Snow Survey and Water Supply Forecasting Program

Prepared for:
Council of State Governments West
Legislative Council on River Governance
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What is a water supply forecast?

Streamflow

Volume of water

Time period (April – July)

How much water will be available during the target period?

Seasonal Water Supply Forecasting
Precipitation
Snow
Rainfall
Soil water
Snowpack
Heat
Runoff
NRCS Water Supply Forecasting Network

- Seasonal water supply forecasts
- Statistical modeling approach
- Based primarily on snowpack and precipitation
- Skillful in snow-melt dominated basins
- 240+ locations in the Columbia River Basin
  - Monthly “official” forecasts
  - Daily Guidance forecasts
  - 10 other Western States
  - Nearly 700 locations total
Seasonal Water Supply Forecasts include a range of possible outcomes based on observed conditions.

Sources of uncertainty include:
* Future precipitation
* Climate variability
* Imperfect monitoring of current conditions
* Watershed soils and geology

How can the NRCS better support risk management and adaptive management?
Daily Guidance forecast shows the probability of outcomes in a graphical format. “Official” forecasts are shown for reference.

Additional information about the skill of the model and percent of normal forecast is also presented.
Other Types of Forecasts

- Peak Flow Forecasts (maximum daily flow rate)
- Low Flow Forecasts (minimum daily flow rate)
- Threshold Flow Forecasts (the date when flow drops below a given threshold – 200cfs)
Forecasting Collaboration

• Operational discussions with Federal partners (NWS River Forecast Centers, USBR, USACE)
• Behind the scenes dialog with State agencies and drought committees
• Technical, science-based input on drought status and state drought declarations
• Advisory member of the Columbia River Forecast Group; provide support to Action Agencies
First of month maps include both manually read snow courses and automated snow pillow data.

Daily basin index maps only included data from automated stations.
Additional Products

• NRCS State-based Surface Water Supply Index (SWSI)

• Monthly west-wide water supply forecast and snowpack summary report

• Weekly Snowpack/Drought Monitor Update
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Questions?