

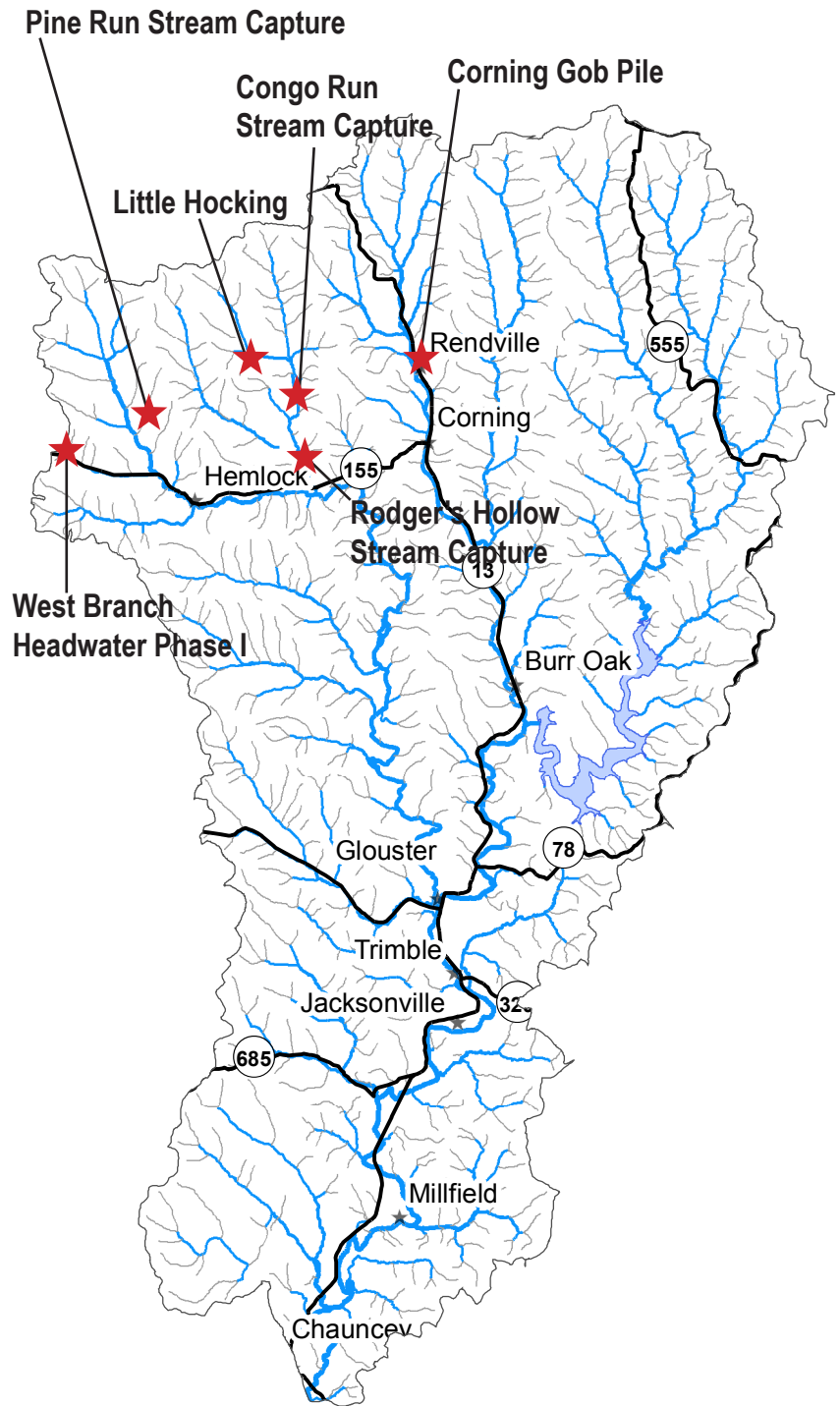
2009 NPS Report - Sunday Creek Watershed

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- The Sunday Creek Watershed Group emerged from local residents' concerns for the health of the Sunday Creek. Currently, we are a project of Rural Action. The Sunday Creek Watershed group office is located on 69 High St. Glouster Ohio 45732. The phone number is 740-767-2225 and our web page is <http://www.sundaycreek.org>. Our most active partners are: Ohio Department of Natural Resources the divisions of Mineral Resource Management and Soil and Water Conservation; Ohio Environmental Protection Agency; Office of Surface Mining; Ohio University; ILGARD; Hocking College; Trimble and Miller School District; Rural Action's Environmental Learning Program and Sustainable Forestry; Local Village Councils; Local Township Trustees; Little Cities of Black Diamonds; Buckeye Trail Group; Moose Lodge; Wayne National Forest; Burr Oak State Park.

- Our mission statement, as adopted by the Sunday Creek Watershed Group in 2000; "The Sunday Creek Watershed Group is committed to restoring and preserving water quality through community interaction, conservation, and education; in pursuit of a healthy ecosystem capable of supporting bio-diversity and recreation."

- The Sunday Creek Watershed is located in the Appalachian foothills, in the unglaciated part of Ohio. It is mostly rural with many small villages throughout, and the majority of the land is privately owned. The Sunday creek watershed starts in the East Branch, north of Rendville and the West Branch at Shawnee. The creek follows SR 13 through Corning, Glouster, Millfield and it goes into the Hocking River right in Chauncey. The watershed covers 139 square miles crossing Athens (38.8%), Perry (42.84%), Morgan (18.35%), and Hocking (0.01%) Counties. According to the Ohio Department of Natural Resources, in 1994, land cover classification for Sunday Creek consisted of 78% wooded, 17% agricultural, 2.4% brush, 1% urban, 1% open water, 0.3% barren, and 0.2% non-forested wetland (Map 2: land use/land cover). The U.S. Forest Service manages approximately 15% of the total acreage.



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In the fall of 1999, Jim Hart began putting together a list of other local residents interested in water quality in the Sunday Creek watershed. A group of over 20 people attended the first meeting, which was held in the Trimble High School library. At the beginning, the group focused on organization, establishing a mission, and getting a sense of the community's concerns for the Sunday Creek. In 2000, the group partnered with Rural Action and got its first full time Americorp VISTA. That year we received an EPA 319 planning grant to develop a management plan. With that grant we completed a State Endorsed Management Plan and an Acid Mine Drainage Abatement Plan with additional funding from ODNR-MRM. In 2002, we received a six year ODNR Soil and Water Conservation Watershed Coordinator grant. In 2003 we

began our first EPA 319 2002 implementation grant. Currently we are in the last year of our second (2004) EPA 319-implementation grant. We also received an Appalachian Clean Stream Initiative Grant from OSM. All of this funding has been made possible with our strong partnership and match funding from the ODNR division of Mineral Resource Management. We have finished our first acid mine drainage remediation project at Congo Run, a subsidence closure. The SCWG is currently coordinating major reclamation projects in the West Branch of Sunday Creek and Headwaters. We have also completed 17 upgrades of septic systems, planted thousands of trees, cleaned up over 200 tons of garbage, and educated thousands of students.

Reductions

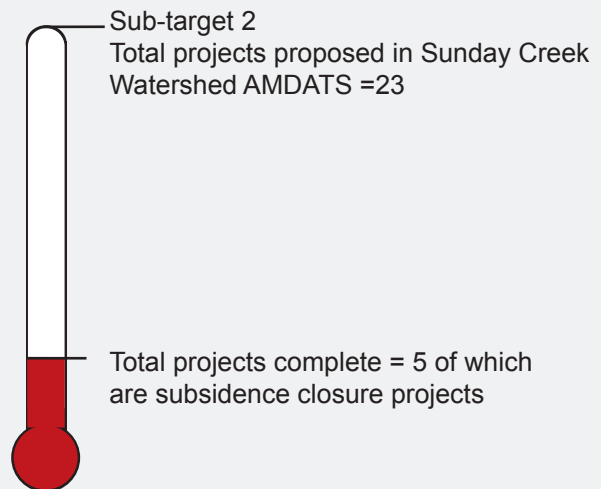
Project Name	Year Completed	Acres Captured	Agencies funding	Estimated water diverted from entering the deep mine
Congo Run CR-15	2004	72	ODNR-DMRM, OSM	24,000,000 gallons/yr
Pine Run	2007	138	ODNR-DMRM, OEPA	50,867,000 gallons/yr
Rodgers Hollow	2007	1,600	ODNR-DMRM, OEPA	589,290,000 gallons/y
Little Hocking	2009	286	ODNR-DMRM, OSM	105,400,00 gallons/yr

Four stream captures located in the Sunday Creek Watershed were closed and completed from 2004-2009. A total of 2096 acres surface drainage area drained year round into the deep mines and as a result of closing these subsidence holes 769,557,000 gallons per year were diverted from entering into the deep mine thus abating the generating of acid mine drainage. Expected additional alkaline loading from these closures returning clean water to the receiving streams is 986 lbs/day. As result of the Rodgers Hollow Subsidence closure, the deep mine discharge in Drakes has seen a reduction in Acidity loads by 18 lbs/day.

Attainment Miles



Completion



Costs

Design = \$208,941
Construction = \$1,004,705

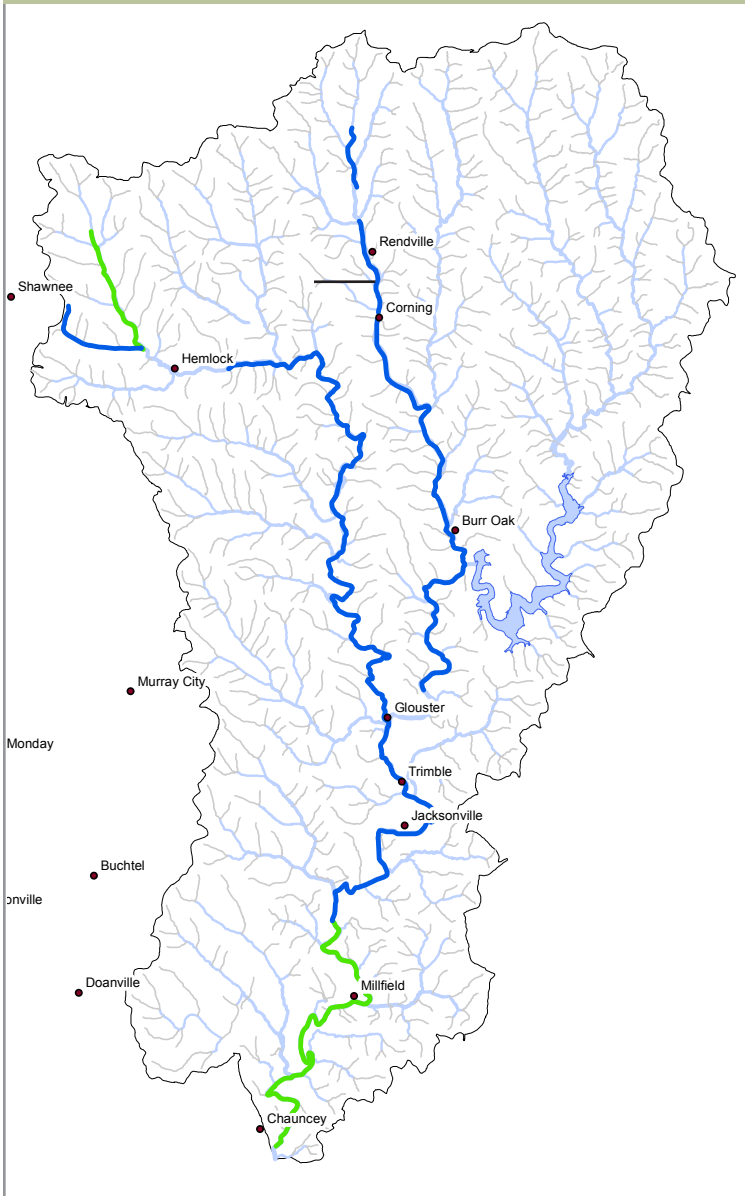
Total costs through 2009 = \$1,213,646
(excluding Congo Run CR-15 design)

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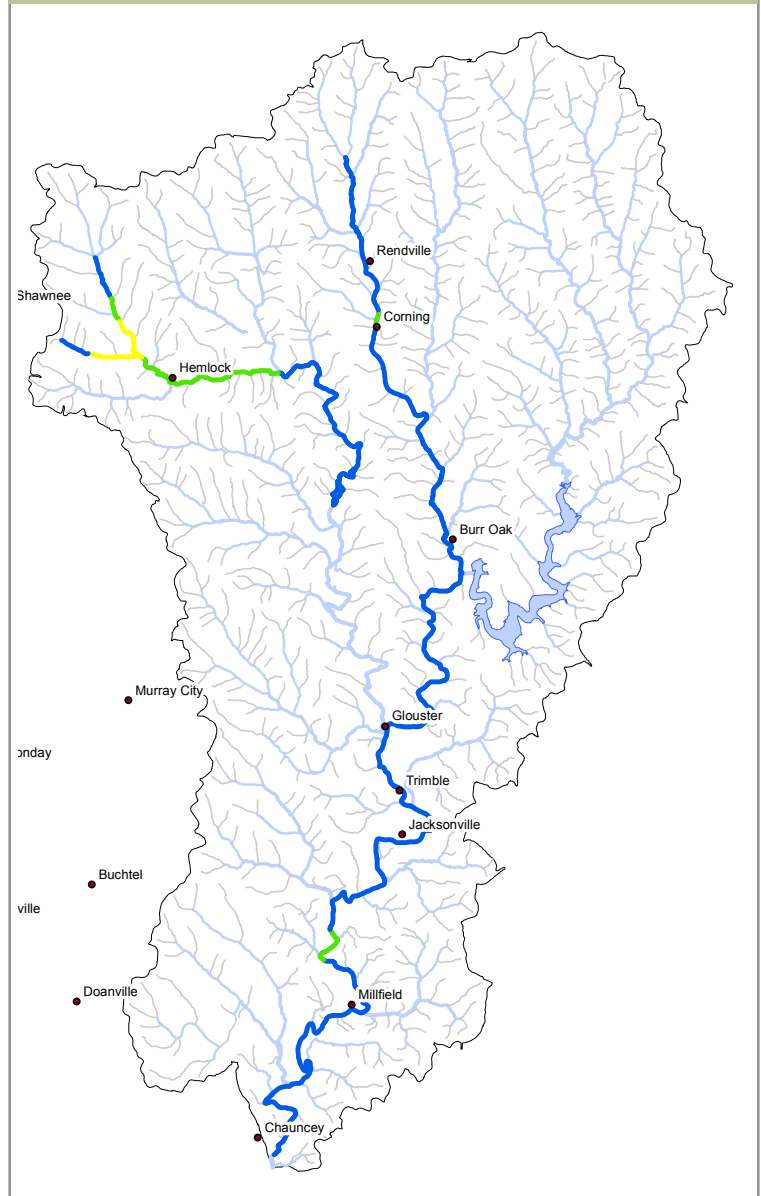
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Chemical Water Quality

Sunday Creek baseline pH



Sunday Creek 2009 pH



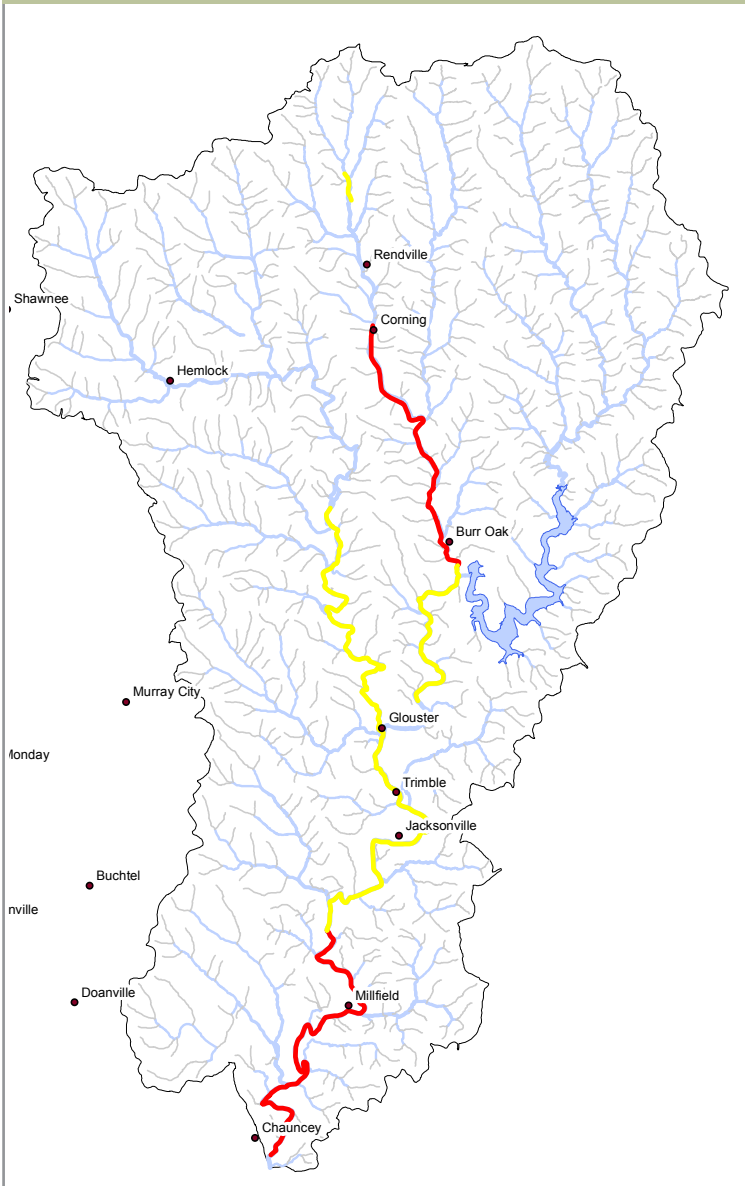
Water quality along the West Branch Sunday Creek has been degrading since baseline conditions in 2001. Values of average pH dropped from >6.4 to 4.0-5.4 range in 2005 to 2006 and remained constant in 2007. When the subsidence features increased in Rodger's Hollow, funneling more water into the mine that generated AMD and discharged it into West Branch of Sunday Creek, the water quality decreased. However, since the subsidence closure in Rodger's Hollow in late 2007, the 2008 data for the first time shows an increase in pH along this stream segment. The average pH in 2007 at site WB 003 was 4.83, in 2008 5.97, and in 2009 6.08.

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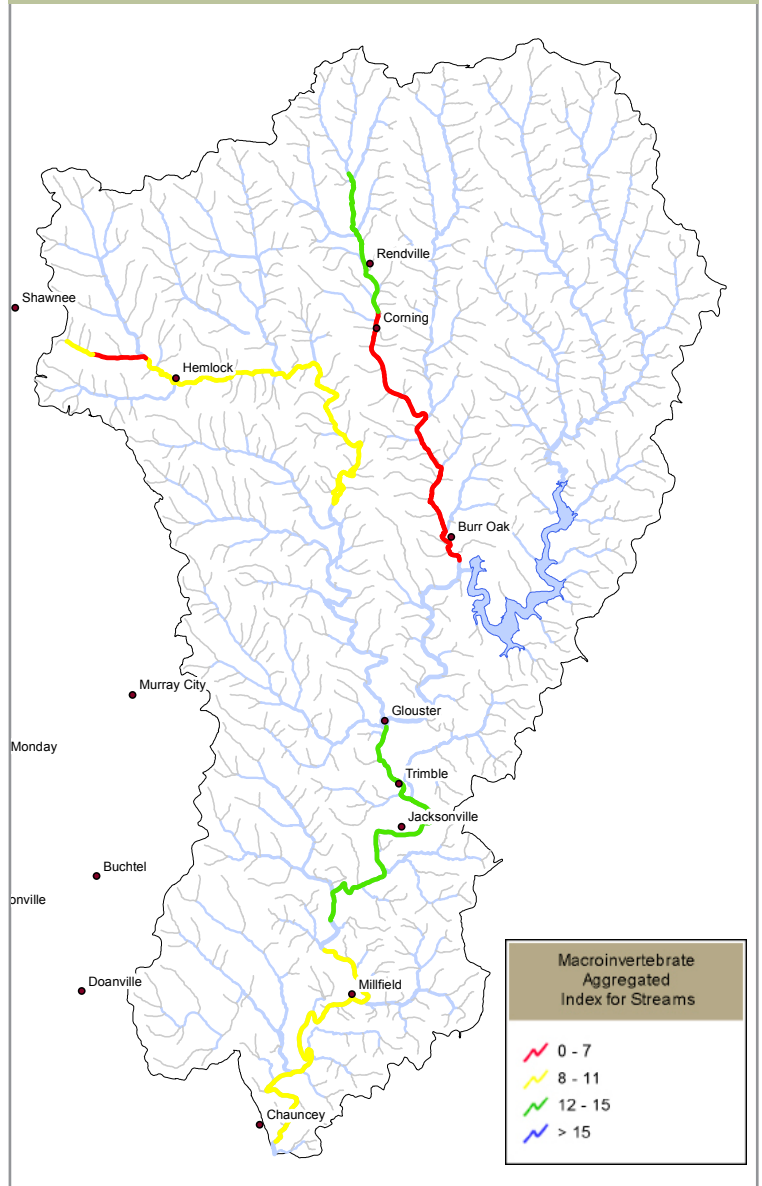
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Biological Water Quality

Sunday Creek baseline MAIS



Sunday Creek 2009 MAIS



MAIS samples were collected throughout Sunday Creek at established annual monitoring stations from 2001 through 2009.

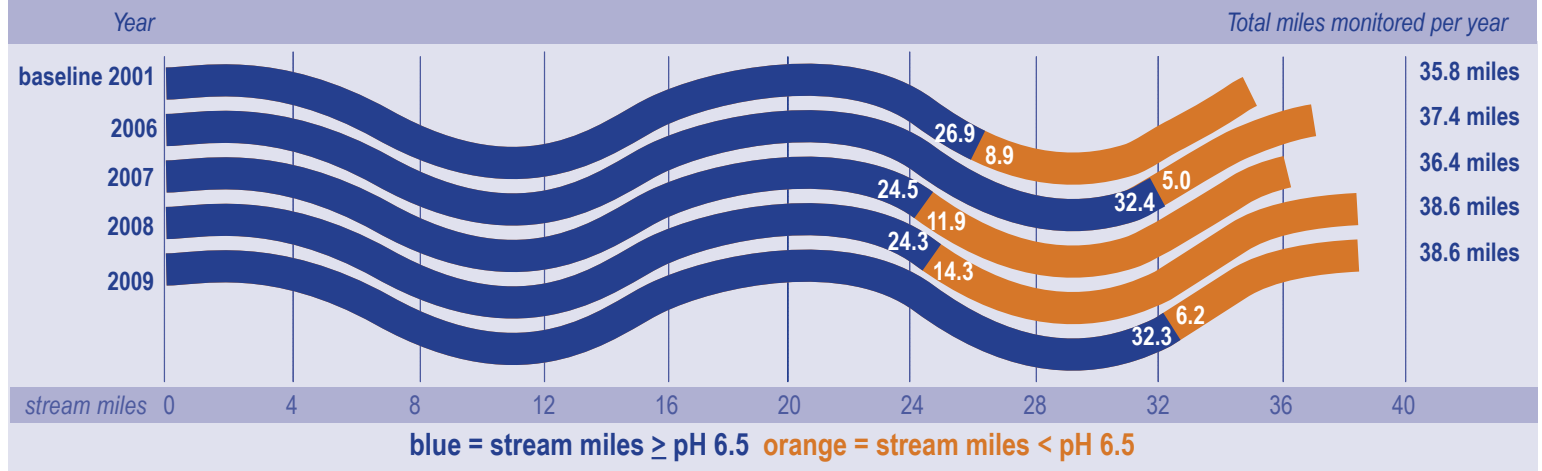
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Chemical Water Quality

There are approximately 39 stream miles monitored each year along the mainstem of Sunday Creek and major tributary West Branch. A restoration target for pH has been set to 6.5. Since 2007 there have been increases and decreases in the number of stream miles that meet this target. In 2007 nearly 25 miles of the 35 monitored met this target. In 2008, there number remained constant. In 2009 a 25% increase was recorded with 32 stream miles of the 39 monitored met the pH target of 6.5 (Figure A).

Figure A. Sunday Creek pH



Biological Water Quality

The 2009 MAIS scores suggest that the total area of degradation along the length of the Sunday Creek mainstem is reduced (e.g. biological quality has increased, with more + values) compared to each of the three preceding years (2008, 2007, 2006). However, this improvement is largely attributable to changes at the two lowermost stations (below river mile 7.3). The Sunday Creek mainstem above these stations showed no improvement, and in fact exhibits reductions in biological quality in 2009 compared to the three preceding years.

Figure B. Area of Degradation in Sunday Creek mainstem from 2008 to 2009

RM	2006	2007	2008	2009
24				
23.3	-7.7	-8.4	-2.1	-8.4
21.9	-22.4	-23.8	-11.2	-30.8
18.2	-40.7	-33.3	-37	-55.5
7.3	-65.4	-43.6	-98.1	-54.5
0.2	-49.7	-78.1	-56.8	-7.1
Total area of degradation	-185.9	-187.2	-205.2	-156.3

Improved relative to 3 prior years

Figure C. Area of Degradation 2008-2009

