

## **Improving Ensemble Streamflow Prediction Using Interdecadal/Interannual Climate Variability and Model Uncertainties**

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This research investigates the potential of using and improved understanding of interdecadal/interannual climate variability to improve ensemble streamflow forecasting in the Colorado River Basin. The research builds on new advances that researchers have found on the influence of interannual/interdecadal climate variability (i.e., Pacific Decadal Oscillation and Atlantic Monthly Oscillation) and Pacific sea surface temperatures on streamflow in the Colorado River Basin (Tootle et al., 2005, Tootle and Piechota, 2006). Preliminary research is presented on how Colorado River streamflow is influenced during the different phases of ENSO, PDO, AMO and the coupled impacts. This includes the monthly, seasonal, and annual evaluation of streamflow in relation to ENSO, PDO, and AMO. The goal is to develop lagged relationships that may be useful in streamflow forecasting. This new information will be combined with existing capabilities in the Ensemble Streamflow Prediction (ESP) system for the Colorado River Basin to produce improved ensemble streamflow forecasts.