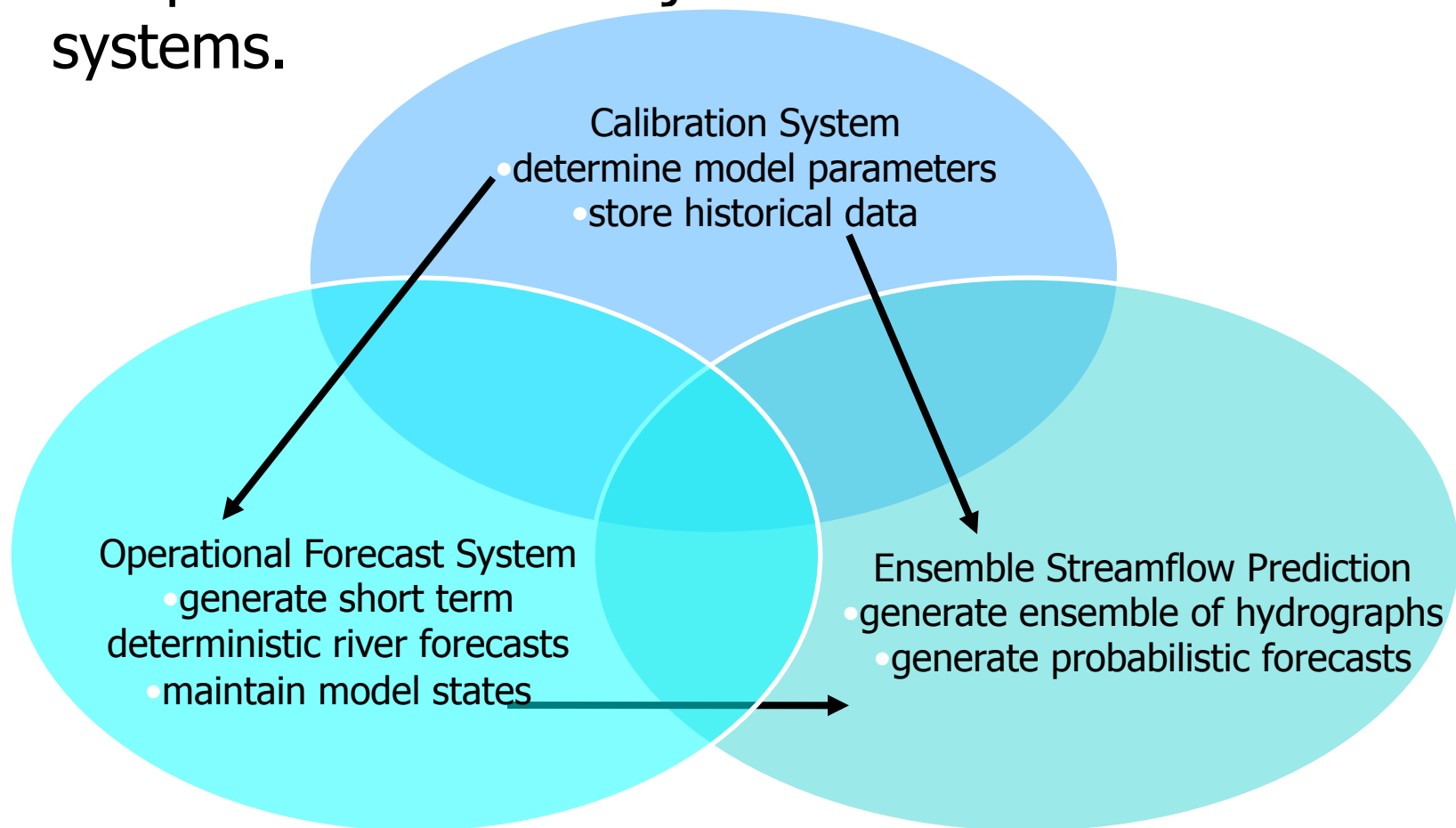
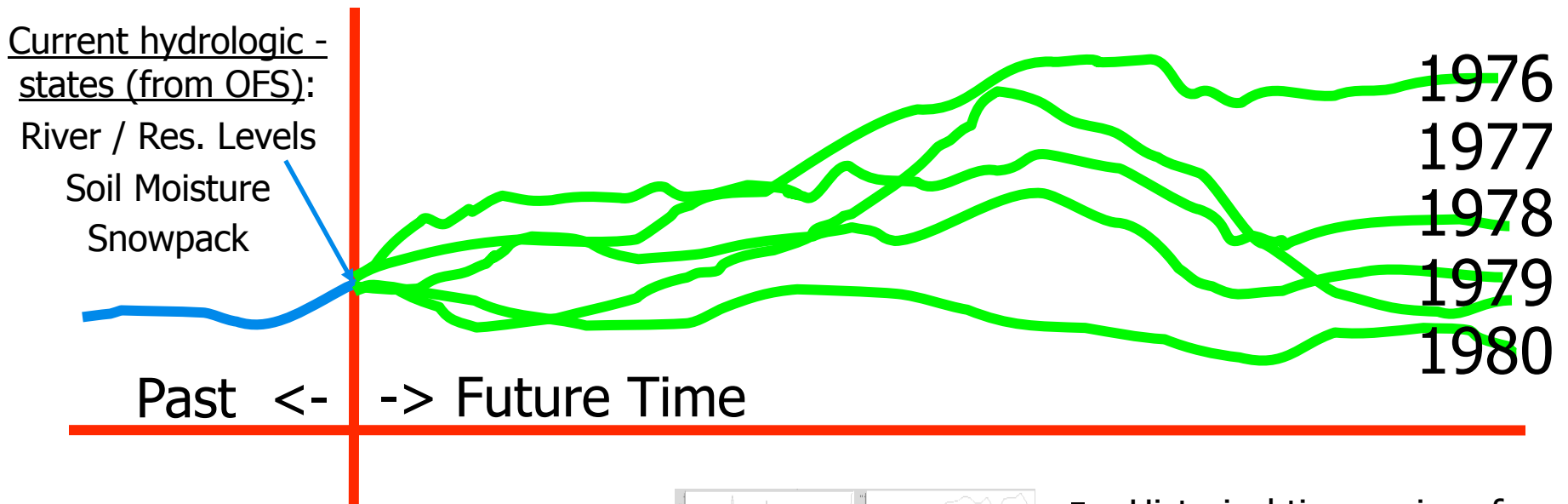


NWS River Forecast System

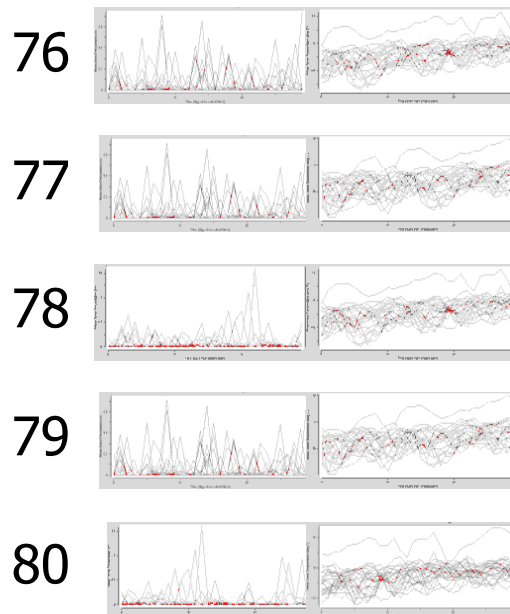
- Continuous, conceptual hydrologic model composed of three major interrelated functional systems.



Ensemble Streamflow Prediction (ESP)

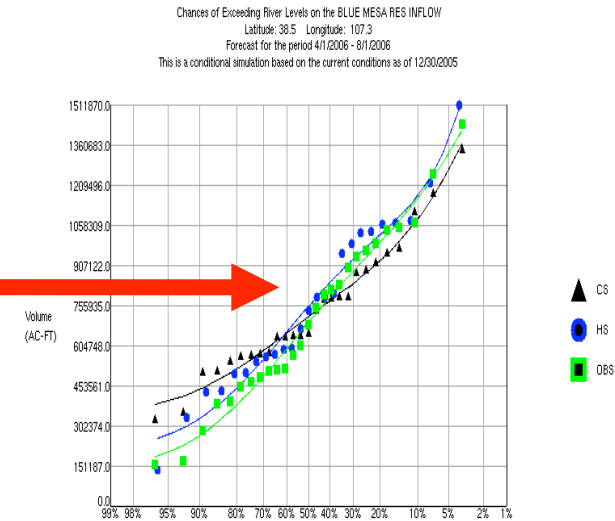
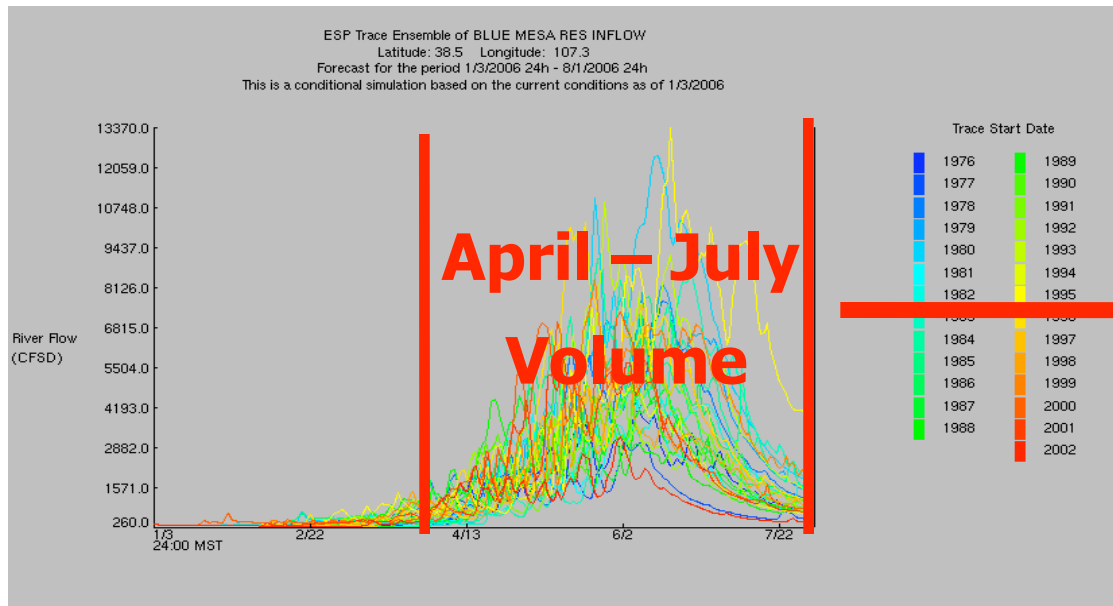


1. Start with current conditions
2. Apply each year of historical climate
3. Create several possible future streamflow patterns



- Historical time series of precipitation and temperature (from Calibration)
- Currently using water years 1976-2005.
- Use historical data because predicting long term future is difficult

Ensemble Streamflow Prediction (ESP)



1. Select a forecast window
2. Select a forecast variable
3. Model derives a distribution function
4. 50% exceedance value = most probable forecast

Statistics based on all years.

# Exceedance Probabilities	Conditional Simulation	Historical Simulation	Historical Observed
0.900	438320.500	328520.656	262730.375
0.750	552369.562	499977.531	435810.375
0.500	711742.375	751782.938	691946.625
0.250	877104.812	973699.188	935549.938
0.100	1080490.375	1170393.125	1157333.250

ESP Run Types

1. Un-regulated Mode

- Diversions are set to zero
- Reservoirs pass flow
- This is the mode used for most volume forecasts

2. Regulated Mode

- Use historical diversion data
- Reservoirs run on rules set in the model
 - *Does not use a release schedule*
- Mainly used for Peak forecasts, we have a few regulated volume forecasts

3. Runs with different Forecast Weather

- 5 days of Precipitation (QPF) and 10 days of Temperature forecast (like OFS), then climatology.
- Climatology for Precipitation (no QPF) and 10 days of Temperature forecast, then climatology