CBRFC SCH

Kevin Werner

Overview

- Introduction
- CBRFC
- SCH program
- Future Directions

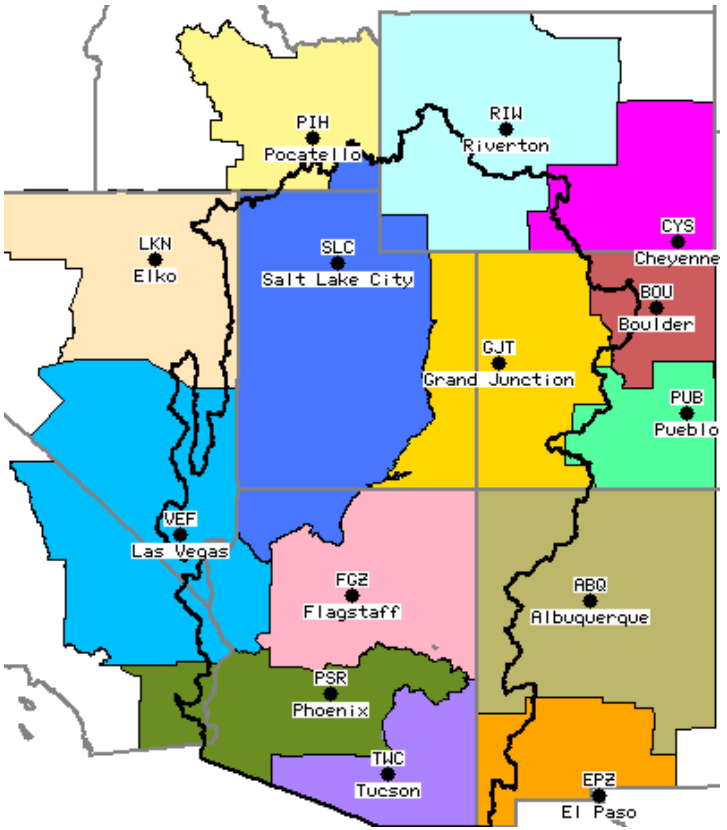
Introduction

A little about me…

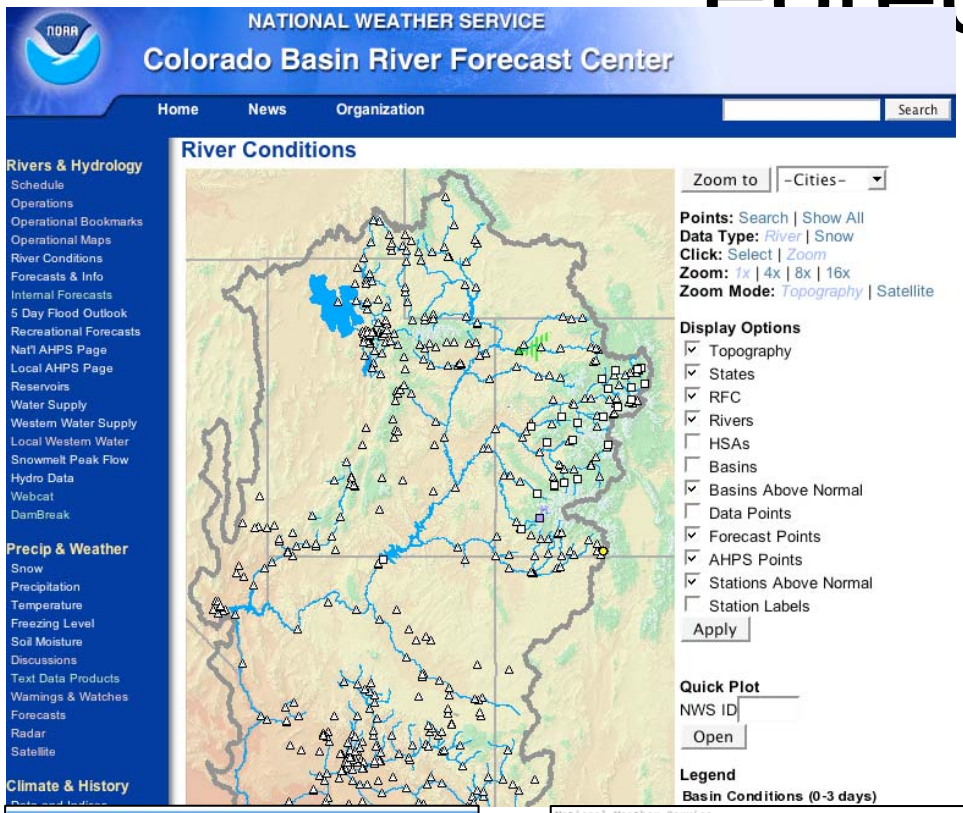
- Previous positions:
  - Western Region SSD
  - CBRFC
  - NOAA Corps
  - M.S. in climate from U Washington
  - B.S. in mathematics from U Washington
- Interests and Expertise
  - Climate and hydrology interactions
  - Debris flows and flash floods
  - Climate change science

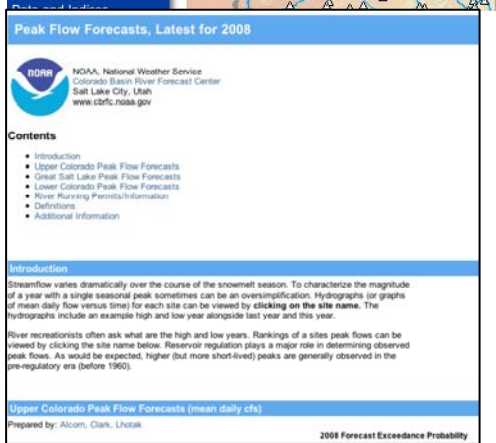
CBRFC

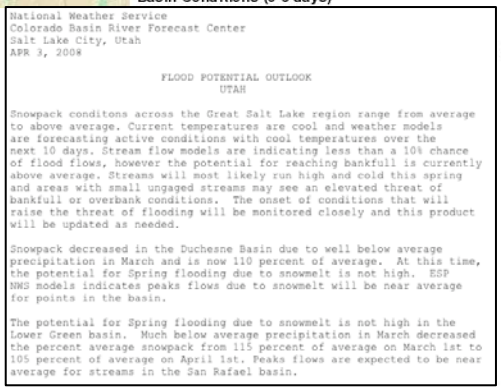
- One of 13 NWS River Forecast Centers
- Major programs include:
  - Flood and routine river forecasts
  - Water Supply Forecasts
  - Flash flood support



Flood Forecasts / Routine Forecasts







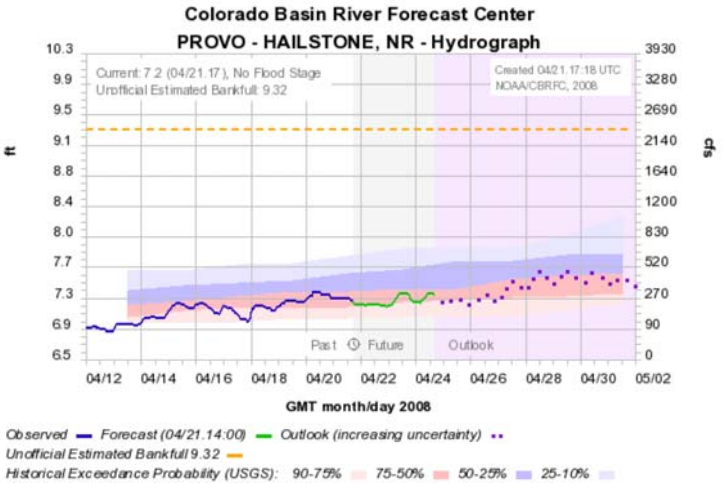
National Weather Service
Colorado Basin River Forecast Center
Salt Lake City, Utah
APR 3, 2008

FLOOD POTENTIAL OUTLOOK
UTAH

Snowpack conditons across the Great Salt Lake region range from average to above average. Current temperatures are cool and weather models are forecasting active conditions with cool temperatures over the next 10 days. Stream flow models are indicating less than a 10% chance of flood flows, however the potential for reaching bankfull is currently above average. Streams will most likely run high and cold this spring and areas with small ungaged streams may see an elevated threat of bankfull or overbank conditions. The onset of conditions that will raise the threat of flooding will be monitored closely and this product will be updated as needed.

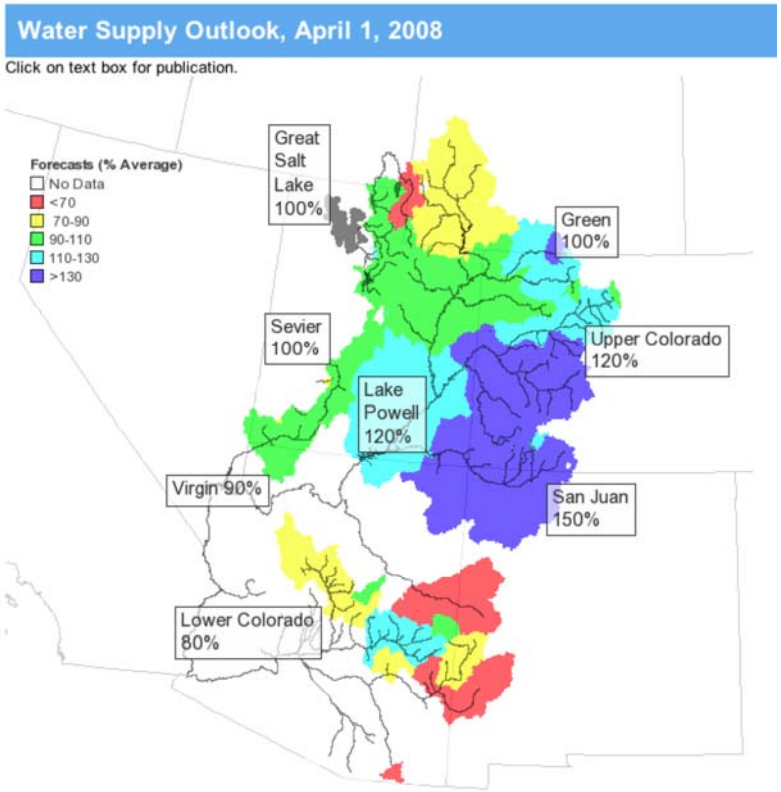
Snowpack decreased in the Duchesne Basin due to well below average precipitation in March and is now 110 percent of average. At this time, the potential for Spring flooding due to snowmelt is not high. ESP NWS models indicates peaks flows due to snowmelt will be near average for points in the basin.

The potential for Spring flooding due to snowmelt is not high in the Lower Green basin. Much below average precipitation in March decreased the percent average snowpack from 115 percent of average on March 1st to 105 percent of average on April 1st. Peaks flows are expected to be near average for streams in the San Rafael basin.

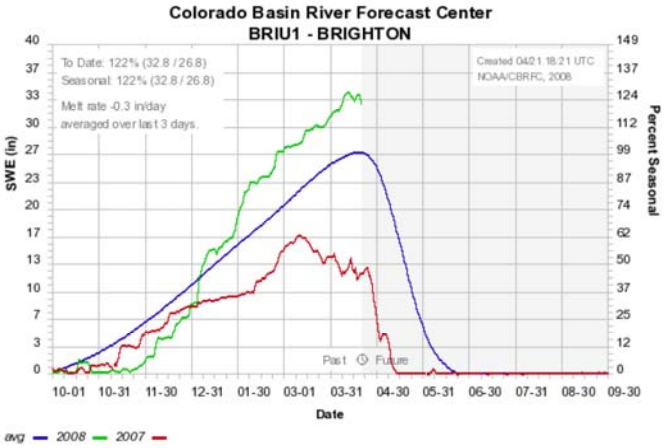


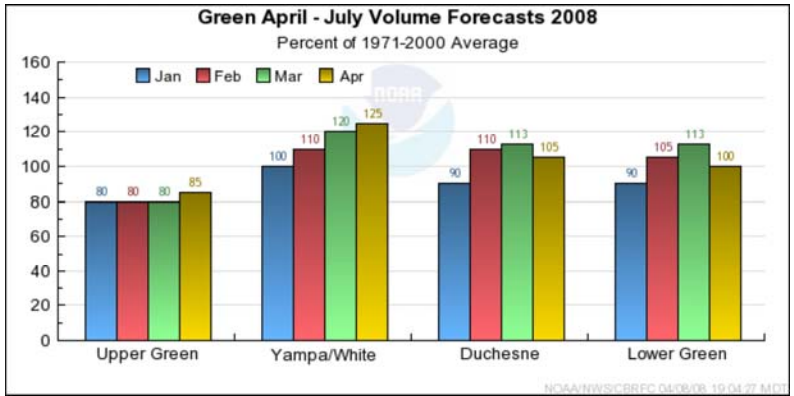
- Nominally provided at ~400 points every 6 hours out to 10 days.
- Flexible web interface to forecasts and data
- Requires large amounts of data (e.g. snow, precip, streamflow)

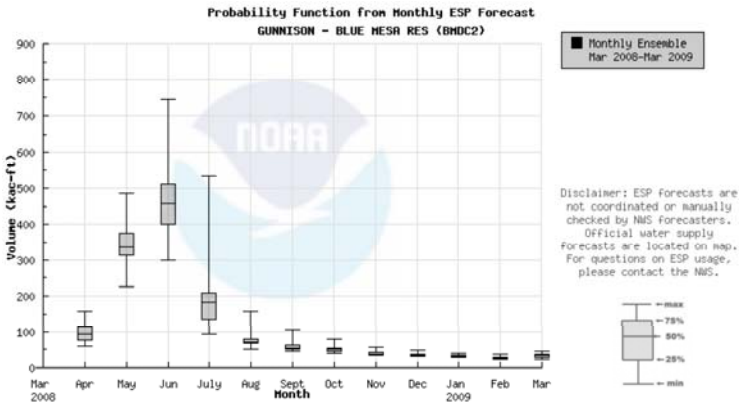
Water Supply



- Monthly water supply forecasts generated for seasonal volumes during winter / spring seasons

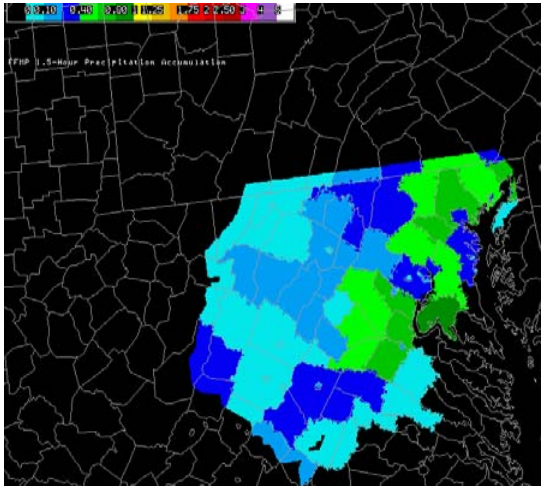


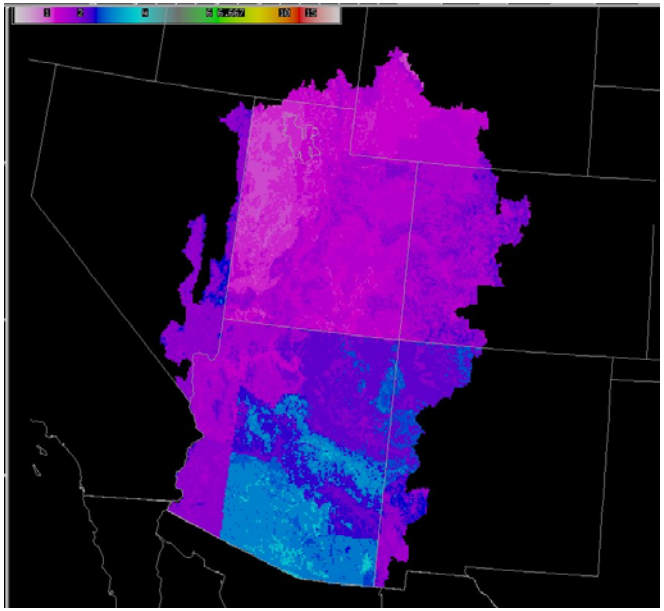


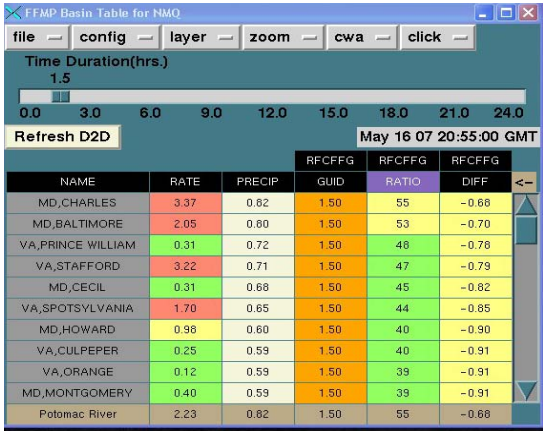


Flash Flood

- Support NWS flash flood program at WFOs through innovative flash flood guidance and (eventually) distributed model







Service Coordination Hydrologist (SCH)

- New NWS position
  - Expand outreach and management at RFCs
  - Effectively leverage new technologies and services to meet ever growing water information needs
  - Increase awareness of RFC functions
  - Realize benefits of RFC forecasts and services
- CBRFC is one first RFCs to “spin up” SCH program

CBRFC SCH: Enhancing Collaborations

- CBRFC SCH focus on RFC areas:
  - Water Supply
  - Ensemble Services
  - Climate / Climate Change
  - Promoting new services
  - Support existing programs
- Larger area users
  - USBR
  - SRP
  - WAPA
  - USACE
  - USGS
  - Major utilities
- NOAA RISAs
  - CLIMAS
  - WWA

USGS science for a changing world

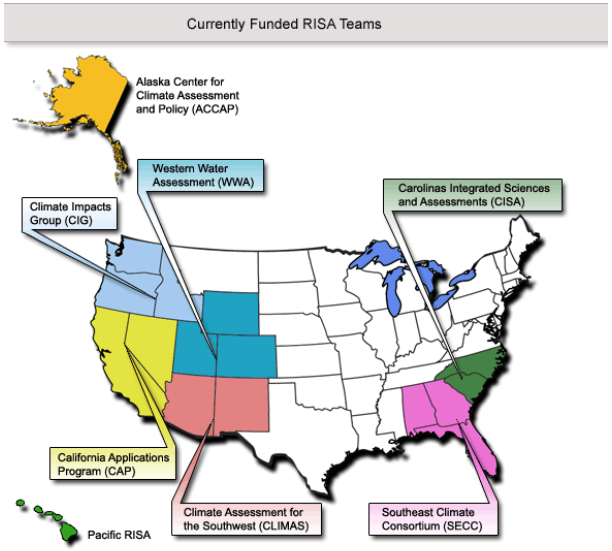
RECLAMATION Managing Water in the West

SRP

Serving the West with Federal hydropower
Western Area Power Administration
An agency of the U.S. Department of Energy

Enhancing Collaboration: NOAA RISAs

- NOAA Regionally Integrated Science Assessments (RISAs) apply NOAA climate research to help local decision makers
- Climate Assessment of the Southwest (CLIMAS)
- Western Water Assessment

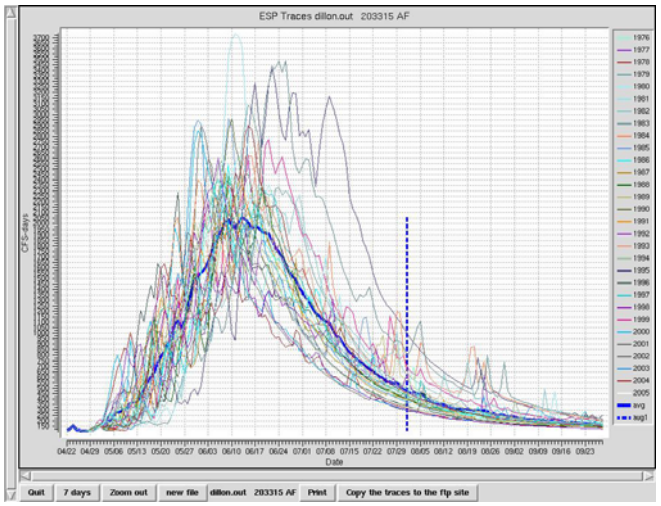


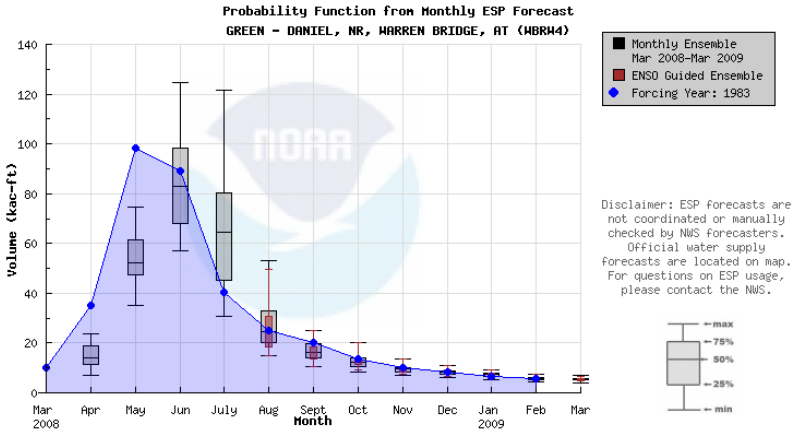
CLIMAS
Climate Assessment for the Southwest

Western Water Assessment

Ensemble Forecasts

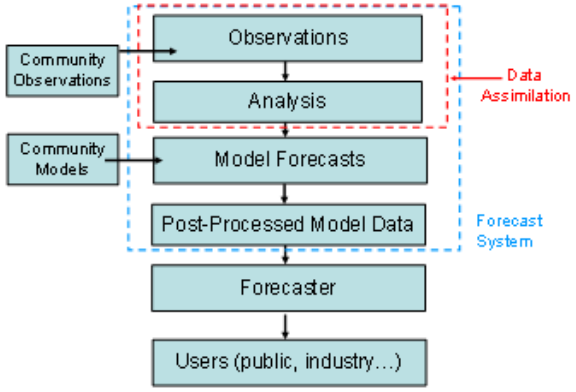
- Major OHD initiative to account for and present uncertainty in forecasts together with forecasts
- CBRFC test site for short range ensemble





Community Hydrologic Prediction System (CHPS)

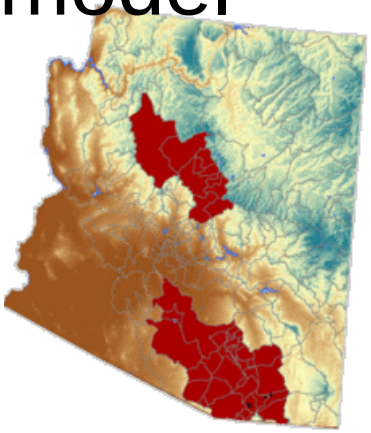
- New modeling framework for RFCs
- CHPS is slated to replace NWSRFS by ~2011.
- NWSRFS has been backbone of RFC operations since 1970s
- CHPS will be:
  - Flexible
  - Modular
  - Collaborative

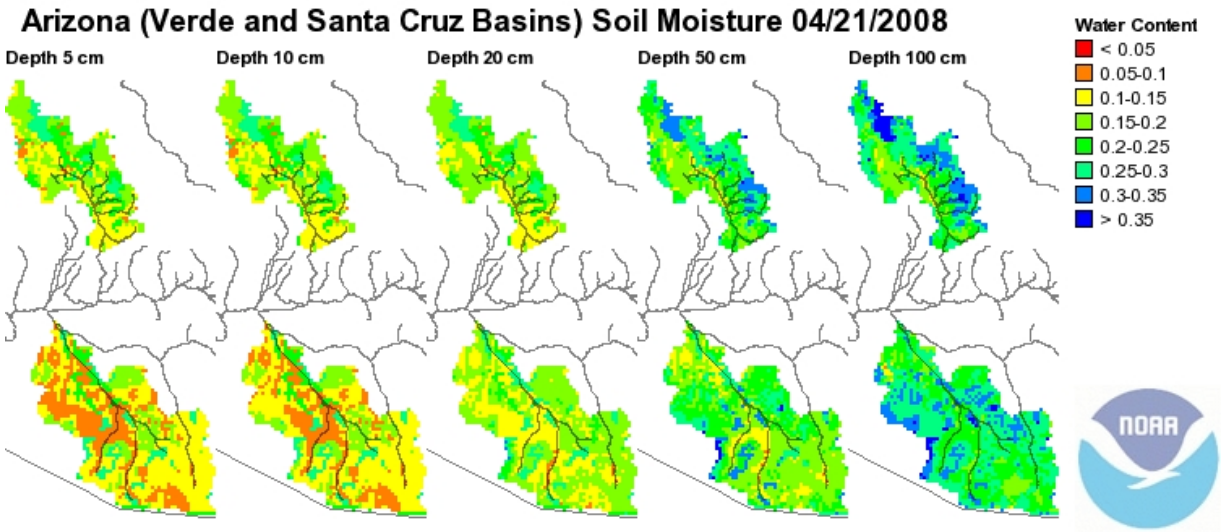


CHPS links hydrologic communities

Distributed Model

- CBRFC testing NWS distributed model
  - Improved forecasts
  - Improve flash flood warnings
  - New soil moisture grids





SCH ≠ SH, WCM

- Local NWS WFOs have:
  - Warning Coordination Meteorologist (WCM) – Coordinates NWS warning operations and interactions with emergency management
  - Most have Service Hydrologist (SH) – Maintains flood and flash flood warning program
- SCH not a replacement for these important functions
- SCH is a RESOURCE to support these and other WFO functions

CBRFC SH Meeting

- Would like to gather all SHs/HFPs this FY to:
  - Highlight new CBRFC developments
  - Meet new personnel
  - Discuss service concerns
  - Etc
- Meeting targeted for Sept 4

Summary

- Here to help
- If you don’t know who to talk to at CBRFC, please talk to me.

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