Water Agency Perspective
Seasonal Precipitation Forecasting

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S2S forecasting

- Potentially hugely useful for water supply, flood management, agriculture, hydropower, etc purposes
- Can't they do better than The Old Farmer's Almanac?
- (And if they're predicting climate change in 2100, why can't they say what next month will be like???)

Western States Water Council Position #366

- **WHEREAS,** the present scientific capability for forecasting beyond the weather time domain – beyond the ten day time horizon – and at the subseasonal to interannual timescales important for water management is not skillful enough to support water management decision-making; and …..
- **BE IT FURTHER RESOLVED**, that the federal government should place a priority on improving subseasonal and seasonal precipitation forecasting capability that would support water management decisions.

Key Points for This Meeting

- Timeframe of interest is 2 weeks+ out to a year
- Prediction of precipitation -- not runoff, snow products, or “drought”

Many Runoff Forecasting Products Already Available! (for example, CDWR products)

Seasonal Runoff Forecasts

Monthly Bulletin 120 river runoff forecast (issued from February 1 through May 1): Latest | Previous

Weekly update to the Bulletin 120 river runoff forecast (issued from February through June): Latest | Previous

State map of April through July unimpaired snowmelt runoff

Historical Bulletin 120 - Water Conditions in California
Sacramento and San Joaquin Valley Water Year Type Index forecast (issued monthly from December 1 through May 1): Latest | Previous

Historical Sacramento and San Joaquin Valley Water Year Type Index

Peak snowmelt runoff forecast (issued from April through June cooperatively with the California-Nevada River Forecast Center)

Will the rest of this winter be dry? (sub-seasonal prediction)

- How much water should we allocate to State Water Project contractors?
- Will we be processing many water transfer requests, and will transfer water be available?
- How should we plan reservoir and aqueduct water and power operations?
- Will emergency Delta salinity control measures be needed?

Will next year be dry? (seasonal prediction)

- Do we need to reprogram funds for drought response activities, or seek new fundingin state budget process?
- Should we plan to operate a drought water bank?
- Should we develop enhanced conservation or drought outreach programs?
- Do we need to start monitoring subsidence due to groundwater extraction, or take administrative actions on subsidence?

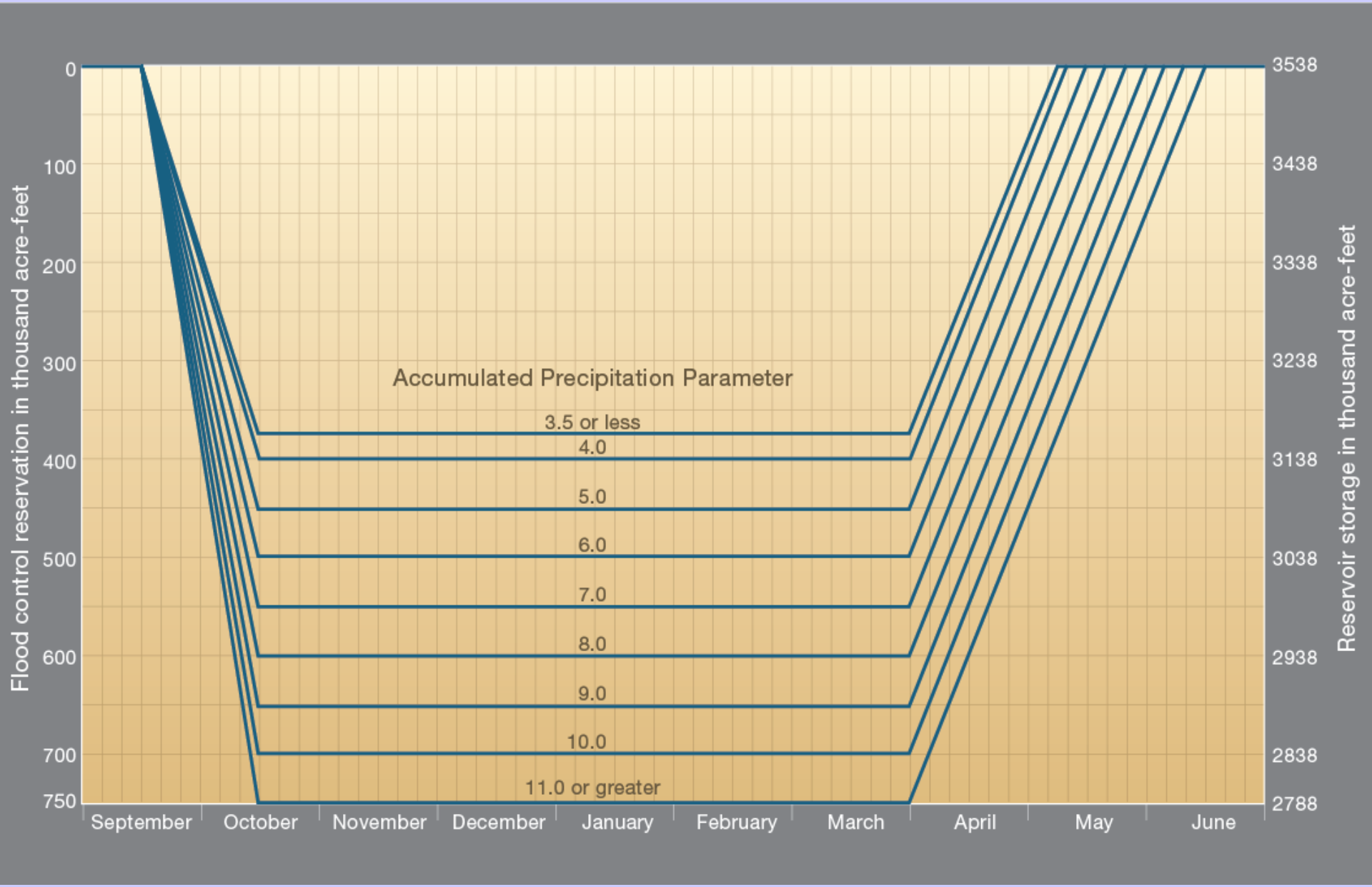
Example -- CDWR Winter Season Decision Timeframes

- WY begins October 1st
- Publish annual water transfers guidance, November
- Contractual requirement for initial allocation to SWP contractors by Dec 1st (then updated based on observed hydrology)
- Snow surveys begin Jan 1st
- Seasonal snowmelt runoff forecasts begin in February
- Water transfer applications due by March

Delicate Balancing Act Between Reservoir Ops for Flood & for Water Supply

And long-term need for climate change adaptation tools

Lake Oroville Rule Curve



Relevance at water user level

- Especially important for agricultural water users; need for adequate lead time for planting decisions (for getting production loans). Agriculture is West's major water user
- Lead time needed for planning response actions such as water transfers & local conservation programs/budgets, ratesetting
- Importance of reliable predictive capability increases with length of drought