Background

In rapidly growing regions like the upper Monocacy River basin (see Figure 1), more and more water is

being diverted for human use. Increased withdrawal of water from wells and streams results in decreases in stream flow which may degrade aquatic habitat. During summertime low flow periods, the availability of pools, riffles, and other habitats may shrink dramatically, and in extreme cases, a stream may dry up completely due to water withdrawals from the stream itself, or due to withdrawals from the ground water aquifers that feed the stream.

Project Description

The goal of this project is to construct a ground water/stream flow simulation model of the upper Monocacy River basin which can help water resource planners evaluate the impact of future development scenarios on summertime aquifer levels and stream base flows. The upper Monocacy basin model will be based on ICPRB's existing ground water/stream flow model of the entire Monocacy River basin (see ICPRB Report 07-5), which uses the USGS's MODFLOW-2000 finite difference ground water modeling software. The upper Monocacy

model will have the following features:

- A horizontal grid with cell size of 500 meters by 500 meters
- A new refined representation of upper Monocacy streams (see Figure 2), implemented with MODFLOW's STR stream package
- A steady-state calibration to summertime base flows
- Incorporation of the new USGS flow measurements for Marsh Creek and Rock Creek, to augment historical stream flow record
- Incorporation of additional data and information provided by project partners

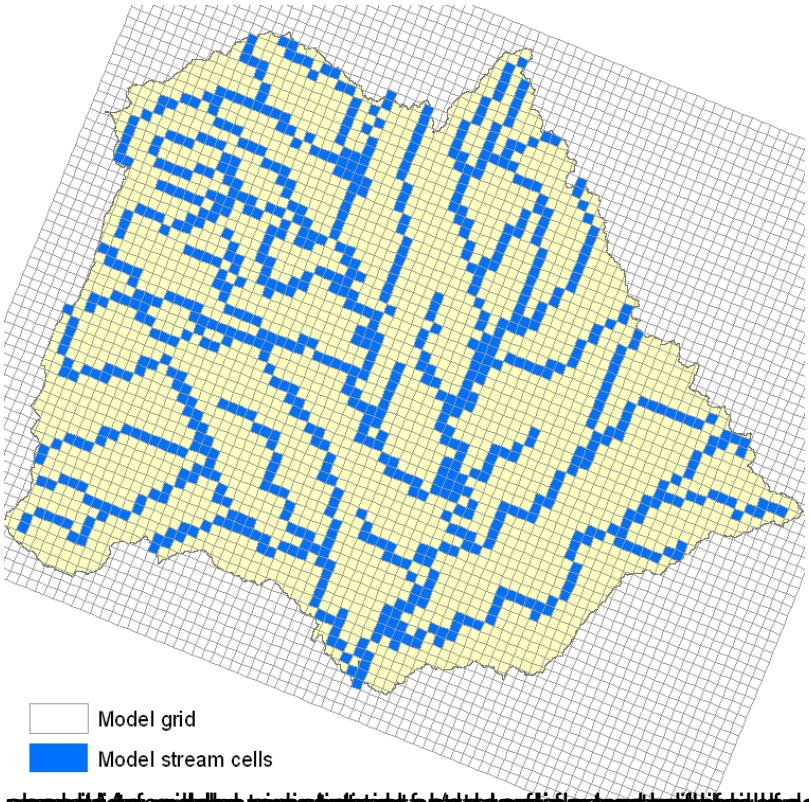
For a project status report, download " Managing Water Use to Protect Aquatic Habitats "

Project Partners

- ICPRB
- Adams County Conservation District
- Watershed Alliance of Adams County
- Strawberry Hill Nature Preserve
- USGS – PA District
- with funding from the National Fish and Wildlife Foundation

Project Outcomes

In the summer of 2008, ICPRB will sponsor a workshop for local planners and stakeholders to present the


Model grid
Model stream cells