

# **How Ecological Flows Would be Applied to NC River Basin Models**

*Ecological Flows Science Advisory Board  
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# Ecological Flows

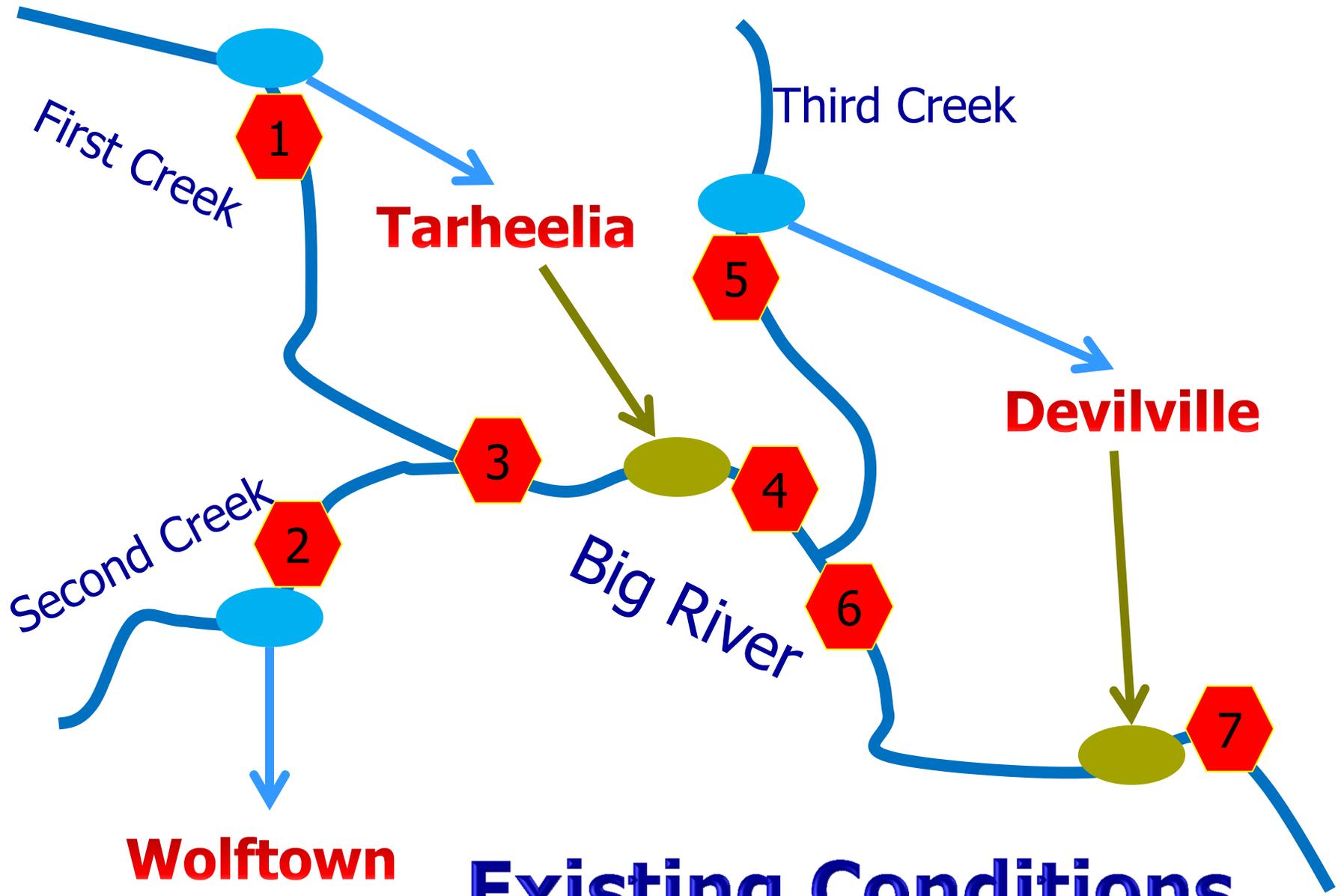
- **Flows needed to maintain ecological integrity**
- **Inclusion in models required by Legislation**
- **If not included? – models will assume any and ALL water can be withdrawn to meet demands**

# Ecological Flows

- **A SCREENING TOOL for river basin models & plans**
- **Flag locations where offstream demands and instream ecological flow needs cannot be met under existing or projected conditions**
- **Need to be quantified at ALL nodes of interest throughout each basin**

# **River Basin Models Include**

- **Unaltered Hydrology**
- **Flow Alterations – withdrawals, discharges, reservoirs**
- **Withdrawals include existing, 20- and 50-year projections**
- **Nodes – specific locations where records of flows are simulated**

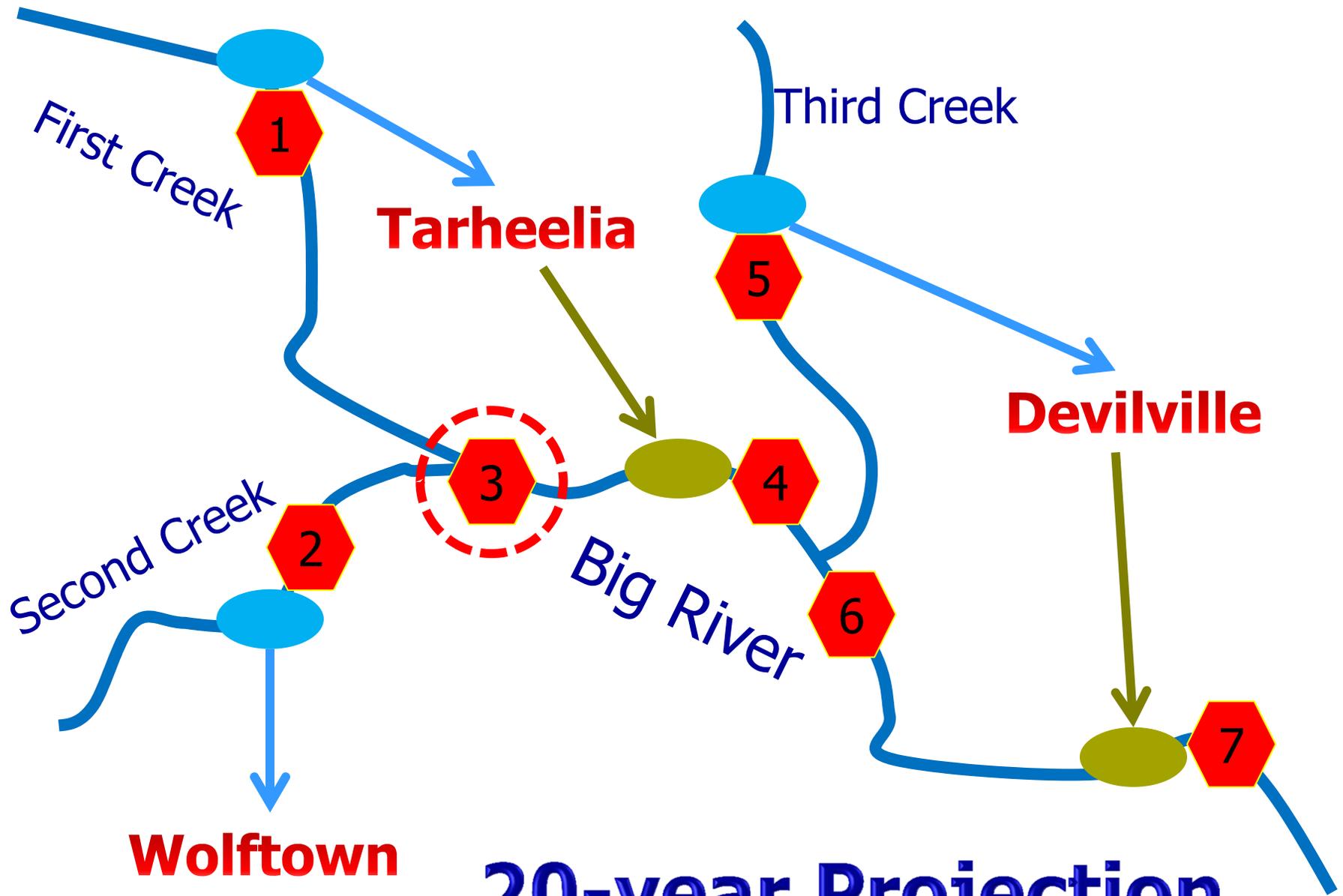


**Wolftown**

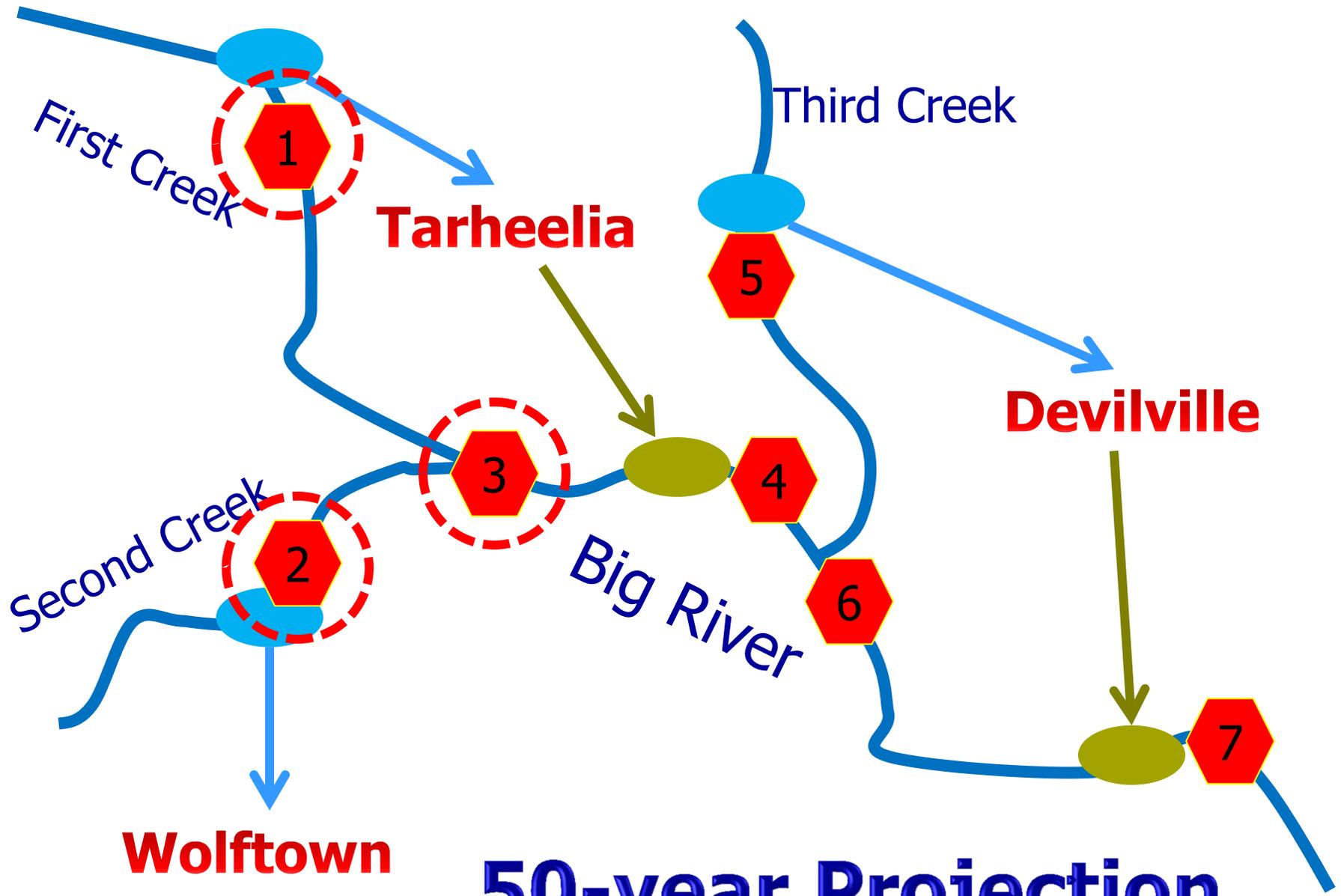
**Existing Conditions**

# At Each Node

- **Drainage Area**
- **Daily Flows for 80 years – unaltered, existing, 20-year, & 50-year projections**
- **So what's the Ecological Flow?**



**20-year Projection**



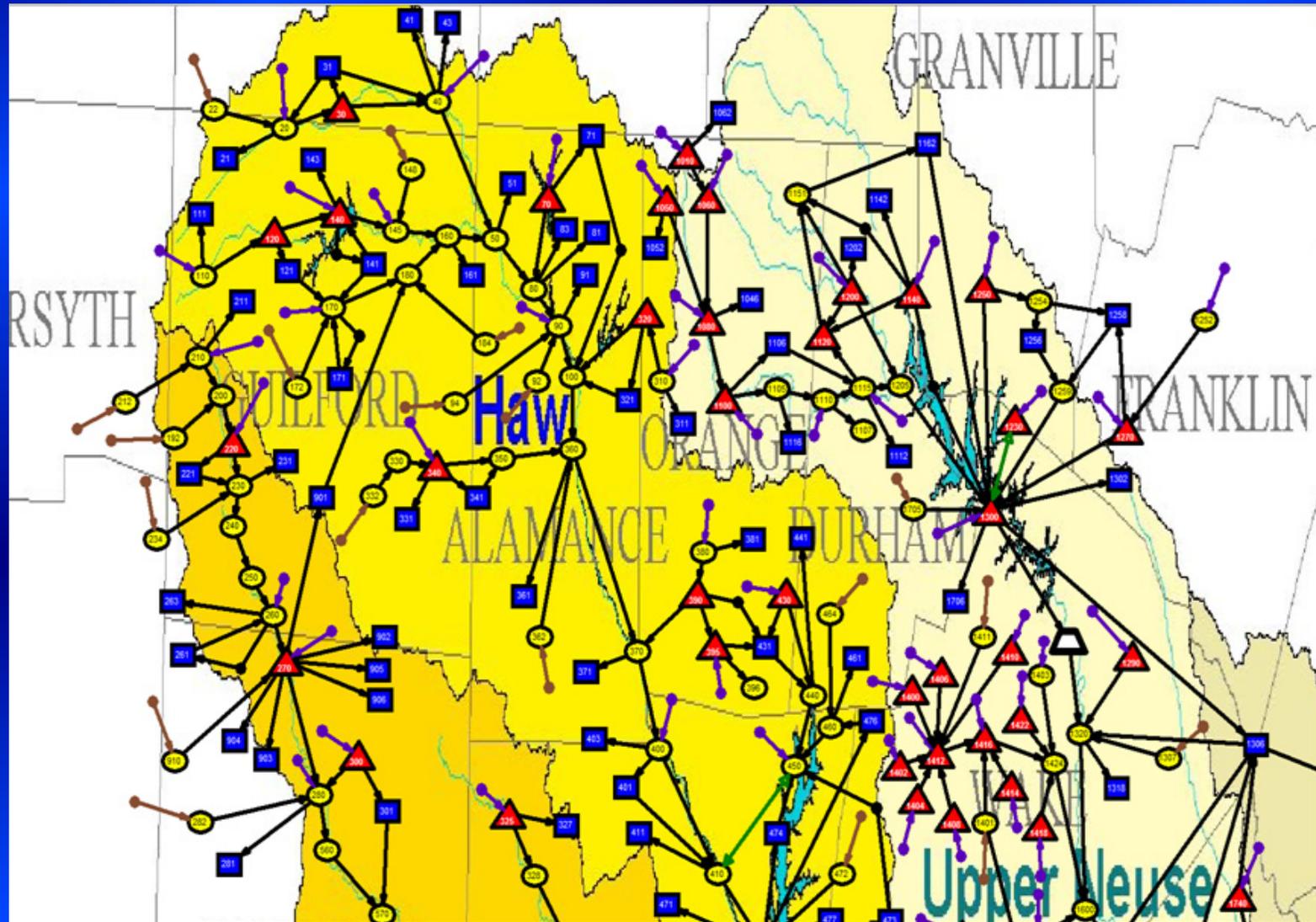
# How Many Nodes?

- Neuse = 84
- Cape Fear = 164
- Tar = 21
- Broad = 40
- Plus 13 more basins, eventually

# The Task

- How will the ecological flow be quantified at each node?
- Is the approach for determining the ecological flow the same for all nodes?
- If not, how are we subdividing nodes?  
stream classification
- How many different approaches/ classifications are there?





Will it work with this number of nodes?