

# State of the Nine Mile Run Stream - 2020

## A Report Card for the Community



### Background

Upstream Pittsburgh restores and protects its watershed ecosystem, while working regionally to support and implement resilient solutions for a healthy urban environment. Upstream PGH is committed to stewarding and monitoring the Nine Mile Run Aquatic Ecosystem Restoration in Frick Park. Before the restoration was completed in 2006, Nine Mile Run was a nearly lifeless ecosystem — a historically polluted stream due to industry, urban development and failing sewer infrastructure in the surrounding 6.5 square mile watershed. The restoration project transformed the stream and its immediate surroundings, creating a native wetland habitat in lower Frick Park. This restoration project was an experiment to see how much ecological improvement could be achieved through current restoration techniques, and whether the transformation could persist despite being in an urban environment.

### Why a report card?

The goal of the Upstream PGH Monitoring Program is to accurately assess the health of Nine Mile Run, to help us understand what has been achieved, and what parameters need to be improved to achieve a healthy ecosystem. The program is a cooperative community data collection effort with oversight from professionals and researchers on the Upstream PGH Monitoring Committee. This Report Card is a tool to communicate ecosystem health to the broader community. It is a summary assessment, based on all of the data we have gathered, of the state of the stream pre-restoration, immediately post-restoration, and in its current state.



## Human Health Risk

Bacterial contamination is caused by failing sewer infrastructure along the stream, as well as pet and wildlife waste. Exposure to bacteria can cause illness or infection. Toxic metals, the result of stormwater runoff, pose potential threats—including anemia and neuropathy—to humans and wildlife.

	Pre	Post			Current
Year	1999-2005	2006-2010	2011-2015	2016-2018	2019-2020
Bacteria	F	C	C	C	C
Aluminum	F	F	F	F	F
Lead	D	C	D	D	F

Metal grades are based on regulations set by the U.S. Environmental Protection Agency. Bacteria grades are based specifically on Pennsylvania state regulations.

## Aquatic Habitat Support

Water quality determines the health of a stream; it can be degraded by sewage contamination, stormwater runoff, industrial waste, and pet/wildlife waste. It's important to note that parameters vary seasonally and are greatly impacted by rain events. Due to climate change, Pittsburgh had an extra 14.5 inches of rain in 2018 above the average of 38".

	Pre	Post			Current
Year	1999-2005	2006-2010	2011-2015	2016-2018	2019-2020
pH	B	A	A	A	A
Dissolved Oxygen	Insufficient Data		A+	A+	A+
Nitrogen (NO <sub>3</sub> )	F	Insufficient Data	D	D	C

Thresholds for DO grades are sourced from the Water Research Center of PA. NO3 and pH grades are based on PA regulations.

## Wildlife

The presence and diversity of aquatic wildlife are key indicators of ecological health, as these species depend on the entire stream ecosystem for their survival.

	Pre	Post			Current
Year	1999-2005	2006-2010	2011-2015	2016-2018	2019-2020
Macro-invertebrates	F	F	D	D	D
Fish	F	B	B	A	Data Unavailable

Thresholds for macroinvertebrates grades are adapted from the PADEP IBI scoring method. Fish grades are based on regulations set by the Ohio EPA.

## Where do we go from here?

Data show that the NMR Aquatic Ecosystem Restoration led to improved water quality through improvements to aquatic habitat support. This improvement is reflected by increased wildlife abundance and diversity in fish populations. However, NMR is still affected by the surrounding urban environment; high nitrogen, bacteria, and metal levels still reflect poor overall stream health. A decade after the restoration, the stream is not yet safe for recreational activities like fishing.

We are working in the upper watershed, and regionally, to reduce sewage contamination and stormwater runoff. However, we cannot reach this goal alone. There are many ways that you can participate directly in improving water quality in NMR and throughout the region: commit to volunteering, disconnect your downspouts from the sewer and install a rain garden and/or rain barrels, use watershed friendly salt (sparingly) throughout the winter, clean up after your pets (even in parks), recycle yard waste in compost piles, reduce or eliminate synthetic pesticide and fertilizer use, and organize to support public policies that prioritize clean water. Information on these and other actions is available on our website, [www.UpstreamPgh.org](http://www.UpstreamPgh.org).

For further information, see <https://upstreampgh.org/projects/monthly-water-quality-monitoring/>