United States Department of the Interior

FISH AND WILDLIFE SERVICE
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In reply refer to:
FERC #1061
ECOSphere #2022-0042433

October 18, 2024

Debbie-Anne A. Reese, Acting Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

Subject: Formal Consultation on the Pacific Gas and Electric's Proposed Phoenix Hydroelectric Project (Project) in Tuolumne County, California

Dear Acting Secretary Reese:

This letter is in response to the Federal Energy Regulatory Commission's (FERC) May 28, 2024 request for concurrence with the U.S. Fish and Wildlife Service (Service) on the Pacific Gas and Electric's (PG&E) proposed Phoenix Hydroelectric Project (Project) in Tuolumne County, California. Your request was received by the Service on May 28, 2024. At issue are the Project's effects on the federally endangered South Sierra Distinct Population Segment (DPS) of the foothill yellow-legged frog (*Rana boylii*)(frog), the federally proposed as threatened northwestern pond turtle (*Actinemys marmorata*)(turtle), and the federally proposed as threatened California spotted owl (*Strix occidentalis occidentalis*)(owl). Critical habitat has not been proposed for the frog, turtle, or owl. This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq*.) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

FERC indicated in their May 28, 2024 letter that the April 24, 2024 Final Environmental Assessment (EA) would serve as their biological assessment for our review and requested concurrence with the findings presented therein. These findings conclude that the Project may affect and is not likely to adversely affect the three species in question.

In considering your request, we based our evaluation on the following: FERC's May 28, 2024 letter requesting concurrence, FERC's April 24, 2024 EA, PG&E's August 24, 2020 Final License Application, email exchanges and meetings with FERC and PG&E staff from June through August 2024, and other information available to the Service.

The Federal action on which we are consulting is the issuance of the new license by FERC for the Project and the conditions contained within to manage and maintain the facilities associated with it. The new license period is anticipated to last either 40 or 50 years from the date of issuance. The

Project provides up to 1.6 megawatts (MW) of electricity at the powerhouse for the local grid and diverts water into the Main Tuolumne Canal (MTC) for municipal and agricultural water needs by the Tuolumne Utilities District (TUD) and their customers. The main Project facilities include Lyons Dam, Lyons Reservoir, Cushion Dam, the MTC and diversion system, header box, penstock, penstock bypass pipe, powerhouse, tailrace, and switchyard. Lyons Reservoir includes nonmotorized recreation within the reservoir, trails, a day use area, and an adjacent helicopter pad.

The Service concurs with your findings that the Project may affect, but is not likely to adversely affect, the proposed owl and turtle. This conclusion is based on: 1) the closest hydrologically-connected occurrence of the turtle is approximately seven miles downstream of the Lyons Dam; 2) the turtle is not known to occur within Lyons Reservoir; 3) FERC shall complete formal ESA consultation prior to the application of anticoagulant rodenticides within the buffer of an active owl nest; 4) annual gathering and assessment of owl surveys performed by the Forest Service, an agency of the U.S. Department of Agriculture, and Sierra Pacific Industries within and adjacent to the Project area to determine nest buffer locations; 5) implementation of active owl nest buffers with associated restricted Project activities; 6) timely reporting to the Service of incidental observations of turtles, owls, or barred owls (*Strix varia*) within the Project area; and 7) other conservation measures included in the Project EA.

The Service does not concur with your determination that the Project may affect, is not likely to adversely affect the frog, based on the potential effects to individuals expected from Project implementation as proposed by PG&E and FERC. The remainder of this document provides our biological opinion on the effects of the proposed Project on the frog.

Consultation History

2017-2022	The Service participated in Project relicensing meetings, email exchanges, and review of Project relicensing documents (including those pertaining to the frog).
May 28, 2024	The Service received FERC's request for concurrence letter.
June 13, 2024	The Service met with FERC to discuss the ESA section 7 consultation process.
June 2024	Email exchanges occurred between the Service and PG&E to clarify Project details and we provided technical assistance.
June 26, 2024	The Service met with PG&E and other parties to discuss Project details and discuss the ESA section 7 consultation process.
July 18, 2024	The Service submitted a Sufficiency Review letter to FERC in which the Service concluded that although the request for initiation letter and referenced EA did not contain sufficient detail, we were able to gather the additional information required through subsequent meetings with PG&E to prepare a biological opinion for the frog.

August 2024 Email exchanges occurred between the Service and PG&E to clarify Project details.

BIOLOGICAL OPINION

Description of the Proposed Action

The proposed Project is located in the foothills of the western slope of the central Sierra Nevada approximately 10 miles northeast of the city of Sonora in Tuolumne County, California. Elevations in the project vicinity range from about 5,000 feet above mean sea level along the ridges above Lyons Reservoir to about 2,600 feet at the Phoenix Powerhouse.

The Project is located on the South Fork Stanislaus River in Tuolumne County, California. PG&E operates the Project for power generation and to meet TUD's water supply needs through the MTC and downstream of the Phoenix Powerhouse. Project facilities include Lyons Dam, Lyons Reservoir, Cushion Dam, the MTC and diversion system, header box (forebay), penstock, penstock bypass pipe, powerhouse, tailrace, switchyard, roads, and recreational facilities.

The dam is equipped with an upper sluice (also referred to as the mid-level outlet), which can be operated at maximum pool with a maximum capacity of 185 cubic-feet-per-second (cfs). It also is equipped with a low-level outlet (198 cfs at full pool) to make controlled downstream releases. The dam seasonally includes four-foot-high flashboards across the crest, which are installed after April 1 and removed before November 1 each year.

Lyons Reservoir has a maximum gross storage capacity of 5,466 acre-feet at its normal maximum elevation of 4,226.6 feet (with the modified flashboards installed). The reservoir has a maximum surface area of 172.3 acres. The shoreline length at an elevation of 4,226.6 feet is approximately 4.47 miles. Currently there are no minimum pool requirements for Lyons Reservoir; however, PG&E has identified a low storage target of 1,500 acre-feet in Lyons Reservoir to protect deliverable water quality in the reservoir pool.

At the head of the MTC is the valve house where the 30-inch-diameter instream flow release pipe also is located and remotely controlled at PG&E's Tiger Creek Switching Center. It has a maximum capacity of 52 cfs and discharges directly into the SFSR. The MTC carries water from the valve house and terminates at the header box (forebay). It is 15.38-miles-long, consisting of a lined (9.38 miles), half-lined (1.13 miles), and unlined (2.66 miles) ditch; elevated flume (2.02 miles); and pipe (0.19 mile).

The powerhouse encloses one Pelton turbine and one generating unit with a normal operating capacity of 2.0 MW and a total authorized capacity of 1.6 MW. The power generated goes to the Project switchyard by an underground cable and then directly into the local 17-kilovolt distribution system.

PG&E operates and maintains two Project recreation facilities: the Lyons Reservoir Day Use Area and the MTC Section 4 Ditch Fishing Access Parking. The Lyons Reservoir Day Use Area consists of a 15-car gravel parking lot, a vault toilet, a trash receptacle, a picnic table, a potable water faucet,

rock and wooden vehicle barriers surrounding the parking lot, entrance and information signage, and a helicopter landing zone gate. PG&E proposes to construct a new accessible picnic site and improve existing amenities to current accessibility standards at the Lyons Reservoir Day Use Area. The MTC fishing access consists of a 5-to-10 car gravel parking lot, wooden vehicle barriers, public safety fencing around the MTC, entrance and information signage, and entrance gate. PG&E proposed enhancements at the MTC fishing access to include new accessible parking and a concrete landing area.

The current Project boundary encompasses approximately 331.34 acres. The boundary includes 223.73 acres of land owned by PG&E, 80.03 acres of privately-owned land, 0.59 acres of federal land administered by the U.S. Bureau of Land Management, and 26.99 acres of federal land administered by the Forest Service. PG&E proposed a modification to the Project boundary to include additional roads and trails currently (or partially) outside the Project boundary, and to adjust the boundary around Lyons Reservoir, along the MTC and several of its spill channels, and along the penstock.

Post-license issuance of Spring Gap-Stanislaus Hydroelectric Project (FERC #P-2130) in 2009, the Project has provided the minimum instream flow (MIF) requirements of 10 cfs released from Lyons Dam: November through June, 8 cfs in July and October, 5 cfs from August through September in normal water years (WY) and a constant release of 5 cfs in dry WY's below Lyons Reservoir. The Project accounts for 97% of the water supply for TUD delivered on a continuous daily basis to points along the MTC and downstream of the Phoenix powerhouse. The Spring-Gap Stanislaus Hydroelectric Project is located approximately nine miles upstream and the majority of waters that flow into Lyons Reservoir are controlled through it. The Spring-Gap Stanislaus Project is operated under a separate FERC license, with associated mandatory requirements from the Forest Service and State Water Resources Control Board (SWRCB).

Lyons Reservoir typically reaches maximum capacity before the peak runoff period ends, resulting in substantial spill in almost all years, although the timing and quantity can vary significantly from year to year. PG&E is required to raise the radial gates and remove the flashboards on the dam by November 1 of each year and can reinstall the flashboards and lower the spill gates after April 1 the following year. PG&E has little control over outflow from the reservoir during the runoff period due to the small reservoir relative to the upstream watershed, and day-to-day runoff variability that can substantially alter inflow to the reservoir. During the peak runoff, after the reservoir has filled, outflow from the dam approximates inflows.

PG&E proposes to implement the Standard Ramping Rate Measure (filed on FERC's eLibrary March 11, 2022) in the South Fork Stanislaus River below Lyons Dam when the Project is in controlled flow conditions to not exceed 50% of the existing flow per hour, as measured at U.S. Geological Survey (USGS) gage 11298000 (PG&E Gage S-51), except when end-of-spill (EOS) conditions apply. Historically, the Project utilized a recession rate of 50% per hour year-round.

Conservation Measures

The following measures are included in the Project to protect the frog and other wildlife resources over the duration of the new license period.

New Water Year Types

PG&E proposes to modify the WY types for the Phoenix Project to match those of the upstream Spring Gap-Stanislaus Project (same as the Forest Service Condition 29). The new water year types are based on anticipated or measured inflows to New Melones Reservoir, as follows:

PG&E shall use the California Department of Water Resources (CDWR) water year forecast of unimpaired runoff inflow into New Melones Reservoir as set forth in CDWR's Bulletin 120, each year in each month from February through May to determine the applicable water year type as described below when implementing the Forest Service's mandatory conditions for Instream Flows (Condition No. 29), Ramping Rates, (Condition Nos. 30 and 31), the Aquatic Resources Plan (Condition No. 34), and the Redeye Bass Management Plan (Condition No. 35). Water Years are classified into four water year types based on inflow to New Melones Reservoir: Wet (W), Normal (N), Dry (D), and Critically Dry (CD) with the Normal water years being subdivided into Normal Wet and Normal Dry. The water year types are defined in Table 1, below:

Table 1: Water Year Types Defined.

Water Year Type	**CDWR Forecast Annual Unimpaired Inflow to New Melones Reservoir (acre-feet)**
Critically Dry	$\leq$ 350,000
Dry	>350,000 and $\leq$ 676,000
Normal-Dry	>676,000 and < 1,050,000
Normal-Wet	$\geq$ 1,050,000 and < 1,585,000
Wet	$\geq$ 1,585,000

PG&E shall use CDWR's forecast of the water year type on or about February 10 and operate for the remainder of that month and until the next month's forecast according to the specification for that water year type. CDWR typically makes new forecasts on or about the tenth of March, April, and May after the snow surveys are completed and operations will be changed within two business days, or as soon thereafter as accessible for manually operated gages. The water year type determined from the May forecast shall apply until the February forecast in the following year.

Proposed Minimum Instream Flows Downstream of Lyons Dam

PG&E proposes to provide the following MIF's to the South Fork Stanislaus River below Lyons Dam based on the WY type and month (see Table 2).

Table 2: MIFs by Month and Water Year Type.

	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
CD	5	5	5	5	5	5	5	5	5	5	5	5
D	5	5	7	7	10	10	5	5	5	5	5	5
ND	8	10	10	10	10	10	5	5	5	6	8	8
NW	10	10	10	10	10	10	8	5	5	8	10	10
W	10	10	10	10	10	10	8	5	5	8	10	10

Proposed End of Spill Ramping Measure
The Forest Service filed an EOS Ramping Rate Plan (filed on FERC's eLibrary September 29, 2023) that pertains to controlled flows. FERC indicated in their April 2024 EA they will include the Forest Service proposed EOS Ramping Rate Plan in the new license period as a license condition. Controlled flow conditions are deemed to be in effect when the water surface elevation in Lyons Reservoir drops to six inches or more below the top of the flashboards at Lyons Dam, inflow to Lyons Reservoir is less than 200 cfs as measured at PG&E Gage S-83 (USGS Gage 11297200; within the Spring Gap-Stanislaus Project), and PG&E's best available forecast indicates inflows will not cause Lyons Dam to go back into spill over the next 10-day period. When the reservoir comes out of spill and these controlled flow conditions apply, this is referred to as EOS conditions. If spill from runoff does not occur, there is no EOS ramping requirement.

The EOS Ramping Rate Plan is subject to the following parameters:

- If spill does not reach the highest flow in the ramping schedule, then EOS ramping will begin at the step below the highest actual daily average spill flow.
- The ramping rate may be temporarily modified upon agreement between PG&E, the Forest Service, and SWRCB. If the ramping rate is so modified, PG&E shall notify FERC as soon as possible, but no later than 10 days after each occurrence.
- EOS ramping rates do not apply when performing required safety testing of the Lyons Dam gate and its associated operating systems. This includes testing of the spill gates, the mid-level outlet and the low-level outlet. Testing will consist of fully opening and closing the gates. PG&E shall make a good faith effort to conduct this testing when the dam is spilling. If this is not possible, PG&E shall make a good faith effort to schedule this testing for the fall or winter (October through December) when biological resources would be least affected by these releases.
- EOS ramping shall be implemented each year between April 30 and August 31, unless modified as provided for within the plan.

Schedule 1: When EOS occurs on or after May 1 and on or before May 20, flows will be stepped down from 80 cfs to MIF using three step-down flow changes over at least three days. Flow targets (±20%) will be initially set for each step and shall be 80, 40, 20, with MIF on the fourth day.

Schedule 2: When EOS occurs on or after May 21 and on or before June 21, flows will be stepped down from 80 cfs to MIF using five step-down flow changes over at least 19 days. Flow targets (±20 %) will be initially set for each step and shall be at approximately 80, 55, 35, 22, 12 cfs, and MIF.

Schedule 3: When EOS occurs on or after June 21 and on or before August 31, flows will be stepped down from 120 cfs to MIF using seven step-down flow changes over at least 19 days. Flow targets (±20%) will be initially set for each step and shall be 120, 90, 65, 45, 30, 20, 12 cfs, and MIF.

Under either Schedule 2 or 3, at least two days will elapse between each successive step change, but the total duration of the ramp shall not be less than that specified above. Once flows are set following a ramping step change, flows may increase or decrease by up to 20 % due to changes in Lyons Reservoir inflows or reservoir stage. If flows vary by more than this, PG&E will adjust flows

back to the target range, if practical, based on inflows and storage levels. If EOS ramping has begun and, due to increased inflows and lack of available storage within the reservoir, releases from Lyons must be increased to avoid spilling the dam over the flashboards, the ramping schedule will be curtailed at that flow level reached on that date. Once flows begin to subside again, ramping will resume with the next target ramping step below the highest flow that occurred.

Operational Assessment Period
During the first three full calendar years after the license is issued or three years after completion of any necessary facility modifications, whichever is later, PG&E will assess its operational ability to manage EOS ramping rates to provide the specified flow schedules without being subject to potential non-compliance with this measure. For a full description of how PG&E will perform this assessment, see the Forest Service's EOS Ramping Rate Plan.

After the Operational Assessment Period is complete, PG&E shall conduct a regularly scheduled review commencing in the year after the issuance of CDWR's Five-Year Water Supply report following the Operational Assessment Period, and thereafter every fifth year. For a full description of how PG&E will implement reviews of the EOS Ramping Rate Plan for the remainder of the license period, see the Forest Service's EOS Ramping Rate Plan.

The Forest Service EOS Ramping Rate Plan provides parameters on how deviations from the flow schedules are allowed, who should be notified, and a means to update the plan, should it become necessary. For a full description, see the Forest Service's EOS Ramping Rate Plan.

Hazardous Materials Management Plan
PG&E will implement a Hazardous Materials Management Plan (filed on FERC eLibrary February 26, 2021) that includes standard practices regarding the storage, use, transport, and disposal of hazardous materials to protect water quality.

Aquatic Resource Plan
PG&E will implement an Aquatic Resource Plan (filed on FERC eLibrary March 11, 2022) to detect long-terms trends in distribution and composition of the fish community, fish habitat, water temperature, and determine the presence and population status of the frog within the Project area and selected nearby tributaries. The aquatic resource plan also includes protocols for decontaminating equipment and reporting invasive species.

Streamflow and Reservoir Level Gaging Plan
PG&E will implement a Streamflow and Reservoir Level Gaging Plan (filed on FERC eLibrary November 18, 2020) to document compliance with flow-related license requirements and provide an annual flow and reservoir level report and a description of any deviations from the flow requirements.

Special Status Species Measure
PG&E will implement a Special-Status Species Measure for new construction or non-routine project operation and maintenance activities to develop a biological evaluation that includes measures to: (1) minimize or avoid adverse effects to special-status species; (2) ensure Project activities meet restrictions included in site management plans for special-status species; and (3) conduct effectiveness monitoring of measures implemented to reduce effects to special-status species.

PG&E clarified with the Service at the June 26, 2024 meeting that this measure will apply to all lands within the Project area.

Vegetation and Integrated Pest Management Plan
PG&E will implement a Vegetation and Integrated Pest Management Plan (filed on FERC eLibrary March 11, 2022) that includes measures for vegetation and pest management, protection measures for special-status plants, noxious weed management, and buffer distances for application of herbicides from waterbodies to protect water quality.

Wildlife Resources Plan
PG&E will implement a Wildlife Resources Plan (filed on FERC eLibrary January 15, 2021) that includes measures to protect special-status wildlife and nesting birds during Project operation and maintenance, and to monitor wildlife mortality in the MTC.

Action Area

The Action Area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." For the proposed Project, the Action Area encompasses the storage and diversion of water arriving at Lyons Reservoir from upstream, and other water diversions in the South Fork Stanislaus River down to the confluence with New Melones Reservoir, as well as the MTC, Lyons Reservoir Day Use Area, MTC Fishing Access, and other associated facilities.

Analytical Framework for the Jeopardy Determination

Section 7(a)(2) of the Act requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this biological opinion considers the effects of the proposed federal action, and any cumulative effects, on the rangewide survival and recovery of the listed species. It relies on four components: (1) the *Status of the Species*, which describes the current rangewide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which analyzes the current condition of the species in the Action Area without the consequences to the listed species caused by the proposed action, the factors responsible for that condition, and the relationship of the Action Area to the survival and recovery of the species; (3) the *Effects of the Action*, which includes all consequences that are caused by the proposed federal action, including the consequences of other activities that are caused by the proposed action but that are not part of the action; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-federal activities in the Action Area on the species. The *Effects of the Action* and *Cumulative Effects* are added to the *Environmental Baseline* and in light of the status of the species, the Service formulates its opinion as to whether the proposed action is likely to jeopardize the continued existence of listed species.

Status of the Species

For the most recent comprehensive assessment of the species' rangewide status, please refer to the Species Status Assessment Report for the Foothill Yellow-legged Frog (Service 2023). Threats evaluated during that review and discussed in the final document have continued to act on the species since the 2023 Status Assessment was finalized.

The South Sierra DPS extends from the South Fork American River sub-basin to the transition zone between the Sierra Nevada and the Tehachapi Mountains that border the south end of the California Central Valley. This DPS largely includes ecoregions that are unique to the southern and central Sierra Nevada Range including the Southern Sierra Mid-Montane Forests, Southern Sierra Lower Montane Forest and Woodland, Southern Sierran Foothills, Tehachapi Mountains, and Tehachapi Foothills (Environmental Protection Agency Level IV Ecoregions (Omerick and Griffith 2014, entire; Griffith *et al.* 2016, entire, all in Service 2021). This DPS also shares an ecoregion transition zone with the North Sierra DPS (Omerick and Griffith 2014, entire; Griffith *et al.* 2016, entire, all in Service 2021). Average precipitation and temperature in this DPS are fairly dry and warm (PRISM Climate Group 2012, 30-year climate dataset in Service 2021).

This DPS contains the majority of the frog's range in the Sierra Nevada but only 27% of Sierra Nevada stream segments with recent (*i.e.*, 2000–2020) frog observations. This DPS has experienced large declines in occupancy (CDFW 2019, p. 38; Figure 51) and abundances appear to be small relative to more northern populations (Lind *et al.* 2003, p. 26; Rose *et al.* 2020, pp. 63–64, table 1). Local extirpations of frogs in this DPS have been reported widely (Jennings and Hayes 1994, pp. 67, 69, figure 18; Jennings 1995, pp. 132–133, figure 2; Lind *et al.* 2003, p. 4, figure 1; Fellers 2005, p. 534; Lind 2005, pp. 37–38, 65, figure 2.1; Hayes *et al.* 2016, p. 30; CDFW 2019, pp. 37–38). Structural and functional connectivity are particularly poor in this DPS. Occupied stream segments are clustered mostly in the northern third of the unit and there are three small, isolated population fragments in the southern two-thirds of the DPS. These population fragments are especially vulnerable to extirpation, genetic drift, and inbreeding. Based on the three localities that were genetically sampled, there are at least three genetically differentiated groups in the DPS (McCartney-Melstad *et al.* 2018, p. 117, figure 3).

In addition to poor occupancy and poor connectivity, streams in this DPD have the highest average relative risk of population decline among the seven analysis units. None of the 153 occupied stream segments that were analyzed in this DPS have relative risks of decline in the low-risk category. Thirty-seven % of stream segments are in the high-risk category. The highest risks of decline are in the northern third of the DPS, where occupancy is greatest. However, this result mirrors the ongoing decline in occupancy in the northern part of this DPS.

The major threats that likely have or are contributing to the decline of the frog in this DPS include altered hydrology, agriculture, nonnative species, disease and parasites, mining, urbanization (including roads and recreation), drought, extreme flooding, and climate change. Although the proportion of total stream segments that are hydrologically altered is lower in this DPS than in the northern Sierra Nevada, there are a greater number of serious threats in this DPS. The proximity of frog habitat downwind of the San Joaquin Valley (greatest use of airborne pesticides) suggests that frog declines in this DPS could be linked to agricultural pesticide-use in the Central Valley (Davidson *et al.* 2002, p. 1594; Davidson 2004, pp. 1900–1901; Bradford *et al.* 2011, p. 690). This DPS also receives notably less precipitation than the other units in the Sierra Nevada (PRISM

Climate Group 2012, 30-year climate dataset) but agricultural water demand in the neighboring Central Valley is high. Extirpations of frogs in this DPS have been attributed both to extreme flooding (Adams *et al.* 2017, p. 10220; CDFW 2020, dataset) and to drought (Service 2019, in litt., pp. 39–42).

Environmental Baseline

Environmental baseline refers to the condition of the listed species or its designated critical habitat in the Action Area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all federal, State, or private actions and other human activities in the Action Area, the anticipated impacts of all proposed federal projects in the Action Area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The impacts to listed species or designated critical habitat from ongoing federal agency activities or existing federal agency facilities that are not within the agency's discretion to modify are part of the *Environmental Baseline*.

Frog Occurrences in the Project Area
Within the Project area, surveys have been conducted by the Forest Service (1996–2006), PG&E (2002, 2014, 2015, 2018, and 2019), and California Department of Fish and Wildlife (CDFW) (2015—fish survey crew that observed a frog incidentally) at sites in the South Fork Stanislaus River and tributaries. Small numbers of post-metamorphic frogs were observed during some of the Forest Service and PG&E surveys in 2002 and earlier. One adult frog was observed by a CDFW fish survey crew in 2015. Evidence of breeding was found at three sites during the 2002 PG&E surveys. Other than the single frog observed by CDFW in 2015, no surveys have detected the frog since 2002.

Effects of the Proposed Action

Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action but that are not part of the action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action.

The South Fork Stanislaus River contains some amount of suitable breeding and/or foraging habitat for the frog. Given the current distribution of predatory fish within the river, existing channel morphology, and water temperatures, most suitable habitat likely occurs downstream of the confluence with Deer Creek, so the Service assumes that any frogs within the Project area likely would occur in this portion of the South Fork Stanislaus River (although this portion of the river has an abundance of predatory fish). The primary potential direct effect of the Project would be the loss of egg masses and tadpoles from rapid changes (increases or decreases) in flow levels within the South Fork Stanislaus River. Other potential effects could include reduced fine sediment (trapped behind Lyons Reservoir) within the flooded portion of the riverbed (escape and overwintering habitat), reduced water temperatures during the frog breeding season from Lyons Reservoir, and potential release of toxic substances that might travel into suitable habitat. No Project activities other than monitoring-related efforts are proposed within the areas of suitable habitat for the frog.

The increases in MIF as proposed by PG&E would provide additional water downstream of Lyons Dam in most water year types, mostly in the spring and early summer months. This additional flow would be expected to provide increased habitat value for the aquatic ecosystem of the South Fork Stanislaus River, including the frog. An increase of one to three cfs (historical level was five cfs), likely would provide better aquatic connectivity within the mainstem and potentially inundate more suitable habitat for the frog along the stream margins.

The Forest Service EOS Ramping Rate Plan is intended to reduce flow-related effects to the frog, by slowing the rate of flow reduction in the South Fork Stanislaus River. Although this plan slows the rate of recession experienced historically in this watershed, the rates included in this plan do not conform with the Service's standard ramping rates recommended in other watersheds for the frog. The Service typically recommends ramping rates of no greater than 10% per day (and occasional "bench" periods where flows are held steady for 7-12 days) during the season when egg masses may be present, and either 10% per day or 10% every other day recession when tadpoles may be present. In this instance, however, the rationale for utilizing faster ramping rates for the Project are justified due to the limited storage capacity of Lyons Reservoir that greatly influences the quantity of water available for ramping. PG&E provided an analysis of several different ramping scenarios in their spreadsheet model to the Service (PG&E 2022). Those scenarios included the PG&E proposed ramping schedule, Forest Service ramping schedule, and four additional variations of ramping scenarios. The slowest recession modeled indicated that Lyons Reservoir would reach the minimum level (exhausted the useable water supply) in seven out of the 11-year analysis period. Had the Service's standard recommended ramping rates for the frog been utilized in this analysis, Lyons Reservoir likely would have reached the minimal level in almost every year of the 11-year analysis period (PG&E 2022). Reaching Lyons Reservoir minimal level could potentially result in an abrupt drop for instream flows and little to no water available for any other authorized uses (including TUD, instream needs, and power generation) from the reservoir pool, except what is provided from the Spring-Gap Stanislaus Project upstream. By utilizing a faster rate of recession, this allows the Project to balance the needs of all water users and environmental water needs and more likely avoid a sudden cessation of flows for the South Fork Stanislaus River. Although, if additional water were released from the Spring Gap-Stanislaus Project upstream, a slower recession rate might be possible below Lyons Dam, providing such water is outside the purview of FERC's authority for the Project.

In the FLA, PG&E indicated that sediment trapped behind Lyons dam has not increased significantly since 1996. PG&E states that either sediment is being passed downstream through the dam, or little sediment is entering the reservoir from upstream. However, fine sediment particles were rarely noted within the South Fork Stanislaus River from Lyons Dam to the upper reaches of New Melones Reservoir. Since fine sediment does not appear to be increasing behind the dam, this Project does not appear to be a significant contributor to the sediment-poor condition of the river downstream.

Water temperatures of Lyons Dam releases can remain cold well into the summer months. For example, in 2018, water temperature (as measured at Gage S-51 downstream of the dam) remained below 15°Celsius (C) until late July, at which time the reservoir became significantly depleted and water temperatures rose quickly to exceed 22°C by mid-August. This extended period of reduced water temperature throughout the frog's egg laying and early tadpole stages could result in delayed development of each life stage, potentially resulting in fewer individuals being able to successfully metamorphose prior to the start of the overwintering period. However, given that water

temperatures within the South Fork Stanislaus River quickly increase further downstream, this impact on the frog would only be anticipated in the upper reaches. At site SF8 (midway between Lyons Dam and New Melones Reservoir upper boundary) in 2002, for instance, water temperatures were greater than 20°C from mid-June through late-August.

Some of the Project activities require the use of various substances that are known to be toxic to frogs and other aquatic and terrestrial life. Accidental spills of contaminants, including oil, fuel, and other Project-related materials could result in localized water quality degradation and potential adverse effects on the frog. The nature, quantity, and extent of accidental spills associated with the Project are unknown until the time of the event occurs. The implementation of the Hazardous Materials Management Plan, as proposed by PG&E, includes best management practices regarding the storage, use, transport, and disposal of hazardous materials that will largely avoid the release of these substances to the environment, and establishes emergency protocols in the event an accidental spill occurs that will minimize its impact to the environment.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the Action Area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. During this consultation, the Service did not identify any future non-federal actions that are reasonably certain to occur in the Action Area of the proposed Project.

Conclusion

After reviewing the current *Status of Species* for the frog, the *Environmental Baseline* for the Action Area, the *Effects of the Proposed Action*, and the *Cumulative Effects*, it is the Service's biological opinion that the Phoenix Hydroelectric Project, as proposed, is not likely to jeopardize the continued existence of the frog. The Service has reached this conclusion because the Project-related effects to the species, when added to the environmental baseline and analyzed in consideration of all potential cumulative effects, will not rise to the level of precluding recovery or reducing the likelihood of survival of the species based on the following: (1) suitable habitat likely occurs downstream of the confluence with Deer Creek, allowing some natural attenuation to reduce impacts from operational flow changes at Lyons Dam, (2) the Forest Service EOS Ramping Rate Plan reduces the historical impacts of operational flow changes experienced within the South Fork Stanislaus River, (3) PG&E proposed additional conservation measures that will minimize indirect effects to the frog, and (4) PG&E consulted with multiple partners and experts during relicensing to establish stream flow levels that mimic as closely as possible the natural hydrograph, within the limits of Project storage.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm in the definition of "take" in the Act means an act which actually kills or injures wildlife. Such [an] act may include significant habitat modification or degradation where it actually

kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not the purpose of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the proposed protective measures and the terms and conditions of an incidental take statement and occurs as a result of the action as proposed.

The measures described below are non-discretionary and must be undertaken by FERC so that they become binding conditions of any grant or permit issued to PG&E, as appropriate, for the exemption in section 7(o)(2) to apply. FERC has a continuing duty to regulate the activity covered by this incidental take statement. If FERC (1) fails to assume and implement the terms and conditions or (2) fails to require PG&E to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, FERC or PG&E must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(4)].

Amount or Extent of Take

The Service anticipates that incidental take of the frog will be difficult to detect due to this species' life history and ecology. Frogs are difficult to observe due to their size, cryptic coloring, and complexity of their habitat. Only one frog has been detected within the Project area in the last two decades, which implies any population present likely is very small, additionally increasing the difficulty of detection. All of these factors contribute to the difficulty in attributing the true number of frogs taken. In addition, we believe that if one frog is observed, then it is highly likely that other undetected individuals exist in the general area. There is a risk of harm and mortality as a result of the proposed ramping rates on any eggs or tadpoles present and harassment through the capture and handling for frog monitoring; therefore, the Service anticipates take incidental to the proposed action over the 40 or 50 years of the new license period as: (1) the injury and/or mortality of 10 egg masses (partial or complete loss) and 100 tadpoles; and (2) the capture, handling, and release of all frogs (all life stages) as detected in the monitoring efforts.

Upon implementation of the following reasonable and prudent measures, incidental take of the frog associated with the Phoenix Hydroelectric Project will become exempt from the prohibitions described in section 9 of the Act. No other forms of take are exempted under this biological opinion.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the frog.

Reasonable and Prudent Measures

All necessary and appropriate measures to avoid or minimize effects on the frog resulting from implementation of this Project have been incorporated into the Project's proposed conservation

measures. Therefore, the Service believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take of the frog:

1. All conservation measures, as described in the EA and restated here in the Project Description section of this biological opinion, shall be fully implemented and adhered to. Further, this reasonable and prudent measure shall be supplemented by the terms and conditions below.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the [Action Agency] must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1) FERC shall include full implementation and adherence to the conservation measures as a condition of any permit or contract issued for the Project.

2) FERC shall require that all personnel associated with this Project are made aware of the conservation measures and the responsibility to implement them fully.

Monitoring/Reporting Requirements:

a. FERC or PG&E shall immediately contact the San Francisco Bay-Delta Fish and Wildlife Office at (916) 930-5603 (FERC Coordinator) to report direct encounters between listed species and Project workers and their equipment whereby incidental take in the form of harassment, harm, injury, or death occurs. If the encounter occurs after normal working hours, FERC or PG&E shall contact the San Francisco Bay-Delta Fish and Wildlife Office at the earliest possible opportunity the next working day. When injured or killed individuals of the listed species are found, FERC or PG&E shall follow the steps outlined in the Salvage and Disposition of Individuals section below.

Salvage and Disposition of Individuals:

Injured listed species must be cared for by a licensed veterinarian or other qualified person(s), such as the Service-approved biologist. Dead individuals must be sealed in a resealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, and the name of the person who found it, and the bag containing the specimen frozen in a freezer located in a secure site, until instructions are received from the Service regarding the disposition of the dead specimen. The Service contact person is the FERC Coordinator at the San Francisco Bay-Delta Fish and Wildlife Office at (916) 930-5603.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends the following actions:

1. Continue to work with the Service and other licensing participants to determine the most appropriate method to control red-eyed bass in the South Fork Stanislaus River.
2. Continue to work closely with the Service to determine the best management practices for the frog within the Project area.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the Phoenix Hydroelectric Project. As provided in 50 CFR §402.16,

(a) Reinitiation of consultation is required and shall be requested by the federal agency, where discretionary federal involvement or control over the action has been retained or is authorized by law and:

(1) If the amount or extent of taking specified in the incidental take statement is exceeded;

(2) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;

(3) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence; or

(4) If a new species is listed or critical habitat designated that may be affected by the identified action.

(b) An agency shall not be required to reinitiate consultation after the approval of a land management plan prepared pursuant to 43 U.S.C. 1712 or 16 U.S.C. 1604 upon listing of a new species or designation of new critical habitat if the land management plan has been adopted by the agency as of the date of listing or designation, provided that any authorized actions that may affect the newly listed species or designated critical habitat will be addressed through a separate action-specific consultation. This exception to reinitiation of consultation shall not apply to those land management plans prepared pursuant to 16 U.S.C. 1604 if:

(1) Fifteen years have passed since the date the agency adopted the land management plan prepared pursuant to 16 U.S.C. 1604; and

(2) Five years have passed since the enactment of Public Law 115-141 [March 23, 2018] or the date of the listing of a species or the designation of critical habitat, whichever is later.

If you have any questions on this consultation, please contact A. Leigh Bartoo at Aondrea_bartoo@fws.gov or (916) 930-5621.

Sincerely,

DONALD RATCLIFF Digitally signed by DONALD RATCLIFF Date: 2024.10.18 10:58:46 -07'00'

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