

Proposed Drought Emergency Regulation for Scott River and Shasta River Watersheds

Agenda Item No. 5
December 19, 2023

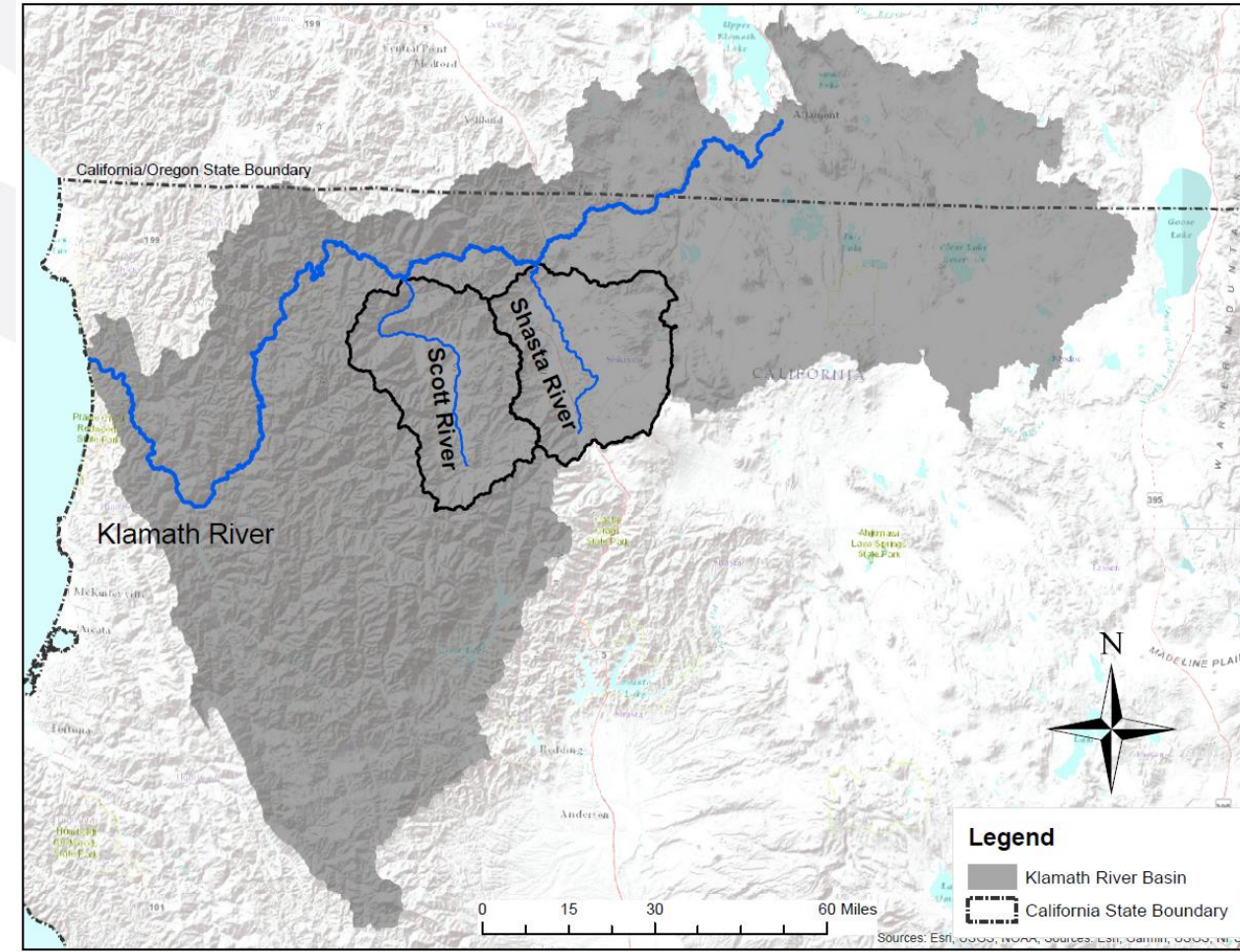


Division of Water Rights

Presentation Outline

- Background + Outreach
- Scott River and Shasta River - Emergency Status
 - Drought Forecast & Current Flow Conditions
- CDFW's Presentation
- Proposed Regulation Overview (updates and change sheet highlighted)
- Comments + Responses
- Resolution Change Sheet

Klamath Basin



Background on Recent Scott-Shasta Flow Efforts

- June 15, 2021: CDFW requests the Board to set emergency minimum flows
- August 30, 2021: Board adopts emergency regulation
- July 29, 2022: Board readopts emergency regulation
- May 23, 2023: Board receives petition to set permanent instream flows in Scott River
 - Karuk Tribe of California, Environmental Law Foundation, Pacific Coast Federation of Fisherman's Associations, and Institute for Fisheries Resources
- August 1, 2023: Emergency regulation expires
- August 15, 2023: Board directs staff to develop emergency regulation for both Scott and Shasta Rivers

Recent and Ongoing Public Input and Outreach for Scott-Shasta

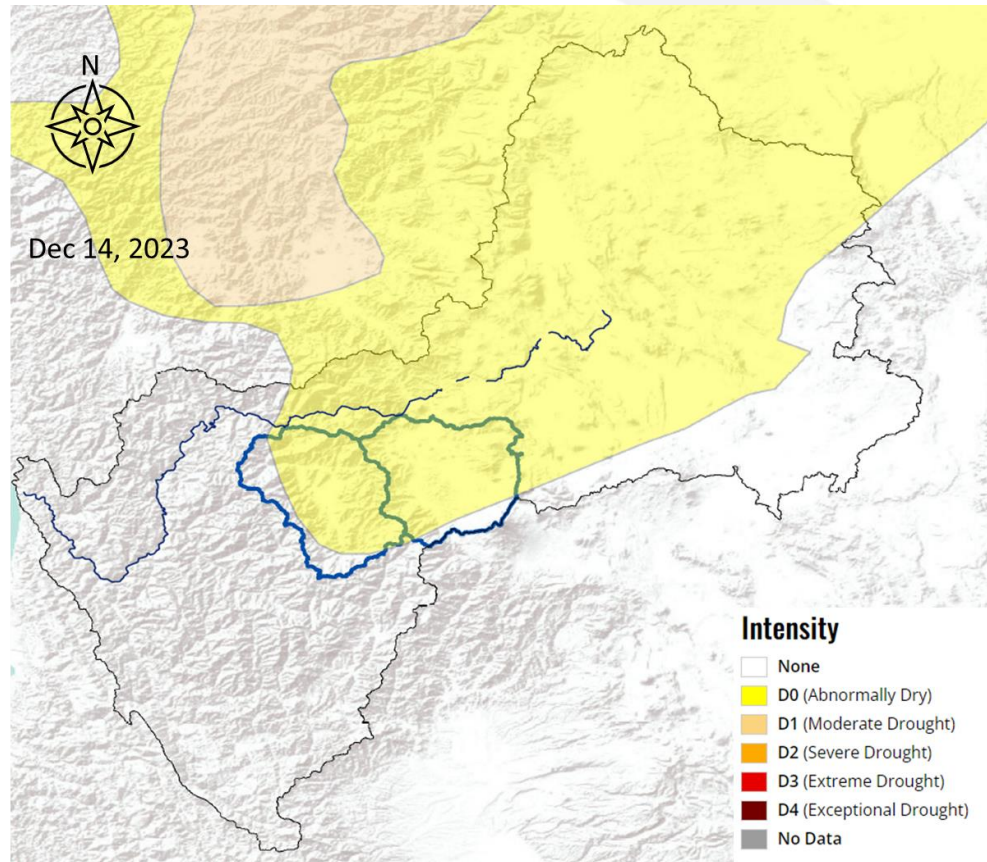
- July 26-28, 2023: Board Members toured watersheds
- September 27-29: Board Members toured watersheds
- October 6: Staff Workshop
- October 30: Listening Sessions in Montague
- November 7-16: Comment period on preliminary draft regulation
- November 14: Virtual meeting on preliminary draft regulation
- December 8-14: Comment period on regulation

- Biweekly Scott-Shasta flows subgroup meetings
- Regular meetings with County and Watermaster staff
- Other meetings and communications

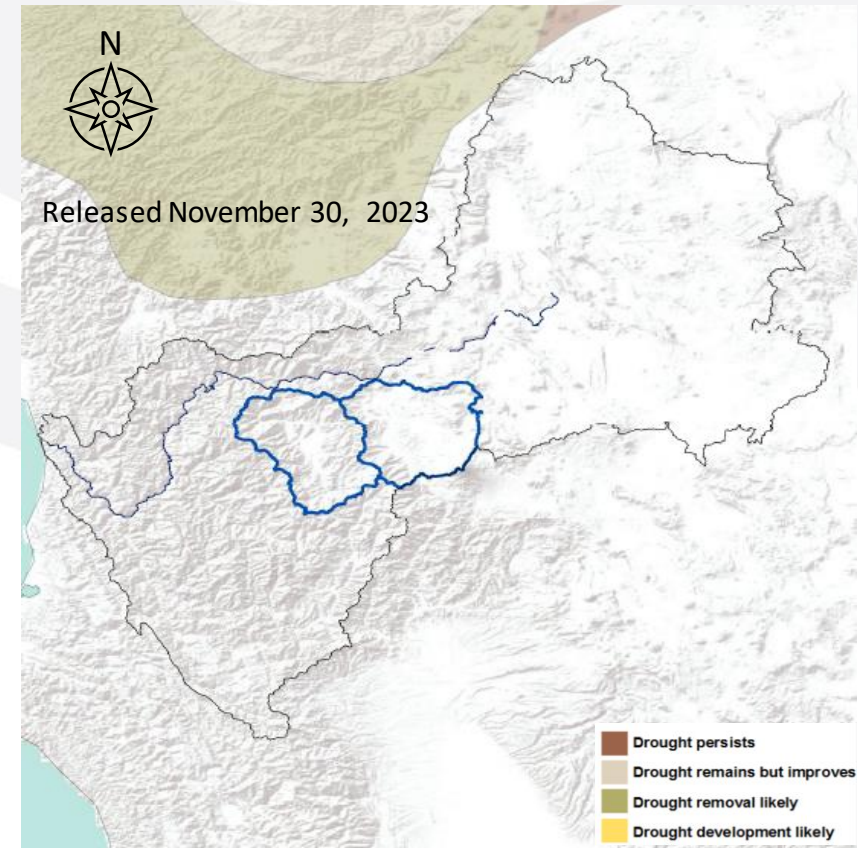
Scott River and Shasta River Emergency Status

- Klamath watershed has been experiencing an ongoing, long-term drought since 2000
- May 10, 2021, Governor Newsom declares drought emergency for 41 counties including Siskiyou County
- March 24, 2023, Governor Newsom terminates drought provisions in select watersheds, but keeps drought fishery protection terms in Klamath River watershed
- Tribal impacts: Yurok did not provide fish for festivals or exercise its commercial or ceremonial fishing rights
- May 17, 2023, West Coast commercial fishery shutdown
- Water Code, section 1058.5 allows Board to adopt emergency regulations to address a declared drought emergency

Scott-Shasta Drought Forecast Map



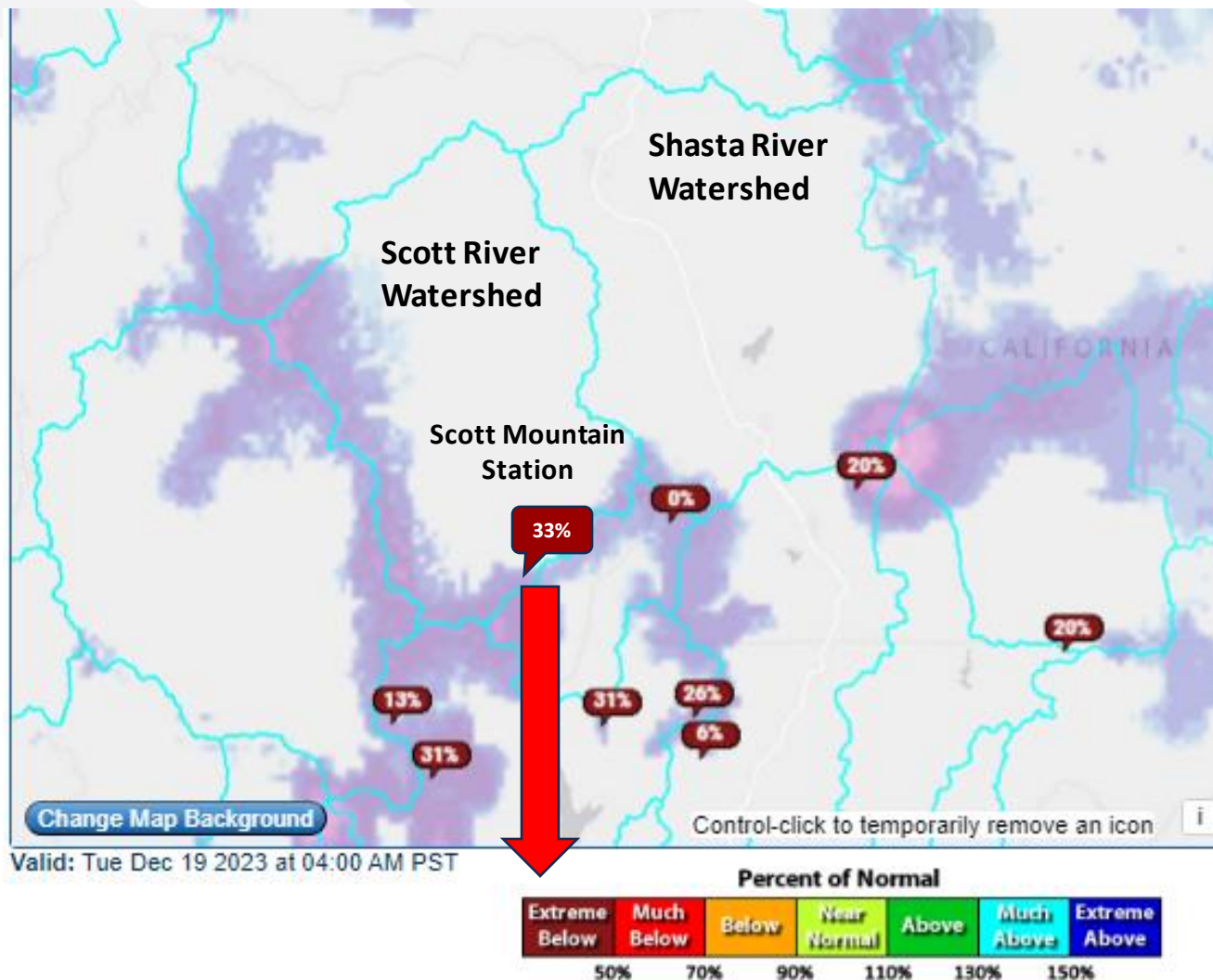
Drought monitoring as of December 14, 2023: abnormally dry for most of the Scott River and Shasta River watersheds



Seasonal drought outlook as of November 30, 2023: no drought for December 2023 through February 2024

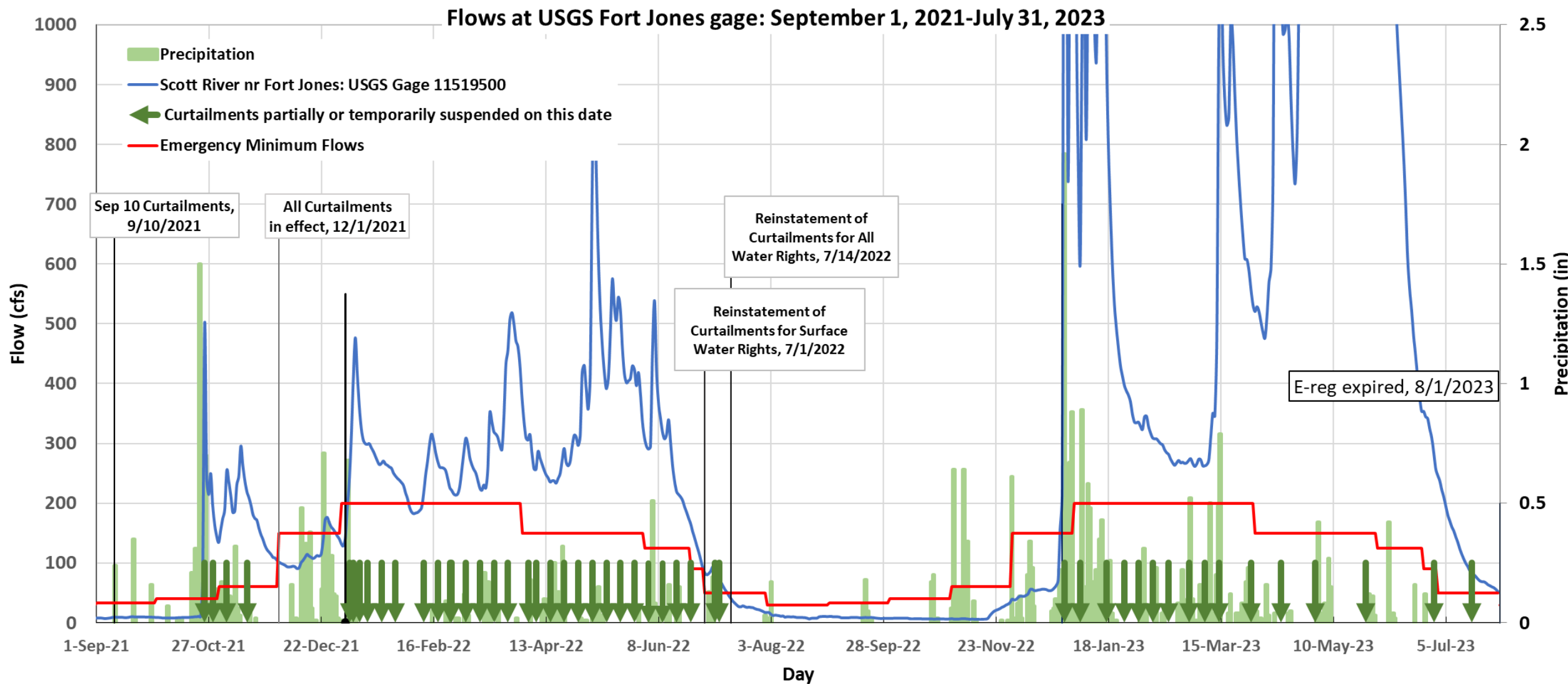
Snowpack

All snow percentages are extremely below average for this time of year



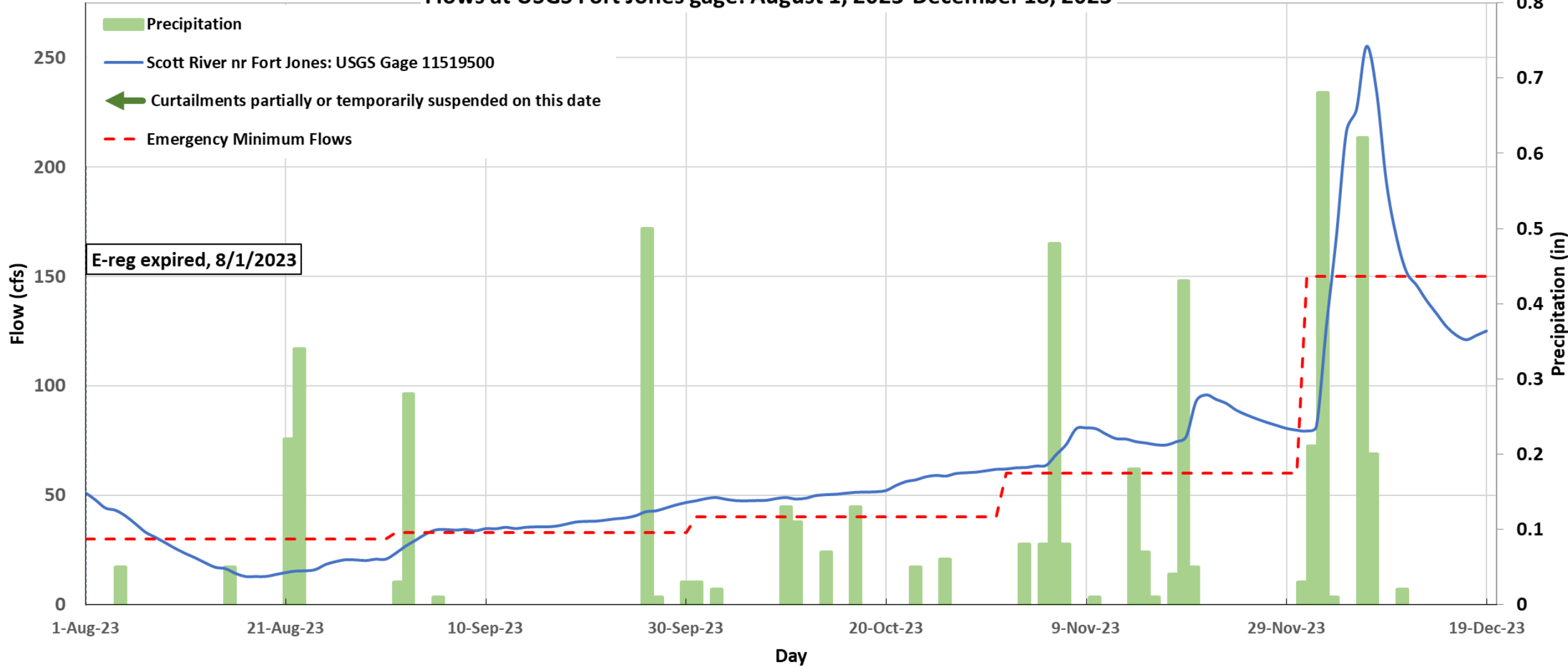
<https://www.cnrfc.noaa.gov/ol.php?product=SNM&product2=snowNOHRSC&zoom=9&lat=41.659&lng=-122.517&time=NOHRSC&PNGtypeID=snow&BASINS=true&opacity=72&mapBG=lightGray>

Scott River Flow Conditions (under regulation)

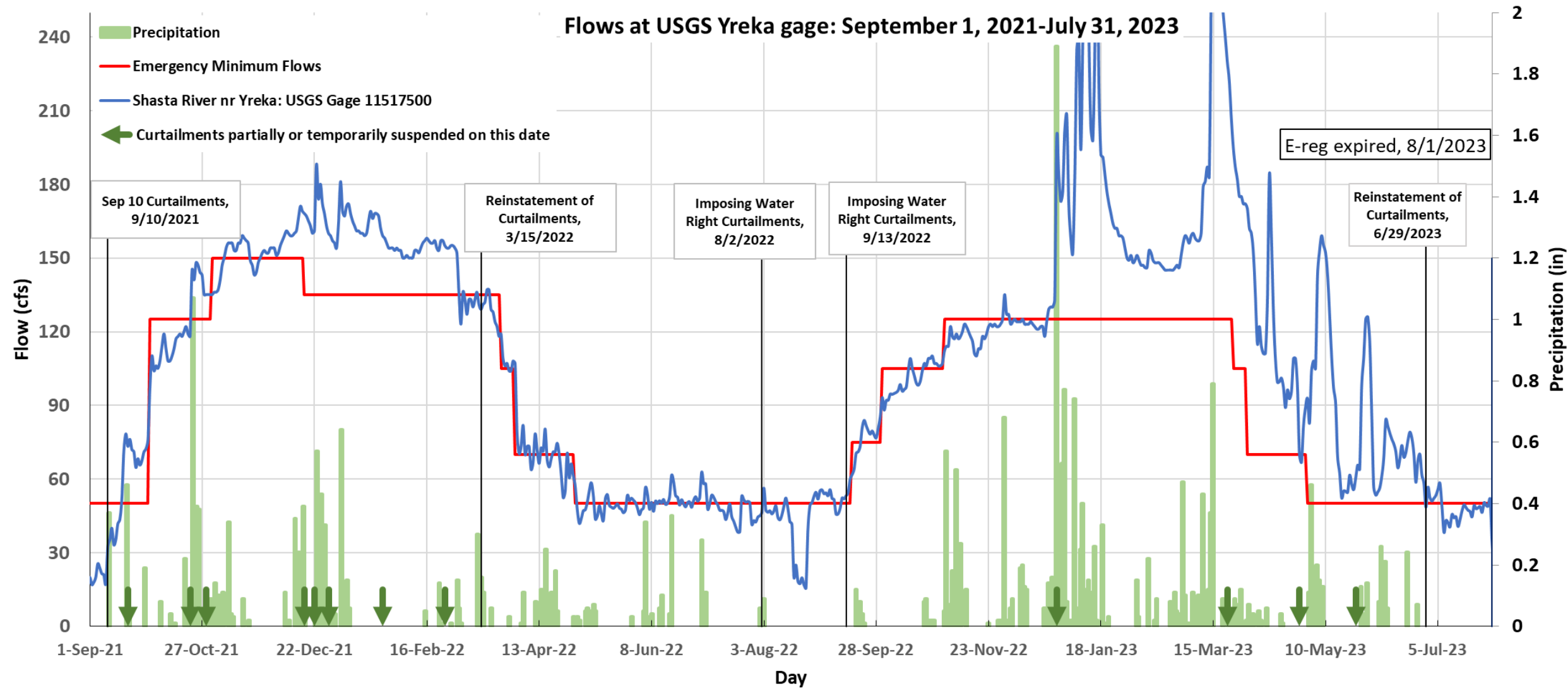


Scott River Flow Conditions (following reg expiration)

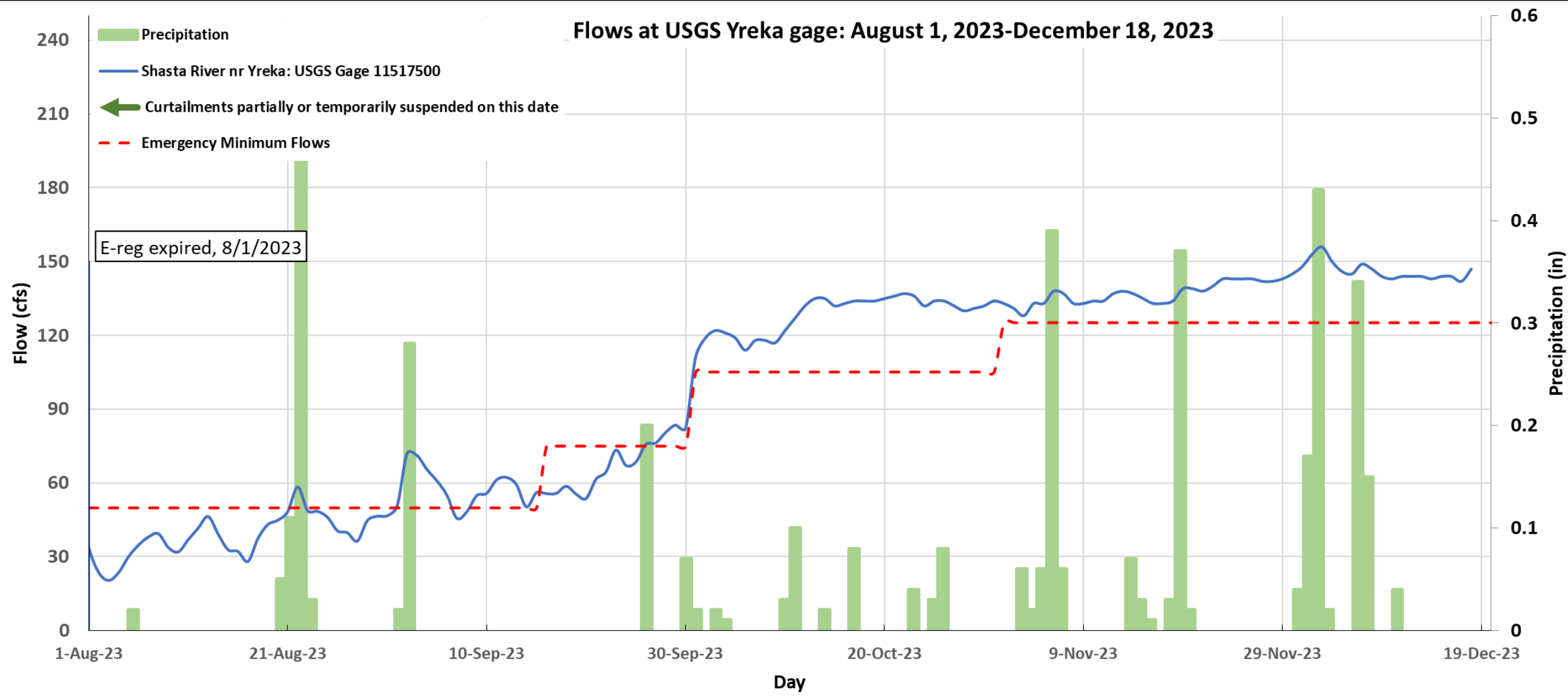
Flows at USGS Fort Jones gage: August 1, 2023-December 18, 2023



Shasta River Flow Conditions (under regulation)



Shasta River Flow Conditions (following reg expiration)



Emergency Regulation Results (related to improved fishery conditions)

Improved

- groundwater levels that support earlier reconnection of Scott River
- longer periods of connection
- flow conditions
- water quality
- habitat



SHASTA SCOTT EMERGENCY DROUGHT INSTREAM FLOWS RECOMMENDATIONS

PRESENTED BY:

Crystal Robinson, California Department of Fish and Wildlife

Klamath Watershed Program

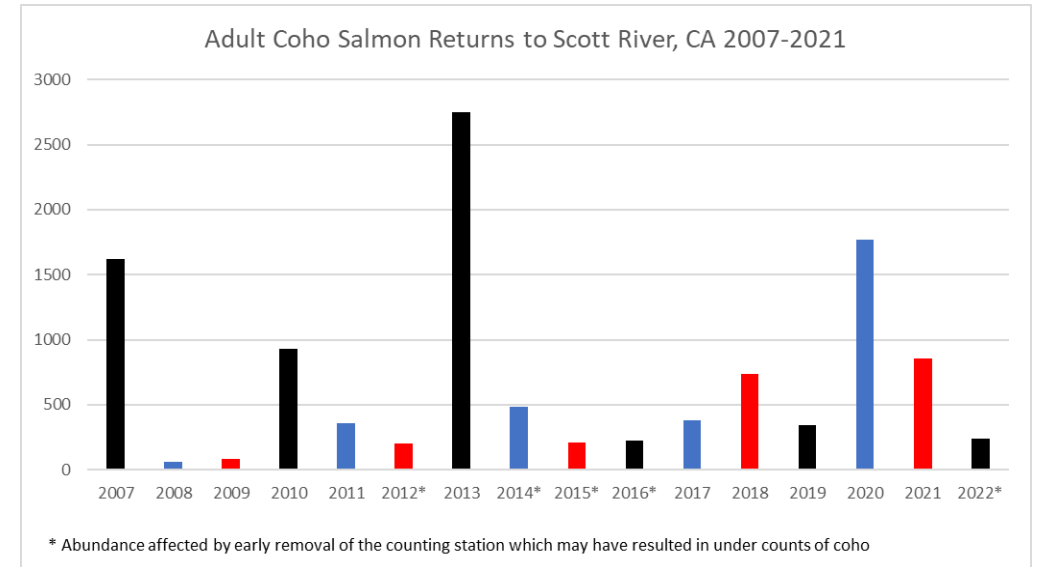
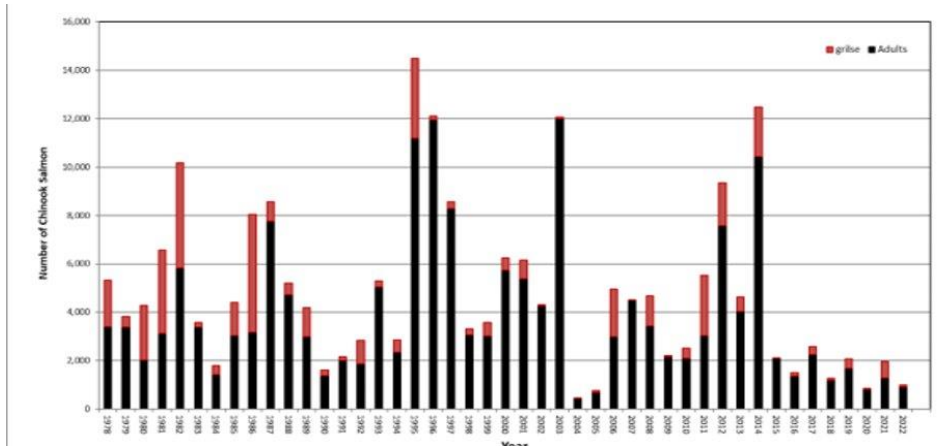
Yreka, CA

General Points

- 2024 Klamath Dam Removal
- 3 Year Life History Strategies
- Controlling Variables
- 2023 Commercial and Sport Fishery Closure
- Adaptive Management

Scott & Shasta River Fisheries Update

Scott River Adult Salmon Population Estimates



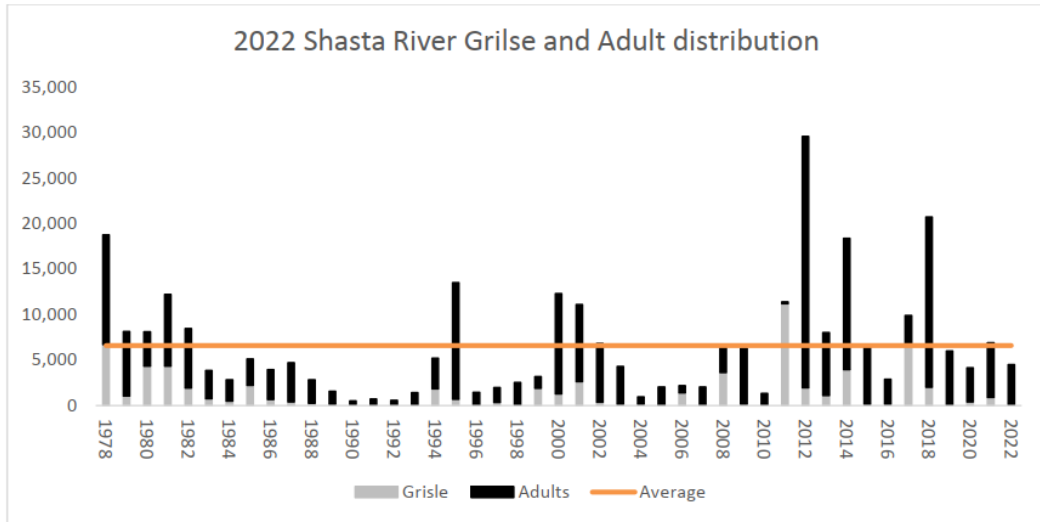
Chinook Salmon

- Adult Chinook Salmon Population range since 1978: **467 – 14,477 fish annually**
- 65% reduction from historic average
- **2023 Chinook preliminary estimate: 1,064 adults**

Coho Salmon

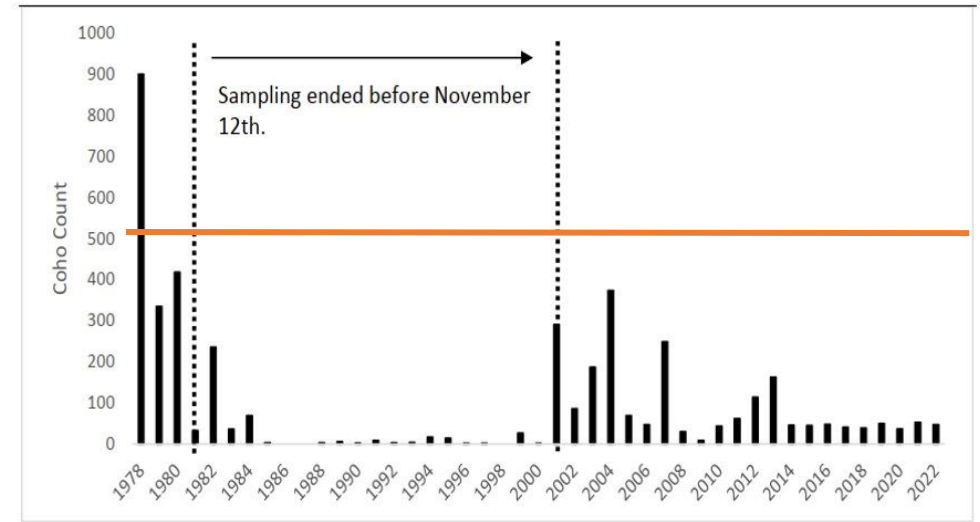
- Adult Coho Salmon Population minimum range since 2007: **63 – 2,752 fish annually**
- NMFS Scott River Coho Recovery **Target: 6,500 adults**
- **2023 Coho to date: 744 adults**

Shasta River Adult Salmon Population Estimates



Chinook Salmon

- 45 Year **Average: 6,591** adults
- 2020 and 2022: 2,000+ fish below average
- **2023 Chinook preliminary estimate: 4,867** adults



Coho Salmon

- **Average of 43** adults returning since 2014
- NMFS Shasta River Coho Recovery Target: **4,700 adults**
- **2023 Coho to date: 35** adults

Scott & Shasta River Steelhead Passage Information

Minimum number of returning adults only

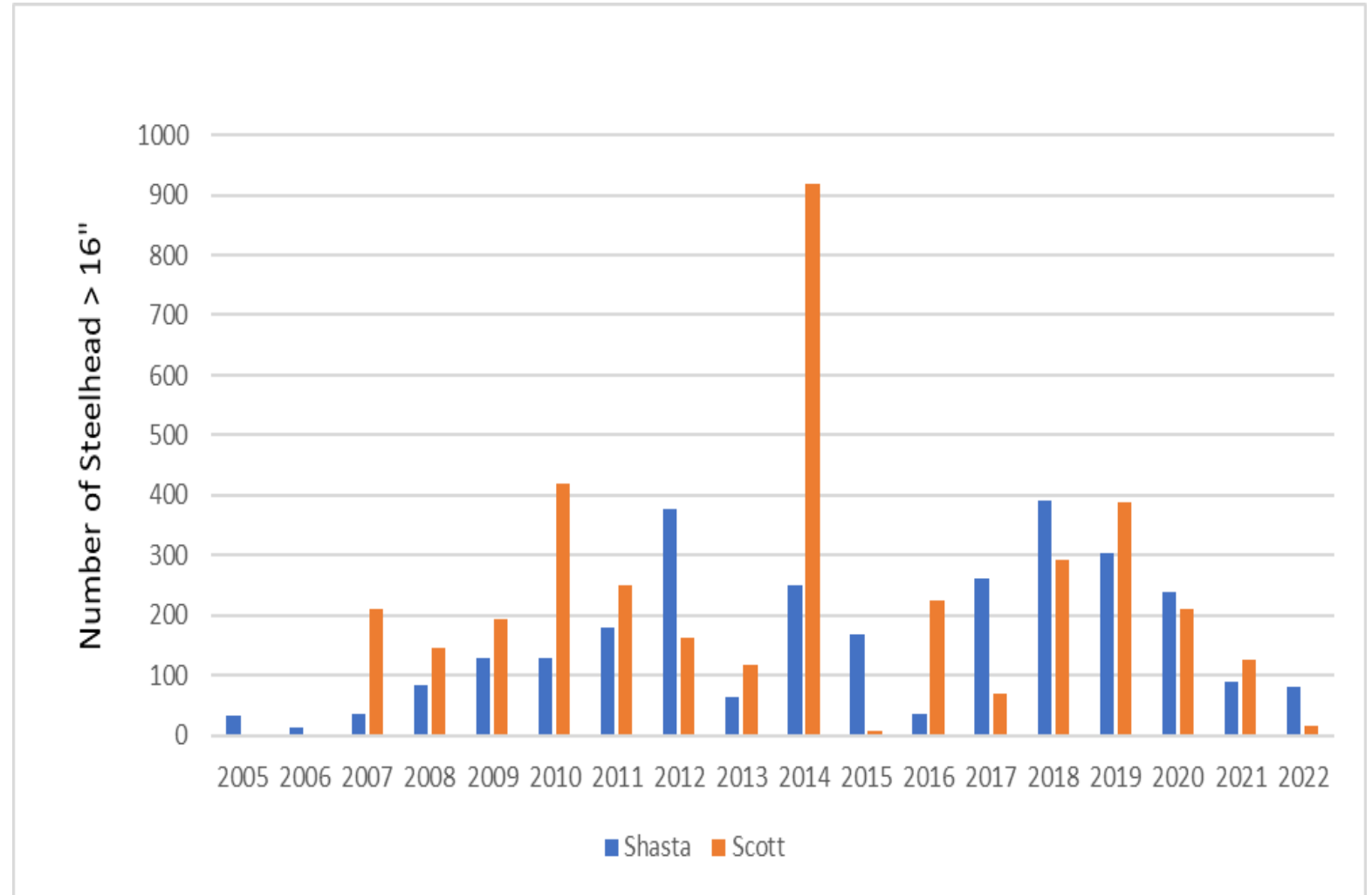
- High flows prevent continued monitoring

Scott River

- Escapement 2007-2022
 - Range: 8 – 917 adults
 - Average = 235 adults
- 2022 Escapement: 18 adults

Shasta River

- Escapement 2007-2022
 - Range: 15 – 392 adults
 - Average = 159 adults
- 2022 Escapement: 82 adults



Scott and Shasta Fish Habitat Challenges

Scott River

- Access to valley spawning and rearing habitat
- Fragmented baseflow habitat – surface flow connectivity

Shasta River

- Access to valley spawning and rearing habitat
- Fragmented baseflow habitat – water quality barriers



Emergency Instream Flow Recommendations and Results

Goals of Emergency Drought Flows

Avoiding the extinction vortex

- Maintaining genetic diversity/viability
- Minimizing population level impacts from catastrophic events such as disease outbreaks, severe drought, poor ocean conditions, etc.
- Maintain life history diversity (accommodating late and early spawners, etc.)

Maintaining sufficient stocks

- **Provide sport, commercial and tribal fishery opportunity**
- **Increase marine derived nutrients to benefit entire ecosystem**

Every cfs matters

- Access to habitat
- Mitigates temperature impacts
- Provide habitat for riparian and in- stream flora and fauna including aquatic invertebrates (salmonid food)

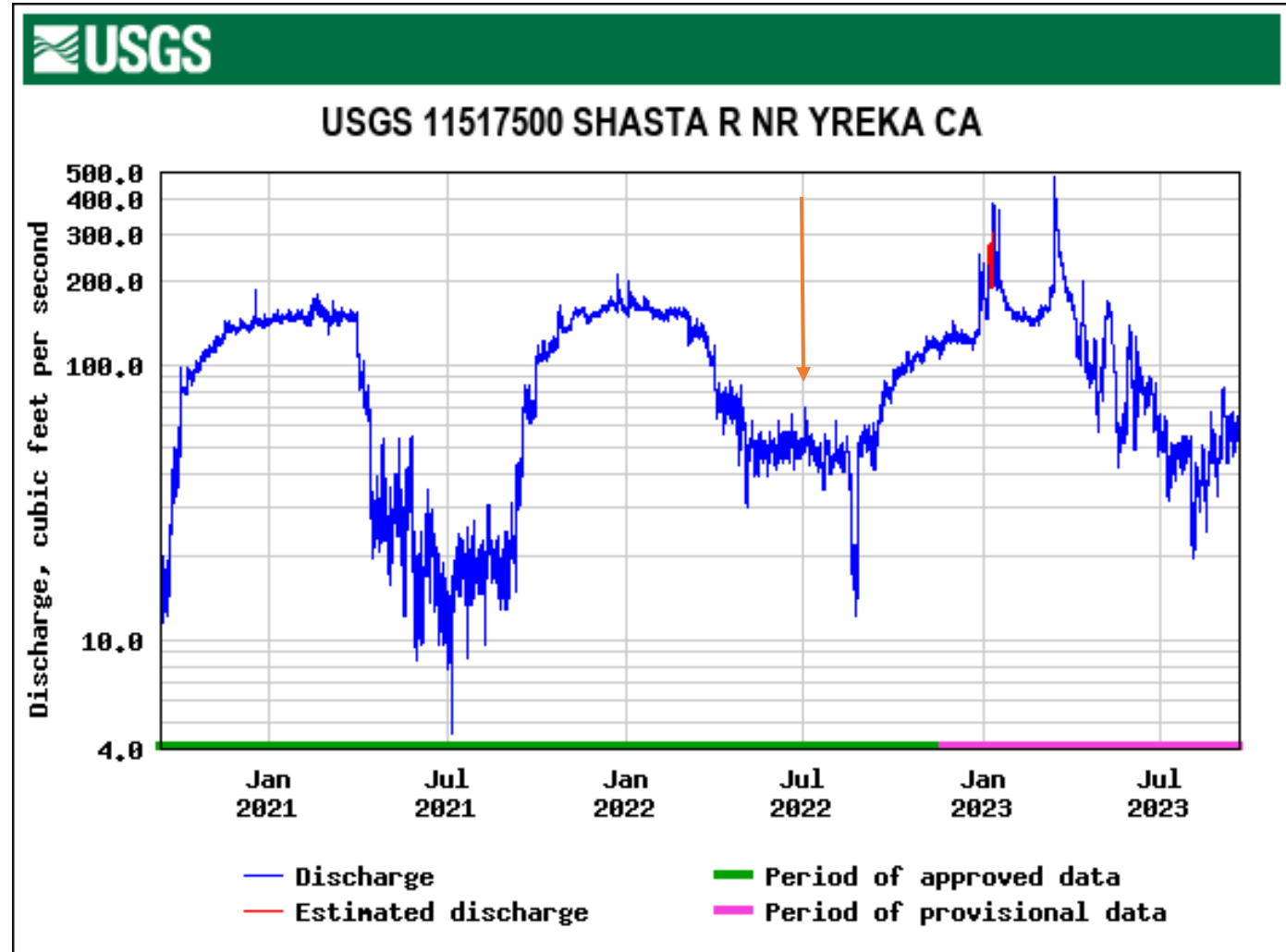
Emergency Drought Flow Effects In Scott River

- Benefits for Scott River:
 - Improved west side tributary habitat for Coho Salmon juveniles
 - Improved groundwater elevation, which provides earlier surface water connection and increased cold water discharged to the river, supporting healthy riparian habitat
 - Improved surface flows and connectivity during Chinook, Coho Salmon and Steelhead migration



Emergency Drought Flow Effects in the Shasta

- Benefits for Shasta River:
 - Improved habitat for salmonid juveniles watershed wide
 - Improved canyon habitat during baseflow
 - Lower water temperatures watershed wide
 - Improved surface flows during adult Chinook, Coho Salmon and Steelhead migration



Shasta Canyon Summer Flows

McBain and Trush

- Shasta River Canyon Instream Flow Needs Assessment 2014
- Shasta River Big Springs Complex Interim Instream Flow Needs Assessment 2013

Population Viability (Moyle et al. 1998)

- Extensive habitat is available for all life history tactics
- All life history stages, and their required habitats have sufficiently broad distribution to sustain the species indefinitely

Inefficient Stock Water Systems



Prohibition

- 2022 March 31st extension - ensures migration, habitat availability, and protection of redds
- Flow Thresholds
 - 2022 Regulation: 500 cfs Scott River, 220 cfs Shasta River
 - Proposed 2023 Regulation Flow Thresholds:
 - Scott River
 - 362 cfs (Jan & Feb) = **CDFW supports**
 - 354 cfs (March) = **CDFW supports**
 - Shasta River 220 cfs = **CDFW supports**

Summary: Local Cooperative Solutions

CDFW is interested in implementing LCS's that have equal or greater conservation values than the curtailment:

- Specific
- Measurable
- Achievable
- Relevant
- Time bound
- Binding

LCS submittals in 2023

- Scott: French and Kidder Creeks & Groundwater
- Shasta: Safe Harbor participants & Little Shasta



Proposed Regulation Overview (with updates summary)

- Section 875: Establishes minimum flows and provides for local cooperative solutions
 - Overlying groundwater local cooperative solutions
 - Defines applied water numbers for 30 percent reduction option
 - Two new options (early shutoff; best management practices)
 - Metering (may provide timeline for implementation; may be waived if infeasible or when well irrigates less than 30 acres)
 - Deadline for submitting proposals to Board (April 15)
 - Coordinating entities
 - Inspectors & evaluators do not have conflict of interest
 - No coordinating entity required
 - Reporting to Board and inspection expectations
 - Posting proposals to web 7 days in advance of approval

Proposed Regulation Overview (with updates summary)

- Section 875.1: Curtailment exception for non-consumptive uses
 - Removed penalty of perjury language (global for all certifications)
- Section 875.2: Curtailment exception for human health and safety
 - Previously incorporated language pulled directly into regulation
 - Nonprofit organization or government entity may certify on behalf of diverter
 - Certification regarding individual conservation measures outside of a broad plan removed*
 - Requirement for seeking alternative sources of water may be certified by end user*
- Section 875.3: Curtailment exception for livestock watering
- Section 875.4: Curtailment in Klamath River watershed
 - Proposed for removal*

* On change sheet

Proposed Regulation Overview (with updates summary)

- Section 875.5: Curtailment priority for watersheds
- Section 875.6: Curtailment Order reporting requirements
- Section 875.7: Inefficient livestock watering prohibition
- *Updates to simplify and streamline provisions* - provides for diversion under following conditions:*
 - *Minimum flows met without curtailment*
 - *Stimulation flows for fall-migration of Chinook and coho migration*
 - *Tributary connection established and maintained*
 - *Diversions of up to 10 percent of flow at diversion (90 percent bypass)*
 - *May be increased to 20 percent diversion (80 percent bypass) for higher flows*
 - *Avoid disturbing redds by managing bypass, as needed*
 - *Lesser requirements for diversions above Dwinnell Dam*
 - *Notification and reporting requirements*
 - *May pursue individual or tributary-wide local cooperative solution with simplified findings*

Proposed Regulation Overview (with updates summary)

- Section 875.8: Information Orders
 - Can seek information for drought contingency planning
- Section 875.9: Penalties

Change Sheet – Proposed Regulation

- Further revisions to minimum human health and safety provisions, section 875.3
 - Clarify allowable uses under this exception and simplify requirements
- Delete section 875.4, Curtailments in the Klamath River Watershed
 - Section had not been used in previous implementation of emergency regulations
 - Drought conditions not as severe across Klamath watershed this year

Change Sheet – Proposed Regulation

- Replace section 875.7 Inefficient Livestock Watering
 - Simplify and reorganize existing section to streamline the conditions under which inefficient livestock water diversions are reasonable
 - Requires bypass flows and provides for reduced bypass flow requirements during high flows (summarized earlier in presentation)

Proposed Regulation Comment Summary and Overview

- December 8-14, 2023
- Received 11 unique comment letters and emails

Commenter(s) on Emergency Regulation	Affiliation
David Webb, Angelina Cook	Friends of the Shasta River, California Sportfishing Protection Alliance
Nick Joslin, David Webb, Konrad Fisher	Friends of the Shasta River, Mt. Shasta Bioregional Ecology Center, Water Climate Trust
Nathanial Kane, Eli Asarian	Karuk Tribe of California, Environmental Law Foundation, Pacific Coast Federation of Fishermen's Associations, Institute for Fisheries Resources, Klamath Tribal Water Quality Consortium, Riverbend Sciences
Sarah Schaefer, Eli Asarian	Quartz Valley Indian Reservation, Klamath Tribal Water Quality Consortium, Riverbend Sciences
Jess Harris	
Dr. Sari Sommarstrom	
Jack Roggenbuck	Shasta Watershed Conservation Group
Lauren Sweezy	Scott Valley Agriculture Water Alliance
Ryan Walker	Siskiyou County Farm Bureau
	Scott River Water Trust
Theodora Johnson	Scott Valley Agriculture Water Alliance

Comments on Proposed Regulation: Overview

- Local cooperative solutions
- Livestock watering prohibitions
- Appropriateness of flows – Shasta Canyon
- Other

Local Cooperative Solutions (LCSs) Comments + Responses

- Concerns on scientific basis and support for two new LCS options, specifically question efficacy of LCSs at reducing consumptive use and achieving flow requirements; alternative proposal
 - Evidence that LCSs that result in less water use and/or early shut off will support flows when they tend to be most constrained
 - Not possible to determine precise amount of water or flows that are needed each year (timing, volume, and form of precipitation, along with how it will translate into groundwater and flow)
 - Lack of certainty regarding precise effects of groundwater curtailment are acceptable and will be improved with metering and modeling updates
 - Provides for earlier curtailment outside of priority

Local Cooperative Solutions (LCSs) Comments + Responses

- Metering: concerns on costs, timelines, viability, need, acreage threshold
 - Provides vital information regarding applied water use in watersheds that varies by soil type, crop, etc.
 - Anticipate funding will be available
- Request for additional options and consideration of hydrology/water years
 - Added two new options
 - Incorporated water year type metrics into best management practice option
 - Parties may forego participation in LCS program in wetter years

Local Cooperative Solutions (LCSs) Comments + Responses

- Too complicated, need to standardize process, desire for information that can be used to evaluate effectiveness
 - Flexibility adds complexity
 - Information to understand and evaluate is available
- Need for public review
 - Added 7-day posting
 - Previously, pending LCSs had generally been posted with little interest.

Livestock Watering Prohibition Comments + Responses

- Scott River flow requirement is too high
 - See change sheet – bypass flow requirements proposed, with option to reduce bypass requirement during higher flows
- Modify language on 'avoid disturbing redds' to comply with CDFW regulations
 - Consulted with CDFW; no change proposed
- Impacts to groundwater recharge
 - Groundwater recharge is site-specific and uncertain, unlike immediate fishery needs
 - Does not affect permitted groundwater recharge projects

Livestock Watering Prohibition Comments + Responses

- Water leasing as option in lieu of prohibition
 - Nothing prohibits water leasing during prohibition
 - Support additional monitoring and evaluation – could identify where such leasing opportunities will be most valuable
 - Provisions significantly simplified

Shasta Canyon Flows Comments + Responses

- Minimum flows during summer months (50 cfs) are too high, requesting 30 cfs from Podlech (June 2022) or new method based on Safe Harbor Agreement
 - Current minimum flow numbers supported by CDFW and NMFS
 - CDFW snorkel surveys found fish in canyon reach during summer when emergency regulations were in effect
 - Regulation allows for changes to minimum flows; staff will continue to engage with parties on new information
 - McBain and Trush recommends 50 cfs (dry) and is best available information; parties debate over temperature impacts is mixed with some pointing to temperature increasing with high flows, while others noting increased cold water associated with Big Spring complex was not included in McBain and Trush temperature assessment, but increases in cold water result from curtailing appropriative groundwater users under the regulation and decreases temperature in the canyon reach
- Minimum flows during summer months too low given repeated lower flows (want 70 cfs from McBain and Trush (2014) Wet Year Flow Recommendation)
 - These are emergency minimum flows

Human Health and Safety Exception Comments + Responses

- Updated language
 - Reduce complexity of the certification

Other Comments

- Shasta Safe Harbor Agreements (SHAs)
 - Participants in the SHA should suffice as a local cooperative solution
 - SHA focuses on range of species and doesn't focus on salmon
- Need real-time quantifiable verification that regulation benefits
- No compensation for loss of water
- More provisions for groundwater recharge
- Not in a drought, invalid authority

Fiscal Impacts Statement

- Estimation of cost to state and local agencies and governments – primarily for water supply agencies:
 - \$1.4 million (expected-range); \$2.0 million (extreme-drought); \$300,000 (above-average WY)
- **Estimated costs:**
 - **Revenue losses for municipal water supply agencies:** \$666,202 (expected-range), \$846,218 (extreme-drought), \$249,471 (above-average)
 - **Revenue losses for non-municipal water supply agencies:-** \$263,445 (expected-range), \$485,550 (extreme-drought), \$6,630 (above-average)
 - **County and state agricultural tax revenue losses:** \$391,713 (expected-range), \$654,407 (extreme-drought), \$9,947 (above-average)
 - Based on approximately \$5.05 million (expected-range), \$8.4 million (extreme-drought), \$128,341 (above-average), loss in crop sales
 - **Reporting costs** (\$56,580)

Change Sheet – Resolution

- Broad Updates:
 - Focus references to Scott River and Shasta River watersheds specifically, rather than broader Klamath River watershed
 - Other clean up edits
- Minimum Human Health & Safety:
 - Revised Whereas 32 to expand on human health and safety exception updates to simplify certification
 - New Resolved 9 that provides staff with additional direction related to water for minimum human health and safety needs
- Inefficient Livestock Water
 - Update Whereas 34, 37, and 38 to reflect the replaced section 875.7 (inefficient livestock watering)

Next Steps

- If adopted by Board today:
 - Notice of Proposed Rulemaking
 - Filing with Office of Administrative Law (OAL)
 - Effective 10 days following submittal to OAL

Stay up to Date and Contact Information

- Scott-Shasta Drought Webpage:
https://www.waterboards.ca.gov/drought/scott_shasta_rivers/
- Email:
ScottShastaDrought@waterboards.ca.gov
- Sign up for future email notice subscription:
https://www.waterboards.ca.gov/resources/email_subscriptions/
 - Select “Scott-Shasta Drought” under “Water Rights”