

Draft Biological and Water Quality Report for the Rocky River and Select Tributaries, 2014

In 2014, Ohio EPA conducted a biological and water quality survey in the Rocky River and Select tributaries watershed. This fact sheet summarizes the findings detailed in the biological and water quality report (BWQR).

Report Highlights

Aquatic Life Beneficial Use

In 2014, Ohio EPA evaluated twenty-eight streams in the Rocky River and Select tributaries watershed for aquatic life use (ALU). A total of 82 monitoring stations were sampled throughout the catchment. Of the 119.6 stream miles assessed as part of the Rocky River study area, 94.7 (79.2%) were found to fully support existing and recommended aquatic life uses. Partial use attainment was indicated for 8.2 miles (6.8%). Wholly impaired waters (non-attainment) were limited to 16.7 miles (14%). Taken together, aquatic life use impairment (partial and non-attainment) was identified on ten streams or segments of the 28 waterbodies evaluated.

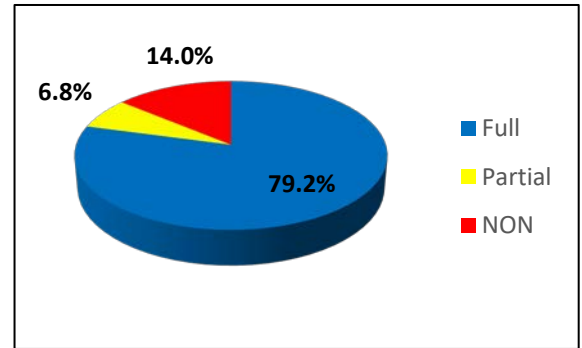


Figure 1. Cumulative aquatic life use attainment for all waters assessed as part of the Rocky River study area, 2014.

The leading causes of ALU impairment were hydrologic modification and urban stormwater, both a product of the well-drained urban and suburban landscapes that typify much of the study

area. Either alone or in combination with other stressors, these factors accounted for nearly 40% of impaired stream miles.

Compared against historical results, ALU attainment has improved significantly throughout the watershed. The baseline assessment found the Rocky River mainstem heavily impacted. Over the intervening years, aquatic communities showed step-wise gains, culminating in full restoration of WWH conditions in 2014. Although the initial frequency and magnitude of impairment was not as great as that observed on the mainstem, a similar pattern of recovery was observed on the large principal tributaries, (East and West Branches), as these too now support aquatic communities consistent with the WWH biocriteria.

Recreation Use

Twenty-three locations were sampled for *Escherichia coli* (*E. coli*) in 2014. Resulting colony counts exceeded the applicable recreational use criteria at 22 of the 23 monitoring stations, thus nearly all assessed waters failed to support the either class A or B, PCR uses. Over half of the impaired sites exceeded criteria by a factor of three, with maximum values exceeding the criteria by a factor of ten. The highest geometric means

Stakeholder Input

The comment period for the Rocky River and select tributaries watershed biological and water quality report ended on August 21, 2020. The BWQR is the second step in the TMDL development process. The next step is the Loading Analysis Plan, which will additionally be available for review and comment.

Stay Involved

Subscribe to updates on TMDL projects at: https://ohioepa.custhelp.com/app/utils/login_form/redirect/account%252Fprofile.

Contact Information

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were observed from the lower Baldwin Creek, lower East Branch, Rocky River mainstem, upper West Branch, Porter Creek and Cahoon Creek.¹

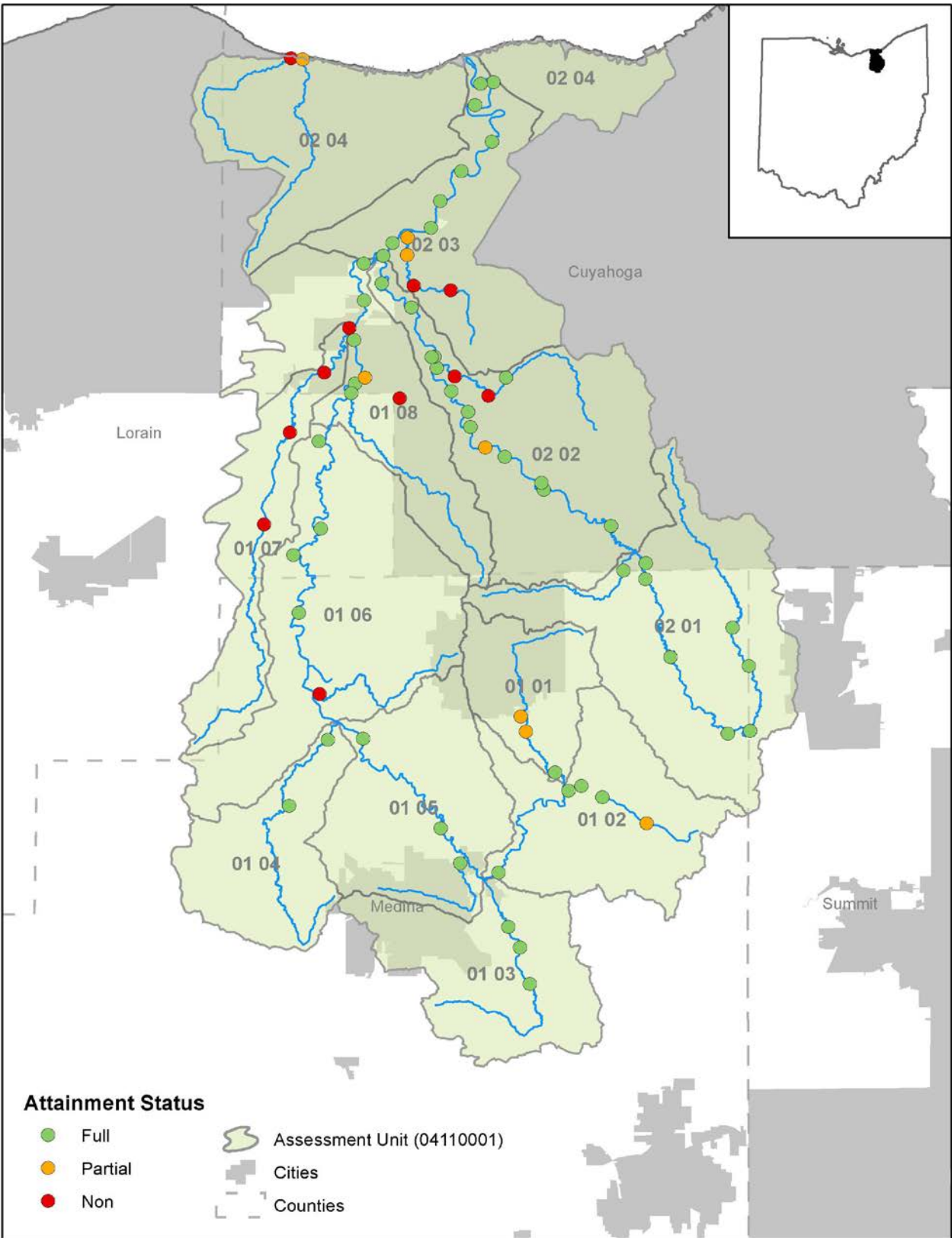


Figure 2. Aquatic life use attainment status in the Rocky River and Select Tributaries watershed, 2014.

¹ Water quality criteria were updated in 2017 as part of a routine OAC rule update. For this report, the streams were assessed using the criteria that were in place in 2015 at the time of the sampling.

[Human Health/Fish Consumption](#)

The 2014 survey found mercury contamination throughout the study area stable to declining, thus no new or otherwise more stringent advisories are recommended. The state-wide mercury advisory of one meal per week appeared appropriate for most species and most fishable waters within the Rocky River basin.

Transformed contaminant levels were indexed against the human health criteria and assessments derived for six watershed assessment units that contain larger, fishable, segments within the study area. Previous assessments of these areas found four of the six impaired due to criteria exceedances for mercury or PCBs, or both. By 2014, the magnitude and extent of contamination had declined, bringing all previously impacted units into full compliance.

[Public Water Supply](#)

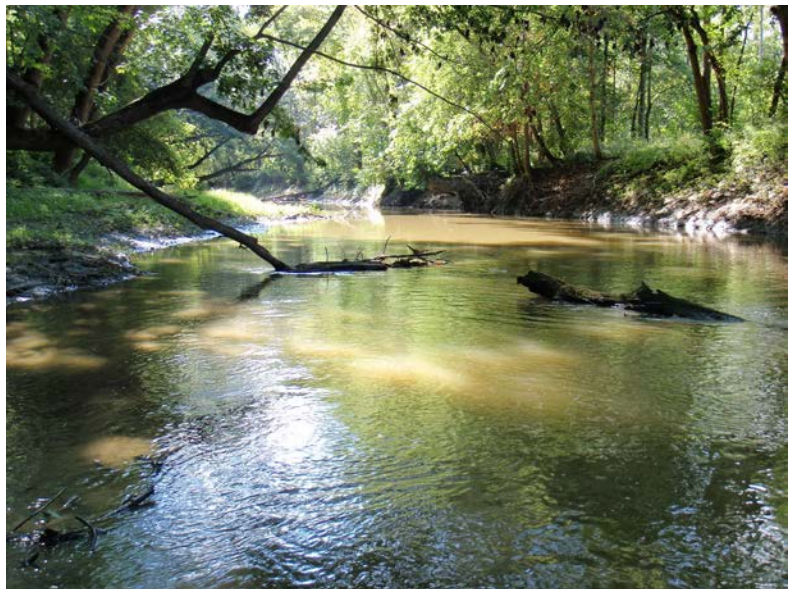
Public water supply beneficial use was evaluated for the City of Berea public water system. Source water monitoring results for nitrate, atrazine and cyanotoxins (microcystins, saxitoxins and cylindrospermopsin) were indexed against the Public Water Supply (PWS) criteria. Nitrate results indicated full support watch list determination due to a single sample exceeding 80% of the criterion. Atrazine concentrations were low and remained well-below criteria for impairment or watch list status. Most cyanotoxin results were at or below detection levels, but microcystins and saxitoxin were detected at levels of concern in Coe Lake (a secondary source water), including a microcystin exceedance resulting in a watch list determination.

[Biological and Water Quality Surveys](#)

A biological and water quality survey is a survey of the biological, chemical and physical properties of surface waters to determine the appropriate beneficial use designations (aquatic life, recreation, human health and water supply) assigned in Ohio Water Quality Standards, evaluate water quality trends and determine if the water body is meeting the goals of the federal Clean Water Act.

The objectives of a biological and water quality survey include:

- Establish the attainable ALU as codified in Ohio's water quality standards (WQS);
- Determine the status of individual river and stream sampling locations in terms of attainment and non-attainment of Ohio's WQS; and
- Document any changes through time including a time series of changes in study areas with multiple years of assessment.



Each year, Ohio EPA conducts surveys in selected watersheds around the state. The results from each survey are detailed in biological and water quality reports (BWQR). These reports summarize major findings and provide results from individual sampling locations.

The survey findings and conclusions may factor into regulatory actions taken by Ohio EPA. For example, adjustments to National Pollutant Discharge Elimination System (NPDES) permits, mitigation requirements in Section 401 Water Quality Certifications and revisions to Ohio Water Quality Standards rules [Ohio Administrative Code Chapter 3745-1]. The findings are eventually incorporated into State Water Quality Management Plans, the biennial Integrated Water Quality Monitoring and Assessment Report (305[b] and 303[d]) and Total Maximum Daily Loads (TMDLs).

[Rocky River and Select Tributaries Watershed Survey Specifics](#)

The Rocky River watershed was the subject of intensive integrated survey during the summer and fall of 2014 (Figures 4 and 5). A total of 82 sampling stations were allocated to this effort and provided for the assessment of 28 named and unnamed streams. Assessed surface waters included the Rocky River mainstem, East and West Branches, and principal affiliated tributaries. Ambient biology, macrohabitat quality, water column chemistry, and bacteriological data were collected concurrently from most of these monitoring stations. Diel observations, sediment, nutrients, and fish tissue were collected and analyzed from a subset of monitoring sites.

Beneficial Use Designations and Recommendations

As a result of previous biological surveys, six streams that are listed in the Ohio Water Quality Standards (WQS) with the Warmwater Habitat (WWH) ALU designation were verified, as is the one stream listed with the Exceptional Warmwater Habitat (EWH) ALU. The WWH ALU was confirmed based on 2015 survey results for eight streams with previously unverified ALUs. The WWH use is recommended for 13 streams in the surveyed area. EWH was determined for one stream, and Coldwater Habitat (CWH) ALUs were determined for seven streams. All streams in the 2015 survey currently designated for primary contact recreation (PCR), industrial water supply (IWS), and agricultural water supply (AWS) should retain the use. Additionally, assigning PCR, IWS, and AWS to unverified and unlisted streams from this survey is appropriate.

Where can I learn more?

- The full study report is available at epa.ohio.gov/dsw/wq.
- More information is available at epa.ohio.gov/dsw/tmdl/BlackRockyRivers#116349110-supplemental-information
- For more information about biological, chemical and physical monitoring, please see the Water Quality Monitoring webpage at epa.ohio.gov/dsw/bioassess/ohstrat.aspx.