

COMMENTS

Application for New Major License

Project No.: 2101-084

Docket No: P-2101-084

Applicant: Sacramento Municipal Utilities District

Name of Project: Upper American River Project

Filed by:
Chris Shutes
Hydro Relicensing Consultant
California Sportfishing
Protection Alliance
1608 Francisco St.
Berkeley, CA 94703
Phone (510) 841-6161
e-mail: blancapaloma@msn.com
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Ms. Magalie Salas, Secretary
Federal Energy Regulatory Commission

Dear Ms. Salas:

The California Sportfishing Protection Alliance offers the following comments on the *Supplemental Preliminary Draft Environmental Assessment (SPDEA)* for the Upper American River Project (FERC 2101-074). The SPDEA was filed with FERC by the Sacramento Municipal Utilities District (SMUD) on August 18, 2006.

Background

I entered the Upper American River Project (UARP, FERC 2101) and Chili Bar (FERC 2155) combined relicensing process in May, 2003, as an unaffiliated stream fisheries advocate, having shortly prior thereto been a signatory in the same capacity to the El Dorado Settlement Agreement (FERC 184). I attended about 100 meetings relating to the UARP/Chili Bar proceeding at my own expense.

I have extensive angling experience in El Dorado County, having regularly fished streams affected by the El Dorado Project for over 25 years. I have little experience angling in the UARP streams, partly out of habit, partly because in all my experiences angling in the Highway 50 and 88 corridors since 1964 I can remember exactly one person recommending a UARP stream segment, and partly because, like most anglers, I prefer to fish streams with what I judge to have a reasonable amount of water in them.

While in the El Dorado Project, an annual average of 13% of the watershed is captured by the project, in the UARP the percent of water diverted out of the stream reaches is

staggering. From 1974-2001, 91% of the natural flow at Rubicon Dam was diverted out of the Rubicon River; 86% of the natural flow of the South Fork American River at Slab Creek Dam was diverted out of the river; 81% of the natural flow at Camino Dam was diverted out of Silver Creek. From 1985 (when Jones Fork powerhouse went on line) to 2001, 86 percent of the natural flow entering Ice House Reservoir never entered the South Fork Silver Creek below the Ice House Dam. If one excludes from these figures the 2% of the days when flows were highest (effectively, flood days), the percentages are even more dramatic: Rubicon 95%; South Fork at Slab 94%; Silver Creek at Camino 89%; and South Fork Silver 89%. Current UARP operation releases into these stream reaches a minimum flow with a flatline hydrograph; in none of these reaches does the dam release exceed the minimum flow more than 10% of the time (source: UnimpairedDailyData 8Jul04.xls, from Devine Tarbell & Associates, Hydrology Technical Report, 2004).

On November 1, 2005, the resource agencies, several NGOs, one other unaffiliated individual and I submitted to FERC and to the licensees, the Sacramento Municipal Utilities District (SMUD) and Pacific Gas & Electric Company (PG&E) respectively, the *Comprehensive Agency/NGO Alternative for the UARP and Chili Bar Relicensings* (November 1 Agency Alternative).

In July, 2006, the California Sportfishing Protection Alliance (CSPA) agreed to support my activities within the combined proceeding, and I changed my affiliation from unaffiliated to CSPA.

The California Sportfishing Protection Alliance supports the *Comprehensive Agency/NGO Alternative for the UARP and Chili Bar Relicensings* as *revised* and submitted to FERC on or about October 18, 2006, and proposes that document en bloc as a recommendation to FERC under Section 10(a) of the Federal Power Act.

The Supplemental Preliminary Draft Environmental Assessment

On August 18, 2006, SMUD submitted to FERC a *Supplemental Preliminary Draft Environmental Assessment* (SPDEA), whose stated purpose is to compare SMUD's Proposed Action, as per its July 15, 2005 *License Application*, with the November 1 Agency Alternative. The Executive Summary of the SPDEA states that the Proposed Action is superior to the November 1 Agency Alternative on three main counts: less energy loss, greater capacity, and, astonishingly, "greater enhancement to aquatic resources." (page 2).

The bulk of these comments will principally address the last of these three claims. However, I would first like to address a few aspects of the first two.

Energy Loss

Given the degree to which the UARP is engineered, as noted in the discussion above of the percent of water that is diverted out of four of the major bypass reaches, an energy

loss of 8.1% is reasonable. The 8.1% figure, as opposed to the 9.3% cited in the SPDEA, was arrived at by the Agencies using the ResSim model Agency personnel constructed. The discrepancy is likely in part explained by SMUD staff's misunderstanding of reservoir level requirements, as described immediately below, and also by changes made in the revised Agency Alternative as opposed to the November 1, 2005 version.

Project Dependable Capacity

There is a recurrent theme in the SPDEA (see especially Executive Summary and Conclusions) that the November 1 Agency Alternative will severely affect project dependable capacity (PDC) in two main ways: first, that storage reservoir level requirements restrict project needs at certain times, and, second, that restrictions on reservoir fluctuations at Slab Creek Reservoir will prevent SMUD from building operating, and thus building, its proposed pumped storage development at Iowa Hill.

As the Agencies and NGO signatories to the November 1 Agency Alternative, including me, described in our August 1, 2006 submittal to FERC regarding the economic consequences of the November 1 Agency Alternative, SMUD's contention regarding effects to PDC imposed by storage reservoir level requirements is based on a misreading. In filings to FERC regarding the economic impacts of the November 1 Agency Alternative in both March and May of 2006, SMUD staff took the phrase, "Maintain the reservoir level to meet the monthly average reservoir level shown in the table below," to mean that SMUD, each day, had to meet a certain level exactly, not that it had to meet *or exceed* that level. Having thus imposed on itself a requirement to use water when it didn't need to, staff arrived at the obvious conclusion that on occasion, it wouldn't have water available when it was in fact needed.

In any case, to further meet SMUD's interest, the reservoir level requirements for the three storage reservoirs in the project (Union Valley, Loon Lake and Ice House) were made less restrictive, and the concept of averaging was abandoned, in the revised Alternative which will be submitted to FERC by October 18, 2006.

Regarding the issue of fluctuations at Slab Creek Reservoir, the Agencies and NGOs agree that as presented in the November 1 Agency Alternative, the conditions are excessively restrictive. The revised Alternative has changed this requirement to allow SMUD what we believe is the latitude necessary to operate Iowa Hill when built according to SMUD's needs.

The SPDEA suggests another possible condition that may limit PDC: constraints during certain months on fluctuations at Gerle Reservoir. While this seems to this author somewhat far-fetched, CSPA would be glad to consider a less restrictive proposal provided SMUD could demonstrate that the interest of multiple opportunities for fish passage out of Gerle Reservoir into Gerle Creek during fall spawning by brown trout could be met.

Air pollution

The SPDEA goes to great lengths to describe how the proverbial air quality sky is going to fall if the November 1 Agency Alternative is adopted instead of SMUD's Proposed Action. For example, on page 14 of the Executive Summary, it states that the differential in carbon emissions is 20, 150 metric tons annually. This certainly sounds like a very big number.

When put in perspective, however, this figure becomes less convincing. If one assumes that the average vehicle in Sacramento County (roughly, SMUD's service area) is driven 13,000 miles per year, gets 20 miles per gallon, and produces 19 lbs of CO₂ per gallon, the 20,150 metric ton per year differential works out to the equivalent of about 3600 vehicles added to the county's overall vehicle numbers. From 2002 to 2004, automobiles registered in Sacramento County increased in number by over 50,000, and trucks registered increased in number by over 20,000 (source: California Statistical Abstract, January, 2006 http://www.dof.ca.gov/HTML/FS_DATA/stat-abs/TOC_PDF.HTM, table J-4 and January, 2003, http://www.dof.ca.gov/HTML/FS_DATA/Fs_home.asp, select 2003, see table J-4). Thus, the regional air pollution differential between the November 1 Agency Alternative and SMUD's Proposed Action, not even taking into account the errors SMUD made in evaluating the November 1 Alternative or the changes made in the revised Alternative, is just over *one tenth of the air pollution attributable to annual regional growth in vehicle traffic alone*.

Nobody is in favor of air pollution. SMUD, to its credit, has an exemplary record on numerous fronts in promoting reductions in air pollution. However, it is not reasonable to trade thirty to fifty years of bad river and stream management for what is clearly a small reduction in air pollution in the context of other forces at play in the region.

“Greater enhancement to aquatic resources”

The unspeakable bravado of this claim makes it very difficult to know where to start. Shall it be with the notion that mimicking the natural hydrograph is a “theoretical concept” (Executive Summary, page 4)? Perhaps the notion that high flows or high flow events are bad for trout based on a ham-fisted application of PHABSIM modeling? The static vision of bedrock streambed geomorphology? Or the stupefying proposal that ecological pulse flows should take place during the time of year when the natural hydrograph is close to its lowest flow period?

We shall address each of these self-serving assertions. The appropriate place to start is with the foundation of the SPDEA's contention, that fisheries and just about every other aspect of stream ecology in the UARP are hunky-dory.

First, however, an aside. It is our belief that this document, the SPDEA, does not represent SMUD as an entity and is not a representation of that entity's collective values. It represents, rather, the expression of an extremist ideological sub-group within SMUD staff, which believes that the interest of SMUD is best served by using any and every

rhetorical device to argue for a reduction in instream flow and a minimization of monetary expenditure. It flies in the face of SMUD's stated core values and what we believe the values of its Board of Directors to be. The goal of the SPDEA is not to represent the fullness of SMUD's interest as a public utility, but is purely and simply to win. I shall not refer to the authors of this document as SMUD, or even as staff. I shall simply refer to them as "the authors."

Fisheries

On page 17 of Section 5.3.3 of the SPDEA, "Aquatic Resources," the authors spell out the standard they would like to require that fisheries protection, mitigation and enhancement measures rise in order to be adopted by FERC:

Methods to determine the "health" of individual fish, fish populations and fish communities in California have evolved from the requirement in the Fish and Game Code of California that owners of a dam release sufficient water from the facility to keep in "good condition" any fish that may exist below the dam (see section 5937 of the code). The phrase "good condition" is essentially synonymous with maintaining the "health" (broadly defined) of the aquatic environment. Among the first efforts to better evaluate the status of fish communities was the work by Leidy (1993, p. 170-209) who defined "good condition" in his assessment of the fishery resources of Bear Creek, San Bernardino County, California, as part of testimony before the SWRCB.

The authors then proceed to offer further history, including some cases in which the California State Water Resources Control Board required a similar determination, which in some cases even had a connection with FERC, and which FERC, moreover, did not in the cited context contest. These were not, however, FERC proceedings, but rather were proceedings of the State Board. The authors conclude, "Because there is precedence for this approach and because the approach has been acceptable to the Agencies and FERC, SMUD's analysis follows the SWRCB's lead in its assessment of whether the fishery resources are in a healthy condition" (Aquatic Resources, p. 18).

The legal imprecision is impressive. The standard imported here is a far cry from the Federal Power Act's requirement of giving equal consideration to power generation/capacity, socioeconomics, and environmental resources such as air quality, water quality, fish and wildlife, and protection of recreational opportunities. In the blink of a paragraph, the authors transport us from equal consideration to a burden of proof that requires a finding of imminent harm or a threat to the continued survival of the resource. Failing to meet this burden of proof shall henceforth in the document result in a finding of "healthy," otherwise stated as "in good condition," an absolute category which, when bestowed by the SPDEA's authors on a fishery (or, later on, other aquatic ecosystem components), almost completely precludes the need for any change whatever in the operation of the stream in question.

The legal imprecision finds its worthy complement in its scientific counterpart. The authors of the SPDEA spend six pages mounting a scorched earth assault on the Agency use of Eric Gerstung's 1973 study of trout populations in the Sierra Nevada Mountains as a tool to aid in the management of the UARP stream fisheries. "Fish biomass is but one piece of information that can be used to assess fish health; it should not be used in isolation, but rather, as was done in the PDEA, should be used as one of several assessment tools. Nor should fish biomass be used in a comparative mode to Gerstung's data to evaluate impairment and set fish management goals." (SPDEA, Aquatic Resources, p. 12). "While Gerstung noted the biomass information would allow biologists to "grade" any stream against others, he did not state his data should be used to set fishery management goals. It is significant to note his observations did not relate biomass to fish population or community 'health,' and he makes no conclusion about the 'health' of the fishery...." "Instead, the establishment of management goals requires a more comprehensive set of analytical tools" (p. 14).

My takeaway from these comments and others presented in the discussion but not cited are: (1) fish biomass is important, but can vary greatly and should not be the only metric for fishery management. (2) A better method for evaluating impairment is available, and it is important to set fish management goals. (3) Gerstung did not erect "health" of a fishery as an absolute category. (4) The authors of the SPDEA are going to propose a set of analytical tools for evaluating and managing stream fisheries that is superior to the Agency use of Gerstung for all Gerstung's acknowledged ambiguities.

The SPDEA goes on to propose a new approach to evaluating fisheries, which borrows from a 1998 article by Peter Moyle, one of the pre-eminent fisheries biologists in California: the individual fish must be healthy; the fish population must consist of multiple age classes and be capable of survival as a population; and the "fish community," different species of fish, must exist in certain relation to one another (SPDEA Aquatic Resources, p.18). The authors state immediately thereafter:

Because the Moyle et al. (1998) discussion of fish communities focuses on native fish assemblages, the community criteria are only applicable to the 12 to 14 miles of streams affected by the UARP where native fishes originally occurred, and not to those streams where they were introduced. ...Notwithstanding the limitations of the fish community metrics identified by Moyle et al. (1998) to fish communities currently occupying historically fishless waters, the evaluation criteria for individual fish and fish populations are highly useful in determining if the fish found in these historically fishless waters are in healthy condition. Note that this evaluation approach does not rely on fish biomass or fish abundance. Small fish populations can be just as healthy (or unhealthy) as large fish populations (p. 19).

Now that is quite a mouthful. The SPDEA just went after Gerstung, and the Agencies' use of Gerstung as a management tool, based on a huge list of rebuttals: fish populations are highly variable [though the SPDEA opposes multi-year monitoring of fisheries]; angler pressure skews the result [although there is not a single piece of evidence in the record that there is heavy angler use of any stream reach in the project, and only

incidental mention suggesting heavy use in one, the Rubicon reach]; the presence of different kinds of fish causes inter-species impacts [even though the authors agree that this applies for the most part to a small portion of project streams]; statistical confidence levels may skew the result [though there is not a single stream reach with anything close to eye popping high numbers of fish – one would assume that the statistics variation would occasion overstatement as well as understatement of some of the fish biomass numbers]; there are no streams in the UARP that were included in Gerstung’s study; the types of streams in the project are different than those studied by Gerstung; Gerstung’s study was geographically biased; and so on.

Yet although one of the three main criteria of the Moyle 1998 discussion does not apply, this doesn’t give the authors pause for a moment. On the contrary, “the evaluation criteria ... are highly useful.” Moyle’s 1998 article not only does not deal with a “historically fishless” river system, it deals with the restoration of native biodiversity to a watershed (Putah Creek in California) that Moyle and his allies argued in court presented “a remarkably intact native fish fauna has persisted in a small section. Therefore, this creates a special responsibility to enlarge this relict assemblage (quoted in Moyle et al, 1998).” Compared to the difference in context between Gerstung and the UARP, Moyle’s study of Putah Creek in relation to UARP streams, especially *in consideration of the management goals* accepted both by the Agencies and by SMUD in the technical working groups, is much further removed in its applicability.

What are we left with? Referring to the takeaway points from above: Biomass has totally disappeared from the equation, *as has management*. If the fish are not sickly and they are capable of surviving, the fishery is deemed “healthy” *and no management measures* are, as the authors repeatedly put it later on, “warranted.” Minimal changes in flow measures should be adopted, and there should be *no monitoring of fish numbers for the next fifty years*. We are going to read through two hundred pages of discussion of individual stream reaches, and at or near the beginning of the discussion of each reach we shall dutifully be informed that each fishery there is “healthy” or “in good condition.” The authors propose to do zip, zilch and zero to try to increase the natural production of fish in project streams.

The authors state that “the approach adopted in the Agency Alternative is inconsistent with generally accepted scientific practices” (SPDEA Aquatic Resources, page 11). This gets to the crux of the matter, which is not a scientific argument but rather a radical conservative argument about the use of science. Carried over from the legal frame, the scientist is required to prove imminent harm or a threat to the survival of a resource, *or else to accept the pre-eminence of economics*. The phrase “generally accepted scientific practices” means nothing more or less than subscribing to this perspective.

On page 23, the authors state: “The PDEA relied upon the ALP habitat time series analysis because of its greater accuracy.” While Agency science and scientists are not loved, scientific-sounding words are revered. The PDEA relied on a particular use of IFIM in order to justify a minimal need for instream flow. This use of science, which is

really what is at play, is economic and ultimately political. But a scientific description is employed to characterize this use.

The authors of the SPDEA also love scientists, at least those who are at a distance. The *authors' use* of Peter Moyle's 1998 analysis is canonized as being purported by Moyle himself: "Fish at Site RRD-F1 Are Healthy Based on the Moyle Analysis Approach" (Aquatic Resources, p.34).

The SPDEA contains numerous references which contend that Agency proposals and analysis are "incomplete" and/or "inconclusive." Again, the burden of proof imputed to the Agencies is that if that Agencies cannot demonstrate beyond the shadow of a doubt that they have a perfect or at least substantially fault-free argument on every detail of each individual point *such as would be required in a criminal proceeding in a court of law*, the argument or approach should be *discounted entirely*. The Agencies weight PHABSIM less heavily in high flow periods than during periods of base flow; there are other ecological benefits to high flows that outweigh a short term diminution of weighted habitat area. But the authors of the SPDEA do not take this "into account." To do so would arrive at a conclusion they don't like. Under the guise of disagreeing with the methodology, the authors of the SPDEA really take issue with the Agencies' conclusions.

A reasonable approach if one questioned the Agencies' methodology would be to accept a level of management that does not affect the capacity or overall core use of the project, to monitor that management over time, and to adjust management based on the monitoring. The proof of the pudding would then be in the eating, not in the a priori declaring that the underlying rationale might be flawed and that therefore the resource would be better off staying as it is, just this side of starving by being provided survival rations of instream flow.

Another approach that the authors of the SPDEA bring forward is to suggest that their approach is one that was developed "collaboratively," implying that there was buy-in from the Agencies and other stakeholders to the approach that the authors are now championing (see, e.g., Aquatic Resources, p. 24; see, similarly, p. 28). The implication then is that the Agencies have somehow strayed from an earlier spirit and have chosen an unfair, contentious, or simply unscientific path. The authors of the SPDEA can apparently not imagine that agreement on study plan *design* could nonetheless reasonably lead to a difference in study result *interpretation*. What is left is then attributed, in so many words, to Agency bad faith: "This series of agreements, all conforming with a stream network-based IFIM study, was not honored in the Agency Alternative" (p.28). For two hundred plus more pages, the SPDEA authors lay claim to the Alternative Licensing Process, inferring that all the studies and science support their conclusions. Arguments supporting the SPDEA authors' desired outcome are thus presented as, for instance, "Evaluation of Environmental Effects Using *ALP* Habitat Time Series Analysis" (p. 242; emphasis added).

For the record, divergent views of science and its use have been present throughout the UARP relicensing, especially in the often dysfunctional Aquatic Technical Working

Group. The insistence by the faction of SMUD staff on the view whose expression reaches its zenith in the SPDEA was the source of much of the paralysis of the overall process.

Prior to making their scattergun assault on the Agencies' use of Gerstung, the authors of the SPDEA conduct a tedious discussion of the lack of "native" fish in most of the project reaches. The authors know full well that, for *management purposes*, the Forest Service considers rainbow trout as the "native" species of the West Slope of the Central Sierras, and that this is the sense in which the term "native" is used in the November 1 Agency Alternative and accompanying Rationale. Were precision the issue, "wild" would surely suffice, at least as far as trout are concerned. "Wild," however, is generally held to have a positive connotation. An alternative term was chosen: the authors impose the word "naturalized," which is not only stilted but metaphorically suspect (it is hard to imagine a license plate holder that advises, "catch and release naturalized trout").

There is a further ulterior motive. The authors wish to discount discussion of fish communities where such discussion is used by the Agencies to suggest that the presence or predominance of non-game fish species, as opposed to trout, is symptomatic of a problem with the ecosystem. This argument has arisen especially in the high elevation reach of the Rubicon River below Rubicon Reservoir, not only in the FERC process, but also in a water rights matter. By declaring in effect all non-native fish to be created equal, the authors of the SPDEA pre-empt any site-specific discussion of fish assemblage that might push in the direction of a change in stream management.

The tactic of demeaning the importance of trout is happily set aside in the SPDEA, however, when it suits the authors to use statistics based on habitat simulations for trout in order to plead for lower flows. Perhaps the clearest elucidation of the self-serving nature of the SPDEA can be found in considering its arguments based on discussion of the application of IFIM and weighted usable area (WUA).

The authors deploy four lines of IFIM attack in the offensive against instream flow. They claim that: (1) the Agencies only consider habitat for adult trout; (2) the Agencies use WUA for inappropriate times of year; (3) the Agencies only consider the stream reaches immediately downstream of dams; (4) the Agencies ask for too much habitat, seeking 100% of WUA in some months in some water year types, when 80% would be, like attractor fishing flies, near enough. Note that on each of these fronts, acceptance of the SPDEA authors' argument would result in reduced releases from project reservoirs. Let's examine each one.

1. First, it is not true that the Agencies focused on adult trout to the exclusion of other life stages. In certain reaches such as Gerle Creek below Loon Lake, spawning was heavily considered. But be that as it may, it is appropriate, all else being equal, to give greater emphasis to adult trout than to juveniles or to spawning. As part of the TRPA Angling Mortality Analysis, Condition 17 binder of the of Rock Creek-Cresta (FERC No. 1962) license implementation, a study is cited that gives the cumulative trout survival from egg to young-of-the-year as 2%. Only about five out of every two thousand make it to age

two. The numbers drop off going forward. It makes sense to protect the life stage with the fewest numbers. And, though this is not an exclusive criterion, speaking as an inveterate angler, it doesn't offer me a lot to know that a stream is full of three inch fish if there is a scarcity of eight-, or even ten- or twelve-, inchers.

2. If anyone uses WUA to analyze conditions at inappropriate times of the year, it is the authors of the SPDEA. This is a classic case of taking the map for the territory. The time when it is truly inappropriate to rely on IFIM is during the high flow period when flows are high enough to provide geomorphic and related biological benefits. I have fished the nearby Silver Fork of the American River and its tributary, Caples Creek, on the descending limb of the hydrograph every chance I could get since 1978. I specifically target this period, even when others whine that the water is too high. Please don't tell me that an extended descending limb of the hydrograph is not beneficial to hatches, that it is harder to fish under such conditions, or that the poor little fishies are suffering due to too much flow. What slams the fishing is when the licensee gains control of the system and abruptly drops the flow precipitously. It is precisely a high minimum flow in this period that will allow the hydrograph a softer landing, and extend the best trout-feeding and angling period of the year, often by weeks.

As for the contention that trout do not feed and are essentially dormant in the winter (SPDEA, Aquatic Resources, pp. 29-30), Needham and Jones (1959) ("Flow, Temperature, Solar Radiation and Ice in Relation to Activities of Fishes in Sagehen Creek, California"), cited in the revised Rationale Report for the revised Agency/NGO Alternative, provide a very different view of trout behavior in winter. More slowly, certainly, but feed and move about they do. In a more mundane light, fishing literature abounds with stories of fanatics of differing degrees fishing for trout in icy conditions wherever it can legally be done. John Gierach's "All This Will Be Under Water," a classic description of February angling in Colorado's Cheesman Canyon, is but one of many such tales (see Gierach, *The View From Rat Lake*).

3. The unimpaired tributaries downstream of UARP dams vary in their distance from the dams and in their contribution of accretion. From July through October in most years, there is very little almost no accretion in most of the stream reaches in the UARP. It is perfectly reasonable to focus on the stream reaches just downstream of dams, because ***these are the reaches where the project has the greatest impact and where flow regimes will have the greatest benefit.*** There is an implied plea in the SPDEA that the project impact is reduced as you get further downstream. Barring spill (which creates a host of different major problems such as fluctuations), the timing of high flow in the bypass reaches is moved forward by the presence of the project, the more so the farther downhill one goes. But leaving this aside, it is simply unacceptable to maintain that impacts to the top of bypass reaches can be ignored or treated less seriously because of inflow farther down. A corollary of this logic, perhaps even worse, is when the SMUD License Application proposes to continue the gaging of South Fork Rubicon River below Robbs Dam and Gerle Creek below Gerle Dam on a combined basis below their confluence; at any given time, flow could be reduced to a real trickle in either reach, showing complete

indifference to the respective fisheries and other aspects of the aquatic ecosystems upstream of confluence.

“Application of the river network concept in time series analyses” (p. 23) sure sounds impressive. Far as I can see, what it says to the angler is: blow off the top part of each reach, hike downstream, and hope that you find some water.

4. The SPDEA complains that the Agencies, in certain months of certain water year types, ask for flows in the UARP that represent 100% of WUA for adult trout. The authors inform us that “decision-makers have generally used a threshold of 80% of maximum WUA to ensure adequate habitat protection. This threshold has often been used in relicensings to define adequate habitat protection for target species” (pp. 23-4). Here the authors are hoisted by their own site-specific petard. In the neighboring El Dorado Project, which captures less than 20% of the annual unimpaired flow, many of the same Agency personnel agreed to flow numbers based on WUA that was 80% or even lower. The flow for the South Fork American River below Kyburz bypass reach in that project (the water in the El Dorado Project is for many miles transported within the natural streams) is in fact set for most months at well below 80% of WUA, in recognition that, to balance interests, any other greater flow requirement would unduly affect other needs, including power generation, consumptive water use and lake levels. The UARP diverts a far greater percentage of the annual unimpaired flow, as discussed above, and has ten times the storage. In below normal to wet water years, 100% of WUA in a couple of months in the UARP is not excessive. In critically dry years, 80% is, as the SPDEA says, “adequate.” For the record, we do not believe that in a highly engineered, storage-rich project, “adequate” is an acceptable default level of protection for instream flow.

The reign of the Absolute over other ecosystem attributes

The reign of the absolute is extended to other ecosystem components as well.

Interspersed in two hundred pages, we read again and again that the benthic macroinvertebrates are healthy, healthy, healthy. Of course, that’s after the authors of the SPDEA do a little metric shopping: “Using just one composite metric to make determinations about the health of aquatic macroinvertebrates is fraught with the same problems discussed previously regarding the use of fish biomass or abundance to gage fish population health” (p. 22). Though the argument is less developed than the discussion of fish, the frame is the same.

Water quality too, is excellent throughout the project. Oh, except when it’s not.

In a somewhat different twist, foothill yellow-legged frogs (FYLF) are, with the exception of the Camino Dam Reach, absolutely irrelevant, because SMUD’s consultants couldn’t find any.

The attitude towards FYLF especially calls for comment. The Executive Summary of the SPDEA states on page 7: “Three independent amphibian surveys conducted in the Slab

Creek Dam Reach did not reveal the presence of FYLF; therefore, flows to enhance FYLF breeding habitat are not warranted.”

In the El Dorado Project, many sites did not reveal FYLF in three years of relicensing studies. Yet in studies conducted in the two years after settlement was reached, frogs were found at several locations on the South Fork American, not far upstream of Slab Creek Reservoir, where they had been looked for, but not found, before. (Similar findings of Mountain Yellow-Legged Frogs were made in the El Dorado Project post-relicensing studies, where these higher elevation relatives of FYLF had, equally, not been found in licensing studies). If SMUD continues to allow unmanaged untimely spills below Slab Creek Reservoir, it is self-fulfilling prophecy that frogs that are there will likely not survive, and those that might come back won't. Without a new valve at Slab Creek Reservoir, the likelihood of spills will only increase if Iowa Hill comes on line.

The utter lack of precaution is not a scientific decision, but a political one. In our opinion, it is also very much not in SMUD's interest, especially considering the likelihood that FYLFs are likely to be listed under the Endangered Species Act in the next several years. It is not in SMUD's interest as a practical matter, since it will likely force a license re-opener, and it is not in SMUD's interest politically, as an entity that prides itself on its environmental responsibility. The attitude expressed in the SPDEA regarding foothill and mountain yellow-legged frogs is perhaps the most striking cases of an ideological position that has lost sight of the interests it purports to defend.

The SPDEA's allegation of "significant impact" by increased minimum flows (see esp. Aquatic Resources, pp. 196-7) to the existing populations of foothill yellow-legged frogs in the Camino Reach is wildly speculative. It is based on a modeling exercise and assumes that breeding locations will not change based on the slight change in flow called for by the Agencies. The Agencies have consulted extensively with their frog expert on the minimum flows below Camino Dam, and have slightly altered the breeding season flows in wet years.

Geomorphic issues, especially as they relate to stream fishing

Regarding geomorphic issues, the SPDEA makes four broad types of responses: (1) There isn't a problem. (2) If there is a problem, it wasn't caused by the Project. (3) Pulse flows or other flow measures cannot improve any problems that exist. (4) Pulse flows would make the problems worse. At many times these lines of argument blend together and become confused, leading almost to a multiple choice kind of arrangement: the reader is left to select the best reason why an Agency proposal should be rejected.

The authors of the SPDEA for the most part limit the geomorphic effects of the project to sediment transport. They suggest that since so much of the project is characterized by bedrock dominated channels, the geomorphic effects of the project are limited. Bedrock geomorphology is presented as static; thus, when asked for monitoring of geomorphology in several reaches, the authors respond: "The first two sites are in bedrock- and boulder-

dominated transport reaches (Camino and Slab Creek) where geomorphic properties are insensitive to the hydrologic regime” (Executive Summary, p. 9).

McBain and Trush, in “Attributes of Bedrock Sierra Nevada Ecosystems” (2004, cited in the revised Rationale), present a very different view from this static model: “Bedrock channels are highly dynamic depositional environments” (p. 2). “The occurrence of smaller hydraulic controls within larger hydraulic controls gives rise to a complex, nested channel morphology that provides diverse aquatic and riparian habitats” (p. 3). McBain and Trush stress the importance of variability in all aspects of annual hydrology, including base flows and high flows, even when the high flows are not large flood events. If anything, this would argue for more variability in the flow regimes presented by the Agencies, not less. However, no good deed goes unpunished in the SPDEA, and an attempt by the Agencies to limit the use of water and to avoid facilities modifications on at least the Loon Lake reach is held out as so ineffectual that “the pulse flows will not provide an effective means of sediment transport” (Executive Summary, p. 16).

Another impact of reduced high flow events and a flatline 8 cfs hydrograph on Gerle Creek is riparian encroachment, which makes fishing on much of the reach a trick when it ought to be a treat. The SPDEA states: “The condition of riparian vegetation in the reach is summarized in the ‘Existing Conditions’ statement of the Agency Alternative Rationale: ‘Lack of high velocity flows within the bankfull channel results in encroachment’ (p.19). This characterization overstates the potential benefits provided by the minimum releases required in the Agency Alternative” (Aquatic Resources, p. 103).

To begin with, let’s first consider whether or not there is a problem. Look at the photographs on pages 85, 94, 95, and 96 of the Aquatic Resources section of the SPDEA. Consider how you as an angler would approach these locations to fish in them at a flow of 8 cfs. Remember that you’re almost surely going to spook fish if you wade at this flow, and remember also that you have to get to the location and get in the water without tearing up your waders on the willows, tag alders or what have you. Now I’m a pretty good roll caster, expert in fact, and I’ve taught dozens of people how to fish brushy streams. But I’ve got to say, fishing from the bank in these locations looks tough. Really tough. Even the photo on page 89, which looks manageable, depicts an area which, when I fished it in August, 2004, was made difficult to get to and to fish because of brushy riparian vegetation.

The SPDEA says that “the level of [fish] production at this site [depicted on p. 89] is good considering the intensity of angling pressure at Gerle Creek. I certainly didn’t see the pressure. Granted, it was a weekday, but I was the only angler in the area. More telling, there were no fishermen’s trails along the mile or so of stream that I fished (similarly, there were none below Silver Creek Campground on South Fork Silver Creek below Ice House Road when I visited it in July, 2003). There is nothing in the record that I have seen that indicates heavy stream angling pressure in the UARP. The Fishing Analysis presented to the Recreation Technical Working Group in November, 2003, stated that 2 out of 698 people surveyed gave stream angling as their principle reason for visiting the project (this document will be submitted along with the revised Rationale).

If any reach is worthy of a try it and see approach, it is the reach of Gerle Creek below Loon Lake Dam. Habitat modeling shows great potential, and fish numbers at some sites were promising in spite of anemic flatline flows. Water that flows in this reach can be re-captured at Gerle Reservoir and run through up to five powerhouses. Remember also that Loon Lake is not simply an onstream reservoir on Gerle Creek; it is also offstream storage for water from the Rubicon drainage. It is inappropriate to consider flow measures in Gerle Creek solely in relation to Gerle Creek's unimpaired hydrology.

Enhancements to Gerle Creek flows are completely appropriate as mitigation for project impacts to the Rubicon, all the more so since storage in Loon Lake is available to provide flow-related enhancements/mitigations, whereas storage is unavailable in Rubicon Reservoir to provide more than very minimal fall flows. Note that the pulse flow and minimum flow proposals for Gerle Creek are to be implemented in conjunction with the Gerle Creek Channel Stabilization Plan, which may involve mechanical restoration to complement the flow measures.

As for the proposed September ecological pulse flows in the Ice House reach of South Fork Silver Creek: in a September time period, the stream will get no help whatever from the tributaries. in mobilizing sediment. The revised Alternative broadens the temporal window for pulse flows in this reach to any time during the winter through peak snowmelt period, and asks that the pulse flow be timed as close as reasonable possible to coincide with high tributary inflow. Biologically, ecological pulse flows (or boating flows) in September are likely to have negative impacts to aquatic insects, and to preclude the possible re-establishment of foothill yellow-legged frogs in the reach. This would likely set the stage for round two of the controversies that have plagued the Rock-Creek-Cresta (FERC No. 1962) license implementation. No one wants to go there.

If there are negative impacts to rainbow trout spawning because of boating flows in May and June, and this has an effect that is limiting of the resource, the appropriate monitoring will reveal it, and options can be considered. The worst-case scenario we can imagine is that the reach might become more heavily populated by brown trout than by rainbows. If this is the price for balancing the myriad interests in this reach, CSPA can support it.

Hardhead

The third and final "significant" impact to aquatic resources identified by the SPDEA is the effect on hardhead of putting more water back in the Slab Creek Reach. The Alternative has substantially reduced summer base flows from earlier iterations. In July and often into August, flows in the Slab Creek Reach will often be lower than flows in the reach below Akin Powerhouse (Project 184), upstream of Slab Creek Reservoir. The veracity of the SPDEA's speculation of impacts to hardhead caused by a small differential in summer base flows that can easily be resolved by monitoring. Moreover, there is a difference in opinion not only about likely impacts, but also over how resources in this reach should be balanced. While SMUD clearly has an economic/generation interest in reducing minimum streamflows in this reach, the Agencies and NGO have no economic interest in increasing instream flow. The effusive concern over impacts to

hardhead that might be caused by Agency proposed flows in the Slab Creek reach is based on reasoning no less speculative than the opinion offered by SMUD in its License Application that an Iowa Hill intake in Slab Creek Reservoir will not entrain hardhead.

“Theoretical concepts such as ‘pass- through’ flows and mimicking the natural hydrograph”

If the fact that water runs downhill is a theoretical concept, it is not a difficult one, and it is certainly part of the empirical record in the UARP relicensing. The principle of passing through required flows from a stream reach to the reach downstream was one of many complex and overlapping considerations used by the Agencies to craft the flow regime proposed in the Alternative. It does not require that the same percent of water relative to the unimpaired hydrograph in each reach be left in the river. It simply aims not to leave less water, as a gross quantity, in a stream reach than was left in the reach above it. This is a principle, not a dogma, and was notably not followed for the Gerle Dam reach, where water left in the reach would exit the system.

Mimicking the natural hydrograph is an approach that has been used in numerous FERC relicensing processes, including at least five on the west slope of the Sierras. Benefits were recognized by FERC staff in the recently filed Environmental Assessment for the Poe Project (FERC 2107): “Although the staff minimum flow alternative would result in some additional cost to the project, it would ... provide a substantially better level of protection for aquatic habitat that the PG&E [flatline] alternative, particularly related to net increases in habitat, *provision of a more natural variable flow regime*, and reduction of water temperature” (p. 212, emphasis added).

Mimicking the natural hydrograph, both in relation to peak and non-peak flows, is cited in Poff et al (“The Natural Flow Regime,” 1997) on numerous major and minor river restoration projects in various parts of the country, including the Sierras, along with the specific benefits and ecological purposes (p. 779). Moreover, the article cites numerous flow-related triggers for aquatic flora and fauna. Notably, this contradicts the argument in the SPDEA that photoperiod is the dominant trigger in many aspects of trout behavior.

The SPDEA cites the article by Poff, et al, (p.781) for different purposes:

In human altered rivers that are managed for incremental improvement, restoring a flow pattern that is simply proportional to the natural hydrograph in years with little runoff may provide few if any ecological benefits, because many geomorphic and ecological processes show nonlinear responses to flow. Clearly half of the peak discharge will not move half the sediment, half of a migration-motivational flow will not motivate half the fish, and half of an overbank flow will not inundate half the floodplain

It is in fact the SPDEA that is arguing on a conceptual, not site-specific level. The second sentence of the citation has no direct relevance to anything proposed in the Alternative. The use of the citation does nothing more specific than to suggest that a principle should

be rejected because it is possible to misapply it. The Rationale provides dozens of references and discussions of specific issues relating to the formulation of flow regimes in each reach. The argument about “site-specific data” on page 10 of the Aquatics Resources section of the SPDEA goes once again to the view that there is no such thing as a general or overlying benefit, and that each proposed reduction in the amount of water that passes through a powerhouse must be justified on a “beyond a reasonable doubt,” before the fact, cause and effect basis. It is the same perspective that suggests that human activity should not be modified to alter global warming because something else might be causing it.

Conclusion

The SPDEA’s assertion that Proposed Action in SMUD’s Application for License will provide greater aquatic benefits than the Agency Alternative is unsubstantiated.

CSPA recommends that FERC adopt the revised Comprehensive Agency/NGO Alternative as the basis for the new UARP license.

Respectfully submitted

Chris Shutes
Hydro Relicensing Consultant
California Sportfishing Protection Alliance.

Certificate of Service

I hereby certify that I have placed in the U.S. Mail on this day, October 17, 2006, in Berkeley, California, a true and correct copy of the preceding comment letter regarding the Upper American River Project from Chris Shutes, on behalf of the California Sportfishing Protection Alliance, to the Federal Regulatory Energy Commission dated October 17, 2006, addressed to each of the parties on the Upper American River Project service list.

Christopher R. Shutes

Submission Contents

California Sportfishing Protection Alliance comments on Supplemental PDEA for
new UARP license
UARP.doc..... 1-17