

Monitoring Program 2018 Final Annual Report Sacramento Municipal Utility District

Hydro License Implementation • June 2019

Upper American River Project

FERC Project No. 2101



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Acronyms and Abbreviations

| Acronym | Definition |
|----------------|--|
| AREC | Annual Review of Ecological Conditions |
| BLM | Bureau of Land Management |
| CDFW | California Department of Fish and Wildlife |
| cfs | cubic feet per second |
| FERC | Federal Energy Regulatory Commission |
| USFS | U.S. Department of Agriculture, Forest Service |
| SMUD | Sacramento Municipal Utility District |
| SWRCB | State Water Resources Control Board |
| UARP | Upper American River Project |

1.0 INTRODUCTION

This Monitoring Program Annual Report (Report) is being submitted to the Federal Energy Regulatory Commission (FERC) by the Sacramento Municipal Utility District (SMUD), in accordance with State Water Resources Control Board (SWRCB) Condition 8 of the 401 Water Quality Certification and U.S. Department of Agriculture, Forest Service (USFS) 4(e) Condition 31 (hereafter Conditions), located in Appendices A and B, respectively, of FERC's Order Issuing New License (License; FERC 2014) for the Upper American River Project (UARP).

SWRCB 401 Condition 8 states:

The Licensee shall prepare an annual report that fully describes the monitoring efforts of the previous calendar year, including the data collected and analysis of that data. The report shall be filed with the Commission by June 30 of each year for the preceding year. USFS, CDFW, USFWS, and the State Water Board shall have at least 30 days to review and comment on the draft report prior to filing with the Commission. The Licensee shall provide copies of the final annual report to USFS, CDFW, USFWS, and the Deputy Director.

USFS 4(e) Condition 31 states:

The Licensee shall file with FERC by June 30 of each year an annual report fully describing the monitoring efforts of the previous calendar year. FS, CDFG, FWS, and SWRCB shall have at least 30 days to review and comment on the draft report prior to filing with FERC. The licensee shall provide copies of the annual report to FS, CDFG, FWS, and SWRCB.

Additionally, SWRCB Condition 10 requires SMUD to include a summary of the efforts made to pass large woody debris at several Project reservoirs in the Annual Monitoring Report.

SWRCB 401 Condition 10 states:

The Licensee shall ensure that mobile instream large woody debris continues downstream beyond Robbs Peak Reservoir Dam, Junction Reservoir Dam, Camino Reservoir Dam, and Slab Creek Reservoir Dam. This requirement will not be in effect when access and working conditions are dangerous or unsafe. At a minimum, all sizes greater than both 20 centimeters wide and 12 meters in length shall be allowed to continue downstream beyond Robbs Peak Reservoir Dam, Junction Reservoir Dam, Camino Reservoir Dam, and Slab Creek Reservoir Dam. Smaller sizes are also allowed but are not required to be moved beyond these dams. To demonstrate compliance with this condition, the Licensee shall include in the annual monitoring report that is required in Condition 8 (Monitoring Program) a summary of the efforts made during the year to pass large woody debris below the dams.

Furthermore, Article 401(b) of the License requires SMUD to file the Annual Report with FERC, along with any comments received by the Agencies during the review period, by June 30 of each year.

Finally, the preface to the Conditions states that:

For purposes of the ecological resources adaptive management program, each year is defined on a calendar year basis (i.e., January through December). This Monitoring Program covers monitoring to be conducted during all years until a new license is issued. Where years are specified, Year 1 is the first year during which all initial minimum streamflows required by the license are implemented by May 1.

All minimum streamflows required by the License were implemented in October 2014; therefore, Year 1 as it pertains to the Monitoring Program was 2015. This Report summarizes results of Monitoring Year 4 (2018). Refer to the Monitoring Frequency section of this report for information about the frequency of resource-specific monitoring effort required by the License. Some monitoring activities have specific reporting requirements and deadlines in lieu of this Report which are noted in the summaries presented in Section 3.0.

For context in considering the monitoring results, the California Department of Water Resources (DWR) May Bulletin 120 forecast the 2018 water year type “Below Normal”, and the UARP was operated under this scenario for the remainder of the water year. The final 2018 water year type remained classified as “Below Normal” based on DWR’s Full Natural Flow record for the American River at Folsom in October 2018.

2.0 MONITORING FREQUENCY

The Monitoring Program covers monitoring to be conducted during all years until a new license is issued. Table 1 describes the monitoring frequencies for the first five years of the License. As noted in Section 3.0, some monitoring activities have specific reporting requirements and deadlines in lieu of this Report.

Table 1. Monitoring Program Frequency First Five Years.

| Monitoring Effort | License Monitoring Year | | | | |
|--|-------------------------|--------|--------|--------|--------|
| | 1 | 2 | 3 | 4 | 5 |
| | (2015) | (2016) | (2017) | (2018) | (2019) |
| Trout Population Monitoring | | | | | X |
| Hardhead Population Monitoring | | X | X | | X |
| Aquatic Macroinvertebrate | | | | | X |
| Amphibian and Aquatic Reptile Monitoring (including Foothill Yellow-legged Frog) | | X | X | X | X |
| Sierra Nevada Yellow-legged Frog (formerly Mountain Yellow-legged Frog) Monitoring | | | | | X |
| Riparian Vegetation Monitoring | | | | | X |
| Algae Species Identification and Monitoring | | X | | | |
| Geomorphology (Sensitive Site Investigation and Mitigation Plan Development) | X | X | | | |
| Geomorphology (Continuing Evaluation of Representative Channel Areas) | | | | | X |
| Water Temperature | | X | X | X | X |
| In Situ Water Quality | X | X | X | X | X |
| Bacteria Monitoring | X | X | X | X | X |
| Metals bioaccumulation | | X | | | |
| Water General Chemistry | | | X | | |
| Robbs Peak Powerhouse Entrainment | X | X | X | | |
| Bear Management Monitoring | | X | X | X | X |
| Bald Eagle Monitoring | | X | X | X | X |
| Large Woody Debris | X | X | X | X | X |

3.0 MONITORING PROGRAM CONDITIONS

Table 2 documents the status of the 2018 ecological monitoring specified in the License, including the status of SMUD's resource Monitoring Program as specified in USFS 4(e) Condition 31 which also encompasses all those measures listed in SWRCB's 401 Condition 8, as well as SWRCB Condition 10. The various monitoring programs described in each Monitoring Plan developed for the UARP have inconsistent reporting timelines as they were developed over the course of several years with different staff involved. In an effort to avoid confusion and simplify the reporting for the Monitoring Program, SMUD will synchronize the timing of the reporting so that all of the annual reports are submitted to the Resource Agencies for review no later than two weeks prior to the Annual Review of Ecological Conditions meeting.

4.0 LITERATURE CITED

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.

Table 2. Status of Ecological Condition Monitoring 2018.

| Condition | Title | Status | Comments |
|--|------------------------------------|---------------|---|
| USFS 4(e) Condition 27; SWRCB Condition 1 | Minimum Streamflows | Current | December 2018 License amendment extends initial Slab Creek Dam flows through Year 6 to accommodate completion of SF Powerhouse. |
| USFS 4(e) Condition 27; SWRCB Condition 1 | Silver Creek "Block of Water" Plan | Current | Plan approved by FERC June 2016. |
| USFS 4(e) Condition 28; SWRCB Condition 2 | Pulse Flows | Current | Pulse flow requirements were met at Rubicon Reservoir by stowing the gates on April 23, 2018 and continuing for a period of 60 days until June 23, 2018. No spill occurred. Pulse flow requirements were met at Ice House Reservoir dam by releasing pulse flows from May 14 - 19, 2018 under the Below Normal water year type requirements. No pulse flows were required below Loon Lake reservoir given final FERC approval was not received in time for 2018 release. 2019 pulse flows are currently being planned for all three reservoirs under the Wet water year type scenario pending the May Bulletin 120 release. |
| USFS 4(e) Condition 29; SWRCB Condition 3 | Ramping Rates | Current | Use ramping rate of 1 foot per hour when implementing pulse flows, minimum streamflows, or recreational streamflow releases. |

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| USFS 4(e) Condition 30 | Coordination with Chili Bar Licensee | Current | Plan approved by FERC October 2015. |
| USFS 4(e) Condition 49; SWRCB Condition 5 | Reservoir Levels | Current | Variance to the end-of-month reservoir levels was approved for Ice House Reservoir in 2018 to facilitate the repair of an auxiliary dam toe drain. All end-of-month reservoir levels were met for Loon Lake and Union Valley Reservoirs. The License was amended (December 2018) to allow for temporary reservoir level variances related to non-emergency activities required to maintain various features of the UARP that have a nexus to reservoirs (i.e. Project-related recreation facilities, Project infrastructure). |
| USFS 4(e) Condition 50; SWRCB Condition 4 | Recreation Streamflows | Current | Recreation streamflows were released from Ice House Reservoir (4 days), and from Slab Creek Reservoir (6 days) under Below Normal water year type requirements. |
| USFS 4(e) Condition 51; SWRCB Condition 7 | Public Information Services | Current | Plan approved by FERC November 2016. |
| Monitoring Program | | | |
| USFS 4(e) Condition 31.1; SWRCB Condition 8.a | Fish Populations | Current | There were no fish population monitoring requirements in 2018. Both hardhead and trout monitoring are scheduled for 2019-2020. |
| USFS 4(e) Condition 31.2; SWRCB Condition 8.b | Aquatic Macroinvertebrates | Current | There was no aquatic macroinvertebrate monitoring requirement in 2018. Aquatic macroinvertebrates monitoring is scheduled for 2019-2020. |

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| USFS 4(e) Condition 31.3; SWRCB Condition 8.c | Amphibian and Aquatic Reptile Monitoring | Current | Amphibian and aquatic reptile monitoring was conducted in 2018 and is scheduled again for 2019 (FYLF and SNYLF). See Appendix A for 2018 report. |
| USFS 4(e) Condition 31.4; SWRCB Condition 8.d | Foothill Yellow-Legged Frog Flow Fluctuations | Current | Foothill yellow-legged frog flow fluctuations monitoring conducted in 2018 and scheduled again for 2019. See Appendix A for 2018 report. |
| USFS 4(e) Condition 31.5; SWRCB Condition 8.e | Riparian Vegetation Monitoring | Current | Riparian vegetation monitoring is scheduled for 2019. |
| USFS 4(e) Condition 31.8; SWRCB Condition 8.h | Geomorphology: Continuing Evaluation of Representative Channel Areas | Current | There was no geomorphology monitoring requirement in 2018. Monitoring scheduled for 2019. |
| USFS 4(e) Condition 31.9; SWRCB Condition 8.i | Water Temperature | Current | Water temperature monitoring was conducted in 2018 and is scheduled again for 2019. See Appendix B for 2018 report. |
| USFS 4(e) Condition 31.13; SWRCB Condition 8.l | Bald Eagle Monitoring | Current | Bald eagle monitoring was conducted 2018 and is scheduled again for 2019 at all three storage reservoirs (Loon Lake, Union Valley, and Ice House). See Appendix E for 2018 report. |
| USFS 4(e) Condition 31.13 | Bear Human Interaction Monitoring | Current | Bear human interaction monitoring was conducted in 2018 and is scheduled again for 2019. See Appendix D for 2018 report. |

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| USFS 4(e) Condition 31.13 | Avian Protection plan | Current | Bird diverters installed on transmission span at Jaybird powerhouse. Further Agency consultation needed to finalize and schedule future retrofits. |
| USFS 4(e) Condition 31.10; SWRCB Condition 8.j | Water Quality Monitoring Plan | Current | In situ and bacteria water quality monitoring was conducted in 2018 and is scheduled again for 2019. See Appendix C for 2018 report. |
| USFS 4(e) Condition 35; SWRCB Condition 10 | Large Woody Debris | Current | No LWD meeting the size requirement to pass was encountered in 2018 at the specified reservoirs. |

¹ Status designations include: 1. Complete – meaning monitoring obligations have been completed for the term of the license. 2. Current – meaning monitoring is ongoing and up-to-date according to agreed upon schedule. 3. In Progress – meaning the plan is still under development.

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APPENDIX A**2018 Amphibian and Aquatic Reptile Monitoring Report**

APPENDIX B**2018 Water Temperature Monitoring Report**

APPENDIX C**2018 Water Quality Monitoring Report**

APPENDIX D**2018 Bear Management Monitoring Report**

APPENDIX E**2018 Bald Eagle Monitoring Report**