

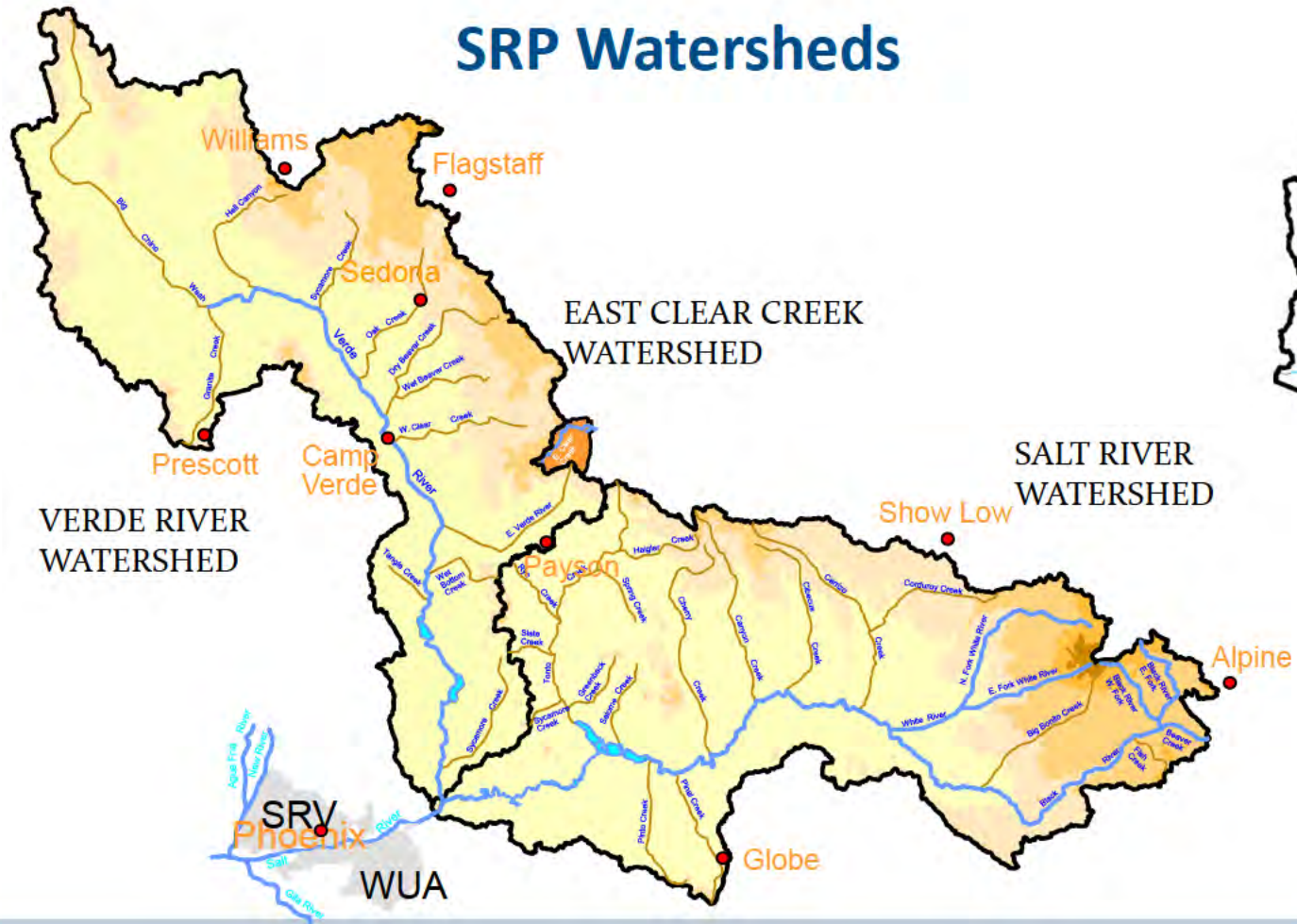


**ASFMRA AZ Chapter AG Forum “Current Trends in Agriculture and Real Estate”
SRP’s Watersheds and Water System Projects**



Bruce Hallin
Director Water Supply
February 24, 2021

SRP Watersheds



SRP Reservoir Systems

Verde River Dams



Horseshoe Dam (1951)



Bartlett Dam (1939, 1997)

East Clear Creek Dam



C.C. Cragin Dam (1965)



Horse Mesa Dam (1927)

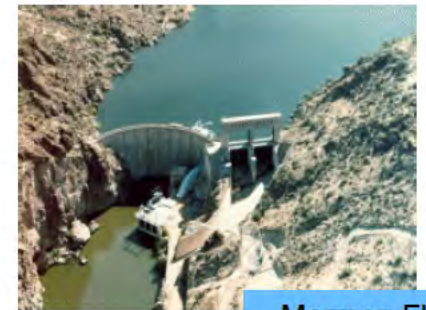


Stewart Mt Dam (1930, 1992)

Salt River Dams



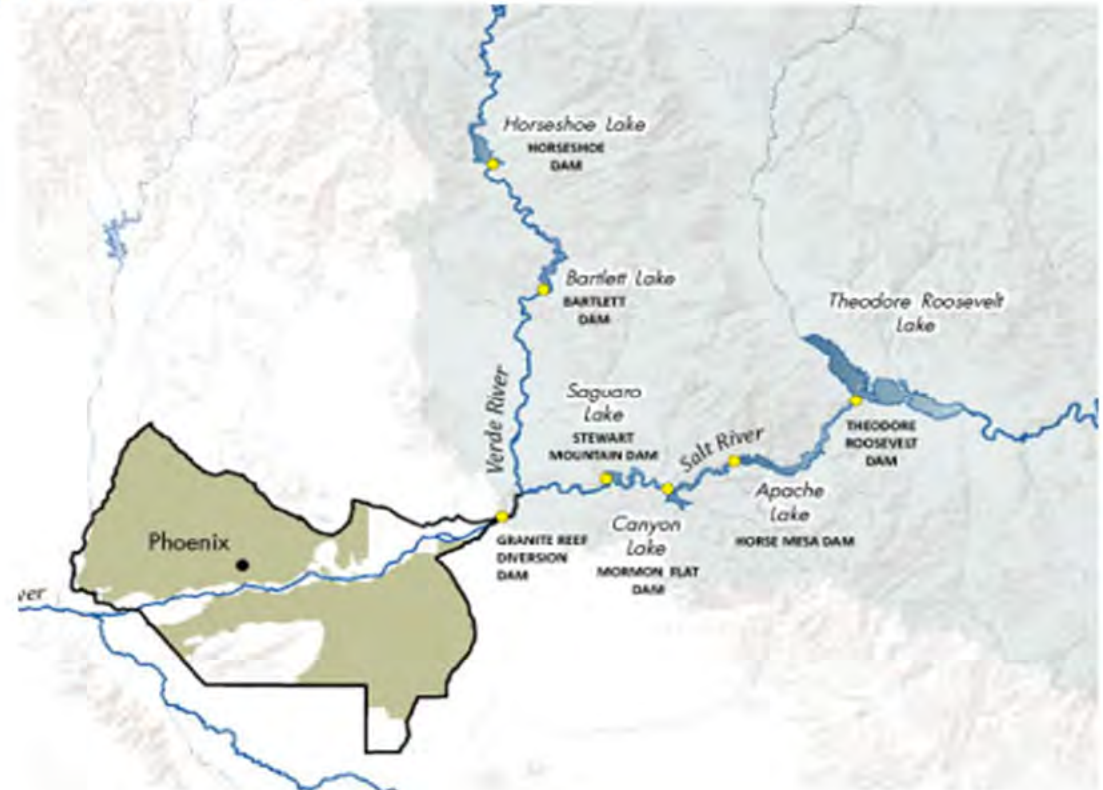
Roosevelt Dam (1911, 1996)



Mormon Flat Dam (1925)

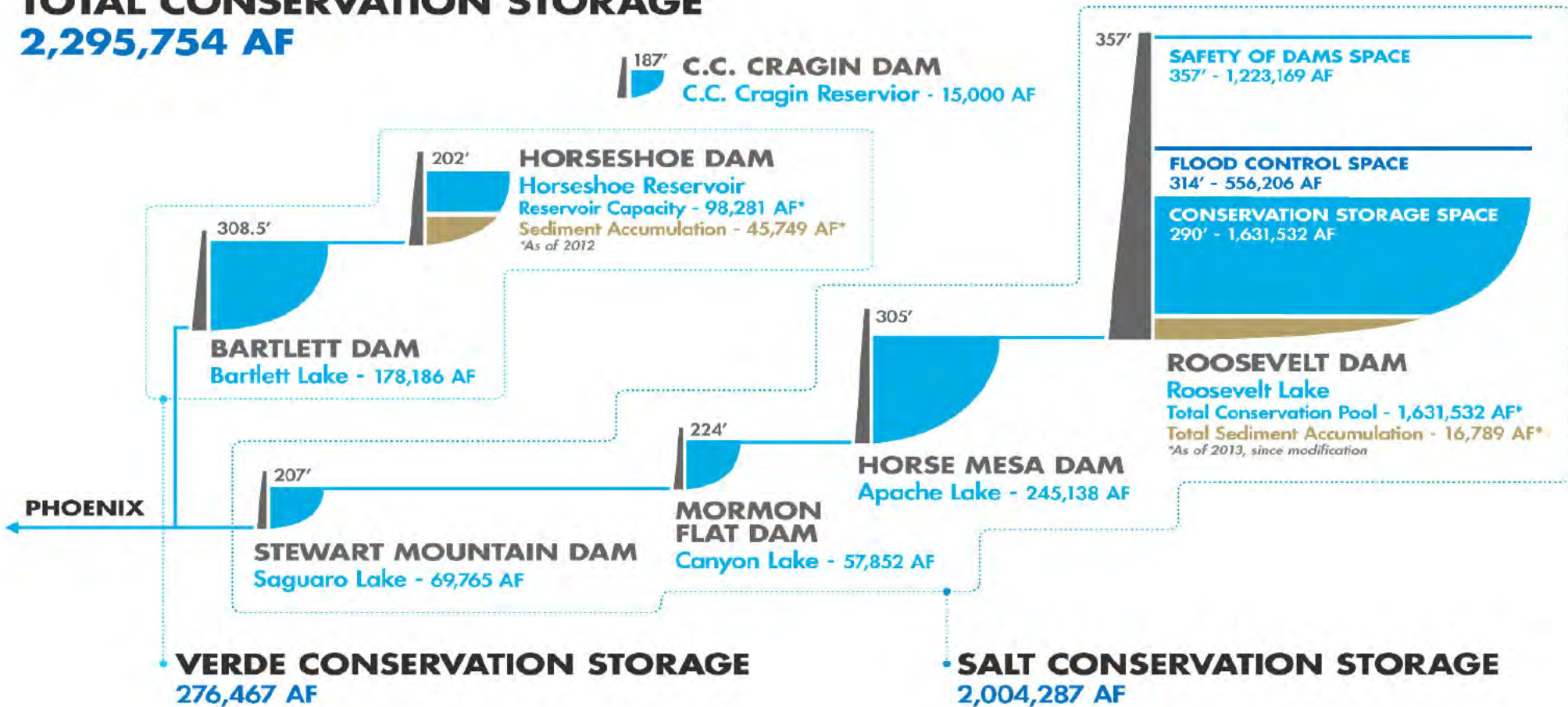
Reservoir System Operations

- Winter (October – May)
 - Deliveries from Verde (Bartlett Dam)
- Summer (May – October)
 - Deliveries from Salt (Stewart Mountain)

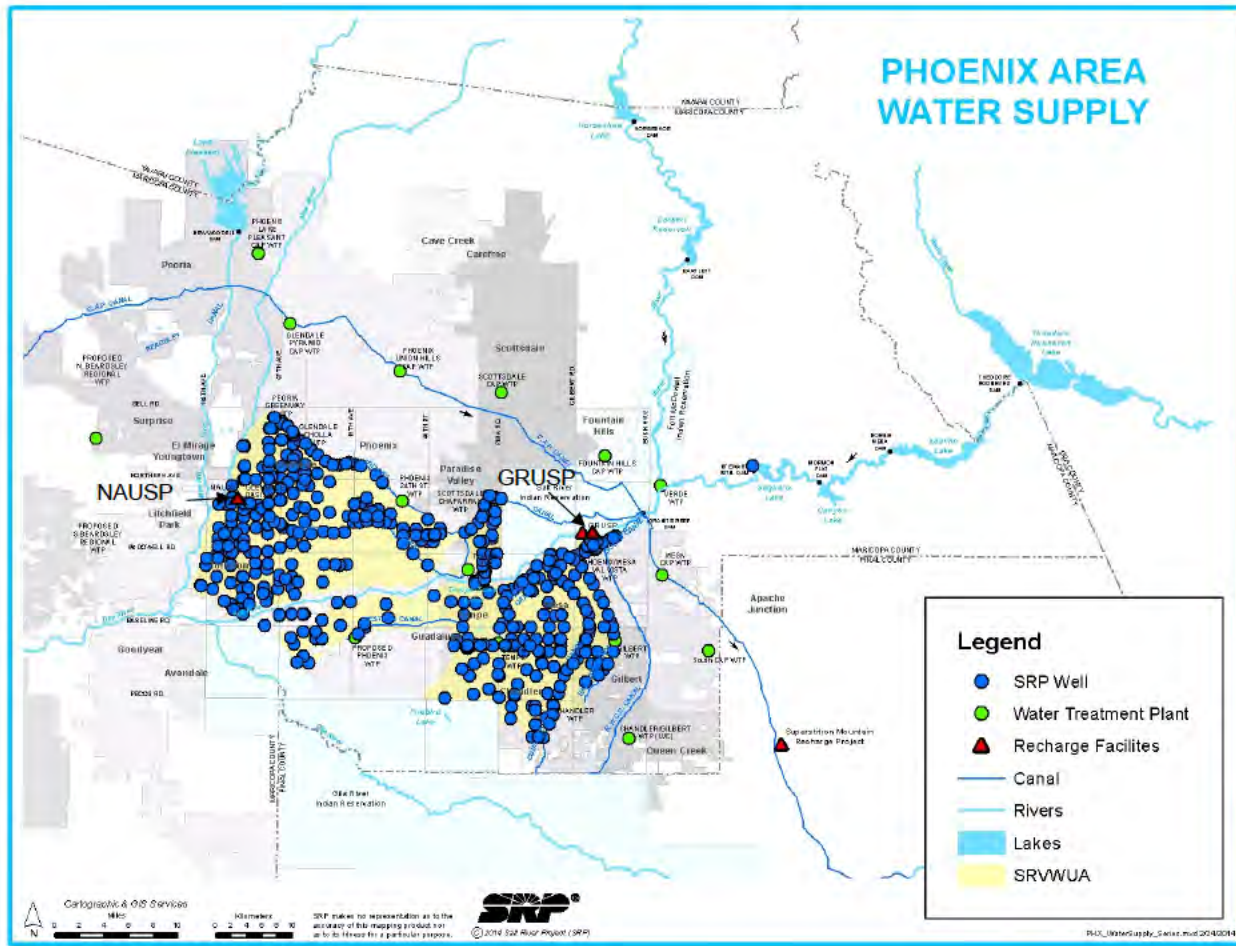


SRP Reservoir System

TOTAL CONSERVATION STORAGE
2,295,754 AF



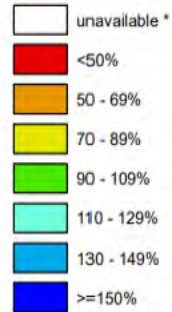
SRP Water Delivery System



Feb 19, 2021

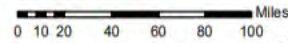
Arizona SNOTEL Current Snow Water Equivalent (SWE) % of Normal

Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median



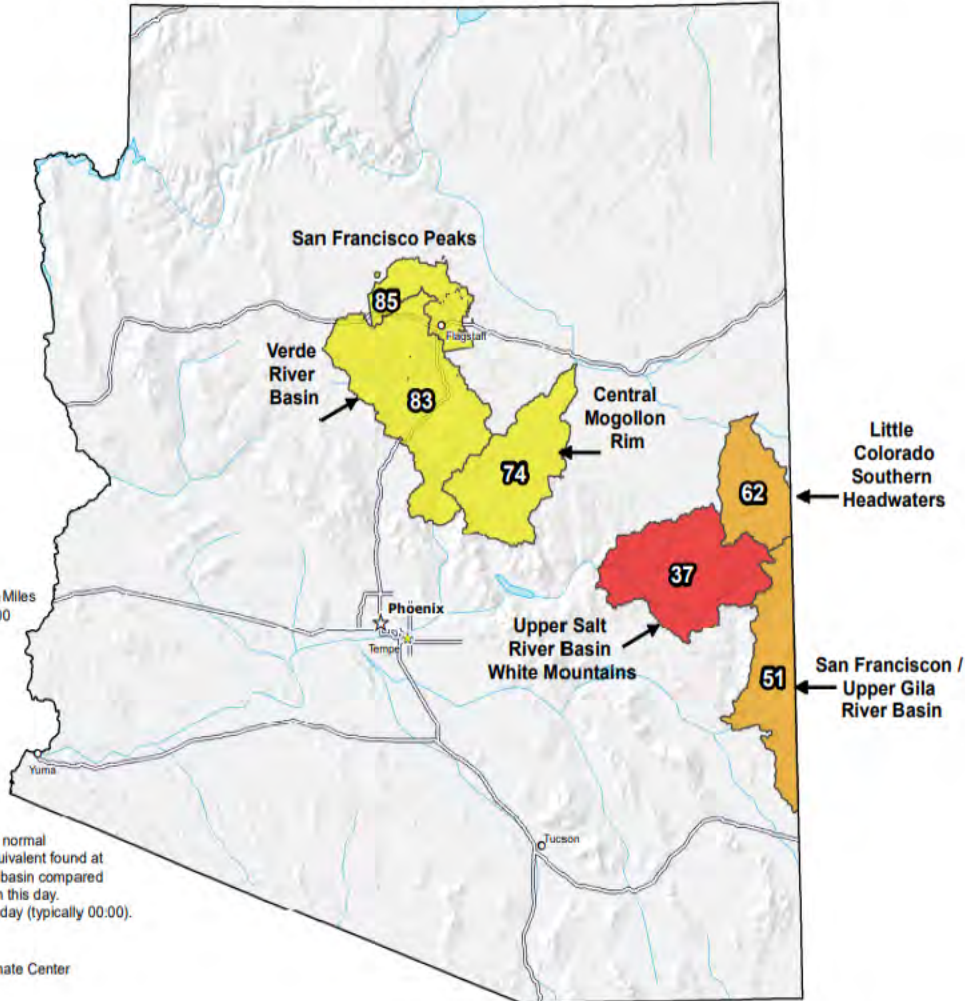
* Data unavailable at time of posting or measurement is not representative at this time of year

Provisional Data
Subject to Revision



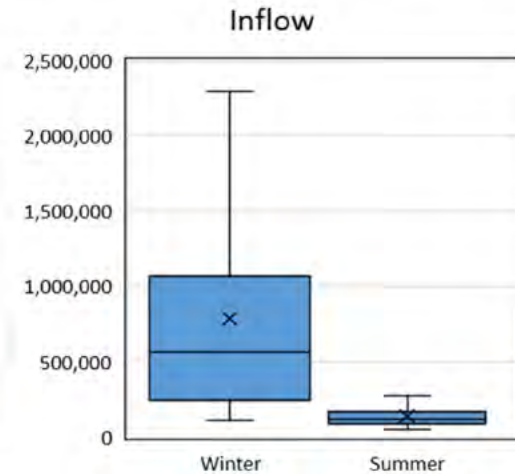
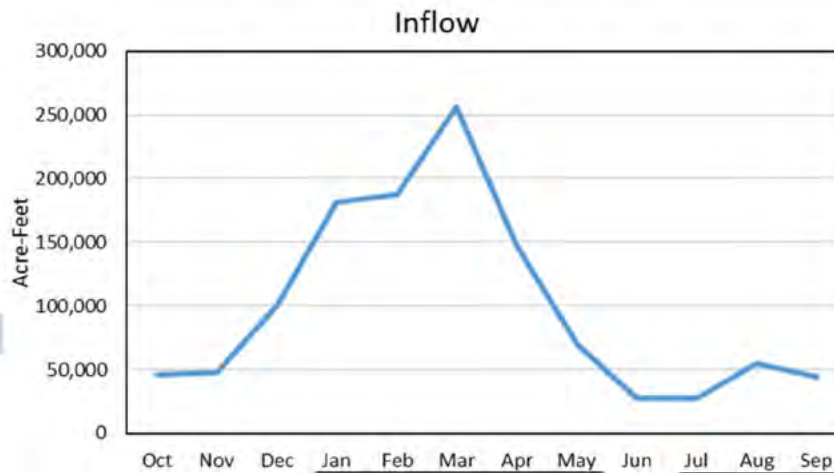
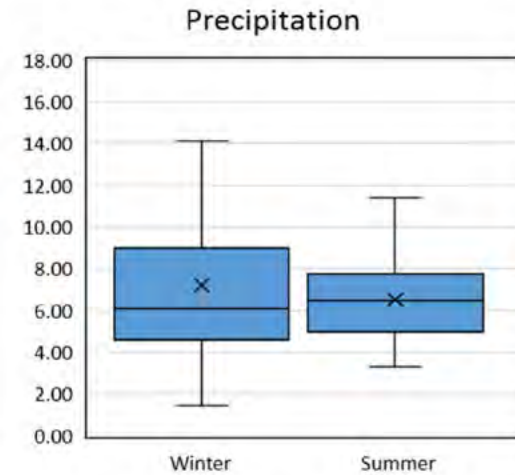
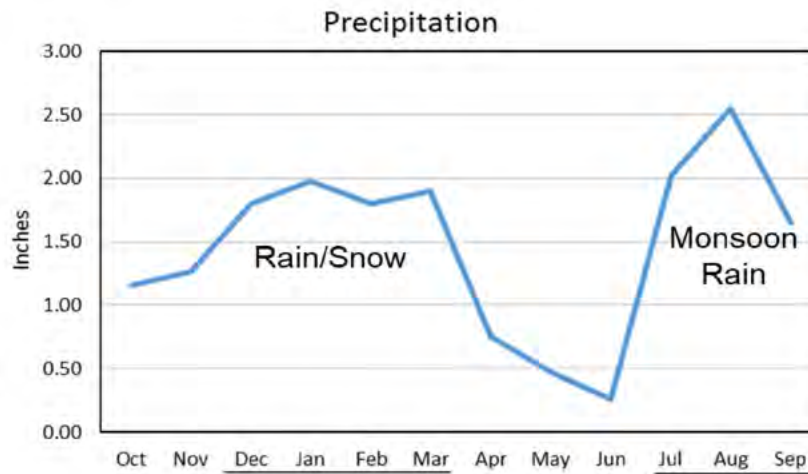
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>



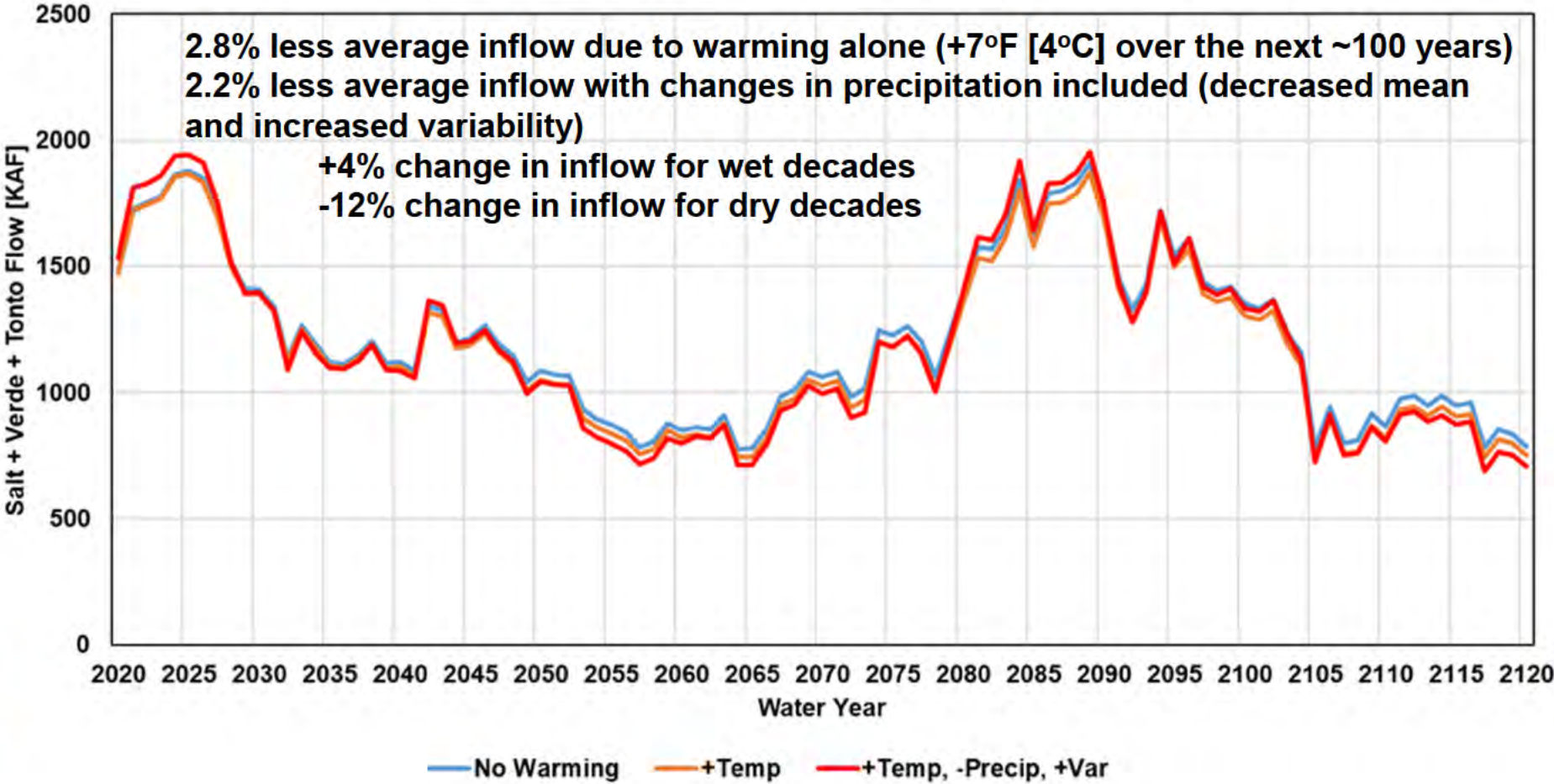
Salt-Verde Precipitation and Streamflow

**Winter/early
Spring rain and
snowmelt
generate most of
the flow**



Climate Change Impacts on Streamflow

Smoothed Reservoir Inflow

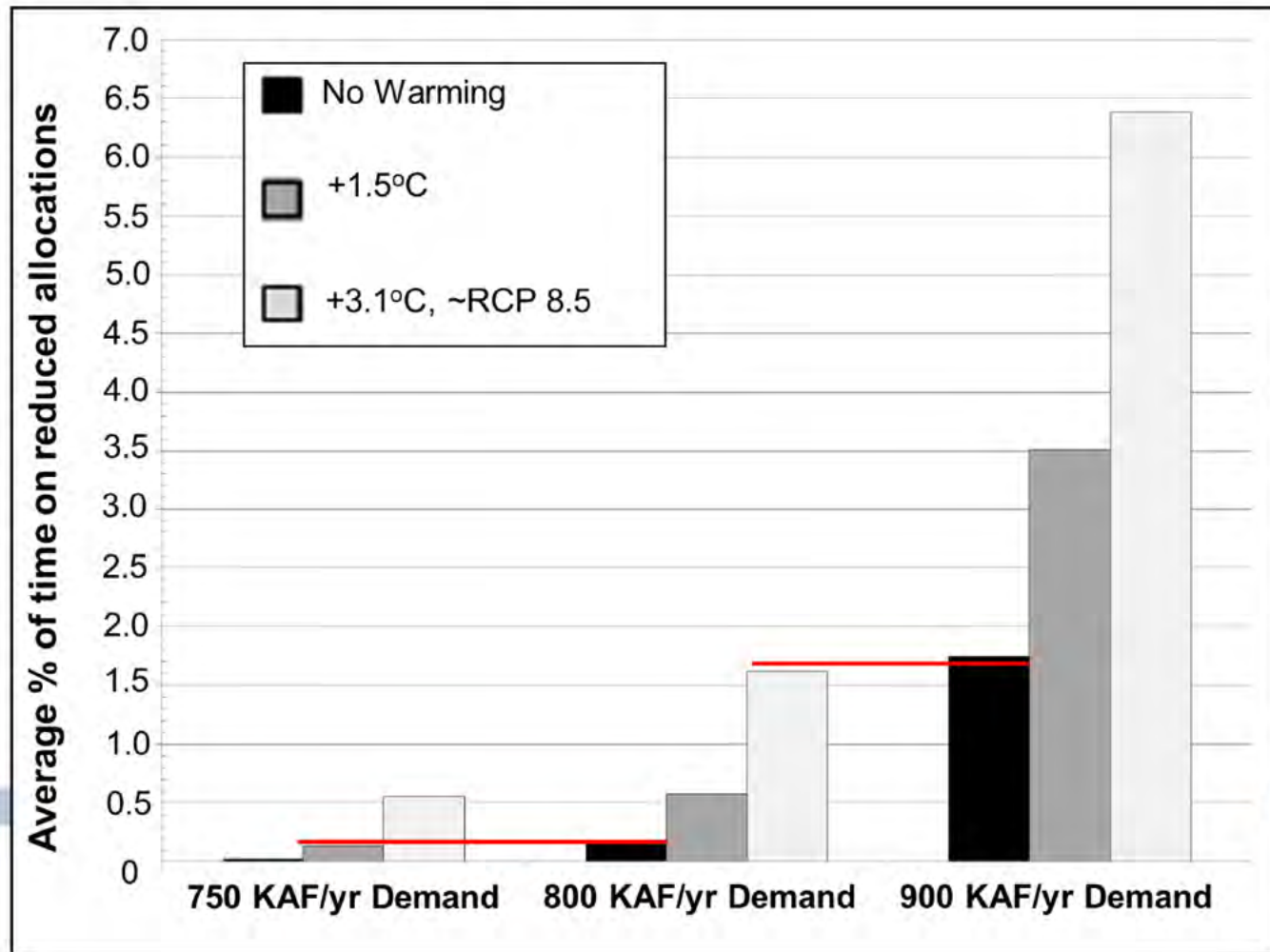


Warming Impacts on Storage

Time on reduced allocation (storage below 600 KAF) increases with demand and warming

A reduction from 900 KAF/yr to 800 KAF/yr demand approximately offsets 3.1°C of warming.

A reduction from 800 KAF/yr to 750 KAF/yr demand approximately offsets 1.5°C of warming.



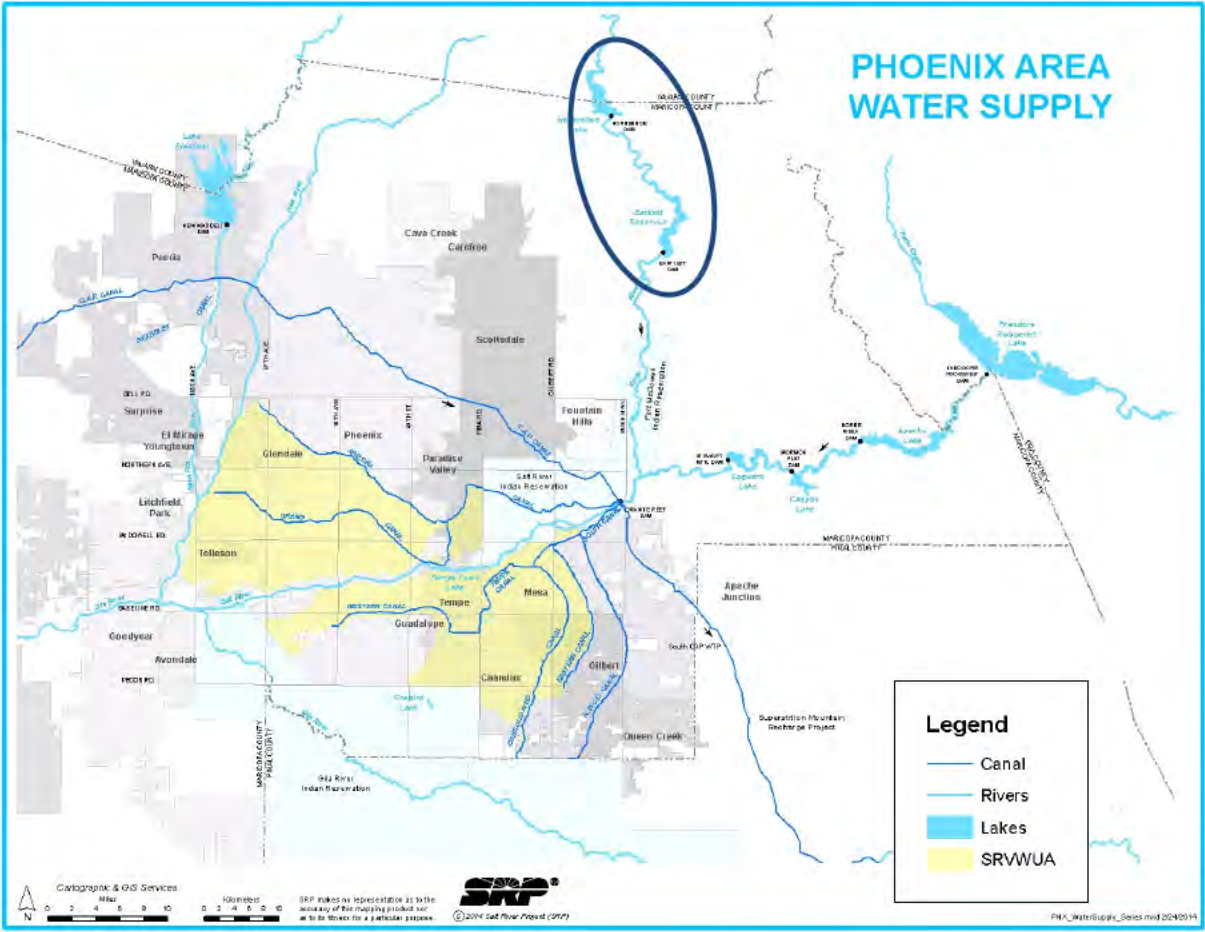


Water System Projects



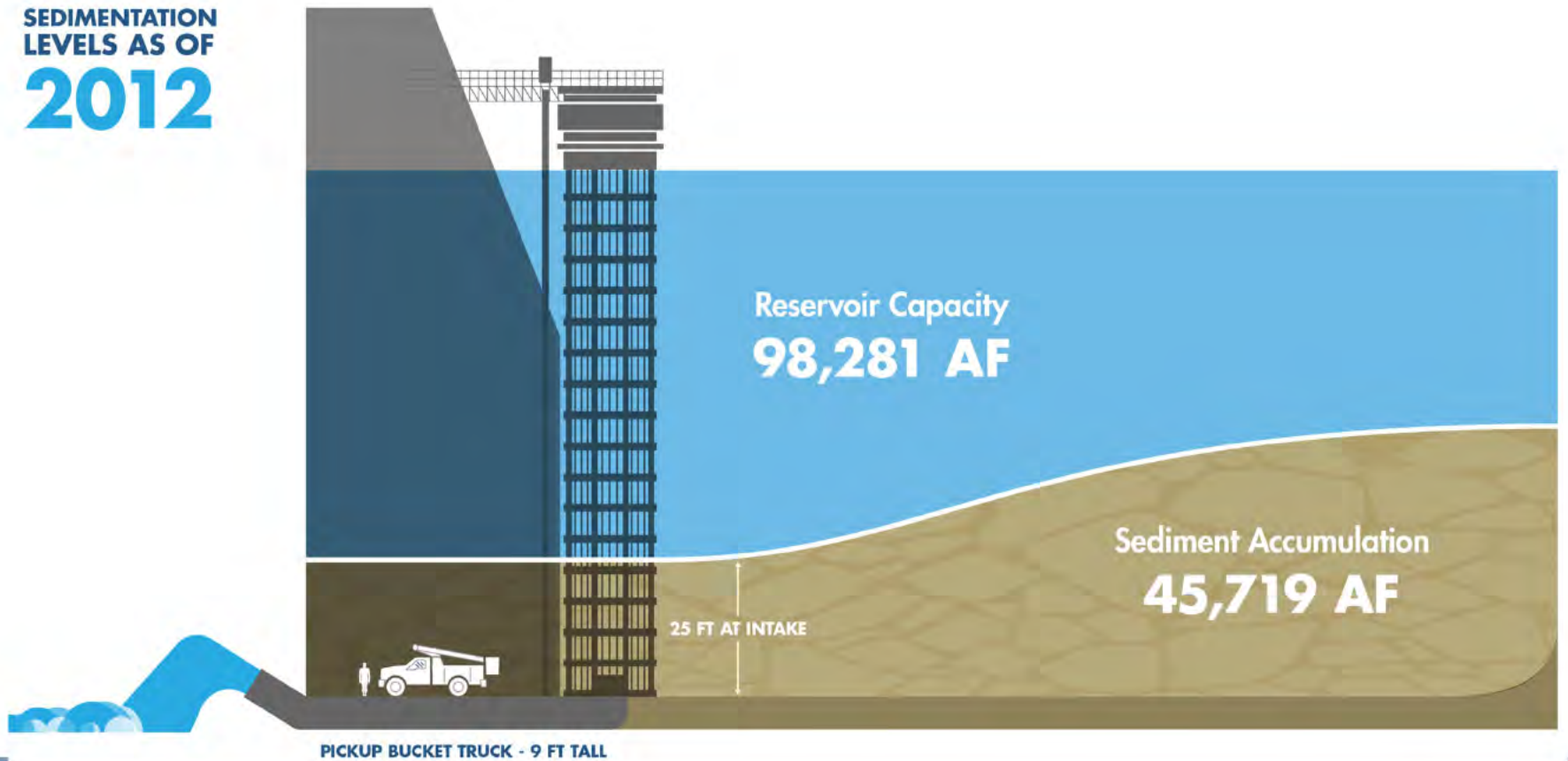
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Verde Sedimentation Issue



Sedimentation at Horseshoe Dam

SEDIMENTATION
LEVELS AS OF
2012



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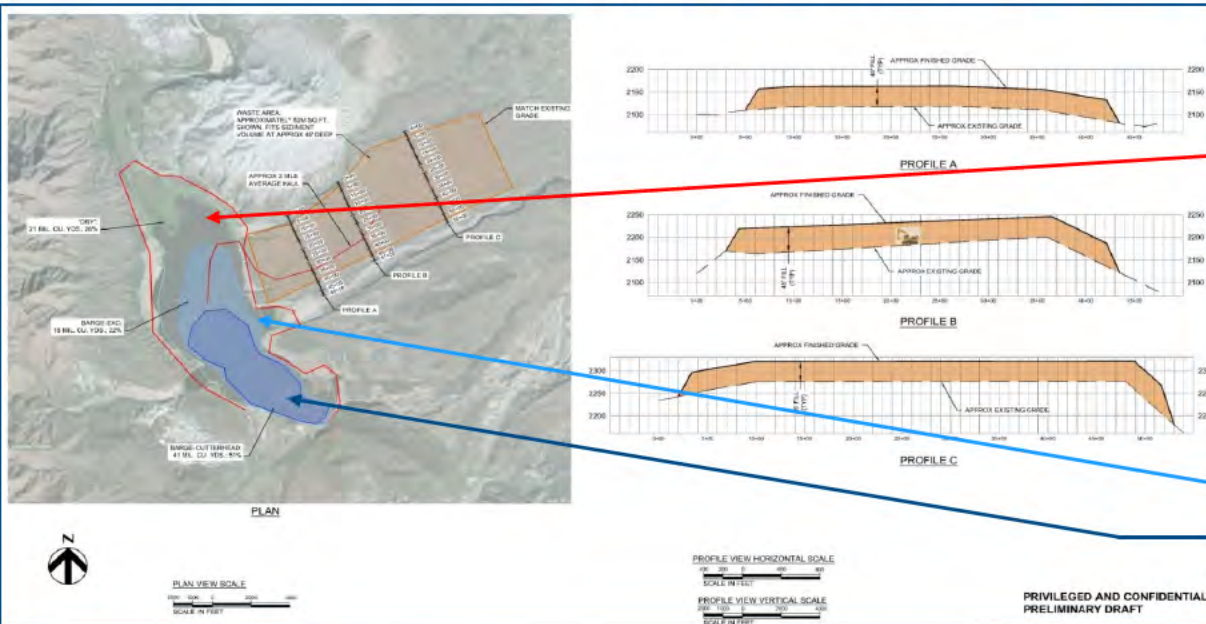
Options Evaluated for Mitigating Sediment Accumulation

- Sluicing
- Mechanical Removal/Dredging
- New Surface Water Storage Facilities
- Modification of Existing Surface Water Storage Facilities



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Horseshoe Dredging Challenges

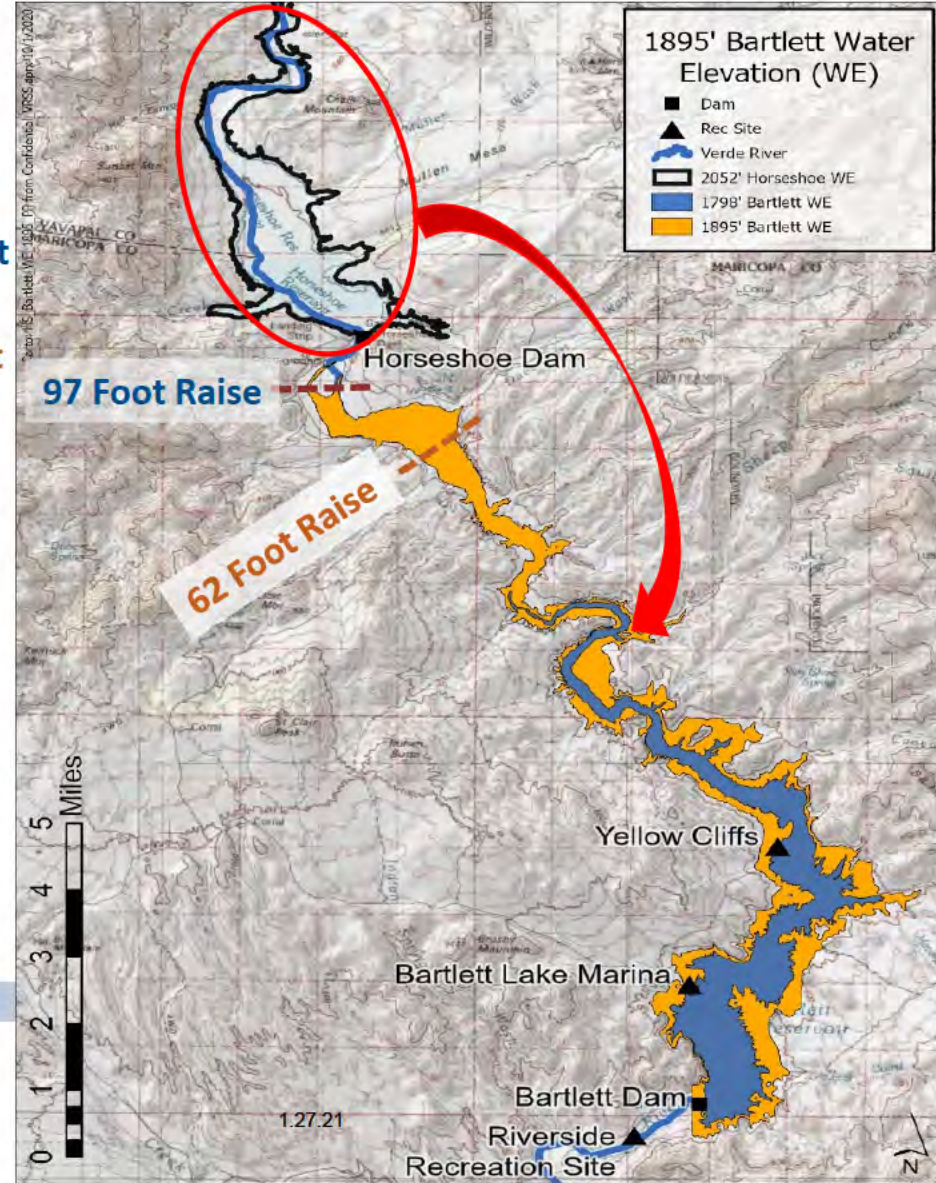
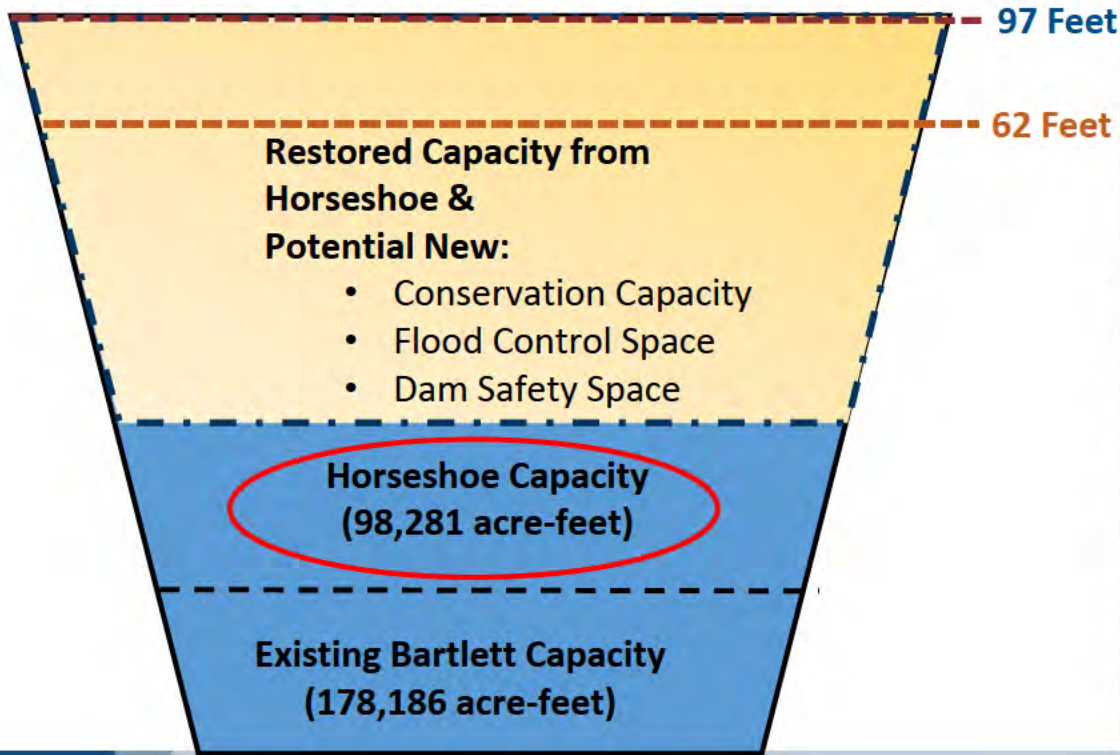


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Bartlett Modification Options

Option 1: Increase dam height=97 Feet, 628,000 Acre-Foot Reservoir

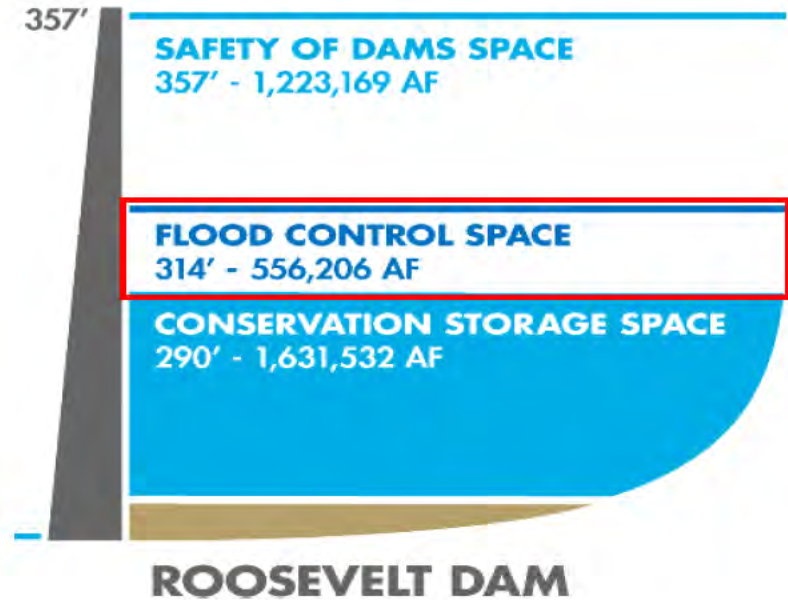
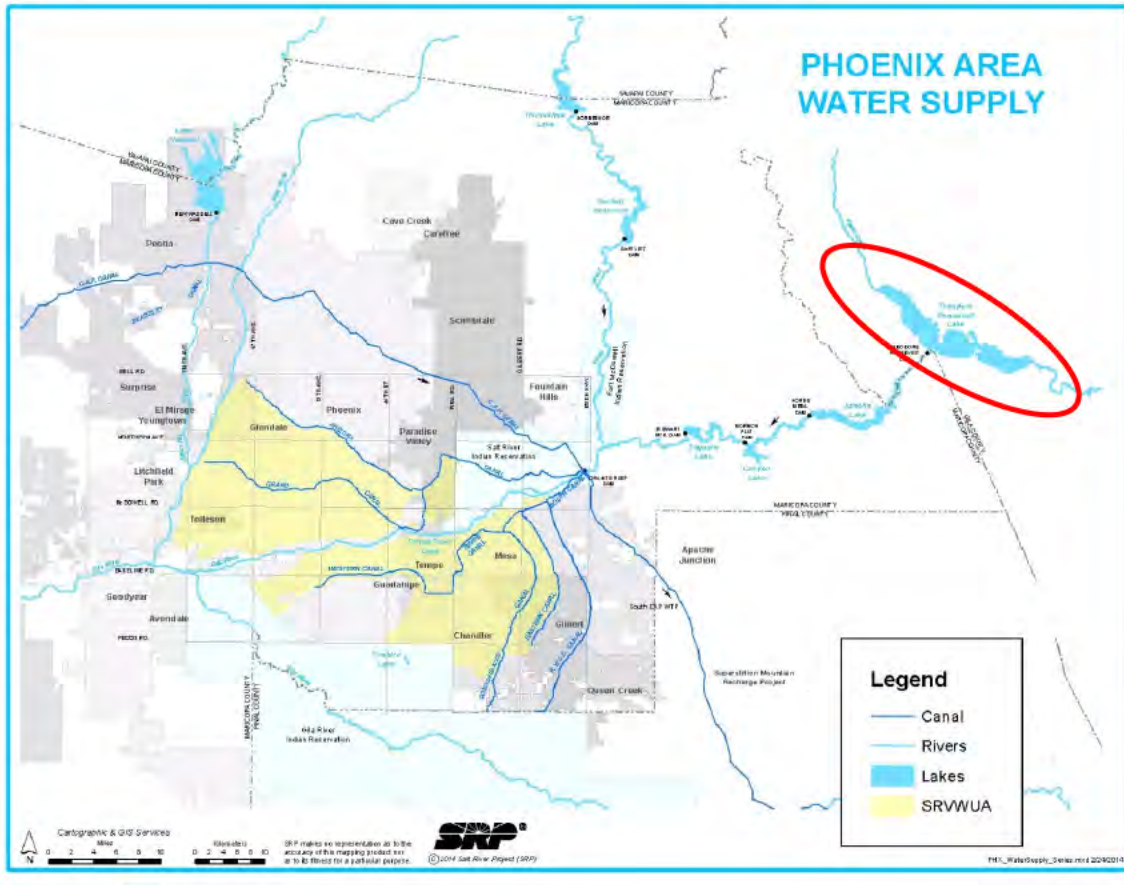
Option 2: Increase dam height=62 Feet, 422,000 Acre-Foot Reservoir



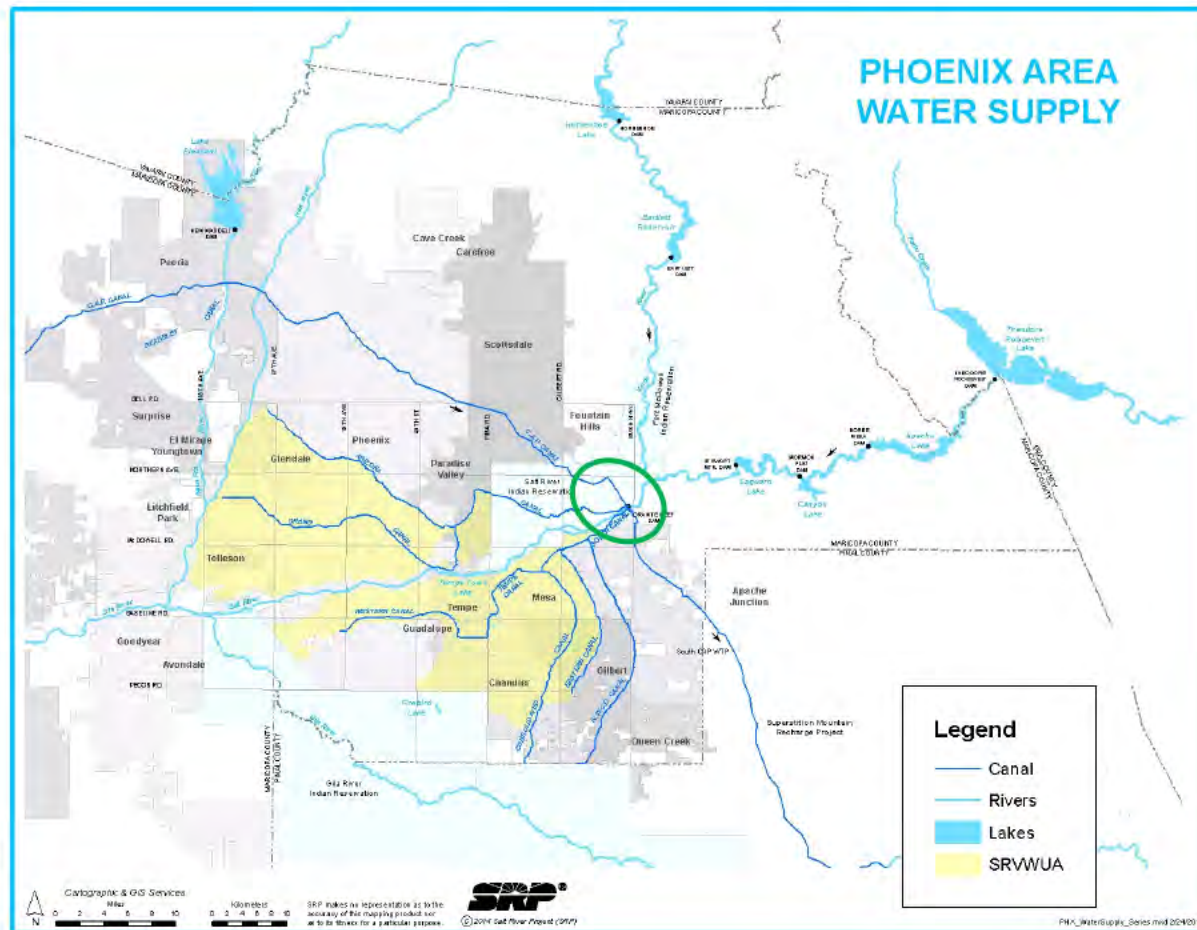
Dam Safety Modifications to Roosevelt Dam (1996)



Use of Roosevelt Dam Flood Control Space



Interconnection to CAP



SRP-CAP Interconnection Facility (“SCIF”)





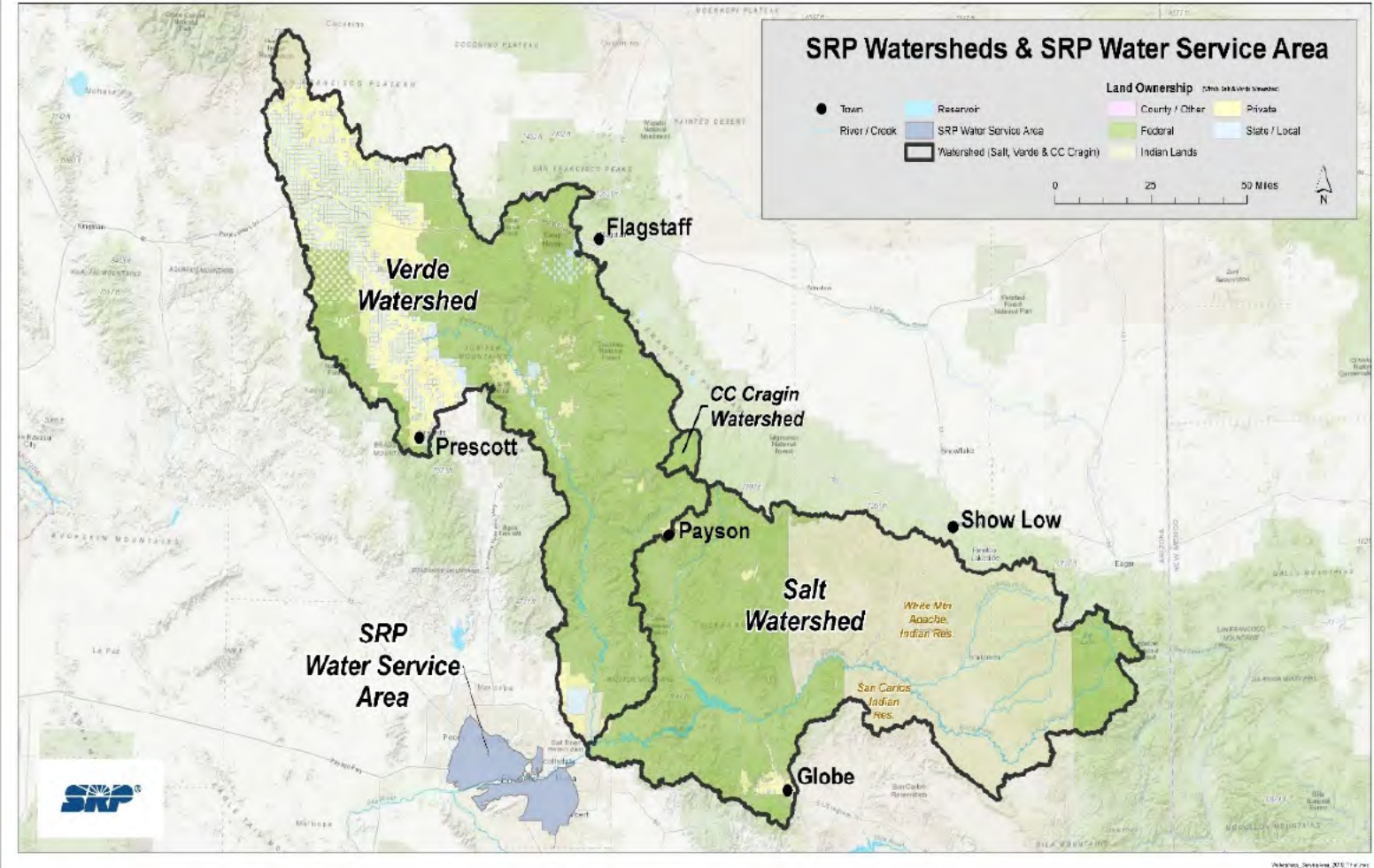
Watershed Health



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SRP Watersheds

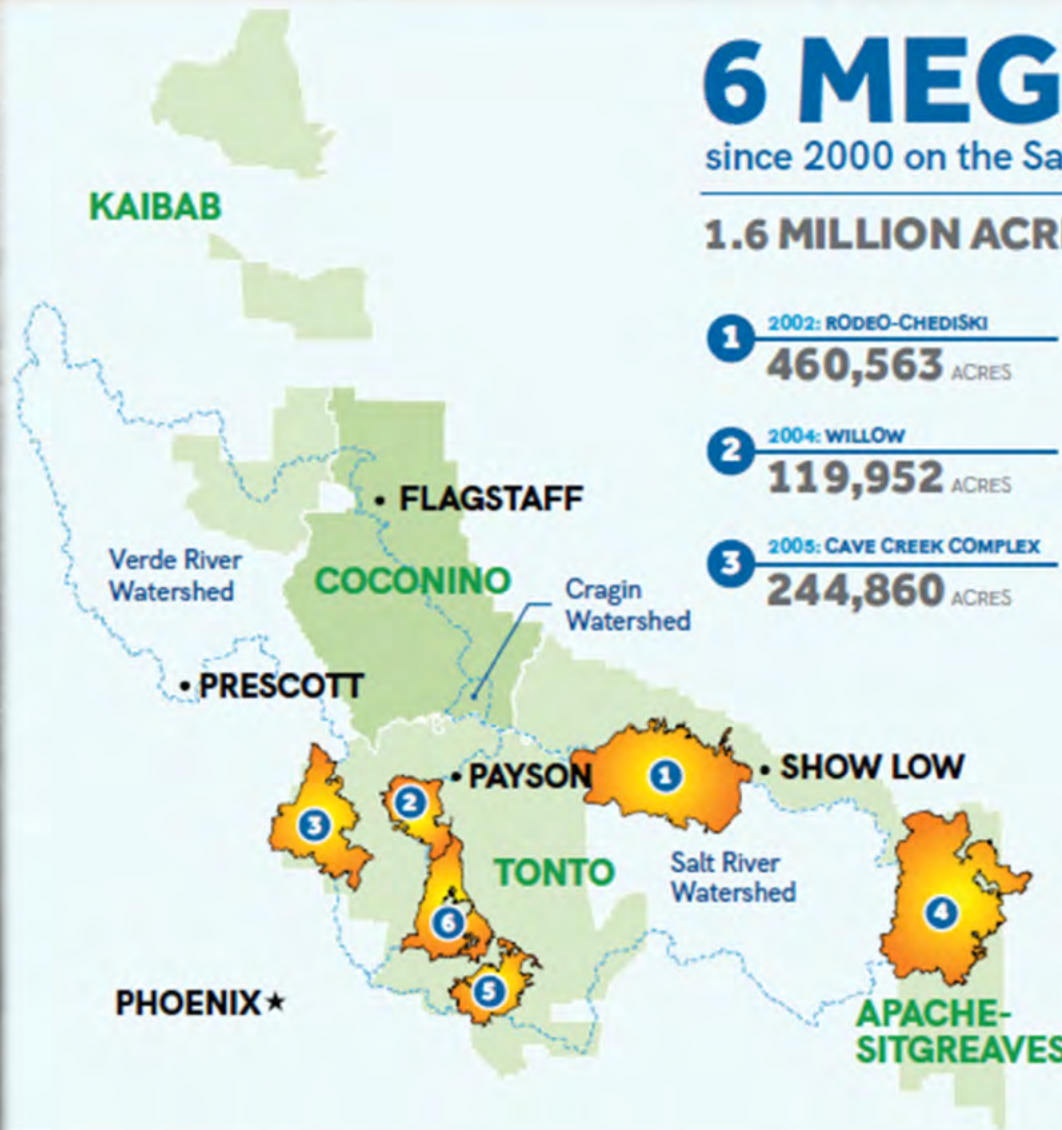
KEY MAP



6 MEGAFIRES

since 2000 on the Salt and Verde watersheds

1.6 MILLION ACRES BURNED



1 2002: RODEO-CHEDISKI
460,563 ACRES

2 2004: WILLOW
119,952 ACRES

3 2005: CAVE CREEK COMPLEX
244,860 ACRES

4 2011: WALLOW
537,864 ACRES

5 2019: WOODBURY
123,870 ACRES

6 2020: BUSH
194,310 ACRES



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Consequences of Wildfire and Flooding

Reservoir Capacity Loss



Damage to Infrastructure



Water Quality Degradation



Forest Restoration Benefits

- Reduces risk of uncharacteristic wildfire
- Restores natural fire regime
- Protects rural communities and economies
- Supports forest products industry and increases rural jobs
- Protects of water infrastructure, water quality and water storage
- Increases forest resiliency to climate change, drought and insect infestation
- Increases carbon sequestration and reduces air pollutants
- Protects wildlife and habitat
- Enhances recreation and tourism



SRP's Forest Restoration Policy and Industry Efforts

- Four Forest Restoration Initiative Request for Proposals (RFP)
 - Jointly developed with SRP, Forest Service, Bureau of Reclamation, State of Arizona
 - Largest single RFP in U.S.: 605,000 – 818,00 acres
 - First 20-year stewardship contract
- Healthy Forest Initiative
- Forest Restoration Policy Changes
- Watershed/ Forest Health Research



Thank you! Questions?



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