

FILE REF: Unnamed Tributary to Lake Michigan, (Kohler Power Systems Americas)

DATE: May 7, 2021

TO: File

FROM: Craig Helker, Water Resources Biologist

SUBJECT: Stream Classification Comments on Unnamed Tributary to Lake Michigan (Kohler Power Systems Americas)

The purpose of this memo is to revisit the historical stream classification of the Unnamed Tributary to Lake Michigan (WBIC: 65000) in response to 2021 enquires from Kohler Power Systems Americas as to whether the 1991 Stream Classification should have produced a Stream Classification of Limited Forage Fish (LFF) instead of Warm Water Forage Fish (WWFF). The conclusion arrived at through this review is that the tributary was correctly classified as Warm Water Forage Fish in accordance with the 1982 “Stream Classification Guidelines for Wisconsin”, and that this historical classification is further supported and confirmed by applying the 2004 “Guidelines for Designating Fish and & Aquatic Life Uses for Wisconsin Surface Waters”.

Un. Tributary to Lake Michigan (WBIC: 65000) is located in Sheboygan County, and drains directly to Lake Michigan. This waterbody is the receiving water for Kohler Power Systems Americas (WPDES Permit WI-0000795). The Un. Tributary is not codified as Limited Aquatic Life or Limited Forage Fish under ch. NR 104, Wis. Adm. Code.

#### Classification under 1982 Guidance

The Un. Tributary’s most recent Stream Classification was written in 1991 (Wawrzyn):

“It is recommended that this stream be reclassified from non-continuous, marginal fish and aquatic life to a Warm Water Forage Fish Community per NR 102. Existing biological communities, habitat conditions, and the controllability of existing limiting factors support this conclusion.”  
*Standards Review and Stream Classification for an Unnamed Tributary to Lake Michigan, Sheboygan County, Wisconsin, Will Wawrzyn, June 12, 1991.*

The Stream Classification produced by W. Wawrzyn was based on fish (see Table 1 below) and habitat surveys following the “Stream Classification Guidelines for Wisconsin” (Ball, 1982). Following these guidelines, the 1991 Classification determined that a Warm Water Forage Fish Community is most appropriate, with this community defined in the 1982 Guidelines as:

Class C, Intolerant Forage Fish, Intolerant Macroinvertebrates, or a Valuable Population of Tolerant Forage Fish: Streams capable of supporting an abundant, and usually diverse, population of forage fish or intolerant macroinvertebrates. These streams are generally too small to support cold or warm water sport fish but have natural water quality and habitat sufficient to support forage fish or macroinvertebrates.

Note that the 1982 Guidelines also defined a Limited Forage Fish Community as:

Class D, Tolerant or Very Tolerant Fish, or Tolerant Macroinvertebrates: Streams capable of supporting only a small population of tolerant forage fish, very tolerant fish, or tolerant macroinvertebrates. The aquatic community in such a stream is usually limited due to naturally poor water quality or habitat deficiencies.

Table 1. Fish species collected 1991 w/1982 Classification Categories

SPECIES	NUMBER July	Sport Fish	Intolerant Forage Fish	Tolerant Forage Fish	Very Tolerant Forage or Rough Fish
Brook Trout	7	x			
Rainbow Trout	1	x			
Hornyhead Chub	3		x		
Brook Stickleback	11			x	
Fathead Minnow	3				x
White Sucker	10			x	
Common Carp	3				x
Longnose Dace	1		x		

Table 1 above lists the fish species collected by W. Wawrzyn in 1991 from the Unnamed Tributary. Additionally, Table 1 shows the fish species tolerance classification categories as included in the 1982 Guidance (see Table 3 of the 1982 Guidance). The species present in the Un. Tributary in 1991 represent a diverse population of forage fish, including two species deemed in the 1982 Guidance as Intolerant. Additionally, the historical survey collected two different species of game fish (Brook and Rainbow Trout). Their presence, while explainable as likely transient migration from Lake Michigan or historical stocking efforts, should be noted. Based on this fish collection, if excluding the trout species for benefit of the doubt, and applying the 1982 Guidance under Appropriate Use Designation, Page 7., the 1991 classification of the Unnamed Tributary stands as Warm Water Forage Fish (Class C).

In 2021 correspondence with the Department, Kohler Power Systems Americas maintains that the 1991 survey resulted in a Habitat score of 144, and per the 1982 “Stream Classification Guidelines for Wisconsin” Table 4., should have resulted in an LFF Use Designation. However, the 1982 guidance states that biological data outweighs habitat data in making a use determination. On page 7 of the 1982 Guidelines, consideration #2 under Appropriate Use Designation explicitly states that, “If the biological community is better than the indicated use class [referring to the use indicated by the habitat score], base the classification on the biological evaluation.” Under the Clean Water Act, the Fish and Aquatic Life Use assigned can be no lower than the existing biological community, regardless of other factors such as habitat and water quality. As the biological community collected in the tributary best reflects a WWFF community, WWFF is the correct Use Designation for the waterbody.

#### Classification under 2004 Guidance

In 2004, the Department released “Guidelines for Designating Fish & Aquatic Life Uses for Wisconsin Surface Waters”, PUBL-WT-807-04. This Guidance document served as an update to the 1982 “Stream Classification Guidelines for Wisconsin”, revising the earlier Guidelines to address a wider range of environmental issues, and to account for environmental relationships between permitted discharges and other pollutant sources.

The updated 2004 Guidance proposed changes to refine the Designated Use Aquatic Life Sub-Categories, and while the Guidance was not formally implemented by the Department, it is useful to revisit the Sub-

Categories defined in the document. Table 2, below, lays out the Fish and Aquatic Life Sub-Categories that were recommended at that time.

Table 2. Proposed (2004) and Current Fish and Aquatic Life Use Sub-categories and Sub-classes.

Proposed Fish Aquatic Life Sub-Category and	Proposed Acronym	Current Sub-Category as Listed in Wisconsin Administrative Code
<b>Diverse Fish &amp; Aquatic Life</b> <ul style="list-style-type: none"> <li>• Game Fish Waters</li> <li>• Non-Game Fish Waters</li> <li>• Macroinvertebrate Waters</li> <li>• Endangered, Threatened or Special Concern Species Waters</li> <li>• Intolerant Fish Species Waters</li> <li>• Coolwater Fish Species Waters</li> </ul>	<b>DFAL</b> <ul style="list-style-type: none"> <li>• DFAL-GF</li> <li>• DFAL-NG</li> <li>• DFAL-MC</li> <li>• DFAL-ETSC</li>   <li>• DFAL-IF</li> <li>• DFAL-CC</li> </ul>	<b>Warm Water Sport Fish (WWSF)</b> <b>Warm Water Forage Fish (WWFF)</b>
<b>Tolerant Fish &amp; Aquatic Life</b> <ul style="list-style-type: none"> <li>• Tolerant Fish Waters</li> <li>• Tolerant Macroinvertebrate Waters</li> </ul>	<b>TFAL</b> <ul style="list-style-type: none"> <li>• TFAL-F</li> <li>• TFAL-M</li> </ul>	<b>Limited Forage Fish (LFF)</b>

The Sub-category of Warm Water Forage Fish (WWFF) in NR 102.04(3)(c) corresponds with the 2004 Guidance’s Fish and Aquatic Life Sub-category ‘Diverse Fish & Aquatic Life-Non-Game Fish’ (DFAL-NG). ‘DFAL-NG’ has the following definition: “This sub-class applies most appropriately to warm water ecosystems capable of attaining a rough fish and minnow species community where 5 to 25 percent of the fish that may be present are intolerant to low dissolved oxygen.” In the fish collection of 1991, if not considering the trout species collected, 45.2% of the collected fish were not tolerant of low DO conditions. (Among the fish collected in 1991, the 2004 Guidance identifies Common Carp, Brook Stickleback, and Fathead Minnow as being tolerant of low DO.) The 1991 collected fish community clearly supports the ‘DFAL-NG’ (WWFF) Fish and Aquatic Life sub-category as defined in the 2004 Guidance.

The above discussions support the Department’s 1991 Classification of the Unnamed Tributary to Lake Michigan as WWFF.

Potential future classification

Under the Clean Water Act, a waterbody’s Designated Uses can be no lower than its “existing use”, which is the highest quality community (use) that the stream has supported at any point in time since 1975. Therefore, even if newer data were available, the tributary’s Fish and Aquatic Life Use could not be assigned at a lower category than what it was attaining at the point of the 1991 survey, so it would maintain at least a WWFF use going forward. If trout species are determined to be present in future analyses, there may be potential for assigning a coldwater use and/or permit limits to protect coldwater species at some point in the future.

Summary

In summary, Unnamed Tributary to Lake Michigan (WBIC: 65000) was correctly classified as Warm Water Forage Fish in accordance with the 1982 “Stream Classification Guidelines for Wisconsin”. This historical classification is further supported and confirmed by applying the 2004 “Guidelines for Designating Fish and & Aquatic Life Uses for Wisconsin Surface Waters”.

## REFERENCES

Ball, Joseph. 1982. Stream Classification Guidelines for Wisconsin. Technical Bulletin. Wisconsin Department of Natural Resources, Madison, Wisconsin.

Wawrzyn, Will. 1991. Memorandum - Stream Classification and Water Quality Standards Review for an Unnamed Tributary to Lake Michigan, Sheboygan County. Wisconsin Department of Natural Resources.

Wisconsin Department of Natural Resources. 2004. Guidelines for Designating Fish & Aquatic Life Uses for Wisconsin Surface Waters. Bureau of Watershed Management, Madison, Wisconsin.