure 11) on Granlees Point during each of the 2017 breeding season surveys and found no evidence of bald eagle nesting at these locations.

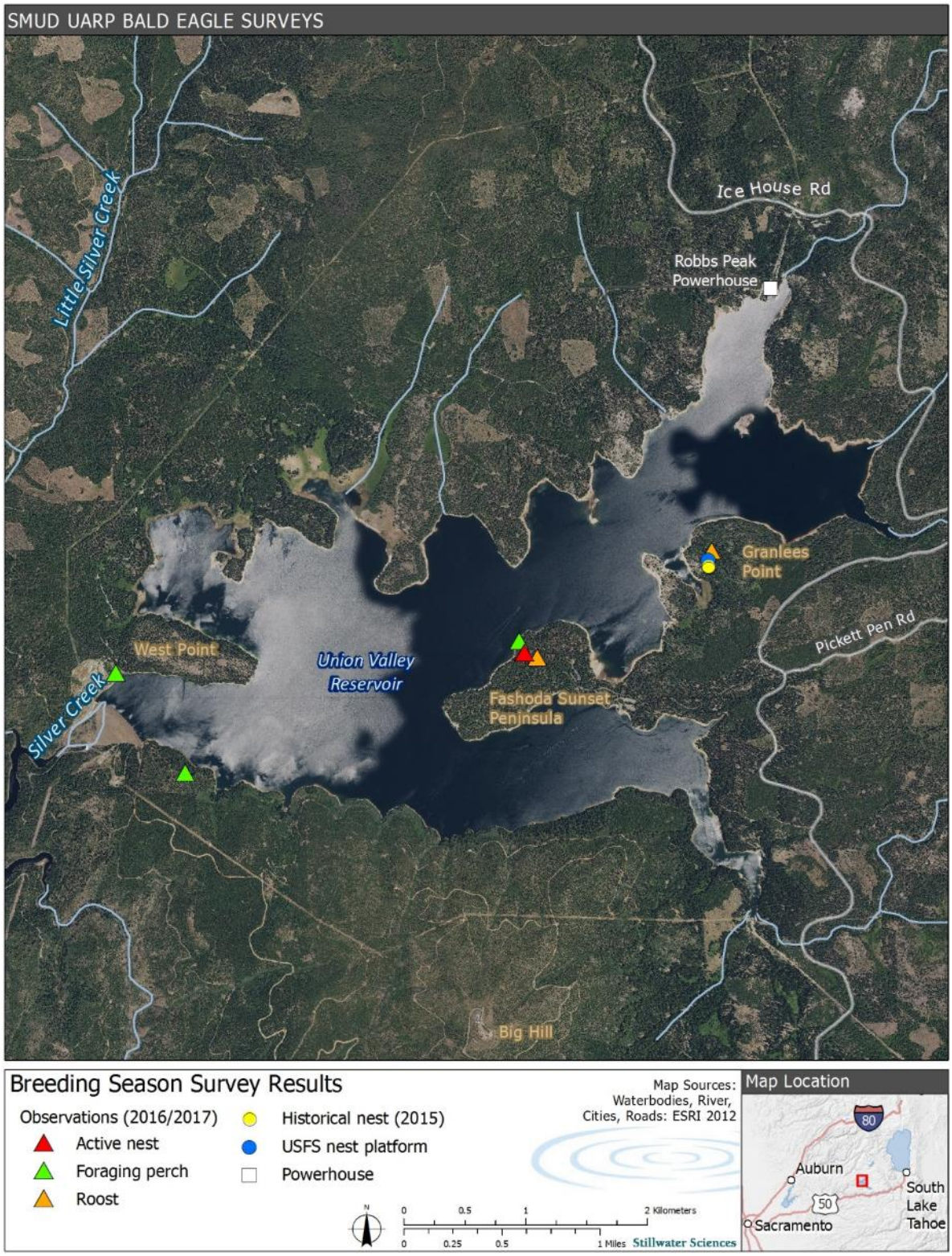

Figure 7. Bald eagle activity sites at Union Valley Reservoir.

Figure 8. Adult bald eagle in nest at Sunset Campground during breeding season surveys at Union Valley Reservoir (March 2017).

Figure 9. Bald eagle nestling in nest at Sunset Campground during breeding season surveys at Union Valley Reservoir (May 2017).

Figure 10. Bald eagle fledglings at Sunset Campground during breeding season surveys at Union Valley Reservoir (July 2017).

Figure 11. Bald eagle nesting platform on Granlees Point (May 2017).

5.2.2 Loon Lake Reservoir

Surveys for bald eagles during the breeding season were conducted at Loon Lake Reservoir on the following dates in 2017: May 25, June 22, and July 07. Table 3 summarizes bald eagle observations made during the surveys. An unsuccessful nesting attempt was documented on the south side of the reservoir approximately 400 feet from the Rubicon Trail in a dominant Jeffrey pine that was initially identified as a potential nest in 2016 (Figure 12). During the early breeding season survey, observers found bald eagle feathers at the base of the tree and determined that, since it was last observed in 2016, sticks and new dressing (i.e., pine needles and fir boughs) had been added to the nest; no other signs of bald eagle nesting activity were observed during the visit. During the mid-breeding season survey, bits of down were visible on the edges of the nest and surveyors noted a slight change in the configuration of sticks; however, no bald eagle activity was observed during the visit. During the late breeding season survey, a pair of adult bald eagles were observed in two different foraging perches on the northeast end of the reservoir (Table 3, Figure 13), but despite extensive exploration, no evidence of nesting activity was found in the surrounding area. The potential nest on the south side of the reservoir appeared unchanged between the mid-breeding season and late breeding season surveys.

Table 3. Bald Eagle Observations During the 2017 Breeding Season Surveys at Loon Lake Reservoir.

Date (Time)	Number of Eagles	Age	Notes
05/25/17 (13:20)	1	Juvenile (3rd year)	Flying west over south end of reservoir
07/07/17 (08:55)	2	Adults*	Perched in hybrid Jeffrey/ponderosa pine on northeast end of reservoir; male remained perched, while female flushed to the north
07/07/17 (09:20)	1	Adult*	Female bald eagle perched in dominant ponderosa pine
07/07/17 (11:40)	2	Adults*	Pair of bald eagles leaving perches on northeast end of reservoir and flying southwest

*Multiple observations of the same birds at different locations made during one visit

Figure 12. Bald eagle activity sites at Loon Lake Reservoir.

Figure 13. Adult bald eagle (female) in foraging perch on Loon Lake Reservoir (July 2017).

6.0 DISCUSSION

6.1 WINTER NIGHT ROOST SURVEYS

Consistent with observations made in the winter of 2015/2016, the results of the 2016/2017 winter night roost surveys suggest that large-scale colonial winter night roosting as described in the survey protocol (Jackman and Jenkins 2004) is not currently occurring at Union Valley Reservoir. A single pair of bald eagles was documented roosting on Fashoda Sunset peninsula and on Granlees Point. These results are similar to observations made during the relicensing surveys, in which a single pair of bald eagles was observed roosting on Granlees Point (SMUD 2004).

Recreational activity on and around Union Valley Reservoir during the night roost surveys was extremely limited. All campgrounds around the reservoir were closed and traffic consisted of an occasional vehicle seen driving across Union Valley Dam. Other than the boat used by surveyors, there were no boats on the reservoir during either survey. Recreational activity, therefore, did not appear to be a factor affecting bald eagle winter night roosting or detection of bald eagles around Union Valley Reservoir in the 2016/2017 winter season.

6.2 BREEDING SEASON SURVEYS

6.2.1 Union Valley Reservoir

The results of the breeding season surveys indicate that bald eagles continue to use the habitat surrounding Union Valley Reservoir for breeding. Reproductive success over the last two years at Union Valley Reservoir has been higher than the average previously recorded during relicensing studies (SMUD 2004) and that documented during a 20-year study of occupied territories along the Pit River drainage in northern California (Jenkins and Jackman 2006). Despite cumulative precipitation being well above the regional average in the 2016/2017 winter season (CDWR 2017 [PCF]), weather and/or reservoir levels did not appear to be a factor affecting bald eagle nesting at Union Valley Reservoir during the 2017 breeding season. Reservoir levels ranged from approximately 4,855 to 4,870 feet above mean sea level during the breeding season (CDWR 2017 [UNV]). The main body of the reservoir did not freeze over for any significant length of time; however, a sizable portion of the lake to the north and east of Granlees Point was frozen during the early breeding season. The waters surrounding Fashoda Sunset Peninsula did not freeze during the breeding season, which allowed for better foraging in the immediate area and may have influenced the nesting location.

Cumulative precipitation during the breeding season at Moratinni Flat (the closest gage to Union Valley Reservoir) was approximately 40 inches (CDWR 2017 [MFT]). The most significant accumulation (approximately 32 inches) occurred by mid-April and a series of spring and early summer showers brought an additional 8 inches of precipitation before the end of June. Minimum air temperatures regularly dropped below freezing through mid-April and snowpack (as measured by water content) at Robbs Peak Powerhouse

peaked at 18 inches in early March and did not melt completely until late April (CDWR 2017 [RBP]).

Other than the removal of accumulated woody debris using a boat and a loader in late spring/early summer, SMUD did not perform significant (i.e., involving noise generating equipment) maintenance activities at Union Valley Reservoir during the breeding season in 2017. There was no recreational activity observed on or around the reservoir during the early breeding season survey; however, increased activity was noted during the mid- and late breeding season surveys (see Attachment 3 for additional details). SMUD informed the resource agencies about the bald eagle nest in Sunset Campground and the USFS delayed opening a portion of the campground until July 29, 2017, after both chicks had fledged. In addition, the USFS installed signage near the entrances to the affected campground loops and along the shoreline near the nest site informing visitors that the area was closed to public access. No observations of bald eagles exhibiting agitation or appearing disturbed as a result of recreational or maintenance activity at Union Valley Reservoir were made during the surveys.

6.2.2 Loon Lake Reservoir

There is suitable bald eagle reproductive habitat around Loon Lake Reservoir during a limited season due to its high elevation (approximately 6,500 feet). The duration of this season varies with weather conditions from year to year. Although there may have been other contributing factors, the reproductive attempt at the nest tree located on the south side of the reservoir was likely unsuccessful due to weather and/or predation. The pair of adult bald eagles observed at the northeast end of the reservoir during the late breeding season survey may be associated with this unsuccessful nesting attempt, as a large area at that end of the reservoir was canvassed and no evidence of nesting was observed. It is also possible that this pair nested at lower elevation outside of the survey area (e.g., downriver along Gerle Creek) and began foraging at Loon Lake Reservoir when it thawed.

During the breeding season, reservoir levels ranged from approximately 6398 to 6409 feet above mean sea level (CDWR 2017 [LON]) and the main body of the reservoir was frozen over and covered with snow into May. Cumulative rainfall at Loon Lake Reservoir during the breeding season was approximately 32 inches, with the vast majority (30 inches) of it occurring before the end of April (CDWR 2017 [LON]). Minimum air temperatures regularly dropped below freezing through mid-May (CDWR 2017 [LON]) and snowpack (as measured by water content) at the nearby Van Vleck Gage peaked at approximately 70 inches in early March and did not melt completely until mid-June (CDWR 2017 [VVL]).

Although SMUD did not perform any maintenance activities involving noise generating equipment at Loon Lake Reservoir during the breeding season, repair and maintenance of the Rubicon Trail was performed for approximately four months beginning in mid-June. This involved helicopter flights along the north side of the lake and multiple boat ferries across the lake to Pleasant Campground. There was no recreational activity

observed on or around the reservoir observed during the early breeding season survey and surveyors noted a modest increase in activity during the mid- and late breeding season surveys (see Attachment 3 for additional details). No observations of bald eagles exhibiting agitation or appearing disturbed as a result of recreational activity at Loon Lake Reservoir were made during the surveys.

7.0 UPCOMING SURVEY PLANS

In accordance with the schedule outlined in Section 3.0 and described in the monitoring plan (SMUD 2015), winter night roost surveys at Union Valley Reservoir are complete. Surveys during the 2018 breeding season will be conducted at Union Valley Reservoir and Loon Lake Reservoir.

8.0 LITERATURE CITED

CDFG (California Department of Fish and Game). 2010. Bald eagle breeding survey instructions and California bald eagle nesting territory field form. Sacramento, CA.

CDWR (California Department of Water Resources). 2017. Precipitation, snow water content, temperature, and reservoir level data from the following stations in California: Loon Lake Reservoir (Station ID: LON), Morattini Flat (Station ID: MFT), Pacific House (Station ID: PCF), Robbs Powerhouse (Station ID: RBP), Union Valley Reservoir (Station ID: UNV), and Van Vleck Bunkhouse (Station ID: VVL). California Data Exchange Center, CDWR, Sacramento, California. http://cdec.water.ca.gov/

FERC (Federal Energy Regulatory Commission). 2014. Federal Energy Regulatory Commission Order 148 FERC 62,070 Issuing New License for the Sacramento Municipal Utility District Upper American River Hydroelectric Project No. 2101. Issued July 23, 2014.

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Attachment 1
State Water Resources Control Board section 401 Water Quality Certification for the UARP
Condition 8.L. Bald Eagle Monitoring

From the FERC Order Issuing New License to SMUD for the Upper American River Hydroelectric Project, July 23, 2014:

Appendix A Water Quality Certificate Conditions for the Upper American River Project issued by the California State Water Resources Control Board on October 4, 2013:

Condition 8.L. Bald Eagle Monitoring

8.L. Bald Eagle Monitoring
Within six months of license issuance, the Licensee shall develop a bald eagle monitoring plan in consultation with USFS, CDFW, USFWS, and State Water Board. The bald eagle is listed as a fully protected endangered species under the California Endangered Species Act (CESA). Further, the Rationale Report directs that measures be taken to maintain, protect and enhance populations of sensitive, threatened and endangered plant and wildlife species. The bald eagle monitoring plan will at a minimum include: (i) a statement of goals and objectives; (ii) a description of all proposed monitoring and monitoring methods; and (iii) specific, measurable criteria to be used to evaluate the data collected and objectively assess the continued viability of this resource. The Licensee shall provide the Deputy Director with any comments provided by the agencies during the consultation process. The Licensee shall submit the plan to the Deputy Director for review and approval after agency consultation. The Licensee shall provide the Deputy Director with at least 60 days to review and approve the plan prior to submittal to the Commission, if applicable. The Deputy Director may require modifications as part of the approval. The Licensee shall file the Deputy Director's approval, together with any required plan modifications, with the Commission.

Method: Use a method approved by the Deputy Director, developed in consultation with USFS, CDFW and USFWS, to continue monitoring bald eagle nest sites to determine if bald eagles are being affected by UARP-related activities.

Frequency: Annually for the term of the license and any extensions

Attachment 2
U.S. Department of Agriculture, Forest Service section 4(e) Condition 31 for the UARP

From the FERC Order Issuing New License to SMUD for the Upper American River Hydroelectric Project, July 23, 2014:

Appendix B – Conditions filed by the U.S. Forest Service on June 8, 2008, pursuant to section 4(e) of the Federal Power Act, for the Upper American River Project No. 2101

USFS 4(e) Condition 31 – Bald Eagle Monitoring

Within 6 months of license issuance, the licensee shall develop a bald eagle monitoring plan in consultation with FS, CDFG, FWS, and SWRCB. The licensee shall provide FS, CDFG, FWS, and SWRCB a 90-day review and approval period for the monitoring plan prior to implementation. The licensee shall implement the plan upon approval.

Method: Coordinate with FS and FWS to continue monitoring bald eagle nest sites.

Frequency: Annually.

Rationale: To ensure bald eagle nest sites are not being affected by Project-related activities.

Attachment 3

Bald Eagle Survey Forms

STATE OF CALIFORNIA THE
RESOURCE AGENCY
DEPARTMENT OF FISH AND GAME

BALD EAGLE BREEDING SURVEY INSTRUCTIONS

The breeding season of bald eagles in California extends primarily from February through July. Each year cooperating agencies, organizations, and private individuals participate in a statewide monitoring program to document nesting activities at each nesting territory. In 1997, 160 recently active breeding territories were surveyed, and the number increases yearly.

Annual breeding season surveys are an important part of the population recovery effort. Survey information is used by resource agencies to aid breeding territory management or protection activities. Additionally, population status and trends must be monitored annually to provide the data needed for assessing population recovery.

Specific assignments and scheduling of observer time are usually handled at the agency district or regional office level. In general, agencies are responsible for surveys or territories on or near their own lands, with Department of Fish and Game also surveying on private lands. Field personnel should coordinate with other agencies or volunteers to avoid duplication of effort or to arrange for survey help.

The bald eagle breeding population is increasing annually. So, it is important that suspected new nesting territories be adequately checked, especially early in the breeding season.

Territories should be checked at least three times during the nesting season, although more frequent checking is preferred. Emphasis should be placed on checking during incubation and early nesting periods.

1. **Early March (early incubation)** – Territories in northern California should be checked in the first half of March, if possible, or as soon thereafter as road or weather conditions allow. The purpose of the first check is to determine whether a territory is occupied (record presence of adults, courtship behavior, evidence of nest repair or construction, incubation).
2. **Late April or early May (early nesting period)** – This check is needed to confirm that a territory is unoccupied, or if occupied in March, to determine whether the breeding pair is still tending the nest (incubating eggs or tending young nestlings).
3. **Mid June (late nesting period)** – The main purpose of this check is to determine how many nestlings are approaching fledgling age.

Survey dates maybe modified from these recommended time periods if the territories can be checked more frequently or if particular breeding pairs are known to begin nesting especially early or late in the season.

We recommend that observers report the stage of development of nestlings in accordance with An Illustrated Guide for Identifying Developmental Stages of Bald Eagle Nestlings in the Field, by G.P. Carpenter (April 1990). This booklet is available from the San Francisco Zoological Society, Sloat Blvd. At the Pacific Ocean, San Francisco, CA 94132 (415-753-7080).

SUBMITTAL OF SURVEY FORMS

Please report observations on the **CALIFORNIA BALD EALGE NESTING TERRITORY FORM (revised 4/2010)**.

Please mail all completed forms by September 1 of the survey year to:

California Department of Fish and Game
Wildlife Branch
1812 Ninth St.
Sacramento, CA 95814
ATTN: Carie Battistone

Forms will be maintained in Department files and annual survey results will be compiled on the basis of these reports. If you have any questions please contact Carie Battistone at the above address or at cbattistone@dfg.ca.gov. Electronic forms can be found at http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html.

California Department of Fish and Game
CALIFORNIA BALD EAGLE NESTING

TERRITORY SURVEY FORM

Revised 4/2010

Territory Code: LLR

County: El Dorado **Survey Year:** 2017

Property Owner: USFS **If USFS:** El Dorado National Forest

Name (or general location of territory): Loon Lake Reservoir

Name of nearest water body: Loon Lake Reservoir

Location of Nest Site:

UTM E: 733613 **UTM N**: 4319278 **Zone:** 10S

No. of nests in territory - **Intact:** 1 **Remnant:**

Nest Tree: Species: Jeffrey Pine **Year last Used:** rebuild attempt in 2017 (year of previous attempt: 2016)

NOTE: Please attach a map showing the location of any newly documented nest tree.

Describe tree and nest condition and size, and add other remarks: Dominant Jeffrey pine in good condition located on south side of Loon Lake west of the summer camp.

For each visit to a territory, note, in detail, the times, number and age of birds, behavior of birds (lying, perching, etc.), evidence of nesting (nest maintenance, courtship, incubation posture), disturbances, and other pertinent information:

Observers	Date of Visit	Observations/Notes
Krista Orr Steven Wood	05.25.17 (06:30 to 17:30)	Loon Lake completely iced over and covered in snow approximately two weeks prior to survey. On day of survey, lake still partially iced over (~30%) with ~2 feet of snow on surrounding ground. Pleasant Lake (NE end of lake) inaccessible. Surveyors observed from the dam from 07:00 to 09:00; no BAEA documented. Surveyors snow-shoed/hiked to 2016 nest tree (coordinates reported on page 2) and observed for 4.5 hours, alternating vantage points. Nest appeared similar to last observation in 2016, but had additional sticks, new dressing on top (i.e., pine needles and fir boughs), and several bits of down visible. BAEA feathers located at base of tree. 13:20 – 3rd year juvenile flying E to W over nest tree (no response from nest). Other suitable habitat around Loon Lake Reservoir surveyed for evidence of BAEA nesting by vehicle and foot. No additional BAEA activity at nest or on lake observed. No recreational activity observed.
Steven Wood Krista Orr	06.22.17 (07:00 to 17:00)	No BAEA observations. Extremely windy conditions precluded boat use. NE end of reservoir (Pleasant Lake) accessed on foot and surveyed from land-based vantage points (no BAEA activity observed). Nest tree from 2016 visited on foot and observed for 4 hours from alternate vantage points. Slight changes to stick configuration in nest noted and bits of down still visible; however, no BAEA observed and no additional evidence of activity in surrounding area (e.g., feathers, whitewash). Other suitable habitat around Loon Lake Reservoir surveyed for evidence of BAEA nesting by vehicle and foot. Recreational activity low to moderate (3 boats, ~4 jeepers, and ~8 hikers); no BAEA disturbance observed.

Observers	Date of Visit	Observations/Notes
Krista Orr Steven Wood	07.07.17 (07:00 to 16:00)	08:55 – BAEA adult pair perched in Jeffrey/ponderosa pine hybrid (10s 734326/4321926) observed from boat at NE end of reservoir (Pleasant Lake). 09:00 – Female BAEA flushed in NW direction; Male BAEA remained in pine. 09:20 – Female BAEA relocated in ponderosa pine (10s 733992/4322287). Surveyors split up to observe male and female BAEA. Both birds remained in respective trees for ~2 hours. Many BAEA feathers noted on shore at boat landing, a small cove with very shallow water (10s 734097/4322150). 11:40 – Female BAEA departed ponderosa pine and was subsequently joined by male. Pair fly SW, soaring high, for approximately 0.75 mi and then separated. Female BAEA continued to the NW and male flew S; both eventually disappeared from site. Nest tree from 2016 visited on foot and observed for ~2 hours. Nest tree appeared virtually identical to previous visit and no BAEA activity observed. Nesting attempt at 2016 nest tree likely failed due to weather (extremely heavy snowfall and late winter), predation, or other factors. Area surrounding foraging perches (Pleasant Lake on NE end of reservoir) canvassed on foot and other suitable habitat around Loon Lake Reservoir surveyed for BAEA by boat, vehicle, and foot. No evidence of nesting or additional BAEA observations made during survey. Recreational activity moderate (4 fishing boats, 2 kayakers, 3 hikers, ~15 jeepers, and campground with ~40% occupancy); no BAEA disturbance observed.

SUMMARY:

A. Successful Nestings: **No. of young known fledged:** 0 **or probably fledged** 0

B. If no fledglings were produced this season please answer the following:

How many adults seen in the territory?: 2

Was there evidence of nest repair or construction?: Yes

Were adults seen in the nest?: No

Were adults in incubating posture?: No

Number of nestlings observed?: 0

Failed during incubation or nesting stage?: Unknown

Other remarks: See notes

Observer Contact Information:

Surveys conducted by Stillwater Sciences, contractors for the Sacramento Municipal Utility District. For additional information contact Ethan Koenigs, SMUD Project Manager (Ethan.Koenigs@smud.org).

STATE OF CALIFORNIA THE
RESOURCE AGENCY
DEPARTMENT OF FISH AND GAME

BALD EAGLE BREEDING SURVEY INSTRUCTIONS

The breeding season of bald eagles in California extends primarily from February through July. Each year cooperating agencies, organizations, and private individuals participate in a statewide monitoring program to document nesting activities at each nesting territory. In 1997, 160 recently active breeding territories were surveyed, and the number increases yearly.

Annual breeding season surveys are an important part of the population recovery effort. Survey information is used by resource agencies to aid breeding territory management or protection activities. Additionally, population status and trends must be monitored annually to provide the data needed for assessing population recovery.

Specific assignments and scheduling of observer time are usually handled at the agency district or regional office level. In general, agencies are responsible for surveys or territories on or near their own lands, with Department of Fish and Game also surveying on private lands. Field personnel should coordinate with other agencies or volunteers to avoid duplication of effort or to arrange for survey help.

The bald eagle breeding population is increasing annually. So, it is important that suspected new nesting territories be adequately checked, especially early in the breeding season.

Territories should be checked at least three times during the nesting season, although more frequent checking is preferred. Emphasis should be placed on checking during incubation and early nesting periods.

1. **Early March (early incubation)** – Territories in northern California should be checked in the first half of March, if possible, or as soon thereafter as road or weather conditions allow. The purpose of the first check is to determine whether a territory is occupied (record presence of adults, courtship behavior, evidence of nest repair or construction, incubation).
2. **Late April or early May (early nesting period)** – This check is needed to confirm that a territory is unoccupied, or if occupied in March, to determine whether the breeding pair is still tending the nest (incubating eggs or tending young nestlings).
3. **Mid June (late nesting period)** – The main purpose of this check is to determine how many nestlings are approaching fledgling age.

Survey dates maybe modified from these recommended time periods if the territories can be checked more frequently or if particular breeding pairs are known to begin nesting especially early or late in the season.

We recommend that observers report the stage of development of nestlings in accordance with An Illustrated Guide for Identifying Developmental Stages of Bald Eagle Nestlings in the Field, by G.P. Carpenter (April 1990). This booklet is available from the San Francisco Zoological Society, Sloat Blvd. At the Pacific Ocean, San Francisco, CA 94132 (415-753-7080).

SUBMITTAL OF SURVEY FORMS

Please report observations on the **CALIFORNIA BALD EALGE NESTING TERRITORY FORM (revised 4/2010)**.

Please mail all completed forms by September 1 of the survey year to:

California Department of Fish and Game
Wildlife Branch
1812 Ninth St.
Sacramento, CA 95814
ATTN: Carie Battistone

Forms will be maintained in Department files and annual survey results will be compiled on the basis of these reports. If you have any questions please contact Carie Battistone at the above address or at cbattistone@dfg.ca.gov. Electronic forms can be found at http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html.

California Department of Fish and Game
CALIFORNIA BALD EAGLE NESTING

TERRITORY SURVEY FORM

Revised 4/2010

Territory Code: UVR

County: El Dorado **Survey Year:** 2017

Property Owner: USFS **If USFS:** El Dorado National Forest

Name (or general location of territory): Union Valley Reservoir

Name of nearest water body: Union Valley Reservoir

Location of Nest Site:

UTM E: 725334 **UTM N**: 4305602 **Zone:** 10S

No. of nests in territory - **Intact:** 1 **Remnant:**

Nest Tree: Species: Ponderosa Pine **Year last Used:** 2016

NOTE: Please attach a map showing the location of any newly documented nest tree.

Describe tree and nest condition and size, and add other remarks: Dominant ponderosa pine in good condition located NW of site #19 in Sunset Campground

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For each visit to a territory, note, in detail, the times, number and age of birds, behavior of birds (lying, perching, etc.), evidence of nesting (nest maintenance, courtship, incubation posture), disturbances, and other pertinent information:

Observers	Date of Visit	Observations/Notes
Krista Orr Steven Wood	03.13.17 (06:45 to 16:30)	13:00 – juvenile BAEA (likely 2nd year) flying N from Fashoda Peninsula. 13:15 – BAEA vocalizing from Sunset Campground. Nest tree from 2016 at Sunset Campground visited; feathers and fresh whitewash at base of tree. 13:45 – Female BAEA departed nest temporarily for food delivery from male BAEA in nearby roost tree. USFS nest platform at Granlees Point visited (no evidence of BAEA activity, although sticks on platform appeared slightly built up). Other suitable habitat around Union Valley Reservoir surveyed for evidence of BAEA nesting by boat and foot. No additional BAEA activity observed. No recreational activity observed.
Krista Orr Steven Wood	05.24.17 (06:45 to 17:00)	06:50 – BAEA vocalizations from Sunset Campground. 07:15 – Adult BAEA (female) departing nest at Sunset Campground, flying E. 07:30 – Juvenile (~4 weeks old) BAEA visible in nest, begging. 12:10 – Adult BAEA (female) with food delivery (fish in talons) to nest (from N). 12:55 – Female BAEA temporarily departed nest and received food delivery (fish) from male BAEA. USFS nest platform at Granlees Point visited (no change from previous visit). Other suitable habitat around Union Valley Reservoir surveyed for evidence of BAEA nesting by vehicle and on foot. No additional BAEA activity observed. Recreational activity low to moderate (~5 boats, campground maintenance activities [e.g., installation of bear boxes and wood chipping], and a few early season campers); no BAEA disturbance observed.

Observers	Date of Visit	Observations/Notes
Krista Orr Steven Wood	06.21.17 (07:00 to 15:30)	07:15 – Two juvenile BAEA visible in nest and subsequently heard begging on and off for next several hours. Both juveniles remained in nest, occasionally stretching wings. 12:55 – Female BAEA arrived at nest with food delivery and both chicks briefly visible. 13:05 – Female departed to N. USFS nest platform at Granlees Point visited (no change from previous visit). Other suitable habitat around Union Valley Reservoir surveyed for evidence of BAEA nesting by vehicle and on foot. No additional BAEA activity observed. Recreational use moderate (12 boats, occasional helicopter and float plane activity, and campground prep activities); no BAEA disturbance observed. Note: USFS closed campground (would have normally opened on Memorial Day, just after second survey).
Steven Wood Krista Orr	07/07/17 (16:30 to 17:30)	Observers returned to UVR nest after final (off set due to late winter) survey at Loon Lake. Two fledglings observed in tree near nest (still committed to the nest – fledged, but not yet dispersed).

SUMMARY:

A. Successful Nestings: **No. of young known fledged:** 2 **or probably fledged** 0

B. If no fledglings were produced this season please answer the following: N/A

How many adults seen in the territory?:

Was there evidence of nest repair or construction?:

Were adults seen in the nest?:

Were adults in incubating posture?:

Number of nestlings observed?:

Failed during incubation or nesting stage?:

Other remarks:

Observer Contact Information:

Surveys conducted by Stillwater Sciences, contractors for the Sacramento Municipal Utility District. For additional information contact Ethan Koenigs, SMUD Project Manager (Ethan.Koenigs@smud.org).

Attachment 4

Incidental Observations of Avian Species

Incidental Observations of Avian Species in the Study Area (2016/2017)

Common Name	Scientific Name
Canada goose	*Branta canadensis*
mallard	*Anas platyrhynchos*
bufflehead	*Bucephala albeola*
common merganser	*Mergus merganser*
mountain quail	*Oreortyx pictus*
common loon	*Gavia immer*
western grebe	*Aechmophorus occidentalis*
eared grebe	*Podiceps nigricollis*
red-necked grebe	*Podiceps grisegena*
turkey vulture	*Cathartes aura*
osprey	*Pandion haliaetus*
sharp-shinned hawk	*Accipiter striatus*
Cooper's hawk	*Accipiter cooperii*
red-tailed hawk	*Buteo jamaicensis*
spotted sandpiper	*Actitis macularius*
hairy woodpecker	*Picoides villosus*
white-headed woodpecker	*Picoides albolarvatus*
northern flicker	*Colaptes auratus*
pileated woodpecker	*Dryocopus pileatus*
olive-sided flycatcher	*Contopus cooperi*
western wood-pewee	*Contopus sordidulus*
dusky flycatcher	*Empidonax oberholseri*
Cassin’s vireo	*Vireo cassinii*
Steller's jay	*Cyanocitta stelleri*
American crow	*Corvus brachyrhynchos*
common raven	*Corvus corax*
tree swallow	*Tachycineta bicolor*
mountain chickadee	*Poecile gambeli*
brown creeper	*Certhia americana*
red-breasted nuthatch	*Sitta canadensis*
white-breasted nuthatch	*Sitta carolinensis*
rock wren	*Salpinctes obsoletus*
golden-crowned kinglet	*Regulus satrapa*
mountain bluebird	*Sialia currucoides*
hermit thrush	*Catharus guttatus*
American robin	*Turdus migratorius*
orange-crowned warbler	*Oreothlypis celata*
yellow-rumped warbler	*Setophaga coronata*
hermit warbler	*Setophaga occidentalis*
MacGillivray's warbler	*Geothlypis tolmiei*

Wilson's warbler	*Cardellina pusilla*
western tanager	*Piranga ludoviciana*
spotted towhee	*Pipilo maculatus*
California towhee	*Melozone crissalis*
fox sparrow	*Passerella iliaca*
dark-eyed junco	*Junco hyemalis*
evening grosbeak	*Coccothraustes vespertinus*
Cassin’s finch	*Haemorhous cassinii*