Drought and Water Resource Management at the Salt River Project; Phoenix

Intermountain West Drought Early Warning System

Charlie Ester
SRP Surface Water Resources

Salt River Project

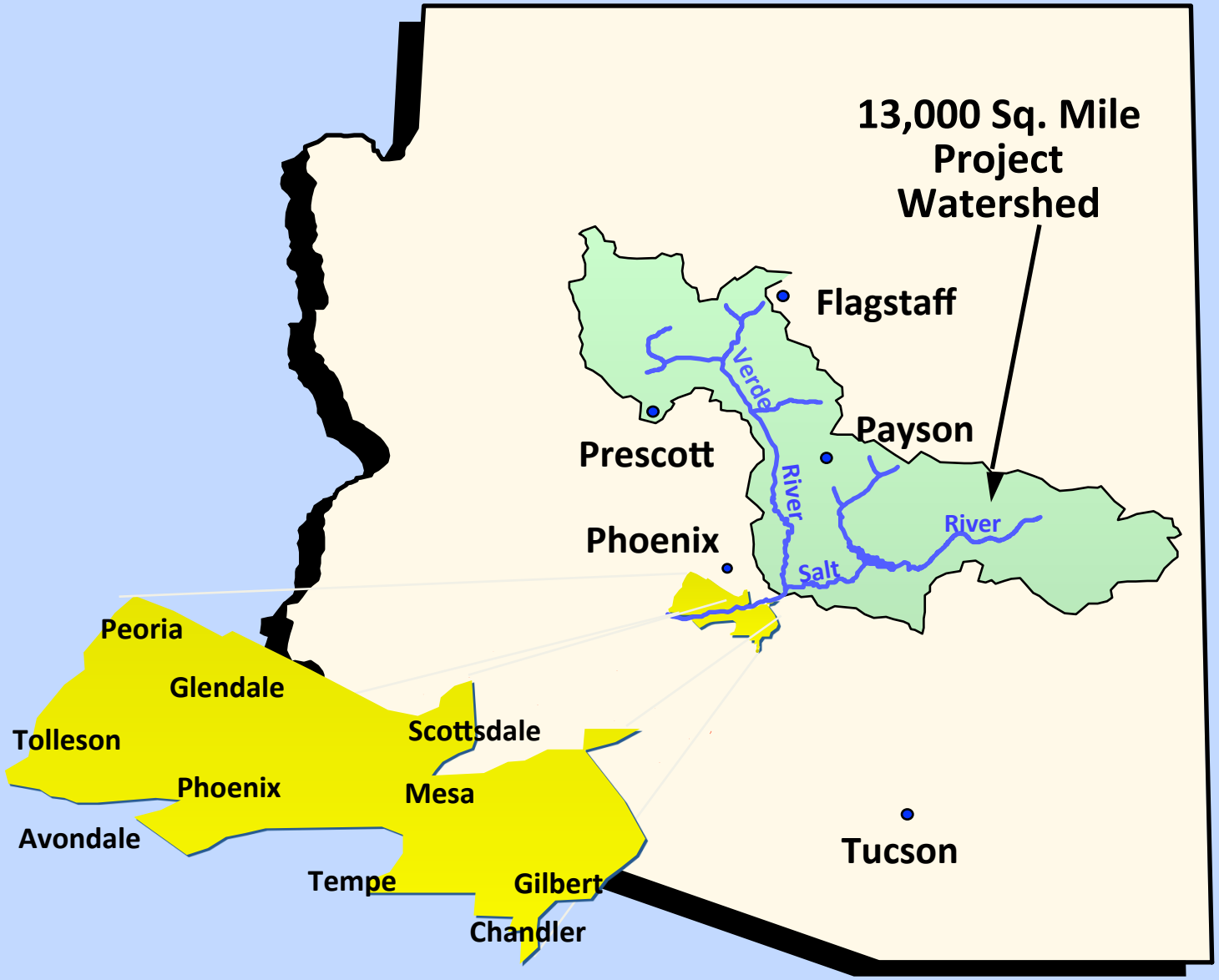
Salt River Valley Water Users Association

- Established 1903
- A Federal reclamation project
- A private corporation
- Delivers almost 1 million acre-feet per year

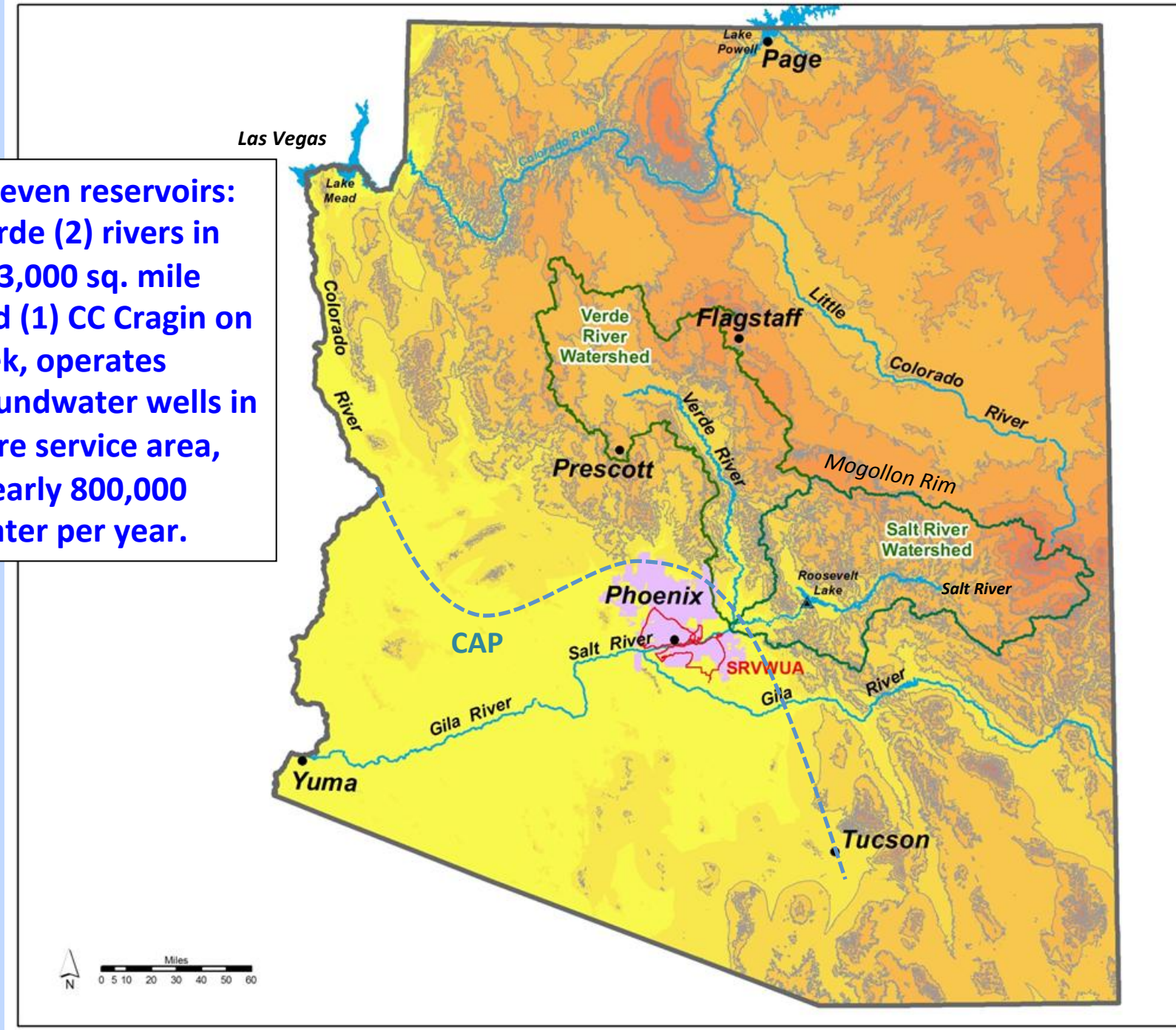
SRP Agricultural Improvement and Power District

- Established 1937 as a political subdivision of the state of Arizona
- 1,000,000 customers in and around the Phoenix metro area

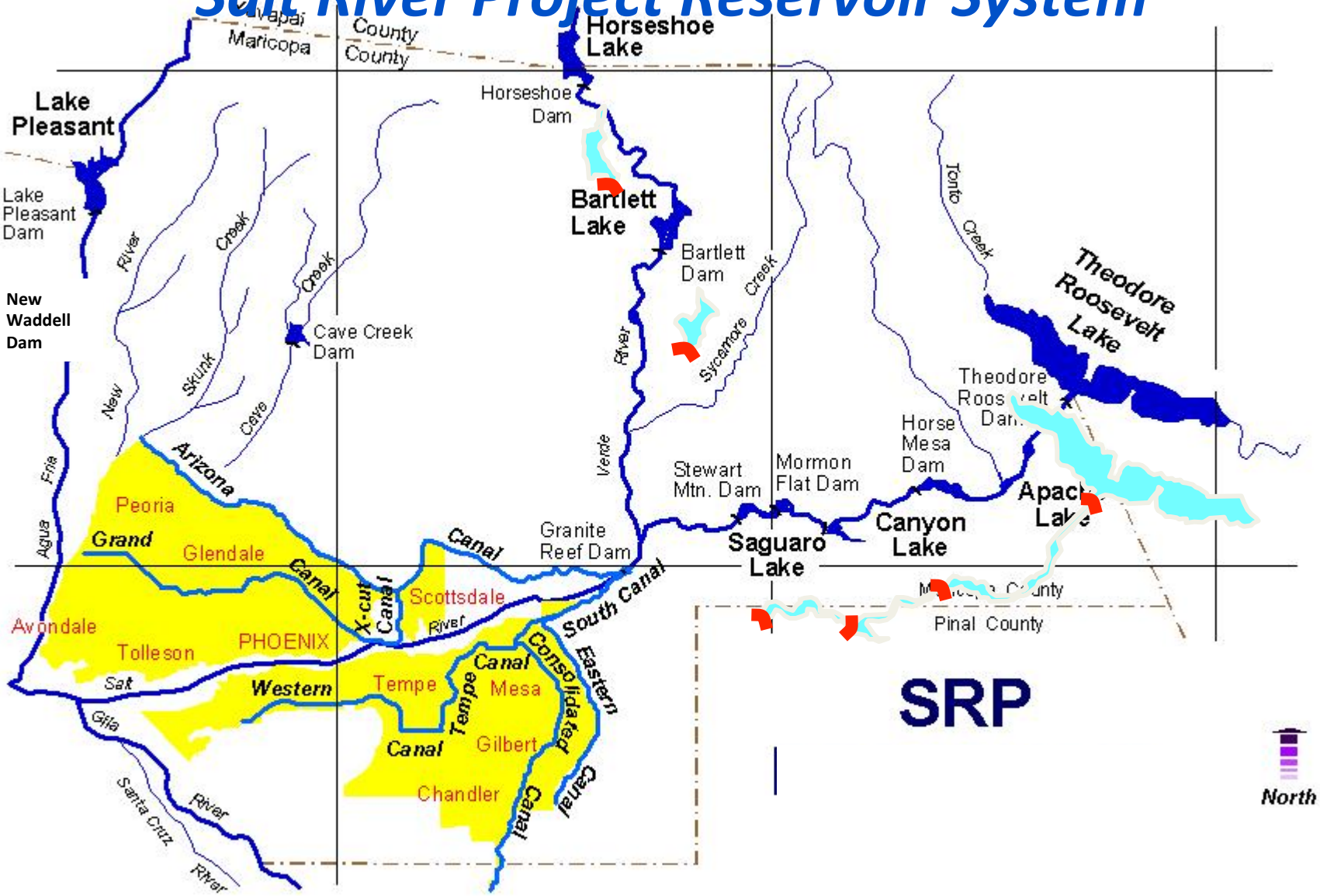
SRP Water Service Area



SRP manages seven reservoirs: Salt (4) and Verde (2) rivers in Arizona for a 13,000 sq. mile watershed, and (1) CC Cragin on East Clear Creek, operates canals and groundwater wells in the 250,000 acre service area, and delivers nearly 800,000 acre-feet of water per year.



Salt River Project Reservoir System



10/27/1999 RESERVOR-1.PP

Project Reservoir Operation Plan

Objective: Provide an adequate and reliable water supply to our ***shareholders***.

Water Demand: The quantity of water needed to satisfy shareholder demand and contract obligations for Agricultural, Municipal, Industrial, Domestic, Recreational, and Wildlife uses.

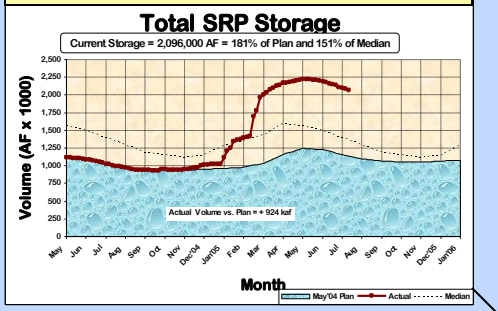
Management Philosophy:

- Ensure carry-over storage to manage the worst drought on record.
- Reduce the probability of having to cut the allocation of water to 2.0 AF/AC.

Methodology:

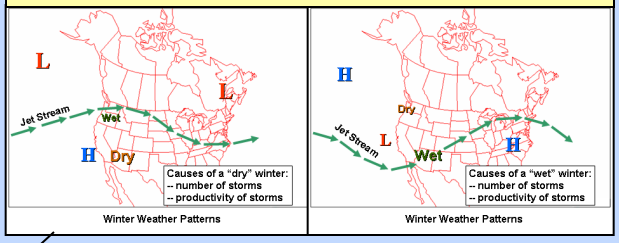
- The end of every wet runoff season is the start of the next severe sustained drought period.

Reservoir Storage

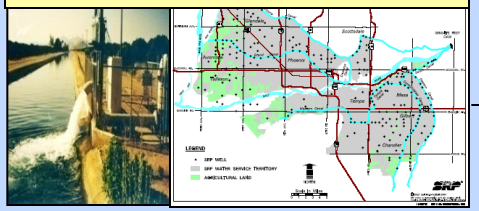


Water Demand

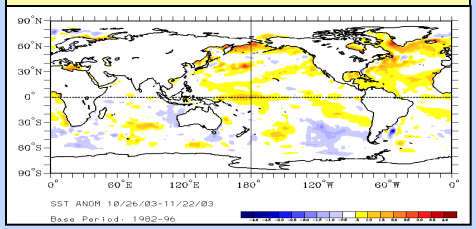
Synoptic Scale Patterns



Groundwater

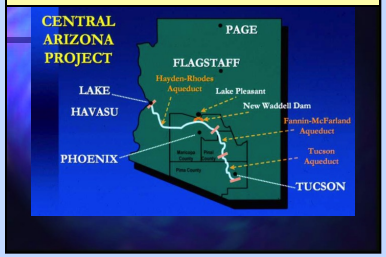


Teleconnections

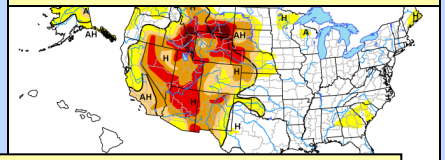


Project Reservoir Operation Plan

Other Sources

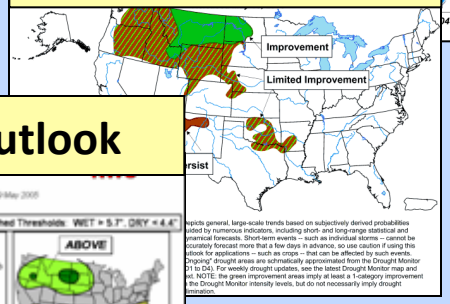


Drought Monitor

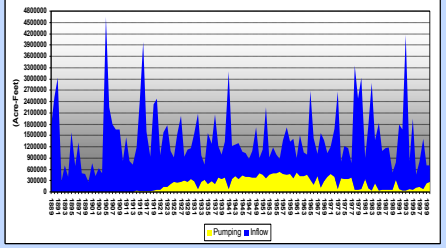


Allocation

Drought Outlook

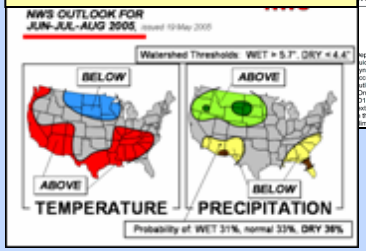


Historical Runoff



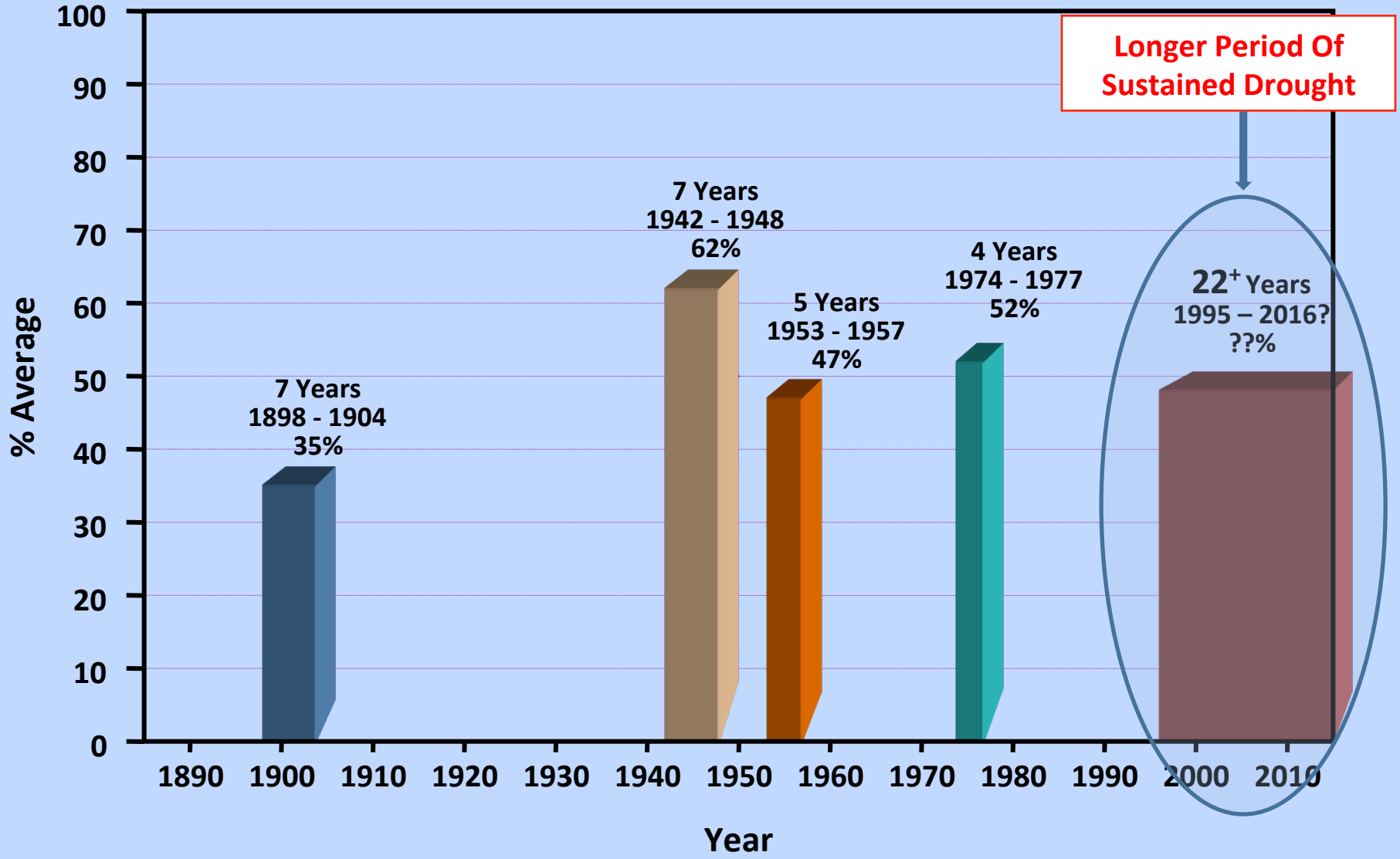
Water Mix

NWS Outlook

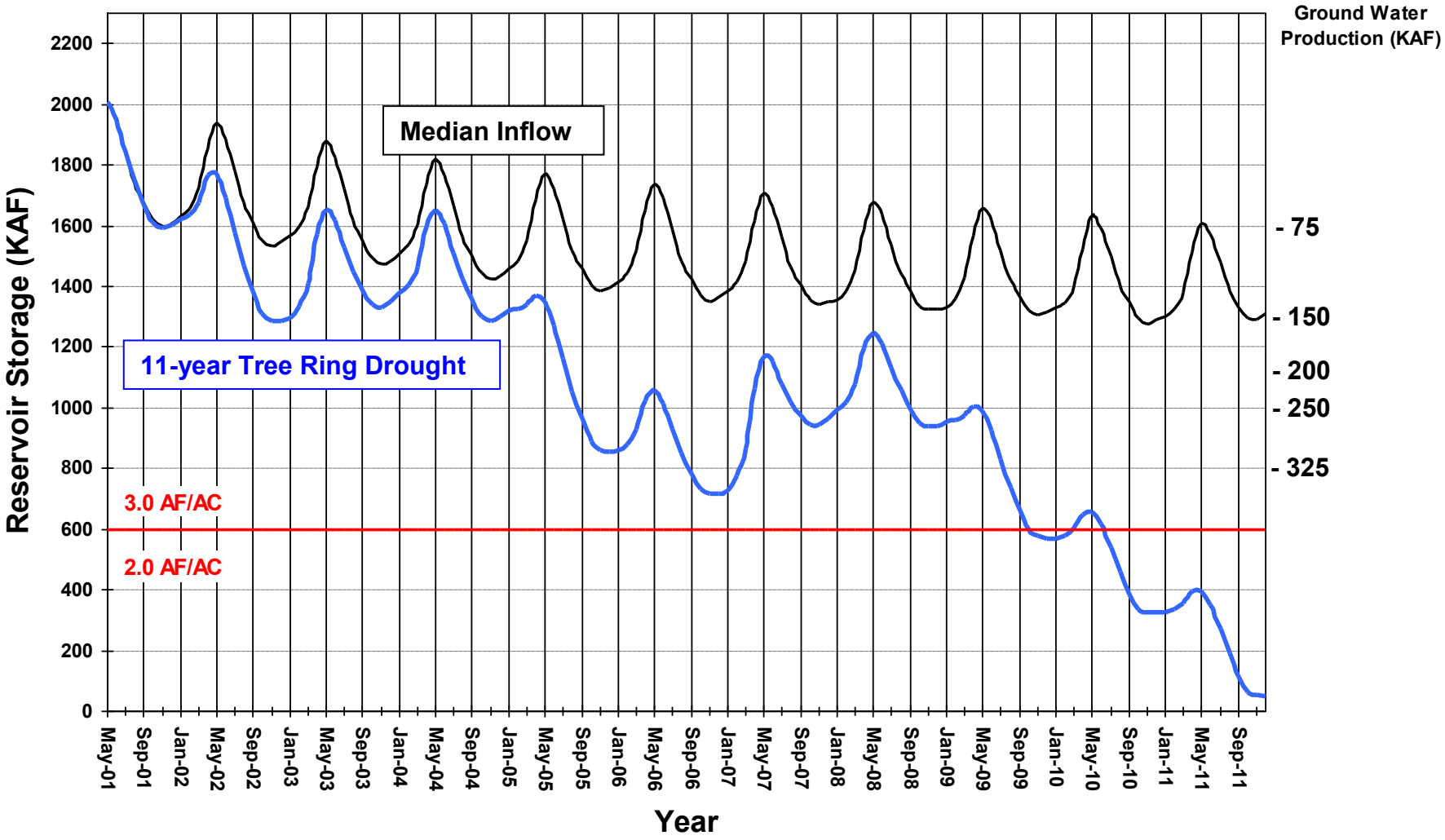


Salt River Project Historic Drought Periods

(Average Runoff 1913–2010 = 1,198,536 AF)



SRP Storage, Pumping & Water Allotment Planning



What Would Help Bolster Drought Preparedness?

- Increased Reliability of Long-Lead Forecasts
- Accurate Demand Forecasts
- Understanding Demand Elasticity
- Innovative Reservoir Operations
- Improved Predictability of Drought Onset/ Duration
- Robust Watershed Programs and Triggers
- Regional Water Planning and Collaborations