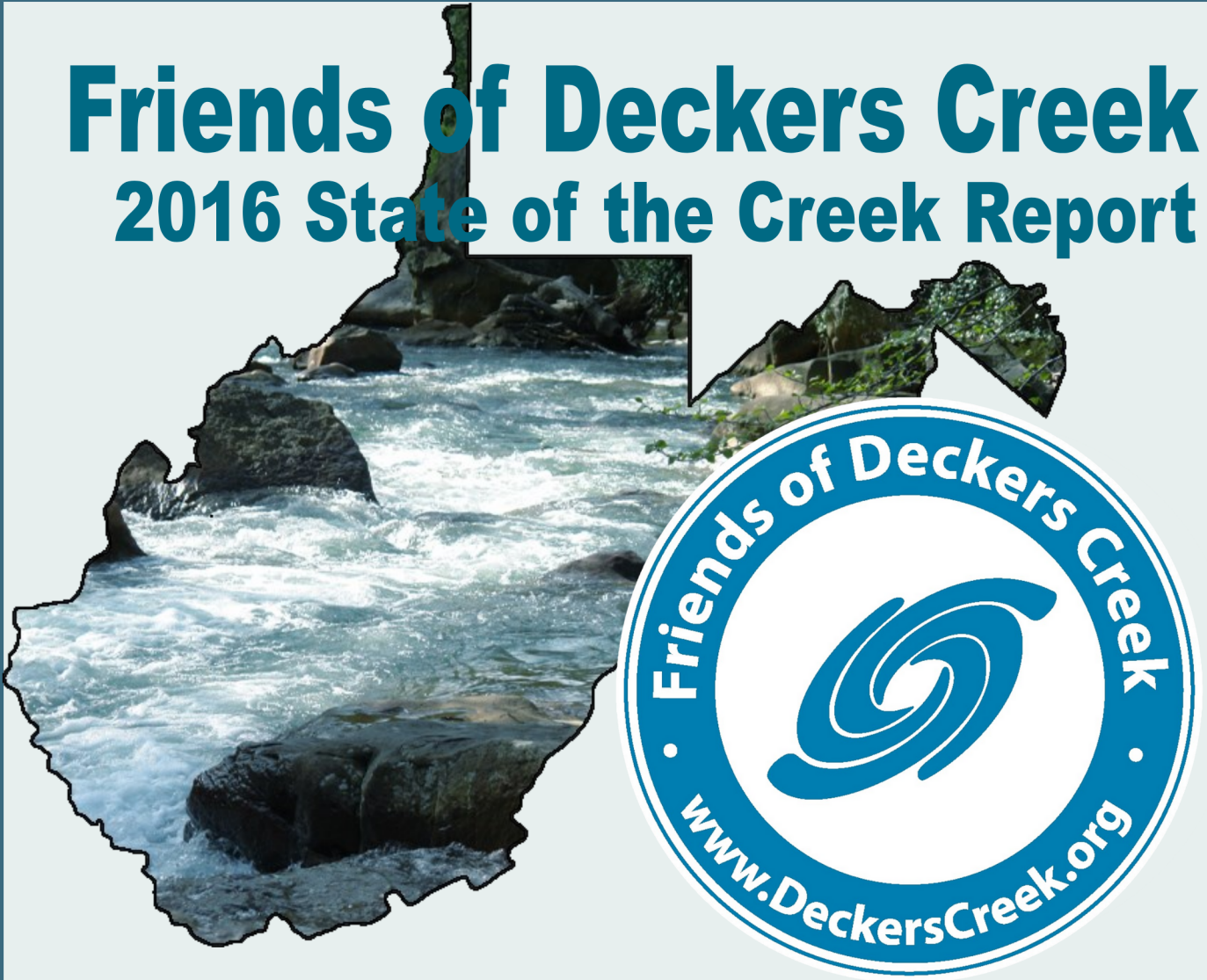


Friends of Deckers Creek 2016 State of the Creek Report



In 2002, Friends of Deckers Creek (FODC) began the Clean Creek Program to track long-term water quality and biological trends throughout the watershed.

Over the past 15 years, FODC has monitored water quality quarterly and sampled fish and macroinvertebrate populations annually. Data is collected at 13 sites within the 64 square miles of the Deckers Creek watershed. The longstanding data collected through this program allows us to evaluate the success of our water treatment systems, direct where best to focus future remediation efforts, and inform the Morgantown community about the impacts of acid mine drainage (AMD) and other pollutants.



Our Mission: To improve the natural qualities of, increase the public concern for, and promote the enjoyment of the Deckers Creek Watershed.

Acid Mine Drainage

Acid mine drainage (AMD) refers to the acidic water discharging from abandoned coal mines.



Most coal beds in Appalachia are heavy in iron sulfide, also known as pyrite, or “fool’s gold.”



When coal seams are mined, the pyrite is exposed to oxygen and water. This causes the sulfide to oxidize into highly corrosive sulfuric acid.

Sulfuric acid drastically lowers the pH of the water and dissolves naturally occurring metals like aluminum and iron that are present in the coal beds.



When AMD enters our streams, it creates conditions that are uninhabitable for most aquatic life. In the Deckers Creek watershed, the largest source of AMD is the Richard Mine. The AMD emanating from this mine creates a chemical barrier that separates fish and macroinvertebrate populations between the upper and lower watershed.



A remediated Richard Mine and a clean Deckers Creek will have various benefits to the local environment and economy. While we are continuously working towards remediating the Richard Mine, FODC has also been completing additional projects throughout the watershed. The most recent completed project targeted the abandoned Ingrand Mine in Preston County.

Ingrand Mine AMD Remediation

How does passive AMD remediation work?

1 The AMD discharge is first directed over a low pH iron oxidation terrace. This oxygenates the water, allowing iron to precipitate out of solution before alkalinity is introduced to raise the pH.



Source Water
pH: 2.91
Iron: 52.74 mg/L
Aluminum: 32.1 mg/L

2 The AMD is then routed to a series of ponds that introduce alkalinity in the form of limestone. This raises the pH so the heavy metals can no longer remain dissolved. The metals are given time to precipitate out in settling ponds before being further filtered through constructed wetlands.



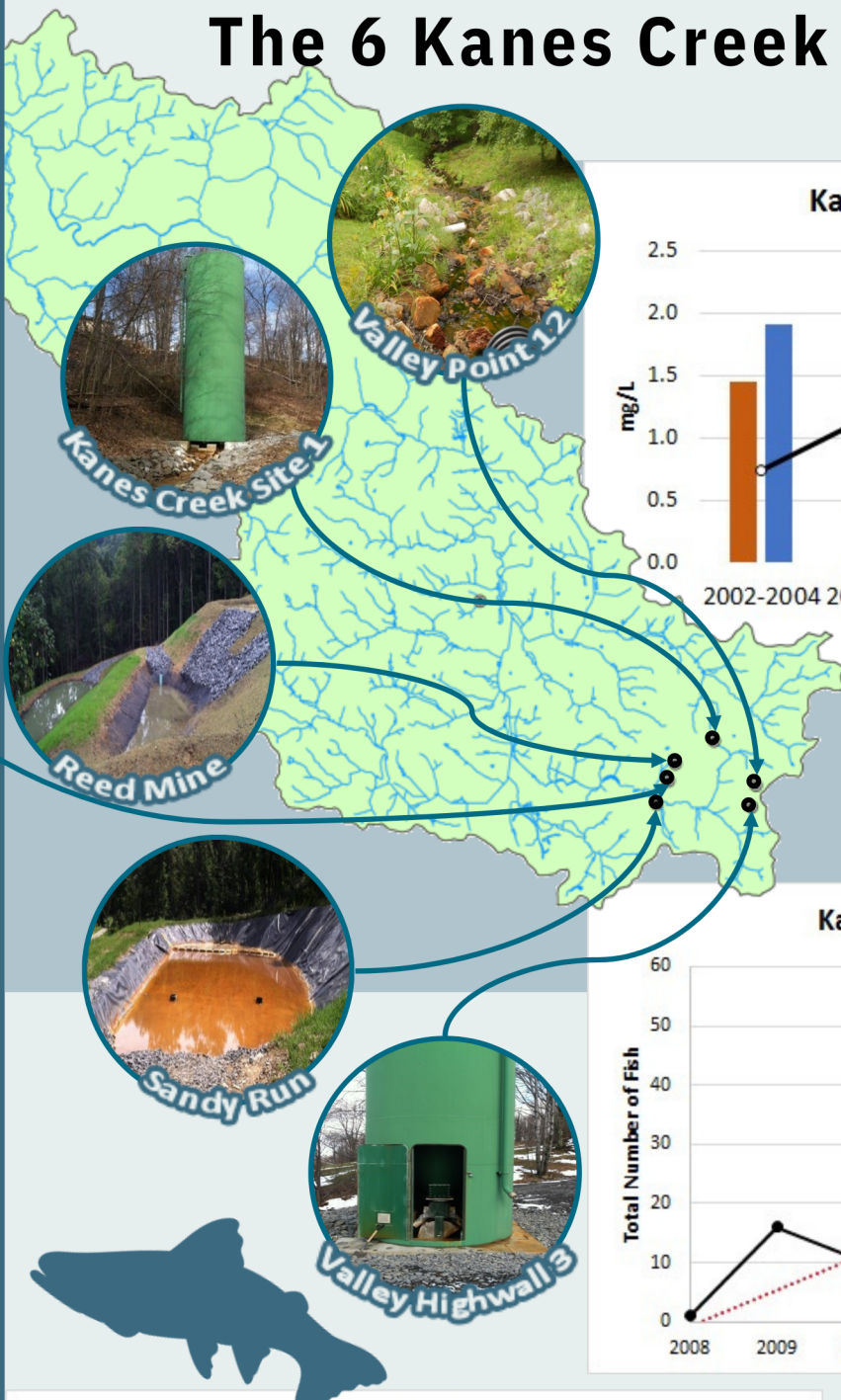
Output
pH: 8.35
Iron: 0.16 mg/L
Aluminum: 0.08 mg/L



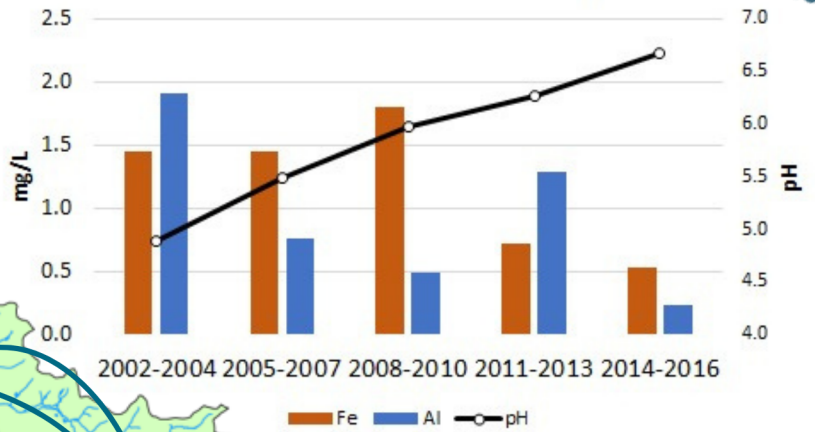
3 The clean water discharges the project site and enters an unnamed tributary which flows into a flood control impoundment, Kanes Creek, and finally Deckers Creek out in Reedsville.



The 6 Kanes Creek Project Sites

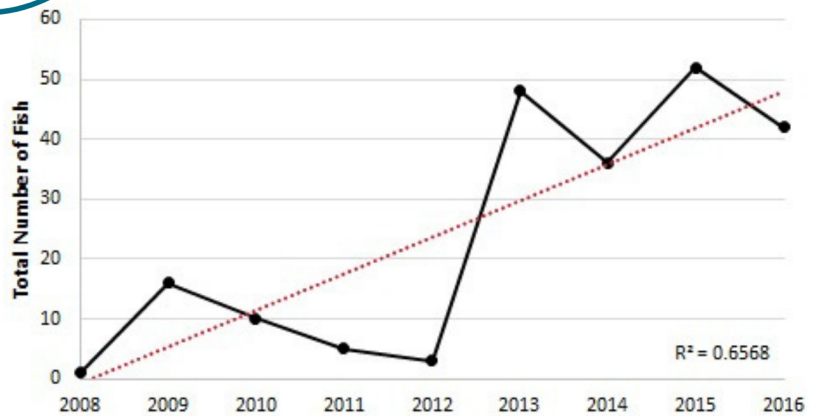


Kanes Creek Water Quality

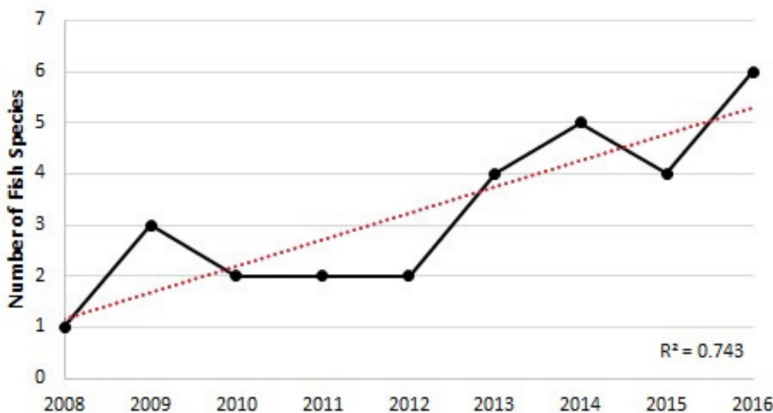


By removing the heavy metals and making the pH in Kanes Creek neutral, the conditions have improved enough to once again support diverse aquatic life.

Kanes Creek Fish Abundance



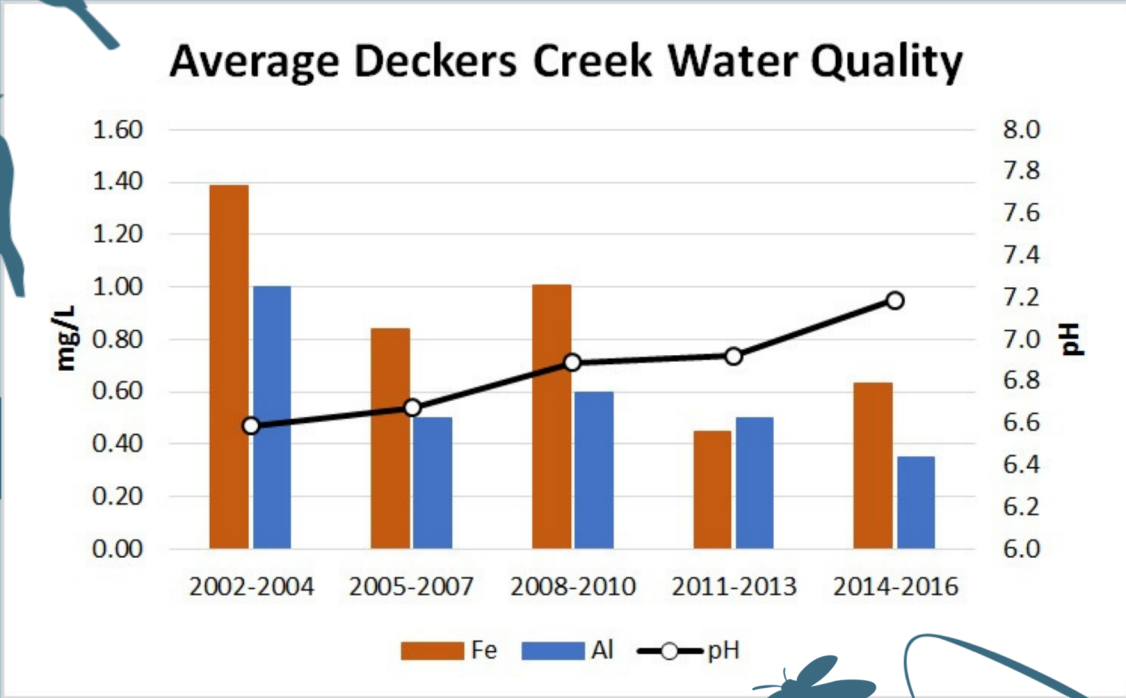
Kanes Creek Fish Diversity



Due to the improved conditions in Kanes Creek, fish are beginning to repopulate a stream that, at one point, struggled to support any life at all.

Thanks to the 6 project sites we've installed on this tributary, the total variety and total number of fish within the stream continues to improve. These projects have also helped further improved conditions downstream in the mainstem of Deckers.

River Quality Characteristics

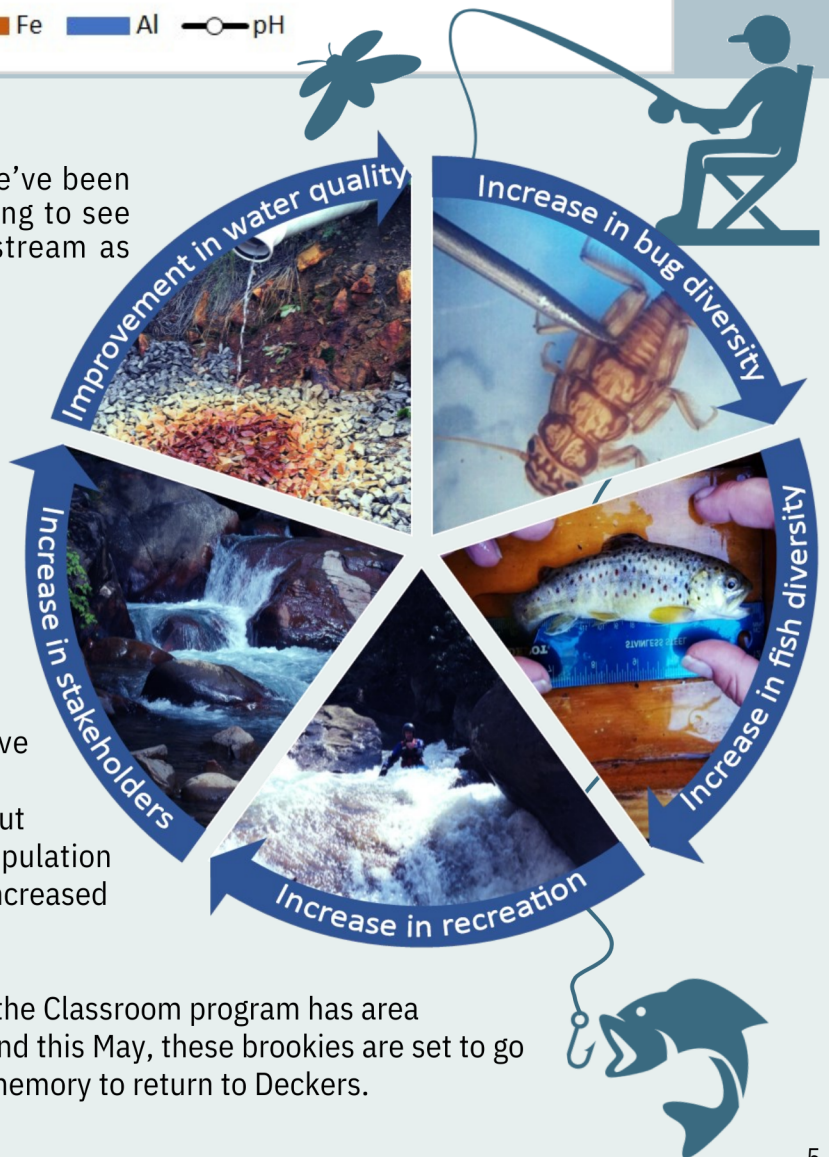


As a result of the remediation projects we've been installing over the years, we are continuing to see a reduction in heavy metals within the stream as well as an improvement in pH.

The improvement in water quality has allowed macroinvertebrate populations to rebound in many places throughout our watershed. Healthier macroinvertebrate populations lead to healthier fish populations, allowing them to survive and thrive.

Thanks to these improving conditions, we've been fortunate to work with Trout Unlimited and the DNR to stock brown and rainbow trout within Deckers. The thriving brown trout population in Cascade, the Gorge area of Route 7, has increased recreation in the area.

This year, the local Trout Unlimited Trout in the Classroom program has area students caring for Brook trout fingerlings, and this May, these brookies are set to go in the creek—the first brook trout in known memory to return to Deckers.



I'm a Friend of Deckers Creek!

- __ \$10 Student
- __ \$25 Individual
- __ \$50 Family
- __ \$75 Establishing
- __ \$100 Benefactor
- __ \$300 Clean Creek Program (CCP) Sponsor
- __ \$500 Major Donor



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www.deckerscreek.org and click on "Donate"*

Friends of Deckers Creek
PO Box 877
Dellslow, WV 26531

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Thank you for Making this Program Possible!

The Clean Creek Program is funded by the West Virginia Department of Environmental Protection and Stream Partners, with additional help and support from the following locals and businesses in the community:

The Morgantown Utility Board, Patagonia, Rabadaugh and Associates, David and Kathleen Raese, Karl and Patty Diefenbach, Annette Tanner, Mountain Path Properties, Missy Hartsell, Big Blue Apartments, LLC, Todd Ensign and Jessika Thomas, Morgantown Brewing Company, Heimo and Nora Riedel, Susan and Don Sauter, Dr. Thomas and Hope Covey, H.A. Ruckle, C.P.A., Morgantown Carpenters Local 604, Downstream Strategies, Blaine Turner Advertising, Monongahela Garden Club, Garth and Angie Lindley, and MedExpress

West Virginia University fisheries students, volunteers, and board members helped with fish sampling, Montgomery County Community College students helped with macroinvertebrate sampling, and numerous volunteers helped with water quality sampling.



Call for Citizen Scientists!

Looking to do more for your community in 2017? FODC is recruiting volunteers for our Citizen Science Program. Check out deckerscreek.org/citizen-scientist to learn more and get involved!