V. Priorities for Restoration

The best approach to the restoration of an impaired watershed is to establish a set of priorities for the necessary work. Usually, restoration priorities first determine which sites are causing the most impairment to the watershed based on pollution loads. Most often, because acidity in AMD is a good indicator of its severity, it has been used as a key factor in determining priority. Acidity levels in an AMD discharge alone, however, do not tell the whole story. The volume of flow must be coupled with the amount of pollutant in the water to determine the total amount of pollution being produced by a discharge, usually measured in pounds per day. Flow is determined by using techniques that will assure reasonably accurate measurement. Most often, discharge flows are measured using a weir, such as a V-notch or rectangular weir, a flume, a piped discharge and using a bucket and stopwatch, or a flow meter, if the discharge is very large. Once a flow measurement is matched with the amount of pollutant in the water, a total load of pollutant in pounds per day can be calculated. These are the basic methods that were used in this assessment.

Many other factors can play a role in determining a final restoration prioritization scheme. These factors may include site conditions, landowner cooperation, site location or access to the site, cost of treatment (both initial and long-term), ease of construction, likelihood of success, expected environmental results, operation and maintenance requirements, funding availability, remining potential, local priorities and support, and many others. Often the initial prioritization is based on pollution load and then is refined based on the other factors. Flexibility is the key to successful restoration efforts. Often the worst discharges cannot be tackled immediately, so other factors help determine what to do and when.

In the case of Anderson Creek, the watershed was long thought to be a lost cause, just too degraded to be worth the effort. However, Anderson Creek Watershed Association (ACWA) saw hope in making small advances, and continued working toward restoration of the watershed despite doubts. Bilger Run is one such area where the initial focus was to stock trout in the lower sections by reducing acidity through limestone sand dosing. That successful project inspired a continued effort toward the cleanup of the entire watershed. Bilger Run continues to be a top local priority because of the possibility to return four miles of stream to a trout fishery with construction of a few remediation projects. Cleaning up Bilger Run will also have a positive effect on the experience visitors have when visiting Bilgers Rocks, through which the stream flows. Additionally, restoration of the main stem of Anderson Creek remains another achievable priority for ACWA. As major sites on Little Anderson Creek are cleaned up, it is very likely that water quality will significantly improve on the main stem of Anderson Creek.

Scarlift Priorities

The first prioritization of AMD problems in Anderson Creek were done during the Scarlift project. Under that study, problem areas were prioritized based on the relative acid load, cost of reclamation, relative benefit to the receiving stream, effectiveness of the proposed reclamation measures, and the possibility of future mining activity in the area. Reclamation focused primarily on AMD treatment projects. At the time, it was felt that by flooding underground mine pools, AMD pollution would be reduced. Many restoration projects focused on installing clay mine seals at the entrances of the mines in order to flood them. Subsequent studies found the technique was not always successful. Project costs were also fairly low because the technique was relatively simple.

Based on the Scarlift study restoration priorities, the 20 problem areas listed in the table below were ranked as priorities in 1974.

Scarlift Study Priorities			
Priority	**Scarlift ID#**	**Assessment Discharge ID**	**Description/Note**
1	301-302	DMP-Draucker1	Drauckers and Pearce mine
2	303	PAMP LA3.0-1, 2	Wingert Site
3	220-221	DMP-Widemire	Kratzer Run tipple
4	329, 350, 351	Korb4, Korb2, Korb3	Little Anderson/Anderson
5	330, 352	DMP - Spencer	Little Anderson
6	204	PAMP KR1.45-1	Falls
7	211-214	DMP-BR 4.0	Bilger Run pipe discharge
8	341-343	PAMP-LA 4.3	Tepke property
9	215-216	DMP-BR 4.5	Bilger Run pond
10	304-304A-304B	PAMP-LA3.0	Wingert
11	334-337	SMP-LA 4.3	Southern discharges – not sampled
12	301A	DMP-Draucker2	Little Anderson
13	103-105	DMP-AC 3.75 -1&2	Bloom Mine
14	322-324		Rock Run Headwaters
15	209		Bilger Run east of twp. road – eliminated
16	313-313A-315		Rock Run headwaters – acid seep area
17	113		Greenville Pike area
18	106	AC-UNT 5.8	Bear Run – Laurel Swamp
19	309		Rock Run headwaters
20	345	DMP-LA5.9-1	Assessment site

TMDL Study Priorities

In 2004, the Susquehanna River Basin Commission completed a Total Maximum Daily Load report for Anderson Creek. The following list identifies the top ten restoration priorities developed for the TMDL. It differs slightly from the priority ranking developed by the Scarlift study.

TMDL Priorities

Priority	Site Name	Scarlift #	Sub-basin	Assessment Designation
1	Drauckers Discharges	OSL 301	Little Anderson Creek	DMP-Drauckers 1
2	Widemire Discharge	OSL 220	Kratzer Run	DMP-Widemire
3	Korb Discharge	OSL 329	Little Anderson Creek	DMP-Korb 4
4	Wingert Discharge	OSL 303	Little Anderson	PAMP-LA3.0-1,2
5	Stronach Discharges	OSL 211–214	Bilger Run	DMP-BR4
6	Little Anderson Seeps	OSL305	Little Anderson Creek	PAMP-LA 2.10
7	Korb Discharge	OSL 350	Anderson Creek	DMP-Korb 2
8	Spencer Discharge	OSL 352	Little Anderson Creek	DMP-Spencer
9	Korb Discharge	OSL 351	Anderson Creek	DMP-Korb 3
10	Spencer Discharge	OSL 330	Little Anderson Creek	DMP-Spencer

ACWA Assessment Priorities

The overall ACWA prioritization for restoration of pollution sources developed for this study is based on acid and metals loadings, measured as existing average load in pounds per day during the 12-month monitoring period. The following charts identify priorities for restoration based on acid, aluminum, iron, and manganese. Because acid and aluminum are the deadliest pollutant sources to aquatic life, they were chosen as the primary indicators of priority for restoration. Although the load rankings change depending on the pollutant, the top-priority discharges remain relatively the same and are strikingly similar to the priorities of the previous studies, which indicate that not much has changed in Anderson Creek in over 30 years.

Ranking by Acidity Loading

Monitoring Point ID	Acidity Loading lbs/day	Rank
DMP-Drauckers1	743.1	1
DMP-Korb4	338.5	2
DMP-Korb2	246.0	3
PAMP-LA4.3	173.6	4
PAMP-LA3.0	97.8	5
DMP-BR4.5	84.9	6
PA-KR1.45-1	70.2	7
DMP-Drauckers2	66.4	8
DMP-Widemire	55.1	9
PAMP-LA3.0-4	54.0	10
DMP-BR4.0	35.5	11
DMP-AC3.75-3	28.7	12
PAMP-LA2.10	16.4	13
DMP-Wildwood	15.9	14
PAMP-LA3.0-1	14.4	15
DMP-AC3.75-2	13.4	16
DMP-Korb1	10.4	17
DMP-AC3.75-1	9.2	18
DMP-LA5.9-1	8.0	19
DMP-LA5.9-2	7.0	20
DMP-Korb3	5.5	21
DMP-BR3.9	5.4	22
DMP-879	-0.3	23

Ranking by Aluminum Loading

Monitoring Point ID	Al Loading lbs/day	Rank
DMP-Drauckers1	67.9	1
DMP-Korb2	21.4	2
DMP-Korb4	20.5	3
PAMP-LA4.3	15.0	4
PAMP-LA3.0	9.7	5
PA-KR1.45-1	8.6	6
DMP-BR4.5	8.2	7
DMP-Widemire	6.2	8
DMP-AC3.75-3	4.3	9
DMP-BR4.0	4.3	10
DMP-Drauckers2	3.3	11
PAMP-LA3.0-1	1.9	12
PAMP-LA2.10	1.6	13
DMP-AC3.75-2	0.9	14
DMP-AC3.75-1	0.9	15
PAMP-LA3.0-4	0.8	16
DMP-LA5.9-2	0.6	17
DMP-BR3.9	0.5	18
DMP-Korb3	0.5	19
DMP-LA5.9-1	0.4	20
DMP-Korb1	0.2	21
DMP-Wildwood	0.1	22
DMP-879	0.0	23

Ranking by Iron Loading

Monitoring Point ID	Fe Loading lbs/day	Rank
DMP-Drauckers1	83.4	1
DMP-Korb4	37.6	2
DMP-Korb2	20.5	3
DMP-BR4.5	13.9	4
PAMP-LA4.3	12.1	5
PAMP-LA3.0-4	11.3	6
DMP-Wildwood	9.3	7
DMP-Widemire	6.3	8
DMP-Drauckers2	3.0	9
DMP-BR4.0	2.8	10
PAMP-LA3.0	2.6	11
DMP-879	1.9	12
DMP-LA5.9-2	0.6	13
DMP-Korb1	0.5	14
DMP-BR3.9	0.5	15
DMP-AC3.75-2	0.3	16
PA-KR1.45-1	0.3	17
DMP-AC3.75-3	0.3	18
PAMP-LA2.10	0.3	19
DMP-Korb3	0.2	20
DMP-AC3.75-1	0.2	21
PAMP-LA3.0-1	0.1	22
DMP-LA5.9-1	0.1	23

Ranking by Manganese Loading

Monitoring Point ID	Mn Loading lbs/day	Rank
DMP-Drauckers1	23.3	1
DMP-BR4.5	21.3	2
PAMP-LA4.3	16.0	3
PAMP-LA3.0-4	10.5	4
DMP-Drauckers2	9.1	5
DMP-BR4.0	7.9	6
DMP-Korb4	7.4	7
PA-KR1.45-1	5.8	8
DMP-Widemire	2.6	9
DMP-Wildwood	2.6	10
DMP-LA5.9-2	2.5	11
DMP-LA5.9-1	2.3	12
PAMP-LA3.0	2.1	13
PAMP-LA2.10	1.7	14
DMP-Korb2	1.5	15
DMP-BR3.9	1.3	16
DMP-AC3.75-3	0.5	17
PAMP-LA3.0-1	0.4	18
DMP-879	0.2	19
DMP-AC3.75-2	0.1	20
DMP-AC3.75-1	0.1	21
DMP-Korb3	0.1	22
DMP-Korb1	0.0	23

Sub-Basin Priorities

The priority restoration sites were also categorized according to the sub-basins into which they drained. The sub-basins included: Anderson Creek, Little Anderson Creek, Kratzer Run, and Bilger Run. Rock Run was not considered a priority sub-basin at this time because of the significant pollution sources elsewhere in the watershed. Priorities were primarily based on measured existing load in pounds per day of acid and aluminum, with iron and manganese measured existing loads being the bigger determinant on discharges approaching a net-alkaline condition.

Little Anderson Creek Sub-basin

Little Anderson Creek Priorities

Monitoring Point	Priority
DMP- Drauckers 1	1
DMP-Korb 4	2
PAMP-LA 4.3	3
PAMP-LA 3.0	4
DMP-Drauckers 2	5
PAMP-LA 3.0-4	6
PAMP-LA 2.1	7
PAMP-LA 3.0-1	8
PAMP-LA 5.9-2	9
PAMP-LA 5.9-1	10

Anderson Creek Sub-basin

Anderson Creek Priorities

Monitoring Point	Priority
DMP-Korb 2	1
DMP-AC 3.75-3	2
DMP-AC 3.75-2	3
DMP-Korb 1	4
DMP-AC 3.75-1	5
DMP-Korb 3	6

Bilger Run Sub-basin

Bilger Run Priorities

Monitoring Point	Priority
DMP- BR 4.5	1
DMP- BR 4.0	2
DMP-BR 3.9	3
DMP-Wildwood	4

Kratzer Run Sub-basin

Kratzer Run Priorities

Monitoring Point	Priority
PAMP KR 1.45-1	1
DMP-Widemire	2
DMP-879	3

Technical and Financial Assistance Needs

Estimates of Remediation Costs

Estimates of costs to construct AMD treatment systems are given for the top fifteen (15) priority sites for restoration. The sites are listed under the sub-basin that they affect. Three methods were used in developing cost estimates—two for passive treatment systems and one for active treatment systems.

One of the methods used to estimate costs for passive treatment systems used the Watershed Restoration Analysis Model (WRAM). WRAM is a loading-based tool that predicts the downstream benefits of treating AMD discharges within a watershed. The Microsoft Excel-based spreadsheet program also generates conceptual passive treatment system component sequences and sizing requirements, cost estimates, and construction area requirements. The user can select one or more AMD sources to treat, then evaluate the predicted downstream water quality improvements in comparison to potential costs. This allows for rapid screening to prioritize AMD abatement projects by cost/benefit ratios (DEP/PSU).

The Penn State ArcView Generalized Watershed Loading Function (AVGWLF) program is an ArcView GIS-based system that also is used for modeling of pollutant loading in streams. A component of AVGWLF is capable of predicting stream flow statistics using historic weather records and watershed-specific factors such as size, slope, surface cover, and soils. This approach has proven effective for estimating long-term flow characteristics for watersheds that do not have continuous flow records (DEP/PSU).

WRAM and AVGWLF were combined to create the WRAM/AVGWLF program, which combined the modeling capabilities of both programs in order to predict the type and costs of constructing passive AMD treatment systems and model in-stream load reductions simultaneously. It uses data from the 12-month assessment sampling, coupled with WRAM software to recommend a passive treatment type. Each AMD discharge monitoring point and its unique water chemistry help define the treatment system components and their costs. AVGWLF is used to help better predict what chemical changes will occur in-stream as a result of treating each of the priority discharges and removing the pollution loading. Long-term flows, produced by AVGWLF, provide a more accurate depiction of what can be expected.

WRAM/AVGWLF was developed in cooperation between DEP, Bureau of Watershed Management’s Section 319 program, Penn State University, and a private consulting firm, and is primarily used as a water quality modeling tool. Because several AMD discharge sites contained water quality that pushes the limits of passive treatment technology, cost estimates are also given for active chemical treatment and annual operation and maintenance as a comparison. Estimated treatment costs for either passive or active treatment must be viewed with the understanding that reliable estimates can only be developed by performing thorough on-site investigations and developing detailed design-engineering estimates, which are beyond the scope of this assessment. The estimates given are based on the WRAM model and discussions with experienced AMD treatment system designers.

Land reclamation estimates associated with the priority sites are unavailable and were not developed during this assessment. A very general ranking of the amount of land reclamation associated for each priority site is given if applicable. As with the AMD remediation project estimates, reliable land restoration estimates can only be developed with thorough on-site investigations and engineering estimates, which are beyond the scope of this assessment.

Little Anderson Creek Priorities – System Type/Estimated Costs

Little Anderson Creek Projects - Estimated AMD Treatment Costs					
Monitoring Site	**Treatment Type**	**System Type**	**Estimated Cost of Construction**	**Operation, Maintenance & Replacement***	****Land Reclamation**
DMP-Draucker1	WRAM Passive	VFW, settling basin, wetland, manganese bed	$2,700,000	$108,000/yr over 20yr life of system*	**Significant**
	Active	Chemicals, settling basin	$250,000	Chemical costs $80,000 over 20yrs	
DMP-Korb 4	WRAM Passive	VFW, settling basin, wetland, manganese bed	$1,133,000	$906,000 over 20yr life of system*	**Minimal**
	Active	Chemicals, settling basin	$250,000	Chemical costs $80,000 over 20yrs	
PAMP-LA 4.3	Passive	VFP/SAPS, settling basin, wetland	$1,000,000	$800,000 over 20yr life of system*	**Moderate**
	WRAM Passive	VFW, settling basin, wetland, manganese bed	$1,402,500	$1,120,000 over 20yr life of system*	
	Active	Chemicals, settling basin	$250,000	Chemical costs $50,000 over 20yrs.	
PAMP-LA 3.0	Passive	VFP/SAPS, settling basin, wetland	$200,000	$160,000 over 20yr life of system*	**Significant**
	WRAM Passive	VFW, wetland	$1,000,000	$800,000 over 20yr life of system*	
	Active	Chemicals, settling basin	250,000	Chemical costs $80,000 over 20yrs	
DMP-Draucker2	Passive	ALD, settling pond, wetland	$150,000	$120,000 over 20yr life of system*	**Minimal**
	WRAM Passive	VFW, wetland	$1,348,200	$1,078,000 over 20yr life of system*	
Subtotals	Passive		$5,183,000 to $7,583,700	$1,986,000 to $3,904,000 over 20yr life	
	Active & Passive		$1,150,000	$410,000 to $1,288,000 over 20yrs	

***Note: One-time system replacement cost included in estimate**

****Note: Land reclamation costs not included in cost estimations**

Bilger Run Priorities - System Type/Estimated Costs

Bilger Run Projects - Estimated AMD Treatment Costs					
Monitoring Site	**Treatment Type**	**System Type**	**Estimated Cost of Construction**	**Operation, Maintenance & Replacement***	****Land Reclamation**
DMP- BR 4.5	WRAM Passive	VFW, settling basin, wetland, manganese bed	$1,495,687	$1,196,000 over 20yr life of system*	**Moderate**
	Active	Chemicals, settling basin	$200,000	Chemical costs $60,000 over 20yrs	
DMP-BR 4.0	Passive	VFP/SAPS, settling basin, wetland	$225,000	$180,000 over 20yr life of system*	**N/A**
	WRAM Passive	VFW, settling basin, wetland, manganese bed	$565,901	$452,000 over 20yr life of system*	
	Active	Chemicals, settling basin	$250,000	Chemical costs $80,000 over 20yrs	
DMP-BR 3.9	Passive	ALD, settling pond	$115,000	$40,000 over 20yr life of system*	**N/A**
	WRAM Passive	VFW, wetland	$114,632	$40,000 over 20yr life of system*	
DMP-Wildwood	Passive	ALD, settling pond	$350,000	$280,000 over 20yr life of system*	**N/A**
	WRAM Passive	VFW, settling basin, wetland, manganese bed	$636,855	$510,000 over 20yr life of system*	
Subtotals	Passive		$2,185,687 to $2,813,075	$1,696,000 to $2,198,000 over 20yr life	
	Active & Passive		$915,000 to $1,201,855	$460,000 to $690,000 over 20yrs	

***Note: One-time system replacement cost included in estimate**
****Note: Land reclamation costs not included in cost estimations**

Kratzer Run Priorities - System Type/Estimated Costs

Kratzer Run Projects - Estimated AMD Treatment Costs					
Monitoring Site	**Treatment Type**	**System Type**	**Estimated Cost of Construction**	**Operation, Maintenance & Replacement***	****Land Reclamation**
PAMP-KR 1.45-1	Passive	Flushing limestone pond, settling basin, wetland	$150,000	$120,000 over 20yr life of system*	**Significant**
	WRAM Passive	VFW, settling basin, wetland, manganese bed	$741,000	$600,000 over 20yr life of system*	
DMP-Widemire	Passive	Flushing limestone pond, settling basin, wetland	$250,000	$200,000 over 20yr life of system*	**N/A**
	WRAM Passive	VFW, settling basin, wetland	$418,698	$334,000 over 20yr life of system*	
DMP-879	Passive	Aeration, settling pond	$30,000	$24,000 over 20yr life of system*	**N/A**
	WRAM Passive	Settling pond, wetland	$20,558	$16,400 over 20yr life of system*	
Subtotals	Passive		$430,000 to $1,180,256	$336,400 to $958,000 over 20 yrs	

***Note: One-time system replacement cost included in estimate**

****Note: Land reclamation costs not included in cost estimations**

Anderson Creek Main Stem Priorities - System Type/Estimated Costs

Anderson Creek Mainstem Projects - Estimated AMD Treatment Costs					
Monitoring Site	**Treatment Type**	**System Type**	**Estimated Cost of Construction**	**Operation, Maintenance & Replacement***	****Land Reclamation**
DMP- Korb2	WRAM Passive	VFW, settling basin, wetland	$871,451	$696,000 over 20yr life of system*	**Moderate**
	Active	Chemicals, settling basin	$250,000	Chemical costs $100,000 over 20yrs	
DMP-AC 3.75-3	Passive	Flushing limestone pond, settling basin, wetland	$150,000	$120,000 over 20yr life of system*	**N/A**
	WRAM Passive	VFW, settling basin, wetland	$453,255	$362,600 over 20yr life of system*	
DMP-AC 3.75-2	Passive	Flushing limestone pond, settling pond, wetland	$50,000	$40,000 over 20yr life of system*	**Moderate**
	WRAM Passive	VFW, wetland	$116,000	$92,800 over 20yr life of system*	
Subtotals	Passive		$1,071,451 to $1,440,706	$856,000 to $1,151,400 over 20yr life	
	Active & Passive		$450,000 to $819,255	$260,000 to $555,400 over 20yrs	

***Note: One-time system replacement cost included in estimate**

****Note: Land reclamation costs not included in cost estimations**

Combined Subbasin Priorities – Total Estimated

Combined Anderson Creek Projects - Total Estimated AMD Treatment Costs					
Subwatershed	**Treatment Type**	**System Type**	**Estimated Cost of Construction Subtotal**	**Operation, Maintenance & Replacement***	****Land Reclamation**
Little Anderson Creek	Passive	Various Passive Treatment Types	$5,183,000 to $7,583,700	$97,000 to $195,200 over 20yr life	**Significant**
	Active & Passive	Quick lime doser	$1,150,000	$3,625,000 over 20yrs	
Bilger Run	Passive	Various Passive Treatment Types	$2,185,687 to $2,813,075	$84,800 to $109,900 over 20yr life	**Moderate**
	Active & Passive	Quick lime doser	$915,000 to $1,201,855	$175,000 over 20yrs	
Anderson Creek Mainstem	Passive	Various Passive Treatment Types	$1,071,451 to $1,440,706	$42,800 to $57,570 over 20yr life	**Moderate**
	Active & Passive	Quick lime doser	$450,000	$125,000 over 20yrs	
Kratzer Run	Passive	Various Passive Treatment Types	$430,000 to $1,180,256	$336,400 to $958,000 over 20 yrs	**N/A**
Totals for all Restoration	Passive		$8,870,138 to $13,017,737	$241,800 to $410,190 over 20 yrs	
	Active & Passive		$2,945,000 to $3,982,111	$3,784,700 to $3,972,520 over 20yrs	

***Note: One-time system replacement cost included in estimate**

****Note: Land reclamation costs not included in cost estimations**

Funding and Support Sources

No restoration/implementation funding was totally secured for any of the identified priority sites in any of the sub-basins at the time of the completion of the assessment report. However, funding to implement restoration projects on three priority sites in the Bilger Run sub-basin was being pursued. As mentioned earlier, the two highest priority sites are being targeted for treatment by DEP. Preliminary negotiations have been initiated with a local energy producer to set up a trust fund for the operation and maintenance of an active treatment system at the highest priority site, DMP-BR 4.5. Pennsylvania's Bureau of Abandoned Mine Reclamation (BAMR) has agreed to fund the construction of the active treatment system and the energy producer has agreed in principle to fund the operation and maintenance of the system. In addition, BAMR is planning to address the #2 priority site, DMP-BR 4.0, by constructing another treatment system at that site. The type of treatment system had not been determined as of the completion of the assessment report, but water quality indicates active treatment may be the best option. In addition, ACWA made application to the Pennsylvania Growing Greener Grant Program to design and construct a passive AMD treatment system on the #3 priority site in Bilger Run, DMP-3.9. Additional financial support, through in-kind services, will be provided by the ACWA, Clearfield County Conservation District, and the PA Senior Environmental Corps, through operation and maintenance and monitoring. The design consultant is offering in-kind support through discounted service fees. The property owner is also providing in-kind support through the use of his land.

Additional sources of funding and support for restoration efforts associated with the remaining priority sites have been identified and include:

- EPA non-point source pollution funding, targeted watershed grants, state revolving funds, Brownfields Initiative, and environmental education grants
- OSM Appalachian Clean Streams Initiative, summer internships, and Title IV AML programs
- DEP Growing Greener Environmental Stewardship/Watershed Protection and Technical Assistance Grant (TAG) program
- DEP Moshannon District Mining Office technical assistance and support
- DEP Bureau of Abandoned Mine Reclamation technical assistance and financial support
- DEP Bureau of Dams & Waterways Engineering technical assistance with permitting and wetlands issues
- DEP Bureau of Mining and Reclamation through reclamation planning, remining, and alkaline addition initiatives
- Western Pennsylvania Conservancy technical assistance
- USDA Natural Resources Conservation Service PL-566 Watershed Protection and Flood Prevention Act funding and technical services center assistance
- Canaan Valley Institute technical and financial assistance

- Headwaters Resource Conservation and Development Area technical assistance and support
- Headwaters Charitable Trust financial support
- Clearfield County Conservation District technical support and monitoring
- PA Senior Environmental Corps technical support and monitoring
- Pike Township administrative and technical assistance
- Pike Township Water Authority monitoring site access
- Western Pennsylvania Watershed Program financial support
- Western Pennsylvania Coalition for Abandoned Mine Reclamation technical support
- PA Fish and Boat Commission technical assistance
- PA Trout Unlimited technical assistance
- Mining industry support through cooperative remining initiatives
- Private industry support through cooperative financial and technology initiatives