An Overview of the CBRFC – How can we help you?

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Southwest Tribal Climate Change Network Call
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Overview

• Who we are
• Summary of operations
• Products and Services
• How can we help?
• How can you help?
Who Are We?

- Part of NOAA - NWS, one of 13 RFCs nationwide
- An operational field office located in Salt Lake City, UT
- Highly collaborative, reliant on partners and data
- All about decision-support!
Who We Are

• Work with a broad and diverse set of stakeholders
  – Weather Forecast Offices and Reclamation
  – Municipal and Agricultural Water Users
  – USGS, NRCS, and many other federal agencies
  – State agencies, Academics, NGOs, Tribes

• Receive data from many of these sources
Hydroclimatic Variability over the Colorado River Basin
April through July Unregulated Inflow into Lake Powell

Avg – 7.25 MAF
Providing Decision Support
We Know The Climate Is Changing

Temperatures are rising and will continue to rise

Precipitation outlook is uncertain, but we do expect more extreme events

Decreased water supply, particularly for the Southwest and Colorado River Basin

And Needs Are Changing

• Where we were:
  – What is THE forecast?
  – How much water is there?
  – How much snow is there?
  – Will there be flooding?

• Where we are going:
  – What is the range of forecasts?
  – What is the likelihood of reaching this flow?
  – What if it’s a dry/wet year?
  – What is the risk to filling my reservoir?
  – What is your uncertainty?
Products and Services
Support flood warning efforts by weather forecast offices
Water Supply Forecast

- Utilize an ensemble of future climate to generate possible streamflow futures
- Dependent on precipitation information during the runoff season – we pay close attention to snowpack
- Model soil moisture component is very important

The more information we have the better!
Products and Services
Products and Services

• Peak Flow Forecasts
  – Mean Daily Peak Flow
  – Helpful for environmental resource managers
  – Meet environmental targets

These graphics are no longer being updated, please refer to the daily forecast.
Coordination Efforts

• Annual Stakeholder Open House
  – Broad range of stakeholders
  – Introduce new products and services
  – Reinforce traditional products and services
  – Important for us to get feedback

• Frequent webinars
  – Water supply, peak flows
  – Custom Webinars for your group
  – WFO Coordination
Coordination Efforts

- Participation in stakeholder-run meetings and events
- Participation in multi-agency efforts
  - Landscape Conservation Cooperatives
  - Climate Science Centers
  - NOAA RISAs (like CLIMAS)
  - Others
- Direct contact by phone, e-mail, etc...
Coordination Efforts

- Western Region Monitoring and Outlook Page
  - More customizable
  - Lots of information in an intuitive interface
  - West-wide
- Coming Soon!
In August 2016, NOAA took a giant leap forward in its ability to forecast the flow of rivers and streams throughout the entire continental United States with the launch of the new high resolution National Water Model (NWM).

The NWM will enhance and expand NOAA’s water flow forecasts, which to date have been available for approximately 4,000 river locations with stream gauges operated by the U.S. Geological Survey. This new model will expand forecasts to 2.7 million stream locations nationwide. Leveraging the full network of nearly 8,000 U.S. Geological Service stream gauges and NOAA’s investment in atmospheric modeling, the NWM will provide high-resolution forecasts of soil moisture, surface runoff, snow water equivalent, and other parameters.

We all recognize that water is an essential component of sustainable and resilient communities. But its also a stressed natural resource and potential threat to life, property, and livelihoods during extreme weather events.

**Improved Water Information Services**

The new NWM improves the National Weather Service’s ability to deliver impact-based decision support services nationwide by providing “street level” water information and guidance, as well as serve as the foundation for additional private sector water services. At a minimum, the NWM will immediately provide predictive water information for many locations where none previously existed.

Initially, this new NWM-based information will be particularly useful in headwater areas in support of NOAA’s flash flood mission.

**How it Works**

The NWM simulates the water cycle with mathematical representations of the different processes and how they fit together. This complex representation of physical processes such as snowmelt and infiltration and water movement through the soil layers varies significantly with changing elevations, soils, vegetation types and a host of other variables.

Additionally, extreme variability in precipitation over short distances and times can cause the response on rivers and streams to change very quickly. Overall, the processes are so complex that to simulate it with a mathematical model means that it needs a “supercomputer” in order to run in the time frame needed to support decision makers when flooding is threatening.

[www.water.noaa.gov](http://www.water.noaa.gov)
How can we help?

• What sites, areas are important to you?
• Is there a site or area that you would like us to add?
• What are your major concerns and decisions? What kind of information can we provide to help with decision support?
How can you help?

• We always need data and can work with you to get us the information in a way that is convenient to you
  – We understand that some tribal information can be proprietary
  – If there’s enough data, we can add points

• What are your major decision points?
• Let us know how we can help!
Contact us!

- Michelle Stokes – Hydrologist In Charge
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- Paul Miller – Service Coordination Hydrologist

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