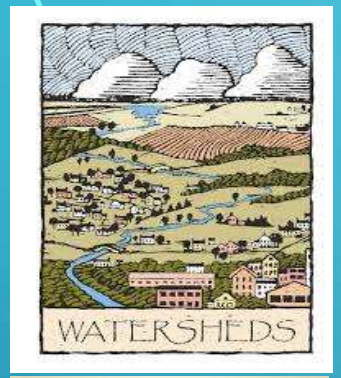
WATERSHED IMPLEMENTER'S WORKSHOP

4/7/15

PARTNERSHIPS ARE THE KEY TO SUCCESS…

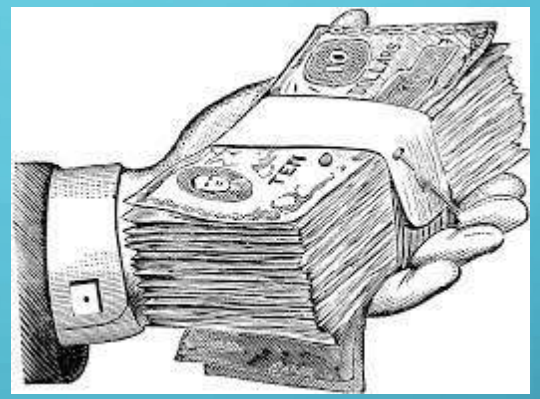


Commonwealth of Pennsylvania

Nonpoint Source Management Plan

2014 Update

September Draft



…but success is also determined by the ability to clearly set goals, track progress, and communicate results

319 WORKPLANS AND REPORTING: KEY COMPONENTS FOR MORE SUCCESSFUL GRANT APPLICATIONS AND BETTER PROJECT IMPLEMENTATION

Effective workplans should provide a project overview, objectives and methods and address the following:

- Is the Project tied to an **approved Watershed Plan** and is the project being proposed covered in the plan?
- Has a TMDL been done for the watershed and what are the **pollutants of concern** and their associated **target load reductions**?
- What are the **proposed BMPs** (names of BMPs as well as quantitative estimates, such as acres, linear feet, etc, where possible) for the project?
- What are the **expected load reductions** from the proposed BMPs (expressed as a rate and not percent reductions; needs to be comparable to TMDL goals)?
- **Clear budget** broken down by work task and/or BMP

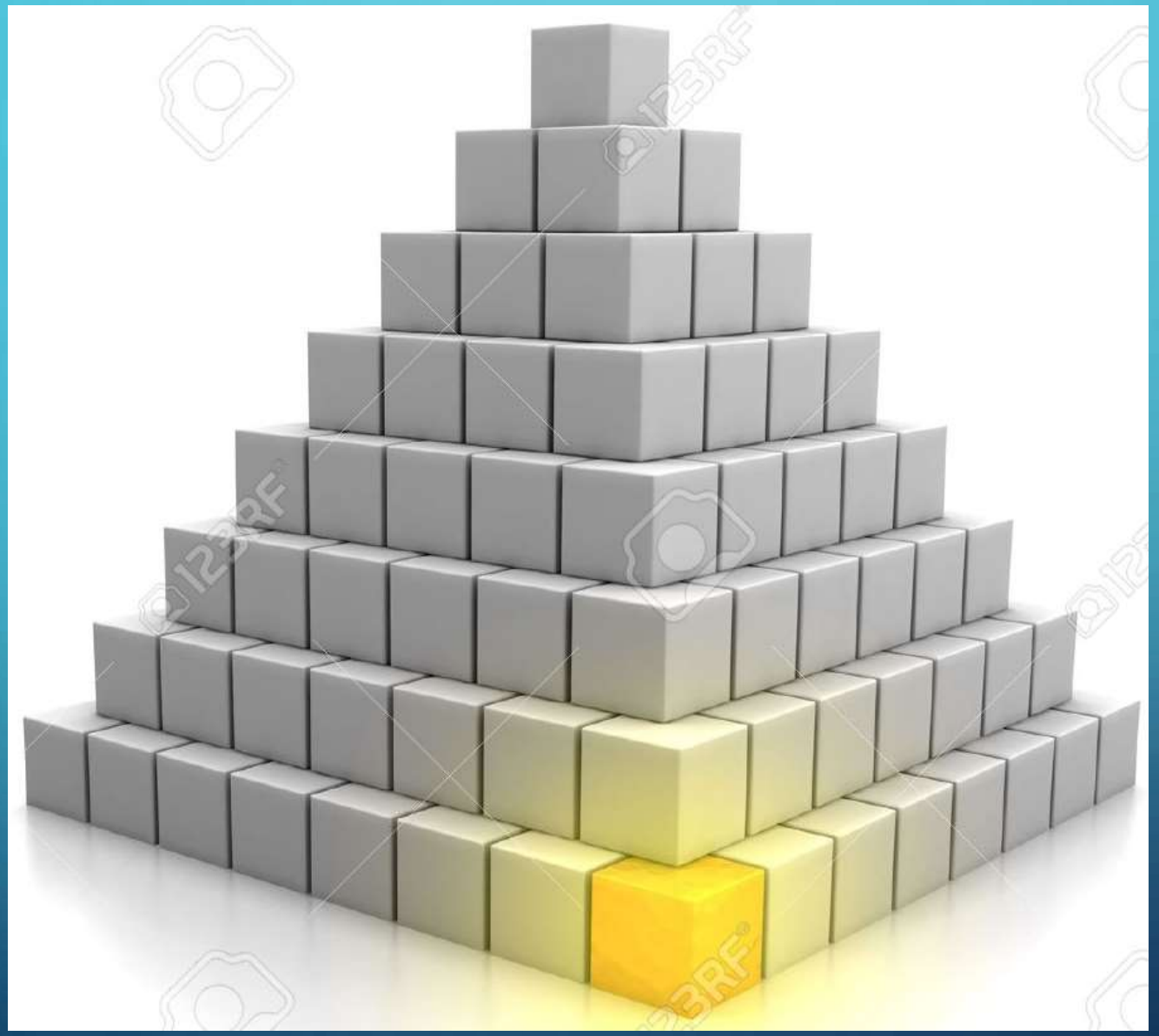
319 WORKPLANS AND REPORTING: KEY COMPONENTS FOR MORE SUCCESSFUL GRANT APPLICATIONS AND BETTER PROJECT IMPLEMENTATION, CONTINUED

Effective reporting of realized environmental results should cover the following:

- What **BMPs were actually installed**?
- What were the pollutants that were addressed and their associated **load reductions achieved**?
- If either the installed BMPs or achieved load reductions are different than what was proposed in the workplan, what were the **differences** and what led to them?
- Were there **changes in the budget** as originally proposed?

319 WORKPLANS AND REPORTING: KEY COMPONENTS FOR MORE SUCCESSFUL GRANT APPLICATIONS AND BETTER PROJECT IMPLEMENTATION, CONTINUED

- At the end of the project, a clear comparison should be able to be made between what was projected to be done with what was actually accomplished
- This helps to produce and transparently communicate results and differences in goals versus accomplishments, track successes as well as failures, and documenting lessons learned.
- Even failure can lead to success if we allow ourselves to learn from it!



Commonwealth of Pennsylvania

Nonpoint Source Management Plan

2014 Update

September Draft


IF A TREE FALLS IN the WOODS AND NO ONE IS THERE TO TWITTER ABOUT IT....
...DOES IT MAKE A SOUND?

http://www.epa.gov/reg3wapd/nps/index.htm

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Nonpoint Source Pollution

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Nonpoint source (NPS) pollution or polluted runoff is the nation's largest source of water quality problems. Approximately 40% of our surveyed rivers, lakes, and estuaries are not clean enough for fishing or swimming due to NPS pollution.

The 3 major sources of nonpoint source water pollution in the Mid-Atlantic region are mining operations , animal feeding operations and stormwater runoff.

Click to view Watershed Plans in Your State

Can't find your watershed? Enter your zip.

Since 1990 Congress has provided over $1.5 billion to states to address these problems with over $120 million coming to the mid-Atlantic region. This funding has been used to develop and implement approved NPS Management Plans. Click here for more funding opportunities.These plans contain specific actions that are necessary to restore and protect water quality, habitat and natural resources concerns in individual watersheds. States identify impaired streams through a comprehensive water assessment process. Reports identifying impaired waters are provided to EPA under Section 303d of the Clean Water Act (CWA). States are also developing Total Maximum Daily Loads (TMDLs) through their watershed planning processes. These TMDLs determine the pollutant load reductions necessary for the water to meet CWA goals.

National Information

- What is Nonpoint Source Pollution?
- Categories of Nonpoint Source Pollution
- Education Resources
- EPA & State Partnerships
- Kids Page
- Funding
- Laws & Regulations
- Outreach Materials
- Outreach Toolbox
- Publications
- Success Stories
- Watersheds Plans Handbook

Annual Report Highlights for 2013

Pa NPS Program

Pennsylvania continues its efforts to implement their *NPS Management Program Plan-2008 Update* which outlines current efforts that the Commonwealth can take to address Nonpoint Source (NPS) pollution of surface water bodies. Pennsylvania has been very successful in its efforts to pull various partnering agencies and organizations together to work towards the goal of improving Nonpoint Source (NPS) impaired streams and lakes throughout Pennsylvania. Through the implementation of restoration projects, Pa has been able to restore over 125 miles of NPS impaired streams as well as over 1,800 acres of NPS impaired lakes since 2008.

PENNSYLVANIA

Stream and Lake Assessments

Approximately 16,353 of the 84,571 miles of assessed streams in PA, or about 19%, were found to be impaired for the Aquatic life designated use. The 16,353 mile figure includes the Impaired, Approved TMDL and Compliance categories. Approximately 67,972 of 84,571 miles of streams in PA, or about 80%, support the aquatic life designated use.

Approximately 1,500 lakes and reservoirs comprising approximately 161,455 acres exist in Pennsylvania. Of these lakes and reservoirs there are about 380 (25%) that are open to the public and 150 (10%) within Pennsylvania's State Parks. Pennsylvania has been able to document that 1,862 lake acres, which had been listed as impaired in 2008, are now attaining aquatic life uses.

Estimated Load Reductions From 319 Federally Funded Projects Completed in 2013

Nutrient and Sediment Pollutant Load Reduction Estimates

Nitrogen (lbs/year)	Phosphorus (lbs/year)	Sediment (tons/year)
51,287	11,616	3,781

Abandoned Mine Drainage Pollutant Load Reduction Estimates

Iron (lbs/year)	Aluminum (lbs/year)	Acidity (lbs/year)
18,800	3,800	19,000

Improving Waters

Kettle Creek & Two Mile Creek Watersheds

The Kettle Creek watershed is located in the Deep Valley Section of the Appalachian Plateau. Although more than half of the Kettle Creek watershed is classified as Exceptional Value for water quality, abandoned mine drainage (AMD) historically polluted over six miles of the lower main stem and another eight miles of streams in the Two Mile Run sub-watershed. Most recently, the Swamp Area Passive Treatment System was completed in October 2012 to address severe AMD flows (average pH of 3.1 and flow of 45 gpm, 522 mg/L as CaCO3 acidity, 80 mg/L iron, and 41 mg/L aluminum) in the headwaters of Two Mile Run. The completion of two final passive treatment systems in early summer of 2013 that will address AMD in Robbins Hollow will wrap up the effort to remediate all the treatable AMD within the Two Mile Run watershed.

West Branch Susquehanna

The West Branch Susquehanna River watershed spans 6,978 sq miles in north central and central Pennsylvania. The majority of the mountainous area is comprised of dense forests, with approx. 10% of the land-used for agriculture. Results from the 2009 West Branch Susquehanna Recovery Benchmark Project indicated significantly better water quality and biological conditions compared to historical conditions. For AMD-impaired tributaries between Curwensville and Renovo, pH improved 85%, acidity concentrations decreased 79%, iron decreased 68%, and aluminum decreased 92%. While large tributaries such as Moshannon Creek and Kettle Creek still contribute acidity to the West Branch Susquehanna River, the amount of acidity contributed has greatly reduced over the years.

Photo 1: The Swamp Area Passive Treatment

Figure 1: A depiction of change from 1970's acidic conditions to 209 net-alkaline conditions on the West Branch of the Susquehanna River

Implementation Plans

- Abrahams Creek-Frances Slocum Lake Watershed (PDF)
- Anderson Creek Watershed (PDF)
- Antietam Creek Watershed-West Branch (PDF)
- Bear Creek Watershed (PDF)
- Blacks Creek Watershed (PDF)
- Buffalo Creek Watershed (PDF)
- Catawissa Creek Watershed (PDF)
- Codorus Creek Watershed (PDF)
- Conewago Creek Watershed (PDF)
- Conowingo Creek Watershed (PDF)
- Core Creek/Lake Luxembourg Watershed (PDF)
- Deer Creek Watershed (PDF)
- Hartshorn Run Watershed (PDF)
- Harveys Lake Watershed (PDF)
- Hubler Run Watershed (PDF)
- Hungry Run Watershed (PDF)
- Jacobs Creek Watershed (PDF)
- Johnson Creek Watershed (PDF)
- Little Laurel Run Watershed (PDF)
- Little Wiconisco Watershed (PDF)
- Middle Spring Creek Watershed (PDF)
- Mill Creek Watershed (PDF)
- Mill Creek/Stephen Foster Lake Watershed (PDF)
- Montgomery Creek Watershed (PDF)
- North Branch Neshaminy/Lake Galena Watershed (PDF)
- Pine Creek Watershed (PDF)
- Pine Run Watershed (PDF)
- Shoup Run Watershed (PDF)
- Six Mile Run/Sandy Run Watershed (PDF)
- South Branch Plum Creek Watershed (PDF)
- South Sandy Creek Watershed (PDF)
- Trout Run-Godfrey Run Watershed (PDF)
- Upper Kishacoquillas Creek Watershed (PDF)
- Upper Schuylkill River Watershed (PDF)
- Upper Swatara Creek Watershed (PDF)

Hubler Run PA Hubler Run HR2

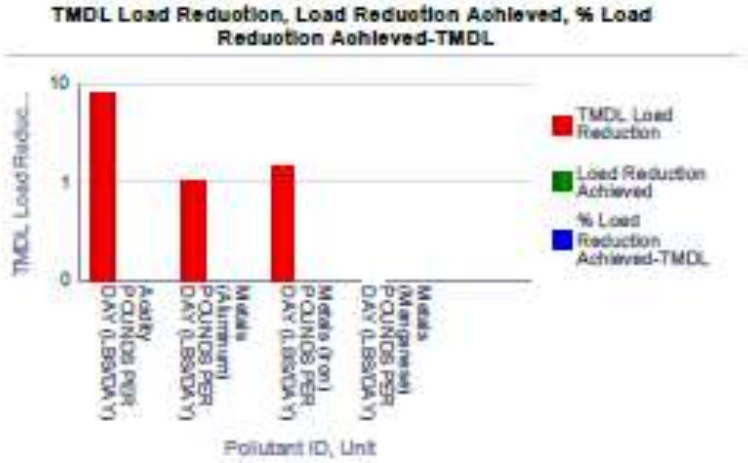
BMP/Action	Goal Amount	Implemented Amount	Unit	% Action Implemented
Aggregated BMP Load Reductions	1.00		UNITS	
Limestone Open Channel	1.00			

Hubler Run PA Hubler Run HR3

BMP/Action	Goal Amount	Implemented Amount	Unit	% Action Implemented
Aggregated BMP Load Reductions	3.00	2.00	UNITS	67
Anoxic Limestone Drain	3.00	6.00	UNITS	200
Limestone Leach Bed/Pond	3.00	3.00	UNITS	100
Vertical Flow Treatment System	1.00	1.00	UNITS	100

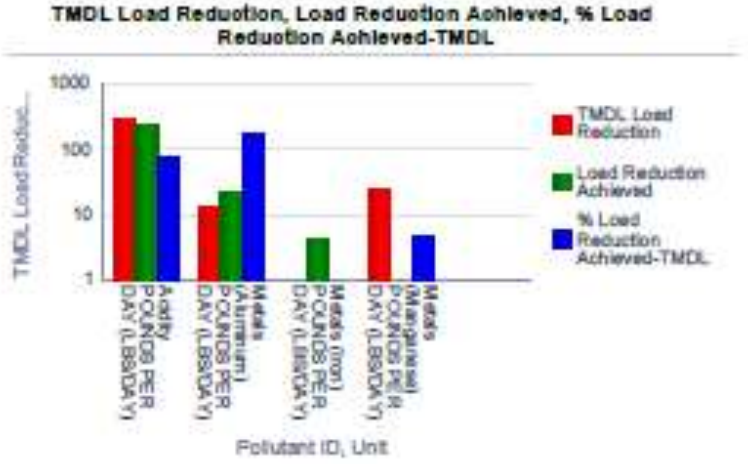
Hubler Run PA Hubler Run HR2

Pollutant ID	Unit	TMDL Load Reduction	Load Reduction Achieved	% Load Reduction Achieved-TMDL
Acidity	POUNDS PER DAY (LBS/DAY)	7.90		
Metals (Aluminum)	POUNDS PER DAY (LBS/DAY)	1.00		
Metals (Iron)	POUNDS PER DAY (LBS/DAY)	1.40		
Metals (Manganese)	POUNDS PER DAY (LBS/DAY)	0.10	0.00	0



Hubler Run PA Hubler Run HR3

Pollutant ID	Unit	TMDL Load Reduction	Load Reduction Achieved	% Load Reduction Achieved-TMDL
Acidity	POUNDS PER DAY (LBS/DAY)	299.90	222.37	74
Metals (Aluminum)	POUNDS PER DAY (LBS/DAY)	13.10	22.67	173
Metals (Iron)	POUNDS PER DAY (LBS/DAY)		4.04	
Metals (Manganese)	POUNDS PER DAY (LBS/DAY)	23.80	1.04	4

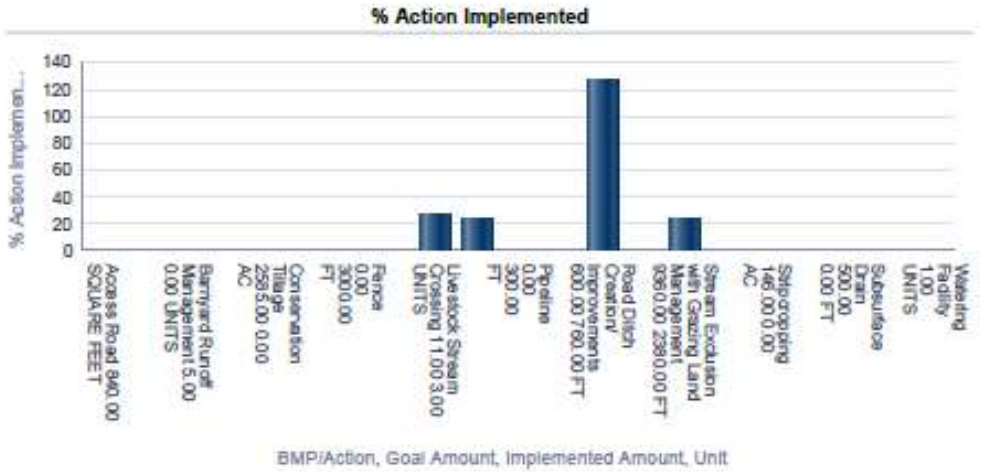


South Branch Plum Creek PA ReddingsRun

BMP/Action	Goal Amount	Implemented Amount	Unit	% Action Implemented
Aggregated BMP Load Reductions				
Barnyard Runoff Management	4.00	0.00	UNITS	0
Conservation Tillage	165.00	0.00	AC	0
Cover Crop	165.00	0.00	AC	0
Nutrient Management	609.00	0.00	AC	0
Planned Grazing System	391.00	0.00	AC	0
Riparian Forest Buffer	55.00	0.00	AC	0
Road Ditch Creation/ Improvements	0.00	4800.00	FT	
Spring Development	5.00	1.00	UNITS	20
Stream Exclusion with Grazing Land Management	10091.00	0.00	FT	0
Streambank & Shoreline Protection	11752.00	0.00	FT	0
Structure for Water Control		1.00	UNITS	
Waste Storage Facility	1.00	0.00	UNITS	0
Watering Facility	5.00	1.00	UNITS	20

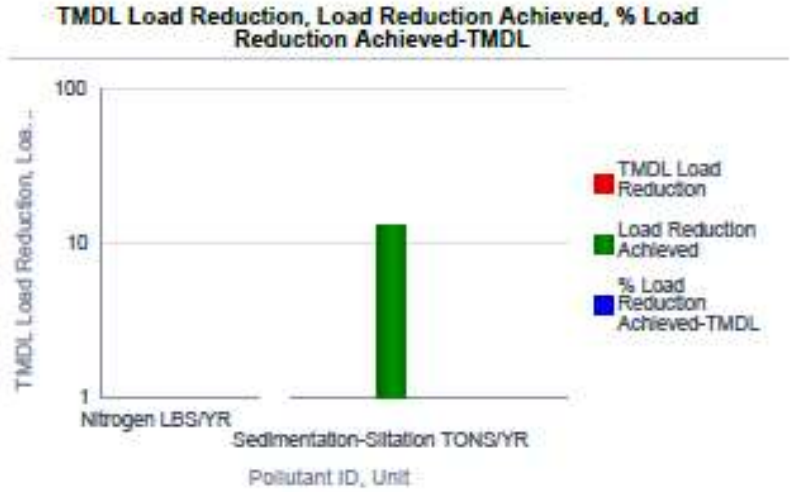
South Branch Plum Creek PA SBPCMain/UNTs

BMP/Action	Goal Amount	Implemented Amount	Unit	% Action Implemented
Access Road		840.00	SQUARE FEET	
Aggregated BMP Load Reductions				
Barnyard Runoff Management	5.00	0.00	UNITS	0
Comprehensive Nutrient Management Plan (CNMP)		54.00	AC	
Conservation Tillage	2585.00	0.00	AC	0
Cover Crop	2506.00	0.00	AC	0
Fence	0.00	3000.00	FT	
Heavy Use Area Protection	0.00	1800.00	SQUARE FEET	
Livestock Stream Crossing	11.00	3.00	UNITS	27
Nutrient Management	832.00	200.00	AC	24
Pipeline	0.00	300.00	FT	
Riparian Forest Buffer	81.00	0.00	AC	0
Road Ditch Creation/ Improvements	600.00	760.00	FT	127
Roof Runoff Management		124.00	FT	
Stream Exclusion with Grazing Land Management	9360.00	2380.00	FT	25
Streambank & Shoreline Protection	52320.00	100.00	FT	0
Stripcropping	146.00	0.00	AC	0
Structure for Water Control		1.00	UNITS	
Subsurface Drain	500.00	0.00	FT	0
Waste Storage Facility	10.00	0.00	UNITS	0
Watering Facility		1.00	UNITS	



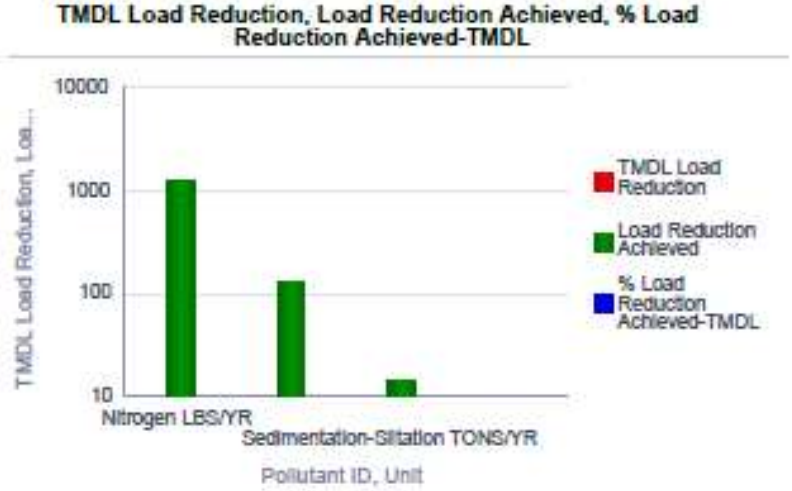
South Branch Plum Creek PA ReddingsRun

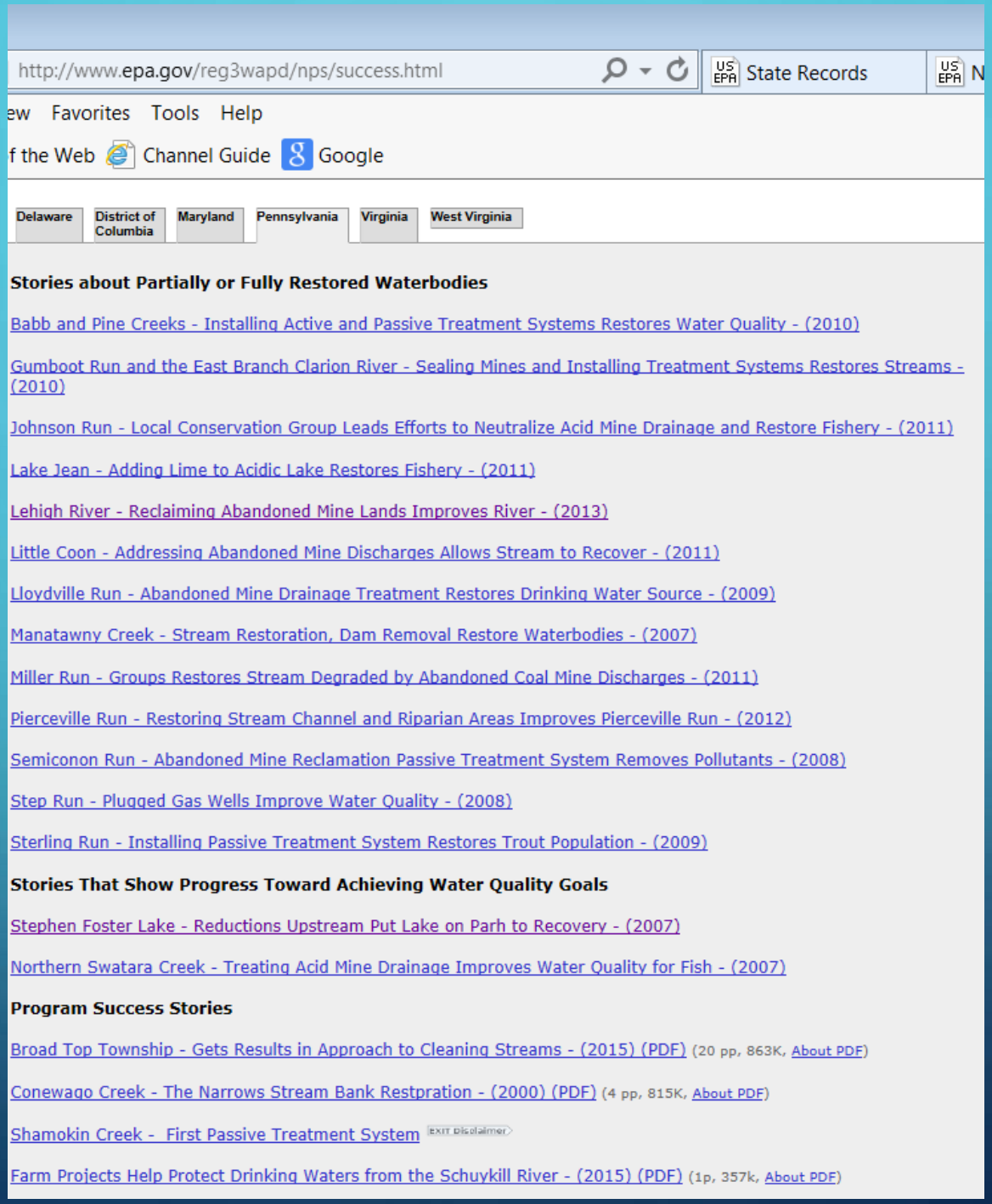
Pollutant ID	Unit	TMDL Load Reduction	Load Reduction Achieved	% Load Reduction Achieved-TMDL
Nitrogen	LBS/YR		0.00	
Phosphorus	LBS/YR		1.00	
Sedimentation-Siltation	TONS/YR		12.60	



South Branch Plum Creek PA SBPCMain/UNTs

Pollutant ID	Unit	TMDL Load Reduction	Load Reduction Achieved	% Load Reduction Achieved-TMDL
Nitrogen	LBS/YR		1207.50	
Phosphorus	LBS/YR		127.30	
Sedimentation-Siltation	TONS/YR		13.90	

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State Records
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Delaware
District of Columbia
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West Virginia
Stories about Partially or Fully Restored Waterbodies
Babb and Pine Creeks - Installing Active and Passive Treatment Systems Restores Water Quality - (2010)
Gumboot Run and the East Branch Clarion River - Sealing Mines and Installing Treatment Systems Restores Streams - (2010)
Johnson Run - Local Conservation Group Leads Efforts to Neutralize Acid Mine Drainage and Restore Fishery - (2011)
Lake Jean - Adding Lime to Acidic Lake Restores Fishery - (2011)
Lehigh River - Reclaiming Abandoned Mine Lands Improves River - (2013)
Little Coon - Addressing Abandoned Mine Discharges Allows Stream to Recover - (2011)
Lloydville Run - Abandoned Mine Drainage Treatment Restores Drinking Water Source - (2009)
Manatawny Creek - Stream Restoration, Dam Removal Restore Waterbodies - (2007)
Miller Run - Groups Restores Stream Degraded by Abandoned Coal Mine Discharges - (2011)
Pierceville Run - Restoring Stream Channel and Riparian Areas Improves Pierceville Run - (2012)
Semiconon Run - Abandoned Mine Reclamation Passive Treatment System Removes Pollutants - (2008)
Step Run - Plugged Gas Wells Improve Water Quality - (2008)
Sterling Run - Installing Passive Treatment System Restores Trout Population - (2009)
Stories That Show Progress Toward Achieving Water Quality Goals
Stephen Foster Lake - Reductions Upstream Put Lake on Parh to Recovery - (2007)
Northern Swatara Creek - Treating Acid Mine Drainage Improves Water Quality for Fish - (2007)
Program Success Stories
Broad Top Township - Gets Results in Approach to Cleaning Streams - (2015) (PDF) (20 pp, 863K, About PDF)
Conewago Creek - The Narrows Stream Bank Restpration - (2000) (PDF) (4 pp, 815K, About PDF)
Shamokin Creek - First Passive Treatment System
EXIT Disclaimer
Farm Projects Help Protect Drinking Waters from the Schuykill River - (2015) (PDF) (1p, 357k, About PDF)

http://water.epa.gov/polwaste/nps/success319/pa_lehigh.cfm

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Pennsylvania: Lehigh River

Reclaiming Abandoned Mine Lands Improves River

Waterbody Improved

Metals and acidity in runoff from abandoned surface mines and discharges from abandoned deep mines impaired Pennsylvania's Lehigh River and some of its tributaries, prompting the Pennsylvania Department of Environmental Protection (PADEP) to add 25.1 miles of watershed streams to the state's Clean Water Act (CWA) section 303(d) list of impaired waters in 2002. Project partners reclaimed and treated 297.9 acres of abandoned mine lands to address pollutant loadings. Water quality improved downstream of the reclamation sites, allowing PADEP to remove a 14.7-mile-long segment of the Lehigh River from the list of impaired waters in 2012.

STORIES OF PROGRESS IN ACHIEVING HEALTHY WATERS

PA TOWNSHIP GETS RESULTS IN APPROACH TO CLEANING STREAMS

Broad Top, PA, February 2015

Treatment pond for mine drainage discharge

- Township places high priority on cleaning streams
- Using own plans, employees and equipment
- Supported with EPA Section 319 Clean Water Act funds
- Major creek taken off list of impaired waters; streams showing positive results


ES
RIDE.
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