

Troubled waters of Battle Creek

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MANTON – Here at [Battle Creek](#), an icy stream that tumbles off Mount Lassen, state and federal agencies are spending \$128 million to bring endangered salmon back to 48 miles of water blocked by dams for nearly a century.

At the same time, another arm of state government is allowing clear-cut logging on thousands of acres just upstream, which some scientists say could jeopardize the costly [restoration](#) project.

The Battle Creek Salmon and Steelhead [Restoration](#) Project is considered the largest of its kind in the nation. It involves removing five dams owned by [Pacific Gas](#) and [Electric Co.](#), and modifying four others so steelhead and winter- and spring-run salmon can pass.

Battle Creek may be the last shot at survival for the species, all of which are endangered.

Scientists say the logging, if not managed carefully, could handicap the expensive [restoration](#). The danger: Erosion from clear-cut forest tracts could smother spawning habitat before salmon have a chance to use it.

The apparent conflict in government missions, critics say, points to flaws in the state's management of logging on private land.

"There should be enforcement to protect (Battle Creek) [water quality](#)," said Pat Higgins, a fisheries biologist who has consulted on the [restoration](#). "Instead, they're allowing unlimited (tree) cutting, and it's still going on."

The trees are cut by [Sierra Pacific](#) Industries, a privately held company based in nearby Anderson and the state's largest property owner.

The company is in the early stages of a strategy to boost lumber production. It includes logging in other watersheds important to salmon, such as the [American River](#), where federal officials face a 2020 deadline to restore salmon above [Folsom Dam](#).

The logging at Battle Creek complies with state law and is overseen by the [California Department of Forestry and Fire Protection](#), also known as Cal Fire. [Sierra Pacific](#) says its operations are tightly regulated.

"There is a whole lot of inherent protection in the rules," said Ed Murphy, the company's manager of resource information systems.

[Sierra Pacific](#) uses a technique called "even-age management," the California regulatory term for clear-cutting. The goal is to convert a large percentage of its acreage, essentially, to pine plantations.

[Sierra Pacific](#) has submitted 16 logging plans over the past 12 years for almost 20,000 acres in the Battle Creek watershed.

In a typical even-age logging plan, all vegetation is removed from multiple 20-acre parcels, leaving a checkerboard pattern of bare ground that may span 1,000 acres or more. One or two

oaks and standing dead trees are usually left as "habitat diversity."

Then each parcel is replanted with pine seedlings. Herbicides are sprayed to eliminate competing vegetation before planting.

Marily Woodhouse has lived in Manton for 22 years. She is co-founder of the Battle Creek Alliance, which has filed suit against several [Sierra Pacific](#) logging plans.

"We're not telling them not to log their land," she said. "We're saying, don't clear-cut and don't use a ton of herbicides."

Cloudy scrutiny

Clear-cutting, as opposed to selective logging, leaves little vegetation behind to trap erosion. And the state does not require logging companies to monitor water quality.

The primary agency charged with making sure logging doesn't ruin fish habitat is the state Department of Fish and Game, which works in concert with Cal Fire. But Fish and Game has been strained by [budget cuts](#).

Former Gov. Arnold Schwarzenegger last year cut \$1.5 million from Fish and Game's logging review program. A similar cut remains in Gov. Jerry Brown's proposed budget for the new fiscal year.

Eight jobs were cut from the Fish and Game staff that monitored logging in the north state, said Curt Babcock, the department's regional habitat conservation program manager. Now, only half the logging projects in the area get a field inspection before approval.

Fish and Game still scrutinizes logging roads, often the source of most erosion. But it gives little attention to wildlife and aquatic habitat threats, Babcock said, and it doesn't monitor logging rules for protecting streams.

"Overall, I'd say there is definitely a potential for the timber harvests there to affect salmon," Babcock said of Battle Creek. "We're spread pretty thin."

With the state role reduced, Woodhouse's group decided to conduct its own water monitoring tests. It began taking samples 18 months ago.

Each week, Woodhouse loads testing gear into her Chevy S-10 pickup and ventures on unpaved county roads to assess the forks and tributaries of Battle Creek.

The results, she said, show an increase in the water's cloudiness, suggesting erosion has increased. "You used to be able to look at the water and it was clear," she said. "Now it's a gray or green color, or it has a soapy appearance."

Erosion is a threat to spawning habitat everywhere, but it is an especially urgent concern at Battle Creek, given the expensive effort to bring back salmon and steelhead.

"It's unlikely we can recover those species in the [Central Valley](#) if we don't get viable populations in Battle Creek," said Brian Ellrott, regional salmon and steelhead recovery coordinator at the [National Marine Fisheries Service](#). "It is critically important."

Cold conclusions

After a decade of study and buy-in from PG&E, the restoration began in 2009 and is expected to be finished in 2015. It is overseen by the U.S. Bureau of Reclamation, which was required by the 1992 Central Valley Project Improvement Act to double naturally spawning salmon populations in the region.

The cost, estimated at \$43 million in 2004, has swelled to \$128 million. That includes \$47 million in federal funds, including \$9 million from the American Reinvestment and Recovery Act, and \$58 million from various state sources.

The money mostly pays contractors to remove five dams and build new fish ladders on four others. PG&E is giving up \$20 million in hydropower to provide more flow for salmon.

"We're opening up streams that have not been accessible to salmon for 90 years," said Paul Moreno, a spokesman for PG&E.

Battle Creek is special because its waters start atop 10,000-foot Mount Lassen, then trickle through underground passages. The meltwater emerges in seeps and springs, keeping the creek cold.

Salmon require cold water to survive and breed. This is especially true of the endangered spring-run chinook, which has the unique habit of migrating upstream from the ocean in spring, then waiting until fall to spawn.

But erosion has already compromised the creek's suitability for spawning, according to a 2004 watershed assessment. It called the spawning habitat "moderately favorable" overall, the equivalent of a "C" grade.

Nearly half the 50 individual stream sites surveyed had too much sediment to be good spawning habitat, earning "D" grades; and 60 percent of pools in the creek got "F" grades because they are too shallow to support spring-run salmon through the summer.

The report suggested 1997 storms likely caused erosion that led to those poor grades. But it did not rule out other problems, including those linked to logging.

The research by Terraqua Inc. was commissioned by the Battle Creek Watershed Conservancy, using federal funds. The conservancy is a local nonprofit that works closely with government agencies on the restoration project. Another study for the project by Kier Associates blamed the erosion largely on logging.

"There was definitely a profound change in habitat in Battle Creek, and it's consistent with extensive upland disturbance," said Higgins, who prepared the report.

The Kier report, however, was excluded from the final study. When the firm published the analysis itself in 2009, it said the work was excluded "at the request of a major private timberland owner" on the conservancy board.

That timberland owner is Sierra Pacific Industries.

Complex science

Sierra Pacific's Murphy denied his company suppressed the report. He said the whole conservancy board decided to exclude it, noting Higgins' methods were more appropriate to coastal forests.

It is a complicated science, one that Cal Fire has been repeatedly criticized for handling poorly. The State Board of Forestry, a politically appointed panel, sets the rules that Cal Fire enforces to regulate logging on private land. Studies as far back as 1994 have urged the board to overhaul its rules on cumulative analysis, yet it has not done so.

A University of California panel in 2001 said cumulative analysis is so vital that it should be stripped from Cal Fire and given to a new agency with special training.

The panel called many of the state's erosion-related logging rules "demonstrably inadequate."

"The State has apparently never explicitly acknowledged the need to protect the runoff regulating

functions of forests," the panel wrote.

The Board of Forestry's executive officer, George Gentry, said the board will likely begin reviewing the cumulative effects rules in 2012.

"People can say, 'Well, you need to do it better'," Gentry said. "We should do it better. But show me how. There's no easy answer to that. It's a very complex science."

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Marily Woodhouse stands amid a clear-cut forest near the headwaters of Battle Creek, in Shasta County.



Jerry Brown campaigned for governor on a strong set of environmental planks. In one of these he promised "to take reasonable steps to ensure a healthier habitat for California's unique fish species by limiting sediment and other runoff entering streams." Brown now can deliver on that pledge at Battle Creek, one of the Sacramento River's most crucial tributaries for imperiled fish. But to do so, the governor may need to buck a timber billionaire who has contributed to his

campaigns and one of his charter schools – A.A. "Red" Emmerson, owner of Sierra Pacific Industries.

As The Bee's Matt Weiser reported Sunday, state and federal agencies are spending more than \$100 million to restore populations of wild spring-run salmon and steelhead in Battle Creek, which tumbles down the western slopes of Lassen Peak to the Sacramento River.

Because the volcanic springs of this area produce vast amounts of cold, clear water, biologists see Battle Creek as one of those rare habitats where salmon could rebound and flourish.

Yet even as state and federal agencies invest in removing dams and restoring spawning habitat, another agency – the California Department of Forestry and Fire Protection – has been allowing Sierra Pacific Industries to clear-cut thousands of acres in the Battle Creek watershed. Scientists have found evidence that logging is contributing to erosion that has degraded spawning grounds in the creek. While Cal Fire officials say they've worked to buffer the creek from any logging sediment, they haven't yet analyzed the cumulative impacts of all the various clear cuts.

Brown and the Legislature could turn this situation around. Last year, Gov. Arnold Schwarzenegger cut \$1.5 million from the logging review program of the California Department of Fish and Game. While the state's budget problems have since worsened, lawmakers could set fees on businesses seeking timber harvest plans to pay for these reviews. The budget Brown vetoed last week included roughly \$10 million yearly in such fees. The governor should insist that the final budget include fees for timber harvest reviews, although perhaps not at the \$10 million figure.

Brown also needs to make key appointments to the state Board of Forestry and Fire Protection. Currently, three of the board's nine seats are vacant, including one for a public member. Brown must ensure this board, traditionally friendly to industry, can balance the demands of timber production with environmental protection, and be willing to use all of its available tools. For instance, the board has the legal authority to impose special logging restrictions in sensitive watersheds, but has yet to use that authority. Battle Creek may be one place to start.

The state's largest private landowner, Sierra Pacific has worked to cultivate a close relationship with previous governors, and Brown is no exception. The company contributed more than \$46,000 to the governor's campaign last year. Emmerson and another Sierra Pacific executive also paid \$10,000 to attend a gala reception last year for Brown's Oakland School for the Arts, which featured an appearance from actor Robert Downey Jr.

While the governor no doubt appreciates these contributions, we'd hate to think they'd have any impact on his dealings with Sierra Pacific. Quite the opposite. Californians elected him at least partly because of the promises he made on the campaign trail. One of these was to "ensure a healthier habitat for California's unique fish species by limiting sediment."

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