

A Tale of Two Rivers



Photograph by Michael Amsler

Gently Down the Stream: Russian RiverKeeper Don McEnhill out on a recent sampling foray.

The Russian, the Eel and why you should care about both every single time you turn on a tap

By R.V. Scheide, June 2004

Editor's note: This is the first in a summer-long series about the history, health and impact of the Russian and Eel rivers on the North Bay's environment and citizenry.

The Russian River begins as a trickle in the pine-studded hills at the far end of Redwood Valley, a dozen or so miles north of Ukiah. It's not much to speak of, this narrow, meandering rivulet; in some places, it's possible to easily step across from one bank to the other. Fed by the creeks and culverts etched into the hillsides, the stream gradually gains breadth, if not depth, as it courses south, where just past the lumberyards of Ukiah, the main stem joins forces with its east fork, and the Russian River, at least as we commonly perceive it, begins.

Picking up speed and volume, the thick band of olive-drab water winds through southern Mendocino County, farms and vineyards suckling its banks, and enters Sonoma County just north of Cloverdale. It cuts through a scenic serpentine canyon and pours into the Alexander Valley, where more thirsty vineyards nestle up to the trough, patchwork swatches of green and gold blanketing the valley floor.

Gazing out over this vast, verdant empire, which receives nearly four times the average rainfall of Southern California, it's tempting to think that water is not a problem for us, like it is for, say, Los Angeles, which over the years has developed an unseemly reputation for stealing water from other regions. It appears that the mighty Russian River and its extensive watershed and aquifer are more than enough to provide for our needs.

In fact, nothing could be further from the truth. The abundance we see all around us is in part built on a lie that's nearly a century old. That's when engineers bored a tunnel through a mountain north of Ukiah and drained a substantial portion of the Eel River's south fork into the east fork of the Russian River. Known as the Potter Valley Project, these flows continue to this day. Without them, our dreams of abundance would wither on the vine.

For the past decade, advocates for the Eel River have harbored a dream of their own. No one really ever asked them for the water, and now they want it back. Led by the Garberville-based Friends of the Eel River, these activists aim to shut down what's now known as "the tunnel from hell." If they are successful, we may be in for some dry times, indeed.

The Los Angeles aqueduct, a 240-mile pipeline built in 1914, is perhaps the state's best known "water grab." The aqueduct delivered water from the Owens Valley to arid Los Angeles against the wishes of Owens Valley farmers, who attempted to blow the pipeline up several times. Rampant real estate speculation in the San Fernando Valley by insiders with knowledge of the coming pipeline served as the conflict in the film *Chinatown*.

But long before the Los Angeles aqueduct was ever completed, the Russian River region was stirring up a little *Chinatown*-type scandal of its own. Ostensibly, the demand by the Ukiah board of trustees shortly after the turn of the 20th century was not for more water, but for cheaper electricity than that provided by the aging coal-fired plant which frequently shrouded the town in thick, acrid black smoke. In 1905, San Francisco entrepreneur and Mendocino County landowner W. W. Van Arsdale proposed a solution: bore a mile-and-a-half-long tunnel through Snow Mountain, 25 miles northeast of Ukiah, to divert water from the south fork of the Eel River through the mountain and into a hydroelectric power plant on the other side in Potter Valley.

Thus the Potter Valley Project was born, and the Russian and Eel rivers have never been the same. It's been almost a century since the water diversion project was

completed, and during that time period, both watersheds have experienced extensive environmental degradation, from gravel mining, timber harvesting and, as a growing body of evidence indicates, the diversion itself. The hole bored through Snow Mountain is called "the tunnel from hell" because, until a fish screen was installed in 1995, salmon and steelhead were sucked into the power-plant generators and shredded to bits.

David Keller, a former Petaluma city councilman with a keen interest in water issues who is now Bay Area director for Friends of the Eel River, says, "The diversion is an extraordinary transfer of wealth from the northern counties to the southern counties, from the public trust into today's dollars." Nevertheless, the decision to bore a tunnel into Snow Mountain and siphon off a good portion of one watershed to generate hydroelectric power in a completely different watershed didn't raise much concern when it was made in 1905. If it had, perhaps someone might have discovered that the Eel River isn't named for its many elaborate geographical twists and turns, but for the eel-like lamprey fish that once swarmed it by the millions. Such nuances were certainly lost in the relentless boosterism of the early 20th century.

"All of our citizens are interested in the welfare of this new project, and it is one that marks a new era of progress," the *Mendocino Dispatch Democrat* noted in a Feb. 19, 1905, story announcing the formation of the Eel River Power and Irrigation Company and its plan to tunnel through the mountain.

Progress and enterprise ruled the day. The engineering rationale driving the project was the 300-foot elevation drop from the Eel's south fork to the floor of the Potter Valley. Diverting the water through a tunnel in the mountain and down a penstock, or sluice, to a power plant on the valley floor increases the water's velocity, enabling the turbines to generate more electricity than a traditional hydroelectric plant.

Van Arsdale Dam, a 517-foot concrete and granite structure spanning the south fork of the Eel at Cape Horn, would provide the project with a constant supply of water, even during low summer flows. More than a hundred men were employed on the project. Chinese and white laborers dug the 5,826-foot-long tunnel by hand. Four-horse teams hauled sections of pipe up the steep mountainside; eight-horse teams lugged the power plant's two 30-ton generators to Potter Valley. Construction was delayed by the San Francisco earthquake in 1906, but by 1908, the project was completed.

"Mendocino County has taken a step forward and joined the ranks of modern civilization," the *Dispatch Democrat* gushed when the first electricity reached Ukiah in April. The celebration was short-lived. By May, Potter Valley residents learned firsthand how the Eel River had earned its name.

"Plagues of various kinds have often been chronicled by the press of the country, but it has never remained for Mendocino County to experience a new brand of plague," the *Dispatch Democrat* reported. A shoal of lampreys--incorrectly labeled eels by the newspaper--had infiltrated the Potter Valley Project. "They worked their way into the power house and vast numbers located themselves beneath the dynamos--one dynamo not being in use and here they congregated to such an extent that the mass of wiggling eels was five feet deep."

Using pitchforks, employees attempted to remove the slimy, slippery creatures from the plant. They loaded up an entire wagonload of fish, but still the lampreys kept coming, clogging the plant's outlet and causing the discharge canal to overflow, carpeting the valley floor with flipping, flopping, asphyxiating eel-like fish.

A simpler people--say, the early Christians--might have taken this plague of eels for a sign: perhaps boring a hole through the mountain wasn't such a great idea, after all. But not the Potter Valley Project pioneers. They sank a large piece of meshed wire netting into the water with high voltage leads attached to it and flipped the switch, electrocuting the entire mass of squirming lamprey. The novel method of execution was duly noted in the January 1914 issue of *Popular Mechanics* magazine.

No one was quite certain exactly where the lamprey came from. Though they are not native to the Russian River, it's possible that the anadromous fish sensed diverted Eel River water flowing into the ocean at Jenner and became confused, swimming up the Russian River to spawn. Wherever they came from, their untimely appearance was an omen. From its very inception, the Potter Valley Project began dramatically altering both watersheds.

Before Eel River water was piped into Potter Valley, the east fork of the Russian River was little more than a drainage creek that often dried up during summer months. Flows were so low that even the Russian's main stem was often reduced to just a trickle. The diversion turned the east fork and the main stem into respectable rivers that flowed year-round. Now, it's the Eel's south fork that nearly runs dry in summer. Potter Valley farmers were quick to form an irrigation district and establish water rights; in a few short years, their small valley was a bucolic wonderland. Farmers in Mendocino and Sonoma Counties were quick to do the same, and a fledgling tourist industry began developing in the newly water-rich Guerneville area. But again, the prospective boom was short-lived.

Dams make a great study for those interested in the law of unintended consequences. In addition to trapping water, dams capture 90 percent to 100 percent of the sediment

suspended in the water. This is bad for the river, because silt and gravel are essential elements for healthy riverbeds; it's bad for the dam, because the sediment takes up valuable storage space in the reservoir. No easy engineering fix exists.

By 1920, Van Arsdale reservoir was so silted up that water no longer flowed through the tunnel during the late summer and the east fork of the Russian was reduced to a rivulet. Fortunately, a solution was in the works: build another dam.

Scott Dam, 12 miles upstream from the tunnel, was completed in 1921, standing 105 feet tall and 805 feet across, the Scott Dam flooded the former town of Hullsville and created Lake Pillsbury, with a maximum storage capacity of 93,000 acre feet. (One acre foot equals 322,500 gallons.) The guaranteed water supply provided by Scott Dam kicked off a developmental boom in Mendocino, Sonoma and northern Marin counties, and spawned the golden age of Russian River tourism.

"Water levels in the summer were much higher than they are today," says Steve Fogle, chairman of the Russian River Chamber of Commerce. "There were deep pools with diving boards." The area boasted three times as many hotel beds in the late 1920s than there are today--15,000 compared to 5,000. Trains brought Bay Area residents directly to the resorts, which remained popular through the 1930s and the Great Depression.

Unfortunately, the same water that brought more tourists also increased the likelihood of winter flooding. Between 1935 and 1945, a series of devastating winter floods caused \$6.1 million in damage in Sonoma County.

The increased flows disrupted gravel beds and gouged out stream banks. Thanks to the Army Corps of Engineers and a newly formed organization that would eventually become known as the Sonoma County Water Agency, a solution was in the works: build another dam.

Chartered by the state in 1949, the Sonoma County Water Agency was built on the same model as Los Angeles' infamous Metropolitan Water District, with the Sonoma County supervisors serving as its board of directors. Because the agency's primary mission is to wholesale water to its contractors (which today include Santa Rosa, Forestville, Sonoma, Rohnert Park, Petaluma and northern Marin County), it's one of the few public entities that actually makes money. Critics charge that because such agencies become "cash cows," supervisors are reluctant to consider public input on water issues.

Nanananda, founder and executive director of Friends of the Eel River, is one such critic. She takes her name from Sanskrit words meaning "the sound of universal energy"

and "bliss." A longtime resident of the North Coast, Nanananda first became interested in the Eel River when a California Department of Fish and Game official told her the river was dead in the early 1990s.

"We saw fish in the river, kids worked on the salmon boats, there was an awareness of salmon," she recalls. "What was he talking about? What did it all mean?"

As the Eel River fisheries continued to crumble, Nanananda made it her business to find out. She poured over government documents, discovering that wildlife officials had been issuing warnings about the decline of the salmon since at least the late 1940s. Despite the reports, the tunnel from hell was widened in 1950 by PG&E, which took over the Potter Valley Project in 1929. PG&E considers the water "abandoned" once it passes through the turbines, and it has provided the Sonoma County Water Agency with 160,000 annual acre feet for no charge. The agency then turns around and sells this water to its customers.

For Nanananda, it all sounded a little too close to *Chinatown*. "They say they need the water for planning, never mind what it does to the river," she fumes, noting that Gordon Miller, who served as the Sonoma County Water Agency's chief engineer from 1957 to 1979, was a veteran of the water wars in Los Angeles with extensive ties to big-time water developers throughout the state.

One of Miller's first projects was Coyote Dam, which blocked off the augmented flows of the Russian River's east fork and created Lake Mendocino, with 118,000 acre feet of additional water storage.

Coyote Dam was the first in an ambitious series of projects planned by Miller. But as the environmental movement took root in the 1960s, large water projects came under increasing scrutiny. By the 1980s, it had become almost impossible to build a new dam. For two decades, the effort to stop Warm Springs Dam on Dry Creek near Cloverdale galvanized Sonoma County activists. It was completed in 1983, the last big dam to be built in California, adding another 212,000 acre feet to the Sonoma County Water Agency's burgeoning empire.

Yet despite all this new storage, the diversion of water from the Eel continued. "By the summer of 1995, we decided to become Friends of the Eel River, and take a stand, to see what we could do," recalls Nanananda.

At Healdsburg, the Russian River bends west toward the ocean and the resort communities of Guerneville and Monte Rio. Along the way, the Sonoma County Water Agency's pumping station near Forestville takes a long, heavy pull, sucking up as much

as 92 million gallons per day for delivery to the agency's nearly 600,000 Sonoma County and northern Marin County customers. The remaining water winds its way through the redwood-shaded resorts and pushes into the Pacific, disgorging tons of suspended sediment--sand, silt and other debris--in a spectacular alluvial fan near Jenner.

Though it is sometimes loathe to admit it, the diversion is a vital component of the water agency's complex water supply system. Without the diversion, the current level of economic activity in the Russian River watershed would be impossible to sustain without seriously reducing water use, according to the agency's own studies.

That's problematic, because a growing amount of scientific evidence indicates that the diversion has played a significant role in wiping out the Eel's salmon fishery, once the largest on the Pacific Coast. Estimates of the accumulative economic damage range as high as \$8 billion. The river's coho, Chinook and steelhead have been listed as threatened under the Endangered Species Act; last year, the Center for Biological Diversity even filed to protect the unlikely lamprey, also in danger of extinction. To restore the river and the fishery, groups such as Friends of the Eel River have mounted an aggressive campaign to return some, if not all, of the diverted water back to the Eel.

"The restoration of the Eel is critically dependent on ending the diversion," says FOER Bay Area director David Keller, who notes that rampant gravel mining has nearly destroyed the Russian River's aquifer. He believes the only way to restore balance to both systems is to end the diversion. "Both watersheds need to be separated, and both need to be managed, or the wealth of both is going to be squandered," he says.

Russian River RiverKeeper Don McEnhill, who also serves as president for the Friends of the Russian River, agrees that the diversion has harmed both watersheds.

"There's a number of things that have given us the Russian River as we have known it for the past 80 years, and the Eel River water is among them," he says. While McEnhill advocates shutting down the diversion, he's not keen on reducing the Russian River's flows, which could lead to concentrated levels of industrial toxins and waste in the water. "We can't go back. The other thing we didn't have 100 years ago was pollution."

If the diversion were shut down, a comprehensive plan using water from Lake Sonoma and Lake Mendocino in combination with increased conservation efforts could make up for the shortfall. Much to the consternation of river advocates, no such comprehensive plan seems forthcoming, despite repeated requests to the water agency over the years.

That has forced advocates to pursue litigation in order to shut the Potter Valley Project down.

But undoing a century-old water project is no mean feat. In 1999 the FOER sued the water agency in Sonoma County Superior Court, demanding, among other things, that approval of the agency's proposed Water Supply and Transmission System Project (WSTSP) be withdrawn because its environmental impact report did not include a full assessment of the Potter Valley diversion's effects on the Eel River.

Indeed, the environmental impact report contained no assessment of the diversion whatsoever. The WSTSP is a planned revamp of the Sonoma County Water Agency's complex delivery system to keep pace with future projected increases in demand. It includes a proposed 33 percent increase in water drawn from the Russian River, from 76,000 acre feet to 101,000 acre feet annually. The agency claims the increase, 25,000 acre feet per year, will be achieved through additional releases from Lake Sonoma. Eel River advocates say that's impossible during years of drought without water from the diversion. Yet the WSTSP's original environmental impact report mentions the diversion only in passing, as if the 160,000 acre feet water pouring through the tunnel from hell didn't exist.

Friends of the Eel River lost in Sonoma County Superior Court, but last year, the First District Court of Appeals partially reversed the decision, resulting in the rescinding of approval for the WSTSP until the water agency completes a supplemental environmental impact report that includes "an environmental setting discussion about the Potter Valley Project and its impacts on the Eel River fishery."

"They were telling two different stories, which isn't unusual for the water agency," explains Keller. In Superior Court, the Sonoma County Water Agency argued that the diversion wasn't critical to its operations. Meanwhile, in concurrent Federal Energy Regulatory Commission (FERC) hearings to determine the Potter Valley Project's eligibility for relicensure, the agency argued that the diversion *is* critical. The glass is both half-full *and* half-empty, an impossibility the appellate court wasn't willing to overlook, even though it's an explanation the Sonoma County Water Agency director Randy Poole continues to cling to.

"It has nothing to with the Potter Valley Project," Poole answers tersely when asked how the supplemental environmental impact report might effect the fate of the Potter Valley Project. "The Friends of the Eel River would have you believe that."

"Randy is entitled to his opinion," McEnhill says, "but the judge ruled by law that their operations do involve the Potter Valley Project. The settlement was all about the Potter Valley Project. They're going to have to look at the impact of the diversion on the middle reach of the Eel."

On June 2 of this year, FERC denied Friends of the Eel River a rehearing on the commission's January decision to reissue PG&E's license to run the Potter Valley Project. The commission's ruling, part of a licensing process that has dragged on since 1972, orders PG&E to increase low summer flows in the south fork of the Eel by 15 percent to protect developing salmonids.

That's simply not enough protection for FOER, who've thrown a serious monkey wrench into the Sonoma County Water Agency's works. Two weeks ago, the agency announced that its current system of pumps, aqueducts and storage tanks was running at full capacity, warning customers to expect interruptions in service this summer. The culprit, according to the agency, was environmental litigation that has delayed expansion of the WSTSP. The first draft of the WSTSP supplemental is expected to be ready for public comment by late summer. The outcome could very well determine the future of the region's water supply.

"Our objective is to restore the Eel, to reduce or eliminate the diversion completely and to lower or remove the dams," says Keller. He insists again that shutting down the diversion will benefit both watersheds, as long as both are carefully managed, not that he thinks the Sonoma County Water Agency is capable of carefully managing anything.

"The models are out there, but the water agency just doesn't give a shit," he says bluntly.

Next installment: Trickle-up theory--whither the Russian River watershed aquifer?

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