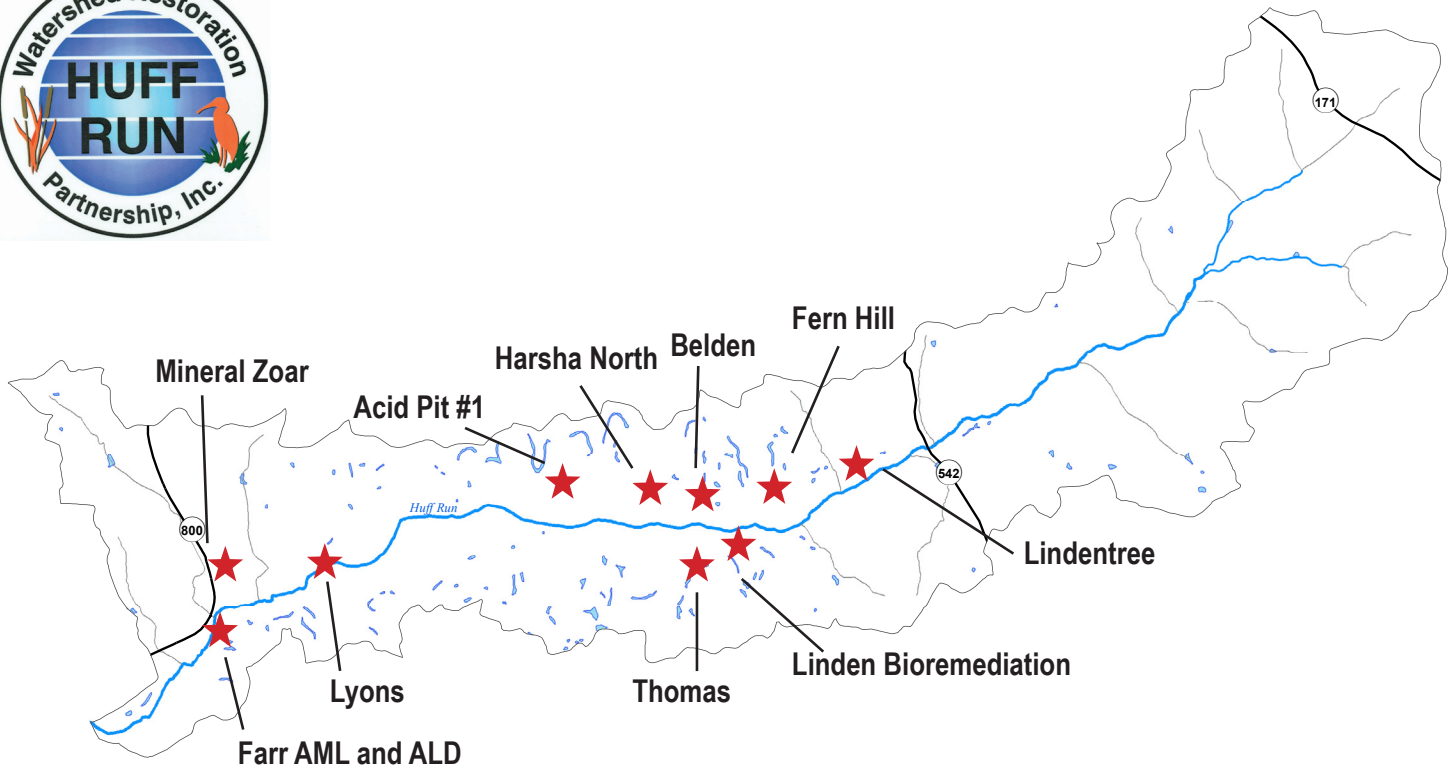


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- Huff Run flows from the Morges community in Carroll County into Tuscarawas County and has its confluence in the Conotton Creek just South of Mineral City, Ohio. Huff Run is 9.9 miles long with a 13.9 square mile watershed. Almost all land east of 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 Farr Anoxic Limestone Drain, the first passive treatment system in the watershed, was constructed in 2000. The 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 has 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.
- 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."

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Reductions

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

Total acid load reduction at all project sites = 965 lbs/day
excluding Mineral Zoar and Farr

Costs

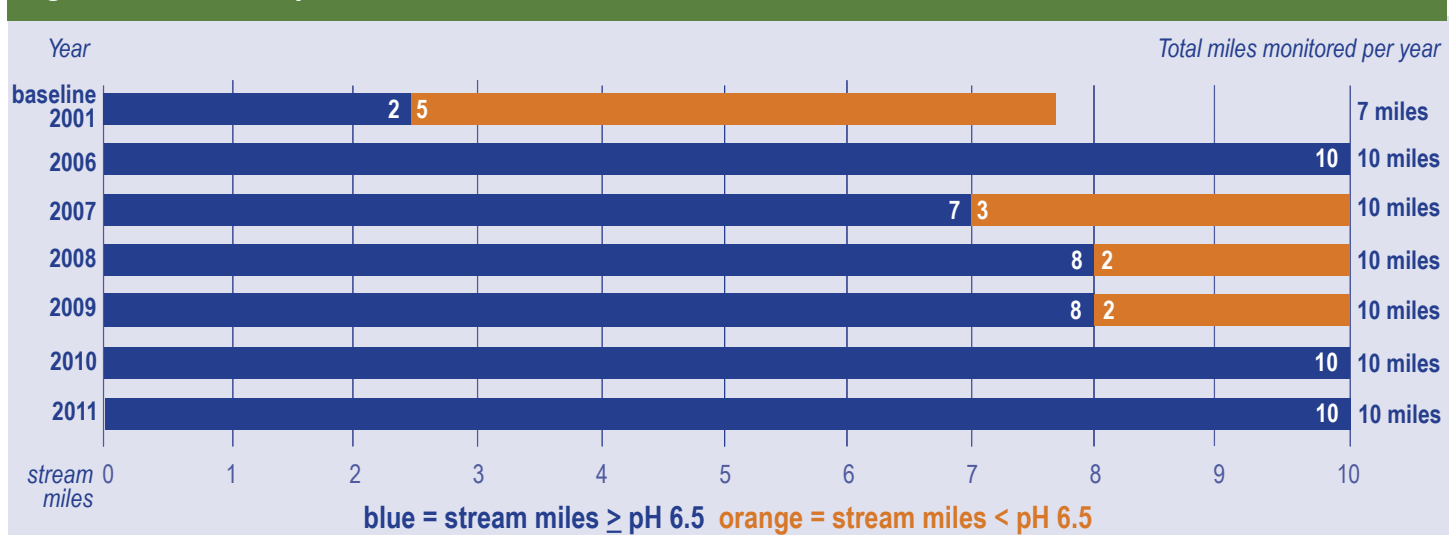
Design \$649,563 (excluding Fern Hill, pond A & Belden Gob)

Construction \$4,028,716

Total cost through 2011=\$4,678,279

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) fell slightly below the target with an average pH of 6.4. In 2010 and 2011, all 10 miles met the pH target (Figure A).

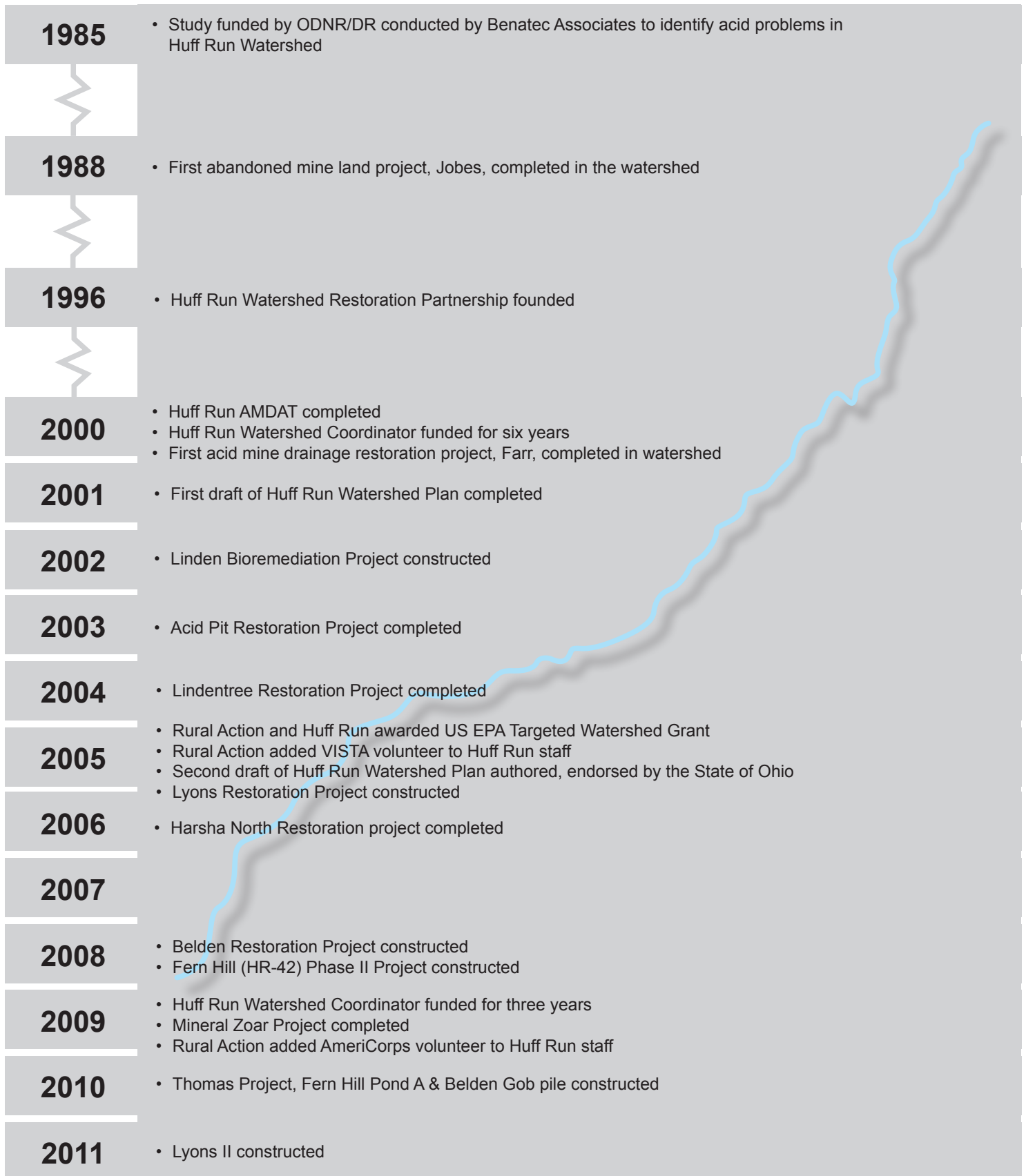
Figure A. Huff Run pH



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TIMELINE OF THE HUFF RUN WATERSHED PROJECT MILESTONES & AMD PROJECTS

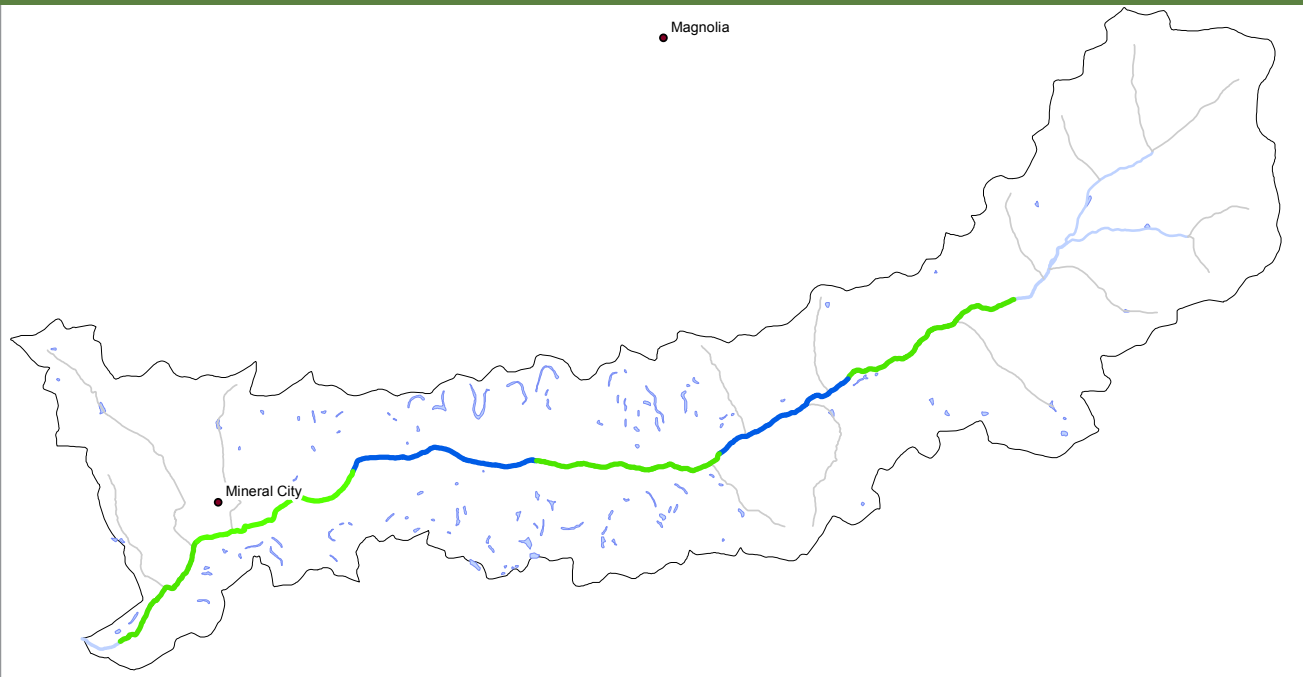


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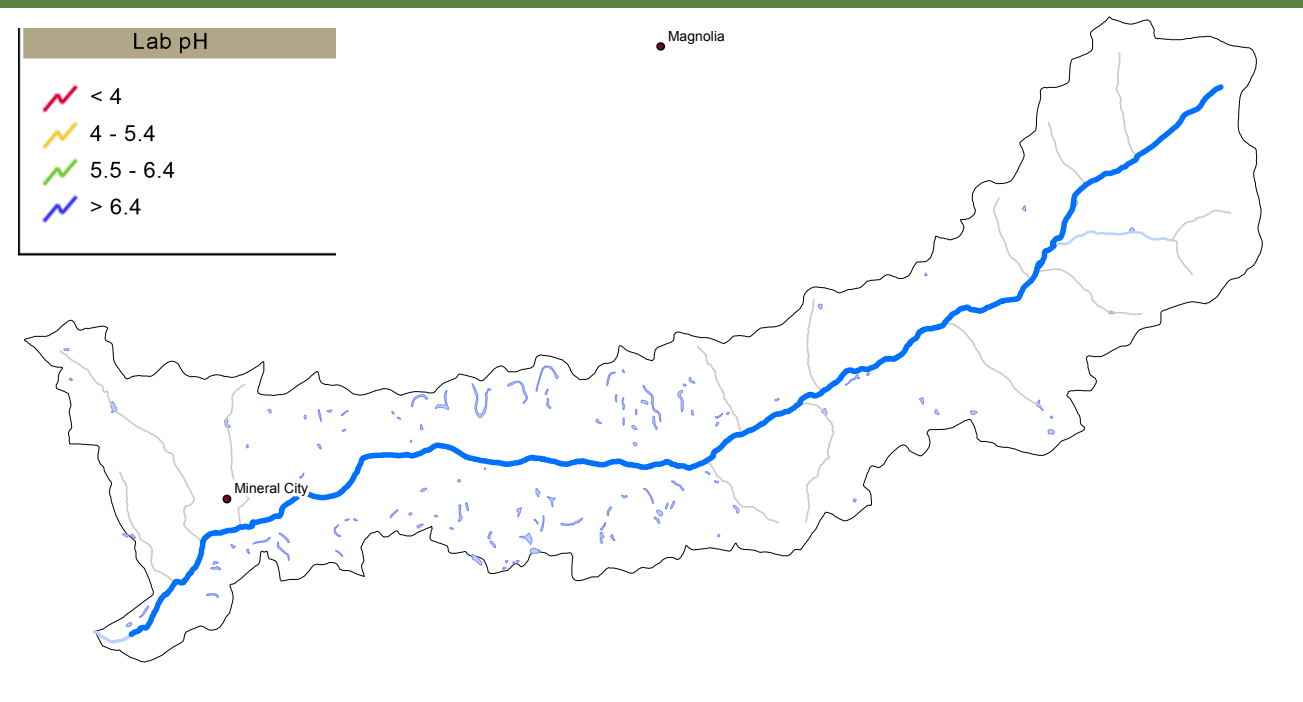
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Chemical Water Quality

Huff Run baseline pH



Huff Run 2011 pH



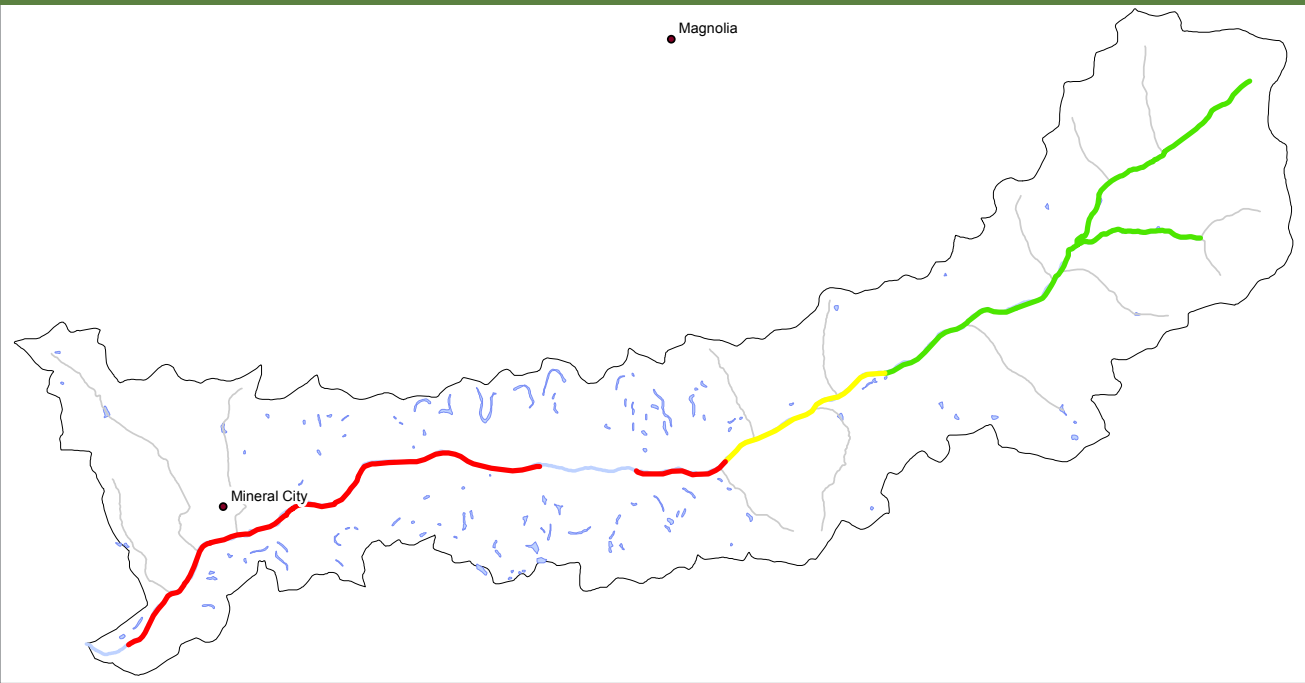
Huff Run pH values have improved from baseline conditions (1985-1998) to 2011. The entire length of Huff Run has met the pH target (6.5) for the last two years.

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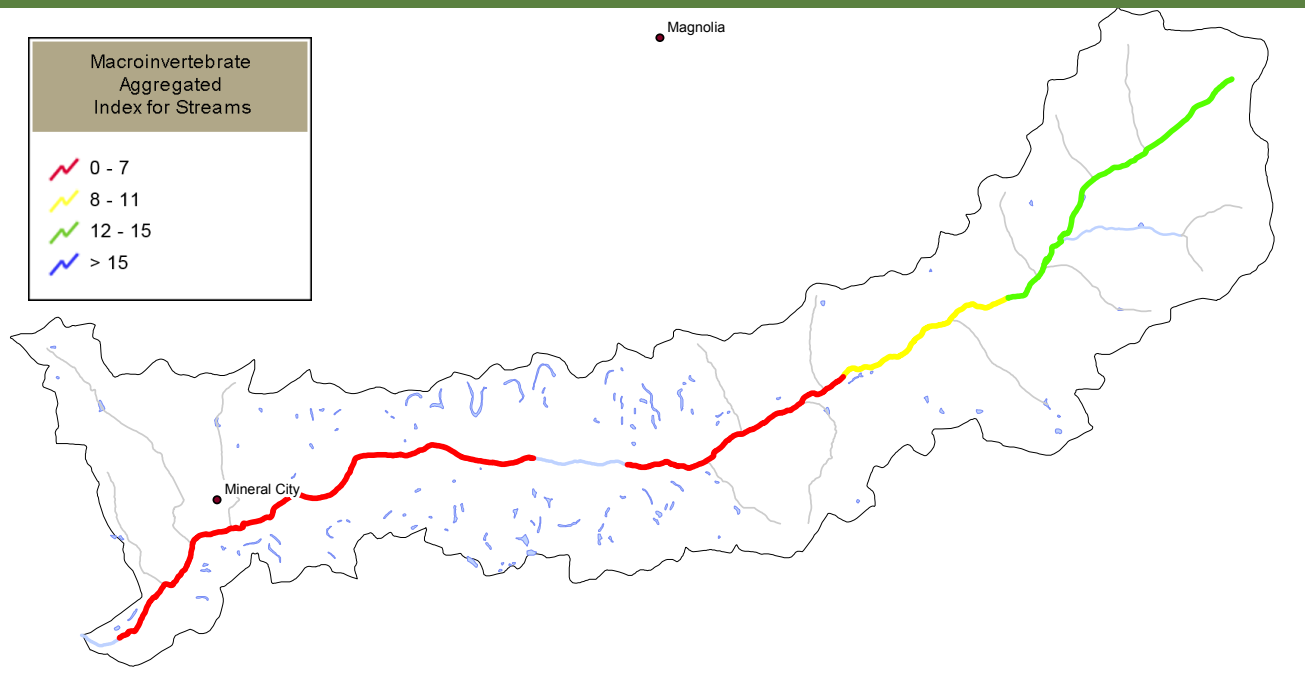
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Biological Water Quality

Huff Run baseline MAIS



Huff Run 2011 MAIS



Biological quality in Huff Run decreases from headwaters to the mouth.

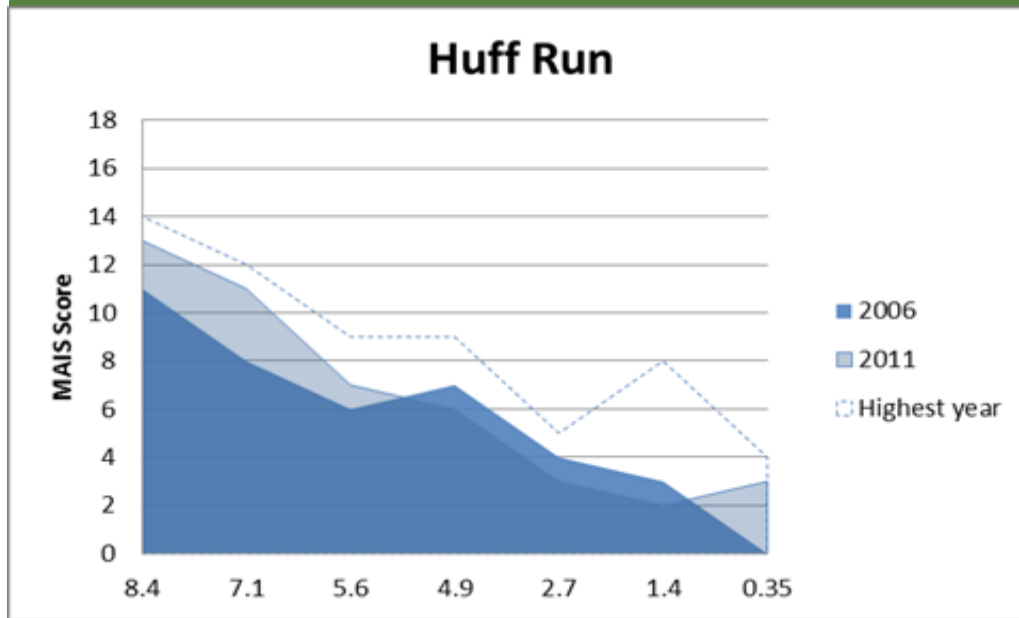
2011 NPS Report - Huff Run Watershed

Generated by Non-Point Source Monitoring System
www.watersheddata.com

Biological Water Quality

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 2006-2011



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	2005	2006	2007	2008	2009	2010	2011	Linear trends	P-value	No. of years
8.4	14	11	12	12	13	9	13	no change	0.537861	7
7.1	12	8	8	8	9	11	11	no change	0.699987	7
5.6	8	6	7	6	8	9	7	no change	0.547054	7
4.9	6	7	9	8	9	9	6	no change	0.629812	7
2.7	5	4	5	3	4	5	3	no change	0.337149	7
1.4	2	3	3	2	8	2	2	no change	0.821827	7
0.35	3	0	4	3	4	3	3	no change	0.449765	7