

US EPA ARCHIVE DOCUMENT

NONPOINT SOURCE PROGRAM ANNUAL REPORT HIGHLIGHTS

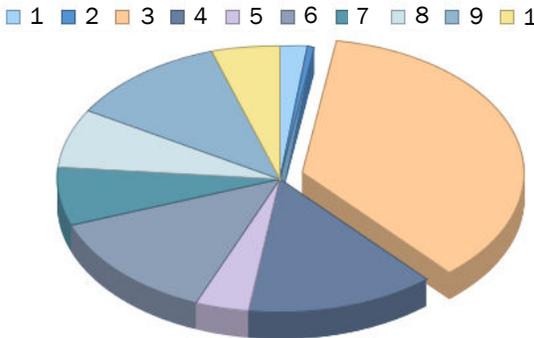
2009

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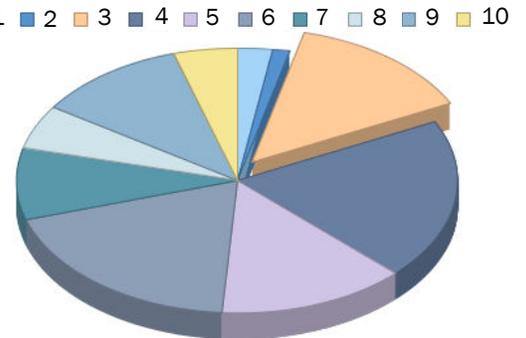
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Region 3 Accomplishments

FY09 Nitrogen Load Reduction by Region



FY09 Phosphorus Load Reduction by Region

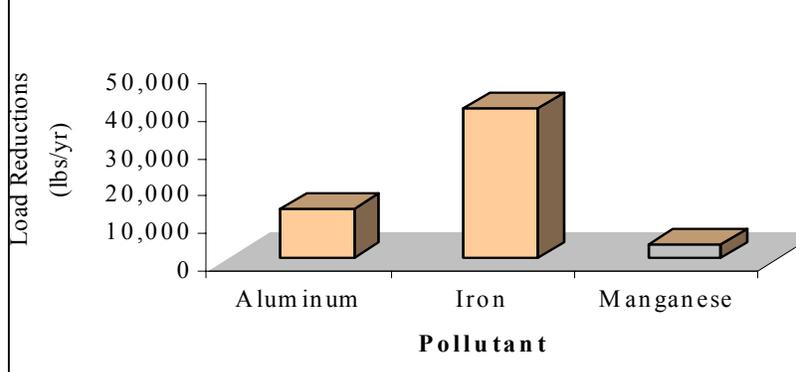


Region 3 is first in nitrogen reduction and third in phosphorus reduction compared to other EPA regions.

Overview:

In 1987, Congress established the Nonpoint Source (NPS) Pollution Management Program under Section 319 of the Clean Water Act (CWA). This program provides states with technical assistance and grant funding, through EPA, to implement NPS pollution controls to achieve goals that protect, improve and restore water quality as described in the State's NPS pollution management program plans. Annual NPS Reports are submitted from the states in response to Section 319(h)(8) and (11) of the CWA (33 USC1329).

FY09 Region 3 Metal Load Reductions

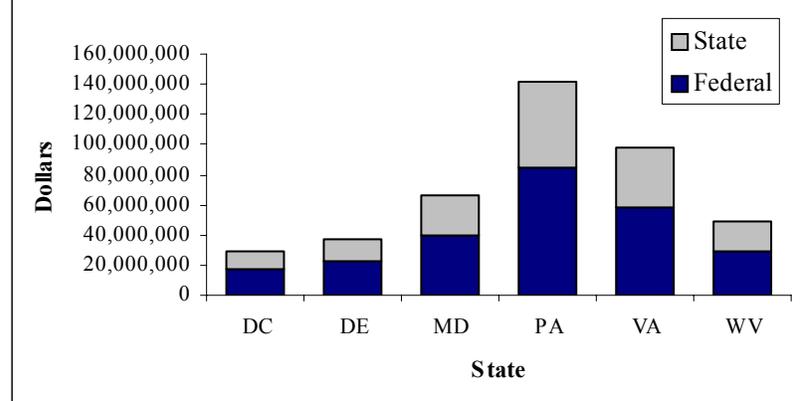


States in Region 3 are reducing metals and pathogens that are impairing many of the local streams, rivers and lakes. Above are the results of such reductions. Region 3 also reported 1.74e16 cfu reductions of Coliform for FY09.

Other Highlights:

Region 3 created a computer tracking tool, which has been incorporated into the 319 Grants Reporting and Tracking System (GRTS). The tool tracks the BMPs implemented pursuant to a 319 watershed plan so that progress towards fully implementing the watershed plan can be observed. Also, Section 319 funding was used to develop and initiate implementation of the RiverSmart Homes Audit and Incentive Program that funds LID practices at the residential level.

NPS Funding 1989 - 2009



This chart shows the total Regional allocation of federal and state funds. Federal funds total over \$250 million and state funds total over \$168 million for NPS program efforts.

While this report highlights efforts that culminated successes of the 2009 NPS program efforts, it is important to acknowledge that these efforts were made possible only as a result of the continued funding over the past 20 years. Ensuring the promise of continued funding is crucial to building our programs to meet the continued challenges of addressing NPS issues in the future.



DELAWARE

In 2009, projects funded through the Delaware's NPS Program embarked on many water quality improvement activities. Below are some examples.

Shoreline Stabilization Cost Share

Completion of a restoration project to create a tidal transition wetland along Indian River at Sandy Beach in Dagsboro.



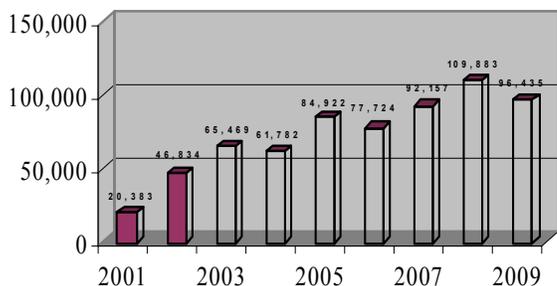
More than 90 percent of Delaware's waterways are considered impaired. The state's list of impaired waters, includes 377 bodies of water that suffer from 11 different impairments, the most common of which are NPS related pollutants including pathogens nitrogen, and phosphorus. As Delaware is a groundwater driven state, removing NPS pollutants become an even harder problem to solve. Due to the rate of groundwater traveling through the system, many NPS pollutants entering the systems up to 30 years ago are just now entering surface water bodies today. As such, the effectiveness of agricultural BMPs placed in 2009 will not be realized until much further in the future.

Project	Nitrogen (lb)	Phosphorus (lb)	Sediment (ton)
Conservation Reserve Enhancement Program	4,571	128	428
Ecological Restoration	193	97	97
Inland Bays Best Management Practices	107,377	NA	NA
Kent Conservation District Planners	164,091	2,077	NA
Nutrient Management Relocation	247,895	24,790	NA
Sussex Conservation District Planners	501,171	15,536	NA
Vegetative Shoreline Stabilization	26	13	15
Total	1,025,325	42,640	540

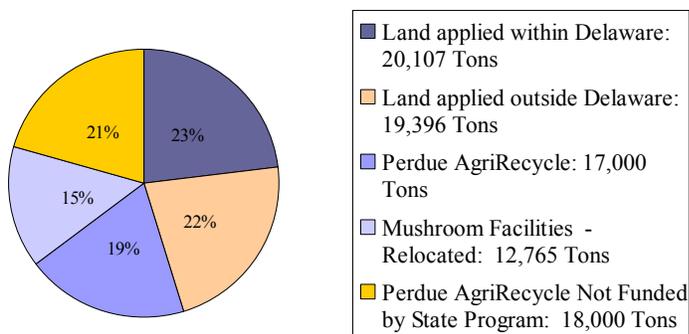
Stream & Corridor Enhancement Program

- **Delaplane Manor Stream Restoration Site** - This project restored approximately 150 feet of stream channel and adjacent banks.
- **Middletown Silver Lake Park Stream Restoration Site** - This project involved the stabilization of approximately 871 of stream channel (450 of an ephemeral drainage channel that drains stormwater and 421 feet of an intermittent channel).

Relocation of Excess Poultry Litter-Manure Since 2001 (to ns)



2009 Relocation & Alternative Use of Excess Poultry Litter-Manure Total 96,435Tons



Nutrient Management Plans

In 2009, 127 farms, 1 museum, and 2 golf courses representing 76,828 acres were reimbursed at a capped rate for a plan developed by a private consultant. During the same period, Kent and Sussex Conservation Districts assisted farmers statewide by writing nutrient management plans representing 11,944 acres. Also, 47 farms were assisted with an animal waste management plan. During 2009, a total of 423,531 acres were provided with nutrient management plans that are valid until 2011.

Nutrient Relocation Program

- In 2009, the Nutrient Relocation Program accounted for the transportation of 4.9 million pounds of nitrogen and 3.8 million pounds of phosphorus as phosphate out of Delaware's priority watersheds. If that tonnage had not been relocated, significant nitrogen and phosphorus could have potentially made their way to Delaware's surface waters.
- 96,435 tons of excess poultry litter were relocated, for a nine year total of over 655,000 tons.

DISTRICT OF COLUMBIA

The mission of the District of Columbia's (DC) Nonpoint Source Program is to prevent and control nonpoint source pollution in the District's watersheds. Employing both regulatory and non-regulatory approaches, the Program works to safeguard the city's water and soil resources as well as the health and welfare of citizens using those resources.



Service cleanup in the restoration of Pope Branch. Over 250 volunteers gathered over three tons of trash.

2009 Accomplishments:

- Regulated construction activities by conducting 7,648 inspections.
- Expanded the *RiverSmart* Homes program to include all 8 Wards in the District with over 2,000 homes registered and enrolled in the program.
- Identified additional funding for the Broad Branch daylighting project to include a site outside of the project area contributing a significant amount of stormwater and generating high sediment loads.
- Received an \$800,000 grant from the National Fish and Wildlife Foundation to reduce stormwater runoff in the Rock Creek Watershed.
- Enhanced environmental education by providing 10,300 Meaningful Watershed Educational Experiences to thousands of school children.

LOW IMPACT DEVELOPMENT



Takoma Recreation Bioretention

Friends of Takoma Park Recreation was awarded a competitive grant to install raingardens to treat stormwater from six tennis courts at the District Takoma Recreation Center. These gardens were incorporated into the existing hill slope to create a cascading, three-tiered system that captures stormwater runoff from approximately 50,000 square feet of impervious surface.



Brent Elementary Bioretention

The project removed over 1200 square feet of asphalt around the perimeter of Brent School's playground and installed a rain garden to manage stormwater runoff from the surrounding 20,000 square feet of remaining asphalt.



Lafayette Park Harvest & Reuse for Drip Irrigation

DPR installed a French drain system around a hilltop children's sprinkler area to collect both sprinkler runoff and stormwater runoff, retaining it in underground cisterns to utilize for the drip irrigation of nearby native plantings.

"The highly urbanized setting and the multiplicity of land ownership within DC can present challenges to nonpoint source pollution reduction; however, the same challenges present opportunities to form creative partnerships and test innovative technologies."

POLLUTION PREVENTION

RiverSmart Homes is an incentive-based program that encourages homeowners to install low-cost residential Best Management Practices and institute green landscape management practices that help improve local water quality. This year the program audited 300 homes, installed 400 rain barrels, installed 87 rain garden/BayScaping/permeable pavement sites, and installed 287 trees.

DC Integrated Pest Management Program (IPM) launched the "Organic Gardening and Lawn Care Workshop Series 2009." Five, free workshops were offered and covered garden IPM, stormwater management, and sustainability topics.

Urban Tree Canopy Goal: Announced in May 2009, the goal is to increase tree canopy to 40% in the next 25 years.

Clean Marina Program: Hosted a boater education workshop and continued educating the boating public on environmentally responsible boating practices; Bell Haven Marina and Washington Sailing Marina were certified as DC Clean Marinas this year, while Capital Cove Marina was recertified.

WPD Storm Drain Marker Program: Installed approximately 1,110 storm drain markers throughout DC.

Scoop Your Pet's Poop: 4,135 brochures were distributed at various civic association meetings, libraries, veterinary facilities, and environmental events.

MARYLAND

“Because of increasing development, there has been in an increase in the urban/suburban component of nonpoint source pollution. While the funding in 319(h) Grant to Maryland has been approximately the same for several years, other federal and state budgets are continuing to decrease, which leads to an ever-tightening restraint on the amount of help, either technical or financial, that a state can provide. There is also the need to show effectiveness or environmental results in an area that may take years or decades to do so.”

Maryland’s NPS Program plays a key role in promoting partnerships and inter- and intra-governmental coordination to reduce nonpoint sources of pollution, and helps bring the necessary technical and financial resources to local watershed management planning, best management practices, and restoration of streams and wetland habitats. The NPS Program’s three priority goals for funding of implementation projects are:

- Eliminating or reducing nonpoint source pollution
- Removing waters from the State’s list of impaired waters (the 303(d) list)

and wetland areas

Accomplishments:

•Projects funded by 319(h) Grant reported implementing 420 best management practices resulting in pollutant load reductions: nitrogen 131,804 pounds/year; phosphorus 10,998 pounds/year; sediment 403 tons/year.

•EPA accepted one watershed plan in 2009. Now a total of six watershed plans in Maryland are eligible for 319(h) Grant implementation funding.

During calendar year 2009, 31 projects in Maryland were reimbursed using the Federal 319(h) Grant. Sixteen of these projects are implementation and four are planning in preparation for implementation.

SUCCESS STORY

In 2009, the Minebank Run project received national recognition for demonstrating improved nitrogen uptake by restoration of stream bank connection to floodplain.



The confluence of a tributary with Minebank Run before and after the restoration.



A portion of the Minebank Run mainstem before and after restoration reconnected the stream to its floodplain.

KEY CHALLENGES AND CONCERNS

Urban/Suburban Nonpoint Source Pollution is increasing:

During 2009, the MDE continued to promote new and innovative practices to control stormwater through environmentally sensitive design techniques described in the “2000 Maryland Stormwater Management Manual.” Also during 2009, MDE’s Stormwater Management Program drafted a new manual with updated information, guidelines and requirements.

One current and ongoing effort to improve NPS management in Maryland is State Agency assistance to local governments as they improve the Water Resource Elements (WRE) in their comprehensive plans. MDE assisted local governments in 2009 in several key ways: 1) developed and made available NPS analysis tools for use by local governments, 2) provided direct staff assistance in using these tools and in meeting NPS program objectives, and 3) reviewed and commented on local government’s draft WRE sections for their comprehensive plans.

Improvement of Impaired Waters:

Removal of impaired waters from Maryland’s 303(d) list, either entirely or partially, is a priority. This priority is designed in part to address EPA’s Strategic goals that call for improvement in a state’s living resources. During 2009, MDE assessed the list of waters with biological impairment in Maryland and ranked them to identify watersheds that appear to be the best opportunities for implementation to remove an entire watershed from the list.

PENNSYLVANIA

Of the 16,121 miles identified as impaired by either point sources or nonpoint sources in the Pennsylvania Department of Environmental Protection (PADEP) 2008 Water Quality Assessment report, the most far-reaching water quality impairment influences are due to nonpoint sources of pollution. The two dominant NPS water quality impairments in Pennsylvania continue to be abandoned mine drainage (AMD) and agricultural runoff.

Accomplishments

Sections of four water bodies were determined to be fully restored during FFY2009. These water bodies were included in the four new success stories for Pennsylvania which have been added to the EPA National Success Story web site. Water quality improvements were also documented in ten water bodies, including both lakes and streams.

FFY2006 through FFY2009 Nutrient and Sediment Load

Nitrogen		Phosphorus		Sediment
(lbs/year)	(tons/year)	(lbs/year)	(tons/year)	(tons/year)
21,117	10.6	7,039	3.5	11,485

FFY2006 through FFY2009 AMD Pollutant Load Reduction Estimates

Iron		Aluminum		Manganese		Acidity	
(lbs/day)	(tons/yr)	(lbs/day)	(tons/yr)	(lbs/day)	(tons/yr)	(lbs/day)	(tons/yr)
20.5	4	21.1	4	0.7	0.1	303	55

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WATERSHED SUCCESS STORIES

Gumboot Run and the East Branch Clarion River: Sealing Mines and Installing Treatment Systems Restores Streams

AMD has polluted Gumboot Run and the East Branch Clarion River as AMD seeps flow in the Gumboot Run watershed, this prompting the PADEP to add the segments to the State's list of impaired waters for low pH. Between 2001 and 2007, several AMD treatment systems were constructed in the Gumboot Run watershed that produced acceptable levels of pH and metals in both streams.



Limestone treatment pond installed.



A portion of the Anna S. Passive Treatment System

Babb and Pine Creeks: Installing Active and Passive Treatment Systems Restores Water Quality

AMD caused high metal levels and low pH in Babb Creek, creating toxic conditions for trout and macroinvertebrates. Stakeholders have worked to restore the creek by installing active and passive AMD treatment systems. Water quality has improved and now meets standards.

Lloydville Run:

Abandoned Mine Drainage Treatment Restores Drinking Water Source

Lloydville Run has been subject to historic strip mine and deep mine coal extraction, resulting in impaired water quality because of AMD. Water quality improved after PADEP's Bureau of Abandoned Mine Reclamation (BAMR) installed a network of treatment systems designed to remove metals and neutralize the acidity of the inflowing water. As a result, PADEP expects to remove this 2.77 mile segment of Lloydville Run from the State's 2010 list of impaired waters.



Lloydville Run in November 2008.



Vertical flow limestone treatment pond

Sterling Run: Installing Passive Treatment System Restores Trout Population

AMD polluted central Pennsylvania's Sterling Run watershed. PADEP's BAMR designed and contracted the construction of a treatment system that increased pH and significantly reduced metal levels in the stream. PADEP's Division of Water Quality Standards determined that segments in Sterling Run watershed meet water quality standards and plans to remove the waters from the State's 2010 list of impaired waters.

VIRGINIA

Overall Accomplishments

• Seven TMDL Implementation Plans (IPs) were completed and three draft IPs were completed. Virginia has completed 39 TMDL IPs since 2000.

• Most IPs were in place to treat bacteria impairments, although three were in place to treat impairments to the benthic ecosystem.

• The Virginia Department of Conservation and Recreation (DCR) and the Department of Environmental Quality funded 28 TMDL implementation projects which installed 288 best management practices (BMPs).

• The 2009 Virginia General Assembly adopted HB 1774, which resolved that Virginia seek No Discharge Zone designation for all its tidal Bay tributaries.

• As of December 16, 2009, 384,899 acres of riparian lands have been primarily preserved, leaving 15,101 acres remaining to reach Virginia's Chesapeake Bay Tributary Strategies goal of 400,000 acres by 2010. The Bay watershed in Virginia is 18.46% permanently protected, as of June 30, 2009.

SPECIFIC LOAD REDUCTIONS

• From January 1 - June 30, 2009, there were 11 active §319(h) funded implementation projects. Collectively these projects implemented 177 agricultural and residential Best Management Practices (BMPs) that resulted in the reduction of 2.13 E+16 Colony Forming Units (CFU) of fecal coliform bacteria, 1,358.42 pounds of nitrogen, 214.98 pounds of phosphorus, and 127 tons of sediment.

• From July 1, 2008 - June 30, 2009, 17 state-funded TMDL projects started in 2006 implemented 111 agricultural BMPs that resulted in the following 'edge of field' pollution reductions: 34,249.1 lbs/year nitrogen, 4,287.16 lbs/year phosphorus and 480.85 tons sediment.

• The Virginia Department of Mines, Minerals, and Energy reclaimed 240 acres of abandoned coal mine land, 5 acres of abandoned mineral mine land, restored 1,700 feet of stream, revegetated over 7 acres of mine spoil, removed over 25 tons of trash and planted 20,000 trees.

Project Title	Calendar Year	Pathogens (Coliform) CFU	Nitrogen lbs/yr	Phosphorus lbs/yr	Sedimentation-Siltation tons/yr
Cooks Creek and Blacks Run TMDL Project	Mar-06	2.44E+11	851.46	79.31	50.82
	2007	1.39E+11	1,742.14	346.65	210.71
	2008	3.73E+10	988.56	171.11	104.01
	2009	7.84E+14	714.27	135.53	80.95
	Sub-Total	7.85E+14	4,296.43	732.59	446.48

TMDL Implementation Progress Reports:

Catoctin Creek September 2004 - June 2009

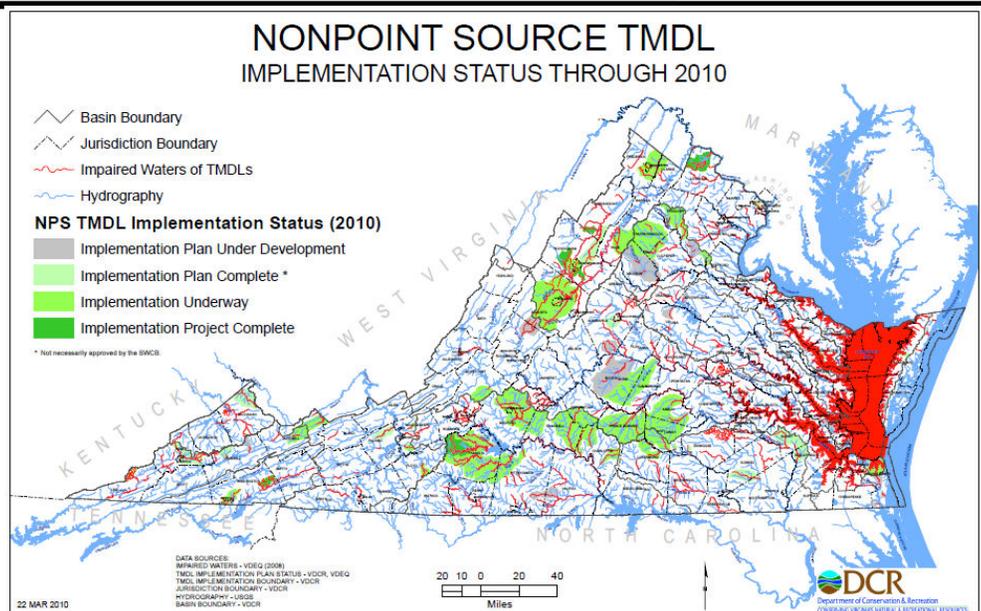
During 2009, Loudoun Soil and Water Conservation District completed 18 BMPs, including 8 agricultural BMPs, which were all stream exclusion practices. In Catoctin Creek, most of the BMPs involved stream fencing and the implementation of septic systems. Eighty BMPs have been installed since this project began in 2004. Reduction results are as follows:

Project Title	Calendar Year	Pathogens (Coliform) CFU	Nitrogen lbs/yr	Phosphorus lbs/yr	Sedimentation-Siltation tons/yr
Catoctin Creek TMDL Project	2005	3.15E+13	225.90	43.20	27.70
	2006	1.07E+14	84.48	1.71	0.59
	2007	5.40E+14	50.72	4.65	1.64
	2008	7.19E+13	255.38	11.05	6.26
	2009	1.24E+11	24.96	0.00	0.00
	Sub-Total	7.51E+14	641.44	60.62	36.20

Cooks Creek and Blacks Run

Summer 2006 - June 2009

The Shenandoah Valley Soil and Water Conservation District implemented 18 BMPs in 2009, including six stream bank protection practices, five septic system pump outs and two connections to public sewer systems. To date, 63 BMPs have been put in with the above results.



WEST VIRGINIA

West Virginia's Nonpoint Source Program (NPSP) takes an interactive approach to improving the state's waters that have been degraded from unregulated sources of water pollution. Such sources include heavy metals in waters polluted by abandoned coal mining and sedimentation in streams, as well as nutrients and bacteria from agriculture and inadequate residential wastewater treatment. The NPSP focuses on remediating such pollution through encouraging, educating, and assisting local stakeholders in voluntary correction of non-point source problems.



Outreach and Education remains a part of WV's mission.

Best Management Practices Installed:

- 49 on-site wastewater systems installed
- 63 on-site wastewater systems pumped
- 6,174 linear feet of stream bank stabilization
- 1,423 acres of riparian buffers established
- 72,158 feet of livestock fencing
- 35 nutrient management plans
- 12 alternative livestock watering systems

The total estimated new reductions in nonpoint source pollutants:

- 6.75 10¹⁴ cfu of fecal coliform bacteria
- 57,268 tons/year of sediment
- 21,911 lbs/year of nitrogen
- 253,230 lbs/year of phosphorus
- 320 tons/year of acid
- 12,860 lbs/year of aluminum
- 115,401 lbs/year of iron
- 5,520 lbs/year of manganese

WATERSHED BASED PLANS

The TMDL implementation projects, project management, planning and monitoring of projects are supported by §319 incremental grants. In FY 2009 there were 30 active incremental projects and 11 active AGO grants awarded from base grant funds. Below are the results of such projects.

Lower Cheat River Watershed Pro-



Cheat Lake use to have a pH near 4 with no fish but now averages above 7 and supports a good recreational fishery. Despite the improvement more work needs to be done, no tributary or the river itself has been fully restored. Monitoring results show that the passive treatment system installed at the Jessop #1 location has reduced the acid load at the site by 134%, iron by 93%, aluminum by 100%, and manganese by 90%. Total load reductions for this project are: 81,445 lbs/yr of acid, 4,620 lbs/yr of aluminum, 3,635 lbs/yr of iron and 4,891 lbs/yr of manganese.

Lost River Watershed Project



In March, the first stream bank stabilization demonstration project was completed. BEHI surveys showed that the amount of sediment lost annually post construction was reduced from 793 tons to 24 tons. Later in the year, a second bio-engineering stream bank stabilization project was completed. Two hundred and fifty feet of eroding stream bank was stabilized using bank-sloping, bio-engineering products, and by securing the toe of the slope with rock. Bank exclusion and pasture division fencing was installed after stabilization, allowing for livestock rotation. The esti-

The Ashland Wastewater Project



This project is equipping 23 homes and two businesses with a viable onsite wastewater treatment system for the first time, eliminating the community's practice of dumping raw sewage into the North Fork of Elkhorn Creek. This system is expected to reduce fecal coliform loads by 4.11E+13 cfu/year and restore Windmill Gap Branch to water quality standards.

The original plan was to install 25 systems but some homes didn't pass the percolation test needed for a system, some residents couldn't provide the proper documentation needed for the loan, and every homeowner had to be convinced to voluntarily sign up for the program. As of the end of September, seven systems were installed.

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[http://www.epa.gov/
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