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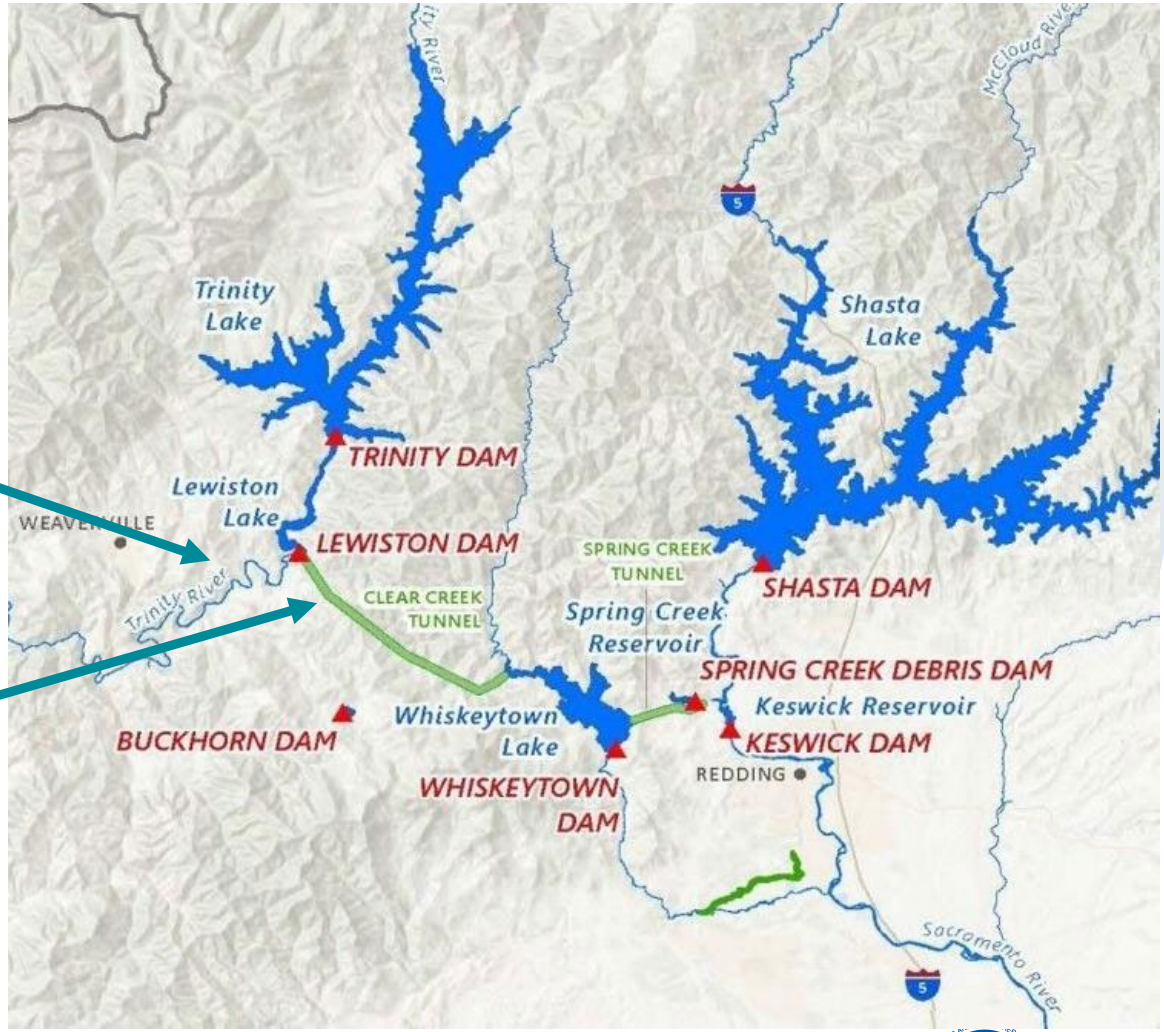
Trinity Reservoir Levels and Trinity River Flows Stakeholder Meeting with Congressman Jared Huffman

Seth Naman
California Coastal Office, Arcata, CA

May 1, 2023

- Trinity River
- Carr tunnels



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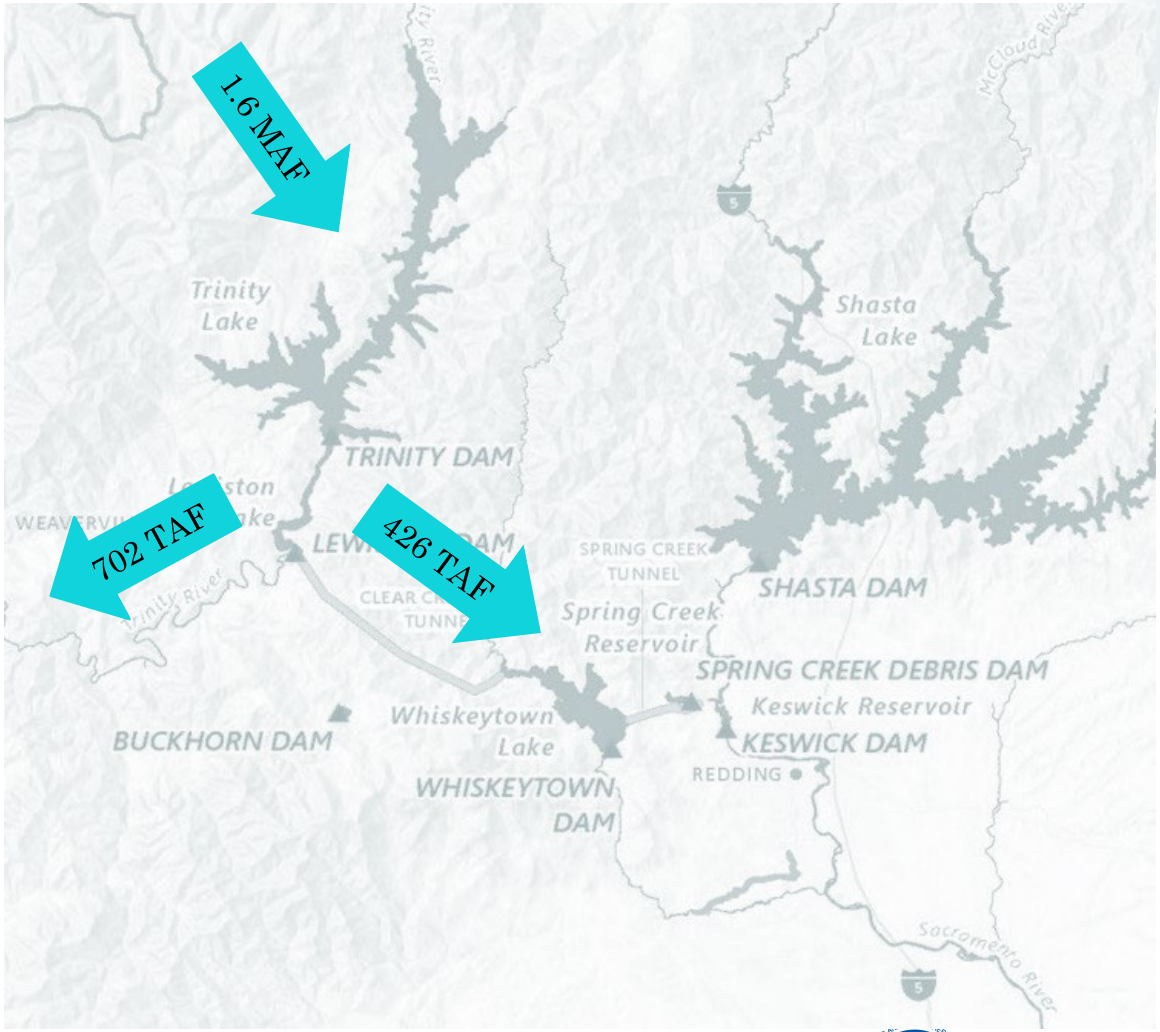
Water year 2019

Reservoir Inflow: 1.6 MAF

Restoration flow release: 702 TAF (42%)

Diversion to Sacramento: 426 TAF (25%)

Reservoir Storage 9/30: 2.0 MAF



MAF = million acre feet
TAF = thousand acre feet

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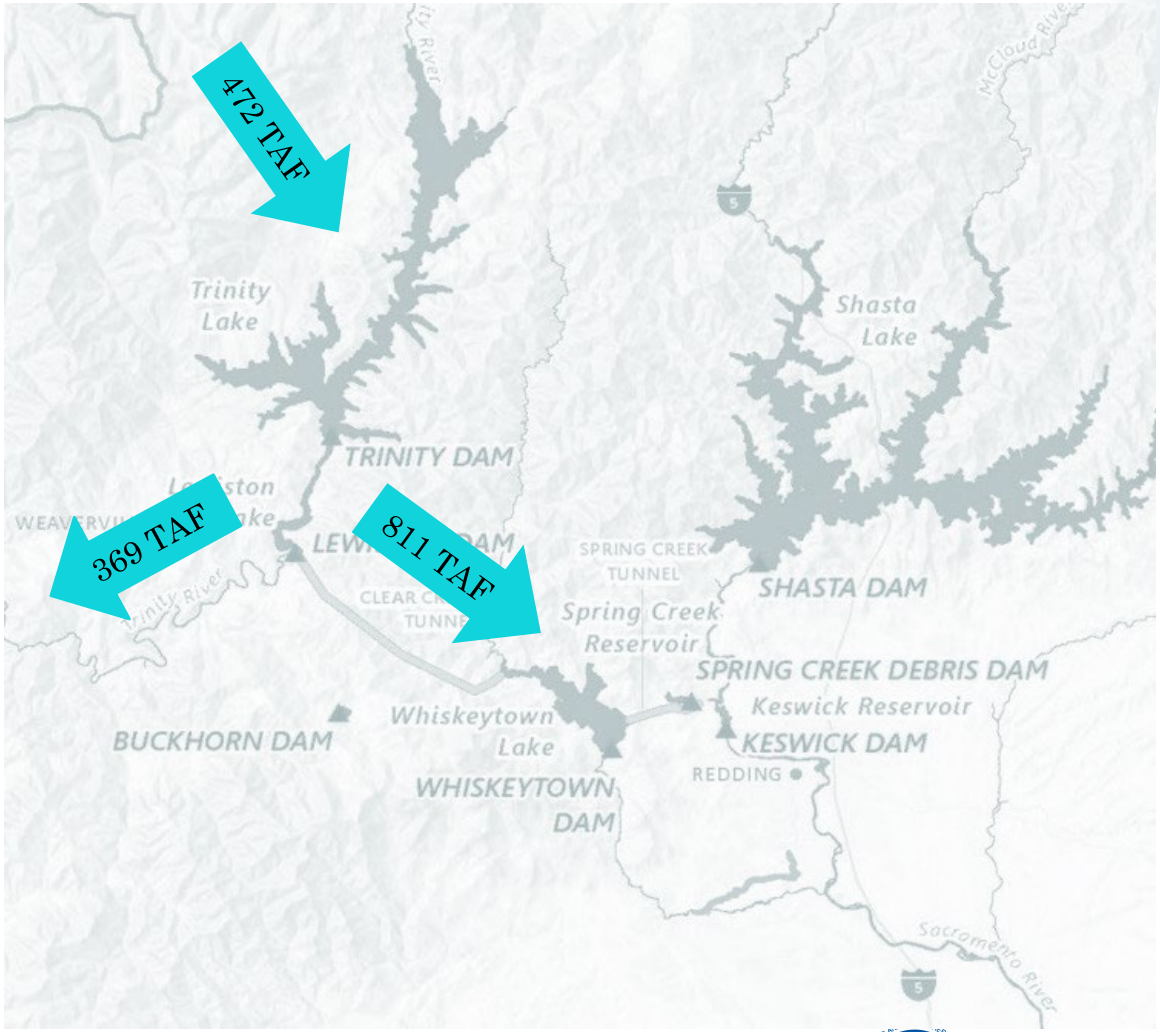
Water year 2020

Reservoir Inflow: 472 TAF

Restoration flow release: 369 TAF (78%)

Diversion to Sacramento: 811 TAF (172%)

Reservoir Storage 9/30: 1.3 MAF



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TAF = thousand acre feet

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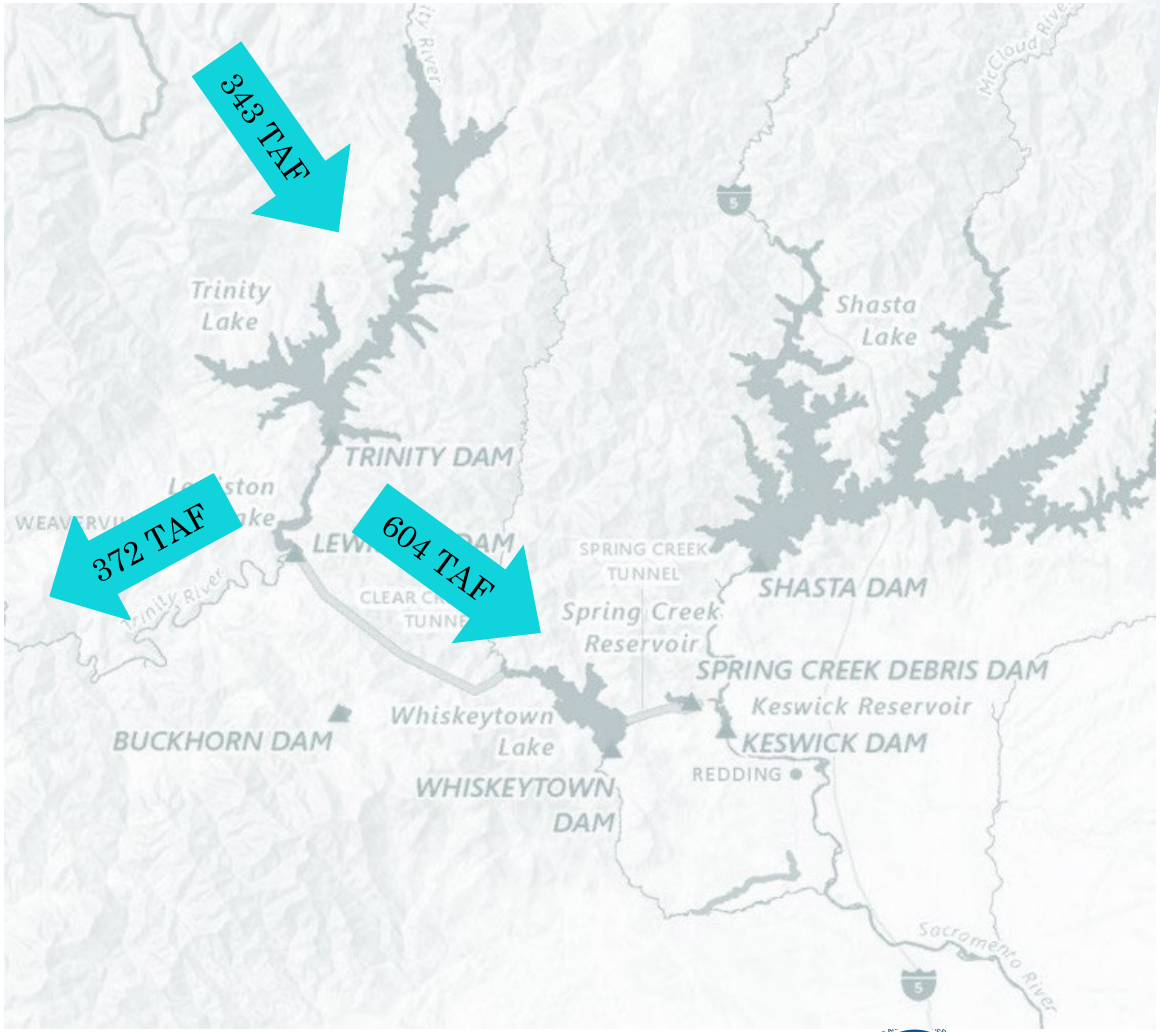
Water year 2021

Reservoir Inflow: 343 TAF

Restoration flow release: 372 TAF (108%)

Diversion to Sacramento: 604 TAF (176%)

Reservoir Storage 9/30: 710 TAF



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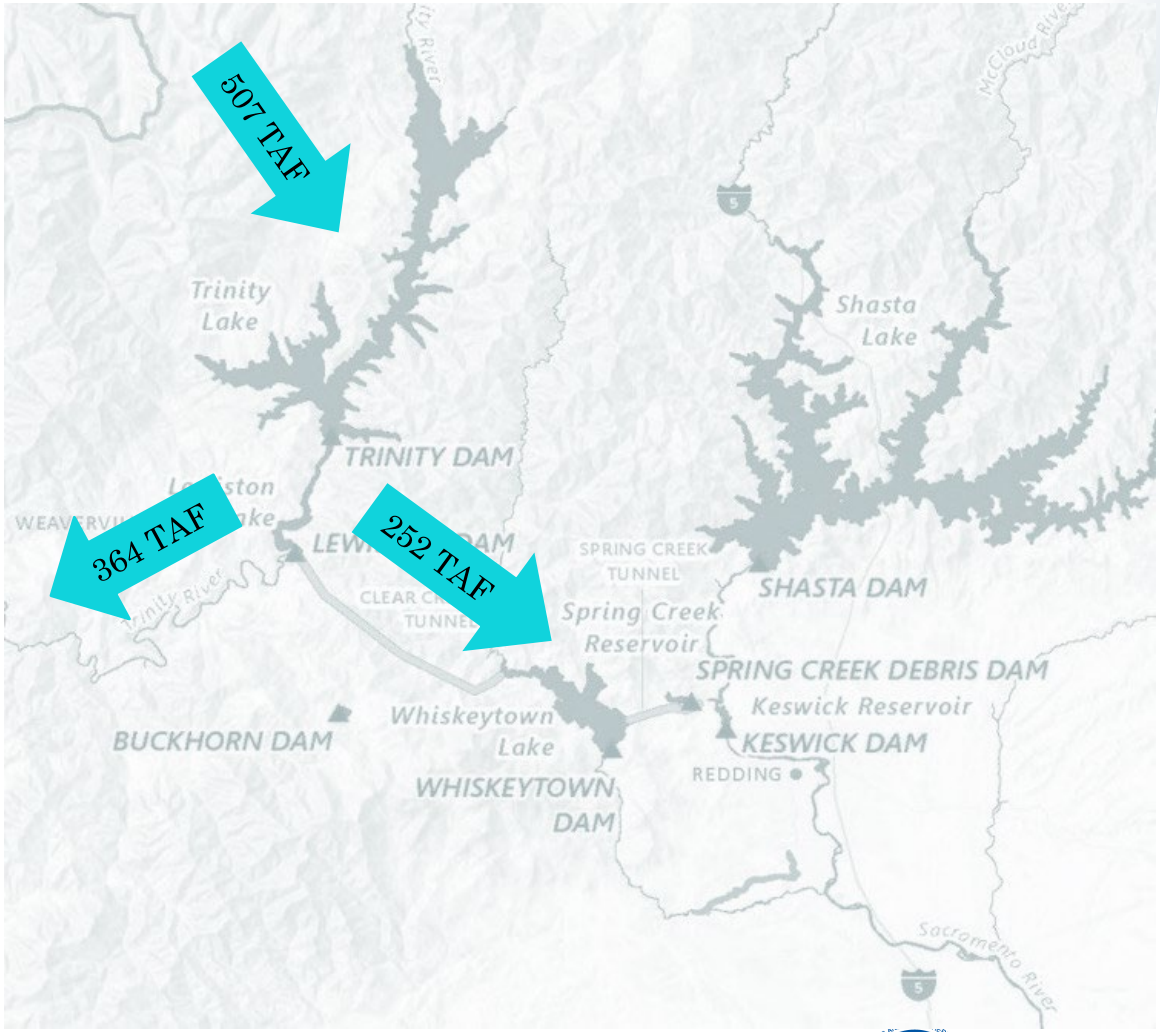
Water year 2022

Reservoir Inflow: 507 TAF

Restoration flow release: 364 TAF (72%)

Diversion to Sacramento: 252 TAF (50%)

Reservoir Storage 9/30: 553 TAF



MAF = million acre feet
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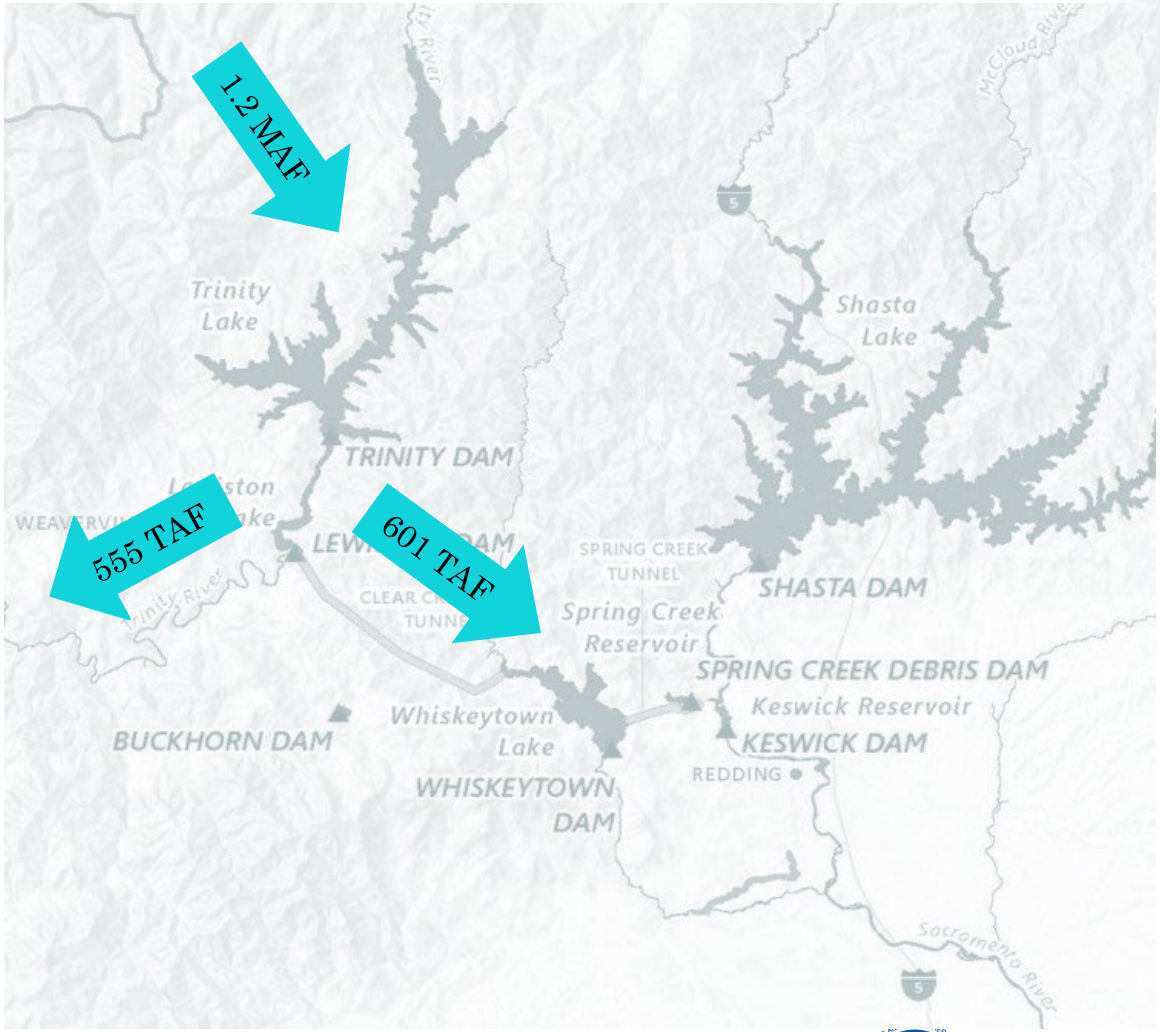
Annual average Since 2004

Reservoir Inflow: 1.2 MAF

Restoration flow release: 555 TAF (46%)

Diversion to Sacramento: 601 TAF (50%)

Other river releases (dam safety, ceremonial releases, etc): 45 TAF (4%)



MAF = million acre feet
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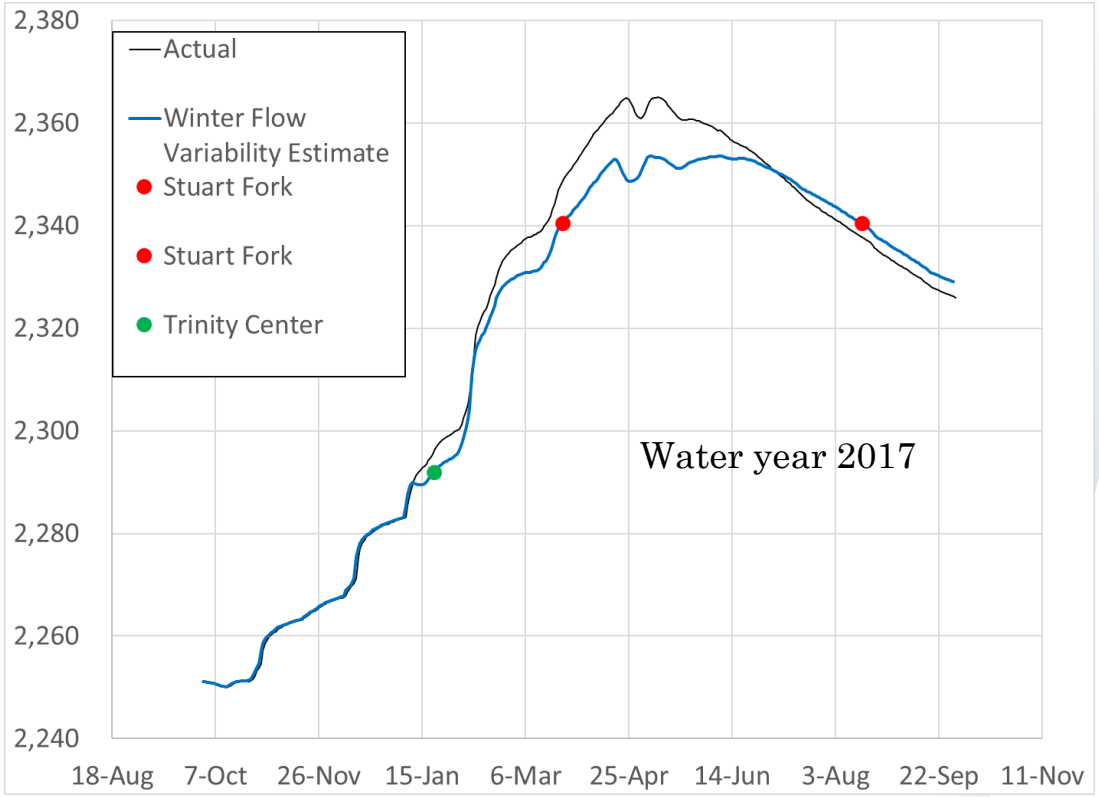
Winter flow action uses the same amount of water as has been used in the last 20 years

- In some years, the winter flow action benefits Trinity Reservoir storage, in other years storage is the same
- Never reduces reservoir storage to less than it would be otherwise



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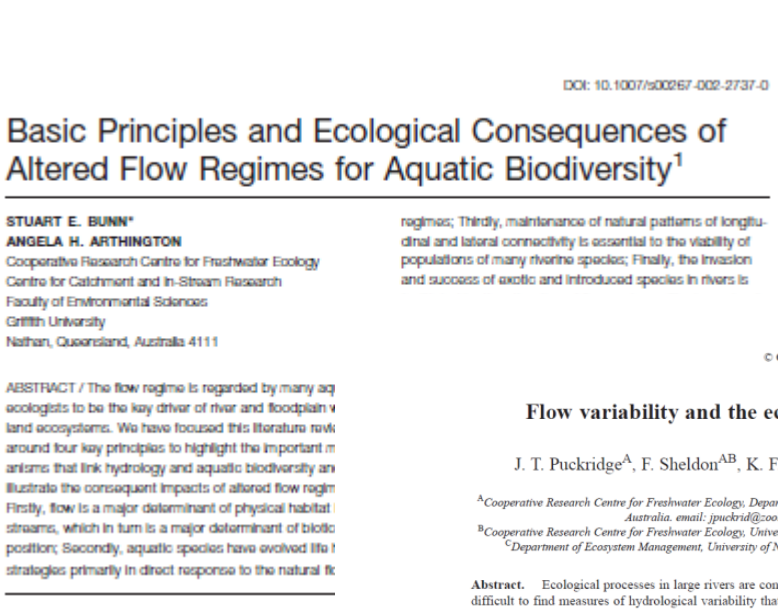
Why do we need winter flow releases?

"Simplistic, static, environmental flow rules are misguided and will ultimately contribute to further degradation of river ecosystems"-Arthington et al 2006



DOI: 10.1007/s00267-002-2737-0

Basic Principles and Ecological Consequences of Altered Flow Regimes for Aquatic Biodiversity[1]

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Griffith University
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ABSTRACT / The flow regime is regarded by many aq
ecologists to be the key driver of river and floodplain v
land ecosystems. We have focused this literature revi
around four key principles to highlight the important m
anisms that link hydrology and aquatic biodiversity an
illustrate the consequent impacts of altered flow regim
Firstly, flow is a major determinant of physical habitat
streams, which in turn is a major determinant of biotic
position; Secondly, aquatic species have evolved life h
strategies primarily in direct response to the natural fl

regimes; Thirdly, maintenance of natural patterns of longitu-
dinal and lateral connectivity is essential to the viability of
populations of many riverine species; Finally, the invasion
and success of exotic and introduced species in rivers is

COMMUNICATIONS

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THE CHALLENGE OF PROVIDING ENVIRONMENTAL FLOW RULES TO SUSTAI

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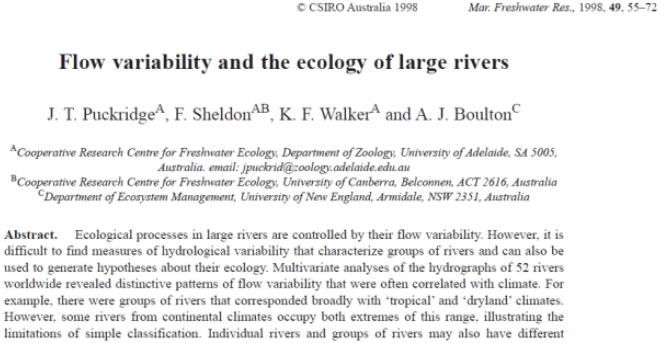
[2]*Department of Biology, Colorado S*
[3]*School of Aquatic and Fishery Sciences, Box*



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Flow variability and the ecology of large rivers

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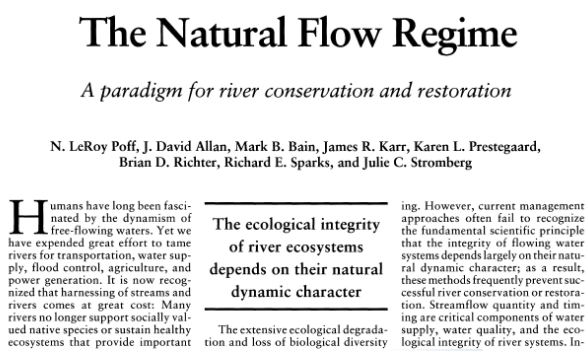
[B]*Cooperative Research Centre for Freshwater Ecology, University of Canberra, Belconnen, ACT 2616, Australia*
[C]*Department of Ecosystem Management, University of New England, Armidale, NSW 2351, Australia*

Abstract. Ecological processes in large rivers are controlled by their flow variability. However, it is difficult to find measures of hydrological variability that characterize groups of rivers and can also be used to generate hypotheses about their ecology. Multivariate analyses of the hydrographs of 52 rivers worldwide revealed distinctive patterns of flow variability that were often correlated with climate. For example, there were groups of rivers that corresponded broadly with 'tropical' and 'dryland' climates. However, some rivers from continental climates occupy both extremes of this range, illustrating the limitations of simple classification. Individual rivers and groups of rivers may also have different



The Natural Flow Regime

A paradigm for river conservation and restoration

N. LeRoy Poff, J. David Allan, Mark B. Bain, James R. Karr, Karen L. Prestegaard, Brian D. Richter, Richard E. Sparks, and Julie C. Stromberg

Humans have long been fascinated by the dynamism of free-flowing waters. Yet we have expended great effort to tame rivers for transportation, water supply, flood control, agriculture, and power generation. It is now recognized that harnessing of streams and rivers comes at great cost: Many rivers no longer support socially valued native species or sustain healthy ecosystems that provide important

The ecological integrity of river ecosystems depends on their natural dynamic character

The extensive ecological degradation and loss of biological diversity

ing. However, current management approaches often fail to recognize the fundamental scientific principle that the integrity of flowing water systems depends largely on their natural dynamic character; as a result, these methods frequently prevent successful river conservation or restoration. Streamflow quantity and timing are critical components of water supply, water quality, and the ecological integrity of river systems. In-

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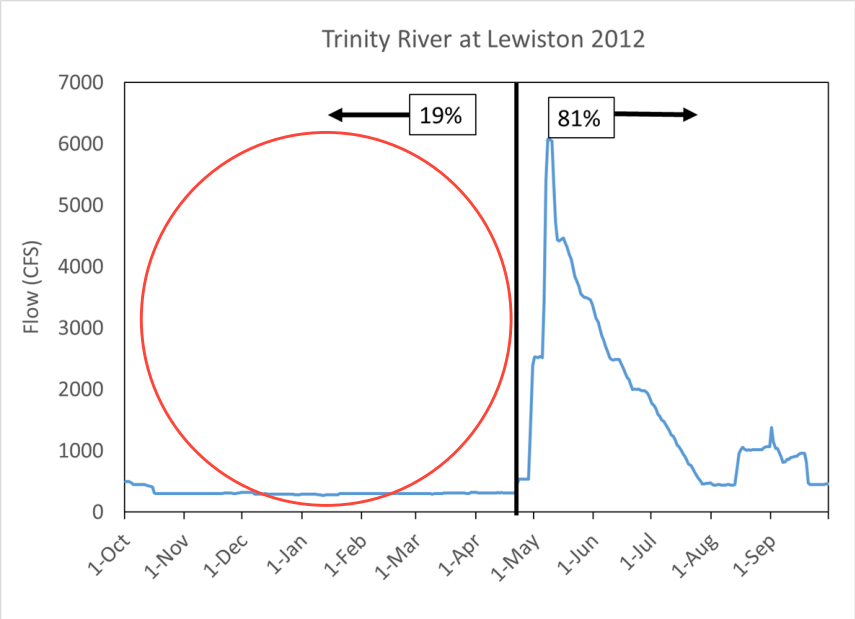
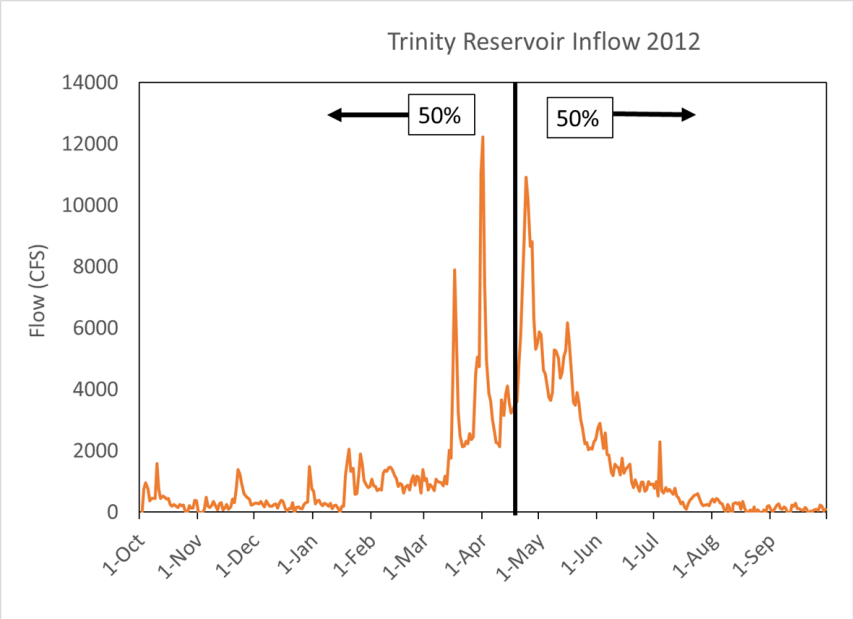
Why do we need winter flow releases?





Constant low flows in the winter are harmful to rivers

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Why do we need winter flow releases?

Deadwood Creek

To move sediment at the right time of year

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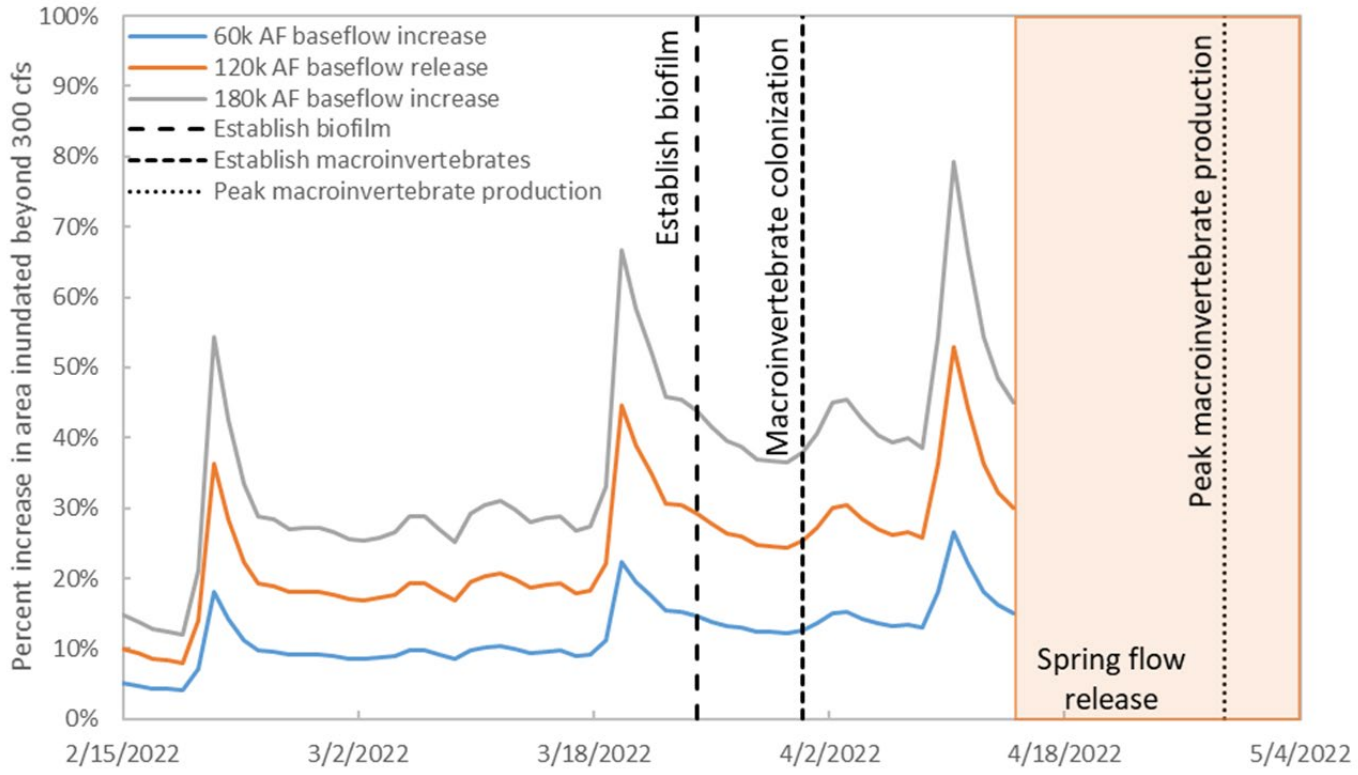
Why do we need winter flow releases?



To make more habitat and more food for young salmon and steelhead

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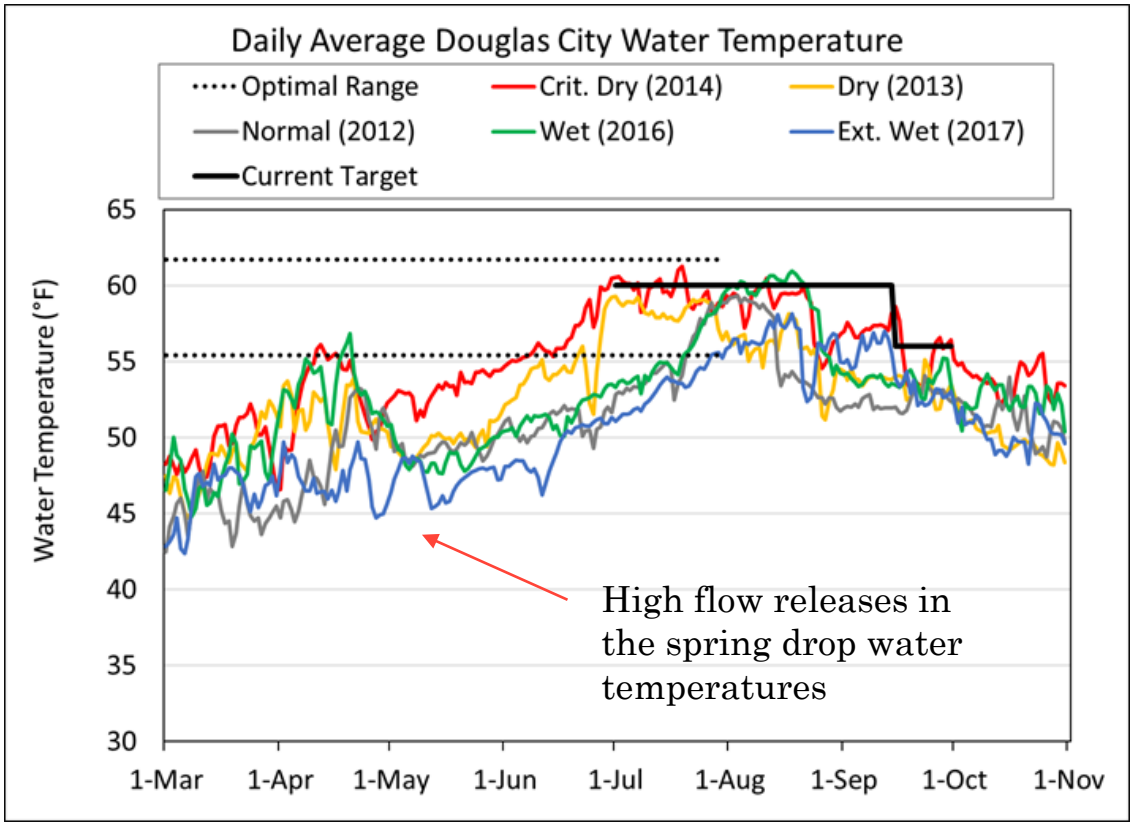
Why do we need winter flow releases?



To provide the best temperatures we can for growing young salmon and steelhead

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Why do we need winter flow releases?

Ask me anytime!
seth.naman@noaa.gov

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