Monday, March 3, 2025

PG&E
via email to PVSurrender@pge.com

Potter Valley Hydroelectric Project, FERC Project No. 77

Draft Application for Surrender of License and Application for Non-Project Use of Project Lands

Dear PG&E,

The undersigned organizations share concerns for the health of the Eel River, its ecosystem and its fisheries. PG&E's Potter Valley Project (Project) has significantly affected the Eel River and its fisheries, even as the Project declined in economic utility and ceased entirely to produce electricity in recent years.

We appreciate the draft license surrender application's detail and direction. We write in large measure to support PG&E's proposed action, including:

1. Decommissioning and removal of Scott Dam;
2. Decommissioning and removal of Cape Horn Dam;
3. Removal of the New Eel-Russian Facility from the FERC license; and
4. Restoration of Project facilities and sites.

In comments below, we note areas of concern, needs for clarification, and various suggestions offered in the hope of improving the final license surrender application and the expeditious removal of Scott and Cape Horn Dams and restoration of areas altered by the Potter Valley Project. These comments are consolidated from a variety of experts from across the undersigned organizations to provide constructive and succinct feedback on PG&E's Draft Application for Surrender of License and Application for Non-Project Use of

Project Lands. Each organization may provide additional detailed comments individually and, in general, each organization's comments are limited to those subjects that affect their particular public interest subject area and expertise.

The Draft Application for Surrender of License and Application for Non-Project Use of Project Lands (Draft Surrender Application) makes several important choices. These include the rapid removal plan to remove Scott Dam over two years, as well as the decision to remove Cape Horn Dam and to build the New Eel-Russian Facility during the same period. We support these decisions as the best available options for the Eel River ecosystem and fish that are the primary locus of our concern given the existing information.

The Draft Surrender Application includes an Application for Non-Project Use of Project Lands by which FERC can authorize the Eel-Russian Project Authority (ERPA) to construct the NERF while PG&E's license for the PVP remains in effect. Given the parties' announced agreements on a flow schedule protective of Eel River fisheries and funding for Eel River restoration and tribal compensation, we also support this framework. To the extent practical, it minimizes impacts to both Eel River fisheries and to Russian River water users during the dam removal and NERF construction process. As well, it properly limits the facilities and operations subject to FERC's jurisdiction to the soon to be removed Potter Valley Project.

We note and appreciate PG&E's willingness to accommodate the efforts of the Two Basin Partnership. Although that effort did not come to fruition, it grew into PG&E's agreement with proponents of the NERF, reflected in the recently announced MOU between Eel and Russian River parties to manage future diversions. The Draft Surrender Application allows the agreement reflected in the MOU to go forward.

However, we also understand that PG&E's plan for dam removal and license surrender does not depend on NERF approval or completion. Removal of Scott and Cape Horn Dams need not be delayed should NERF be abandoned or delayed, and we see nothing in the Draft Surrender Application assessment of potential impacts that would be invalidated by such a future decision. Here, too, we support PG&E's direction, to move forward with removal of Scott and Cape Horn Dams as expeditiously as possible, whether NERF is built or not.

Specific comments

The following comments follow the organization of the Draft License Surrender Application. We provide no comments on the Non-Project Use of Project Lands at this time.

1.1 Background

Eight years ago, PG&E initiated the process to relicense the Potter Valley Project (PVP), later attempting to sell what has since been revealed as a hazardous liability. Over the past decade, the Project's inability to meet scheduled flows without severe harm to listed

species has become evident. As noted in the Draft Surrender Application (p. 3.3.3-4), PG&E sought flow variances in 7 of the last 10 years due to inadequate water supply, and in 2023–2024, requested additional variances to manage cooler water releases from Lake Pillsbury.

By opting to surrender the license, PG&E has committed to decommissioning the PVP. FERC's subsequent auction process confirmed that no other qualified entity was willing to take over the Project. As a result, the PVP will be decommissioned, and once completed to FERC's satisfaction, PG&E's license will be surrendered, and FERC jurisdiction will cease.

1.2 Project Location and Overview

For more than a century, the Project has operated to the detriment of salmonids in the Eel River by blocking access to essential habitat and disrupting natural flows. Although it is technically true that "releases made at Scott Dam and Cape Horn Dam support salmon and steelhead populations in the Eel River watershed," the watershed was supporting much larger salmonid populations prior to the construction of the dams. Our central argument for the removal of the Eel River dams is the need for access to the high-quality spawning and rearing habitat above Scott Dam. The unreliable and often unsuitable flows provided below the dams are a poor and entirely inadequate mitigation for the loss of access to that habitat. Eel River communities rely on a healthy watershed and harvestable salmon populations to support tribal lifeways, recreation opportunities that also provide economic benefits, and commercial and recreation fishing industries.

PG&E's decision not to replace the failed Potter Valley Powerhouse transformer highlights two key points. First, the Project has long been economically unviable, costing far more to operate than it generates—a central reason for PG&E's move toward decommissioning. Second, while originally licensed as a hydroelectric project, its primary significance now lies in supplying water to the Russian River, even as wind and solar have outpaced hydropower in cost and viability.

2.0 Purpose of Action

This section explains the relationship between decommissioning and removal of most of the Project infrastructure prior to license surrender, and the transfer of some Project facilities to the ERPA to construct the NERF outside the FERC license. We support this Application for Non-Project Use of Project Lands as an integral part of the resolution of competing interests embodied in the recently approved Memorandum of Understanding.

We note that PG&E "requests the Commission in the License Surrender Order to remove lands and works associated with the NERF from the license after specific milestones are met." We note as well that ERPA will complete separate environmental analyses and permitting as necessary for the NERF. Thus, we support PG&E's request that "FERC evaluate the NERF as a related project and analyze the cumulative effects of construction and operations," as well as the request that the Commission review and approve the proposed construction plan as detailed.

3.1.2 Section 18 Fishway Prescriptions

The Draft LSA notes that the Cape Horn fish ladder was "constructed as prescribed by USFWS under Section 18 of the FPA." Given both the oversight NMFS staff have exercised with respect to the Project and the California Department of Fish and Wildlife's history of operations at Van Arsdale, we would appreciate it if the final LSA would clarify, as appropriate, the relevant roles and responsibilities over time of the state and federal agencies with respect to what we have become accustomed to calling the Van Arsdale Fisheries Station, including what the present document describes as the Cape Horn Dam Fish Ladder.

3.1.9 FERC Dam Safety

PG&E and FERC should inform the public as to the seismic risks at Scott Dam. It is not appropriate, and indeed counterproductive in terms of public safety, for natural hazard risks such as these to be treated as confidential simply because Scott Dam is part of a (no longer functional) generation system. Although the CEII regulations allow utilities to keep information confidential for a range of reasons, including "national security, economic security, public health or safety, or any combination of such matters,"[1] here the potential risk to the public from a seismic event can only be increased by maintaining confidentiality.

Scott Dam's failure would have posed little risk to the electric grid, even when the Potter Valley Powerhouse was operational. However, PG&E's lack of transparency on seismic risks has left some local communities in denial, with some still pushing to keep the dams. We support PG&E's efforts to remove Scott Dam promptly because: (1) delays are costly to PG&E and its ratepayers, and (2) given its location on the Bartlett Springs Fault, the risk of a catastrophic event on downstream communities cannot be ignored.

4.0 Consultation

The Draft Surrender Application states that FERC has granted PG&E's request to act as FERC's "non-federal representative" for purposes of consultation under the Endangered Species Act, Magnuson-Stevens Act, and National Historic Preservation Act. Draft LSA at 4-5. However, PG&E's role as designated non-federal representative under each of these statutes is not entirely clear. For example, under the Endangered Species Act, a non-federal representative may engage in informal consultation and may prepare a biological assessment, but the federal agency remains responsible for compliance with Section 7 of the Act. *See* 50 C.F.R. § 402.08. Similarly, as the Draft Surrender Application acknowledges, FERC cannot delegate to PG&E its responsibility for government-to-government consultation with Tribes. Draft LSA at 4-6; *see also* 36 C.F.R. § 800.2(c)(4) (federal agency may allow license applicant to "initiate" consultation, but agency "remains legally responsible for all findings and determinations charged to the agency official," including "government-to-government relationships with Indian tribes"). The Final Surrender

[1] See 18 CFR 388.113 and especially 18 CFR 388.113(c)(3), (4).

Application should explain the exact extent of PG&E's consultation authority and anticipated consultation actions under each of these statues.

5 Proposed Action and Alternatives

5.1.2 Existing Project Operations

On page 5-5, the Draft Surrender Application states that "the Project is operated in compliance with existing regulatory requirements, agreements, and water rights to generate power and deliver consumptive water to local water users." This statement would be more complete if it noted that the Project is constrained in its operations by seismic threats, sediment buildup, and the breakdown of Project facilities over time; that NMFS found that the Project's ordinary operations, as reflected in the 1983 FERC license, jeopardized the survival of Chinook salmon and steelhead listed under the Federal Endangered Species Act, resulting in the 2004 license amendments requiring Project flows to substantially follow a natural flow regime and cease diversion of "excess" flows to the Russian River; and most importantly, that over the following two decades PG&E has not generally been able to supply the prescribed diversions to the Russian River without risking catastrophic harm to listed species. Finally, the Project has not generated electric power since the Potter Valley powerhouse transformer failed in 2021, and PG&E has declined to replace that expensive equipment for a project that costs millions of dollars a year more to operate than it produces in revenue. Thus, the Project has not been able to fully satisfy any of its purposes for decades.

What the LSA at page 5-5 describes as "a 2007 operational 'reinterpretation' of the terms of the 2002 RPA" is a creative reinterpretation of the actual story: that PG&E and Russian River interests tried to read the 2002 RPA to say that they could continue to divert all unspecified flows to the Russian River, as they had under the license to date. That was, however, not what NMFS meant in defining permissible diversions to the Russian. It took some sorting out, such that an official statement acknowledging NMFS's original interpretation as correct was finally issued in 2007.

As noted, we generally support PG&E's decision to use the Rapid Removal approach to taking out Scott Dam. We understand that removing the dam will necessarily entail significant risks of harm to the Eel River and its fisheries. We agree with PG&E's assessment that delaying the removal of Scott Dam or using a phased approach to removal would extend its impacts, while a rapid removal approach would significantly shorten the duration of negative impacts to the aquatic ecosystem.

5.2.1.2 Conceptual Restoration Plan

We support and reiterate the comments offered by the California Native Plant Society on the basis of their deep collective expertise in restoration ecology:

> For the revegetation of the area, we would recommend that the taxa selected for revegetation be based on information from the preconstruction surveys. This would

ensure that the species composition matches the existing vegetation specific to the area being revegetated. Surveys should also be used to identify potential sources for revegetation materials, including populations or individuals that could be targeted for seed collection. All seeds used for revegetation should be collected as locally as possible to the restoration site, and any transplants, whether grown from seed or cuttings, should be propagated from individuals in or adjacent to restoration sites.

Revegetation should not only focus on more common species, but in areas where special-status species are adjacent to restoration work, or where previously inundated suitable habitat is present, revegetation should include these less common species.

To further ensure revegetation success, we also recommend multiple years of invasive species control prior to construction and restoration. Invasive species distribution information can also be included in preconstruction surveys to strategically treat invasive species based on the risk of dispersing into revegetation areas. Invasive species control following seeding and planting should also be incorporated into restoration plans to ensure revegetation success.

Additionally, given the current 10ft reservoir restriction at Scott Dam, PG&E is currently implementing a convenient experiment whereby a portion of the reservoir footprint will remain exposed for the remainder of the Project's life. This "bathtub ring" area should be used to learn about invasive species densities and distribution and should serve as a test site for replanting. Restoration in this area could start immediately and inform future efforts.

Section 6 Conclusions and Recommendations

6.3 Unavoidable Adverse Impacts

The Draft Surrender Application notes that, even after proposed environmental mitigation measures are implemented, some unavoidable adverse effects will nonetheless result from removal of Scott and Cape Horn Dams. We concur, and agree that in light of those effects PG&E is making the choices that overall, best protect Eel River fisheries and their hopes of recovery. We look forward to commenting on future management plans that will seek to mitigate these impacts.

6.3.1.1 Water Use and Hydrology

The Draft Surrender Application notes unavoidable adverse effects on the Potter Valley Irrigation District (PVID) water supply and "existing condition hydrology" in the East Branch Russian River. Like many tributaries of the Eel and Russian Rivers, the East Branch Russian River has a natural dry season in the summer/early fall. After diversions began, the East Branch Russian River became in essence an irrigation canal. Reducing flows in the East Branch Russian River will return it to a more natural condition. Thus, neither reductions in PVID's diversions nor reductions in EBRR flows actually constitute adverse effects in the ecological sense.

6.3.1.2. Water Quality

The short-term water quality effects of Eel River dam removal will be very serious. This is an inevitable consequence of the dams' existence. Scott Dam was built because Cape Horn's small reservoir filled so quickly with sediment. Neither Cape Horn nor Scott Dam will stand forever. When the structures fail or are removed, the sediment trapped behind them will be carried downstream. We believe releasing this sediment as soon as possible, in a planned and controlled manner is the best option to manage a problematic situation created by dam construction.

As the Draft Surrender Application notes, the result of sediment release will be severe turbidity, very high levels of suspended sediment, depleted dissolved oxygen (DO) levels, and high nutrient levels which are likely to drive production of algal toxins, all of which is likely to affect much of the Eel River downstream. This will have serious short term negative impacts on aquatic life, including sensitive and imperiled species.

Given those realities, we understand and appreciate the decision to proceed with removal of both Scott and Cape Horn Dams in a way that minimizes the extent and especially the duration of these effects. We very much agree that the removal of the Eel River dams is likely to result in dramatically improved conditions for native fisheries and species, especially in the upper mainstem Eel River. To minimize and mitigate potential impacts , we encourage continued consultation with Tribes and resource agencies while developing management and construction plans that will result in sediment release.

We note that the Draft Surrender Application's description of "long-term unavoidable adverse effect on existing cold-water conditions in the Eel River from below Scott Dam to below Cape Horn Dam" is not an accurate description of the result of dam removal that will allow Eel River salmon and steelhead renewed access to a larger area of lower temperature waters. Nor is it accurate to describe the EBRR as suffering "long-term unavoidable adverse effect on existing water temperature conditions" from what is essentially a return to natural conditions altered by Project operations for the last century. Similarly, it makes little sense to describe the entirely artificial habitat conditions in the EBRR, including riparian vegetation, as suffering long-term unavoidable effects when those effects consist of nothing more than returning to the stream's natural hydrology.

We understand it is likely that many of the nonnative fish in the Lake Pillsbury reservoir will perish from the effects of sediment flushing noted above. We encourage the Final Surrender Application and other relevant planning documents to address the potential to amplify this effect through additional measures to reduce pikeminnow and other non-native species populations. Non-native species should be monitored and managed for several years after construction is completed.

The Draft Surrender Application notes "short-term unavoidable adverse effects to fish and aquatic resources resulting from sediment deposition in channel pools and spawning habitats in the Eel River." We would appreciate an analysis of the hydrologic conditions

necessary to reduce and eliminate those effects, both as to deep pools and as to spawning gravels.

6.3.1.6. Geology and Soils

The elimination of the Lake Pillsbury reservoir could reduce the groundwater table, affecting nearby wells used primarily for recreation sites and residences. PG&E should develop mitigation strategies to support affected landowners.

A pertinent example is the Klamath River dam removal project, where the Klamath River Renewal Corporation established the Klamath Mitigation Fund to address similar concerns. This voluntary, claims-based program was designed to compensate property owners for specific physical impacts resulting from dam removal, such as changes in groundwater wells. The Fund is administered independently, ensuring fair evaluation and compensation for demonstrated damages.

We recommend that PG&E consider a similar approach by establishing an independently managed mitigation fund to address potential adverse effects on groundwater levels resulting from the PVP decommissioning.

6.3.1.7. Geomorphology

Given the potential noted for "temporary unavoidable alteration of the Eel River channel or floodplain morphology from sediment deposition after removal of the dams until subsequent high-flow events can resuspend the sediment and transport it farther downstream," we encourage PG&E to partner with the fisheries agencies, tribal nations, and resource agencies to mobilize equipment as necessary to address severe sediment issues that may arise downstream in the days after dam breach, especially those that may impact tributary access and refugia.

6.3.1.8 Land Use

The Draft Surrender Application notes "potential unavoidable adverse effects to local fire suppression to properties near Lake Pillsbury due to the Lake Pillsbury with the Eel River or other sources as a water source, resulting in potentially longer fire response times."

The Klamath River Renewal Corporation (KRRC) developed a comprehensive Fire Management Plan to address wildfire risks associated with dam removal.[2] This plan, created in collaboration with state and local fire agencies, was designed to ensure that decommissioning activities do not compromise fire response capabilities in the region. Key components of the plan include fire prevention and suppression strategies, the implementation of early fire detection systems, and coordinated efforts with emergency responders to strengthen regional wildfire preparedness. KRRC also identified ways to enhance local firefighting resources, ensuring that the transition from reservoir-backed

[2] See https://klamathrenewal.org/fire-management-plan/

water supplies to a free-flowing river would not leave communities more vulnerable to fire risks.

6.3.1.12 Socioeconomics

The Draft Surrender Application notes:

> The removal of Scott Dam would result in a change from a lacustrine to riverine environment at Lake Pillsbury and a return to unimpaired Eel River flows that may result in changes in and could have unavoidable effects on recreation value, community way of life, and population and housing in the Scott Dam area. These effects may be offset by restoration (Phase 2).

We note that restoring the Eel River in the Project area may result in beneficial outcomes.

A study analyzing the effects of the Edwards Dam removal on Maine's Kennebec River discovered that properties near the former dam site experienced an increase in value post-removal, attributed to enhanced fisheries and recreational opportunities.[3] Provencher et al. examined the impact of small dam removals on property values and found that in many cases, property values remain stable or increase following dam removal, particularly as environmental and recreational conditions improve.[4]

A comprehensive review by Perera and North highlighted that while some communities fear property devaluation post-dam removal, the literature generally suggests that property values are unlikely to drop and may even improve when rivers are restored to their natural state.[5] This improvement is often attributed to enhanced water quality and ecosystem health, which can increase the attractiveness of riverfront properties.

The Draft Summary also notes:

> In the Russian River Watershed, there may be unavoidable adverse impacts to water reliability and cost, economic opportunity (particularly farming and ranching), recreation value in the Russian River Watershed, and community way of life because diversions to the East Branch Russian River would no longer occur under the Proposed Action (Phases 1 and 2).

We understand the above passage to be referring to the phases of dam removal during which diversions to the East Branch Russian River would be impossible or impracticable

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[3] Lewis, L. Y., Bohlen, C., & Wilson, S. (2008). Dams, dam removal, and river restoration: A hedonic property value analysis. *Contemporary Economic Policy*, *26*(2), 175-186.

[4] Provencher, B., Sarakinos, H., & Meyer, T. (2008). Does small dam removal affect local property values? An empirical analysis. Contemporary Economic Policy, 26(2), 187–197. https://doi.org/10.1111/j.1465-7287.2007.00068.x

[5] Perera, D. and North, T. (2021) The Socio-Economic Impacts of Aged-Dam Removal: A Review. Journal of Geoscience and Environment Protection, 9, 62-78. doi: 10.4236/gep.2021.910005.

because the Eel River will be diverted away from the existing diversion works while they are removed and replaced with the NERF. If the NERF and MOU are constructed and implemented, continuing diversions to the Russian River will ameliorate much of this impact.

6.3.2.2 Fish and Aquatic Resources

The Draft Surrender Application notes "permanent unavoidable adverse effect on critical habitat and essential fish habitat for Endangered Species Act threatened California Coastal Evolutionarily Significant Unit Chinook salmon and Northern California Distinct Population Segment steelhead within Van Arsdale Reservoir due to the placement of fill."

This refers to the construction of the New Eel-Russian Facility's diversion structure. It is technically accurate that the project will include the additional placement of fill to build the control section. However, on the whole there will be orders of magnitude more fill removed both at Cape Horn Dam and at Scott Dam than will be added at the NERF. We are satisfied that by removing Cape Horn and providing run of the river volitional fish passage to all stages and life histories, the project will provide net benefits for listed Chinook and steelhead, including CESA-listed summer steelhead. NERF impacts will be further evaluated as the facility undergoes its own permitting process.

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2.1.1.7 Project Recreation Facilities

As noted, we support removal of PG&E-owned recreational facilities except for the Trout Creek campground. We recommend PG&E conduct a Request for Proposals to transfer Trout Creek Campground prior to decommissioning the campground to seek a subsequent owner. This campground is located on the Eel River and is unlikely to be substantially impacted by dam removal, making it a viable, and worthy candidate for a subsequent owner. We support removal of facilities on USFS lands as the Mendocino National Forest determines appropriate. In general, we support establishment of new facilities appropriate to the restored river environment, and not only in the Project area to support regional recreation.

2.1.3. Existing Environmental Measures

The license was amended in 2004 to incorporate the Reasonable and Prudent Alternative presented by NMFS following that agencies' finding that operation of the Project under the 1983 license was likely to jeopardize the continued existence of Chinook salmon and steelhead listed under the federal Endangered Species Act.

As noted above, we disagree with PG&E's description of the 2007 resolution of its previous misinterpretation of the 2002 RPA. We further note that PG&E's water supply agreement with PVID is contractual and may be terminated by the utility.

2.1.3.2 Water Rights

We appreciate the steps PG&E is taking to remove the Eel River Dams. However, we would be remiss if we did not point out that the dams were built despite the protests of downstream water users and communities on the Eel River. We appreciate PG&E's inclusion of the Non-Project Use of Projects Lands component, which will lead to the transfer of water rights to Round Valley Indian Tribes. We request all water rights not transferred to successor owners to meet the needs of the Non-Project Use of Projects Lands be dedicated to instream flow in the Eel River.

2.2.1.1 Conceptual Decommissioning Plan

Again, we generally support PG&E's proposed action. Clearly there are areas where additional information will need to be developed to finalize plans that accomplish the proposed decommissioning efficiently while minimizing environmental effects.

Most significantly, the decommissioning plan and subsequent management plans should reflect better analyses and modeling of the composition and extent of the sediment to be removed, especially from the Lake Pillsbury reservoir. The relative composition and approximate volumes of coarse materials, gravels, silt, and sand remain poorly understood, resulting in uncertainty about how the sediment plume is likely to affect the Eel River and the species in it. This will be the largest ecological impact of the proposed project and will likely require detailed planning and mitigation measures See p. 3.3.7-6:

> Importantly, Stillwater Sciences (2021b) also stated that inadequate information exists to reasonably understand the volume and grain size distribution of gravel deposited in Lake Pillsbury because neither USGS nor Geosyntec collected samples from the upper reservoir gravel deposits (top-set deposit) (Figure 3.3.7-2).

We encourage PG&E to collaborate and consult with downstream affected parties including Tribes, resource agencies, NGOs and local government to manage and mitigate the anticipated impacts of sediment release.

Decommissioning and Restoration Schedule
PG&E notes, appropriately, that "the decommissioning and restoration schedule is contingent on issuance of a Surrender Order and associated conditions for the Project."

2.2.2 Non-Project Use of Project Lands

We support PG&E's request that FERC authorize PG&E to allow ERPA to construct the NERF on lands within the FERC Project boundary as described. In conjunction with removing the Project works associated with the Russian River side of the diversion from the FERC license and transferring them to ERPA to operate with the NERF, a FERC authorization for NERF construction will allow the new diversion to go forward as a non-hydropower project outside FERC's jurisdiction. As noted, "Other construction activities

associated with the NERF and future operation of the facility by ERPA will require separate environmental analysis and permits/approvals to be completed by ERPA."

2.2.3 Proposed Environmental Measures

We support and reiterate the comments offered here by the California Native Plant Society:

> The following comments apply to avoidance and protection measures and best management practices to address and reduce potential effects to environmental and cultural resources during decommissioning of the Potter Valley Hydroelectric Project, avoidance and protection measures and best management practices to address and reduce potential effects to environmental and cultural resources during NERF construction, and avoidance and protection measures and best management practices to address and reduce potential effects to environmental and cultural resources during Phase 2.
>
> **Special-status Plant Construction Measures - Pre-construction Surveys:** We would recommend that the surveys be comprehensive in documenting not just the special status species, but all species found during the surveys. This will help to inform the composition of species that would be used for restoration and revegetation throughout the project area. We appreciate the intent to follow the guidelines laid out in the CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (Protocols). Several of the recommendations in the Protocols are essential to ensuring the effectiveness of the surveys. The timing of the surveys and the use of reference sites is essential to ensuring that target species would be identifiable during the survey efforts. This may require that multiple surveys take place over the course of a year to have the best chance of capturing the full botanical diversity of the project area, based on the species with the potential to occur we would recommend that at least four surveys be conducted at appropriate times to capture the blooming period of all special status species with the potential to occur. Given that some annual and herbaceous perennial species may only be present in the seed bank or below ground as bulbs or other dormant structures, surveys may need to assume presence of these taxa in suitable habitat in years with low rainfall or when reference sites show that a taxon is not detectable. The Protocols state that "Habitats, such as grasslands or desert plant communities that have annual and short-lived perennial plants as major floristic components, may require multiple annual surveys to fully capture baseline conditions." The survey report should include the names and qualifications of surveyors, the survey dates (including surveyor names, area surveyed, and man hours spent), survey methodology, description of reference sites and phenology of plants at those sites, identification of taxa to the level necessary to determine if it is special status (if the surveyors are unable to determine a taxa beyond the genus or species level, and there is a special status species or subspecies in that grouping with the potential to occur in the project area, it should be assumed to be the special status taxa), discussion of climatic conditions and how these may have affected survey results, discussion of survey timing and how this may have influenced survey results, and a discussion of a false negative survey. These recommendations from the Protocols should be included as survey requirements in the Revised Draft Final Application. Survey results should be made publicly available and easily accessible.

Special-status Plant Construction Measures - Special-status Plant Protection: Species specific buffers and measures considering the life history of each special status plant should be included in the Revised Final Draft Application. While dormant season work may be effective at reducing impacts to some taxon of deciduous herbaceous perennials, other perennial life forms including evergreen perennials, shrubs, subshrubs and trees would need to be avoided at any time of the year. Where measures recommend dormant season work the language should clarify that this would only be effective at reducing impacts to deciduous herbaceous perennials.

Avoidance of impacts should be prioritized over any form of compensatory mitigation. The transplanting and/or creation of new populations has been shown to be ineffective in most cases. A review of mitigation-related transplantation, relocation, and reintroduction attempts showed that only 8% of these attempts were successful (Fiedler, 1991). Any attempts at compensatory mitigation through transplantation, relocation, or seeding of special status species should occur at a minimum of a 2:1 ratio and follow these requirements:

- The mitigation plan will be prepared by a qualified biologist and include at a minimum: (1) seed/propagule collection sites and methods, (2) identification of receiver sites or locations for relocated or propagated plants and rationale for their selection, and environmental analysis of the receiver site to ensure that mitigation activities would not impact existing resources (3) success criteria for population establishment, including a not-to-exceed threshold for invasive species cover, (4) a minimum of 5 years of maintenance and monitoring, followed by 5 years of monitoring to ensure that populations meeting success criteria without maintenance, returning to 5 years of maintenance and monitoring if monitoring shows that populations are not meeting success criteria without maintenance, mitigation requirements would be met when populations are shown to be stable for five consecutive years post maintenance, (5) the adaptive management approaches that would be used to evaluate monitoring results and adjust management actions, if necessary, and (6) financial assurances for the funding of special-status plant mitigation.

Invasive Weed Measures: We recommend incorporating pre- and post-work invasive weed treatment into the conceptual restoration plans as well as a preventative measure to avoid further spread due to construction. We also recommend stronger equipment cleaning measures to include all equipment - on and off road and within and outside of watershed - to avoid further spread of invasive species due to construction by incorporating the following measures:

- Clean clothing, footwear, and equipment used during treatments of soil, seeds, vegetative matter, or other debris or seed-bearing material, before entering the treatment area or when leaving an area with infestations of invasive plants, noxious weeds, or invasive wildlife;
- For all heavy equipment and vehicles traveling on and off road, pressure wash, if feasible, or otherwise appropriately decontaminate equipment at a designated weed-cleaning station prior to entering the project area, or when leaving an area with infestations of native plants. Anti-fungal wash agents will be specified if the equipment has been exposed to any pathogen that could affect native species;
- Track/document decontamination efforts for each piece of equipment or vehicle using a wash log with the date and service type (e.g., pressure wash, anti-fungal wash, other decontamination solutions); the log will be stored in said vehicle or equipment and may

be inspected by the qualified biologist, or biological technician prior to entering the project area;
- Inspect all heavy equipment, vehicles, tools, or other treatment-related materials for sand, mud, or other signs that weed seeds or propagules could be present prior to use in the work area. If the equipment is not clean, the equipment shall be denied entry to the treatment area;
- Stage equipment in areas free of invasive plant infestations**,** if there are no uninfested areas present within a reasonable proximity to the treatment area an area shall be cleared of invasive propagules to the extent feasible prior to staging equipment, these areas shall be prioritized for post implementation monitoring and management;
- In project areas with known populations of invasive species implement pre-work weed abatement measures to reduce the risk of spreading propagules withing the work site or to other areas of the project,
- Implement applicable BMPs outlined in the most current version of Cal-IPC's Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers.
- Post implementation monitoring shall occur at the soonest appropriate time of year to identify any new populations of non-native species, any newly identified populations of non-native species shall be actively managed and monitored until they are eliminated.

References -

Fiedler, P.L., 1991. Mitigation-related transplantation, relocation and reintroduction projects involving endangered and threatened, and rare plant species in California. Final report submitted to Department of Fish & Game Endangered Plant Program.

Section 3 Environmental Analysis

3.3.1.15 Hydrology

This section in the Final Surrender Application should include a statement/disclaimer that, due to the effects of ongoing climate change, future hydrologic patterns will likely differ from the hydrology as described by the existing hydrologic record/data. For example, more of the precipitation will fall as rain and less as snow, resulting in changed timing and magnitude of flows, reduced snowmelt, and increased stream temperatures.

3.3.2.3 Existing Water Quality Data
Analytical and In Situ Water Quality Data — *Lake Pillsbury*

The Draft Surrender Application notes that the Lake Pillsbury reservoir has characteristics which tend to drive poor water quality, i.e. "eutrophic with diminished hypolimnetic DO levels during summer stratification." It further suggests that the water quality has obvious deleterious effects, noting "an observed algal bloom in the Rice Fork Arm of the reservoir in March and included a personal communication citation stating that fish kills were reported to be a problem in the lake."

PG&E describes its recent study of the reservoir, conducted in anticipation of relicensing:

> The main conclusions of this study were as follows:
> Seasonal thermal stratification and hypoxia occurred in the Lake Pillsbury Arm (Site LP1) and Lake Pillsbury near Scott Dam (Site LP3) (PG&E 2019a: Table AQ 3-5 and Attachment A). This may have implications for the production of hydrogen sulfide, internal cycling of algal nutrients, as well as the production of trace metals affected by oxidation-reduction conditions.
>
> … Nutrient concentrations (i.e., ammonia, total Kjeldahl nitrogen, orthophosphate, and total phosphorus) were generally highest in the bottom waters at Lake Pillsbury near Scott Dam (Site LP3)(PG&E 2019a: Table AQ3-7).
>
> Low levels of mercury and methylmercury concentrations were detected in all samples collected during seasonal and monthly sampling efforts. Concentrations were highest during October in the bottom waters at Lake Pillsbury near Scott Dam (Site LP3) (PG&E 2019a: Table AQ3-8).

This is describing a eutrophic reservoir, with hypoxic conditions producing hydrogen sulfide. Those are conditions conducive to the anaerobic organisms that methylate elemental mercury. In summary, then, Scott Dam and the Lake Pillsbury reservoir were constructed and have been managed such that methylmercury concentrations normally occur in its bottom waters. It is no accident that PG&E reports that "Sampling of tissue taken from Lake Pillsbury fish detected high concentrations of mercury, averaging 1.31 µg/g in 350 millimeter (mm) largemouth bass (*Micropterus salmoides*), and the highest concentration for an individual fish (4.08 µg/g in a 559 mm largemouth bass) in statewide sampling (Davis et al. 2009)." (see p. 3.32-34)

Notably, these samples contrast with the absence of high mercury levels in sediments. Sampling in the Lake Pillsbury reservoir has shown relatively low levels of mercury in the sediments.[6] The Final Surrender Application should, if possible, explain the mechanisms by which mercury and especially methylmercury levels get so high in large predatory fish in the Lake Pillsbury reservoir without significant mercury contamination in reservoir sediments.

To the extent mercury accumulation has yet to significantly contaminate Lake Pillsbury reservoir sediments, we are hopeful that removal of Scott Dam will largely ameliorate the production and accumulation of methylmercury in the Project area by restoring natural fluvial processes that mix and oxygenate water.

Fish Tissue Mercury Sampling

This section should note the facts established by PG&E's study above regarding the production and concentration of methylmercury in the Lake Pillsbury reservoir. It should also explain what the reported numbers mean with respect to food webs and human health, the latter of which greatly reduces the value of the Lake Pillsbury fishery for subsistence purposes.

[6] See Geosyntec Consultants letter to California State Coastal Conservancy, *Lake Pillsbury and Van Arsdale Reservoir Sediment Characterization,* April 1, 2020

For example, the Draft Surrender Application notes that "Total mercury concentrations in Lake Pillsbury sportfish tissue were generally greater than 0.2 µg/g (0.2 mg/kg) wet weight (Table 3.3.2-10, PG&E 2019a)," with a footnote stating that the "California statewide water quality objective for methylmercury in sportfish is 0.2 mg/kg, wet weight."[7] The final LSA should state clearly that mercury levels in Lake Pillsbury sportfish generally exceed the California water quality objective for methylmercury.

But the final LSA should further explain that the levels of mercury reported for several species in the Lake Pillsbury reservoir do not just exceed California water quality standards: they are so hazardous that they should not be consumed, especially by children or women of reproductive age.

The California Office of Environmental Health Hazard Assessment (California OEHHA) advisory tissue levels for children and women younger than 45 state that fish with mercury levels above 0.44 ppm are not safe to consume, while men and older women could safely consume a single serving a week at levels between 0.44 and 1.31 ppm. See Table 1, Updated OEHHA Advisory Tissue Levels.[8] (Note that the "do not consume" levels of mercury reported in parts per billion in Table 1, at > 440 ppb for children and younger women and >1310 ppb for men and older women, correspond to levels of 0.44 ppm and 1.31 ppm.)

But as Table 3.3.2-10, Lake Pillsbury sportfish tissue mercury results, shows, four of the ten Bluegill sampled had mercury levels in excess of 0.44 ppm. Only one of the 12 largemouth bass sampled had a mercury level lower than 0.44 ppm. Seven of ten pikeminnow captured exceeded the 1.31 ppm "do not consume" level even for men and older women.

In general, the data presented suggest that larger, older fish are more likely to accumulate dangerously high levels of mercury. That is consistent with the observation that "Sampling of tissue taken from Lake Pillsbury fish detected high concentrations of mercury, averaging 1.31 µg/g in 350 millimeter (mm) largemouth bass (*Micropterus salmoides*), and the highest concentration for an individual fish (4.08 µg/g in a 559 mm largemouth bass) in statewide sampling (Davis et al. 2009)."

It is notable that the 2000 sampling found even higher concentrations of mercury than reported in PG&E's more recent effort, and that even in smaller bass mercury levels reached the 1.31 ppm level at which OEHHA recommends fish not be consumed at all.

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[7] Final Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions.

[8] Klasing, S. and R. Brodberg. 2018 (Updated ATL Table November, 2017). Development of Fish Contaminant Goals and Advisory Tissue Levels for Common Contaminants in California Sport Fish: Chlordane, DDTs, Dieldrin, Methylmercury, PCBs, Selenium, and Toxaphene. California Office of Environmental Health Hazard Assessment. California Environmental Protection Agency, Sacramento, CA.

Note that OEHHA has issued an advisory for fish caught in the Lake Pillsbury reservoir. Even the planted rainbow trout are so high in mercury that children and younger women should only eat a single serving a week.

3.3.3 Fish and Aquatic Resources
3.3.3-2

The list of databases consulted does not explain how the sources were used. It is essential to follow standard CDFW methods when querying these databases. For example, a nine-quad search of the California Natural Diversity Database (CNDDB) should be conducted for a project of this scale. Since CNDDB is an observation-only database, a broader search is necessary to generate a more comprehensive list of potentially present species and habitats.

3.3.3.3 Overview of Fish and Aquatic Resources

The text notes among "other species of concern" summer steelhead, listed as Endangered under the California Endangered Species Act. The Draft Surrender Application fails to convey the Project's central role in the demise of Eel River summer steelhead. Construction of Scott Dam closed off access to nearly all of the upper mainstem Eel River, leading to the effective extinction of what had been the southernmost summer steelhead run on Earth.

But because steelhead are the anadromous form of rainbow trout (*O. mykiss*), those vanished summer steelhead left relatives behind in the watershed above Scott Dam. As Kannry has shown, rainbow trout populations above Scott Dam still retain the genetic markers associated with anadromy as well as those associated with the now-rare summer steelhead life history.[9] It is reasonable to project that those upper basin rainbow trout populations will produce summer steelhead in relatively short order following dam removal. Thus, while construction of Scott Dam caused very significant harm to these extraordinary fish, dam removal may see their resurrection.

Above Lake Pillsbury, the Eel River and Rice Fork also provide habitat for native rainbow trout (*O. mykiss*). Review of available habitat should reference and include a summary of Fitzgerald et at. 2022.[10]

CalTrout has additional fisheries information not included in the LSA. We understand this effort to be a summary, however, we encourage PG&E and their consultants to reach out with questions or needs for information sources.

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[9] Kannry, S. H., O'Rourke, S. M., Kelson, S. J., & Miller, M. R. (2020). On the ecology and distribution of steelhead (Oncorhynchus mykiss) in California's Eel River. Journal of Heredity, 111(6), 548-563.

[10] FitzGerald, Alyssa M., David A. Boughton, Joshua Fuller, Sara N. John, Benjamin T. Martin, Lee R. Harrison, and Nathan J. Mantua. (2022) "Physical and biological constraints on the capacity for life-history expression of anadromous salmonids: an Eel River, California, case study." Canadian Journal of Fisheries and Aquatic Sciences. 99(999), 1-19

3.3.3-5

Where agriculture is listed as one of the many additional causes of fisheries decline, the final draft should specify "and associated water diversions, legal and illegal."

This section also notes the invasion of Sacramento pikeminnow out of the Lake Pillsbury reservoir and throughout most of the Eel River watershed. The subject is further addressed at pp 3.3.3-73 et seq. and again at 3.3.396, where the text notes that:

> Introduction of pikeminnow into the Eel River Watershed likely occurred because of a "bait bucket" introduction in Lake Pillsbury in the late 1970s (SEC 1998). Largemouth bass were stocked in Lake Pillsbury from Clear Lake in 1986 to potentially assist in controlling pikeminnow numbers."

Pikeminnow are not native to the Eel River and have likely become a significant limiting factor in salmon and steelhead survival and population recovery. Because PG&E failed to prevent the establishment of pikeminnow in its reservoir, and then failed to control its transmission downstream, most of the Eel River watershed is now significantly less productive habitat for salmon and steelhead than it was before 1980.

As the text notes, there is reason to believe that pikeminnow are an especially serious threat to steelhead reproduction in the Project area. Dam removal is likely to reduce those effects, and will allow native salmon and steelhead access to higher-gradient, cooler waters higher in the watershed where they will have a competitive advantage over pikeminnow, reversing the advantage pikeminnow enjoy in the warmer waters downstream.

We urge PG&E to propose, and the Commission to accept, significant continuing support for pikeminnow suppression and eradication efforts in the Eel River as long as pikeminnow remain a problem.

3.3.3.4 Eel River
3.3.3-8 Physical Environment — *Aquatic Habitat*

The text notes that

> Two large tributaries, Tomki Creek (RM 153.0, 3.8 mi. downstream of Cape Horn Dam) and Outlet Creek (RM 126.0, 31 mi. downstream of Cape Horn Dam), provide a significant amount of spawning and rearing habitat for anadromous salmonids (SEC 1998).

This may be true in the abstract, but more recent information discussed at and around pp 3.3.3-60 suggests that neither Outlet Creek nor Tomki Creek have been productive of salmon and steelhead in recent decades. While causes are uncertain, land use in Tomki Creek and land use and water pollution in Outlet Creek seem likely contributors. In any case, what had seemed in past decades to be areas capable of returning to high

productivity remain frustratingly free of fish today. By contrast, assessments of the upper basin above Scott Dam have found no significant water quality or habitat issues for salmonids; instead, they indicate favorable conditions.[11]

3.3.3-9 Fish Passage Barriers — Scott Dam

The barriers noted in the maps at 3.3.3-17 and 3.3.3-19 do not appear to reflect actual conditions as assessed in the watershed by fisheries biologists. While the recent work by Cooper et al. did not consider barriers, the VTN study mentioned here to calculate potential habitat has been repeatedly shown to be inaccurate.

We have combined personal observations with CDFW's extensive survey reports to catalog **actual** barriers and included additional habitat (not above barriers) from Cooper et al.'s IP model. This adds a significant amount of habitat beyond PG&E's estimate.

Map 1 and Map 2 (see pp 31-32) are modifications of PG&E's maps that summarize the available information about the accessibility of habitat, especially for steelhead, above Scott Dam. Pink circles denote putative barriers that are identified in the Draft Surrender Application, but which are not reflected in CDFW reports, and should not be used to determine the extent of potential habitat. The purple ovals denote stream reaches with suitable habitat above those putative barriers which should be included in the assessment of total available habitat.

We also would like it noted that numerous fisheries experts have concurred, based on their assessment of Bloody Rock Roughs and observations of anadromous steelhead upstream of far more significant barriers in similar watersheds (Van Duzen, Middle Fork Eel, Mad River), that Bloody Rock Roughs should not be referred to as "impassable barrier," as it is most likely passable at flows that would occur on an annual basis.

Downstream Passage

The Project's impacts on fish passage are generally understood to be severe, given that Scott Dam blocks the Eel River entirely, and that Cape Horn Dam's antiquated fish ladder, longest and highest in California, has continued to suffer severe problems into recent years. Downstream passage at Cape Horn Dam has received the least attention.

The text acknowledges "structural" passage issues at Cape Horn Dam at low and intermediate flows. The 26.6 foot drop from the center of the dam is indeed "a significant drop," worsened by the fact that at "intermediate flows, water depth over the downstream steps of the dam is likely insufficient to cushion fish." This will harm or kill juvenile Chinook, juvenile steelhead, and outmigrating steelhead kelts.

[11] See FitzGerald et al.

As PG&E knows, NMFS stated in a March 16, 2022 letter to FERC that the Biological Opinion for the Project expired with the Project license in April of that year. NMFS also explained that, based

> on information currently available, we conclude that the Project is causing take of ESA-listed salmonids in a manner not anticipated in the Opinion and from activities not described in the Opinion.

Specifically, NMFS states that

> Cape Horn Dam, the associated infrastructure, fishway maintenance, and flow operations to achieve fish passage at the passage facility are neither described within the *Description of the Proposed Action*, nor are their effects to listed species assessed within the Opinion. Consequently, **we did not authorize incidental take resulting from these effects** (e.g., delayed or blocked migration and predation of ESA-listed salmonids caused by the configuration and full operation of the Cape Horn Dam fish passage facility). (emphasis added)

NMFS' warning regarding the impacts on upstream migrants applies equally to impacts on downstream migrants: at Cape Horn Dam, none of these forms of take are presently authorized by incidental take permits. This contributes to our sense of urgency in seeking removal of both Cape Horn and Scott Dams.

3.3.3-30

The text notes that

> Sedimentation and connectivity issues caused by dry reaches in the Eel River create additional fish passage barriers. In the lower mainstem Eel River, stranding of Chinook salmon has been observed at the Van Duzen River confluence of the Eel River. Gravel extraction altered the channel of the Van Duzen River until 1996, widening the channels and creating a shallow, braided reach unsuitable for fish passage (CDFG 2010). **The lower 4 mi. of the Van Duzen River have purposefully been blocked to salmonids since 2003 to prevent stranding**. Seasonal high-gradient "barrier" culverts are installed to ensure migrating adult salmonids are not stranded in the shallow waters that occur before sufficient flows allow for upstream passage. (emphasis added)

DFW staff report that the Van Duzen barriers were operated from the early 2000s to approximately 2012, and that no strandings have been reported in that area since.[12]

3.3.3-31 Benthic Macroinvertebrates

The text notes that "Benthic macroinvertebrate (BMI) sampling has not been historically conducted in the Eel River below Scott Dam." Cal Poly Humboldt's Dr. Alison O'Dowd, a benthic macroinvertebrate expert, has done some limited sampling in the Emmendal reach

[12] A. Renger, personal communication 2025

of the upper mainstem. Of note, Dr O'Dowd reports that efforts to sample for benthic macroinvertebrates following Klamath Dam removal have been unsuccessful, apparently due to sediment impacts. (O'Dowd, personal communication 2025) It would thus seem especially important to have a profile of benthic macroinvertebrate populations in the Eel River prior to dam removal.

3.3.3-32 *Aquatic Molluscs*

The text notes observations of invasive Asian clam (*Corbicula fluminea*) in the upper Eel River below the Project. The Final Surrender Application should discuss the potential for sediment discharge and associated dam removal impacts to suppress this population, as well as any potential for the clam to grow in habitats affected by dam removal.

3.3.3-35 ***Salmonids*** — *Steelhead – Lower Eel River*

The text states that summer steelhead "are primarily found in the Lower Eel River Watershed in the Van Duzen River and Middle Fork Eel River." This is currently the case. But summer steelhead were very much present in the upper Eel River prior to the construction of Scott Dam. There is every reason to believe that they will quickly return when the dams are removed. [13][14]As NMFS has noted in its Multi Species Recovery Plan, additional independent summer steelhead populations like the Upper Eel are necessary to recover steelhead in the region now listed as Threatened under the federal Endangered Species Act.

The text states that "the estuary serves as a holding area for adult steelhead during upstream spawning migrations (late fall into early summer)." Please clarify this statement in the Final Surrender Application. It is our understanding that it is in fact the lower Eel River – above the estuary but below the Van Duzen confluence – that provides key holding areas for upstream migrating salmonids. Certainly, that is the case for Chinook, which hold from early August until the rains come.

3.3.3-71

The text notes "Western brook lamprey are also present in the study area." A 2023 paper proposed renaming Pacific Coast lamprey species as a new genus, *Occidentis* to mark their difference from their Atlantic basin relatives. [15] Then a 2024 paper showed that Western brook lamprey and Western river lamprey are "best categorized as life history variants of a

[13] Munsch SH, McHenry M, Liermann MC, Bennett TR, McMillan J, Moses R and Pess GR (2023) Dam removal enables diverse juvenile life histories to emerge in threatened salmonids repopulating a heterogeneous landscape. Front. Ecol. Evol. 11:1188921. doi: 10.3389/fevo.2023.1188921

[14] Brewitt, P. K. (2016). Do the fish return? A qualitative assessment of anadromous Pacific salmonids' upstream movement after dam removal. Northwest Science, 90(4), 433-449.

[15] Carim, K.J., Larson, D.C., Helstab, J.M. et al. A revised taxonomy and estimate of species diversity for western North American Lampetra. Environ Biol Fish 106, 817–836 (2023). https://doi.org/10.1007/s10641-023-01397-y

single species."[16] Thus, the Final Surrender Application need only note the presence of *Occidentis ayersii* to be accurate.

3.3.5 Wildlife Resources: Information Sources

Our comments on this section were principally authored by wildlife biologist Gary Falxa, PhD, USFWS (ret.).[17]

The list of information sources doesn't include classic public references on CA wildlife (e.g. *Distribution of the Birds of California by Grinnell and Miller* 1944, *Atlas of the Breeding Birds of Humboldt County* by Hunter et al 2005), nor modern digital resources such as eBird and iNaturalist.

Table 3.3.5-3 Special status terrestrial wildlife species

Western Yellow-billed Cuckoo

Black Cottonwood (*Populus balsamifera*) is the dominant cottonwood species along the lower Eel River, where Western Yellow-billed Cuckoos have been documented. Regarding historical nesting sites, Falxa notes that "There are actually more than 20 breeding season records along the lower Eel, mostly from the estuary but also upstream as far as Holmes Flat." These records highlight the species' historical and potential contemporary use of the Eel River corridor as breeding habitat.

Yellow Warbler

The phrase "may potentially occur" should be corrected to "known to occur." The Atlas of Breeding Birds of Humboldt County (Hunter et al. 2005) documents a confirmed nesting record at the confluence of the Van Duzen and Eel Rivers. Additionally, multiple breeding season records from eBird provide further evidence of this species' presence and reproductive activity in the area.

Monarch Butterfly

The text should specify that the Monarch (*Danaus plexippus*) is a widespread migratory species, occurring in the area at a minimum during migration. Given the declining populations of the western monarch and its reliance on suitable nectar sources and roosting sites along migration routes, recognizing its occurrence in the project area is important.

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[16] Carim KJ, Auringer G, Docker MF, Renaud CB, Clemens BJ, Blanchard MR, et al. (2024) Species diversity in the new lamprey genus Occidentis, formerly classified as western North American 'Lampetra'. PLoS ONE 19(12): e0313911. https://doi.org/10.1371/journal.pone.0313911

[17] See https://www.researchgate.net/profile/Gary-Falxa

Short-eared Owl

The phrase "may potentially occur" should be changed to "known to occur." Multiple records from eBird confirm the presence of Short-eared Owls (*Asio flammeus*) in the area, suggesting that it is a regular winter visitor and possibly an occasional breeder in suitable open wetland and grassland habitats.

Northern Harrier

The Northern Harrier (*Circus hudsonius*) should be classified as "known to occur" rather than "may potentially occur." Numerous eBird records document the species in the region year-round, with individuals frequently observed hunting over open habitats along the Eel River.

Purple Martin

Habitat descriptions should be expanded beyond redwood forests to include other forest types, such as mature Douglas-fir, mixed conifer-hardwood stands, and riparian forest edges. Purple Martins (*Progne subis*) are known to utilize cavities in large trees and snags for nesting and may also take advantage of artificial structures.

Willow Flycatcher

The designation "unlikely to occur" should be revised to "known to occur." Records from Hunter et al. (2005), eBird, and personal observations by Falxa indicate that Willow Flycatchers (*Empidonax traillii*) have been observed around Cock Robin Island during the breeding season. These records suggest the species may use the Eel River corridor for breeding or stopover habitat during migration.

Bald Eagle

In addition to wintering records, Bald Eagles (*Haliaeetus leucocephalus*) also occur during the breeding season along the Eel River between Island Mountain and the confluence with the South Fork Eel River. Given the presence of nesting habitat and increasing regional populations, it is likely that the species breeds in this section of the river. eBird records further support consistent seasonal use of the area.

3.3.5-11 Beaver

We are disappointed to note that the Draft Surrender Application merely notes beaver (*Castor canadensis*) as a species of common wildlife, without addressing its presence in the Project area. Beaver play a central role in river and stream ecology, and can have benefits to streamflow, and other fish and wildlife, including salmonids. From a utilitarian perspective, beaver will interact with revegetation and restoration efforts in the project area. The Final Surrender Application should consider how to work with beaver to improve

restoration outcomes and include beaver in the Restoration Plan. PG&E should consult CDFW's recently created Beaver Restoration Program for best management practices.

Beaver play a crucial role in shaping stream ecosystems by constructing dams that create ponds and wetlands, altering hydrology and geomorphology in ways that enhance habitat for fish and wildlife. Research by Pollock et al. highlights that beaver dams improve groundwater recharge, regulate stream discharge, retain sediment, and enhance stream habitat quality for fish.[18] Historically widespread, beaver have been severely reduced across much of their range, and their absence has likely contributed to stream incision, lower groundwater levels, and the drying of waterways.[19] Restoring beaver populations in mountain meadows can create climate refugia for sensitive species and increase carbon sequestration.

Beaver ponds also provide critical protection for riparian corridors during wildfires. Fairfax and Whittle (2020) found that beaver-dammed areas remained relatively unaffected compared to similar corridors without beavers, highlighting their role in fire resistance and habitat refugia.[20]

Salmon and steelhead benefit significantly from beaver activity. Beaver ponds create slow-moving water with abundant food and cooler temperatures, ideal for juvenile salmonids. Pollock et al. note that these ponds provide extensive cover, productive vegetation, and rich invertebrate populations, offering fish foraging opportunities not found in free-flowing streams.

Beyond fish, beaver-created wetlands support diverse wildlife, including waterfowl, muskrats, mink, deer, and elk. Several species described in the Draft Surrender Application rely on beaver ponds as preferred habitat.[21]

Following near-extermination across the American West, beavers are gradually recovering in some areas. Restoration efforts have provided valuable insights, as detailed in *The Beaver Restoration Guidebook: Working with Beaver to Restore Streams, Wetlands, and*

[18] Pollock, Michael & Heim, Morgan & Werner, Danielle. (2003). *Hydrologic and Geomorphic Effects of Beaver Dams and Their Influence on Fishes,* American Fisheries Society Symposium *37*

[19] Lanman, C. W., Lundquist, K., Perryman, H., Asarian, J. E., Dolman, B., Lanman, R. B., & Pollock, M. M. (2013). The historical range of beaver (Castor canadensis) in coastal California: an updated review of the evidence. California Fish and Game, 99(4), 193-221.

[20] Fairfax, Emily, and Andrew Whittle, (2020) Smokey the Beaver: beaver-dammed riparian corridors stay green during wildfire throughout the western United States, Ecological Applications Vol 30 Issue 8, https://doi.org/10.1002/eap.2225

[21] See Yarnell, Sarah, UC Davis Center for Watershed Sciences, Beavers, Meadows and Climate Change, https://watershed.ucdavis.edu/project/beavers-meadows-and-climate-change

Floodplains, published by the U.S. Fish and Wildlife Service.[22] We encourage PG&E to incorporate relevant beaver restoration into the Final Surrender Application.

Given the well-documented benefits of beavers to salmonid recovery and ecosystem resilience and their known presence, restoration efforts in the Project area should include a thorough analysis of beaver restoration as part of long-term planning.

Beaver presence in the planning area

There is at least one photographic report of beaver activity in the Eel River above the Lake Pillsbury reservoir in February 2023, near the Bloody Rock area.[23] Additionally, beaver activity has been observed in the Upper Mainstem Eel River about the Lake Pillsbury reservoir in the Rice Fork, immediately below Scott Dam and further downstream at Hearst.

3.3.7-13 Recent Restoration Projects

The text cites the Russ Creek-Centerville Slough project as a restoration project. We wish we could agree.

However, as the Coastal Commission staff report on the proposed Consistency Determination for the project notes, "(a)lthough the Project would likely provide substantial restoration benefits to the area," it ultimately concludes that the project is, rather, a reclamation effort. It recommends the Coastal Commission object to the Consistency Determination, noting that

> the Commission has long considered "restoration" to be generally defined as taking actions to return an area to a prior, relatively unimpaired, pre-disturbance natural condition, while "reclamation" is generally defined as changing an area so that it improved for agricultural purposes.

The report concludes on this issue that:

> In sum, the Project does not meet [Public Resources Code] Section 30233(a)'s allowable use test because the majority of its proposed wetland dredge and fill activities in support of creating or enhancing agricultural pasturelands do not result in a "prior, relatively unimpaired, and natural condition" or an "indigenous, historical ecosystem," and do not otherwise fit within the definitions of 30233(a)'s allowable "restoration" use. Instead, the Project's creation and enhancement of agricultural pasturelands fall within the generally recognized definitions of "reclamation," which is not an allowable use.

Finally, we note that the proposed project would include pre-permitting for up to an additional 100,000 cubic yards of dredge and fill as necessary to address storm damage.

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[22] Pollock, M.M., G.M. Lewallen, K. Woodruff, C.E. Jordan and J.M. Castro (Editors) 2023. The Beaver Restoration Guidebook: Working with Beaver to Restore Streams, Wetlands, and Floodplains. Version 2.02. United States Fish Service, Portland, Oregon. 189 pp. Online at: https://www.fws.gov/media/beaver-restoration-guidebook

[23] See INaturalist https://www.inaturalist.org/observations/147865065

That is not a self-sustaining project. PG&E may wish to reconsider the description of the Russ Creek project as a restoration project.

3.4.1.4. Environmental Effects: Fish and Aquatic Resources

A primary concern of the undersigned organizations is the health and recovery of Eel River salmon, steelhead, and lamprey that support tribal communities, recreational and commercial fisheries, local economies, and the broader ecosystem via the transport of marine-derived nutrients. Of significant concern are the short-term impacts on those fisheries from dam removal and in river construction, most notably sediment release.

PG&E intends to develop "The Post-dam Removal Aquatics Species Management and Monitoring Plan would include measures to capture/salvage, relocate, and implement broodstock rescue of aquatic species." Given these risks to aquatic species, we request more detailed information on sediment management strategies, including anticipated sediment loads, timing, a mitigation measure alternative analysis, and monitoring efforts. Our overall intent is to help PG&E, in consultation with resources agencies and Tribes, to reduce negative impacts to the greatest extent possible.

We recognize the potential need for short-term mitigation measures, but these measures need to be implemented and balanced with long-term recovery goals in mind. Based on the existing information, we are not convinced that capture, salvage, and relocation are necessary, however we do note that salmon populations in the Upper Eel River are depressed, and every effort should be made to protect individuals. If capture, salvage, and relocation are deemed necessary due to the severity and duration of sediment loads, the process should have clearly defined goals, specific start and completion dates, thorough monitoring, and be implemented for the shortest duration possible.

We do not see a likely scenario under which broodstock rescue and rearing for either steelhead or Chinook, would ultimately benefit wild salmonids in the Eel River long term. Hatcheries have been used extensively as mitigation for habitat lost from dam construction. There is ample published literature showing that they are unsuccessful in that role and usually have adverse effects on wild fish. In a synthesis of 207 studies on impacts of hatcheries, McMillan et al. found that 83% of the studies examined had negative impacts, and only 3% had positive impacts, with negative genetic impacts being the most frequently observed.[24] These included reduced genetic diversity, changes in population structure, and decreased effective population size. Hatchery fish, even those used in "broodstock rescue" i.e., the first generation bred from wild broodstock, have significantly lower fitness than wild offspring of wild fish.[25] If hatcheries were able to rebuild or even maintain healthy populations of wild fish, then close to half of California's Evolutionarily

[24] McMillan, J. R., Morrison, B., Chambers, N., Ruggerone, G., Bernatchez, L., Stanford, J., & Neville, H. (2023). A global synthesis of peer-reviewed research on the effects of hatchery salmonids on wild salmonids. Fisheries Management and Ecology, 30(5), 446-463.

[25] Chilcote, M. W. (2003). Relationship between natural productivity and the frequency of wild fish in mixed spawning populations of wild and hatchery steelhead (Oncorhynchus mykiss). Canadian Journal of Fisheries and Aquatic Sciences, 60(9), 1057-1067.

Significant Units of salmonids wouldn't be listed under the Federal Endangered Species Act. [26]

There are prominent examples of wild fish rebounding after severe disturbance, akin to what will occur when the Eel River dams are removed. Seven years after Mount Saint Helens erupted and buried the Toutle River in superheated ash and sediment, wild steelhead runs exceeded carrying capacity.[27] Wild summer-run steelhead numbers increased from less than ten to hundreds of individuals six years after dam removal was completed on the Elwha River.[28] In most other cases we have been unable to observe what the response of wild fish would be due to the pre-emptive construction of hatcheries as mitigation for the disturbance.

Genetic diversity in the resident *O. mykiss* population above Scott Dam has been maintained up to the present. From Kannry et al., 2020 "Our results suggest that, considering their present state of run-timing genotypes, the potential to exhibit migratory behavior, and overall genetic diversity, the resident trout population above Scott Dam would be primed for reestablishment of steelhead post dam removal. Given the results of our study and the potential negative consequences and costs of hatchery fish, it seems prudent to give the native *O. mykiss* the opportunity to autonomously reestablish anadromy in the upper watershed upon dam removal."[29]

All Chinook hatchery operation in the California Coastal ESU ended in 2007, as it was recognized that Chinook numbers were still declining and the hatcheries, even though they were small, localized efforts, were likely contributing to the decline. [30] Chinook salmon have a higher rate of straying than other salmonids so are well positioned to make use of newly accessible above dam habitat.[31] The idea of "broodstock rescue" is usually reserved for instances in which a population is either extirpated or so depressed, that they have no chance of rebounding. That is not the situation on the Eel for Chinook or steelhead. Precise population estimates are not available, but over 1000 Chinook were observed at Van Arsdale and in Tomki Creek this year. CDFW has operated a Sonar "camera" to enumerate adult and jack salmon escapement into the lower mainstem Eel River above the confluence with the South Fork Eel River during the fall and winter since 2018. Chinook Salmon

[26] Moyle, P. B., Lusardi, R. A., Samuel, P. J., & Katz, J. V. (2017). State of the Salmonids.

[27] Bisson, P.A., Crisafulli, C.M., Fransen, B.R., Lucas, R.E., Hawkins, C.P. (2005). Responses of Fish to the 1980 Eruption of Mount St. Helens. In: Dale, V.H., Swanson, F.J., Crisafulli, C.M. (eds) Ecological Responses to the 1980 Eruption of Mount St. Helens. Springer, New York, NY. https://doi.org/10.1007/0-387-28150-9_12

[28] Duda, J. J., Torgersen, C. E., Brenkman, S. J., Peters, R. J., Sutton, K. T., Connor, H. A., & Pess, G. R. (2021). Reconnecting the Elwha River: spatial patterns of fish response to dam removal. Frontiers in Ecology and Evolution, 9, 765488.

[29] Kannry, S. H., O'Rourke, S. M., Kelson, S. J., & Miller, M. R. (2020). On the ecology and distribution of steelhead (Oncorhynchus mykiss) in California's Eel River. Journal of Heredity, 111(6), 548-563.

[30] Moyle, P. B., Lusardi, R. A., Samuel, P. J., & Katz, J. V. (2017). State of the Salmonids.

[31] Westley, Peter AH, Thomas P. Quinn, and Andrew H. Dittman. "Rates of straying by hatchery-produced Pacific salmon (Oncorhynchus spp.) and steelhead (Oncorhynchus mykiss) differ among species, life history types, and populations." Canadian Journal of Fisheries and Aquatic Sciences 70.5 (2013): 735-746.

returning to the mainstem Eel River above the confluence of the South Fork Eel River has averaged around 5,000 fish annually since 2018.[32] These numbers are fractions of what existed historically, but not a population on the verge of imminent collapse. From Chilcote (2003), "For natural populations, removal rather than addition of hatchery fish may be the most effective strategy to improve productivity and resilience."

3.4.4.3 Botanical Resources

We support and reiterate the comments offered here by the expert California Native Plant Society:

> Table 3.3.4-2: We would recommend that in addition to taxa that are 'known to occur' and taxa that 'may potentially occur' taxa that are described as 'unlikely to occur' be evaluated for potential impacts and targeted in preconstruction surveys. Many of these species have historic occurrences or historic ranges within the study area and should be considered in analysis despite the lack of recent data, noting that these data sources are positive occurrence databases, and the lack of data does not indicate that a taxon is not present. The California Natural Diversity Database Management Framework (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=181808&inline) states that "The CNDDB is a positive sighting database. Information on negative sightings is only included when it pertains to previously documented occurrences. It is important to emphasize that absence of data is not proof of absence. There may be areas of the state that have not been surveyed or where data have not been submitted to the CNDDB program. Just because a species has not been documented in the CNDDB at a given location does not necessarily mean the species does not occur there. The absence of data in the CNDDB is NOT proof of absence and does not constitute the basis for a negative declaration."
>
> Land Use and Non-Vegetated Areas: While barrens do not have dense vegetation cover, the description that they are devoid of vegetation is misleading, there are many species that have adapted to the challenging conditions present on bedrock, rock outcroppings and cliff faces. Many of these taxa are rare and we would strongly recommend avoidance of any serpentine and calcareous soils, alpine fell fields, barrens, biological soil crusts, and other sensitive soil types that are easily eroded or degraded, as determined by a qualified biologist and licensed geologist for staging areas, road construction or any other project activities.

3.4.1.6-4 Wildlife Resources — Scott Dam Area Direct Effects to special status invertebrates

Given the wide distribution of these species (monarch butterfly and western bumble bee) and the relatively small area impacted, we expect impacts to be limited; however, any such

[32] Kajtaniak, D., K. Roberts. 2022. Lower Mainstem Eel River Chinook Salmon Monitoring Project, Sonar Estimation of California Coastal (CC) Chinook Salmon (*Oncorhynchus tshawytscha*) And Steelhead (*O. mykiss*) Abundance in The Lower Mainstem Eel River, Humboldt County, California 2021-2022- Final Report. And Kajtaniak, D Pers. Coms. 2025

impact could be mitigated by plantings of native local nectar species as part of revegetation of disturbed areas.

3.4.1.6-10

Best Management Practices: to avoid impacts, include specific BMPs that prohibit refueling within 100 ft of wetlands, streams, or waterways. It is a violation of FGC 5650 to place pollutants where they may enter waters of the state, thus BMPs need to be specific to the activity, clear, and able to be easily implemented. The buffer to aquatic resources should be a minimum of 100 ft. If there are slopes toward a waterway, larger buffers must be used. There must be spill and containment measures onsite to contain spills if they happen. Equipment must be parked outside these areas with absorbent materials under them.

3.4.1.6-15

Scott Dam Area Direct Effects on Northern Spotted Owl: Please clarify the specific avoidance measures that will be implemented, under what jurisdiction, and at whose direction. Mitigation measures should be determined in consultation with CDFW and USFWS to ensure appropriate actions are taken. We have concerns regarding the language used, as mitigation measures that are only implemented to the extent "possible" or "feasible" are legally insufficient under CEQA (King and Gardiner Farms, LLC v. County of Kern (2020) 45 Cal.App.5th 814, 857-58).

3.4.1.6-19

Northern (American) Goshawk, Golden Eagle, and Other Raptors:
Given the stated sensitivity of golden eagles and goshawks to disturbance, is 500 ft adequate for surveys for active nests?

3.4.1.6-24

Cape Horn Area Direct Effects on Osprey:
Same as above re: “to the extent possible.”

3.4.1.6-25

Scott Dam Area Direct Effects on Other Special Status Birds, last paragraph:
Please note that FGC 3503 prohibits take of active bird nests.

3.4.1.6-31

Cape Horn Area Direct Effects of special status bats:
Pre-construction surveys should include surveys during the maternity season of the prior year. Where maternity roosts are found, exclusion devices should be installed prior to the maternity season of the construction year.

3.4.1.6-42

Potential effects to bald eagle phase 2b:
While phase 2b is most likely a long-term net benefit for bald eagles, for the purposes of disclosure, phase 2b impacts should include the loss of lacustrine foraging habitat due to the draining of the Lake Pillsbury and Van Arsdale reservoirs.

3.4.1.6-53

Scott Dam Area Indirect Effects on bald eagles: This discussion is good. Negative impacts should be acknowledged in the summary as well.

3.5.1.6-1 Wildlife Resources - Potential Effects

Special status invertebrate species: Direct effects should also include potential effects to eggs and larvae.

3.5.1.6-10

Because golden eagle and peregrine falcons are fully protected, PG&E should avoid any take. To ensure none are nesting in the area, please survey before operations commence.

3.5.1.6-21

Unavoidable adverse effects to bald eagle:
We assume PG&E will consult with CDFW on this potential take.

Conclusion

As noted, we broadly support PG&E's proposed action. In addition, we applaud PG&E's efforts to move expeditiously to decommissioning and dam removal while incorporating broad stakeholder agreement that should form the basis for a continuing and constructive relationship between the Russian and the Eel River watersheds long after PG&E's dams have been removed and its FERC license surrendered.

Please consider the corrections and additions we suggest above. Please do not hesitate to reach out for clarification of any point. We look forward to working with PG&E during the License Surrender and Decommissioning process to ensure the health of the Eel River is adequately considered and protected.

Thank you for your time and consideration.

Alicia Hamann
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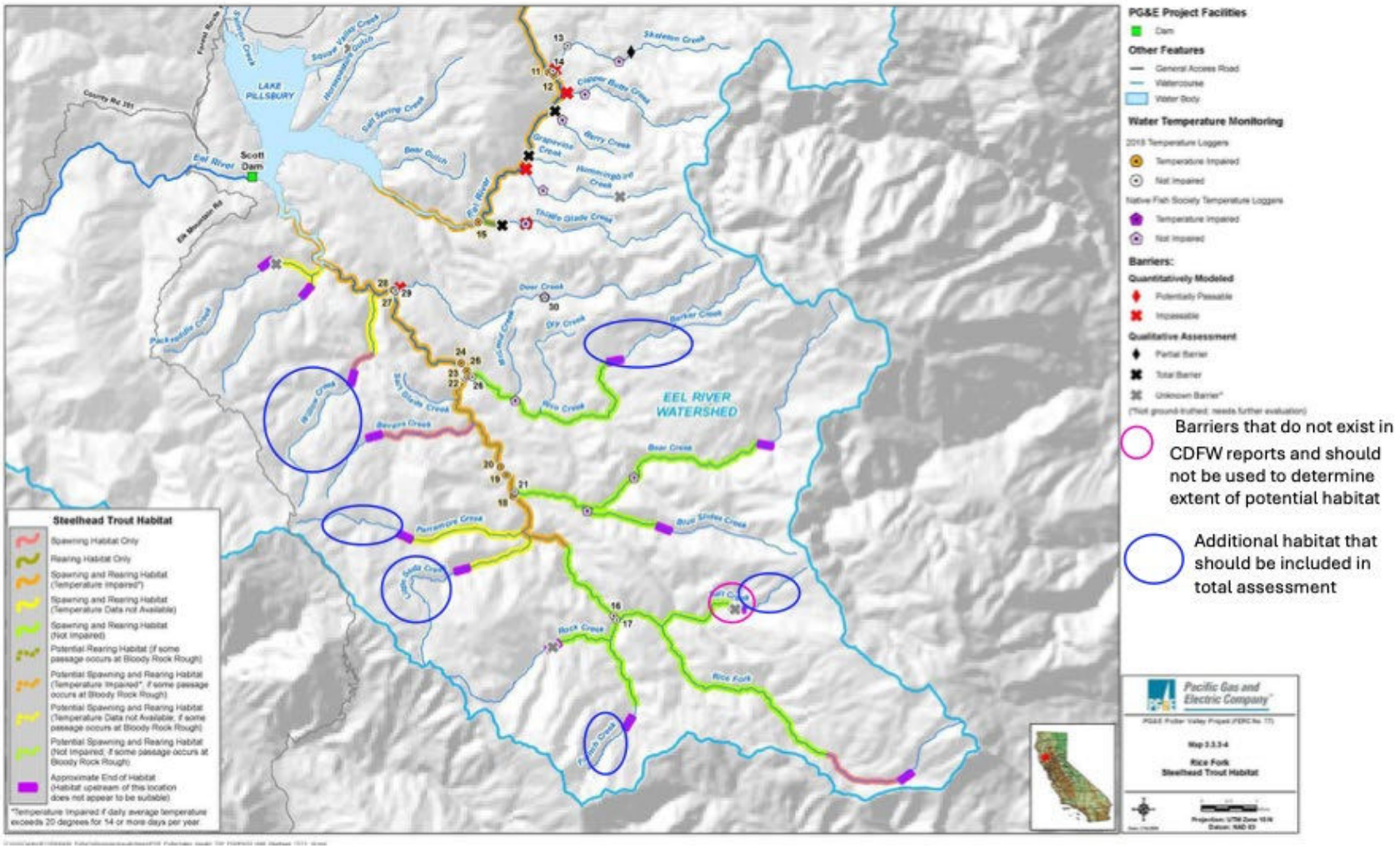
Redwood Chapter of the Sierra Club Water Committee

Scott Harding
Stewardship Associate
American Whitewater

Regina Chichizola
Executive Director
Save California Salmon

Mark Sherwood
Executive Director
Native Fish Society

Map 1 – Potential barriers and additional habitat in the Rice Fork



Map 2 – Potential barriers and additional habitat in the mainstem Eel River drainage.