

CCAWWG August 26 Breakout Report

Theme: Changes in Basin Climate including effects on surface water and ground water.

Science Leads: Martyn Clark and Bart Nijssen

Rapporteur: Kevin Werner

Messages Received:

Progress to date:

- Significant recent success in planning to climate change at the basin scale - Many agencies now routinely use climate projections in their planning efforts.
- Progress is particularly evident in well resourced and well connected agencies. Less so in smaller agencies that are less connected with science capabilities.

Major outstanding needs:

- More work needed to effectively institutionalizing application of climate change science including hydrologic projections into decision making and planning. This includes:
 - Paradigm shift from deterministic to probabilistic inputs to planning and understanding how to effectively use probabilistic inputs
 - Training the next generation of scientists and engineers to be both proficient in needed skills and collaborative with each other
 - Address disparities in application of science across water resources agencies
- Projections of variables beyond streamflow are needed to capture the full water cycle and provide additional inputs into planning. These include:
 - Soil moisture
 - Land use
 - Vegetation
 - Groundwater
 - Radiation
- Keep advancing science
 - Continue to reveal uncertainty and sources of uncertainty in projections
 - Developing more robust and more widespread natural flow datasets
 - Sustained investment in monitoring networks including remote sensing and in situ