

# Executive Summary

## *State of the Kiski-Conemaugh River Watershed: Community Shift*

*An update to the 1999*

*Kiski-Conemaugh River Basin Conservation Plan*

2017



The Kiski-Conemaugh River Basin encompasses 1,888 square-miles of southwestern Pennsylvania. It comprises 16% of the Allegheny River watershed, making it the largest sub-basin of the Allegheny River, which serves as a drinking water source for at least half a million people.

Historically plagued by the results of the Industrial Revolution and the boom-bust economy that accompanied this time period, orange veins of polluted water coursed through the Kiski Basin's heavily forested landscape for decades. Beginning as early as the 1970s, but more so in the 90s, watershed organizations and conservation groups mobilized and began addressing the problems within their boundaries.



Abandoned Mine Drainage.  
Photo by Melissa Reckner

Many of these issues were documented in the original *Kiski-Conemaugh River Basin Conservation Plan* published in 1999. It was not a plan that collected dust on a shelf; it was heavily utilized with about 88% of its 120 recommendations implemented to some degree.

In 2013, the Conemaugh Valley Conservancy's Kiski-Conemaugh Stream Team secured funds to update this plan and document the recovery of our streams and rivers. People recognized that the waterways were improving, but no one had quantified and publicized the collective results of restoration and conservation efforts since 1999.

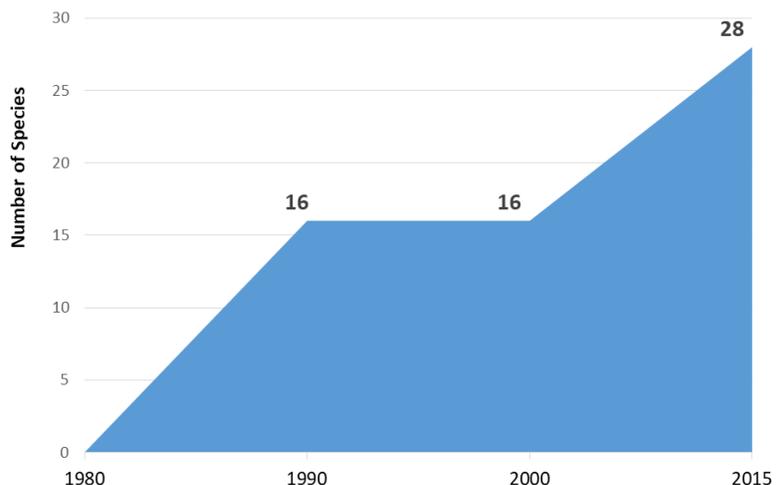
Over four years of data collection, tabulation, and evaluation created this document, which reveals that many of our streams and rivers have changed from being net acidic to net alkaline; fish poor to fish rich. Yet, much work remains. Many Abandoned Mine Drainage (AMD) treatment systems are failing or undersized, erosion and sedimentation is replacing AMD as the number one source of water pollution, combined sewer overflows dump untreated waste into rivers on which people are increasingly recreating, new forms of natural resource extraction threaten the ecosystem, and funding sources are far less abundant. On top of that, of the twelve watershed associations that operated in the Kiski Basin, two are defunct from a lack of interest and membership has dropped or remained about the same since the group's inception at seven others. Watershed associations struggle

with securing volunteers to serve on their board of directors, replacing aging volunteers, and invigorating the group with new ideas and connections.

Still, hope remains and all past efforts have not been for naught.

The Kiskiminetas River, the receiving waterway of all upstream restoration and conservation efforts, has drastically improved biologically and has become a recreational fishing and paddling destination. In 1980, when the Pennsylvania Department of Environmental Resources (now DEP) surveyed fish at the mouth of the Kiskiminetas River, they found no fish; just one frog. The river was dead largely from uncontrolled mine and industrial discharges, sewage, and runoff. When that survey was repeated in 2015 by the PA Fish and Boat Commission, 386 individuals of 28 species were collected and that doesn't even include some species, like walleye, that anglers report catching in the Kiski and that were captured in the 1990 and 2000 surveys! Species sensitive to pollution like the mooneye and brook silverside were collected for the first time in 2015! This is a tremendous increase that stems from a decline in industry, an increase in regulations, and the start of reclamation efforts.

Kiskiminetas River Fish Species Collected  
Over Last 35 Years



The Conemaugh River is another great example of what can be achieved through passion, persistence, and public-private partnerships. In 1993, the Conemaugh River in Blairsville had a pH of 4.8, which is comparable to beer and too acidic for most fish to survive. In 1997, the Conemaugh River in Blairsville had a pH of 6.8 but an alkalinity of only 6 mg/L. Most aquatic life needs a pH between a 5 and an 8 to survive, and Chapter 93 of Title 25 in the Pennsylvania Code requires that alkalinity measure at least 20 mg/L as Calcium Carbonate. Typically, the higher the alkalinity, the more nutrients available to aquatic life and the stream's productivity is higher. In 2017, the pH of the Conemaugh River in Blairsville rose to 7.8! Because the pH scale is logarithmic, that's a 1,000% improvement since 1993! Also, the Conemaugh's alkalinity measured 57.8 mg/L in 2017.

This improvement is reflected in the visual appeal of the river, the increase in use and promotion of the river, and the proliferation of the fish diversity in the river. In 1997, fish species tolerant to pollution like bluegill and creek chub dominated the fish community in Blairsville with 14 species documented. In 2015, 16 species were collected. While this may not seem significant, the key is that many more pollution-sensitive species, like banded darter and logperch, constituted the collection in 2015.

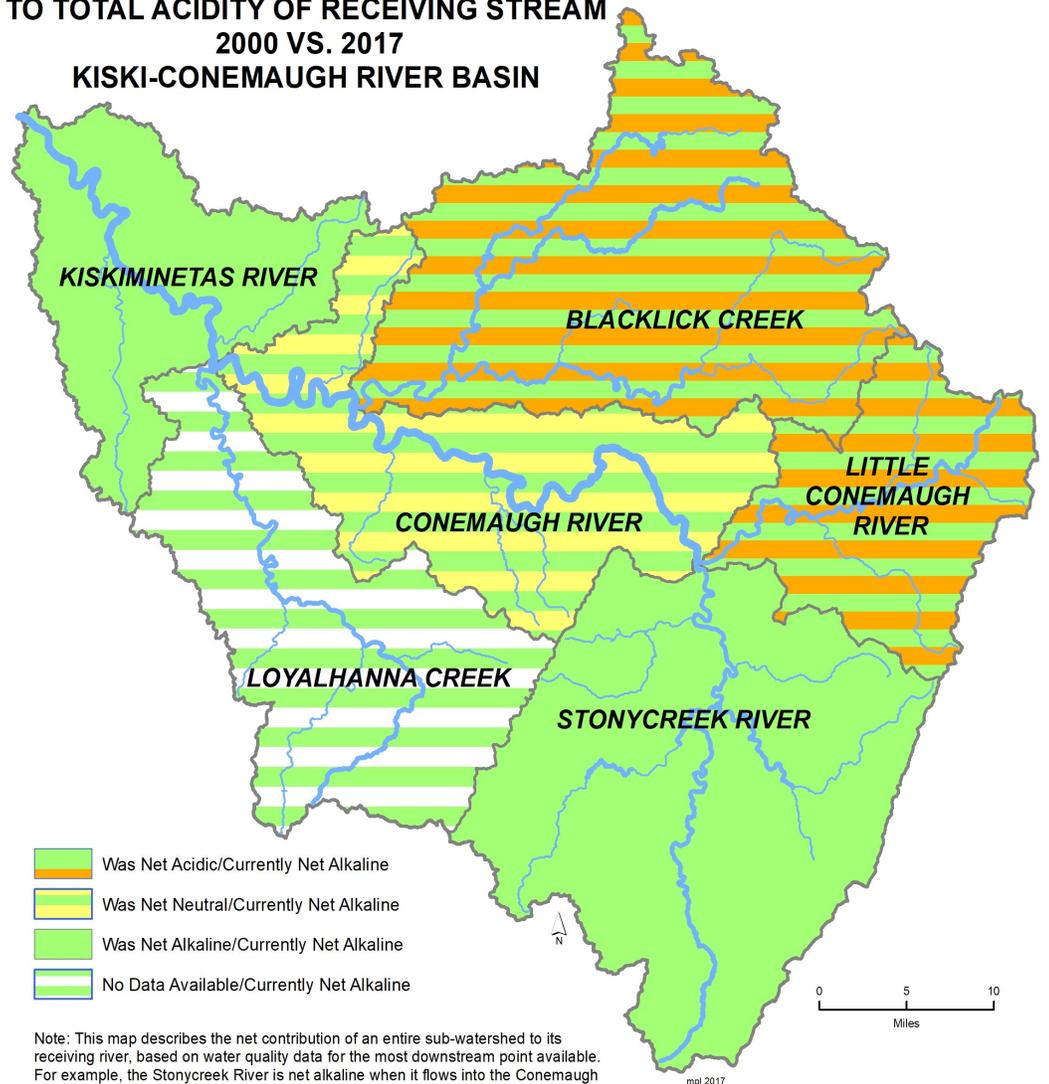
In the community of White, before the Conemaugh River and Loyalhanna Creek come together to form the Kiskiminetas River in Saltsburg, an even greater fish community shift was discovered. In 1997, only eight fish species were collected, while in 2015, 13 fish species were netted, including the rare and pollution-sensitive streamline chub and bigeye chub. Additionally, in 2015, twice the number of fish were collected in half the survey length!

After running a metric called the Jaccard Coefficient of Community Similarity that measures how similar a site is in biological composition to another site or to itself over time, the greatest community shift at the three sites surveyed on the mainstem of the Conemaugh River in 2015 was in Seward. Here, only six fish species were collected during a PA Fish and Boat Commission survey on September 17, 1997. Creek chubs dominated the collection by nearly half. Exactly 18 years later, California University of PA and the Conemaugh Valley Conservancy surveyed the same site and collected nine fish species with pollution-sensitive banded darter and longnose dace dominating.

Of course, we remain at a tipping point in that our waterways could revert to their former, near lifeless states if existing AMD treatment systems are not maintained, or if laws and regulations are relaxed to the point that industrial discharges degrade our waterways, or if new forms of resource extraction are not closely monitored and held to high standards. On the other hand, more improvements could be seen as it seems Mother Nature just needed a helping hand to bring life back to our waterways, so with a few more nudges in the right direction, our aquatic communities could blossom even more.

To provide those nudges, we need to get creative with technology, funding, and community buy-in. Since many of the "low-lying fruits" have been addressed, our challenge now is to remediate discharges that were previously thought untreatable. Fortunately, large, active treatment systems like Rosebud Mining Company's St. Michael Treatment Plant are no longer off the table. The PA DEP is pursuing the design and construction of at least two such systems, one for the Wehrum and nearby discharges in the Blacklick Creek watershed and another for the Hughes, Sonman, and Miller Mine Shaft discharges in the Little Conemaugh River watershed. And, an active treatment system may be constructed at some point in the next decade for the Big 4 AMD in Central City, in the Stonycreek River watershed. This would restore 13.1 miles of Dark Shade and Shade Creeks, as well as benefit the Stonycreek River, which is a growing fishery, a popular whitewater recreation destination, and an economic driver in the Johnstown area.

### SUB-WATERSHEDS' CONTRIBUTION TO TOTAL ACIDITY OF RECEIVING STREAM 2000 VS. 2017 KISKI-CONEMAUGH RIVER BASIN



- Was Net Acidic/Currently Net Alkaline
- Was Net Neutral/Currently Net Alkaline
- Was Net Alkaline/Currently Net Alkaline
- No Data Available/Currently Net Alkaline

Note: This map describes the net contribution of an entire sub-watershed to its receiving river, based on water quality data for the most downstream point available. For example, the Stonycreek River is net alkaline when it flows into the Conemaugh River; however, further upstream, the Stonycreek and its many tributaries may variously be acidic, neutral or alkaline.

Data source: Pennsylvania Department of Environmental Protection and Pennsylvania Fish & Boat Commission.





An immature bald eagle dines on a mallard duck along the Kiski.  
Photo by Marge Van Tassel

There have been several economic studies to capture the value of eco-tourism, which stems from improved natural resources, though none have focused specifically on the Kiski Basin. Besides the obvious environmental impacts, land and water conservation enhances property values, reduces local taxes, improves the quality of life, which attracts businesses and employees, and creates jobs. The Trust for Public Land published *Pennsylvania's Return on Investment in the Keystone Recreation, Park, and Conservation Fund* and found, "that every \$1 invested in land conservation returned \$7 in natural goods and services to the Pennsylvania economy." This makes it evident that healthy waterways and landscapes not only contribute to personal well-being, but to the economy as well. In 1999, there was only one canoe/kayak outfitter serving the Kiski Basin; now there are five! In 1999, the "Kiski-Conemaugh Water Trail" map was in development and included all 86 river miles on one map. Now a revised map breaks down the Kiski Basin into an Upper and Lower Section, each with its own map highlighting safety, natural and recreation features, and river towns' businesses and points of interest. There's even an interactive online map too.

Unquestionably, we have to be mindful of how our work impacts the environment and those waterways downstream. The collective we, who work on treating AMD, restoring waterways, and conserving resources, might be too good at our jobs! We need to make sure that we do not allow our rivers to have too high of a pH. At a pH of about 8.2, aluminum, which is near lethal levels for aquatic life in some of our waterways, can become soluble on the basic or high end of the pH scale, and become toxic to fish. We've seen it on a smaller scale in the Blackleggs Creek watershed, which is a naturally alkaline watershed. Treatment systems here, as throughout the Kiski Basin, focus on generating as much alkalinity as possible, but when that treated water hits the mainstem, pH elevates and the aluminum re-dissolves and limits aquatic life in Blackleggs Creek. We cannot have this happen in our rivers. In general, we must focus more on precipitating metals, thereby keeping them out of waterways, and consider discharging slightly acidic or net neutral water in select waterways.

We also must keep educating youth and the public a priority. In 2017, University of Pittsburgh at Johnstown students surveyed 100 people in the City of Johnstown and in its suburbs and found that 51% of the respondents viewed the rivers as "dirty." While the survey didn't delve into what made the participants think that, it is concerning that of the 51% who felt that way, 59% were between the ages of 18 and 30! [Undoubtedly, this perception and accessibility issues keep potential users away from our rivers and streams, which prevents a personal connection to our water resources from being formed, so we must work to publicize our restoration efforts, the state of the watershed, and what may be found in and around our streams and let people know the rivers are open!](#)



Pennsylvanians should be proud of the accomplishments of its environmental organizations and agencies. Together we should support legislation that protects this work and contribute time, resources, and talents to these organizations to ensure efforts continue. Preserving and enhancing our resources is paramount, given the strain our natural resources receive and the ever-increasing interest in outdoor recreation for healthy minds, bodies, and communities.

Funding for this project was provided by the Pennsylvania Department of Conservation and Natural Resources' Community Conservation Partnerships Program grant through the Keystone Recreation, Park and Conservation Fund and by a Foundation for Pennsylvania Watersheds grant. Thanks to the Cambria County Conservation and Recreation Authority for serving as a pass-through for the DCNR grant and to the following whose grant funds for water monitoring efforts, equipment, and general operating support also supported this project: Community Foundation for the Alleghenies, Colcom Foundation, Foundation for Pennsylvania Watersheds, Laurel Foundation, Norcross Wildlife Foundation, PA Department of Environmental Protection, Wal-Mart Store #1935. Extra special thanks to the excellent staff and volunteers who make this work possible and who continue to inspire, labor, protect, and promote the Kiski Basin and its many treasures.

Like what you're reading?  
**Support our efforts!**  
Join the Conemaugh Valley Conservancy and/or your local watershed association and become involved in these good works!  
Your membership and donations also make a huge difference in allowing these groups to continue their efforts.  
To join CVC or make a tax-deductible donation, go to [www.conemaughvalleyconservancy.org](http://www.conemaughvalleyconservancy.org) and click the "Get Involved" tab.

**Contact: Melissa Reckner, Kiski-Conemaugh Stream Team Director**  
**814-444-2669    [mreckner@kcstreamteam.org](mailto:mreckner@kcstreamteam.org)**  
**P.O. Box 218 ~ Johnstown, PA 15907**