



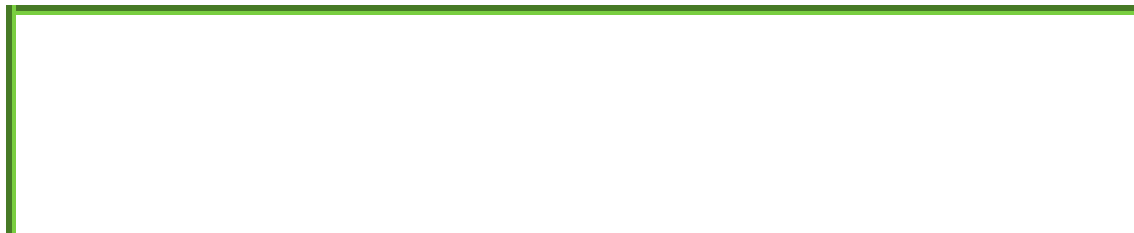
Protecting our rural environment by promoting citizen participation in sustainable land use planning since 2006

The Community Action Project (CAP) administers the Calaveras Planning Coalition (CPC), which is comprised of regional and local organizations, community groups, and concerned individuals who promote public participation in land use and resource planning to ensure a healthy human, natural, and economic environment now and in the future.

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In this edition of the ReCAP...

1. [Next CPC Meeting](#)
2. [BOS & PC Meetings](#)
3. [County's cannabis program experiencing growth ; illegal grow eradication on the rise](#)
4. [Sierra Nevada Conservancy Funding Newsletter](#)
5. [California's largest fire torches homes as blazes lash west](#)
6. [DYK: only 6% of California's population lives in rural areas?](#)
7. [Editorial: the California Salmon wipeout is worse than you think](#)
8. [California Salmon suffer in drought](#)
9. ['Climate Change has become real': extreme weather sinks prime tourism site](#)
10. [Poem: Trees and Cattle by James Dickey](#)

Join Us!

Get a glimpse into what CPC membership is like by attending a meeting.

There is no commitment, just show up and listen in!

Next Calaveras Planning Coalition Meeting

August 2, 2021 3 P.M. - 5 P.M.

New Members Welcome at CPC Meetings

Organizations, groups, and individuals (known as associate members) may join the Calaveras Planning Coalition (CPC). Prospective members may attend two consecutive meetings before making a final decision on membership in the Coalition. The membership form is a pledge to support and advocate for the Coalition's eleven Land Use and Development Principles, which you will find on our website:

www.calaverascap.com.

There is no membership fee. However, members are encouraged to donate to the Community Action Project/Calaveras Planning Coalition. Visitors and prospective members will, by necessity, be excluded from attorney/client privileged discussions.

If you are interested in membership, please email CPC Facilitator Tom Infusino, tomi@volcano.net, to receive a membership form, agenda, and the Zoom meeting connection.

To help prevent the spread of Covid-19 in our county, all CAP and CPC meetings will be held online via Zoom until restrictions are lifted by the Public Health Department.

BOS Meeting Tuesday, August, 10 2021

Agenda Upcoming

Planning Commission Meeting August 12, 2021

Agenda

County's cannabis program experiencing growth ; illegal grow eradication on the rise

Noah Berner / Calaveras Enterprise / July 29, 2021

The county's cannabis program is experiencing growth, and the eradication of illegal grows is on the rise.

On Tuesday, the Calaveras County Board of Supervisors received an update on the county's cannabis program from Division of Cannabis Control (DCC) Director Gregory Wayland, as well as an update from Sheriff Rick DiBasilio on the sheriff's office's enforcement actions on illegal grows.

"The last update to the board was Feb. 9, and since that time we've experienced a lot of growth in the industry and our permits," Wayland said. "There's approximately 37% increase in square footage that's permitted since that date and about a 40% increase in the maximum canopy tax revenue since that date."

The county has issued a total of 59 cultivation permits. Of total cultivation applications submitted, 36 have been withdrawn, 19 have been denied, three are under review, 16 have corrections needed, 43 have conditional approval and 24 are in "applied" status.

"The conditional approvals are the closest to permitting," Wayland said. "They have gone through our screening, our preliminary review, they've paid their main application fee, and they are in the process of being approved by the cooperating county departments, ultimately reaching permitting once that's done and they've received their state license."

In order to successfully apply for a permit, cannabis business owners must have filed an application for registration with the county under the urgency ordinance of 2016, that registration must not have been denied or withdrawn, and the applicant must have received a state license or have applied for one but was denied do to the county's ban on cultivation.

The DCC estimates the total number of "rights to apply" at between 190 and 200. Wayland said that 148 "rights to apply" have been utilized, which is between 74% and 78% of the total.

"This shows that the program is building out," Wayland said.

Of the total permits issued, 38 are for outdoor sites, two are for indoor sites and 19 are for mixed light sites.

The permits issued allow for a total of about 1.59 million square feet of outdoor canopy; 1,750 of indoor canopy; and 341,500 of mixed light canopy.

The number of issued Cannabis Background Clearance Badges (CBCBs), which are required to work in the local industry, stands at 381. An additional 34 are in process, eight have been denied and 18 have been revoked.

"The last couple of months, we've seen a spike in applications," Wayland said. "I'm encouraged by the number of issued CBCBs that we've got today, and that number is still going up."

Wayland presented a map of the county showing the locations of the permitted cultivation sites.

"You can see that there are quite a few in Mountain Ranch, up near Rail Road Flat, in and around Moke Hill," he said. "We also have a few out in the Wallace/Burson area and then several strewn about District 4 down in the southwest."

In November of last year, county voters approved Measure G, which went into effect on Jan. 1 and taxes cannabis cultivation based on canopy square footage.

Maximum tax revenue, which is the total revenue projected to be owed to the county based on current permits, is about \$4,221,000 for the year, Wayland said.

"I want to put this out there with caution, because this is what the permits dictate would be the tax, but there's always a margin of error in these numbers," Wayland said.

The taxes are collected quarterly based on the calendar year, and Wayland estimated that there was a 15-20% deficiency in payments for the first quarter of 2021.

"We're currently in the process of working with the tax collector in trying to shore that up," Wayland said. "As we go along, the industry learns the new tax process, and we refine our process, that's something that I think we'll see improvement on."

Wayland provided the board with an update on pending state legislation that could impact the local industry.

"We're seeing a lot of interest at the state level now turning back to the issue of unlicensed businesses and trying to strengthen laws that may help local jurisdictions as well as cities enforce the rules so that our permit holders can operate on a level playing field and fairly because they follow the rules and they pay their taxes," Wayland said.

Wayland gave a brief overview of AB1138, which aims to give local jurisdictions more authority in combating illegal grows.

"My understanding is that it would give the county a cause of action to impose penalties if there were, for instance, a retailer that was operating without a license and without a local permit, to be able to impose monetary fines on them," he said.

"The current statute that's on the books provides for the attorney general to do this," County Counsel Sarah Edwards said. "If this bill is passed, that would extend to potentially at least some local jurisdictions."

Wayland said that recent studies indicate that between 70% and 85% of cannabis sales in the state are from illegal retailers.

"When Prop 64 passed, the state began developing programs that would regulate the industry," Wayland said, "but the illegal cannabis operators and retailers are still a scourge on local jurisdictions and they compete with our permit holders who comply with all of the rules and pay our taxes."

Wayland said that between March and June, Calaveras County Sheriff's Office Marijuana Enforcement Team (MET) officers executed 12 warrants at illegal residential indoor grows. The average home value was \$650,000, with 36% purchased in 2020 and 45% purchased between 2016 and 2019, indicating that they were purchased with illegal cultivation in mind.

"These are high-end homes, some of which were in the \$800,000 to \$900,000 range," Wayland said. "About 90% of these homes were purchased with financing which shows accessibility."

Between March and June, 24 warrants were executed for outdoor illegal cannabis grows, with about 26,000 plants eradicated.

"I'm very grateful that we have a team of sheriff's deputies at our sheriff's office who have been efficient and effective in addressing the local illegal growers," Wayland said. "The local enforcement effort from the sheriff's office has been exemplary as far as I've seen."

Board Chair Ben Stopper asked DiBasilio about the results of the illegal cannabis eradication effort.

"Do you feel like there's been success, that the message is getting out that it's not easy to do business in Calaveras County if you aren't following the rules?" he said.

"I think that the message is getting out, but the problem is that we still have those illegal growers that are going to come in and try to fly underneath the radar," DiBasilio said.

DiBasilio provided the board with more statistics on the sheriff's office's activities. He said that so far this year, 48 illegal grows have been eradicated.

"We've eradicated this year so far over 40,000 plants, 1,500 pounds of processed marijuana, four pounds of concentrated marijuana, made 44 arrests," he said. "We've seized 18 firearms."

The numbers are on track to be significantly greater than last year, DiBasilio said, and more plants have already been eradicated this year than the total eradicated last year. A total of 15 indoor sites have been eradicated to date this year, while a total of 10 were eradicated last year.

Over the past few years some sites have been eradicated up to five times, DiBasilio said.

"We've had two sites eradicated five times, one site eradicated four times, three sites eradicated three times, and 25 sites eradicated at least twice," he said. "They just lease to somebody else, or they're doing it, but they're just bringing in other workers ... (The workers) get arrested and/or they get cited, and we never see them again. So, they're just

bringing in more people. The key is going to be going after the property owners to prove that they're the ones that are financing these sites."

DiBasilio said that the cost of eradicating a site is about \$8,200 on average, with about \$394,000 spent so far this year.

"Our staff has gotten way better than we were back in 2016, so technology has helped us and just the act of doing it has helped us," he said. "We've gone from eradicating one site a day to sometimes now up to three sites a day, and we're doing sometimes nine and 10 sites a week."

The confiscated plants are all taken to the county's landfill, DiBasilio said.

"They get buried, and the product, the marijuana plant, has so much moisture and stuff in it, when we put it in the ground about six feet down and we cover it up, within about 15 minutes it turns to mush—it's not worth anything at that point," he said. "And for people who ask the question—'Why doesn't the sheriff's office sell what we confiscate?'—the federal government might frown on that a little bit if the sheriff's offices are selling marijuana, because it still is a Schedule 1 drug as far as they are concerned."

At the meeting, the board also adopted a resolution establishing an application fee of \$783 for cannabis permit modifications in a 5-0 vote.

Sierra Nevada Conservancy Funding Opportunities Newsletter for August/Sep tember



This is an electronic newsletter published every two months containing information on upcoming grant and funding opportunities for the Sierra Nevada region. The newsletter includes federal, state, and private foundation funders as well as additional resources and information related to grant funding. The Sierra Nevada Conservancy provides the Funding Opportunities Newsletter as a free resource under its Sierra Nevada Watershed Improvement Program.

[Back to Top](#)

Regional News

California's largest fire torches homes as blazes lash west

AP / July 25, 2021

INDIAN FALLS, Calif. (AP) — Flames racing through rugged terrain in Northern California destroyed multiple homes Saturday as the state's largest wildfire intensified and numerous other blazes battered the U.S. West.

The Dixie fire, which started July 14, had already leveled over a dozen houses and other structures when it tore through the tiny community of Indian Falls after dark.

An updated damage estimate was not immediately available, though fire officials said the blaze has charred more than 181,000 acres (73,200 hectares) in Plumas and Butte counties and was 20% contained.

The fire was burning in a remote area with limited access, hampering firefighters' efforts as it charged eastward, fire officials said. It has prompted evacuation orders in several small communities and along the west shore of Lake Almanor, a popular area getaway.

Meanwhile, the nation's largest wildfire, southern Oregon's Bootleg fire, was nearly halfway surrounded Saturday as more than 2,200 crew members worked to corral it in the heat and wind, fire officials said. The growth of the sprawling blaze had slowed, but thousands of homes remained threatened on its eastern side, authorities said.

"This fire is resistant to stopping at dozer lines," Jim Hanson, fire behavior analyst, said in a news release from the Oregon Department of Forestry. "With the critically dry weather and fuels we are experiencing, firefighters are having to constantly reevaluate their control lines and look for contingency options."

In California, Gov. Gavin Newsom has declared a state of emergency for four northern counties because of wildfires that he said were causing "conditions of extreme peril to the safety of persons and property." The proclamation opened the way for more state support.

Such conditions are often from a combination of unusual random, short-term and natural weather patterns heightened by long-term, human-caused climate change. Global warming has made the West much warmer and drier in the past 30 years.

On Saturday, fire crews from California and Utah headed to Montana, Gov. Greg Gianforte announced. Five firefighters were injured Thursday when swirling winds blew flames back on them as they worked on the Devil's Creek fire burning in rough, steep terrain near the rural town of Jordan, in the northeast part of the state.

They remained hospitalized Friday. Bureau of Land Management spokesperson Mark Jacobsen declined to release the extent of their injuries, and attempts to learn their conditions Saturday were unsuccessful. Three of the firefighters are U.S. Fish and Wildlife Service crew members from North Dakota, and the other two are U.S. Forest Service firefighters from New Mexico.

Another high-priority blaze, the Alder Creek fire in southwest Montana, had charred over 6,800 acres (2,750 hectares) and was 10% contained Saturday night. It was threatening nearly 240 homes.

Elsewhere in California, the Tamarack fire south of Lake Tahoe continued to burn through timber and chaparral and threatened communities on both sides of the California-Nevada state line. The fire, sparked by lightning July 4 in Alpine County, has destroyed at least 10 buildings.

Heavy smoke from that blaze and the Dixie fire lowered visibility and may at times ground aircraft providing support for fire crews. The air quality south of Lake Tahoe and across the state line into Nevada deteriorated to very unhealthy levels.

In north-central Washington, firefighters battled two blazes in Okanogan County that threatened hundreds of homes and again caused hazardous air quality conditions Saturday. And in northern Idaho, east of Spokane, Washington, a small fire near the Silverwood Theme Park prompted evacuations Friday evening at the park and in the surrounding area. The theme park was back open on Saturday with the fire half contained.

Although hot weather with afternoon winds posed a continued threat of spreading blazes, weekend forecasts also called for a chance of scattered thunderstorms in California, Utah, Nevada, Arizona and other states. However, forecasters said some could be dry thunderstorms that produce little rain but a lot of lightning, which can spark new blazes.

More than 85 large wildfires were burning around the country, most of them in Western states, and they had burned over 1.4 million acres (2,135 square miles, or more than 553,000 hectares).

Did you know ... only 6% of California's

population lives in rural areas?

Rural is defined by the US Census Bureau as all territory, population, and housing units that are located outside of urban areas and urban clusters. Urban areas and clusters are determined by population density and size.

Characteristics of California's Predominantly Rural Counties

- 1) Sparsely populated. Just under 1% of the total California population live in these "rural" counties.
- 2) Population tends to be older with 60% of the population above 35 compared to 49% for the state as a whole.
- 3) A higher percentage are married (61% compared to 52%).
- 4) A higher percentage are veterans (18.6% compared to 11%).
- 5) Ethnically homogenous. 82% of the population is white, compared to 47%. Latinos comprise the next highest group (9%), followed by American Indians (3%).
- 6) 91% speak English at home (compared to 61%).
- 7) Higher percent graduate from high school (84%) compared to state (77%), but fewer complete college (17% compared to 27%).
- 8) Fewer residents are in labor force (53% compared to 62%), but unemployment rates are about the same as the state average (4.7% compared to 4.3%).
- 9) A higher percentage are employed in the service occupations, construction and farming than for the state as a whole.
- 10) The top 4 industries (employing 54% of the population) are:
 - a. Educational, health, social services
 - b. Arts, entertainment, recreation, accommodation and food services

- c. Retail trade
- d. Public administration.

11) A substantially higher number are employed in agriculture, forestry, fishing, hunting and mining (6.0% compared to 1.9%).

12) Median household income is \$36,582 compared to \$47,493. As expected, a higher percentage receive social security (34%) and retirement income (24%).

13) Although incomes are lower, the percentage of families with incomes below the poverty level is the same (10%).

14) 85% of the housing units in rural counties are 1 unit detached dwellings (71%) or mobile homes (14%). This compares to 56% and 4% respectively.

15) 31% of housing units use wood for heating fuel compared to 1.8% statewide.

16) 3% of housing units have no telephones (2% statewide).

17) Federal lands comprise 64% of the total surface area.

18) The remaining non-federal lands are predominantly rural, comprising 33%. Only 1% of non-federal lands is developed.

19) Only 10% of the total land area is in agriculture.

Excerpted from "[Quick Facts About Rural California](#)" produced by the California Communities Program by the University of California

Editorial: the California Salmon wipeout is worse than you think

Salmon are facing extinction not just because of climate change, but because of Trump-era policies that continue to be carried out by President Biden's and Gov. Gavin Newsom's administrations. (Associated Press)

The [news reports](#) about the California salmon wipeout got a good chunk of the story right: Record-breaking [heat waves](#) made Northern California rivers too warm to sustain migrating chinook salmon, and virtually all of the salmon in the Sacramento River this summer have died, or will die, before reproducing. Any eggs that were successfully laid, or the fry hatched from those eggs, are also probably doomed. So a generation of the rare and endangered [winter-run](#) Chinook is virtually gone, and the spring-run as well.

Some of the details were a bit off, though. It's important to know that the salmon are facing extinction not just because of warm weather or climate change, but because of Trump-era policies that continue to be carried out by President Biden's and Gov. Gavin Newsom's administrations, despite those Democrats' professed rejection of Donald Trump's destructive approach to California's water. Those decisions are still reversible. It's very late to save one of the remaining marvels that make California what it is. But it's not too late.

[Salmon](#) are cold-water fish, evolved to begin their lives in bracingly frigid spring water and snow-fed streambeds, then migrate downriver to the Pacific — and then fight their way back again to the locations of their birth to spawn and begin the cycle anew.

California is unique in having four separate annual pulses of anadromous (migrating from saltwater to freshwater) salmon in a single river. Each pulse, or run, is defined by the time of year in which the ocean-going adult fish stop eating and make their way from the Pacific and enter river mouths and estuaries to begin the journey hundreds of miles upstream, against river and stream currents, to spawn — hence the [winter](#), spring, fall and late-fall runs. Although all are [chinook salmon](#), each population is genetically, behaviorally and ecologically distinct and is made up of unique evolutionary lineages that found particular migration times and behaviors for reaching particular spawning pools. It is as if each subspecies mapped out its own travel schedule and chose its own lane in order to leave each other enough space to travel the same highway.

For thousands of years, the winter run's destinations after traveling from the open Pacific were springs and small pools of water in the Cascades. But that all changed in the 1930s, when construction began on Shasta Dam, owned by the U.S. Bureau of Reclamation. The fish now lay their eggs farther downriver, below the dam, where the water often gets too warm.

One of the bureau's duties is to keep enough water in the reservoir's lower depths, where it is shielded from the summer heat, so that it can be released into the river as needed to keep it cold enough to prevent extinction of the winter run. Government biologists issue guidelines prescribing the amount of water needed.

As president, Trump scoffed at those practices, saying all the stored water should go to orchards and farm fields. To use water to prevent extinction, he said, was just “shoving it out to sea.” His Interior Department pushed aside its biologists and got new ones, who issued new guidelines calling for much less cold-water storage.

The Biden administration is adhering to the same weakened and scientifically suspect biological opinions. This year, to its discredit, the California Water Quality Control Board, made up of gubernatorial appointees, [signed on to the low storage](#) requirements for cold water in Shasta and the release of water to almond orchards and rice fields. Their plan in effect anticipates the extinction of the winter-run chinook, because the fish have on average a three-year lifespan — and their numbers were decimated last year too, like this year’s wiped-out generation, by water that was too warm and too scarce. It was the failure to retain and release cold water for the winter run, at least as much as record-shattering heat waves, that did in the fish.

After the winter run is lost forever, the spring run is likely next in line, and then the fall run, and the late-fall run, and then that's it.

Is it a big deal? For people who see salmon as simply a pinkish-orange fish on a plate, perhaps not. Restaurant menus and grocery store freezer cases are full of a distant relative of the chinook — farmed Atlantic salmon, [raised in Chile](#) (in the Pacific, ironically) and threatening the local environment.

But saying California can lose the wondrous migrating chinook, a keystone species that for eons has [enriched the soil of inland regions](#) and sustained an ecological web that includes black bears in the Sierra and orcas in the Pacific, because there is still a pink fish called by the same name, is a little like saying it would be no big deal to lose the redwoods or the giant sequoia, because after all, there are other trees in other places.

Perhaps we can give up the [Western monarch butterfly](#) — also an endemic California migratory species, and also, like the winter-run chinook, down to its last few thousand or so individuals — because there are other butterflies in other states. Perhaps we can lose everything that makes California's natural environment special.

Whether we do may be up to Biden and Newsom, on whose watch one of California’s most iconic species may be snuffed out because they chose to follow the fake “science” dreamed up in the Trump era. It's all Californians' watch too, and after the iconic salmon, butterflies and trees, it may be all of us in danger of being wiped out.

California Salmon Suffer in Drought

Alastair Bland / Pacific Sun / July 21, 2021

So many salmon once spawned each year in the Central Valley that humans all but lived on them, and chemical traces of the fish are still detectable in the soil, where the scavenged carcasses fertilized riparian vegetation.

“It was a salmon-based ecosystem,” said Peter Drekmeier, the policy director of the group Tuolumne River Trust.

All that has changed. California’s Chinook population has collapsed. The fish compete against agriculture, urban growth and climate change, and with their inland habitat mostly gone and the cold water they need to spawn a scarcer and scarcer resource, wild Chinook, especially in the San Joaquin River, face extinction. So do several other fish species, whose estuary habitat has been destroyed or drained dry by agricultural diversions. Reduced flows and higher water temperatures also cause frequent blooms of toxin-producing algae and cyanobacteria in the Sacramento–San Joaquin Delta—events that turn the water an electric green and which scientists consider serious threats to public health.

Environmentalists say the San Joaquin watershed needs more water. So do state officials, who in 2018 ordered water users to give a large share of water back to the San Joaquin and its tributaries, notably the Tuolumne.

But the fight to restore this ailing ecosystem has turned political, and environmentalists leading the effort are facing an unlikely foe—the water service provider for one of the most liberal cities in the country. The San Francisco Public Utilities Commission owns and operates O’Shaughnessy Dam, the cement wall built across Yosemite’s Hetch Hetchy Valley in the early 1920s. The dam gave birth to Hetch Hetchy Reservoir, the main water supply bank for 2.8 million people in San Francisco, the Peninsula and the South Bay. While the State Water Resources Control Board’s plan requires the utilities commission, as well as irrigation districts, to leave 40% of the San Joaquin River watershed’s total, or unimpaired, flow in the river for the benefit of fish, wildlife and water quality, the water users aren’t cooperating.

They refused to abide by the order when it was issued in late 2018, and in May, the City of San Francisco and the PUC sued the state to squash their river revival plan. The May 13 lawsuit argued that “there is little evidence that the flow conditions [called for by the state] will, in fact, materially protect native fish and wildlife”—a claim that biologists and environmentalists are quick to challenge.

The plaintiffs also took an unlikely political stance by embracing a recent change to the Clean Water Act initiated by the Trump Administration, which stripped state governments of much of their power to protect watersheds from energy development projects. President Biden is considering reversing the new rule, which weakened the State Water Board’s ability to oversee management of Hetch Hetchy.

Most scientists studying the watershed, its vanishing fishes and its plague of algal blooms say the system needs more water. They say current conditions have turned the Delta into a warm-water ecosystem in which species like introduced catfish and black bass will thrive but from which salmon, Delta smelt and green sturgeon will dwindle or disappear.

"[The San Joaquin River] cannot regain its ecological integrity and provide sustainable salmon fisheries without more flow," the Department of Fish and Wildlife's Water Branch Chief Scott Cantrell wrote in a 2013 letter urging the Water Board to increase the river volume to 60% of its unimpaired flow. Years of negotiations ensued, and in 2018, the Water Board settled on a compromise of 40%, within a 30% to 50% range.

But even the 40% compromise is more than water users want to swallow. Steven Ritchie, the SFPUC's assistant general manager for water, says that for all practical purposes, there is not enough water in the Tuolumne watershed to meet the state's requirements without unfairly impacting the PUC's customers. San Franciscans already use relatively little water, and Ritchie says they would need to reduce current water use by half or more in order to provide the Tuolumne with 40% of its unimpaired flow.

Michael Cooke, a water policy expert with the Turlock Irrigation District—which along with the Modesto Irrigation District shares rights to the Tuolumne's water with the SFPUC—says impacts to farmers "would be severe" if water users met the Water Board's requirement.

Cooke and Ritchie say they and their agencies are willing and ready to help restore the river, and to this end they've offered up their own measures—part of a larger, basin-wide process called the "Voluntary Agreements" resolution. This program would ostensibly restore the Central Valley's aquatic ecosystems, but environmentalists have widely criticized the Voluntary Agreements for lacking rigor, direction and a basic timeline for completion.

They also, generally speaking, lack water. The proposed actions of this alternative plan lean on habitat improvement measures, with just a relatively small amount of flow added back to depleted rivers.

"River flow is not the only variable," Cooke said. "There's also habitat, predators, Delta conditions, ocean conditions That's why we're looking at other strategies than just pouring more water into the system."

The water districts have argued for culling populations of nonnative predator fish to help salmon, though an independent scientific review, ordered by the National Marine Fisheries Service, concluded this would be less beneficial for salmon than allowing more water down the river.

The districts have also offered to restore small parcels of floodplain where juvenile salmon find food and shelter. Research shows that access to inundated floodplains significantly increases the odds of a young Central Valley salmon surviving its migration to the ocean. But the total proposed floodplain habitat is almost negligibly sparse—80 scattered acres along a 50-mile section of river.

There is also some question whether these restored acres will even flood.

"You can restore floodplains, but if there isn't water to activate them, they won't work," Drekmeier said.

Jon Rosenfield, a senior scientist with the environmental watchdog group San Francisco Baykeeper, said water flow in a river is "the master variable" that ultimately determines how

effective other measures, like habitat improvements and predator control, can be.

“Nothing can substitute for flow,” Rosenfield said.

To the frustration of Tuolumne’s advocates, the SFPUC and the communities it serves have given feeble pursuit of alternative water sources. A recycling plant now under construction will produce between 2 and 4 million gallons of water per day—a scant fraction of the commission’s daily demand of about 200 million gallons. A few other recycling projects are in development, but significant inputs of recycled water are many years away. By contrast, the Orange County Water District is nearing completion on a plant that will produce more than 100 million gallons per day.

For the SFPUC, this means that giving water back to the Tuolumne River would cut directly into the urban supply. According to Ritchie, the state’s water quality plan would require the SFPUC to forfeit 93 million gallons every day to the river.

The SFPUC’s Voluntary Agreement proposal, he said, would be much easier on customers’ taps; it would mean giving up about 15 million gallons per day on average. This water would be released into the lower Tuolumne in the form of so-called “pulse flows”—water freed from dams in strategic bursts intended to give out-migrating salmon smolts a boost.

“We think that’s a more effective approach,” Ritchie said.

The water would be recaptured again and diverted to farmers before entering the San Joaquin—a curious add-on to the plan that environmentalists say ignores the needs of downstream users, and the fact that the out-migrating salmon are trying to reach the ocean, not just the San Joaquin River.

The pulse flow strategy relies on predicting when Chinook salmon smolts are leaving the river system—something Rosenfield said cannot be done reliably. The Central Valley’s Chinook, he said, evolved to utilize a widely diversified array of behavioral traits—among them migration timing. What this means is, schools of young salmon are swimming downstream almost constantly for several months in the spring. Short pulse flows, by design, would miss most of the fish.

“Once the pulse ends, those fish that didn’t get out of the river at the ‘right’ time are sunk,” Rosenfield said. “And, as it turns out, you can’t serve enough fish with any one short pulse to provide an adequate bump in survival—we’ve done the math on this.”

From February through June 21 of this year, the Tuolumne River in Modesto ran at an average 13% of the watershed’s unimpaired flow. Greg Reis, a hydrologist with The Bay institute, said such numbers are typical for the wet months, when nearly all rainfall and snowmelt is captured in reservoirs. The percentage of runoff in the river rises in the summer months, but only because total water volume in the watershed declines. The Tuolumne is now flowing at a trickle, and elsewhere in the Central Valley, river levels are dropping and temperatures rising. Salmon will soon be spawning, and experts, watching temperature forecasts, predict massive egg kills.

Historical hydrology graphs show a close link between river flows and fish numbers. In 1985, 40,000 Chinook salmon spawned in a single year in the Tuolumne, and in 2000, 18,000 salmon returned. Each of these Matterhorn-like spawning spikes came one three-year Chinook life cycle after extremely rainy winters, when rivers flowed high. On the flipside, extreme droughts have been followed by sharp dips in salmon abundance. In 1980, 559 salmon returned to the Tuolumne, 77 spawned in 1991 and 113 came back in 2015.

That fish need water is an inconvenient truth for California's agriculture industry. For years, farming interests have argued that the Central Valley's beleaguered river ecosystems need improved habitat, pollution and predator controls, and better fishery management in the ocean—basically everything except significant increases in water flow, even for rivers that have been pumped nearly dry.

But a wealth of research from state and federal agencies, universities, organizations and even irrigation districts, which find themselves bound by law at times to conduct environmental studies, shows otherwise—especially that juvenile salmon survival increases as river flows are elevated in combination with habitat improvements, and that predator control efforts are relatively ineffective unless higher water flow is incorporated. One 2013 "Predation Study" commissioned by the Turlock and Modesto irrigation districts—the SFPUC's Tuolumne partners—found that large increases in the Tuolumne's flow, as high as 2,100 cubic feet per second, dramatically increased the odds that tagged salmon released upstream would pass hydrophone stations lower in the river. At flows between 280 and 415 cubic feet per second, relatively few of the fish were detected and were presumed eaten by predators.

"They didn't like the results, so they downplayed it," said Chris Shutes, a water policy specialist with the California Sportfishing Protection Alliance.

He said that water users have repeatedly extracted favorable data from such studies which give the impression that adding water to depleted rivers is either insignificant or harmful. In fact, closeup views of the numbers can show that. The same study found that increasing the river's flow within the lower end of the range led to slightly reduced survival of young salmon—possibly because very small fish can be swept downstream, and often past predator ambush points, by higher flows if there are no inundated floodplains to utilize. Shutes said that floodplains along the Tuolumne become inundated at about 1,700 cubic feet per second, meaning that flow increases beneath that threshold can be detrimental. In mid-June, the Tuolumne River flowed at barely above 100 cubic feet per second.

Barry Nelson, a Berkeley environmentalist who has fought to protect the ecosystems of the Central Valley and San Francisco Bay for three decades, said San Francisco's water provider is twisting data to meet its own interests and, in doing so, helping drive "a wave of extinctions in San Francisco Bay."

"The SFPUC is denying science in the same way the tobacco and the oil industries denied the science about cancer and climate change," he said.

Federal law mandates salmon recovery. The Central Valley Project Improvement Act of 1992 includes a requirement for agencies to rebuild salmon and steelhead runs to something

resembling their historic abundance. The Water Board's flow requirements—and, ostensibly, the Voluntary Agreements—are intended to meet this goal. For the Tuolumne River, the target is to produce 38,000 adult fish in the ocean. Roughly half those salmon might eventually swim upriver and spawn, completing their legendary life cycle—still just a fraction of historic highs.

"It's very doable," Rosenfield said.

His organization, meanwhile, is not just thinking about fish. Along with the Stockton environmental justice group Restore the Delta, Baykeeper tracks harmful algal blooms. These episodes have grown more frequent in the past decade. Globally, they present a phenomenal mystery, almost certainly related to warming trends, and a challenge for waterway managers and health officials.

In the Delta, upstream diversions are probably fueling the HABs, as they're often called, since lower flows often mean higher temperatures and nutrient concentrations. The blooms can turn water neon-green and produce toxins that linger and spread, even migrating into saltwater after the HABs subside. Rosenfield says cyanotoxins traced to Delta blooms have been found in San Francisco Bay, and emerging evidence shows the same toxins can go airborne and even harm human health through unexpected pathways—notably by tainting food crops grown with polluted irrigation water. The Delta is the water supply hub for tens of millions of people, and it is feasible that the toxins could find their way into municipal water supply systems. New research shows a strong link between certain algal toxins and liver cancer, and possible associations with Parkinson's and Alzheimer's diseases.

In the Delta, harmful algal blooms are a nuisance and a menace to swimmers, boaters, pets and, in general, all 330,000 people in the City of Stockton.

"I was just at the Stockton waterfront, and there is a bloom spreading right now," said Barbara Barrigan-Parrilla, executive director of Restore the Delta, in mid-June. For years, she says, her group has encouraged state agencies as well as the SFPUC to increase reservoir releases to improve water quality in the Delta, as well as to protect the water supply that is pumped to Los Angeles.

"They've heard from us, they've read our letters, they know we're concerned—but they just don't think protecting Delta communities from harmful algal blooms is a worthy cause," she said.

When asked whether such downstream consequences of the commission's water withdrawals merit more conservation on the PUC's customers' part, Ritchie said no.

"Asking our customers to put more water in the system so that people in Southern California and other places have improved water quality doesn't seem like an equitable solution to us," Ritchie said.

San Francisco residents have shown themselves willing and eager to conserve water to help the environment. During the last drought, the city's residents cut their water use by billions of gallons. However, these conservation efforts didn't help the Tuolumne River or communities downstream at all. With less water flowing from city taps, more water

remained in Hetch Hetchy Reservoir, where the SFPUC kept it. While San Francisco residents left their toilets yellow and their lawns brown, and while thousands of residential wells ran dry in the San Joaquin Valley, the commission hoarded its surplus water many miles upstream from the river's salmon habitat.

"The PUC didn't share any of the water with the environment," Nelson said. "San Franciscans conserved during the drought, but it had zero benefit for the environment."

By the end of the drought, after salmon experienced near-total spawning failures in the Central Valley, the SFPUC had a reservoir filled with water. Only when the wet winter of 2017 drenched the state with torrential rains and flooding did the PUC open the gates and flood the river.

Drekmeier remembers that winter.

"The Tuolumne was beautiful," he said.

Now, as drought wrings the state dry, ecological needs have fallen last in line for water.

"They starve the river in dry years," Drekmeier said.

'Climate Change has become real': extreme weather sinks prime tourism site

Annette McGivney / The Guardian / July 29, 2021

Chaos erupted at Bill West's business in Page, Arizona, last week when he was forced to tell dozens of paid clients their summer vacations were either canceled or on hold – effective immediately.

West, the owner of a houseboat timeshare company, was scrambling after record-low water levels at Lake Powell – one of the most popular motorized boating destinations in the US – disrupted recreational and tourism activities throughout the region.

The National Park Service abruptly announced earlier this month that houseboats could no longer use the Wahweap Launch Ramp, the busiest boat launch site in the area. Boats already cast out into the water were warned they had less than a week to return to land, or risk getting marooned.

West sat in traffic for more than an hour last Friday trying to corral 30 of his houseboat timeshares from the 180-mile-long reservoir before the final deadline. Dozens of vehicles stretched for at least a mile waiting for their turn on a concrete ramp that no longer reached

the water. Even four-wheel-drive trucks were getting stuck in the mud as the Lake Powell shoreline retreated faster than federal water managers expected.

During what should have been prime houseboat vacation season, West says he's forced to cancel timeshare reservations for more than 200 trips this summer. With his business slamming to a halt, he says he may have to lay off as many as 40 employees.

"This is a crisis for our community that is just as bad as Covid," West said of Page, which has a population of 7,500 and is the main service hub for Lake Powell. "It is peak season and the whole town is being hit hard – the restaurants, the grocery stores, the bars, we are all feeling it."

While climate change has exacerbated wildfires, heatwaves and flash floods this summer, it is also taking a heavy toll on the tourism industry that's dependent on Lake Powell. Last week the water line reached a historic low of 3,554ft, a level that has not been seen since 1969, when the reservoir was first filled. The giant reservoir is currently three-quarters empty and will keep dropping at least through next spring due to record low snowpack levels in the Colorado River basin.

If this trend continues, the Park Service is advising boating-based businesses like West's to make unpredictability part of their business model.

"We sent out plenty of advisories to stakeholders about the possibility of very low lake levels this year and no one took it seriously," said Billy Shott, superintendent of the Glen Canyon National Recreation Area, which manages Lake Powell. He compares the park's regular drought notices to routine avalanche alerts in the mountains. "Well, now the avalanche has actually happened. Climate change has become real at Lake Powell."

Out of seven public boat launch ramps at Lake Powell, only Bullfrog in southern Utah – a five-hour drive from Wahweap – remains reliably functional due to a series of recent ramp extensions. But that too may soon become inaccessible. The Bureau of Reclamation predicts there is a 79% chance Lake Powell will drop another 29ft from the current historic low "sometime next year".

According to a National Park Service report, Glen Canyon had 4.4 million visitors in 2019, making it one of the most visited parks in the country. The visitors spent \$427m in Page and the surrounding area and supported 5,243 jobs, including providing a vital source of employment for the nearby Navajo Nation.

Brent Dooley says it's been an annual family tradition since 2004 to spend a week house-boating on Lake Powell. A total of 12 family members were planning to be on the trip this year until they were forced to make an abrupt change.

"We are devastated that our vacation was cancelled," said Dooley. "We had a really tough year with deaths in the family and all of us being together was going to be our saving grace. But then the lake level dropped and, boom, our vacation is gone."

Beyond impacts to recreation, climate change is creating other big problems for Lake Powell and its sister reservoirs in the Colorado River storage system that provides water to 40

million people in the western United States. The entire system is depleted from extreme drought conditions and Lake Mead, the country's largest reservoir, is expected to reach a record low in August that will trigger the first ever mandatory water cutbacks to Arizona and Nevada.

As water managers and the Park Service scramble to adapt an infrastructure that was designed to function optimally when Lake Powell was full – which last happened in 1999 – some environmentalists are fighting to protect the nearly 100,000 acres of land that has emerged from beneath the high water mark.

Before it was buried by Lake Powell, the sprawling region of slickrock canyons called Glen Canyon was described by environmentalist and author Ed Abbey as the “living heart” of the Colorado River. And now that environmental groups, scientists, and cartographers have access to document the restored ecology in hundreds of side canyons, they say it’s time for the park officials to no longer focus solely on maintaining water-based recreation at Lake Powell.

“We are not anti houseboat, we are just pro-Glen Canyon,” says Eric Balken, executive director of the not for profit Glen Canyon Institute based in Salt Lake City. “We want the ecological values of Glen Canyon to be part of the discussion about how to move forward during climate change.”

Balken says there is huge potential for other recreational opportunities in the side canyons that emerge out of Lake Powell. And the Page boating industry agrees that the newly accessible scenic areas in Glen Canyon are a big draw for tourists. “My customers say they have never seen so many beautiful places to park a houseboat,” says West. “The lower the lake gets the better it becomes for camping.”

If only they could get there..

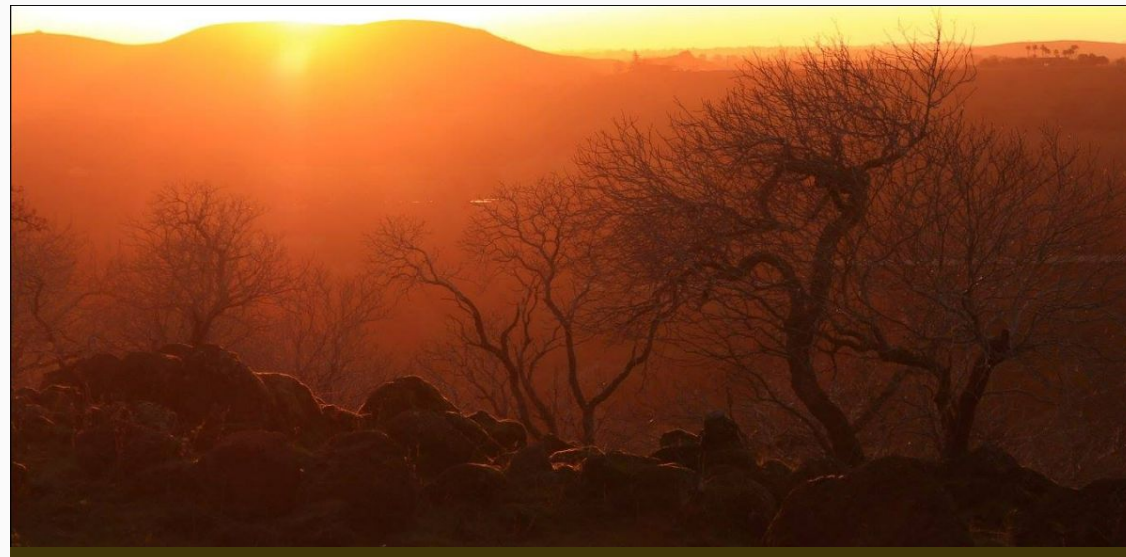
Trees and Cattle

by James Dickey

Many trees can stand unshaded
In this place where the sun is alone,
But some may break out.
They may be taken to Heaven,
So gold is my only sight.
Through me, two red cows walk;
From a crowning glory
Of slowness they are not taken.
Let one hoof knock on a stone,
And off it a spark jump quickly,

And fire may sweep these fields,
And all outburn the blind sun.
Like a new light I enter my life,
And hover, not yet consumed,
With the trees in holy alliance,
About to be offered up,
About to get wings where we stand.
The whole field stammers with gold;
No leaf but is actively still;
There is no quiet or noise;
Continually out of a fire
A bull walks forth,
And makes of my mind a red beast
At each step feeling how
The sun more deeply is burning
Because trees and cattle exist.
I go away, in the end.
In the shade, my bull's horns die
From my head; in some earthly way
I have been given my heart:
Behind my back, a tree leaps up
On wings that could save me from death.
Its branches dance over my head.
Its flight strikes a root in me.
A cow beneath it lies down.

From: Poems 1957-1967, copyright 1960, 1962, and 1966 by James Dickey (University Press of New England)





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