Section 319
NONPOINT SOURCE PROGRAM SUCCESS STORY
Alabama

Pasture Grazing Best Management Practices Result in Pathogen (Fecal Coliform) Delisting

Waterbody Improved

Runoff from grazing activities contributed to pathogen (fecal coliform [FC]) impairments of Caney Branch in Baldwin County, Alabama. Implementing best management practices (BMPs) including livestock exclusion fencing, stream crossings, and riparian buffers helped Caney Branch meet its designated water use classification of *Fish & Wildlife*. As a result, the Alabama Department of Environmental Management (ADEM) removed the 5-mile impaired segment of Caney Branch from the state's section 303(d) list of impaired waters in 2002.

Problem

Caney Branch is a tributary of the Fish River, which originates near the city of Stapleton and flows south through Baldwin County before emptying into Weeks Bay in southwest Alabama (Figure 1). The U.S. Environmental Protection Agency (EPA) designated Weeks Bay as a National Estuarine Research Reserve in 1986, and ADEM designated it as an Outstanding National Resource Water in 1992.

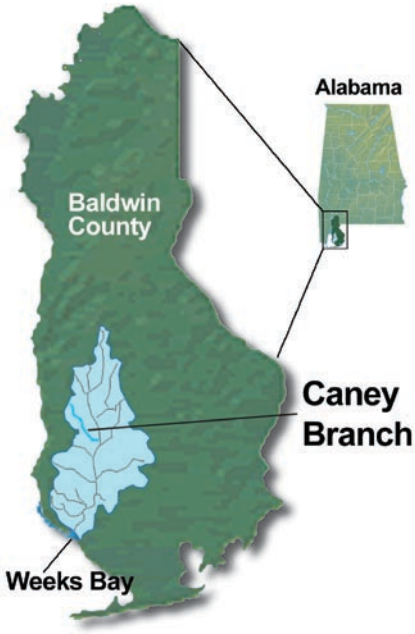

Figure 1. Location of Caney Branch in Baldwin County, Alabama.

Table 1. Geological Survey of Alabama sample results (Site 8-A)

Year	# of Samples	Exceedances
1994	10	5
1995	12	2
1996	12	1
1997	12	0
1998	12	1
Total	58	9

Land use/land cover in the Caney Branch subwatershed is primarily cropland, pasture/hayland, and forest lands. FC contamination problems associated with cattle grazing practices, unrestricted stream access, and trampling of riparian vegetation was well documented in the watershed. The Geological Survey of Alabama used section 319 funds to collect 58 monthly FC samples between 1994 and 1998. The median FC count was 230 col/100 milliliters (mL) (range of 30 to 83,000 col/100 mL) with nine samples (15 percent) exceeding the Fish & Wildlife single sample criterion of 2,000 col/100 mL (Table 1). As a

result, ADEM placed this 5-mile segment of Caney Branch on the state's 1998 and 2000 303(d) lists of impaired waters. The impairment cause was listed as pathogens, and the sources of impairment were identified as pasture grazing/riparian.

Project Highlights

The Natural Resources Conservation Service, ADEM, EPA–Gulf of Mexico Program, and other stakeholders used a section 319 grant to initiate the Fish River Watershed Project, which was eventually expanded to become the Weeks Bay Watershed Project. The project focus was to holistically assess water quality, lessen cumulative effects of runoff, and address threats to the Weeks Bay watershed.

The partners installed BMPs including livestock exclusion fencing, riparian buffers, and stream crossings. They also conducted education and outreach efforts throughout the Caney Branch Watershed, including cleanups, field days, workshops, and stakeholder meetings. These efforts helped to achieve the goals of the Weeks Bay National Estuarine Research Reserve Management Plan and the Weeks Bay Watershed Management Plan.

Results

In 2001 ADEM collected 22 samples at Caney Branch Site CNYB-1 (Table 2). No single sample value exceeded the Fish & Wildlife criterion of 2,000 col/100 mL, and no geometric mean value exceeded the October to May geometric mean criterion of 1,000 col/100mL.

Also, the Weeks Bay Project coordinator collected two series of five FC samples near the mouth of Caney Branch between August and October 2001 for analyses by a private certified laboratory. No single sample value exceeded the single sample criterion, and no geometric mean value exceeded the applicable geometric mean criterion. Thus, ADEM removed this segment of Caney Branch from the 303(d) list in 2002.

Partners and Funding

ADEM provided $450,000 in section 319 funds to support a watershed coordinator, BMP installation, and water quality monitoring in the Weeks Bay Watershed. The Gulf of Mexico Program, through the Baldwin County Soil & Water Conservation District, provided $157,600, and landowners provided $113,600 in matching funds for a total project cost of $720,000. Partners involved in implementing the Weeks Bay and Weeks Bay National Estuarine Research Reserve Management Plans include Alabama Department of Conservation and Natural Resources, the Weeks Bay Reserve Foundation, the Baldwin County Department of Public Health, the U.S. Fish and Wildlife Service, the Dauphin Island Sea Lab, the University of South Alabama, the Alabama Clean Water Partnership, businesses, and local citizens.

Table 2. ADEM final monitoring results (Site CNYB-1)

Date (2001)	Fecal Coliform (# col/100 mL)	Geometric Mean (# col/100 mL)
April 25	48	101
May 01	100	
May 02	140	
May 09	120	
May 16	130	
Oct 09	70	56
Oct 17	110	
Oct 24	56	
Oct 31	38	
Nov 05	34	

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