

US EPA

REGION 4

# Nonpoint Source Program Success Story

## Alabama

### **Catoma Creek Watershed Best Management Practices Reduce Nonpoint Source Pollution**

#### **Waterbody Improved**

In the Catoma Creek Watershed, nonpoint source (NPS) pollutants contained in rural and urban stormwater runoff caused the creek to exceed State water quality standards.

Rural and urban best management practices (BMPs) have been installed in the watershed to reduce erosion, improve aquatic habitat, and thus improve water quality.

#### **OVERVIEW**

The Catoma Creek Watershed, a part of the Alabama River Basin, is approximately 360 square miles in area and comprises about two-thirds of Montgomery County. Catoma Creek flows in a north-westerly direction, giving it and one other creek in Alabama this unusual distinction. The creek has been listed as an impaired water, having a portion of the stream that does not meet water quality standards. Pollutants contained in rural and urban storm water runoff to the creek cause it to exceed the Alabama Department of Environmental Management (ADEM) water quality criteria for Fish and Wildlife designated waters. Catoma Creek has been designated as impaired by organic enrichment and pathogens from Ramer Creek to the Alabama River, for a total of 23.1 miles. Total Maximum Daily Loads (TMDLs) have been completed for the creek with the primary sources of NPS impairments listed as pasture grazing and urban runoff.



**Catoma Creek**

*(Photo courtesy of Montgomery Water Works and Sanitary Sewer Board)*

## HIGHLIGHTS

To improve water quality in Catoma Creek and protect physical, chemical, biological, and habitat conditions, a project to reduce NPS pollution was initiated with the following objectives: 1) reduce or abate water quality degradation in priority NPS impacted areas through implementation of on-the-ground BMPs to protect natural resources and water quality; 2) assess water quality in priority NPS impacted areas; and 3) provide stakeholder educational outreach and training through outdoor learning areas and resource materials for classroom and field use.

## RESULTS

As a result of this project, over 59,000 feet of exclusion fencing have been installed, with 26 alternative watering sources, 13 heavy use protection areas, 1 stream crossing, 161 acres of stream habitat and pasture improvements, and almost 1,700 acres of rotational grazing practices implemented to reduce cattle access to the creek. A major BMP completed on one farm was a pump-out renovation and closure of three, five acre dairy lagoons with spillways next to the creek; subsequently manure transfer and wastewater irrigation was provided to over 400 acres. Cover crops, conservation crop rotation, residue management, and contour farming were also implemented on 385 acres adjoining the creek. In addition, a retention pond and recycling system was installed on the Alabama Sports Fish Hatchery Farm to prevent the direct withdrawal and release of pond water to Catoma Creek.

The following table summarizes BMPs installed on the creek:

<b>BMPs Installed in the Catoma Creek Watershed</b>	
<b>BMP</b>	<b>Size/Units</b>
<b>Alternative Water Sources</b>	<b>26 Units</b>
<b>Closure of Waste Impoundments</b>	<b>15 Acres</b>
<b>Conservation Crop Rotation</b>	<b>385 Acres</b>
<b>Conservation Tillage</b>	<b>385 Acres</b>
<b>Cover Crop</b>	<b>385 Acres</b>
<b>Critical Area Planting</b>	<b>24 Acres</b>
<b>Fence</b>	<b>59930 Feet</b>
<b>Heavy Use Area Protection</b>	<b>12 Acres</b>
<b>Manure Transfer</b>	<b>400 Acres</b>
<b>Nutrient Management</b>	<b>1696 Acres</b>
<b>Pasture &amp; Hayland Planting</b>	<b>36 Acres</b>
<b>Pipeline</b>	<b>12275 Feet</b>
<b>Pond</b>	<b>1 Unit</b>
<b>Prescribed Grazing</b>	<b>1696 Acres</b>
<b>Stream Crossing</b>	<b>1 Unit</b>
<b>Water Well</b>	<b>2 Units</b>



*Dairy lagoon before pumpout and renovation*



*Dairy lagoon after pumpout and renovation*

The Table below summarizes estimated sediment and nutrient load reductions as a result of the Catoma Creek Watershed project:

Catoma Creek Watershed: Load Reduction Data		
Pollutant Type	Load Reduction Estimate	Units
Nitrogen	153,349	LBS/YR
Phosphorus	17,083	LBS/YR
Sedimentation-Siltation	1,209.1	TONS/YR

To assess water quality in this ongoing project, the biological, chemical, physical, and habitat conditions are monitored and analyzed in various Catoma Creek tributaries by the Montgomery Water Works and Sanitary Sewer Board and Auburn University in Montgomery. Water quality monitoring occurs on a monthly basis at 13 standard sites, which are located throughout the watershed. Sampling tests are conducted around each BMP site.



*Fencing for cattle exclusion*

As a part of the education and outreach component, the project helped support the “Hooked on the Alabama River” campaign through funding, planning, and implementation of the event. In addition, the Catoma Creek Watershed Education Subcommittee holds the Montgomery County Water Festival, for 4th grade students. This has been a very successful program with over 2,800 students and 150 volunteers attending each year. Eleventh grade students that attended the first Montgomery Water Festival are now returning to teach at the festival. A water quality program has also been initiated for 7th grade students who live in the basin. The first event was held in October 2008 with students participating in water chemistry sampling, bioassessments, and designing ponds using a *Global Positioning System* (GPS).

### **PARTNERS AND FUNDING**

The project was funded by \$650,000 in US Environmental Protection Agency Section 319 funding; state matching funds of \$482,635 was provided by participating partners, including the Montgomery Water Works and Sanitary Sewer Board, the Montgomery County SWCD, the Natural Resources Conservation Service, the City of Montgomery, Auburn University - Montgomery, CH2M Hill, the Alabama Department of Public Health, the Montgomery County Cooperative Extension System, and the Upper Alabama Clean Water Partnership.

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