Low Flow Reservoir Release Predictions for the National Water Model

Elizabeth Del Rosario, Harte Research Institute Gulf of Mexico Studies, Texas A&M University, Corpus Christi, Corpus Christi, TX and Trey Flowers, NOAA Office of Water Prediction, National Water Center, Tuscaloosa, AL

Abstract Text:

The National Water Model (NWM) is a hydrologic model that simulates observed and forecast streamflow over the entire continental United States (CONUS) using the network of USGS stream gages. The purpose of this project is to develop data-driven correlations to predict reservoir releases under low flow conditions. This will be done by investigating datasets; the identification of watersheds that have a long record of reservoir releases and other data sets (irrigation demand, soil moisture, etc.); and the development of correlations between thresholds in the data sets and reservoir releases. The correlations will then be used as a predictive measure for the triggering of a release. A minimum of two watersheds that exhibit low flow conditions will be identified and analyzed; additional watersheds will be investigated as appropriate. Reservoirs will be selected and primary purposes for withdrawals determined. This project will look at release requirements, the releases that were made, and then correlate the releases to other datasets to determine what prompted the release decision. The correlations determined will then be used to construct a predictive model that can be used to inform the NWM.