

## FACT SHEET- CSPA/C-WIN/SCS TEMPERATURE MANAGEMENT PLAN 2021

The situation for salmon in California’s two largest river systems is dire. Most critically, the Bureau of Reclamation’s proposed Central Valley Project (CVP) operations of the Sacramento and Trinity Rivers could become a species extinction event. The State Water Resources Control Board (State Water Board) must now approve or disapprove of Reclamation’s Sacramento River temperature management plan for the CVP.

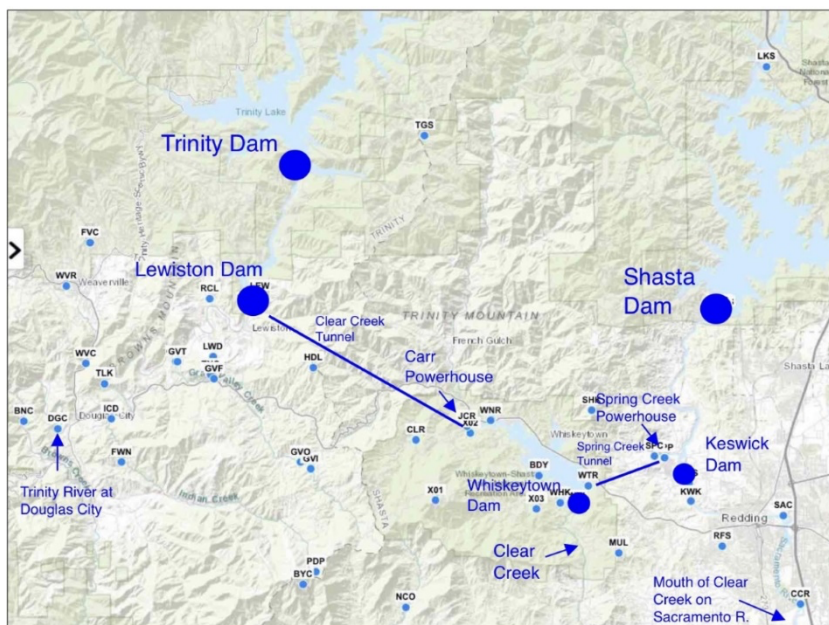
In response to this emergency, the California Sportfishing Protection Alliance, California Water Impact Network and Save California Salmon have submitted an alternative water operations plan (CSPA Plan) to the State Water Board that would significantly lower water temperatures and result in increased salmon survival during this critically dry year.

The CSPA Plan and Reclamation’s plan can be found at [https://www.waterboards.ca.gov/waterrights/water\\_issues/programs/drought/sacramento\\_river/](https://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/sacramento_river/).

Reclamation’s proposed operations would deplete the cold-water reserve (or “pool”) in Shasta Reservoir. This would kill most of the winter-run and fall-run Chinook salmon eggs and young in the Sacramento River through excessively warm water releases. Reclamation would also deplete the cold-water pool in Trinity Reservoir in late summer – the time the important Klamath-Trinity fall-run Chinook move into the Lower Klamath River to spawn. As a result, Reclamation’s plan would cause sport, commercial and tribal fisheries to suffer for years.

CVP reservoir storage is critically low. Runoff in April and May was much less than forecasted. Cold water in Shasta and Trinity reservoirs is lower than predicted. Reclamation made allocation of these extremely limited water resources far more difficult by making excessive agricultural releases from Shasta Reservoir in April and May.

**Figure 1. Shasta-Trinity Division of the CVP**

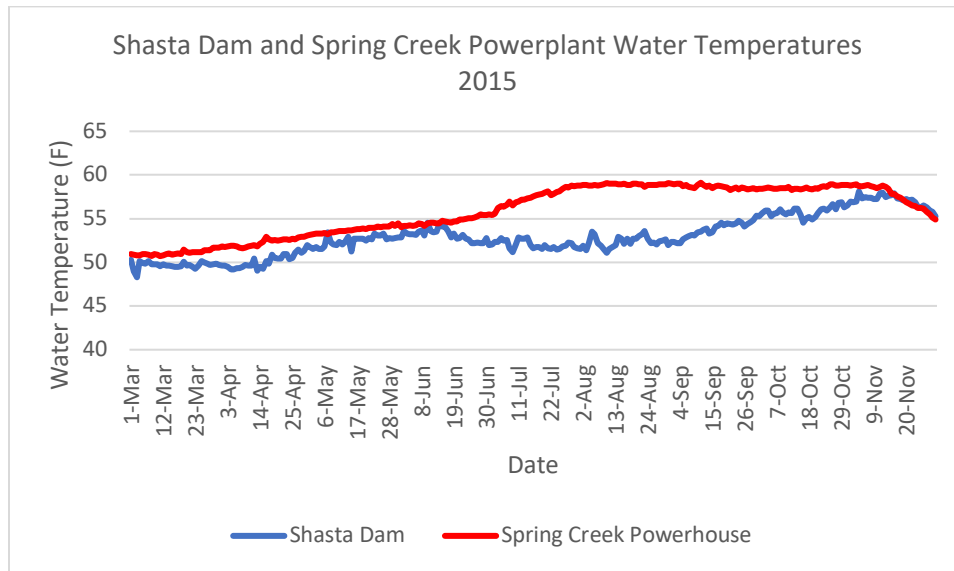


Fish-killing scenarios develop when warm water exported from the Trinity system through the ten-mile Spring Creek Tunnel to Whiskeytown Reservoir discharges into Keswick Reservoir downstream of Shasta Dam (Figure 1, left).

Initially, water released from Trinity Dam is cold, but it warms as it moves through Lewiston Reservoir and is diverted to Whiskeytown Reservoir via the Clear Creek Tunnel to Carr Powerhouse.

Trinity water warms further in Whiskeytown Reservoir; this warm water then mixes in Keswick Reservoir with colder Shasta Dam releases, resulting in a net temperature spike in Keswick Reservoir water. The water that is released into the Sacramento River below Keswick typically is several degrees warmer than discharges from Shasta Dam in the summer and late fall, resulting in significant salmon mortality (Figure 2, below).

**Figure 2. Temperature comparison in drought year 2015**



The CSPA Plan (main highlights in Figure 3, below) will reduce Sacramento River water temperatures and significantly increase salmon survival in the following ways:

1. Limit June-through-October releases from Shasta-Keswick dams to 5,000 cfs (cubic feet per second), using Shasta’s cold-water pool to maintain Keswick releases at less than 54°F.
2. Eliminate June-through-October use of the Spring Creek power tunnel between Whiskeytown and Keswick reservoirs.
3. Maintain June-through-October flows of 300 cfs to Whiskeytown Reservoir through the Carr powerhouse, increase June-October releases to Clear Creek to 300 cfs, and increase June-October releases from Trinity-Lewiston dams to the lower Trinity River to 800-870 cfs.

**Figure 3. CSPA Proposed Actions**

	Apr	May	Jun	Jul	Aug	Sep	Oct
<b>Average monthly values for daily releases/flows</b>							
CSPA Proposed Shasta Release cfs		8100	5000	5000	5000	5000	5000
CSPA Proposed Clear Creek Release cfs		335	300	300	300	300	300
CSPA Proposed Sac. R. @ Clear Creek cfs		9235	5300	5300	5300	5300	5300
CSPA Proposed Lewiston Release to Trinity R cfs		1498	850	800	850	870	800

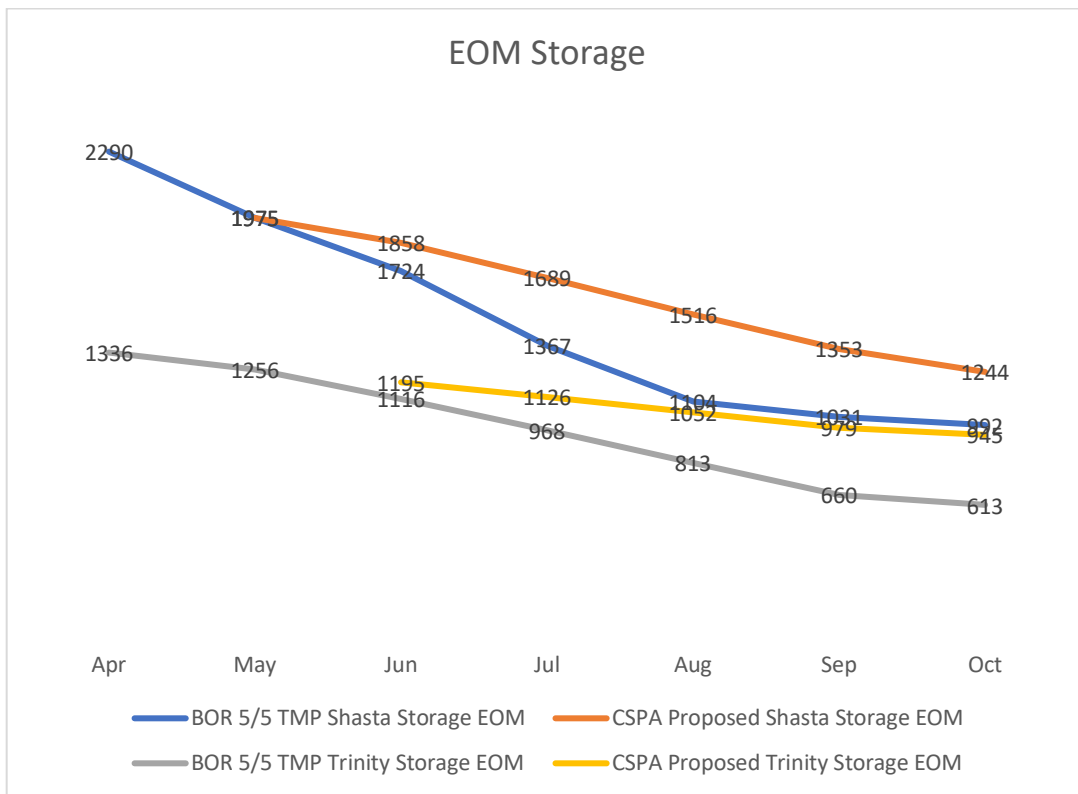
*(Red font indicates BOR’s approximate actual releases. CSPA et al. opposed high May Shasta releases.)*

*(Actual Lewiston release to Trinity River may be higher per Lower Klamath Record of Decision.)*

The CSPA Plan would greatly reduce the export of Trinity River water to Whiskeytown Reservoir. In addition, the CSPA Plan would release all Trinity exports down Clear Creek, eliminating the warming that occurs when water moves from Whiskeytown through the Spring Creek Powerhouse into Keswick Reservoir. Water released to Clear Creek from Whiskeytown Reservoir is also colder than water released from Whiskeytown to the Spring Creek Powerhouse, because releases to Clear Creek are drawn from deeper in Whiskeytown Reservoir. Colder releases from Keswick Reservoir, no longer mixed with warmer releases through the Spring Creek Powerhouse, will improve survival of winter-run salmon eggs in the prime 10-mile spawning reach of the Sacramento River downstream of Keswick Dam.

As it has outlined in its plan for 2021, the Bureau of Reclamation intends to move 90 thousand acre-feet (TAF) to 110 TAF of Trinity water per month to the Spring Creek Powerhouse during the hottest part of the summer. Elimination of releases through the Spring Creek Powerhouse in summer will reduce demand on Shasta’s cold-water pool, significantly improving Sacramento River temperatures for winter-run and fall-run Chinook while simultaneously conserving cold water in Trinity Reservoir by up to 50%. See Figure 4 below.

**Figure 4. Comparative End-of-Month Storage in Shasta and Trinity Reservoirs under CSPA and Reclamation Plans**



## **Ancillary Benefits of CSPA Plan**

1. Improved rearing and migration conditions for steelhead in the Klamath, Trinity, Clear Creek, and Sacramento rivers.
2. Improved flows and water temperatures in the lower Klamath River below the mouth of the Trinity River for salmon, steelhead, and sturgeon.
3. Improved migration conditions for juvenile and adult Coho salmon in the lower Trinity and lower Klamath rivers by providing higher spring-to-fall flows and higher carryover storage in Trinity Reservoir.
4. Increased end-of-water-year storage by over 500 TAF, with nearly one-third more storage in Shasta and Trinity reservoirs, leaving more water for fish and people in 2022.
5. Elimination of the need for powerhouse bypasses at Trinity Dam due to higher storage.
6. Improved recreation at Shasta and Trinity reservoirs due to higher storage

## **Negatives**

The proposal will have negative effects on hydropower throughout the Shasta-Trinity Division hydropower system and on water deliveries to CVP contractors. And, though it must be measured against the effects on water temperature, generation capacity will remain available in 2021 for incidents of exceptional demand for electricity.

## **Conclusion**

The proponents of the CSPA Temperature Management Plan understand that their proposed operations are no panacea. Fish will take a terrible hit in 2021 for multiple reasons. And as the fish suffer, so will the tribal, commercial fishing and sport angling communities that depend on them for livelihoods, food, and recreation.

But the CSPA Plan points to a better future for both fish and people. It ensures fish and communities a good chance for stability in coming years. Reducing total releases will keep water colder in key river reaches and save fish for future generations.

During 2020, Reclamation and many of its contractors responded to dry conditions by draining their accounts of millions of acre-feet of water. Now they are seeking “balance” of beneficial uses. But balance must account for the amount already spent – not just in 2020 but also in April and May of 2021, when Shasta releases were far more than Reclamation’s initial Temperature Management Plan proposed. Balance must incorporate more than a snapshot in time.

The State Water Board must act quickly and decisively to determine the reasonable use of our limited water resources at this terrible moment – and that includes actions beneficial to fish and people. Without these actions, our salmon will disappear. That’s not hyperbole. Absent the State Water Board’s intervention, California’s salmon runs will become nothing more than a poignant memory, reduced to scattered and remnant populations: *just like Delta smelt became in the last drought in 2014 and 2015.*