

## **Seminar Title: Data Visualization for Water Resources – Examples from Three Case Studies**

An introduction and overview of hydrologic time-series data visualization using raster hydrographs is provided. Three different case studies are used to demonstrate the flexibility of the raster approach.

### *Case study 1 – Data analysis of SNOTEL sites in the Gunnison River Basin*

Snow water equivalent (SWE) and air temperature data from six SNOTEL sites were examined for consistency and detection of climate change patterns.

### *Case study 2 - Quantifying baseflow trends for the San Pedro River, Arizona*

An analysis of winter low flows for the San Pedro River was undertaken using data from the long-term USGS Charleston, AZ, river gauge. Raster hydrographs and temporal data overlays were used to determine which low flows were influenced by storm discharge. By taking into account storm influenced flows, a clearer picture of base flow trends is determined.

### *Case study 3 - Using Innovative Displays of Hydrologic Ensemble Data*

Using the 2018 seasonal water supply forecast for the Colorado River at Cameo, CO site, a demonstration shows how hydrologic ensemble traces as raster hydrographs can be used in a time-based GIS-like analysis approach. The result is visualization of temporal patterns within and between different simulations.