2010 NPS Report - Huff Run Watershed

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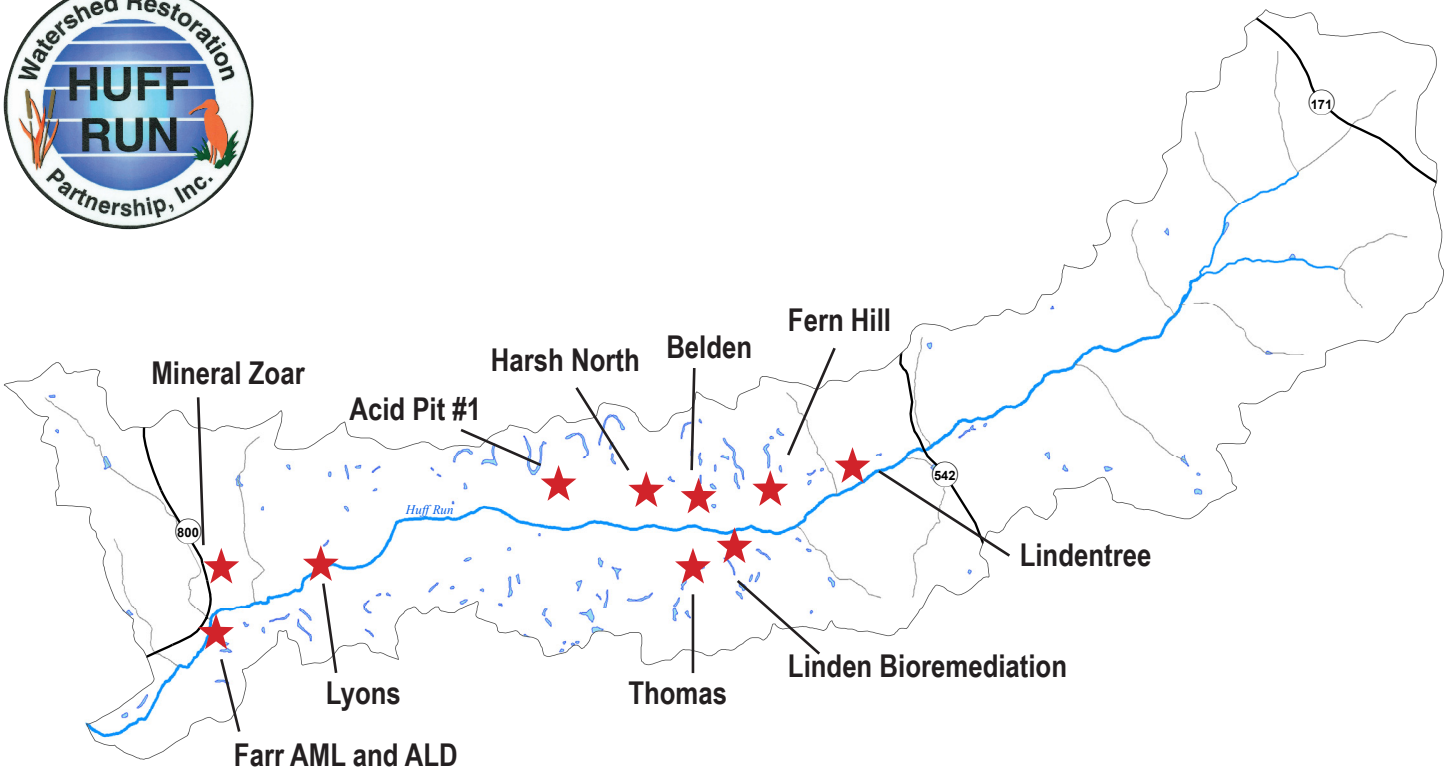

• Huff Run flows from the Morges community in Carroll County, into Tuscarawas County and has its confluence in the Conotton Creek just South of Mineral City, Ohio. Huff Run is 9.9 miles long with a 13.9 square mile watershed. Almost all land east of State Route 542 (about 2/3 of the watershed) has been mined for coal and some limestone and clay. Because much of the land mined was not reclaimed, the watershed is plagued with the resulting acid mine drainage. Other pollution issues in the watershed include illegal dumping, poor riparian buffers, raw sewage entering the stream, oil and gas impacts, and agricultural impacts.

• The Huff Run Watershed Restoration Partnership Inc. (HRWRP) was founded in 1996 by a group of concerned citizens. The HRWRP has partnered with ODNR/MRM, Rural Action, OEPA, Crossroads RC&D, OSM and others to fulfill their mission statement which is “To restore the Huff Run watershed by improving water quality and enhancing wildlife habitat, through community support and involvement.”

• The Farr Anoxic Limestone Drain, the first passive treatment system in the watershed, was constructed in 2000. Also, HRWRP can boast of building the first bioremediation system in Ohio with their Linden Restoration Project. They also were awarded a US EPA Targeted Watershed Grant in 2005 for their Belden Successive Alkaline Producing System. At their 10 year anniversary, seven restoration projects have been completed with funding obtained for five more.

• To learn more about the HRWRP, visit their website at www.huffrun.org or call 330-859-1050 to reach their office.

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Attainment Miles

Total stream miles assessed impacted by mine drainage=9.90 miles

Target #1 indicates 30% attainment of impaired streams by 2010=2.97 miles

2006 progress = 0 miles meeting Full WWH attainment, however 3.90 miles changed from Non-supportive to Partial Attainment

(9.90 miles assessed in 2006)

Completion

Total projects complete = 12 projects

Sub-target 2 - Total projects proposed Huff Run Watershed = 11 projects

Reductions

Total acid load reduction = 81 lbs/day at site HRR08

Total acid load reduction = 908 lbs/day

at project effluent sites Linden, Lindentree, Belden, Acid pit #1, Fern Hill, Thomas, Harsha and Lyons.

Costs

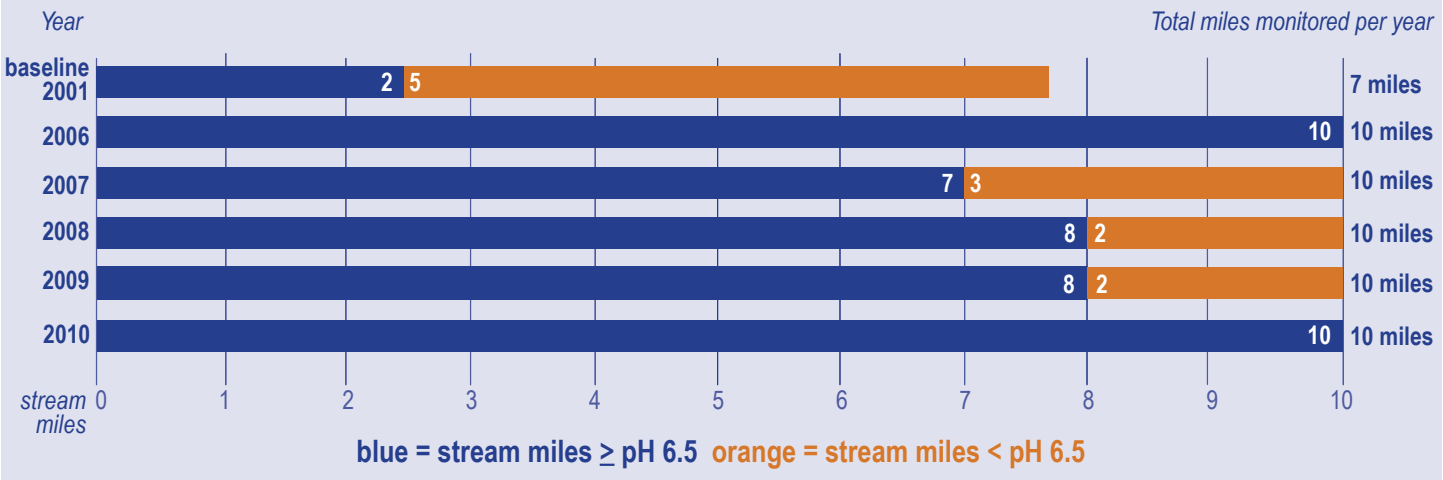
Design $561,586 (excluding Fern Hill, pond A & Belden Gob)

Construction $4,018,576

Total cost through 2010=$4,580,165

The mainstem of Huff Run is approximately 10 miles in length with monitoring occurring year round. In 2009, 8 miles met the pH target of 6.5 while the two downstream stream reaches (HRR08 and HRR07) fall slightly below the target with an average pH of 6.4. In 2010, all 10 miles met the pH target (Figure A).

Figure A. Huff Run pH



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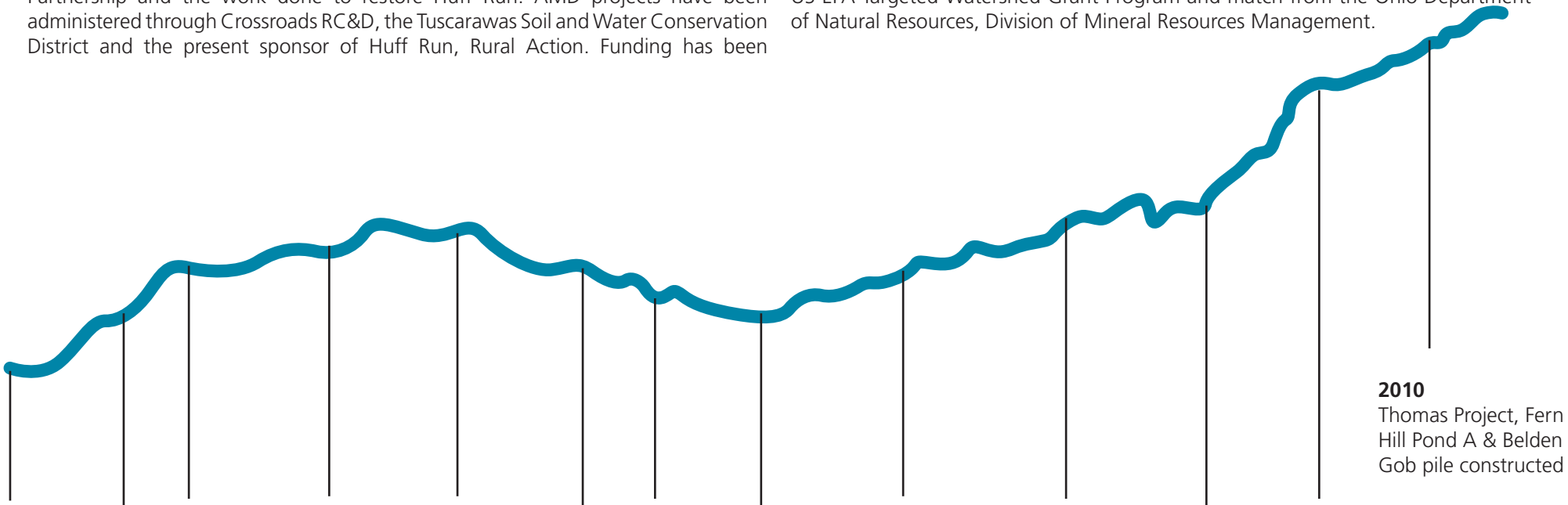
Timeline of the Huff Run Watershed Project Milestones & AMD Projects

This timeline demonstrates this history of the Huff Run Watershed Restoration Partnership and the work done to restore Huff Run. AMD projects have been administered through Crossroads RC&D, the Tuscarawas Soil and Water Conservation District and the present sponsor of Huff Run, Rural Action. Funding has been secured for projects through the Office of Surface Mining, Ohio EPA 319 Program, US EPA Targeted Watershed Grant Program and match from the Ohio Department of Natural Resources, Division of Mineral Resources Management.



1985
Study funded by ODNR/DR conducted by Benatec Associates to identify acid problems in Huff Run Watershed

1988
First abandoned mine land project, Jobes, completed in the watershed

1996
Huff Run Watershed Restoration Partnership founded

2000
Huff Run AMDAT completed

Huff Run Watershed Coordinator funded for six years

First acid mine drainage restoration project, Farr, completed in watershed

2001
First draft of Huff Run Watershed Plan completed

2002
Linden Bioremediation Project constructed

2003
Acid Pit Restoration Project completed

2004
Lindentree Restoration Project completed

2005
Rural Action and Huff Run awarded US EPA Targeted Watershed Grant

Rural Action adds VISTA volunteer to Huff Run staff

Second draft of Huff Run Watershed Plan authored, endorsed by the State of Ohio

Lyons Restoration Project constructed

2006
Harsha North Restoration project completed

2008
Belden Restoration Project constructed

Fern Hill (HR-42) Phase II Project constructed

2009
Huff Run Watershed Coordinator funded for three years

Mineral Zoar Project completed

Rural Action adds AmeriCorps volunteer to Huff Run staff

2010
Thomas Project, Fern Hill Pond A & Belden Gob pile constructed

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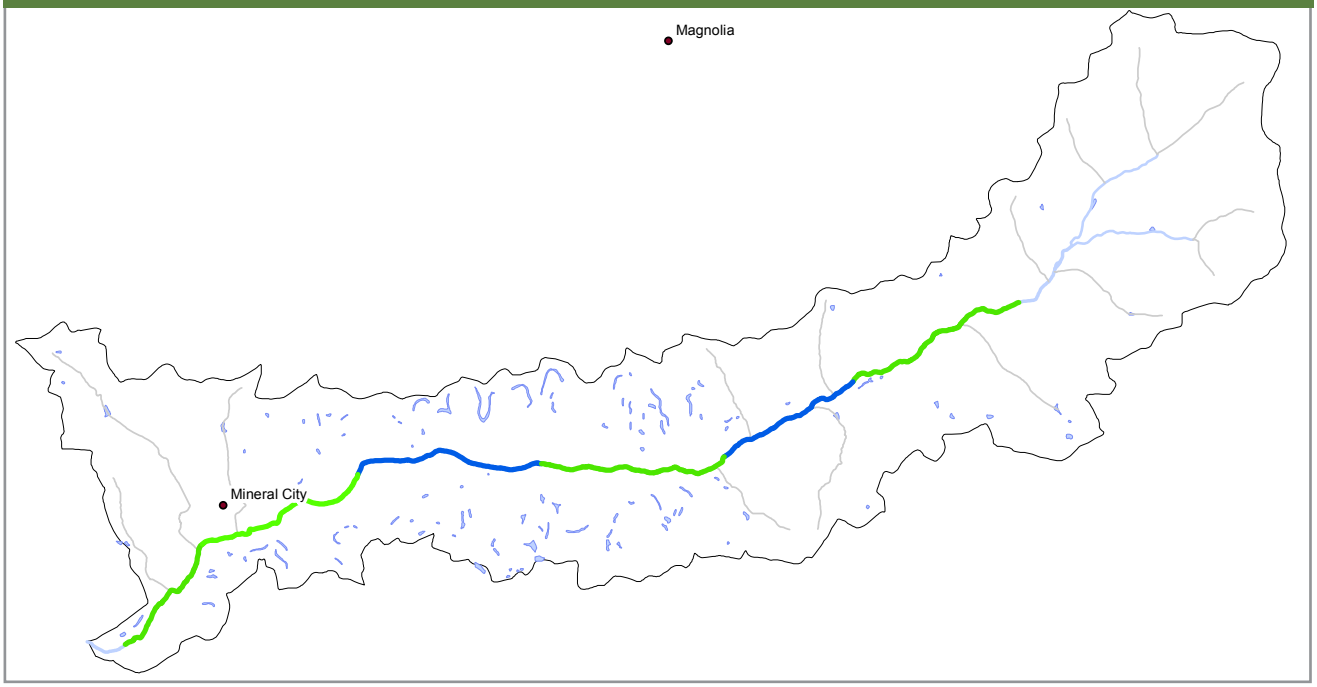
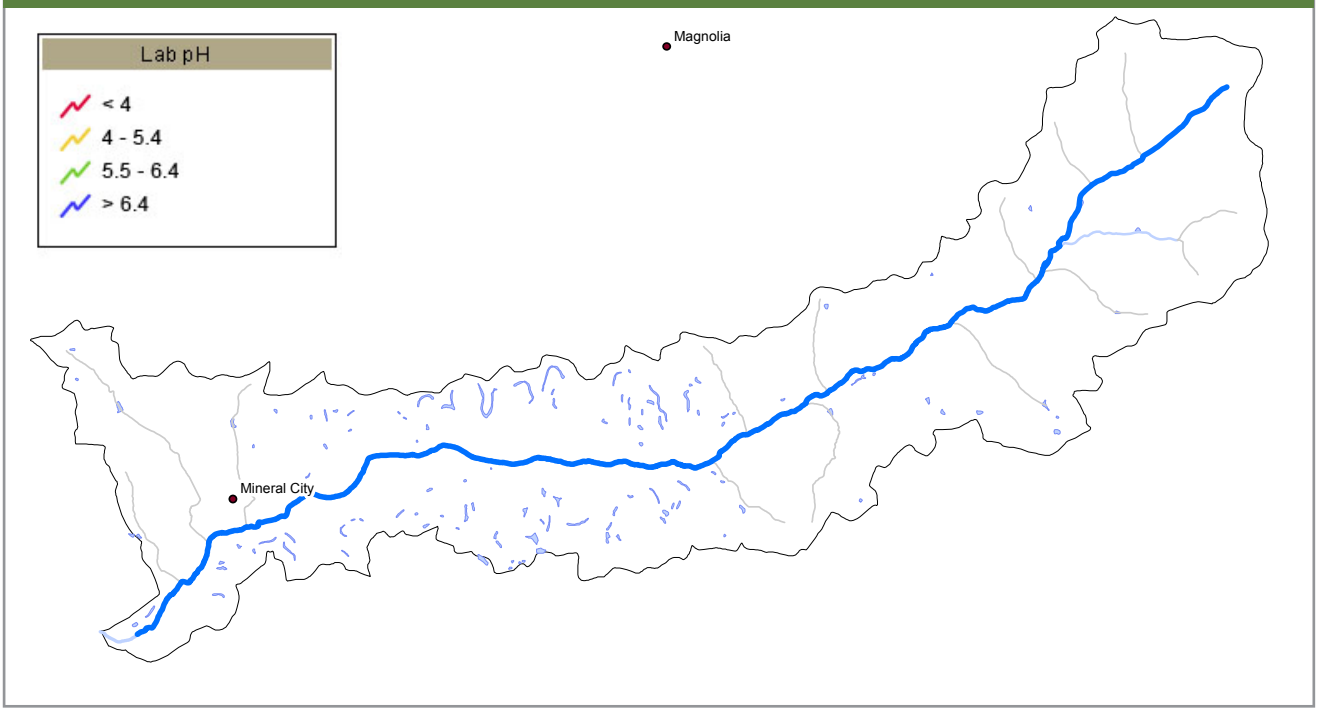
Chemical Water Quality

Huff Run baseline pH



Huff Run 2010 pH



Huff Run pH values have improved from baseline conditions (1985-1998) to 2010.

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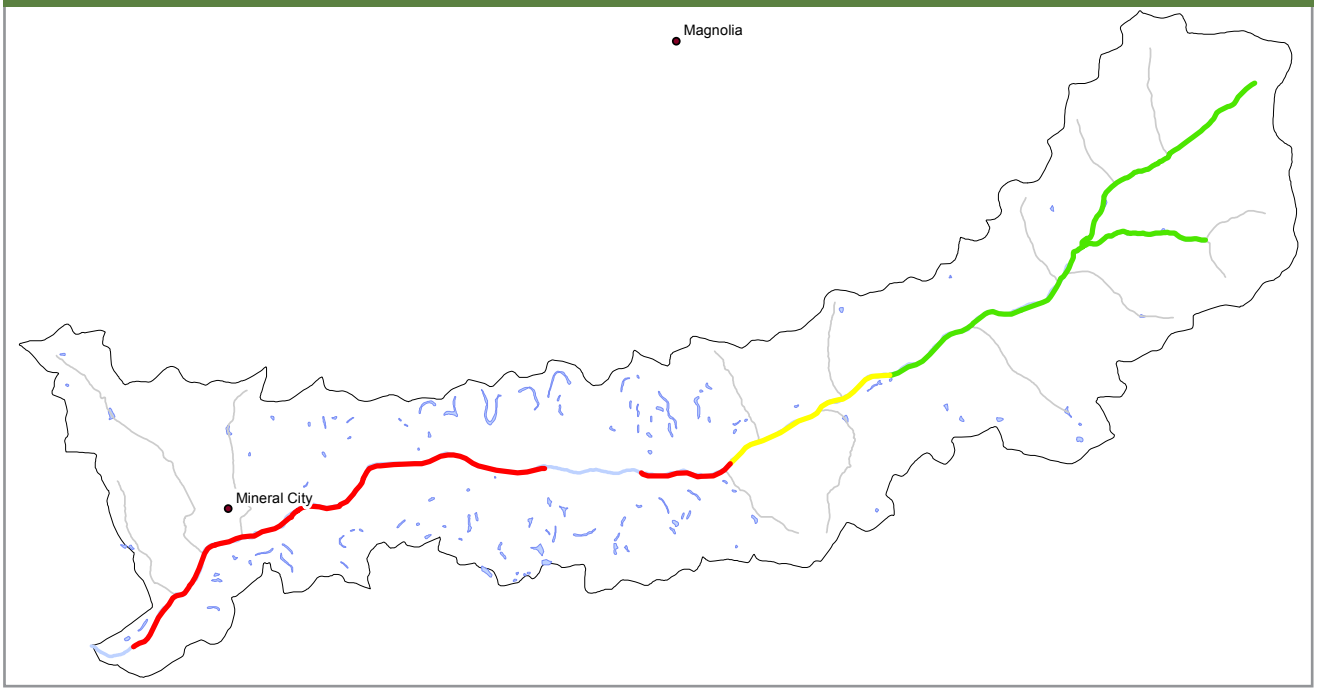
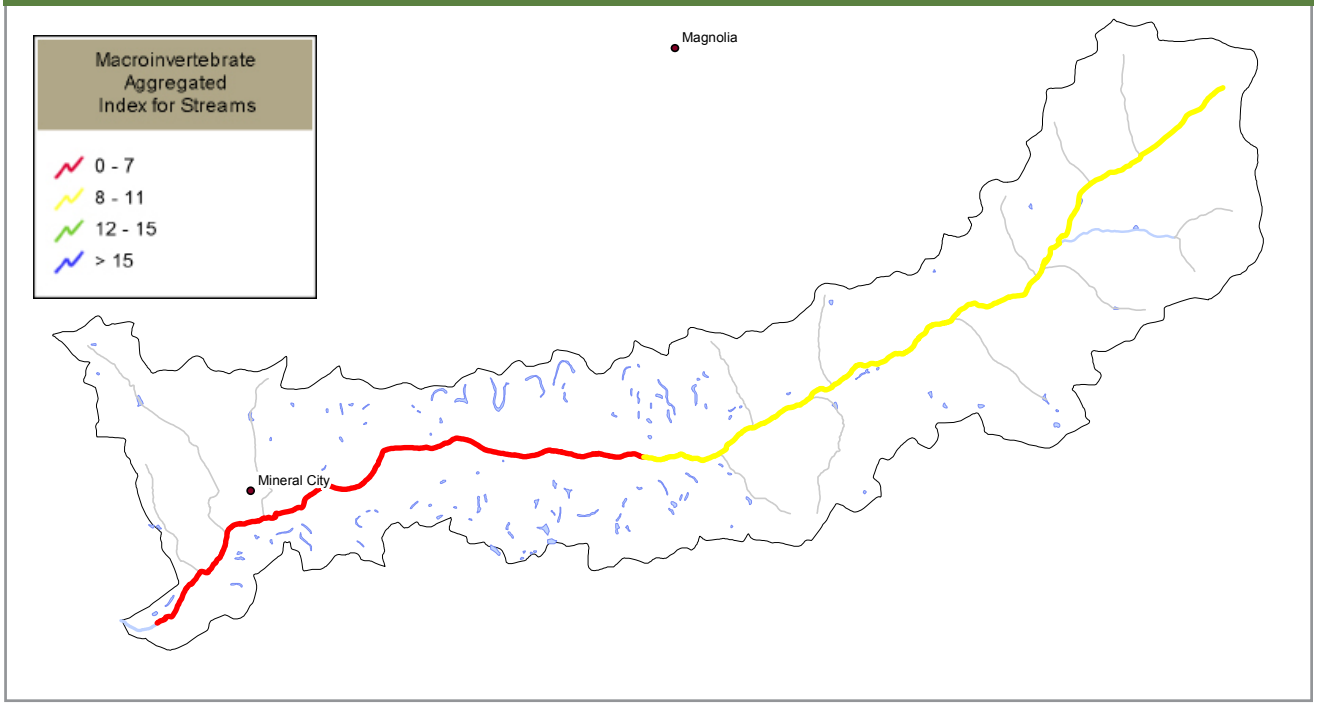
Biological Water Quality

Huff Run baseline MAIS

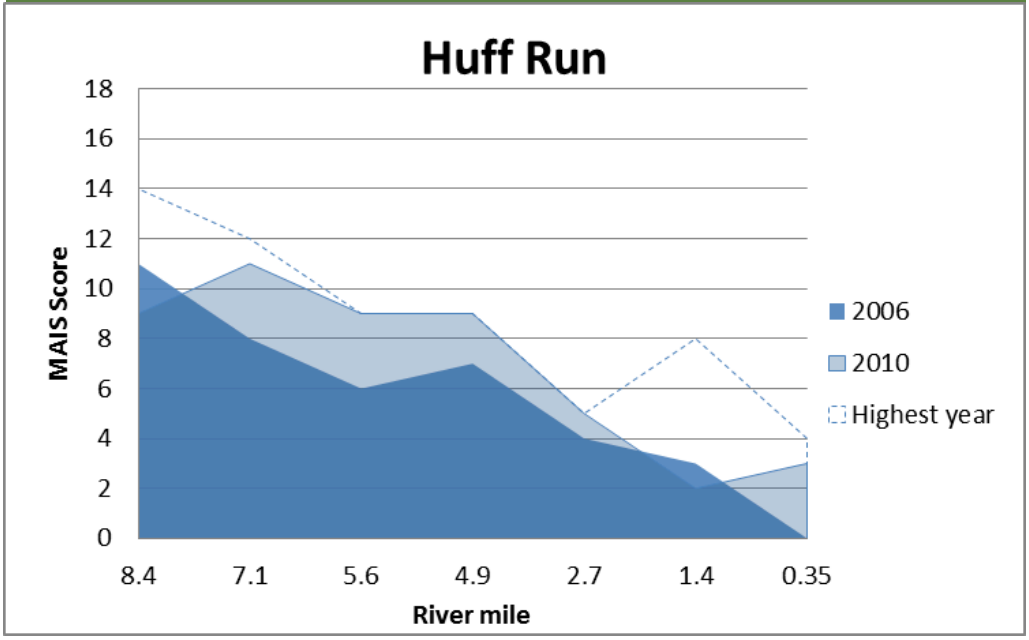


Huff Run 2010 MAIS



Biological quality in Huff Run (based on macroinvertebrate data) showed significant improvements at five stations between 2006 and 2009 (Figure B), but in 2010 scores dropped at the headwaters (RM and 8.4) and the two lowermost sites (RM 1.4 and 0.35), reducing the strength of the trend such that only two river miles (RM 7.1 to 4.9) exhibit more stable improvements in biological quality (Figure C).

Figure B. Huff Run Area of Degradation 2006-2010



The blue dashed line identifies the highest MAIS score ever achieved at that site throughout the monitoring time period.

Figure C. Huff Run MAIS Regressions

RM	MAIS Scores					Linear trends	P-value	No. of years
	2006	*2007*	*2008*	*2009*	*2010*			
8.4	11	12	12	13	9	no change	0.6	5
7.1	8	8	8	9	11	**some improvement**	**0.068**	5
5.6	6	7	6	8	9	**some improvement**	**0.069**	5
4.9	7	9	8	9	9	no change	0.18	5
2.7	4	5	3	4	5	no change	0.76	5
1.4	3	3	2	8	2	no change	0.76	5
0.35	0	4	3	4	3	no change	0.31	5