



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Northern Region
601 Locust Street
Redding, CA 96001
(530) 225-2300
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



April 20, 2022

Eileen Sobeck
Executive Director
State Water Resources Control Board
1001 I Street, 25th Floor
Sacramento, CA 94814
eileen.sobeck@waterboards.ca.gov

SUBJECT: Re-adopt Drought Emergency Regulation on the Shasta and Scott Rivers with Modified and Additional Recommendations

Dear Director Sobeck:

The purpose of this letter is to request re-adoption of the drought emergency regulation for an additional twelve (12) months, and recommend several adjustments to flows and conditions within the drought emergency regulation.

On May 10, 2021, Governor Gavin Newsom extended an existing drought proclamation to include the Klamath Basin. Condition 6 of that proclamation requires the State Water Resources Control Board (SWB) and California Department of Fish and Wildlife (CDFW) to evaluate minimum instream flows and other actions needed to protect salmon, steelhead, and other native fishes. In the Shasta and Scott Rivers critical species include federal and state-listed threatened Southern Oregon and Northern California Coho salmon, Chinook salmon, and Steelhead. Chinook salmon are biologically and commercially important. All of them represent critical Tribal trust resources.

On June 15, 2021, CDFW transmitted a letter providing recommendations to inform proposed drought emergency regulation for the Shasta and Scott Rivers. On August 17, 2021, the SWB approved the drought emergency regulation that included CDFW recommended drought emergency minimum flows. The Office of Administrative Law adopted the drought emergency regulation for the Shasta and Scott Rivers, and it went into effect upon filing with the Secretary of the State on August 30, 2021. The SWB may re-adopt the emergency regulation if drought conditions persist.

Director Sobeck

April 20, 2022

Page 2 of 9

Northern California experienced one of its driest January-March periods on record in 2022. Welcomed precipitation has occurred in April but severe drought conditions are expected to persist for the remainder of the year. On March 28, 2022, Governor Gavin Newsom extended the existing drought proclamation. A summary of CDFW recommendations follows:

- Reduce minimum flows on the Shasta River during the winter with ramp-up and ramp-down flows in the fall and spring,
- Implement ramp-down flows on the Scott River in June,
- Retain minimum summer flow values in the Scott and Shasta Rivers,
- Extend the existing prohibition on inefficient livestock watering to March 31, and
- Where watermaster service has jurisdiction, require riparian and groundwater diverters to coordinate water extraction with the Scott Valley and Shasta Valley Watermaster District (SSWD).

This correspondence is also transmitted in the spirit of Resolution 6 of the Shasta and Scott drought emergency flow requirements adopted on August 30, 2021. Resolution 6 states:

“Resolved #6; The State Water Board directs staff to continue to work with CDFW to evaluate and refine the drought minimum instream flows adopted in this regulation if new scientifically-defensible information becomes available....”

Minimum Instream Flow Recommendations

As the Trustee Agency for California's fish, wildlife, and native plant resources (See, e.g., Fish and Game Code sec 1802) CDFW is providing drought emergency minimum flow recommendations by month as daily averages. Each value will be measured at the identified gages (Tables 1 and 2) in cubic feet per second (cfs). Minimum flows and other recommendations were developed in consultation with the National Marine Fisheries Service (NMFS) and are not intended to set the stage for long-term management considerations, nor should they be construed to provide adequate protections for salmonids over extended periods of time. They only provide drought emergency minimum flow recommendations for all life stages of salmon during the current drought emergency. These drought emergency minimum flows are intended to enable salmonids in these rivers to survive drought emergency conditions.

Director Sobeck
 April 20, 2022
 Page 3 of 9

Table 1. Drought Emergency minimum flow requirements for the Shasta River at the Yreka Gage

Shasta (Yreka) USGS 11517500	Daily Average Minimum Drought Emergency Flow Requirements (cfs)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Existing	135	135	135	70	50	50	50	50	50	125	150	150
Proposed	125	125	125-105 ^a	70	50	50	50	50	50-75 ^b	105	125	125

a Minimum flow at the Yreka gage March 1-24 = 125 cfs, March 25-31 = 105 cfs.

b Minimum flow at the Yreka gage September 1-15 = 50 cfs, September 16-30 = 75 cfs.

Table 2. Drought Emergency minimum flow requirements for the Scott River at the Fort Jones Gage

Scott (Fort Jones) USGS 11519500	Daily Average Minimum Drought Emergency Flow Requirements (cfs)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Existing	200	200	200	150	150	125	50	30	33	40	60	150
Proposed	200	200	200	150	150	125-90 ^f	50	30	33	40	60	150

f Minimum flow at the Fort Jones gage June 1-23 = 125cfs, June 24-30 = 90 cfs.

Lower Drought Emergency Winter Flows on the Shasta River at the Yreka Gage

Based on continued evaluation of the best available information, CDFW is recommending reduced winter flows at the Yreka gage. Reduced flows will continue to provide survival habitat for salmon and steelhead and minimize superimposition of redds (redds placed on top of redds). Flow-habitat results from the three sites in McBain and Trush Shasta River Canyon Instream Flow Needs Assessment (2014) were composited to calculate spawning habitat availability during a critically dry water year winter-flow scenario on the Shasta River. Based on this modeled scenario, 105 cfs represents approximately 83% of the maximum habitat value available in a critically dry water year. For this reason, 105 cfs provides an appropriate amount of early season spawning

Director Sobeck

April 20, 2022

Page 4 of 9

habitat for Chinook Salmon in this drought emergency. The overall flow-habitat relationships display a relative peak of spawning habitat at 125 cfs in a critically dry water year. The increase in subsequent months from 105 cfs to 125 cfs should minimize superimposition of redds. The Shasta River table (Table 1) displays proposed drought emergency minimum flows compared to the existing values based on this evaluation.

Redd dewatering is influenced by redd and tailspill depth. The minimum depth of a redd is typically 0.5 foot, and the tailspill depth is typically 0.3 foot less than the redd depth. Accordingly, a drop or rise of more than 0.2 foot in water surface elevation would be expected to change tailspill depths and available spawning habitat. Rating curves in McBain and Trush (2014) demonstrate that fluctuations between 105 and 125 cfs would result in approximately a 0.18-foot change in water surface elevation. Assuming two (2) months from spawning to fry emergence, flows could be dropped to 105 cfs in late March without causing redd dewatering.

Summer Flows

Since the development of the drought emergency minimum flow regulation, there have been questions about the need for summer flows (primarily July and August) in the Scott and Shasta Rivers. This question continues post regulation adoption, and it is anticipated this will be challenged in the future adoption. CDFW recommends retaining minimum summer flow requirements for the following reasons:

1. These flows are based on the best available scientific information to enable salmonids in these rivers to survive critically dry drought conditions,
2. It is counter-productive to support the drought emergency minimum flows for the Fall migration season without a summertime base flow to maintain stream function,
3. Lower flows exacerbate negative water quality issues (e.g., temperature and dissolved oxygen) that limit fish mobility and survival (e.g., Figure 39, McBain and Trush 2014), and
4. There are over summering juvenile salmon of both species in both rivers. Notably, there were over summering juvenile salmon on the mainstem Scott River at Kelsey Creek in 2021. There were over summering steelhead in cool pockets of the Shasta River Canyon in 2021. Fish presence is primarily limited by the availability of high-quality water, and the exclusion of fish for currently poor conditions should not be used alone to dismiss a river reach.

Director Sobeck

April 20, 2022

Page 5 of 9

Tributary Flows

CDFW and NMFS spent considerable time evaluating drought emergency minimum flow values for tributaries on both rivers. Tributary flow requirements could supplement the downstream flow requirements and support connectivity in the watershed. Tributary flows would also distribute the drought burden to a wider range of diverters and support basin-wide approaches and restoration actions for native fishes. Examples on the Scott River include several west-side tributaries and the upper forks. Examples on the Shasta River include the Little Shasta River, Parks Creek, and Big Springs Creek. While we did not have enough time to develop and present formal tributary flow recommendations to the SWB for adoption in the year's regulation, this work could inform tributary-wide local cooperative solutions and other efforts moving forward. CDFW and NMFS are prepared to discuss tributary contributions if requested.

Additional Recommendations for Existing Regulation

CDFW is providing two reasonable and feasible recommendations for the current drought emergency regulation:

1. Extend the existing inefficient livestock watering prohibition to March 31:
CDFW acknowledges this is a controversial issue with a wide range of support and opposition. We supported this prohibition in the regulation package as part of several actions necessary to use all tools available to ensure salmon migration. We think the instream benefits from the prohibition in a critically dry year outweigh any real or perceived benefits of groundwater recharge proposals, particularly in the tributaries of both rivers. Redd dewatering was a concern when the prohibition was lifted. We are recommending the extension because there are potential negative consequences with lifting inefficient livestock watering in a 24-hour period while salmon eggs are incubating and hatching.

CDFW also notes that there are alternative livestock watering systems already in place for some landowners. There is drought funding in place for landowners to install alternative livestock watering systems and we offered a presentation of these sources on March 18, 2022.

2. Require riparian and groundwater diverters to coordinate with the Watermaster District to manage drought emergency minimum flows:
Some diverters are not subject to the respective adjudications, nor are they currently required to be water mastered. Coordination on both rivers, but particularly the Shasta River, is confounding for the SWB and SSWD to manage, and for CDFW to understand stream dynamics, when diverters utilize their rights without coordination. During the drought emergency, it is

Director Sobeck

April 20, 2022

Page 6 of 9

critically important that diverters coordinate with the SSWD where services are provided.

Considerable Benefits of the Current Regulation

- There is a heightened awareness and improved dialog around the drought emergency that indicates a stronger commitment by all who live in, or are involved with salmon, in these watersheds. The drought emergency regulation is encouraging creative thinking, experimental projects, forbearance contracts, feasibility studies, and a deep analysis of water use.
- Since adoption, the SWB and CDFW have implemented Resolution 6 from the regulation as a good faith effort to evaluate and refine the drought emergency minimum flows. CDFW is grateful to have been able to exercise this resolution. It is critical that Resolution 6 continue to be available.
- Information gathering required by the order has allowed us to better understand surface water, overlying groundwater, and groundwater extraction in these watersheds. The updates for SWB record collection to determine who is using water, how that water is extracted, when water is used, and the specific water right priorities is valuable.
- The inclusion of local cooperative solutions in the regulation is an appreciated alternative since recovery of sensitive species requires a balance of voluntary and regulatory efforts.
- The regulation supported and encouraged expanded stream gaging in both rivers and their tributaries. The two agencies formed a small team and have been evaluating potential gage locations and securing access to install several gages. Additional stream gages will allow the community to be more strategic, will help support Section 1707 orders, and will provide better stream response information.
- Compared to the 2020-21 migration season, relative adult salmon access to spawning habitat was good in 2021-22. Early indications are that there weren't as many redds in some locations and more in others. More adults showed up this year than the relevant previous cohorts. CDFW is not attempting to take credit for more fish available to spawn, or the significant precipitation events in October or December 2021 that assisted

Director Sobeck
April 20, 2022
Page 7 of 9

the adult migration. We are grateful for the immediate and long-term restoration efforts of those in the community that contributed to solutions.

CDFW is grateful for the opportunity to work closely with SWB staff on drought issues. One great example was coordinating a compliance assistance workshop on December 10, 2021. We are prepared to meet with you to review the available scientific information that informs our recommendations.

If you have any questions regarding this letter, please contact Environmental Program Manager Joe Croteau at klamathwatershed@wildlife.ca.gov.

Sincerely,

DocuSigned by:

189F3871E465427...

Tina Bartlett, Regional Manager
Northern Region

Reference

Ec's on Page 9

Director Sobeck
April 20, 2022
Page 8 of 9

Reference

McBain and Trush, 2014. Shasta River Canyon Instream Flow Needs Assessment. 221 pg.

Director Sobeck

April 20, 2022

Page 9 of 9

ec: **State Water Resources Control Board**

Joaquin Esquivel, Chair

joaquin.esquivel@waterboards.ca.gov

Erik Ekdahl, Deputy Director

Division of Water Rights

erik.ekdahl@waterboards.ca.gov

Eric Oppenheimer, Chief Deputy

eric.oppenheimer@waterboards.ca.gov

National Marine Fisheries Service

Alecia Van Atta, Assistant Regional Administrator

alecia.vanatta@noaa.gov

Jim Simondet, Klamath Branch Chief

jim.simondet@noaa.gov

California Department of Water Resources

Patricia Vellines, Senior Engineering Geologist

patricia.vellines@water.ca.gov

Craig Altare, Section Chief Sustainability Plan Review SGM

craig.altare@wate.ca.gov

California Department of Fish and Wildlife

Tina Bartlett, Northern Region Manager

klamathwatershed@wildlife.ca.gov

Kathleen Miller, Attorney

kathleen.miller@wildlife.ca.gov

Joshua Grover, Branch Chief of Water Branch

joshua.grover@wildlife.ca.gov