HUFF RUN WATERSHED

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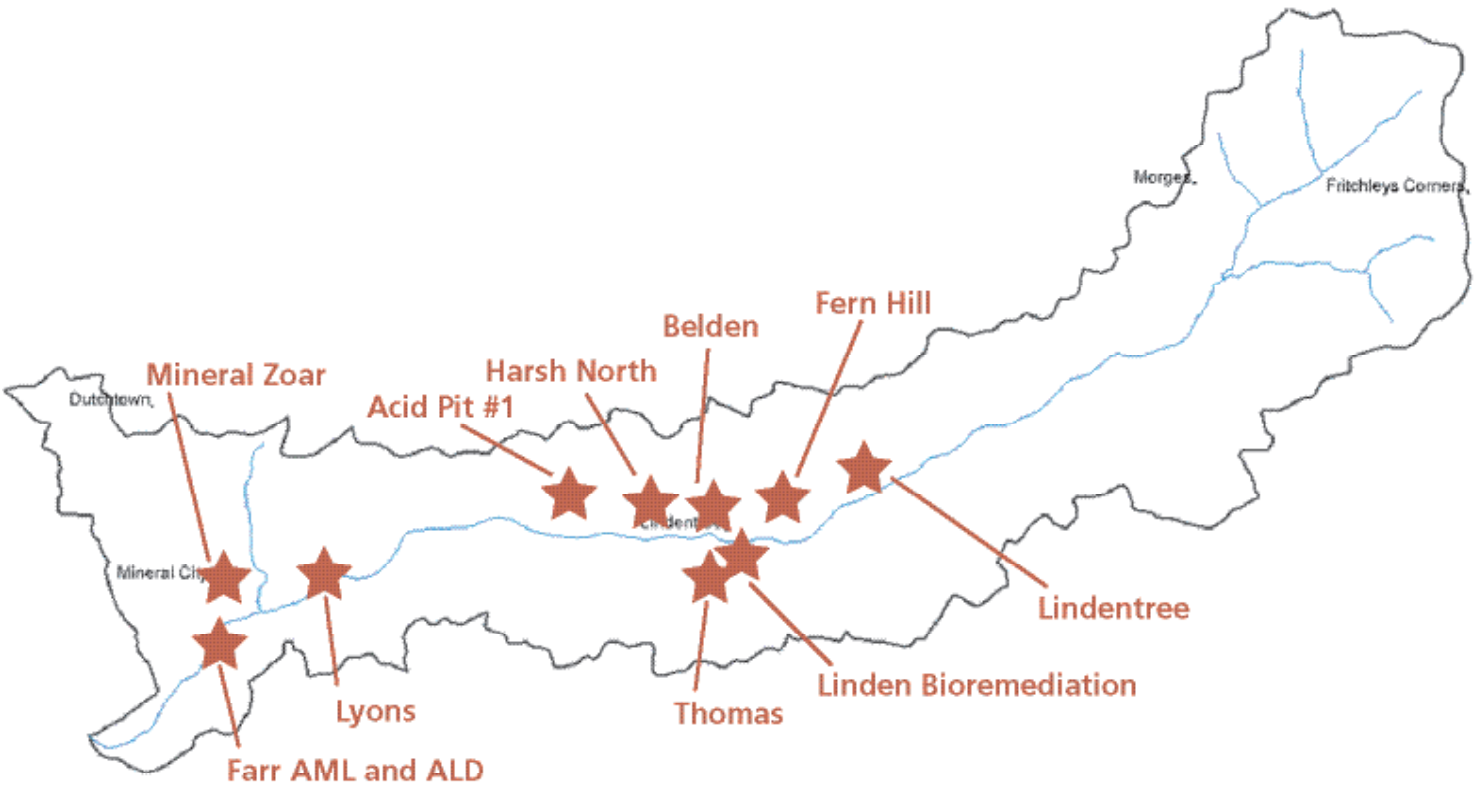


• Huff Run flows from the Morges community in Carroll County, into Tuscarawas County and has its confluence in the Conotton Creek just South of Mineral City, Ohio. Huff Run is 9.9 miles long with a 13.9 square mile watershed. Almost all land east of State Route 542 (about 2/3 of the watershed) has been 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.

Reductions

Total acid load reduction = 82 lbs/day at site HRR08

Total acid load reduction = 141 lbs/day at project effluent sites Linden, Lindentree, and Lyons, where acid load reduction could be calculated.

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

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

Total projects complete = **9 projects**

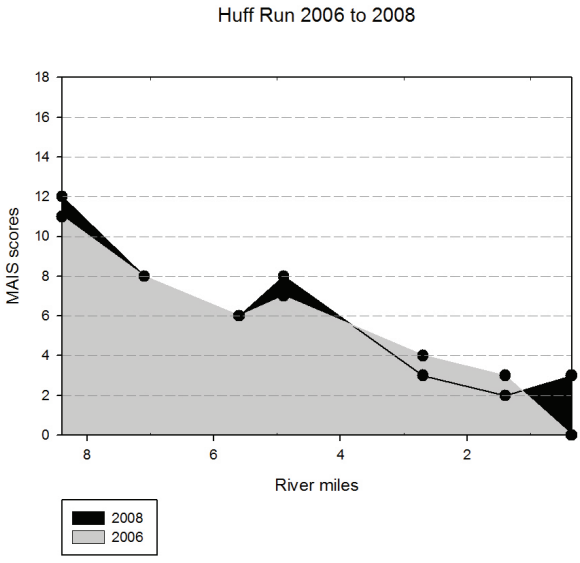
Costs

Design $388,460 (excluding Huff Run AML)

Construction $3,106,739 (excluding Huff Run AML)

Total cost through 2008=$3,495,199

Figure 4. Area of degradation along Huff Run mainstem in 2006 and 2008.



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

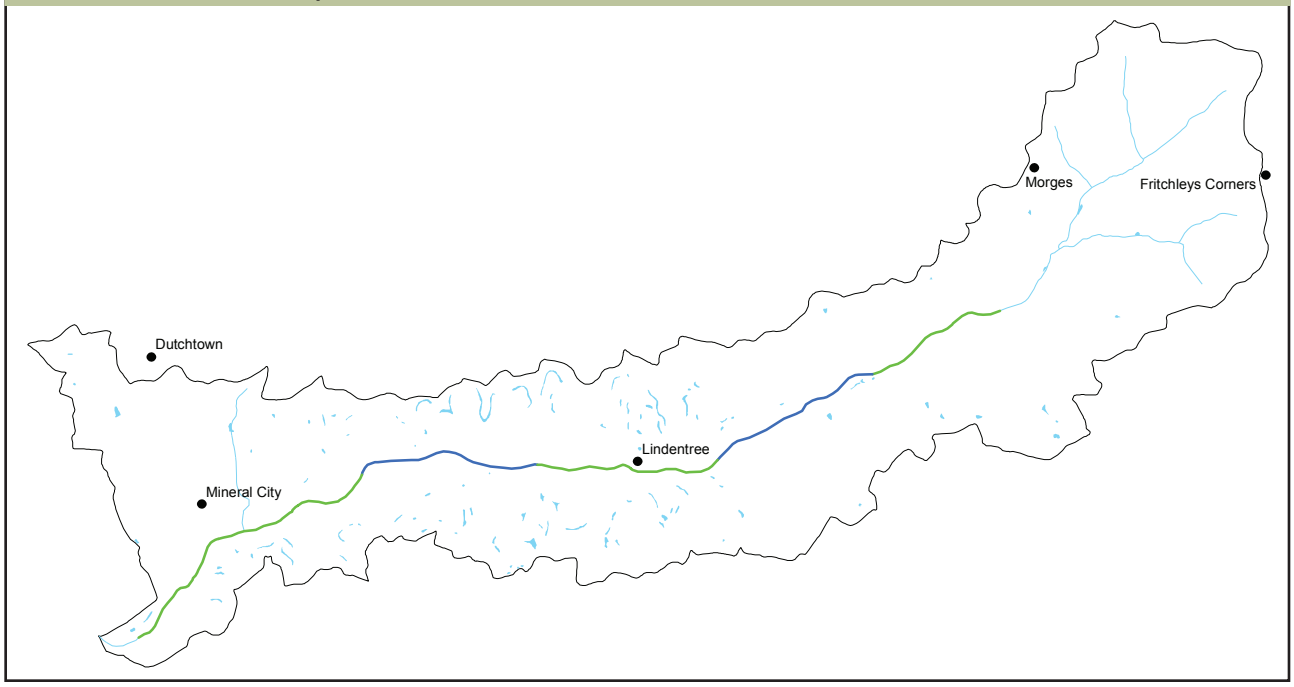
2009 Huff Run Watershed Coordinator funded for three years

Mineral Zoar Project completed

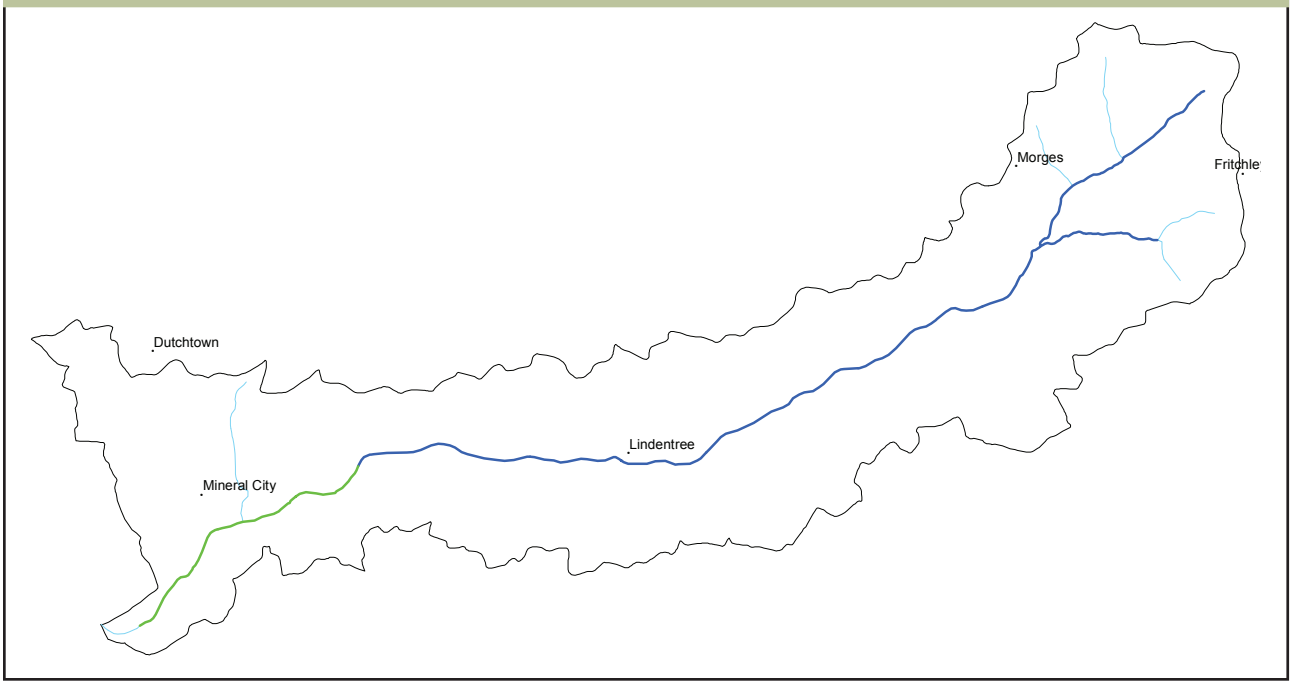
Thomas Project constructed

Rural Action adds AmeriCorps volunteer to Huff Run staff

Huff Run baseline pH



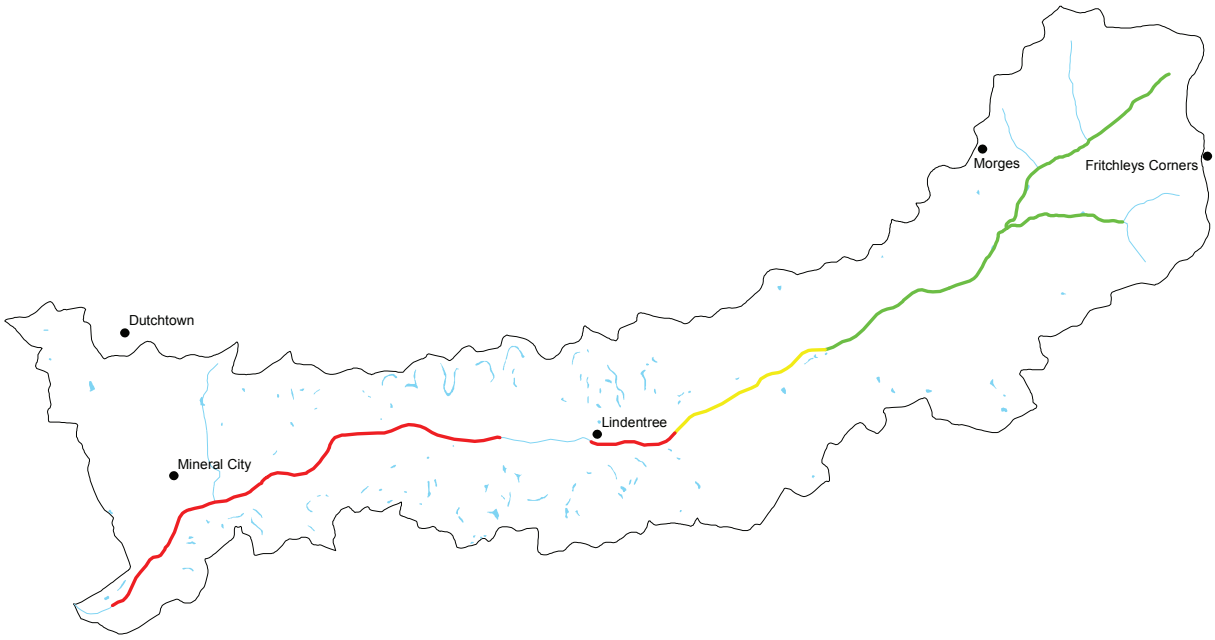
Huff Run 2008 pH



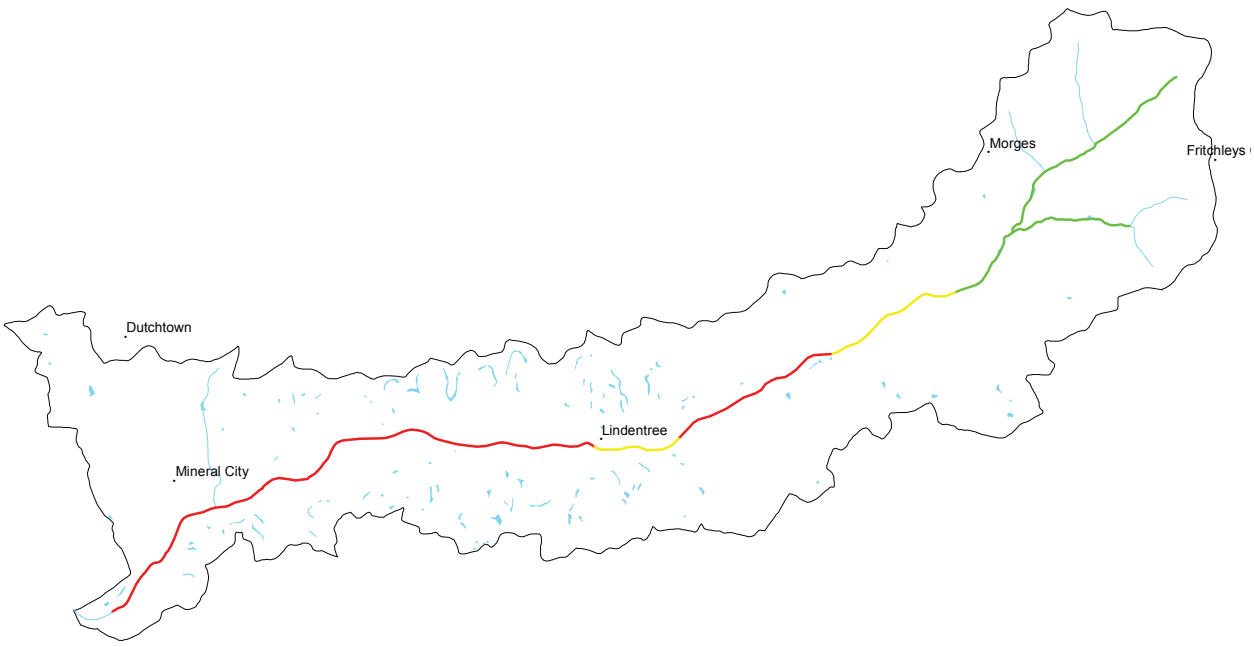
Huff Run pH values have improved from baseline conditions (1985-1998) to 2008. Three mainstem sections totaling 3.7 miles have improved pH values from the range 5.5–6.4 to now meeting water quality standards pH >6.5 since baseline. Huff run mainstem supports 8.3 miles in total that meet the pH standard (>6.5). Sites HRR05, HRR06, to HRR07 have increased in pH and decreased their net acidity values since 2007.

Lab pH
- < 4
- 4 - 5.4
- 5.5 - 6.4
- > 6.4

Huff Run 2005 MAIS



Huff Run 2008 MAIS



Huff Run aquatic life use has improved from baseline conditions (1985-1998) to 2005. Aquatic life use changed from WWH non-sportive to WWH partial attainment along 3.9 miles in Huff Run. In 2008 the MAIS score increased in the headwaters slightly (HR0, RM 8.4) and at HR11/HRR04 the site downstream of Lindentree Project, a pattern held over from 2007.

The area of degradation analysis for the seven mainstem sites along Huff Run in 2008 (-95, Figure 4), shows little change between 2005 (-84), 2006 (-95) and 2007 (-80).

Macroinvertebrate Aggregated Index for Streams

- 0 - 7
- 8 - 11
- 12 - 15
- > 15