

French Broad, Nolichucky, and Pigeon River Basin OASIS Model Development Stakeholder Meeting #2

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Advancing the Management
of Water Resources



Concept of the Hydrologic Model

A basinwide model of the Upper French Broad, Pigeon, and Nolichucky rivers in North Carolina at the finest practical geographic resolution and timestep.

Possible Uses:

1. Evaluation of the combined effects of municipal water supply plans
2. Evaluation of interbasin transfer permit applications
3. Development of individual water supply plans – model will be on the DWR server and available to stakeholders and their consultants
4. A platform for developing risk-based drought plans.

Project Timeline

- Components
 - Basin schematic (**complete**)
 - Data collection (demands and discharges, including agricultural demands (**complete**))
 - Inflow development (**complete**)
 - Operating rules and reservoir data
 - Current (basecase) and future demand model runs
 - Documentation and training
 - Expected completion date: **January 2019**

Data Collection (HydroLogics)

- Reservoirs
 - Elevation-storage-area curve and operating rules
 - Historic elevation/release data
- Streamflow (USGS gages)
- Precipitation/evaporation
 - Use stations nearest the reservoirs of interest
- Drought plans
- Interconnections

Data Collection (HDR)

- Water supply/wastewater discharge
 - Recent data supplied from utilities/industries or water supply plans/NPDES data submitted to DWR
 - Water use data to be extrapolated to earlier years using census population data.
 - Discharge data to be extrapolated using monthly return percentages based on recent data
 - Future demand/discharge scenarios will be developed by HydroLogics/DWR
- Agricultural demand
 - Based on crop and animal use requirements, precipitation, and irrigable area by county