Comments on Sub. HB 175 to the
Ohio Senate Agriculture and Natural Resources Committee
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Senator Shaffer and members of the committee:

I am representing the Darby Creek Association (DCA), a nonprofit volunteer-based organization dedicated since 1972 to protecting Big Darby Creek, our State and National Scenic River in central Ohio. The Big and Little Darby Creeks have been a source of pride for the State of Ohio. However, their natural heritage and biodiversity are under stress from a variety of sources, and we cannot afford to see elimination of protection, or further degradation, of the watershed's ephemeral tributary streams. These tributaries, including many ephemeral streams, help determine much of the quality of Big Darby Creek and other streams, and we should protect and improve them, not diminish or eliminate protection.

Therefore, we oppose Sub. HB 175. We ask for a delay in any vote on this bill.

cc: Senators Hackett, Kunze, Reienke

General concerns about HB 175

We oppose elimination of protection of ephemeral streams ("ephemeral features" in HB 175) by the State of Ohio. If federal protection were ended, we are concerned that the bill would eliminate adequate protection of ephemeral streams in Ohio.

Proposed Sec. 6111.01. (H) states:

> ""Waters of the state" does not include an ephemeral feature for which the United States army corps of engineers lacks the authority to issue a permit under 33 U.S.C. 1344."

1. Based on the above, should federal policy change and the Supreme Court of the United States review its pending Sackett v. Environmental Protection Agency case and decide that ephemeral streams would not be protected, removing U.S. Army Corps of Engineers jurisdiction, this bill apparently eliminates protection of ephemeral streams in Ohio. This is not acceptable to the DCA, and could extensively degrade streams, especially in urban and suburban areas. Therefore we encourage that Ohio continue to protect Ohio's ephemeral streams.

2. The technical issues included in this bill need to be addressed in another, more appropriate public forum open to extensive stakeholder review and input. For example, proposed 6111.311 through 316 are very complex and need full review by many parties. We have not been provided evidence that what is proposed in ORC Section 6111.311 through 316 is adequately protective.

A change of this technical nature and scope normally would be addressed over a period of at least many months. We have seen the sub. bill, version 3, since only March 25, 2022, and only through an individual request. The bill was not published on the Senate committee's website as of this writing, so it seems the public would be unlikely to know of its existence and content.

To our knowledge, environmental nongovernmental organizations were not included in the drafting of the sub. bill for HB 175 made available in March 2022.

This is a very complex bill that includes many technical issues and details. These are typically reserved for the Ohio Administrative Code or technical manuals and an extensive review process, including outreach to interested parties, many meetings and comment opportunities normally provided by a department of the State of Ohio. These issues should be addressed in another forum, not in a bill that becomes the Ohio Revised Code. If Ohio EPA proposed such content without such a process, it likely would be immediately opposed by most, if not all, stakeholders as procedurally inadequate.

We know of no technical justifications, such as supporting technical documents and data, that have been provided to the public to support these changes in ORC 6111.

3. We have questions about the need to consider all costs and the implementation of the bill's provisions. The bill appears to allow the replacement of ephemeral streams with stormwater management and units. All stormwater management adds to costs, and stormwater units degrade and have long-term maintenance costs. The bill does not consider the long-term maintenance and costs of eliminating ephemeral streams and replacing them with stormwater management and units. While HB 175 proponents have complained about costs of ephemeral stream mitigation, to date we have not seen this additional cost of stormwater management considered. Please note that DCA favors significantly improved stormwater management, as stormwater is a major cause of stream degradation and channel erosion. It is possible that some stormwater management can reduce stormwater volume management requirements and costs. The present stormwater permits do not adequately address the causes of stream degradation.

The bill does not address the costs of eliminating ephemeral streams. In addition to the stormwater unit maintenance costs, there are negative costs, i.e., lost value, such as in residential values, as residences near green space has higher resale value, and residents would lose highly desirable green space that would otherwise have been ephemeral stream riparian corridors.

4. In some sections, could the bill increase protections by requiring more stormwater management? However, if so, that means that ephemeral streams can be eliminated and replaced by stormwater units, without ephemeral stream and their riparian corridor protection, DCA is opposed to the bill. We support protection of the ephemeral streams and improvements in stormwater management, especially such as those that improve recharge to groundwater and reduction in stream channel erosion. We recognize that Increased stormwater requirements, if that is actually what is proposed (and that is not clear to us if it is), could increase costs beyond the ephemeral stream mitigation cost. <u>If the bill would increase stormwater requirements and still conserve and protect the ephemeral streams and their riparian corridors, we would be supporting at least parts of this bill</u>. However, it does not appear this is how this bill is structured and would be implemented.

Further comments

Comparison of ephemeral stream Section 401 projects compared to the number of stormwater permits in Ohio

Summary: We believe the number of ephemeral stream Section 401 (Water Quality Certification) projects compared to the number of construction projects in Ohio, as measured by stormwater permits, is very small and not a significant hindrance to Ohio economic activity. It is less than 1% of the number of stormwater permits. Therefore, it does not appear, based on these numbers, that ephemeral stream issues affect the overwhelming majority of stormwater Notifications of Intent (NOIs) submitted to Ohio EPA for construction projects. We believe the economic impact of ephemeral stream mitigation on Ohio's economy is relatively small.

Loss of small streams - Stream network comparison and costs

Summary: In Ohio's developed and urban areas, historical loss of small streams, including ephemeral streams, has been cumulative and extensive. This has led to degraded stream quality and loss of the less common aquatic (e.g., fish) species. Removal of ephemeral stream protection would remove disincentives and could lead to significantly expanding these negatively impacted areas. Replacing ephemeral streams with stormwater units will require substantial and perpetual costs and maintenance of those units. The analysis of HB 175 to date has not addressed the additional costs and long-term obligations of stormwater best management practices and additional needs for municipalities to meet Clean Water Act goals.

As an example of impacts to small streams, including ephemeral streams, the two map figures in my full statement (below) are comparisons of the stream network in the Mill Creek watershed in Cuyahoga County. The long-term impact of eliminating ephemeral stream protection is likely to be extensive and will lower downstream stream quality. Evidence for stream health and Clean Water Act use designation attainment is lacking to date in such impacted watersheds. HB 175 lacks an analysis providing evidence of the effectiveness of stormwater units for achieving Clean Water Act use designation goals.

Costs of stormwater management

Summary: HB 175 to date has not addressed costs of stormwater best management practices and compared them to avoidance or mitigation of ephemeral stream impacts. Those costs should include the units' construction and perpetual maintenance, and loss of land and aesthetic features dedicated to the stormwater units. The landowner and subsequent landowners will also be subject to operation and maintenance costs, which are perpetual. Because of the need to increase infiltration to groundwater and management flow regimes and water temperatures, additional stormwater management be required, adding costs, if ephemeral streams are eliminated from protection.

In addition, HB 175 could have unintended consequences for local government and others concerning related regulatory obligations. Wastewater agencies might find it more difficult to attain Clean Water Act goals in a watershed with extensive modification of small streams. Please see the full testimony of

the Association of Ohio Metropolitan Wastewater Agencies (AOMWA) dated May 24, 2021, to the Ohio House Agriculture and Natural Resources Committee.

Loss of ephemeral streams will add to local government's water quality challenges

Besides the Cuyahoga County example (Figure 1) we provide later in these comments, examples in other states show the problem of lack of protection. When small and ephemeral stream protection did not exist, many years ago, streams were regularly piped, buried or otherwise altered, resulting in far fewer streams and lowered downstream quality.

> "Urban development can have profound effects on baseflow hydrology, and thus, can affect the hydrologic permanence of streams" (Roy et al 2009).

Eliminating protection of ephemeral streams or replacing them with stormwater units will not address the root cause of stream erosion or flashy, unnatural stream flows. The drying of streams and flashy flows originate on the landscape they drain. Our management of that landscape causes the problem, and is where our attention should be addressed. People and the environment would benefit by reducing stormwater runoff, through minimizing the volume of stormwater that needs to be managed in developing areas, and improving our agricultural soils' quality and water-absorbing capacity.

Recent federal action and a related LSC statement on HB 175

Summary: HB 175 could conflict with federal implementation of WOTUS (Waters of the United States), and a court could find it preempted by the federal Clean Water Act.

In the Bill Analysis of 9/30/2021 (https://www.legislature.ohio.gov/download?key=17487&format=pdf), the Legislative Services Commission (LSC) stated:

> "As a result of the recent federal court decision in the Pasqua case since the bill's introduction, the bill, if enacted, *would possibly conflict with current federal law*, which re-institutes the "significant nexus" test." (emphasis added)

and

> "Whenever there is a conflict between a state law and federal law, the federal law, subject to other constitutional law, "preempts" or takes precedence over the state law under the Supremacy Clause of the U.S. Constitution. As a result, Ohio cannot enforce statutes that conflict with federal statutes. And, in particular, the CWA does not allow states to enforce standards that are less stringent than the Act.

In contrast, as mentioned above, should federal policy change and the Supreme Court of the United States review its pending Sackett v. Environmental Protection Agency case and decide that ephemeral streams would not be protected, removing U.S. Army Corps of Engineers jurisdiction, HB 175 apparently eliminates protection of ephemeral streams in Ohio. This is not acceptable to the DCA, and could extensively degrade streams, especially in urban areas.

Definition and determination of an ephemeral feature

While HB 175 contains a definition it remains unclear on what determines "ephemeral" in the field.

From H.B. 175 as passed by the House, September 2021: "An ephemeral feature is surface water flowing or pooling only in direct response to precipitation, such as rain or snow. An ephemeral feature does not include a wetland."

While this might seem simple to discern, that is not so in the field. It lacks an implementation procedure that includes some technical tools to delineate between ephemeral and not ephemeral. For any stream classification system, it needs a supporting, rigorous methodology, which tends to be something beyond the appearance of a stream on a particular day. Two observers could come up with different outcomes. For example, when does a field visit need to be conducted to determine if a stream is ephemeral? What time of year? How long after a rain event? What distance along a stream qualifies? Does this definition include interstitial streams that flow under the surface for extended periods, especially during the summer and fall? (etc.) We emphasize that the 2020 Navigable Waters Rule never established a technical determination for use in the field of what an ephemeral stream is. Federal agencies continued to struggle with technical definitions after the rule was established.

To establish some consistency, if Ohio passes HB 175, the state might need to adopt one of the Streamflow Duration Assessment Methods (SDAMs) that US EPA, U.S. Army Corps of Engineers and other partners are still studying (https://www.epa.gov/streamflow-duration-assessment). For many years, Ohio EPA has used the standard methods in its Field Methods for Evaluating Primary Headwater Streams in Ohio (https://epa.ohio.gov/static/Portals/35/wqs/headwaters/PHWHManual_2020_Ver_4_1_May_2020_Final.pdf?ver=Jx6Z3rn9feBAUir3HWp_FQ%3d%3d). In any case, for the sake of consistency, this will not be a simple determination done by a landowner.

Full comments

I am representing the Darby Creek Association, a nonprofit volunteer-based organization dedicated since 1972 to protecting Big Darby Creek, our State and National Scenic River in central Ohio. The Big and Little Darby Creeks are a source of pride for the State of Ohio. However, their natural heritage and biodiversity are under stress from a variety of sources, and we cannot afford to see the watershed's ephemeral tributary streams filled, piped, replaced inadequately, or otherwise degraded. These tributaries help determine much of the quality of Big Darby Creek and other streams, and we should protect and improve them, not eliminate protection.

My qualifications include over 40 years of experience in environmental science and policy in Ohio. I have degrees in biology, geology and environmental science from three universities in Ohio. I have extensive policy experience in the implementation of the Clean Water Act, and training and field experience in observing and interpreting stream conditions and quality.

Comparison of ephemeral stream Section 401 projects compared to the number of stormwater permits in Ohio

We believe the number of ephemeral stream Section 401 (Water Quality Certification) projects compared to the number of construction projects in Ohio, as measured by stormwater permits, is very small and not a significant hindrance to Ohio economic activity. Therefore, it does not appear, based on these numbers, that ephemeral stream issues affect the overwhelming majority of stormwater Notifications of Intent (NOIs) (to Ohio EPA) and construction projects. We believe the economic impact of ephemeral stream mitigation on Ohio's economy is relatively small. Ohio's economy (measured by GDP) is 7th largest among states, at close to $700 billion (https://www.lsc.ohio.gov/documents/reference/current/ohiofacts/2020/Economy.pdf).

Because the economic impact is so limited, and we believe the public supports mitigation of ephemeral streams, especially the limited amount that takes place currently, it is not necessary or appropriate to remove protection from all ephemeral streams in Ohio, as proposed in HB 175's ORC 6111.01 (H).

According to Ohio EPA records as of May 2021, there were more than 6700 stormwater permits currently active in Ohio.[1] That means more than 6700 construction projects for roads/streets, residential, commercial and whatever else underway at this time that required stormwater permits because they affected the environment through land disturbance, potentially affecting stream health and water quality.

The 2021 Legislative Services Commission report on HB 175 stated there are an average of only 13.5 Clean Water Act Section 401-related Water Quality Certification (WQC) cases involving ephemeral streams and subject to mitigation.[2] Based on these numbers, we believe Clean Water Act oversight of ephemeral streams is not holding back statewide Ohio economic activity in a significant way. Projects requiring stormwater permits are either avoiding ephemeral streams at the sites, there are not

[1] Communication from Division of Surface Water, Ohio EPA, May 24, 2021

[2] WQCs issued by Ohio EPA. Based on Legislative Service Commission, Fiscal Note & Local Impact Statement, September 30, 2021 (https://www.legislature.ohio.gov/download?key=17483&format=pdf)

ephemeral streams affected by the project at the sites, or the project falls under the 300-foot distance impact threshold in the Ohio EPA 2020 general permit for ephemeral streams.

Note that in an average year in Ohio, according to Ohio EPA there were an average of 2189 stormwater permit NOIs (Notification of Intent) submitted each year during that same 2015-2020 period[3]. The ratio of ephemeral stream Water Quality Certifications (WQCs) subject to mitigation to stormwater permit NOIs is very low, and less than 0.1 (actually about 0.06). The number of ephemeral stream cases was less than 1% (~0.6%) of the number of stormwater NOIs. This appears to mean that ephemeral streams and mitigation are overwhelmingly likely to be avoided most of the time that construction requires a stormwater permit. A very small number of stormwater permits, which are one measure of economic activity such as the development of subdivisions, roads or other construction, are directly impacting ephemeral streams. Therefore, it does not appear, based on these numbers, that ephemeral stream issues affect the overwhelming majority of stormwater NOIs and construction projects.

If abandoned projects are due to ephemeral stream impacts that are deemed prohibitive by a potential applicant, and if that would double the number of ephemeral stream mitigation cases to 27 per year, that percentage would then be about 1.2%.

Please keep in mind that under the Ohio EPA general permit[4] of 2020, projects that impact less than 300 linear feet are NOT required to mitigate. Therefore, there is an undetermined amount of ephemeral stream impacts that are not counted after the 2020 permit took effect.

Table 1. Comparison of Ohio Ephemeral Stream Water Quality Certifications to Stormwater Permits (NOIs)

Average Number of Water Quality Certifications That Included Ephemeral Stream Impacts (SFY 2015-SFY 2020)*	Average annual number of stormwater permits (NOIs) issued by Ohio EPA 2015-2020**	Ratio of ephemeral stream WQ certifications to stormwater permits/%, 2015-2020	Number of active stormwater permits (NOIs) issued by Ohio EPA ***
13.5	2189	.0061/0.6	6753

* (WQCs issued by Ohio EPA) Based on Legislative Service Commission, Fiscal Note & Local Impact Statement, September 30, 2021 (https://www.legislature.ohio.gov/download?key=17483&format=pdf)
** Notice of Intent (NOI) under Ohio's Construction General Permit. An NOI is a one-page application form to request initial coverage or to renew coverage under a general permit. (https://www.epa.ohio.gov/dsw/storm/index)
*** Per communication from Division of Surface Water, Ohio EPA, May 24, 2021

[3] Per communication from Division of Surface Water, Ohio EPA, November 2, 2021.
[4] OHIO GENERAL PERMIT FOR FILLING CATEGORY 1 AND CATEGORY 2 ISOLATED WETLANDS AND EPHEMERAL STREAMS, June 25, 2020, https://epa.ohio.gov/dsw/401/permitting#149525361-ephemeral-stream-permit. Note that this permit's Part V. MITIGATION FOR PERMANENT EPHEMERAL STREAM IMPACTS, states "A) Mitigation for permanent impacts to ephemeral streams is required for impacts over 300 linear feet in order to qualify for coverage under this general permit." "Projects for the filling of or discharge of dredged material into ephemeral streams that impact less than 300 linear feet are" are NOT required to mitigate, as they are not subject to "Mitigation Terms and Conditions in Part V and Part VI."

Again, many other projects have no ephemeral streams or avoid such streams at the site. In ORC 6111.01(H), HB 175 proposes to remove protection from all ephemeral streams in Ohio, potentially leading to a much larger impact. Passage of HB 175 could lead to a much greater number of ephemeral stream impacts (and consequently downstream impacts) in Ohio because the disincentives (mitigation) to avoid ephemeral stream impacts would be removed.

Note that under the present Ohio EPA general permit of 2020 "Projects for the filling of or discharge of dredged material into ephemeral streams that impact less than 300 linear feet are" are NOT required to mitigate, as they are not subject to "Mitigation Terms and Conditions in Part V and Part VI" (see above footnote regard the general permit). We do not have an analysis of this exemption, but it could reduce the average annual number of ephemeral stream cases to less than 13.5. See: "As specified in Part V.A. of the general permit, mitigation is not required for those impacts either" in Ohio EPA's "Ephemeral Stream and Level One Isolated Wetland General Permit Frequently Asked Questions" at: https://epa.ohio.gov/static/Portals/35/401/ES-L1IW-GP-FAQ.pdf.

Loss of small streams - Stream network comparison and costs

Summary: In Ohio's developed and urban areas, historical loss of small streams, including ephemeral streams, has been cumulative and extensive. This has led to degraded stream quality and loss of the more rare species. Removal of ephemeral stream protection would remove disincentives and could lead to significantly expanding these negatively impacted areas. Replacing ephemeral streams with stormwater units will require substantial and perpetual costs and maintenance of those units. We do not have analysis that would show that stormwater management replacing stream mitigation would be effective. The analysis of HB 175 to date has not addressed the additional costs and long-term obligations of stormwater best management practices and additional needs for municipalities to meet Clean Water Act goals.

While the overall impact of potential ephemeral stream loss statewide in Ohio might be relatively low, cumulatively, and over time, the loss of headwater streams, including ephemeral, can be extensive in certain areas. These are areas where landscape alterations such as development or mining is most prevalent.

As an example, the two map figures below are comparisons of the stream network in the Mill Creek watershed in Cuyahoga County between the early 1900s and about 2005. They are taken from the Ohio Nonpoint Source Pollution Management Plan 2005-2010, published by Ohio EPA. These maps show the loss of small tributary streams as they were routed into pipes or culverts, or otherwise covered or buried in an urbanizing area. Most of this was likely before Clean Water Act and other laws discouraged such activity. Note that it is not clear which of these streams in the maps were ephemeral, intermittent or permanently flowing, but in Ohio's urban and developed areas, in the past streams often were highly modified if their locations were inconvenient to a project. Consequently, stream health across large areas became degraded. Our concern is that ephemeral streams, if they were removed from protection, would often suffer the same fate and thereby degrade the downstream health.

One major result of the loss of these streams is that Mill Creek's quality was degraded. This stream has very low biological life scores and in its last available survey was not attaining Clean Water Act goals[5]. Mill Creek was described as "affected negatively by stormwater and urban runoff" (page 109).

Under HB 175, we should be concerned that ephemeral streams might be covered over, consumed by stormwater units (e.g., retention ponds), placed in pipes or culverts, or otherwise lost as components of the stream system (see Figure 1 below). This might happen because under HB 175 they would not be considered streams in Ohio. HB 175 considers these streams "ephemeral features." The bill excludes "ephemeral features" from ORC 6111 and Ohio water pollution control programs, including the Section 401 water quality certification program and associated mitigation.

While the overall impacts throughout Ohio might seem small, in some Ohio watersheds and counties, they are extensive and have cumulative impacts downstream. See the Mill Creek example in Figure 1 below. Cumulative, overall impacts dominate, and even define, quality in streams receiving stormwater discharges in Ohio's more populated counties such as Cuyahoga, Franklin, Hamilton, Lucas and Montgomery. This influences downstream quality in these and other counties' watersheds.

Effectiveness of stormwater units to achieve Clean Water Act goals - Some proponents of HB 175 might argue that ephemeral streams are readily replaced by stormwater units. Replacement of ephemeral streams by stormwater best management practices (BMPs) has not been shown to consistently achieve, or significantly improve, Clean Water Act use designation goals downstream. Stormwater units have been required for at least 30 years, but there is still a major shortcoming in developed areas of Ohio in achieving Clean Water Act goals. This is especially true for smaller streams (under 20 square miles drainage area) that Ohio EPA monitors.[6] About 43% of these streams fail to attain Clean Water Act goals. (Ephemeral streams are not included in this calculation, but are tributaries to those streams that are monitored, and are likely to affect downstream quality.) Stormwater units might increase problems such as those related to stream flow patterns and temperature, degrading downstream aquatic life. Ohio data show that urban, developed areas, which are the mostly likely to degrade small streams and use stormwater BMPs, have much lower quality streams than those in agricultural or forest-dominated areas.[7]

Extensive scientific literature has been published on ways to increase the infiltration of precipitation, help improve stormwater management, especially hydrology, and lower its impact on waterbodies (streams, rivers, lakes) that are downstream. However, there is a shortage of evidence showing attainment of use designation goals demonstrating that stormwater management is able to achieve

[5] Ohio EPA. 1999. Biological and Water Quality Study of the Cuyahoga River and Selected Tributaries, Volume 1, Geauga, Portage, Summit, and Cuyahoga Counties (Ohio). https://epa.ohio.gov/static/Portals/35/documents/cuyvol1.pdf

[6] Ohio EPA. 2020. Ohio 2020 Integrated Water Quality Monitoring and Assessment Report. Table G-2. https://epa.ohio.gov/wps/portal/gov/epa/divisions-and-offices/surface-water/reports-data/ohio-integrated-water-quality-monitoring-and-assessment-report See page G-12.

[7] Miltner, R.J., D. White and C. Yoder. 2004. The biotic integrity of streams in urban and suburbanizing landscapes. Landscape and Urban Planning 69 (2004) 87–100.

these goals.[8,9] We would welcome more regulation of stormwater hydrology that would achieve and exceed Clean Water Act attainment goals. But first, they must be demonstrated to do so. Considerably more protective stormwater hydrology would need to be included in stormwater permitting in Ohio. We find evidence for stream health use designation attainment related to stormwater management units is lacking to date.

In brief, stormwater units have been proposed to replace ephemeral streams. However, the effectiveness of stormwater units for achieving Clean Water Act use designation goals has not been analyzed and provided to date.

As an example of cumulative small stream impacts, the figures below show the loss of streams in the Mill Creek Watershed in northeast Ohio, near Cleveland. Source: Ohio Nonpoint Source Pollution Management Plan 2005-2010
http://wwwapp.epa.ohio.gov/dsw/nps/NPSMP/SI/asishheijumppage.html

[8] Fanelli et al. 2019. Urban legacies: Aquatic stressors and low aquatic biodiversity persist despite implementation of regenerative stormwater conveyance systems. Freshwater Science 38(4). DOI: 10.1086/706072. "These results document that the effects of urbanization in streams persist even after SCM implementation occurs. Ultimately, our research underscores the need for restoration designs to address multiple stressors that cause ecosystem degradation in urbanized streams."

[9] Roy et al. 2014. How Much Is Enough? Minimal Responses of Water Quality and Stream Biota to Partial Retrofit Stormwater Management in a Suburban Neighborhood. PLoS ONE 9(1).
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0085011

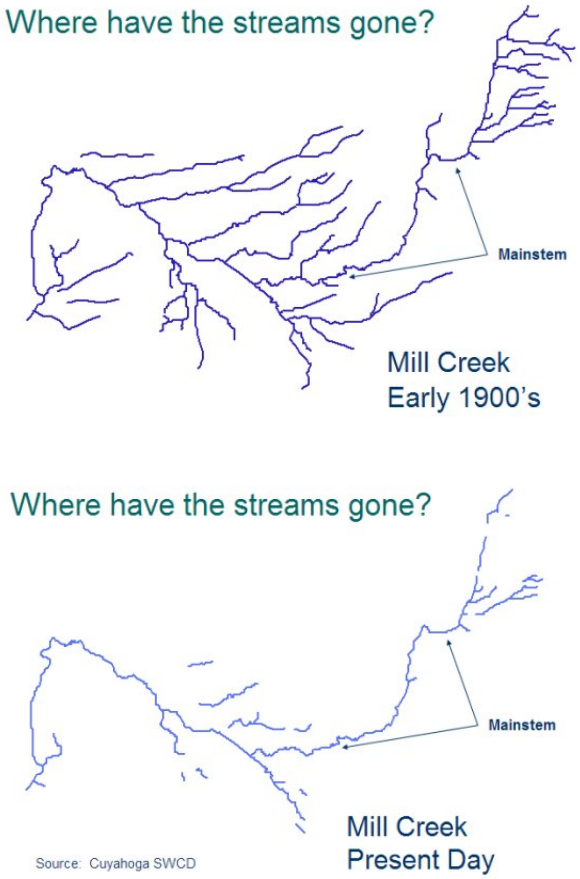

Figure 1 Stream losses in the Mill Creek watershed, Cuyahoga County, over about a century.

Excerpt from the text related to the above maps:

> "Causes Of Impairment
> The major causes of primary headwater habitat impairments, in urban, suburban, and rural areas alike, are habitat modification and hydromodification. Specifically, fundamental changes to stream channel form through channelization, rip rap or gabion installation, lining with concrete, and/or conversion to a grassed waterway and elimination of primary headwater streams through filling, culverting, or disconnection from ground waters are the major ongoing impacts. Because the drainage areas are so small, each individual impact may seem minimal. However, collective impact of eliminating thousands of feet of primary headwater streams in a particular watershed can fundamentally alter the entire watershed. The example shown here is the Mill Creek Watershed in northeast Ohio, near Cleveland. These slides are from a presentation by Ohio EPA, Division of Surface Water, on their work with primary headwater streams."

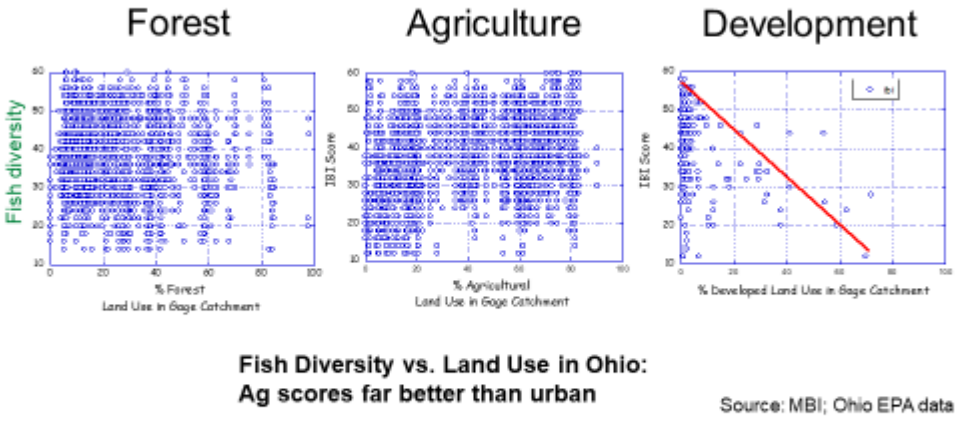

Figure 2 Comparison of Ohio fish community diversity scores for forest, agricultural and urban-dominated ("Developed Land Use") watersheds. Developed areas score further below Clean Water Act goals as the percentage of developed land increases.

Figure 2 shows how Ohio stream quality, as measured by fish diversity, declines as the percentage of urban land ("Developed Land Use") increases. Ohio EPA's biennial Integrated Report consistently states that the "principal causes for … impairments were those primarily related to landscape modification issues involving agricultural land use and urban development."[10]

Summary: The analysis of HB 175 to date has not addressed costs of stormwater best management practices and compared costs or effectiveness to avoidance or mitigation of ephemeral stream impacts. Those costs should include the units' construction and maintenance, and loss of land and aesthetic features dedicated to the stormwater units. The landowner and subsequent landowners will also be subject to operation and maintenance costs, which are perpetual. Because of the need to increase infiltration to groundwater and management flow regimes and water temperatures, additional stormwater management would be required, adding costs, if ephemeral streams are eliminated from protection.

In addition, HB 175 could have unintended consequences for local government and others concerning related regulatory obligations. Please see the full testimony of the Association of Ohio Metropolitan

[10] Ohio EPA. 2020. Ohio 2020 Integrated Water Quality Monitoring and Assessment Report. Page A-10. https://epa.ohio.gov/wps/portal/gov/epa/divisions-and-offices/surface-water/reports-data/ohio-integrated-water-quality-monitoring-and-assessment-report

Wastewater Agencies (AOMWA) dated May 24, 2021, to the Ohio House Agriculture and Natural Resources Committee.[11] Excerpts follow:

> "Primarily, HB 175 could impose increased or prolonged regulatory obligations on public wastewater agencies and others, because Ohio EPA would be required to implement regulatory restrictions to address impacts to water quality."

and

> **"3. The deregulation of ephemeral streams will negatively impact watersheds that have been the subject of billions of dollars of public investment**
> Ohio's public wastewater agencies have been and continue to expend billions of dollars on infrastructure and treatment technologies as part of federally-mandated consent decrees and existing permitting and regulatory requirements. Likewise, many of these communities are making significant investments in green infrastructure and other innovations to address water quality issues associated with stormwater discharges. Finally, Ohio's flagship policy for improving water quality, H2Ohio, currently envisions significant public investment to improve water quality in the Lake Erie watershed and elsewhere. If enacted, HB 175 would authorize negative impacts to the headwaters of the same streams and rivers that have been the subject of billions of dollars of public ratepayer investment designed to improve water quality."

Loss of ephemeral streams will add to local government's water quality challenges

When small and ephemeral stream protection did not exist, especially many years ago, streams were regularly piped, buried or otherwise altered, resulting in far fewer streams and lowered downstream quality, such as described by Roy et al (2009):

"Headwater streams have been extensively eliminated by human activities that disturb landscapes because of their predominance in the landscape and the fact that they receive minimal legal protection. Small streams often are filled or diverted through pipes to accommodate residential, commercial, and industrial development. For example, in Atlanta, Georgia, drainage density of natural channels is less in urban and suburban catchments than in forested catchments (Meyer and Wallace 2001). Many areas presently experiencing urban, suburban, and exurban growth were previously farmed, and agriculture also results in filling and burying of stream channels (Meyer and Wallace 2001)."

Elmore and Kaushal (2008) found that within the City of Baltimore, 66% of all streams and 70% of streams in catchments smaller than 260 ha (1 mi^2) were buried.

Roy et al (2009) also state, "Urban development can have profound effects on baseflow hydrology, and thus, can affect the hydrologic permanence of streams. Urbanization decreases the magnitude and increases the duration of low flows by reducing infiltration and groundwater recharge (Ferguson and Suckling 1990)."

[11] Testimony is at: https://www.ohiohouse.gov/committees/agriculture-and-conservation/meetings/cmte_h_agriculture_1_2021-05-25-0900_583

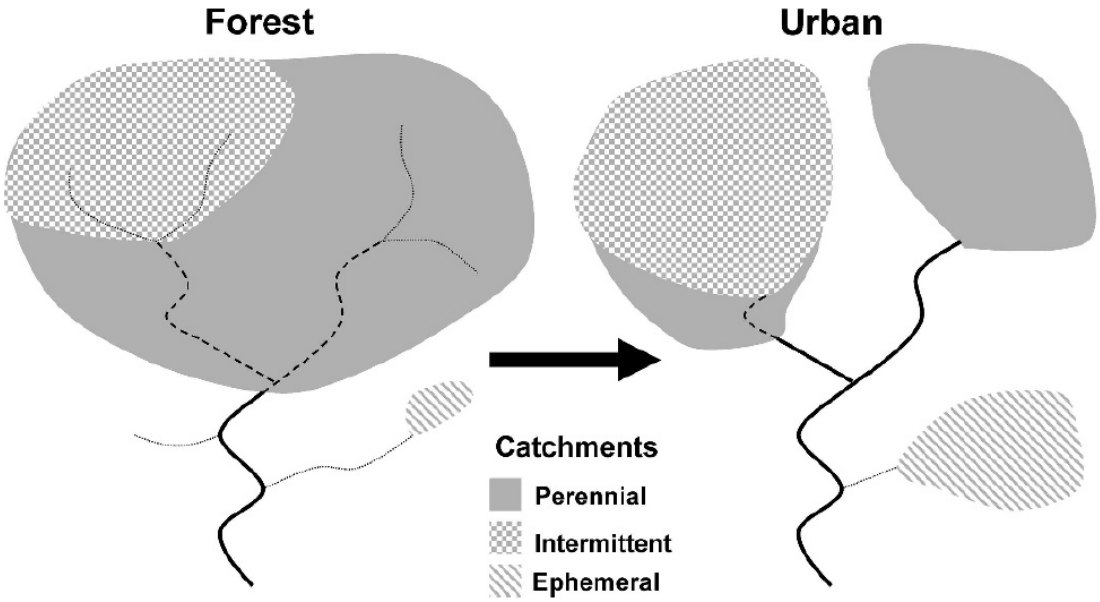

Figure 3 From Roy et al (2008) - Conceptual representation of study results. Urbanization results in a loss of ephemeral (dotted lines) and intermittent (dashed lines) stream length thorough channel burial/piping, as indicated by larger drainage areas.

Figure 3 shows Roy et al's concept of how ephemeral streams have been lost and such loss might continue. Sunder HB 175, stormwater units would subsume more of these streams than in the past.

Dodds and Oakes (2008) made the point "that nonpoint pollution control strategies should consider the influence of small upland streams and protection of downstream riparian zones alone is not sufficient to protect water quality." They also state "headwater effects were evident even at times when these small streams were unlikely to be flowing."

Addressing problems at the source

Summary: Address hydrologic problems of ephemeral streams at the source, i.e., on the landscape. Eliminating protection of ephemeral streams or replacing them with stormwater units will not address the root cause of stream erosion or flashy, unnatural stream flows.

> "Urban development can have profound effects on baseflow hydrology, and thus, can affect the hydrologic permanence of streams."[12]

Eliminating protection of ephemeral streams or replacing them with stormwater units will not address the root cause of stream erosion or flashy, unnatural stream flows. The drying of streams and flashy flows originate on the landscape they drain. Our management of that landscape causes the problem, and is where our attention should be addressed. Some other testimony to this committee and that to

[12] Roy, A.H., A.L. Dybas, K.M. Fritz and H.R. Lubbers. 2009. Urbanization affects the extent and hydrologic permanence of headwater streams in a midwestern US metropolitan area. J. N. Am. Benthol. Soc., 28(4):911–928. (NOTE: This study investigated Hamilton County, Ohio, headwater streams.)

the Ohio House Agriculture and Natural Resources Committee emphasized that ephemeral streams have lost flow, have eroding banks and are unstable. That is, they were previously more likely to flow continuously or intermittently. This is true, but we need to point out that this is because of human-caused alterations of the landscape that resulted in the watersheds' loss of ability to hold water and provide natural flow amounts and patterns to streams. Before alteration of the land (timbering, agriculture, development), ephemeral streams might have once had regular, natural flow, but many generally were "dried up" by changes brought about by landscape changes – that is, removal of trees, installation of artificial drainage, and construction of impervious surfaces like rooftops and roads, mining and other alterations. These causes lead to the drying of ephemeral (and larger) streams and flashy flows that create more unstable conditions than would occur naturally.

Previous testimony also stated that ephemeral streams are "unstable," implying this was a condition that could be addressed through elimination of the ephemeral streams. All streams are "unstable," in that they all erode and continually re-shape their channels, banks and valleys and meander from side to side. This is how stream meanders and valleys are formed. Streams are naturally unstable, but they are made more so due to human-caused changes in the landscape, such as impervious surfaces, artificial drainage or low organic matter soils. Upstream causes and consequences of additional, human-caused ephemeral stream instability are readily transferred downstream to larger streams.

These causes of instability, especially flashy flows, will not be addressed by eliminating ephemeral stream protection or by replacing them with stormwater units. The hydrologic problems and causes of ephemeral stream desiccation and flashiness need to be addressed at their source. The root causes of stream instability will not be addressed unless the landscape drained by the streams is restored to more natural conditions, such as by increasing infiltration to groundwater and building soil organic matter across large areas.

Some proponent testimony claimed that protection of ephemeral streams would authorize "professional engineers to use best management practices (BMPs)." This assumes that establishing and/or increasing stormwater storage through BMPs such as retention ponds in a watershed fixes the problem and achieves downstream CWA attainment. However, if BMPs like retention ponds are used, this would not address the root causes to the extent necessary, and downstream stream quality and use designation attainment or restoration has yet to be shown by such practices on any extensive scale, if at all.[13] Stormwater units could make flow patterns less natural or cause elevated temperatures.[14] Definitions of terms like "excessive" erosion in HB 175 are undefined. Elimination of ephemeral streams might make it harder to achieve Clean Water Act goals in a watershed. Ohio municipalities need to be aware of this problem; please see the HB 175 opponent testimony of the Association of Ohio Metropolitan Wastewater Agencies, AOMWA, provided by John Newsome, in written testimony to House of May 24, 2021, opposing HB 175.

If HB 175 is enacted and ephemeral streams are not protected, failure to adequately address the root cause of stream flashiness will only transfer the problem downstream. We support better stormwater

[13] Christopher J. Walsh, C.J., T.D. Fletcher and M.J. Burns. 2012. Urban Stormwater Runoff: A New Class of Environmental Flow Problem. PLoS ONE 7(9): e45814. doi:10.1371/journal.pone.0045814

[14] Principles for urban stormwater management to protect stream ecosystems
Walsh, C.J. D.B. Booth, M.J. Burns, T.D. Fletcher, R.L. Hale, L.N. Hoang, G. Livingston, M.A. Rippy, A.H. Roy, M. Scoggins and A. Wallace. 2016. Principles for urban stormwater management to protect stream ecosystems. Freshwater Science 35(1). https://doi.org/10.1086/685284

management, but it must be adequate to restore stream health – and not just address controlling flow from stormwater units. Because this bill does not address hydrologic, landscape-level causes of erosion along ephemeral streams and all other parts of the downstream stream network, it will not return stream stability to natural levels or restore the health of Ohio's intermittent and permanent streams and achieve Clean Water Act goals in general.

Early accounts of the loss of flow in Ohio's streams, especially smaller streams, was provide by eminent Ohio fish biologist Milton Trautman in his classic 1957 book, "The Fishes of Ohio." The loss of water and longer-term flow in Ohio streams, especially small streams such as ephemeral, are described in that reference and Appendix 1 below.

Recent federal action and a related LSC statement on HB 175

Summary: HB 175 would conflict with federal implementation of WOTUS (Waters of the United States), and a court could find it preempted by the federal Clean Water Act.

In the Bill Analysis of 9/30/2021 (https://www.legislature.ohio.gov/download?key=17487&format=pdf), the Legislative Services Commission (LSC) stated:

"As a result of the recent federal court decision in the Pasqua case since the bill's introduction, the bill, if enacted, would possibly conflict with current federal law, which re-institutes the "significant nexus" test." (*emphasis added*) [15]

and

"Whenever there is a conflict between a state law and federal law, the federal law, subject to other constitutional law, "preempts" or takes precedence over the state law under the Supremacy Clause of the U.S. Constitution.[16] As a result, Ohio cannot enforce statutes that conflict with federal statutes. And, in particular, the CWA does not allow states to enforce standards that are less stringent than the Act.[17] Thus, if enacted, Ohio law might conflict with federal law and a court could find it preempted by the federal CWA and unconstitutional if challenged under the Supremacy Clause."

The most recent federal activity addressing a change in federal policy, replacing the federal Navigable Waters Rule of 2020, is covered at the sites below. This forms the conflict that the LSC refers to above. The federal policy is what is known as a "pre-2015" approach, referring to a 2015 interpretation of jurisdictional Waters of the United States (WOTUS).

See also: https://www.epa.gov/newsreleases/epa-and-army-take-action-provide-certainty-definition-wotus

News Releases from Headquarters > Water (OW)

[15] Pasqua Yaqui Tribe v. United States EPA, 2021 U.S. Dist. Lexis 163921.
[16] U.S. Constitution, Article VI, cl. 2.
[17] 33 U.S.C. § 1370.

EPA and Army Take Action to Provide Certainty for the Definition of WOTUS
November 18, 2021

And https://www.epa.gov/wotus/revising-definition-waters-united-states

Revising the Definition of "Waters of the United States"

> "On November 18, 2021, the U.S. Environmental Protection Agency and the Department of the Army ("the agencies") announced the signing of a proposed rule to revise the definition of "waters of the United States." This proposal marks a key milestone in the regulatory process announced in June, 2021. The agencies propose to put back into place the pre-2015 definition of "waters of the United States," updated to reflect consideration of Supreme Court decisions. This familiar approach to "waters of the United States" would support a stable implementation of "waters of the United States" while the agencies continue to consult with states, Tribes, local governments, and a broad array of stakeholders in both the implementation of WOTUS and future regulatory actions."

Revised Definition of WOTUS Notice of Proposed Rulemaking - pre-publication version (pdf):

> https://www.epa.gov/system/files/documents/2021-11/revised-definition-of-wotus_nprm_pre-publication_version.pdf

Definition and determination of an ephemeral feature

<u>While HB 175 contains a definition it remains unclear on what determines "ephemeral" in the field and what ensures consistent delineation of "ephemeral" at project sites</u>.

From H.B. 175 as passed by the House, September 2021:

> "An ephemeral feature is surface water flowing or pooling only in direct response to precipitation, such as rain or snow. An ephemeral feature does not include a wetland."

While this might seem simple to discern, that is not so in the field. It lacks an implementation procedure that includes some technical tools to delineate between ephemeral and not ephemeral. For any stream classification system, it needs a supporting, rigorous methodology, which tends to be something beyond the appearance of a stream on a particular day. Alternatively, two observers could come up with different outcomes.

For example, when does a field visit need to be conducted to determine if a stream is ephemeral? What time of year? How long after a rain event? Does this include interstitial streams that flow under the surface for extended periods, especially during the summer and fall? (These streams are common in parts of Ohio, such as the Scioto and Great Miami River watersheds.) What antecedent conditions must exist when a stream is surveyed as to whether it is ephemeral? How much rain needs to fall to determine an ephemeral stream exists? How deep do pools have to be? If a point source discharges continuously to an otherwise ephemeral stream, is that a permanent or interstitial stream? At what point along a stream does it become ephemeral? To minimize the chance that two parties differ on the determination of the extent of an "ephemeral" delineation, what is the established guidance?

We emphasize that the 2020 Navigable Waters Rule never established a technical determination for use in the field of what an ephemeral stream is. Standard methods were not established that would implement the previous federal administration's June 2020 Navigable Waters Protection Rule. Federal agencies continued to struggle with standard technical determination procedures after the rule was established.

To establish some consistency, if Ohio passes HB 175, the state might need to adopt one of the Streamflow Duration Assessment Methods (SDAMs) that US EPA, U.S. Army Corps of Engineers and other partners are still studying (https://www.epa.gov/streamflow-duration-assessment). For many years, Ohio EPA has used other methods, which are the standard methods in its Field Methods for Evaluating Primary Headwater Streams in Ohio (https://epa.ohio.gov/static/Portals/35/wqs/headwaters/PHWHManual_2020_Ver_4_1_May_2020_Final.pdf?ver=Jx6Z3rn9feBAUir3HWp_FQ%3d%3d). In any case, for the sake of consistency, this will not be a simple determination done by a landowner. In order to provide more consistent and defensible determinations, we recommend the Ohio EPA manual for defining an "ephemeral" stream.

References

Dodds, W.K. and R.M. Oakes. 2008. Headwater Influences on Downstream Water Quality. Environmental Management 41: 367–377. DOI 10.1007/s00267-007-9033-y

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Appendix I - **Trautman references to stream flow**

Many ephemeral streams' condition of flashy flow (high after rains or rapid snowmelt, very low afterwards, resultant eroded channels) because of the landscape-scale changes that have occurred in Ohio since European settlement. In his landmark reference book, "The Fishes of Ohio," noted fish biologist Milton Trautman (1982) extensively describes how Ohio streams became "flashy," in other words, drier in summer and early fall, and more prone to high water levels following heavy rains.

In Trautman's summary of the 1851-1900 period (Pg 24), he states "Many streams became intermittent which formerly had a uniform flow throughout the year. The water table, once at or near the surface of the land, continued to sink lower and lower…"

From "Summary for 1750-1950" (Pg 29): "Many streams and springs have ceased to flow or flow intermittently following the drop in the water table which followed overdraining."

Citing Hildreth (1848) (Pg 14): ""regular" supply of water throughout the year from the springs of southeastern Ohio before 1800 and that it was this continuous supply of water from springs, and from water draining the surface, which kept even the small brooks flowing throughout the year."

Citing Howe (1900) (Pg 23): "facilitating by every means in our power the prompt removal of storm water from the land to the nearest water courses. … Rivers will shrink during summer droughts to smaller and smaller volumes …"

References:

Trautman, M. 1983. Fishes of Ohio. The Ohio State University Press, Columbus. 782 pp.