

STATE PERSPECTIVES ON DROUGHT PREDICTION

Don Ostler

Upper Colorado River Commission

WHO WE ARE

- Upper Colorado River Commission
 - - Interstate water administrative agency
 - - Includes States of Colorado, New Mexico, Utah and Wyoming
 - - Deals with apportionments to UB States
 - - Deals with supply obligations to the LB States
 - - Deals with delivery obligations to Mexico
 - - Responsible for implementing curtailment of uses if required

WHERE WE ARE



Is this the definition of drought







How Do You Define Drought??

- Webster says: a long period with little or no rain
- If you have a period of low precipitation but no one is short of water, do you have drought?
- If you are short of water but precipitation is not low at the time, is that drought?
- The Mexican Water Treaty's extraordinary drought provision is a good example.....

Mexican Water Treaty of 1944

- Provides that the US may short Mexico proportional to US shortages during **extraordinary drought**
- In 100 years of records there has never been a shortage in supply to lower basin states or Mexico
- A few years ago, we were close to declaring a shortage in the lower basin and Mexico, however during that year precipitation was not that much below normal
- Mexico has requested that we find a precipitation or drought index that would correlate to the need for shortage. We have not been able to find one.

The Practical Application of Drought to a Water Manager

- We need not just a relationship of precipitation and runoff but also integrated with available storage (supply) and demands (uses of water)

Need to understand uncertainty over a more broad range of risk levels

- Colorado River is growing closer to full utilization – more sensitive
- UB Curtailment based upon predictions – advance actions
- Water Users need to be able to see what is coming and make decisions based upon risk
- Need for smaller watershed based predictions
- Need long range understanding of climate impacts and uncertainty

WHAT DO WE WANT?

- We wish we had advance lead time and accurate forewarning of significant drought
- We want to know how deep of a drought it may be
- We want to know how long the drought will last
- We want drought predictions translated into runoff projections
- We want drought predictions translated into predictions of storage or total supply compared to water demands

WHAT MUST WE HAVE?

- We must have good historical based records defining past drought (magnitude and duration)
- We must have assessments of historic drought modified to reflect future climatic conditions and risk
- We must have good tools to relate this information to storage and available supply
- We must have good information on current and future water demands
- We must have good risk based plans to manage supply and demand imbalances



• THANK YOU



WYOMING

NEVADA

UTAH

COLORADO

CALIFORNIA

ARIZONA

NEW MEXICO