What is a water quality model?

Biological Systems Engineering

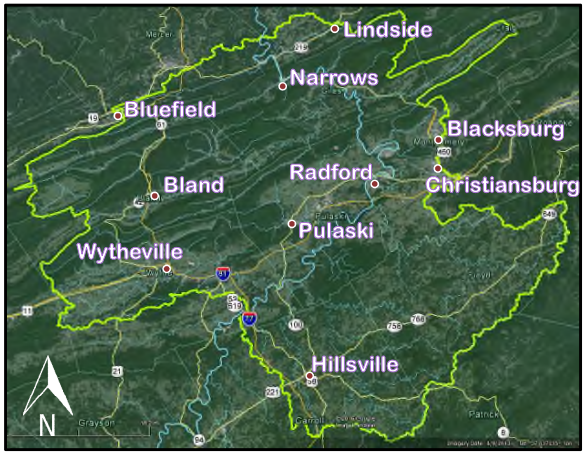
Virginia Cooperative Extension

VirginiaTech Invent the Future

DEFINITION: A computational representation of a watershed used to simulate pollutant fate and transport.

Conceptual Watershed Model

New River Watershed



Why do we need a model?

- Provides greater understanding about watershed characteristics and processes
- Helps estimate pollutant reductions needed to meet Water Quality Standards (WQS)
- Aids in informing stakeholders about appropriate implementation actions

How is the model used?

1. Watershed inputs is defined & used to develop model
2. Model is executed to simulate watershed processes
3. Model is iteratively calibrated to observed data
4. Simulated pollutant levels compared with Water Quality Standard
5. Multiple pollution reduction scenarios are evaluated
6. Stakeholders select acceptable reduction scenario to achieve TMDL
7. Develop the Plan to achieve needed pollutant reductions