# Evaluating Beneficial Use: Public Drinking Water Supply

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# H1. Background

The 2024 Integrated Report (IR) is the ninth reporting cycle to include assessment of the public drinking water supply (PDWS) beneficial use. Ohio continues to look for connections between Clean Water Act and Safe Drinking Water Act (SDWA) activities and leverage the programs to improve water quality and protect drinking water sources. Acknowledgement of the public water supply use and identification of impaired waters helps engage the public and stakeholders in watershed-wide planning and implementation activities. The public water systems can be effective partners in these efforts and stand to benefit through reduced treatment costs, reduced risk to human health and credits toward achieving compliance with new SDWA regulations via source water controls in the watershed.

Assessments for each public water system were completed for nitrate, pesticide, and algae (cyanotoxin) indicators. Assessments included in this cycle are based on treated and raw water quality compliance data and, to a limited extent, other source water quality data available from Ohio EPA and external sources. Information used to complete assessment determinations include public water system treatment information, intake location, number and type of reservoirs and water quality data. Assessments were completed for stream sources, in-stream impounded reservoir sources and upground reservoirs with active drinking water intakes. Figure H-1 identifies Ohio watershed assessment units (WAUs), large river assessment units (LRAUs), Ohio River assessment units (ORAU), and Lake Erie assessment units (LEAUs) that contain surface waters currently utilized as drinking water sources by a public water system. WAUs correspond to 12-digit hydrologic unit codes.

# H2. Evaluation Method

The methodology for assessing the PDWS beneficial use was first presented in the 2006 Integrated Water Quality Monitoring and Assessment Report and updates have been included in subsequent IRs. The methodology used for this reporting cycle, including the use of an algae indicator, is described in this section. For more detail on how the method was first developed and rationale for indicator selection and exclusion, please refer to the initial methodology at ***epa.ohio.gov/static/Portals/35/tmdl/2006IntReport/IR06_app_C_PDWSmethodology.pdf***.

## Beneficial Use Designation

The PDWS use designation is defined in paragraph (B)(3) of Ohio Administrative Code (OAC) rule 3745-1-07. It applies to public waters that, with conventional treatment, will be suitable for human intake and meet federal regulations for drinking water. Although not necessarily included in rules 3745-1-08 to 3745-1-30 of the OAC, the bodies of water with one or more of the following characteristics are designated public water supplies by definition:

- All publicly owned lakes and reservoirs, except for Piedmont reservoir;
- All privately owned lakes and reservoirs used as a source of public drinking water;
- All surface waters within 500 yards of an existing public water supply surface water intake; and
- All surface waters used as emergency water supplies.

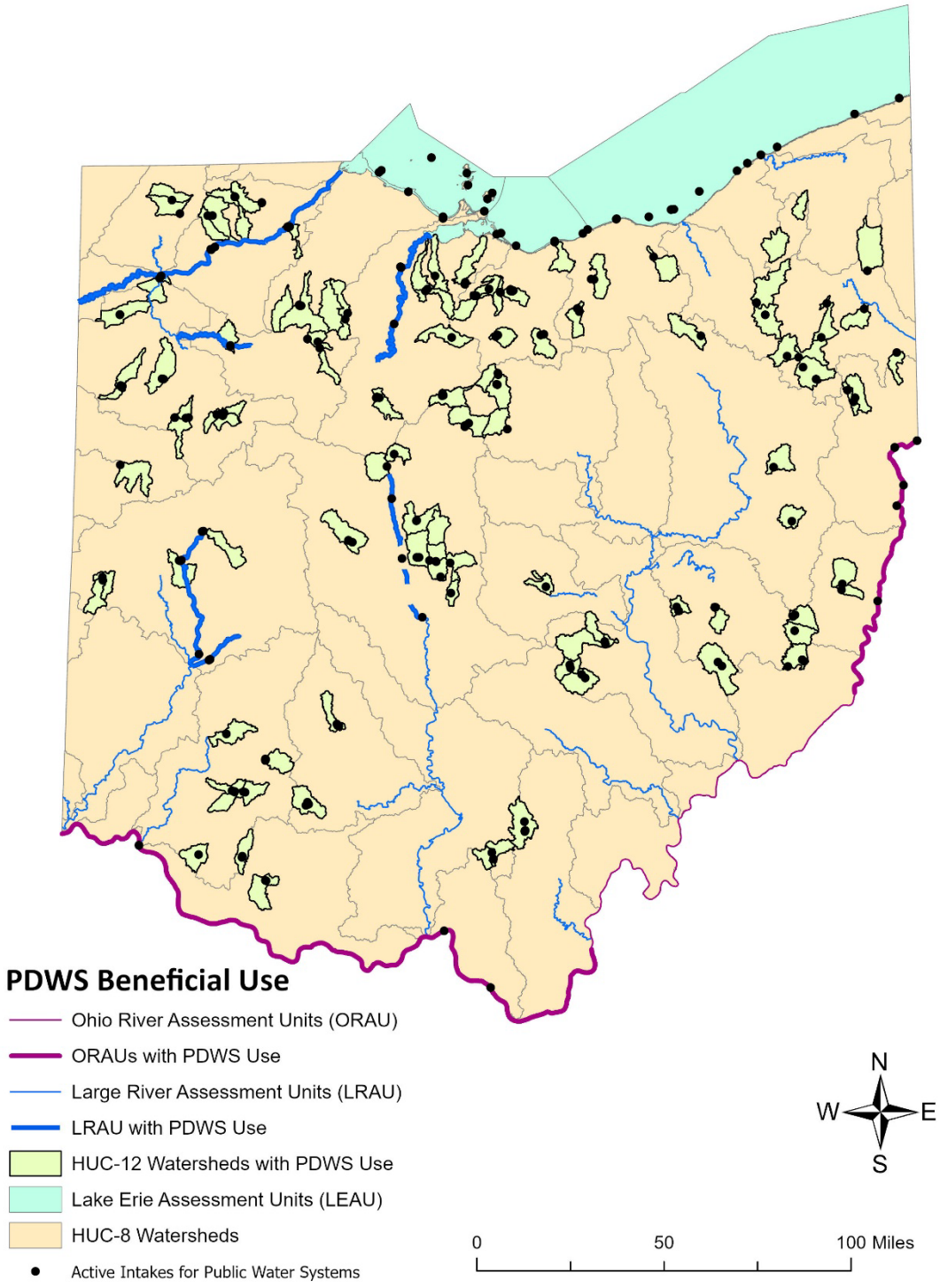


*Figure H-1 — Ohio WAUs, LRAUs and LEAUs that contain at least one active surface water drinking water intake.*

Ohio EPA is focusing assessment efforts and limited resources on water bodies currently serving as public drinking water sources. Water bodies with inactive drinking water intakes that are being maintained as an emergency source of drinking water will also be assessed. Assessments for waters designated with the PDWS use

but not currently used as a drinking water source are considered a lower priority and will be assessed only when water quality data is available.

Attainment determinations will apply to hydrologic assessment units (AUs) as defined by Ohio EPA's Division of Surface Water (DSW) (Figure H-1). For inland rivers, the assessment unit is defined as the 12-digit hydrologic unit code (HUC 12) or the large river assessment unit (LRAU). Lake Erie Assessment Units (LEAUs) include seven units based on geographic location and depth (shoreline: less than or equal to three meters and open water: greater than three meters). There are 29 active public water system intakes located within six of the seven LEAUs. There are ten pools, or assessment units, of the Ohio River along the Ohio border (see page H-9). Ten active public water system intakes are located within six of these Ohio River Assessment Units (ORAUs). Although this beneficial use designation applies to a 500-yard zone surrounding the intakes, the attainment determination will be associated with the corresponding hydrologic assessment unit and factor into the 303(d) priority listing determination for impaired waters.

## Water Quality Standards

Water quality standards are designed to protect source water quality to the extent that public water systems can meet the finished water SDWA standards utilizing only conventional treatment. Source water quality will be assessed though comparison of in-stream and applicable treated water quality data to numeric chemical water quality criteria for the core indicators: nitrate, pesticides and other contaminants, and algae and associated cyanotoxins. The numeric water quality criteria correspond to the maximum contaminant levels established by the SDWA or were adopted from U.S. EPA's 304(a) recommended water quality criteria. Criteria will apply as average concentrations except for nitrate. At elevated levels, nitrate can cause acute health effects and the SDWA finished water standard applies as a maximum concentration not to be exceeded. Consequently, the water quality criteria for nitrate will be applied as a maximum value. Annual time-weighted mean pesticide concentrations were calculated by taking the annual average of the quarterly averages and comparing to the water quality criteria.

An additional core indicator based on algae and associated cyanotoxins is based on the aesthetic narrative criteria for algae described in OAC rule 3745-1-07 and uses cyanotoxins as an indicator of algae impairment. The State of Ohio initially developed numeric cyanotoxin drinking water thresholds for microcystins, saxitoxins, anatoxin-a and cylindrospermopsin in 2011, and these thresholds were the initial basis for cyanotoxin indicators of impairment. The numeric cyanotoxin drinking water thresholds were revised in 2015 and 2020 versions State of Ohio Public Water System Harmful Algal Bloom Response Strategy. The PDWS beneficial use assessments are now based on comparison to the thresholds identified in the current State of Ohio Public Water System Harmful Algal Bloom Response Strategy. For 2024 reporting cycle, Ohio EPA aligned the cyanotoxin indicators with the adult drinking water threshold values in the current Harmful Algal Bloom Strategy for Public Water Systems (revised 2022). Since cyanotoxin thresholds are based on acute or short-term exposures, the criteria are based on a maximum concentration not to be exceeded. Public water systems in Ohio with surface water sources have routine monitoring requirements for microcystins and cyanobacteria screening that are described in OAC rule 3745-90 (revised 2022).

| Public Drinking Water Supply Beneficial Use Cyanotoxin Indicators and Thresholds | | | |
|---|---|---|---|
| Microcystins (µg/L) | Anatoxin-a (µg/L) | Cylindrospermopsin (µg/L) | Saxitoxins (µg/L) |
| 1.6 | 1.6 | 3.0 | 1.6 |

## Attainment Determination

Each assessment will result in identification of one of three attainment categories: Impaired; Full Attainment; and Not Assessed-Insufficient Data. For AUs with multiple PDWS zones, the attainment statuses of all zones are

combined and the lowest attainment status applied to determine the PDWS assessment status for the entire assessment unit. That is, the overall AU status is considered Impaired if any of the PDWS zones have an impaired attainment status. Conversely, the overall assessment status for the AU could be listed as Full Support only if sufficient data for at least the nitrate indicator was available to determine the attainment status for all PDWS zones within the AU.

AUs are further evaluated for water quality conditions placing them on a watch list. Source waters are placed on the watch list when water quality was impacted, but not at a level that indicates impairment. Waters may remain on the watch list based on historical data if current raw water data or applicable finished water quality data are not available. While these waters are still considered in full attainment of the PDWS use, they will be targeted for additional monitoring and more frequent assessment as resources allow. Table H-1 identifies impaired and watch list water quality conditions.

**Table H-1 — PDWS attainment determination.**
*Applies to ambient and treated water quality data from 2018 through 2023.*

| Indicator | Impaired Conditions |
|---|---|
| Nitrate | ☐ Two or more excursions[a] above 10.0 mg/L within the 5-year period |
| Pesticides | ☐ Annual average exceeds WQ criteria (atrazine = 3.0 µg/L) |
| Other Contaminants | ☐ Annual average exceeds WQ criteria |
| Algae: Cyanotoxins[b] | ☐ Two or more excursions[a] above the state drinking water thresholds (microcystins = 1.6 µg/L) within the 5-year period |
| *Cryptosporidium*[c] | ☐ Annual average exceeds WQ criterion (1.0 oocysts/L*)* |
| **Indicator** | **Full Attainment Conditions** |
| Nitrate | ☐ No more than one excursion[a] above 10.0 mg/L within the 5-year period |
| Pesticides | ☐ Annual average does not exceed the WQ criteria (atrazine = 3.0 µg/L) |
| Other Contaminants | ☐ Annual average does not exceed the WQ criteria |
| Algae: Cyanotoxins | ☐ No more than one excursion[a] above the state drinking water thresholds (microcystins = 1.6 µg/L, cylindrospermopsin = 3.0 µg/L, and saxitoxins = 1.6 µg/L) within the 5-year period |
| *Cryptosporidium* | ☐ Annual average does not exceed the WQ criterion |
| **Indicator** | **"Watch List" Conditions**<br>*Source waters targeted for additional monitoring and assessment* |
| Nitrate | ☐ Maximum instantaneous value > 8 mg/L (80% of WQ criterion) |
| Pesticides | ☐ Running quarterly average ≥ WQ criteria<br>☐ Maximum instantaneous value ≥ 4x WQ criteria |
| Other Contaminants | ☐ Maximum instantaneous value ≥ WQ criteria |
| Algae: Cyanotoxins | ☐ Maximum instantaneous value ≥ 50% of the state drinking water thresholds |
| *Cryptosporidium* | ☐ Annual average ≥ 0.075 oocysts/L |

[a] Excursions must be at least 30 days apart in order to capture separate or extended source water quality events.
[b] Impaired conditions based on source water detections at inland public water systems and detections at public water system intakes for Lake Erie source waters. Cyanotoxins include: microcystins, saxitoxins, anatoxin-a and cylindrospermopsin.
[c] Impaired conditions for *Cryptosporidium* are based on water quality criteria that Ohio EPA intends to develop.

## Data Sources and Requirements

To capture current water quality conditions, the beneficial use will be evaluated using the most recent five years of data. The 2024 PDWS use impairment list was developed using public water system compliance monitoring treated and raw water quality data and ambient (stream and lake) water quality data from January 2018 through September 2023. Water quality data were requested and obtained from the Syngenta Crop Protection, Inc. Atrazine Monitoring Program (AMP; 2012-2019; monitoring activities were suspended on 1/17/2020). Treated

water quality data were obtained from the Safe Drinking Water Information System (SDWIS) database, which contains all SDWA compliance data submitted to the Division of Drinking and Ground Waters (DDAGW) by Ohio public water systems and their certified laboratories. Raw water quality data from samples collected near intakes were obtained from DSW's ambient monitoring database and level 3 credible data collected and submitted by level 3 qualified data collectors. Additional raw water quality data were collected by DDAGW at intake locations and cyanotoxin data were retrieved from Ohio EPA's Harmful Algal Bloom database.

Treated water quality data could only be used for the assessments if the water system did not blend with ground water, selectively pump from the stream source to an upground reservoir to avoid contamination or use a nitrate or pesticide removal treatment process. A significant number of water systems use activated carbon during the water treatment process, which precludes use of the treated pesticide data for PDWS assessments and leads to a significant number of assessments completed with nitrate and algae data only.

The following sampling guidance was followed to ensure that surface water samples are representative of the source water:

- Preferred sampling location was within the 500-yard PDWS zone or directly at the intake. Samples collected from the treatment plant raw water line were also considered representative.
- Data collected upstream from the intake beyond the 500-yard zone were utilized if there were no significant hydrologic or water quality changes between the sample location and the intake. Dams, channel modification, tributaries with significant flow or contaminant sources were assumed to significantly alter in-stream water quality and limit applicability of farther upstream sampling data.
- For PDWS lakes and reservoirs with known stratification or seasonal turnover, the preferred data collection location was either the raw water intake line or in the lake at the same depth or zone as the raw water intake screen(s). Surface sampling data collected at the intake were utilized if no other raw water data were available.

PDWS attainment determinations based on small sample sets present several challenges. The small sample set may fail to identify an exceedance of a water quality standard, resulting in a determination of attainment, when in fact an area is impaired. Statistical confidence in the determination decision is also reduced. To address these concerns, the assessment looks at multiple lines of evidence including several sources of water quality data and treatment plant information. The attainment decision target sample size is 20 samples collected within the past five years. This sample count will provide sufficient power to detect exceedances of greater than or equal to 15 percent above the criterion with a Type I error of 0.15. Ohio EPA has limited resources for source water sampling, therefore attainment determinations may be concluded with a minimum of 10 samples if these samples represent the critical period when the contaminant is typically detected. Attainment decisions may also be made with less than the required sample count when there is overwhelming evidence of impairment, such as a large single sample exceedance of nitrate or microcystins (verified with a repeat sample).

Many source water contaminants occur in surface waters seasonally with maximum concentration in early spring through summer. To ensure that sampling for nitrates and pesticides accurately characterizes these seasonal fluxes, at least 50 percent of the samples are collected from March to August with at least two years represented. The critical sampling time for cyanotoxins is late spring through fall (May to November). To minimize dataset seasonal bias, any impairment determination based on exceedance of a mean water quality criterion requires a minimum of 10 samples representing at least two seasons. If a large dataset is available with sample collection skewed toward high flow events (stratified sampling program), it may be necessary to calculate time-weighted seasonal or monthly average values.

Most of the nitrate assessments were completed with sufficient samples and well over the recommended minimum sample counts. Much lower sample counts for pesticides were available and several assessments were completed with fewer than 10 samples. Use of fewer than 10 samples were allowed if the samples were collected

from at least two separate years, the samples were all within the spring runoff period (typically March through June), and all results were well below (less than 50 percent) the water quality criteria. Exception to the ten-sample minimum was also allowed if the PDWS zone was in an area with minimal atrazine application, all samples were also below the criteria, and available samples were collected during the spring runoff period when occurrence is most likely.

To provide additional information within the Not Assessed reporting category 3, Insufficient Information was used to note when some water quality data were available but not enough to complete an assessment. A determination was also made to retain all impaired listings until sufficient valid data were obtained to justify delisting.

The impaired status will remain until there are five consecutive years without any excursions and sufficient raw water data are obtained. The same number of samples required to list an AU as impaired due to nitrate, pesticides or algae will be required to delist the AU.

For the 2024 assessment cycle, only the nitrate, pesticide and algae (cyanotoxin) indicators were evaluated in-depth. Other contaminants monitored by the public water systems for SDWA compliance and reported in the SDWIS database were also reviewed but no in-stream raw water data were evaluated for these contaminants.

### Ohio River Assessments

For the current reporting cycle, Ohio River Assessment Units with intakes providing source water to Ohio PWS were included in the assessment. The Ohio River Valley Water Sanitation Commission (ORSANCO) also evaluates and presents assessments in the Biennial Assessment of Ohio River Water Quality Conditions Report. ORSANCO is an interstate agency that was created in 1948 to control and abate pollution in the Ohio River Basin. ORSANCO operates programs to monitor, assess and improve water quality within the basin. ORSANCO's water quality standards are available at the commission's website: ***orsanco.org***. The Ohio River has a series of pools connected by locks and dams installed for navigational purposes. Each pool has its own unique characteristics and are considered as separate assessment units for this report. Of the ten pools (assessment units) along the Ohio border, six include active public water system intakes.

## H3. Results

Using the PDWS assessment methodology and available water quality data, results for the PDWS beneficial use are presented here for all WAUs, LRAUs, ORAUs, and LEAUs where the PDWS use applies. Applicable water quality data were evaluated to determine an impairment status for each key indicator in each AU. To be considered assessed, sufficient data were required for only the nitrate indicator. There are 107 public water systems using surface water (excluding purchased water systems and multiple facilities at a water system) in 121 separate AUs. The 121 AUs with the PDWS beneficial use include the following: 100 WAUs; nine LRAUs; six ORAUs; and six LEAUs. A summary of the nitrate, pesticide and algae (cyanotoxin) indicators for each public water system are presented in Section H4. Table H-2 provides supporting information for each of the 49 AUs listed as impaired for the PDWS beneficial use.

**Nitrate Indicator.** Sufficient data were available to complete nitrate evaluations for 68 (56 percent) of the 121 AUs using data primarily from Ohio EPA's compliance database and Ohio EPA watershed surveys. Of all 121 AUs, eight (five percent) were identified as impaired and 60 (50 percent) were in full support. Impairments included five of the nine LRAUs (three Maumee River, one Sandusky River, and one Scioto River LRAUs remain impaired). Most of the 31 waters placed on the nitrate watch list (single detection greater than 8 mg/L) are in northwestern Ohio (Figure H-2).

**Pesticide Indicator.** Sufficient data were available to complete atrazine evaluations for 37 (30 percent) of the 121 PDWS AUs using data from Ohio EPA's compliance database (treated water), Ohio EPA water quality surveys and

Syngenta Crop Protection, Inc.'s AMP. Five of the WAUs were impaired. There were no new assessment units identified as impaired due to pesticides. For LRAUs, six remained on the watch list from the previous report cycle. A total of 25 waters were placed on the pesticide watch list because of elevated atrazine [single exceedance of four times the water quality criteria (WQC) or quarterly average greater than WQC]. These areas of elevated atrazine coincide with the predominantly agricultural land use in western and northwestern Ohio (Figure H-3).

**Algae (cyanotoxin) Indicator.** Starting June 1, 2016, Ohio public water systems are required to conduct routine monitoring for microcystins and cyanobacteria, greatly increasing the data available to assess the algae indicator. Sufficient data were available to list 40 AUs (33 percent) as impaired due to algae. The impairment listing includes five AUs in Lake Erie with drinking water intakes, including: Western Basin shoreline and open water; Sandusky Basin shoreline and open water; and Island shoreline AUs. In addition, 32 WAUs and three LRAUs are assessed as impaired. An additional 23 AUs were placed on the algae watch list. Microcystins are the predominant cyanotoxin impacting attainment determinations. WAUs that are impaired or on the watch list for cyanotoxins were found distributed across Ohio virtually in every geographic region (Figure H-4).

**Cryptosporidium Indicator.** As noted in the 2022 report, Ohio EPA has not yet formalized water criteria for Cryptosporidium, therefore an assessment of this indicator could not be included in this report nor used for Ohio's previous 303(d) listings. Ohio EPA will continue to evaluate formalizing the criteria for cryptosporidium. To demonstrate how the data could be evaluated using the PDWS methodology, Ohio EPA requested all available Cryptosporidium data from U.S. EPA and summarized the results. The highest average (in oocysts/L) in any 12 consecutive months is compared to SDWA Bin classifications 1 through 4. Ohio EPA's proposed water quality criteria and watch list condition for Cryptosporidium correlate to these trigger concentrations for the Bins.

Cryptosporidium data are available for 115 public water systems. This dataset included samples collected to fulfill SDWA regulations that require the water systems to submit samples over a two-year period. Water systems collected between 24 to 47 samples in Round 1 of data collection which started in 2006 and was completed in 2012. Round 2 of sampling began in 2015, and all public water systems have completed Round 2 with their existing sources. Only one public water system (Painesville) has added a new surface water source since Round 2 sampling ended; their sampling was completed in 2022 with no cryptosporidium detections.

A review of available data indicates that no water systems have exceeded the 1.0 oocysts/L 12-month average. Following Round 2 monitoring, eight public water systems had average concentrations between 0.075 oocysts/L and 1.0 oocysts/L. These systems are: City of Delaware (had an average less than 0.075 oocysts, but officially chose to stay in Bin 1), Newark, Greenville, Campbell (which has since deactivated their source and plant and have connected to another public water system to purchase finished water), Salem, Columbus Dublin Plant, Napoleon, and Sebring.

## H4. Supplemental Information

Table H-3 provides a summary of PDWS assessment results for the nitrate, pesticide and algae indicators and is organized by assessment unit. A description of the PDWS use zone is also included.

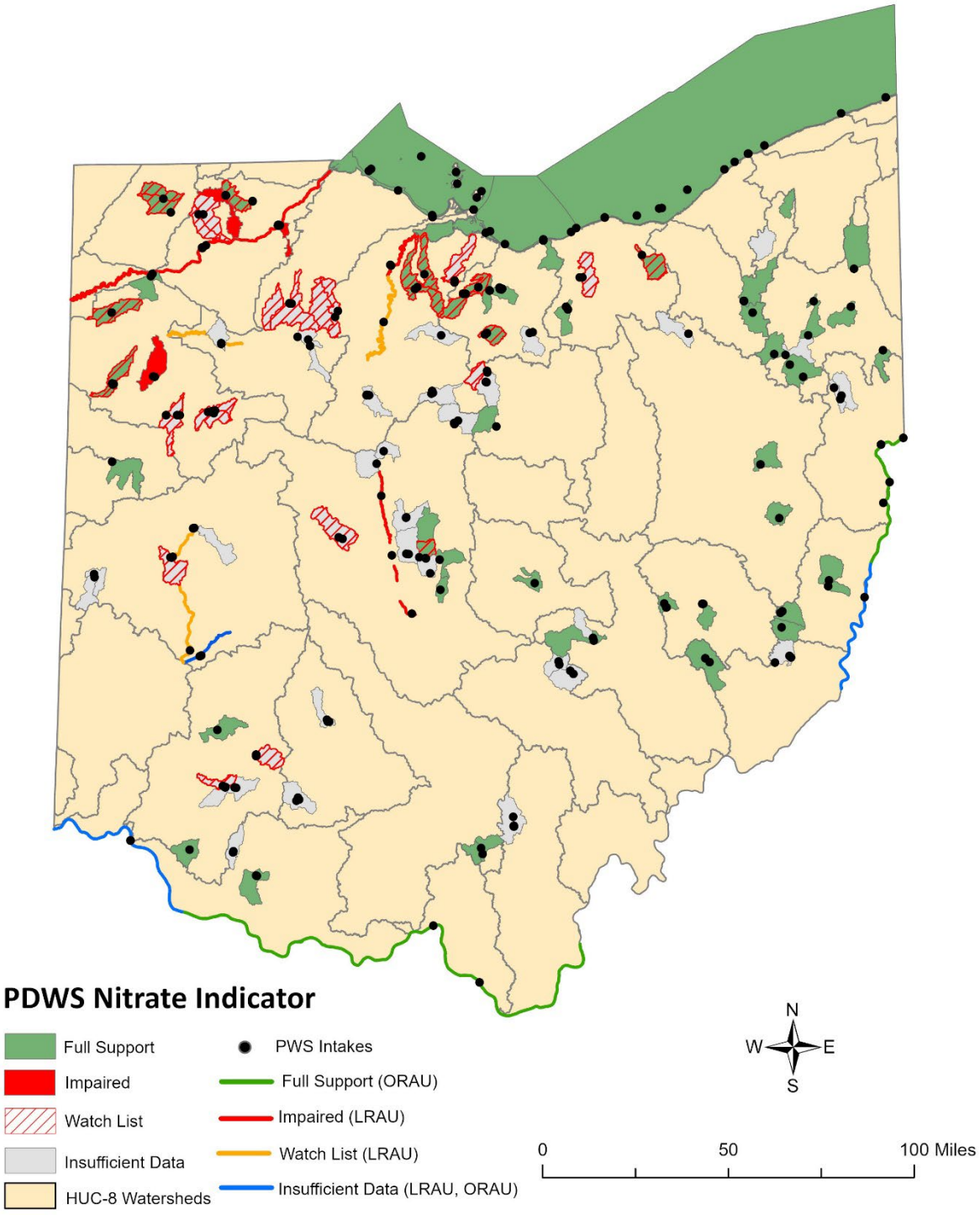


*Figure H-2 — AUs with nitrate indicator results.*

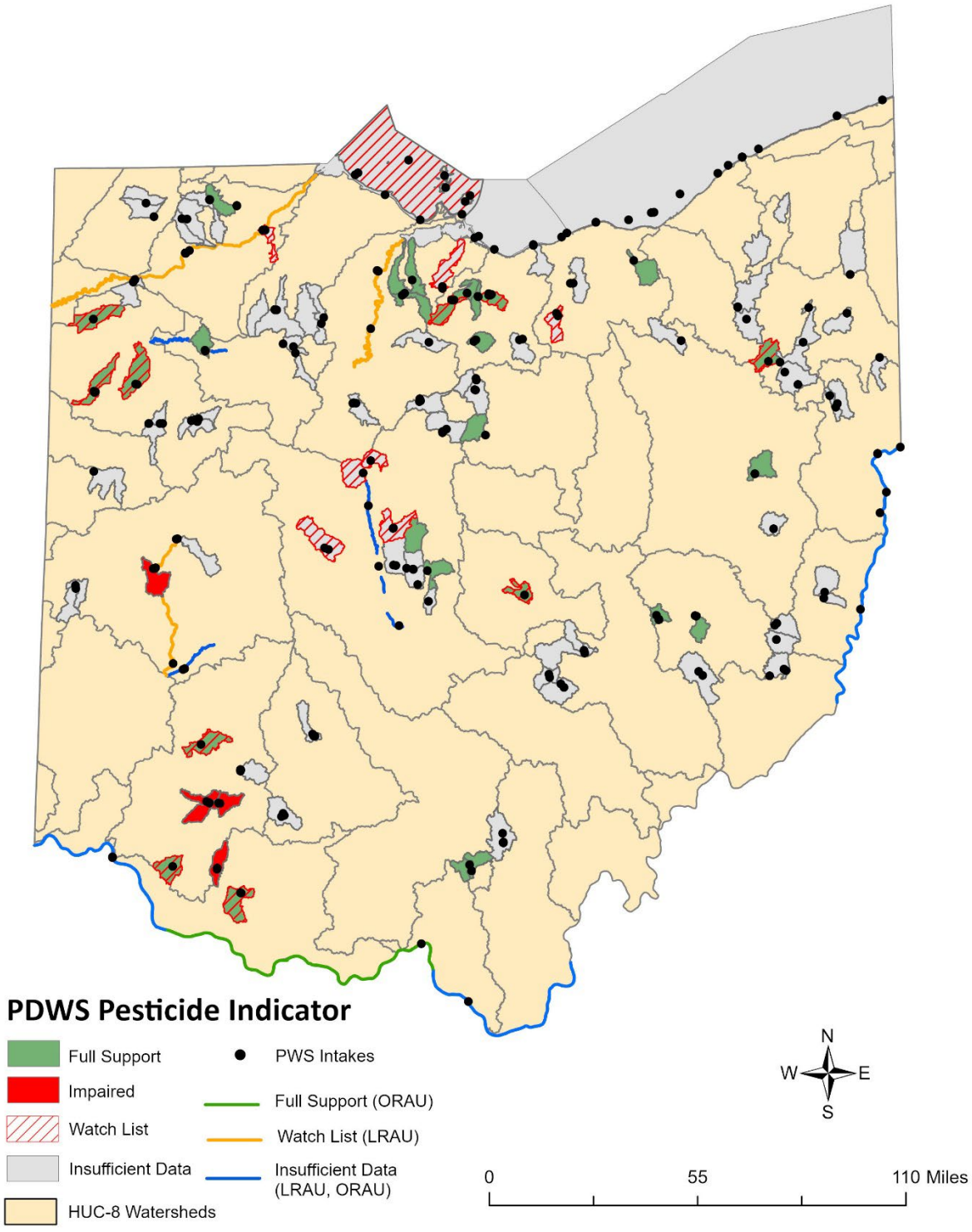


*Figure H-3 — AUs with pesticide indicator results.*

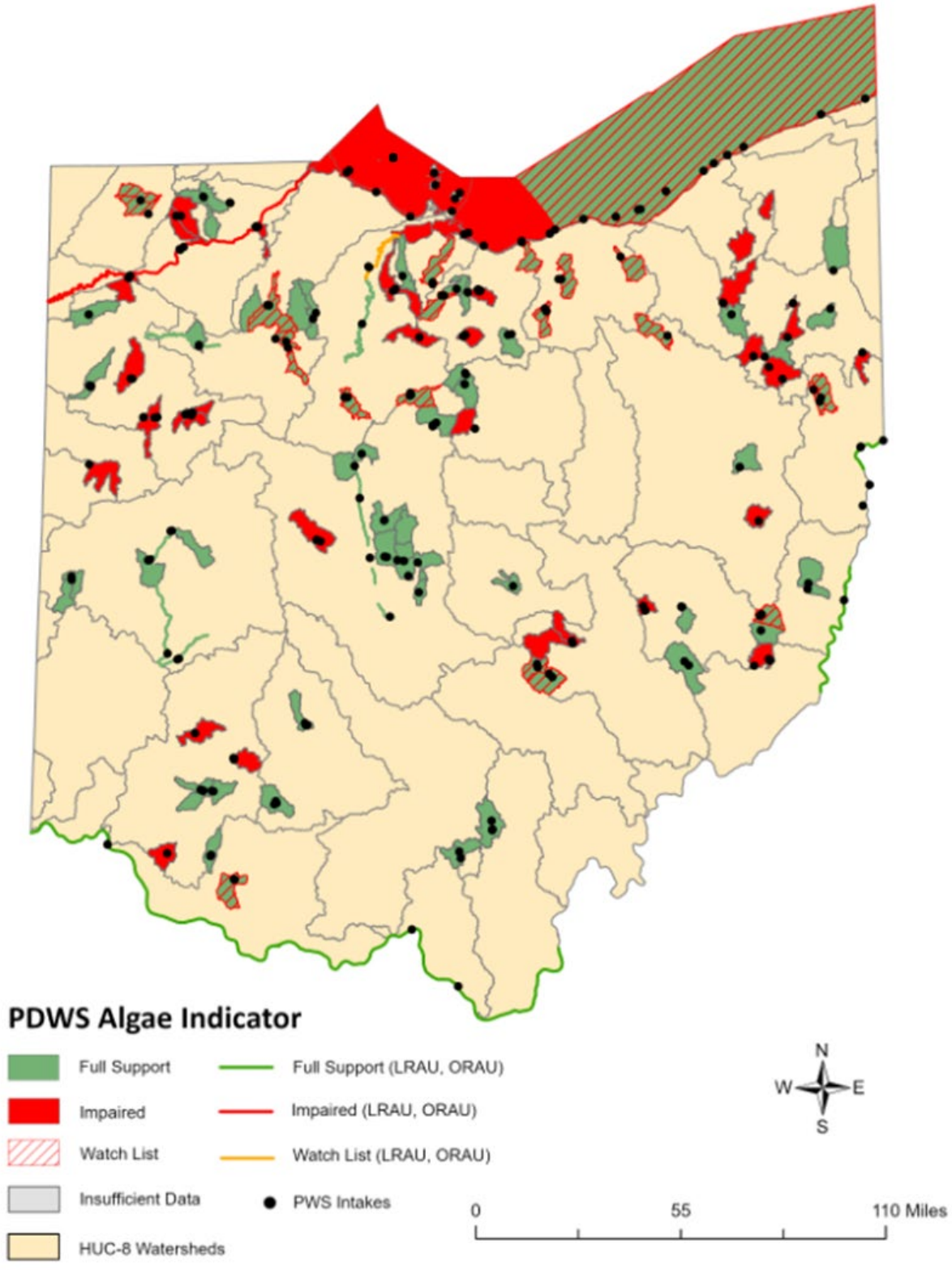


*Figure H-4 — AUs with algal toxin indicator results.*

**Table H-2 — Waters designated as impaired for (not supporting) the PDWS beneficial use.**

| Assessment Unit | Cause of Impairment | Summary of Key Water Quality Data |
|---|---|---|
| 04100005 90 01<br>Maumee River Mainstem (IN border to Tiffin River) | *Nitrate*<br>One public water system had at least one excursion above the nitrate WQC and finished nitrate levels above the WQC. Original impairment listed in 2008.<br>*Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | The City of Defiance exceeded the nitrate WQC in finished water during three events (12/24/02-1/28/03; 6/17/03-6/19/03; and 5/15/06-5/16/06). None of the excursions occurred during the reporting period, but the impairment will remain until raw water is collected that supports delisting the assessment unit. A watch list level exceedance occurred on 1/14/13 (8.73 mg/L) and there were seven samples collected by the public water system at their intake that exceeded the WQC (>10 mg/L), indicating more data is needed to delist.<br>The source water for the City of Defiance exceeded the microcystins threshold in 2014, 2016, and 2019 (maximum concentration 19 µg/L at Maumee River intake). |
| 04100007 02 03<br>Sims Run-Auglaize River<br>04100007 03 05<br>Lost Creek<br>04100007 03 06<br>Lima Reservoir- Ottawa River<br>04100007 04 03<br>Honey Run | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | The City of Lima's Metzger Reservoir exceeded the microcystins threshold two times in 2010 and once in 2012 (maximum concentration 5.3 µg/L).<br>The City of Lima's raw water sources, including Williams Reservoir and Bresler Reservoir, had raw water microcystins detections that exceeded the threshold in 2012, 2015, 2018, and 2020. Maximum microcystins concentrations were 7.46 µg/L (raw water), 1400 µg/L (Williams), and 39 µg/L (Bresler). |
| 04100007 06 04<br>Dry Fork-Little Auglaize River | *Nitrate*<br>One public water system had two excursions above the Nitrate 10.0 mg/L WQC.<br>*Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | Nitrate samples collected from the source water for City of Delphos public water system exceeded the WQC in 2015 and 2017. Included were 15.9 mg/L on 6/10/15 and 15.6 mg/L on 12/2/17.<br>The City of Delphos' raw water had microcystins exceeding the threshold in 2016, 2018, and 2019 (maximum concentration 19 µg/L). |
| 04100007 12 09<br>Eagle Creek – Auglaize River | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | The City of Defiance had raw water microcystins exceeding the threshold during June and July 2019 (maximum concentration 5 µg/L at plant and 17 µg/L in Defiance WTP Reservoir). |
| 04100009 03 02<br>Lower Bad Creek | *Nitrate*<br>One public water system had two excursions above the Nitrate 10.0 mg/L WQC. | Nitrate samples collected from source water for Delta public water system exceeded WQC in 2015. Included were 17.6 mg/L on 6/11/15 and 13.4 mg/L on 7/14/15. |
| 04100009 04 02<br>North Turkeyfoot Creek | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | The source water for Wauseon had microcystins that exceeded the threshold in 2018, 2020, 2022 (maximum concentration 8.8 µg/L). |

| Assessment Unit | Cause of Impairment | Summary of Key Water Quality Data |
|---|---|---|
| 04100009 90 01<br>Maumee River Mainstem (Tiffin River to Beaver Creek) | *Nitrate*<br>One public water system had several excursions above the nitrate WQC during the 5-year period. The public water system had finished nitrate levels above the WQC and received SDWA violations.<br>*Algae*<br>Two public water systems had at least two raw water samples above the threshold for microcystins. | Finished water nitrate excursions occurred at Campbell Soup in 2012 (11.3 - 12.5 mg/L), 2014 (10.6 mg/L), 2016 (10.6 – 11.3 mg/L), and 2018 (12.4 – 14.9 mg/L). In addition to nitrate WQC exceedances, finished water sample results exceeded the 8.0 mg/L watch list threshold at Campbell Soup in 2019 and 2021.<br>Finished water sample results exceeded the 8.0 mg/L watch list threshold at Napoleon in 2012, 2013, 2014, 2015 and 2016. Campbell Soup's Maumee River intake exceeded the microcystins threshold in 2015, 2016, 2017, 2018, and 2020 (maximum concentration 6 µg/L) and Napoleon exceeded the threshold in 2015, 2016, 2018 and 2020 (maximum concentration 4.0 µg/L). |
| 04100009 90 02<br>Maumee River Mainstem (Beaver Creek to Maumee Bay)<br>04100009 06 03<br>Haskins Ditch – Maumee River | *Nitrate*<br>One public water system had at least one excursion above the nitrate WQC during the 5-year period.<br>*Algae*<br>One public water system had at least two raw water samples above the threshold for microcystins. | Numerous Maumee River samples from 2012 to 2015 exceeded the Nitrate WQC. In addition, raw water from Bowling Green exceeded the nitrate WQC during three events in 2011 and 2012.<br>The source water for Bowling Green public water system had microcystins detections that exceeded the threshold in 2013, 2014, 2015, 2018, and 2020 (maximum concentration in plant raw water was 6.3 µg/L in 2020, maximum concentration in Bowling Green Reservoir was 20,000 µg/L in 2014). |
| 04100011 12 02<br>Beaver Creek<br>04100011 12 03<br>Green Creek | *Algae*<br>One public water system had numerous microcystins concentrations above the threshold. | For the City of Clyde public water system, Beaver Creek Reservoir raw water sample results for microcystins routinely exceeded the threshold in 2014 and 2015. Included was a maximum of 300 µg/L in July 2015 on Beaver Reservoir. |
| 04100011 08 05<br>Middle Honey Creek | *Algae*<br>One public water system had numerous microcystins concentrations above the threshold. | Attica Village public water system had raw water microcystins detections that exceeded the threshold in 2018, 2019 and 2020 (maximum 30 µg/L). |
| 04100011 90 02<br>Sandusky River Mainstem (Wolf Creek to Sandusky Bay) | *Nitrate*<br>One public water system had an excursion above the nitrate WQC during the 5-year period in both raw and finished water. This public water system also received SDWA violations. | The City of Fremont exceeded the nitrate WQC in May 2010 (13 mg/L). In addition, Sandusky River samples exceeded the nitrate WQ criteria numerous times during 2010—2015. |
| 04100012 04 03<br>Walnut Creek - West Branch Huron River | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | The City of Willard's raw water had microcystins exceeding the threshold on one occasion in 2015 and on multiple occasions in October and November of 2017 (maximum detection greater than 5 µg/L). |

| Assessment Unit | Cause of Impairment | Summary of Key Water Quality Data |
|---|---|---|
| 04100012 06 03<br>Norwalk Creek | *Algae*<br>One public water system had at least two raw water samples above the threshold for microcystins. | The source water for Norwalk public water system, Memorial Reservoir, had microcystins detections that exceeded threshold in 2014 and 2015 (maximum concentration 22.7 µg/L in August 2014 and results greater than 5.0 µg/L in June and July 2015). |
| 04110002 01 01<br>East Branch Reservoir-East Branch Cuyahoga River<br>04110002 01 04<br>Ladue Reservoir-Bridge Creek<br>04110002 02 03<br>Lake Rockwell-Cuyahoga River | *Algae*<br>One public water system had at least two raw water samples in each assessment unit with microcystins concentrations above the threshold. | Source waters for the City of Akron had microcystins levels that exceeded the drinking water threshold in 2010, 2016, and 2017. In 2010, maximum raw water microcystins concentrations were 43 µg/L in LaDue reservoir, 3.6 µg/L in East Branch reservoir and 3.2 µg/L in Lake Rockwell. Maximum microcystins concentrations at Akron's Lake Rockwell intake were 1.3 µg/L in 2016 and 2.2 µg/L in 2017. |
| 05030103 02 01<br>Fish Creek-Mahoning River<br>05030103 02 01<br>Deer Creek | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | The source water for City of Alliance, including Walborn Reservoir, had microcystins levels that exceeded the threshold in 2018, 2020, 2021, 2022, and 2023 (maximum concentration 9.95 µg/L). |
| 05030103 03 06<br>Charley Run Creek-Mahoning River | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | Newton Falls had source water concentrations of total microcystins that exceeded the threshold in 2020 and 2021 (maximum 7.13 µg/L). |
| 05030103 08 05<br>Headwater Yellow Creek | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | Aqua Ohio Struthers source water from Lake Evans had microcystins exceeding the threshold in 2016, 2017, 2018, and 2019, 2021 (maximum concentration greater than 10 µg/L). |
| 05030201 01 01<br>Upper Sunfish Creek | *Algae*<br>One public water system had at least two raw water samples above the threshold for microcystins. | Raw water sampling for the Village of Woodsfield source water from Ruble Lake and Witten Lake exceeded the microcystins threshold in 2010 and 2015. Maximum microcystins concentration on Rubel Lake in 2010 was 360 µg/L. Maximum microcystins concentration on Witten Lake in 2015 was 2.1 µg/L. |
| 05040001 15 03<br>Upper Little Stillwater Creek | *Algae*<br>One public water system had at least two raw water samples above the threshold for microcystins. | The Village of Cadiz raw water sampling from Tappan Lake exceeded the microcystins threshold in 2014, 2015, 2016, 2017, 2019, 2020, 2021, 2022, and 2023. The maximum concentration was 12 µg/L. |

| Assessment Unit | Cause of Impairment | Summary of Key Water Quality Data |
|---|---|---|
| 05040002 03 01<br>Headwaters Clear Fork Mohican River | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | The City of Mansfield's source water from Clear Fork reservoir had microcystins exceeding the threshold in 2016 and 2018 (maximum concentration 5.6 µg/L). |
| 05040004 04 05<br>Kent Run<br>05040004 04 07<br>Painter Creek-Jonathon Creek | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | The City of Maysville's source water had microcystins exceeding the threshold in 2016, 2019, 2020, 2021, and 2022 (maximum concentration 8.8 µg/L). |
| 05040005 05 01<br>North Crooked Creek | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | Source water for New Concord public water system had microcystins exceeding the threshold in 2014, 2018, and 2022 (maximum concentration 5.6 µg/L). |
| 05060001 06 02<br>Middle Mill Creek | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | The City of Marysville's source water had microcystins exceeding the threshold in September, October, and December 2017 (maximum concentration 3.1 µg/L). |
| 05060001 90 01<br>Scioto River Mainstem (L. Scioto R. to Olentangy R.); excluding O'Shaughnessy and Griggs reservoirs | *Nitrate*<br>One public water system had an excursion above the nitrate WQC during the 5-year period in both raw and finished water. This public water system also received SDWA violations. | The City of Columbus exceeded the nitrate WQC in finished drinking water from 6/8/15 through 6/17/15 (maximum 12.5 mg/L) and again from 6/17/16 through 7/1/16 (maximum 10.7 mg/L). |
| 05080001 07 05<br>Garbry Creek-Great Miami River | *Pesticides*<br>One public water system had the pesticide atrazine in source water where the annual average exceeded the WQC. | The City of Piqua uses several surface water sources and participates in Syngenta Crop Protection's AMP1. Swift Run Lake (impounded section of Swift Run) is one of the three drinking water sources and the atrazine annual average2 was 3.62 µg/L in 2008 (annual average exceeded WQC in 2011, 2018, and 2019). In recent years, atrazine results remained at levels of concern with several lake samples exceeding 12.0 µg/L (4x WQC; maximum 38.5 µg/L in 2011, 17.1 µg/L in 2014, 16.1 µg/L in 2017, 36.5 µg/L in 2018, and 52.4 µg/L in 2019). |
| 05090201 10 01<br>Sterling Run | *Pesticides*<br>One public water system had the pesticide atrazine in source water where the annual average exceeded the WQC. | The Village of Mt. Orab draws surface water from Sterling Run and participates in Syngenta Crop Protection's AMP[1]. The 2011 annual average[2] (6.2 µg/L) exceeded the WQC. In addition, single sample maximum atrazine detections were over four times the WQC in June 2011 (121 µg/L) and April 2012 (18.05 µg/L). |

| Assessment Unit | Cause of Impairment | Summary of Key Water Quality Data |
|---|---|---|
| 05090202 04 06<br>Lower Caesar Creek<br>05090202 06 04<br>Headwaters Cowan Creek | *Algae*<br>One public water system had at least two source water samples above the threshold for microcystins. | The City of Wilmington's source water had microcystins exceeding the threshold in 2017 (maximum 12.8 µg/L at Caesar Creek Lake intake) and 2019 (maximum 8.1 µg/L at Caesar Creek State Park, South Beach). |
| 05090202 07 02<br>Second Creek<br>05090202 10 05<br>West Fork East Fork Little Miami River<br>05090202 13 01<br>Headwaters Stonelick Creek | *Pesticides*<br>One public water system had the pesticide atrazine in source water where the annual average exceeded the WQC. | The Village of Blanchester draws surface water from Whitacre Run, Stonelick Creek and the West Fork of the East Fork Little Miami River and participates in Syngenta Crop Protection's AMP[1]. The raw and finished water sampling locations for this monitoring program do not differentiate between the three separate source waters. In 2005, the annual average of the AMP samples was 4.63 µg/L and exceeded the WQC for atrazine in finished water. Ohio EPA conducted two sampling runs in 2008 at the three separate sources and measured elevated atrazine levels ranging between 23 µg/L and 70 µg/L. Considering the 2008 atrazine levels, Ohio EPA conservatively applied the impairment listing to all three AUs. In 2012, atrazine concentrations were greater than four times the WQC in samples collected at Stonelick Creek (102.0 µg/L) and the West Fork of the East Fork Little Miami River (89.5 µg/L) and resulting annual averages for atrazine exceeded the WQC in the source water. Finished water result of 21.7 µg/L in May 2014. The impairment listings will remain until adequate source water sampling is conducted to confirm the water source is no longer impaired. |
| 05090202 12 03<br>Lucy Run-East Fork Little Miami River | *Algae*<br>One public water system had at least two source raw water samples with microcystins concentrations above the threshold. | Multiple raw water samples collected from Clermont County public water system source water locations on Harsha Lake (East Fork Lake State Park) from 2012 to 2017 and 2021 exceeded the microcystins threshold. Maximum concentration observed was reported as greater than 500 µg/L in July 2021. |
| 05120101 02 04<br>Grand Lake-St Marys | *Algae*<br>One public water system had at least two raw water samples with microcystins concentrations above the threshold. | The Grand Lake Saint Marys public water system intake for the City of Celina continues to be heavily impacted by microcystins. Threshold exceedances have occurred every year since the lake was first sampled in 2009, with exceedances occurring year-round in some years and, with a maximum detection of 194 µg/L on 5/15/2017. |
| 041202000201<br>Lake Erie Western Basin Shoreline (≤3m) | *Algae*<br>Two public water systems had at least two raw water samples with microcystins concentrations above the threshold. | Carroll Township and Ottawa County had raw water samples that exceeded the microcystins threshold in 2010, 2011, 2013-2015, and 2017-2022. Maximum detection of microcystins was 22.4 µg/L in August 2019. |

| Assessment Unit | Cause of Impairment | Summary of Key Water Quality Data |
|---|---|---|
| 041202000301<br>Lake Erie Western Basin Open Water (>3m) | *Algae*<br>Four public water systems had at least two raw water samples above the threshold for microcystins. | Oregon had raw water samples that exceeded the microcystins threshold in 2010, 2011,2013-—2019, and 2021-2023. Toledo had raw water samples that exceeded the microcystins threshold in 2010, 2011, 2013-2015, 2017-2019, 2021-2023. Marblehead had raw water samples that exceed the microcystins threshold in 2015, 2017, and 2021. Kelleys Island had results above the threshold from 2015, 2017, 2018 and 2021. |
| 041202000101<br>Lake Erie Islands Shoreline (≤3m) | *Algae*<br>Three public water systems had at least two raw water samples above the threshold for microcystins. | Put-In-Bay had sample results above the threshold in 2010, 2013-2015, 2017-2019, and 2021. Camp Patmos had results above the threshold in 2010, 2013-2015, and 2017-2019. Lake Erie Utilities had results above the threshold in 2014, 2015, 2018-2020. |
| 041202000202<br>Lake Erie Sandusky Basin Shoreline (≤3 m) | *Algae*<br>One public water system had at least two raw water samples above the threshold for microcystins. | Sandusky had raw water samples that exceeded the microcystins threshold in 2015, 2017, 2018 and 2021. |
| 041202000302<br>Lake Erie Sandusky Basin Open Water (>3 m) | *Algae*<br>Two public water systems had at least two raw water samples above the threshold for microcystins. | Huron had raw water microcystins above the threshold in 2013, 2015, 2017 and 2018. Sandusky had raw water samples that exceeded the microcystins threshold in 2015, 2017, 2018 and 2021. |

[1] The January 2003 Atrazine Interim Reregistration Eligibility Decision and subsequent Memorandum of Agreement between U.S. EPA and the atrazine registrants, including Syngenta Crop Protection, Inc., initiated an atrazine monitoring program at select community water systems. The atrazine monitoring activities were suspended on January 17, 2020.
[2] Annual average calculated as average of the quarterly means for calendar year.

**Table H-3 — Summary of PDWS assessment results for the nitrate, pesticide and algae indicators.**

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 04100005 90 01 | Maumee River Mainstem (IN border to Tiffin River) | Maumee River @ RM 65.84 [Defiance] | No | Impaired | Full Support; Watch List | Impaired |
| 04100006 03 01 | Bates Creek-Tiffin River | Tiffin River @ RM 47.54 [Archbold] | Yes | Full Support; Watch List | Insufficient Data | Full Support; Watch List |
| 04100006 03 03 | Flat Run-Tiffin River | Archbold Upground Reservoirs [Archbold] | Yes | Full Support; Watch List | Insufficient Data | Full Support; Watch List |
| 04100007 02 03 | Sims Run-Auglaize River | Auglaize River @ RM 64.58 (Agerter Rd), Williams and Bresler Reservoirs [Lima] | No | Insufficient Data; Watch List | Insufficient Data | Impaired |
| 04100007 03 05 | Lost Creek | Lima Metzger, Ferguson, and Lost Creek Reservoirs [Lima] | No | Insufficient Data; Watch List | Insufficient Data | Impaired |
| 04100007 03 06 | Lima Reservoir-Ottawa River | Ottawa River @ RMs 42.60 (Roush Rd) and 43.45 (upstream of low-head dam at Metzger Rd) [Lima] | No | Insufficient Data; Watch List | Insufficient Data | Impaired |
| 04100007 04 03 | Honey Run | Williams and Bresler Reservoirs [Lima] | No | Insufficient Data | Insufficient Data | Impaired |
| 04100007 06 04 | Dry Fork-Little Auglaize River | Little Auglaize River @ RM 23.40 [Delphos] | No | Impaired | Full Support; Watch List | Impaired |
| 04100007 08 04 | Lower Town Creek | Town Creek @ RM 18.35 [Van Wert] | Yes | Full Support; Watch List | Full Support; Watch List | Full Support |
| 04100007 12 06 | Big Run-Flat Rock Creek | Flat Rock Creek @ RM 14.13 [Paulding] | Yes | Full Support; Watch List | Full Support; Watch List | Full Support; Watch List |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 04100007 12 09 | Eagle Creek-Auglaize River | Defiance Upground Reservoir [Defiance] | No | Full Support | Insufficient Data | Impaired |
| 04100008 02 03 | Findlay Upground Reservoirs-Blanchard River | Findlay Upground Reservoirs [Findlay] | Unknown | Insufficient Data | Insufficient Data | Full Support; Watch List |
| 04100008 02 05 | City of Findlay Riverside Park-Blanchard River | Blanchard River @ RMs 58.72, 62.43 and 65.20 [Findlay] | Unknown | Insufficient Data | Insufficient Data | Full Support; Watch List |
| 04100008 06 02 | Pike Run-Blanchard River | Ottawa Upground Reservoirs [Ottawa Village] | Unknown | Insufficient Data | Full Support | Full Support |
| 04100008 90 01 | Blanchard River Mainstem (Dukes Run to mouth) | Blanchard River @ RM 28.50 [Ottawa Village] | Unknown | Insufficient Data; Watch List | Insufficient Data | Full Support |
| 04100009 03 02 | Lower Bad Creek | Bad Creek @ RM 17.0 [Delta] | No | Impaired | Insufficient Data | Full Support |
| 04100009 04 01 | Konzen Ditch | Unnamed trib segments immediately adjacent to Wauseon Reservoir, Big Ditch Intake [Wauseon] | No | Insufficient Data; Watch List | Insufficient Data | Impaired |
| 04100009 04 02 | North Turkeyfoot Creek | Stucky Ditch Intake and Reservoir [Wauseon] | No | Insufficient Data; Watch List | Insufficient Data | Impaired |
| 04100009 06 03 | Haskins Road Ditch – Maumee River | Bowling Green Upground Reservoir [Bowling Green] | No | Impaired | Insufficient Data; Watch List | Impaired |
| 04100009 07 02 | Fewless Creek-Swan Creek | Swan Creek @ RM 30.84 [Swanton] | Yes | Full Support; Watch List | Full Support | Full Support |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 04100009 90 01 | Maumee River Mainstem (Tiffin River to Beaver Creek) | Maumee River @ RMs 45.88 and 47.10 [Campbell Soup], 47.13 [Napoleon and Wauseon] | No | Impaired | Full Support; Watch List | Impaired |
| 04100009 90 02 | Maumee River Mainstem (Beaver Creek to Maumee Bay) | Maumee River @ RMs 23.16 [Bowling Green] | No | Impaired | Insufficient Data; Watch List | Impaired |
| 04100010 01 01 | Rader Creek | Rader Creek @ RM 13.57 and Upground Reservoirs [NWWSD-McComb] | Unknown | Insufficient Data; Watch List | Insufficient Data | Full Support |
| 04100010 01 03 | Rocky Ford | Rocky Ford Creek @ RMs 10.66 and 11.10 and Upground Reservoirs [North Baltimore] | Unknown | Insufficient Data; Watch List | Insufficient Data | Full Support; Watch List |
| 04100010 02 02 | East Branch Portage River | East Branch Portage River @ RMs 13.84 and 16.15 and Upground Reservoirs [Fostoria] | Unknown | Insufficient Data; Watch List | Insufficient Data | Full Support |
| 04100010 02 03 | South Branch Portage River | Veterans Memorial Reservoir [Fostoria] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 04100011 01 03 | Mills Creek | Snyders Ditch @ RMs 5.0 and 5.5 and Upground Reservoirs [Bellevue] | Unknown | Insufficient Data; Watch List | Insufficient Data; Watch List | Full Support; Watch List |
| 04100011 02 04 | Raccoon Creek | Raccoon Creek Upground Reservoir [Clyde] | Yes | Full Support; Watch List | Full Support | Full Support |
| 04100011 04 03 | Headwaters Middle Sandusky River | Sandusky River @ RM 115.4 and Upground Reservoirs [Bucyrus] | Unknown | Insufficient Data | Insufficient Data; Watch List | Full Support; Watch List |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 04100011 07 02 | Town of Upper Sandusky-Sandusky River | Sandusky River @ RMs 82.9 and 83.15 and Upground Reservoirs [Upper Sandusky] | Unknown | Insufficient Data | Insufficient Data; Watch List | Full Support; Watch List |
| 04100011 08 05 | Middle Honey Creek | Honey Creek @ RM 28.35 and Upground Reservoirs [Attica] | No | Insufficient Data | Insufficient Data | Impaired |
| 04100011 12 02 | Beaver Creek | Beaver Creek @ RM 2.88 and Upground Reservoirs [Clyde] | No | Full Support; Watch List | Full Support | Impaired |
| 04100011 12 03 | Green Creek | Beaver Creek Upground Reservoir [Clyde] | No | Full Support; Watch List | Full Support | Impaired |
| 04100011 90 01 | Sandusky River Mainstem (Tymochtee Creek to Wolf Creek) | Sandusky River @ RM 41.08 [Tiffin-Ohio American Water] | Unknown | Insufficient Data; Watch List | Full Support; Watch List | Full Support |
| 04100011 90 02 | Sandusky River Mainstem (Wolf Creek to Sandusky Bay) | Sandusky River @ RM 18.02 [Fremont] | No | Impaired | Insufficient Data; Watch List | Full Support; Watch List |
| 04100012 01 04 | New London Upground Reservoir-Vermilion River | Vermilion River @ RM 52.24 and Upground Reservoirs [New London] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 04100012 02 04 | Mouth Vermilion River | Vermilion River @ RM 0.2 [Vermilion] | Yes | Full Support | Insufficient Data | Full Support; Watch List |
| 04100012 04 03 | Walnut Creek-West Branch Huron River | West Branch Huron River @ RM 33.8 and Upground Reservoirs [Willard] | No | Full Support; Watch List | Full Support | Impaired |
| 04100012 05 03 | Frink Run | Frink Run @ RM 4.83 and Upground Reservoir #5 [Bellevue] | Yes | Full Support; Watch List | Full Support; Watch List | Full Support; Watch List |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 04100012 05 06 | Mouth West Branch Huron River | W. Branch Huron River @ RM 8.52 and Upground Reservoirs [Monroeville] | Yes | Full Support; Watch List | Full Support | Full Support |
| 04100012 06 03 | Norwalk Creek | Norwalk Creek @ RMs 0.11 and 4.02 [Norwalk] | No | Full Support | Full Support | Impaired |
| 04100012 06 04 | Mouth East Branch Huron River | East Branch Huron River @ RM 6.16 [Norwalk] | Yes | Full Support | Full Support | Full Support |
| 04110001 02 02 | Baldwin Creek-East Branch Rocky River | E. Branch Rocky River @ RM 5.06, Baldwin Creek @ RM 0.48, upstream boundaries of Rocky River reservation (RM 15.15) to West Branch [Berea] | Yes | Full Support; Watch List | Full Support | Full Support |
| 04110001 05 01 | Charlemont Creek | Charlemont Creek @ RM 2.97 and Upground Reservoir [Wellington] | Yes | Full Support | Insufficient Data; Watch List | Full Support; Watch List |
| 04110001 05 06 | Lower West Branch Black River | West Branch Black River @ RM 14.42 [Oberlin] | Unknown | Insufficient Data; Watch List | Insufficient Data | Full Support; Watch List |
| 04110002 01 01 | East Branch Reservoir – East Branch Cuyahoga River | East Branch Reservoir [Akron] | No | Full Support | Insufficient Data | Impaired |
| 04110002 01 04 | LaDue Reservoir- Bridge Creek | LaDue Reservoir [Akron] | No | Insufficient Data | Insufficient Data | Impaired |
| 04110002 02 02 | Feeder Canal-Breakneck Creek | Lake Hodgson (Breakneck Creek) [Ravenna] | Yes | Full Support | Insufficient Data | Full Support |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 04110002 02 03 | Lake Rockwell-Cuyahoga River | Lake Rockwell (Cuyahoga River RM 62.0 to 57.97) [Akron] | No | Full Support | Insufficient Data | Impaired |
| 05030101 04 03 | Stone Mill Run-Middle Fork Little Beaver Creek | Salem Reservoir [Salem] | Unknown | Insufficient Data | Insufficient Data | Full Support; Watch List |
| 05030101 05 01 | Cold Run | Cold Run @ RM 4.96, Salem Reservoir, Unnamed Tributary (Cold Run RM 4.97) @ RM 1.42 [Salem] | Unknown | Insufficient Data | Insufficient Data | Full Support; Watch List |
| 05030103 01 03 | Fish Creek-Mahoning River | Mahoning River @ RMs 83.55 [Alliance] and 91.50 [Sebring] | No | Full Support | Insufficient Data | Impaired |
| 05030103 02 01 | Deer Creek | Deer Creek @ RM 0.54 (Walborn Reservoir) [Alliance] | No | Full Support | Full Support; Watch List | Impaired |
| 05030103 02 04 | Island Creek-Mahoning River | Berlin Lake [Mahoning Valley S.D] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 05030103 03 06 | Charley Run Creek-Mahoning River | Mahoning River @ RMs 56.47 [Newton Falls] | No | Full Support | Insufficient Data | Impaired |
| 05030103 05 02 | Middle Mosquito Creek | Mosquito Creek @ RM 12.49 (Reservoir) [Warren] | Yes | Full Support | Insufficient Data | Full Support |
| 05030103 07 03 | Lower Meander Creek | Meander Creek @ RM 2.96 (Meander Cr Reservoir) [Mahoning Valley S.D.] | Yes | Full Support | Insufficient Data | Full Support |
| 05030103 08 05 | Headwaters Yellow Creek | Yellow Creek @ RM 8.40 (Lake Evans) [Struthers- Aqua Ohio] | No | Full Support | Insufficient Data | Impaired |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 05030106 03 03 | Cox Run-Wheeling Creek | Jug Run @ RM 3.18 (Provident Reservoir) [St. Clairsville] | Yes | Full Support | Insufficient Data | Full Support |
| 05030106 07 03 | Little McMahon Creek | Little McMahon Creek @ RM 6.6 (St. Clairsville Reservoir) [St. Clairsville] | Yes | Full Support | Insufficient Data | Full Support |
| 05030106 09 01 | North Fork Captina Creek | Unnamed trib (North Fork RM 10.0) @ RM 0.55 (Res #1 and #3) [Barnesville] | Yes | Full Support | Insufficient Data | Full Support; Watch List |
| 05030106 09 02 | South Fork Captina Creek | Slope Creek @ RM 1.85 Slope Creek Res) [Barnesville] | Yes | Full Support | Insufficient Data | Full Support |
| 05030201 01 01 | Upper Sunfish Creek | Sunfish Creek @ RM 25.50, Unnamed trib (Sunfish Creek RM 24.55) @ RM 0.15 and 0.80 [Woodsfield] | No | Insufficient Data | Insufficient Data | Impaired |
| 05030201 09 01 | Headwaters West Fork Duck Creek | Wolf Run @ RM 0.7 (Wolf Run Lake), Dog Run @ RM 1.35 (Caldwell Lake) [Caldwell] | Yes | Full Support | Insufficient Data | Full Support |
| 05030204 01 01 | Center Branch | Center Branch Rush Creek @ RM 5.45, Unnamed Tributary (Somerset Creek RM 1.84) @ RM 0.89 [Somerset] | Unknown | Insufficient Data | Insufficient Data | Full Support; Watch List |
| 05030204 01 02 | Headwaters Rush Creek | Yeager Creek (Rush Creek RM 28.46) @ RM 1.0; New Lexington Reservoir [New Lexington] | Unknown | Insufficient Data | Insufficient Data | Full Support; Watch list |
| 05040001 01 04 | Wolf Creek | Wolf Creek @ RM 5.12 (Reservoir) [Barberton] | Unknown | Insufficient Data | Insufficient Data | Full Support; Watch List |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 05040001 08 02 | Pleasant Valley Run-Indian Fork | Indian Fork @ RM 3.0 and 3.7 (Atwood Lake) [MWCD Atwood Park] | Yes | Full Support | Full Support | Full Support |
| 05040001 15 03 | Upper Little Stillwater Creek | Tappan Lake [Cadiz] | No | Full Support | Insufficient Data | Impaired |
| 05040002 01 01 | Marsh Run | Marsh Run Creek @ RM 0.05 [Shelby] | Unknown | Insufficient Data; Watch List | Insufficient Data | Full Support |
| 05040002 01 02 | Headwaters Black Fork Mohican River | Black Fork River @ RMs 50.82, 53.88 [Shelby] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 05040002 03 01 | Headwaters Clear Fork Mohican River | Clear Fork River @ RM 30.6 (Clear Fork Reservoir) [Mansfield] | No | Full Support | Full Support | Impaired |
| 05040004 04 05 | Kent Run | Kent Run @ RM 1.3 [Maysville] | No | Insufficient Data | Insufficient Data | Impaired |
| 05040004 04 07 | Painter Creek-Jonathon Creek | Frazier's Run (Fraziers Quarry) [Maysville] | No | Full Support | Insufficient Data | Impaired |
| 05040005 02 07 | Trail Run-Wills Creek | Wills Creek (Cambridge Reservoir) [Cambridge] | Yes | Full Support | Full Support | Full Support |
| 05040005 05 01 | North Crooked Creek | North Crooked Creek [New Concord] | No | Full Support | Full Support | Impaired |
| 05040006 02 05 | Log Pond Run-North Fork Licking River | North Fork Licking River @ RM 3.0 [Newark] | Yes | Full Support | Full Support; Watch List | Full Support |
| 05060001 03 03 | City of Marion-Little Scioto River | Little Scioto River @ RM 7.1 [Marion-Ohio American Water] | Unknown | Insufficient Data; Watch List | Insufficient Data; Watch List | Full Support |
| 05060001 04 06 | Glade Run-Scioto River | Scioto River @ RM 180.04 [Marion-Ohio American Water] | Unknown | Insufficient Data; Watch List | Insufficient Data; Watch List | Full Support |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 05060001 06 02 | Middle Mill Creek | Mill Creek @ RM 19.45 [Marysville] | No | Full Support; Watch List | Insufficient Data; Watch List | Impaired |
| 05060001 08 01 | Headwaters Olentangy River | Rocky Fork (Olentangy River RM 84.84) @ RM 0.6, Amann and Amicks Reservoirs [Galion] | Unknown | Insufficient Data | Insufficient Data | Full Support; Watch List |
| 05060001 10 07 | Delaware Run-Olentangy River | Olentangy River @ RMs 31.23 and 31.02 [Delaware] | Unknown | Insufficient Data | Insufficient Data; Watch List | Full Support |
| 05060001 11 01 | Deep Run-Olentangy River | Olentangy River @ RM 18.19 [Del-Co] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 05060001 13 08 | Hoover Reservoir-Big Walnut Creek | Hoover Reservoir, Duncan Run @ RM 0.68 [Columbus] | Yes | Full Support | Full Support | Full Support |
| 05060001 14 03 | Big Run-Alum Creek | Alum Creek Reservoir [Del-Co] | Yes | Full Support | Full Support | Full Support |
| 05060001 14 04 | Alum Creek Dam-Alum Creek | Alum Creek Reservoir and Alum Creek @ RM 26.74 [Del-Co] | Yes | Full Support | Full Support | Full Support |
| 05060001 15 02 | City of Gahanna-Big Walnut Creek | Big Walnut Creek @ RM 32.64 [Columbus] | Yes | Full Support | Insufficient Data | Full Support |
| 05060001 16 01 | Westerville Reservoir-Alum Creek | Alum Creek @ RM 21.20 (@ low-head dam) [Westerville] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 05060001 90 01 | Scioto River Mainstem (L. Scioto R. to Olentangy R.); excluding O'Shaughnessy and Griggs reservoirs | Scioto River at O'Shaughnessy dam (RM 148.8) to Dublin Road WTP dam [Columbus] | No | Impaired | Insufficient Data | Full Support; Watch List |
| 05060002 08 02 | Buckeye Creek | Buckeye Creek/Hammertown Lake [Jackson] | Yes | Full Support | Full Support | Full Support |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 05060002 08 03 | Horse Creek-Little Salt Creek | Jisco Lake [Jackson] | Yes | Full Support | Full Support | Full Support |
| 05060003 01 03 | Town of Washington Court House-Paint Creek | Paint Creek @ RM 71.4 [Washington Court House] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 05060003 05 02 | Clear Creek | Clear Creek (Rocky Fork) @ RM 7.4 [Hillsboro] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 05080001 07 02 | Mosquito Creek | Tawawa Creek @ RM 0.14 [Sidney] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 05080001 07 05 | Garbry Creek-Great Miami River | Piqua Hydraulic System (Swift Run Lake) and Ernst Gravel Pit [Piqua] | No | Insufficient Data; Watch List | Impaired | Full Support |
| 05080001 11 01 | Mud Creek | Mud Creek @ RM 0.88 [Greenville] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 05080001 11 02 | Bridge Creek-Greenville Creek | Greenville Creek @ RM 22.3 [Greenville] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 05080001 90 01 | Great Miami River Mainstem (Tawawa Creek to Mad River) | Great Miami River @ RMs 86.6 and 90.3 [Dayton], 118.3 [Piqua] and 130.2 [Sidney] | Unknown | Insufficient Data; Watch List | Insufficient Data; Watch List | Full Support |
| 05080001 90 03 | Mad River Mainstem (Donnels Creek to mouth) | Mad River @ RMs 5.2 and 5.6 [Dayton] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| 05090101 04 01 | Headwaters Little Raccoon Creek | Little Raccoon Creek @ RM 30, Lake Rupert, Alma Lake [Wellston] | Unknown | Insufficient Data | Insufficient Data | Full Support |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 05090201 08 02 | Headwaters Straight Creek | Sycamore Run @ RM 0.97 (Reservoir) and Straight Creek (Lake Waynoka) [Waynoka Regional] | Yes | Full Support | Full Support; Watch List | Full Support; Watch List |
| 05090201 10 01 | Sterling Run | Sterling Run @ RM 6.47 [Mt. Orab] | No | Insufficient Data | Impaired | Full Support |
| 05090202 04 06 | Lower Caesar Creek | Caesar Creek Lake [Wilmington] | No | Full Support | Full Support; Watch List | Impaired |
| 05090202 06 04 | Headwaters Cowan Creek | Cowan Creek @ RM 11.7 [Wilmington] | No | Insufficient Data; Watch List | Insufficient Data | Impaired |
| 05090202 07 02 | Second Creek | Whitacre Run @ RM 1.4 [Blanchester] | No | Insufficient Data; Watch List | Impaired | Full Support |
| 05090202 10 05 | West Fork East Fork Little Miami River | West Branch of the East Fork LMR @ RM 4.6 and Westboro Reservoir [Blanchester] | No | Insufficient Data | Impaired | Full Support |
| 05090202 12 03 | Lucy Run-East Fork Little Miami River | Harsha Lake - Impounded E. Fork LMR [Clermont County] | No | Full Support | Full Support; Watch List | Impaired |
| 05090202 13 01 | Headwaters Stonelick Creek | Stonelick Creek @ RM 23.4 [Blanchester] | No | Insufficient Data | Impaired | Full Support |
| 05120101 02 04 | Grand Lake-St Marys | Grand Lake St. Marys [Celina] | No | Full Support | Insufficient Data | Impaired |
| 04120200 01 01 | Lake Erie Islands Shoreline (≤3m) | [Camp Patmos, Lake Erie Utility Co., Put-in-Bay] | No | Full Support | Insufficient Data | Impaired |
| 04120200 02 01 | Lake Erie Western Basin Shoreline (≤3m) | [Ottawa County Regional, Carrol Water & Sewer] | No | Full Support | Insufficient Data | Impaired |

| Assessment Unit ID | Assessment Unit Name | PDWS Zone [Public Water System(s)] | Use Support | Nitrate Indicator | Pesticide Indicator | Algae Indicator |
|---|---|---|---|---|---|---|
| 04120200 02 02 | Lake Erie Sandusky Basin Shoreline (≤3m) | [Sandusky, Vermillion] | No | Full Support | Insufficient Data | Impaired |
| 04120200 03 01 | Lake Erie Western Basin Open Water (>3m) | [Toledo, Oregon, Kelleys Island, Marblehead] | No | Full Support | Insufficient Data; Watch List | Impaired |
| 04120200 03 02 | Lake Erie Sandusky Basin Open Water (>3m) | [Sandusky, Huron, Vermillion, Elyria, Lorain] | No | Full Support | Insufficient Data | Impaired |
| 04120200 03 03 | Lake Erie Central Basin Open Water (>3m) | [Conneaut, Ashtabula-Ohio American Water, Lake County East, Lake County West, Painesville, Mentor-Aqua Ohio, Cleveland, Avon Lake] | Yes | Full Support | Insufficient Data | Full Support; Watch List |
| OR05030101 | Ohio Stateline to New Cumberland Locks and Dam | [East Liverpool City, Buckeye Water District] | Yes | Full Support | Insufficient Data | Full Support |
| OR05030102 | New Cumberland Locks and Dam to Pike Island Locks and Dam | [Toronto, Steubenville] | Yes | Full Support | Insufficient Data | Full Support |
| OR05030103 | Pike Island Locks and Dam to Hannibal Locks and Dam | [Bellaire] | Unknown | Insufficient Data | Insufficient Data | Full Support |
| OR05090101 | Robert C. Byrd Lock and Dam to Greenup Lock and Dam | [Ironton] | Yes | Full Support | Insufficient Data | Full Support |
| OR05090201 | Greenup Lock and Dam to Captain Anthony Meldahl Locks and Dam | [Portsmouth] | Yes | Full Support | Full Support | Full Support |
| OR05090202 | Captain Anthony Meldahl Locks and Dam to Ohio Stateline | [Cincinnati] | Unknown | Insufficient Data | Insufficient Data | Full Support |