

## Executive Summary

*The mouth of the Eel River, the third-largest river in California, is nearly two hundred miles north of the mouth of the Russian River, yet high up at the rivers' headwaters, only two miles naturally separates these two rivers (see map, Figure 1). In 1908 humans breached that separation, completing a tunnel to link the two river systems. Eel River water travels through this tunnel to turn turbines to generate electricity below, in Potter Valley. After being used for this purpose, Eel River water is released to flow into the East Fork of the Russian River.*

*The complex of facilities (including dams, reservoirs, tunnel, and machinery) used to store water and generate electricity is currently owned by PG&E and is known collectively as "The Potter Valley Project" (PVP). The Potter Valley Project has been characterized in a Sonoma County Water Agency Report as "not economic as a hydroelectric project." Furthermore, the dams have contributed to the collapse of the Eel River salmon populations which once "supported runs of salmon and steelhead trout that were estimated to exceed one-half million fish" (Dept. Fish and Game 2001, p. 57).*

Our previous study primarily examined the downriver impacts on salmon and other market and non-market values related to restoration of natural water flows to the Eel River. This report focuses on the benefits to Mendocino and Lake Counties from removal of dams on the Eel River. Our major findings are summarized below:

**Direct PVP dam removal costs are estimated to be \$33 million.** This includes both physical removal of the dams and other facilities, and addressing sediment and restoration needs.

**A total of nearly 600 jobs could be directly and indirectly created during the dam deconstruction and habitat restoration project period.** The study estimates that 467 local temporary jobs<sup>1</sup> will be directly created by this deconstruction and restoration. An additional 112 local jobs are estimated to be indirectly created from the increased demand on support industries to the project.

**The direct and indirect economic impact from the Project is estimated to total \$49 million.**

**Because of the timeline for applying for relicensing of hydroelectric facilities, now is not too early to consider deconstruction and financing of the deconstruction of the PVP dams.** Prior to PG&E's filing for bankruptcy it was attempting to sell by auction its hydroelectric facilities. Now that PG&E has emerged from bankruptcy, questions become increasingly important and timely as to who pays for deconstructing hydroelectric facilities, including aging dams. In addition, if the PVP cannot be sold, and if operation and maintenance costs exceed revenue, PG&E might decide to cease operating PVP. This would bring its current license into question and invite the proponents of restoration to push even harder for dam removal. Planning for deconstruction takes time, and the many sources for financing deconstruction of the PVP need to be investigated and developed.

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<sup>1</sup> "Job is defined here as "one job for one year"—i.e., the equivalent of one person employed full-time for a year. A local job is defined as a job in Mendocino and Lake Counties.

**Nature-based tourism benefits to Mendocino and Lake Counties, counting both rafting and increased fishing, are estimated to exceed \$2,000,000 annually.** The value of nature-based tourism and recreation can be measured in several different ways: expenditures per day per angler, expenditures per fishing trip, the value of the time and travel to and from the fishing site, the value to anglers in excess of what they spend, the willingness of anglers to pay so that a fishing opportunity can exist, and the value from fishing associated with increased stream flow. Benefits from increased rafting opportunities have previously been estimated to be over \$3,000,000, approximately half of which would benefit Mendocino County (the remainder going to Humboldt County) (CEED 2002). In addition, there is “passive” or intrinsic value in increased fish populations. Increased revenue from sports fishing from removal of Matilija dam on the Ventura is estimated to be \$600,000 annually (Heinz Center, 2002).

**There is abundant water supply in Mendocino County; annually an average of 1 million acre-feet of water falls in the Upper Russian River basin, which is in Mendocino County.**

Annual water demand in Mendocino is very small compared to the water that is available. Water demand in 2020 from water suppliers in the Upper Russian River Basin portion of Mendocino County is estimated to be 36,000 acre-feet a year (Sommarstrom, 1986). In an average year the natural flow into Lake Mendocino (without diversion of water from the Eel River) is about 90,000 acre-feet.

**Even in critically dry years, the water flow requirements of Lake Mendocino can be met without Eel River water.** With the addition of Eel River water, current Russian River summer flows are much higher than the natural flows to which Russian River salmonids are adapted, and it has been found that “currently, high summer flows (generally exceeding 125 cfs) result in an adverse effect to juvenile salmonid habitat in the Russian River” (NMFS, 2002). Even in a “critically dry year,” if Russian River minimum flows were reduced to a more natural level to benefit Russian River fisheries, current Upper Russian River water withdrawal demands could be satisfied without Eel River water.

**Several options exist for matching water supply with water demand for the upper Russian River basin.** These options include:

1. Revise and improve water storage and water release management of Lake Mendocino
2. Develop more groundwater sources
3. Use excess winter runoff to recharge the groundwater reservoir
4. Increase efficiency of water use
5. Extend existing water supply through the use of reclaimed water

**Overall, water in the Upper Russian River basin is relatively abundant, not scarce.** For the months of the year when there is no or little rainfall and during the years of exceptionally low rainfall, improved management of release of water from Lake Mendocino can increase water supply available during dry months. Such improved management of water release from lake Mendocino coupled with improvements in water efficiency can match the water naturally available to the Upper Russian River Basin with humans’ social and economic needs.

**In conclusion, removing the PVP dams on the upper Eel not only benefits fish and fisheries in the Eel River ecosystem, but also benefits the Mendocino and Lake County economies through the jobs created by deconstruction and through an increase in nature-based tourism. Meanwhile, local water needs remain satisfied even without Eel River water coming into Lake Mendocino.**