

DATE: May 26th, 2026 FILE REF: NA

TO: Nicole Krueger, Limit Calculator; Trevor Moen, Compliance Engineer

FROM: Eric Evensen, Stream Biologist; Justin Chenevert, Waterbody Assessment Coordinator;
Diane Figiel, Limit Calculator Coordinator

SUBJECT: Agropur Inc Luxemburg, Unnamed Tributary of the East Twin River (WBIC 3000213),
Kewaunee County

Overview of issue

In preparation for reissuance of Agropur Inc Luxemburg's permit, staff were requested to do a site visit to determine the appropriate stream classifications for the receiving waters. Agropur is a continuous discharger, with an actual annual average flow of 0.68 MGD (1.05 cfs).

The immediate receiving water is the Tributary to the East Twin River (Segment 1). This flows into the East Twin River. The facility's previous permit limits were based on limited aquatic life (LAL) for 1.7 miles for the Tributary to the East Twin River with downstream protection limits for phosphorus.

The main objectives of this site visit are to determine the appropriate Natural Community and Designated Use for the Tributary to the East Twin River.

Summary of previous and proposed stream class recommendations

- **For all segments:**
 - *Currently codified designated use:* not in ch. NR 104 as LAL or LFF and not classified as trout water
 - *Classification used for previous permit issuance:* LAL
 - *Previous stream class recommendations:* LAL, from the WWTP outfall to the SE ¼ SE ¼ T23N R23E S27 to Sleepy Hollow Road in NE ¼ NE ¼ T23N R22E S26 (formerly Weyauwega Milk – Luxemburg)
- **Segment 1 (most upstream): Unnamed (WBIC 3000213)**
 - *Modeled Natural Community:* Macroinvertebrate
 - *New recommended Natural Community and Designated Use:* Cool-Warm Headwater NC and WWFF DU
- **Segment 2: Unnamed (WBIC 3000212)**
 - *Modeled Natural Community:* Macroinvertebrate
 - *New recommended Natural Community and Designated Use:* Cool-Warm Headwater NC and WWFF DU
- **Segment 3: Unnamed (WBIC 3000211)**
 - *Modeled Natural Community:* Cool-Cold Headwater
 - *New recommended Natural Community and Designated Use:* Cool-Cold Headwater NC and Coldwater DU
- **Segment 4: East Twin River (WBIC 84000)**
 - *Modeled Natural Community:* Cool-Cold Headwater
 - *New recommended Natural Community and Designated Use:* Cool-Cold Headwater NC and Coldwater DU

Site overview map

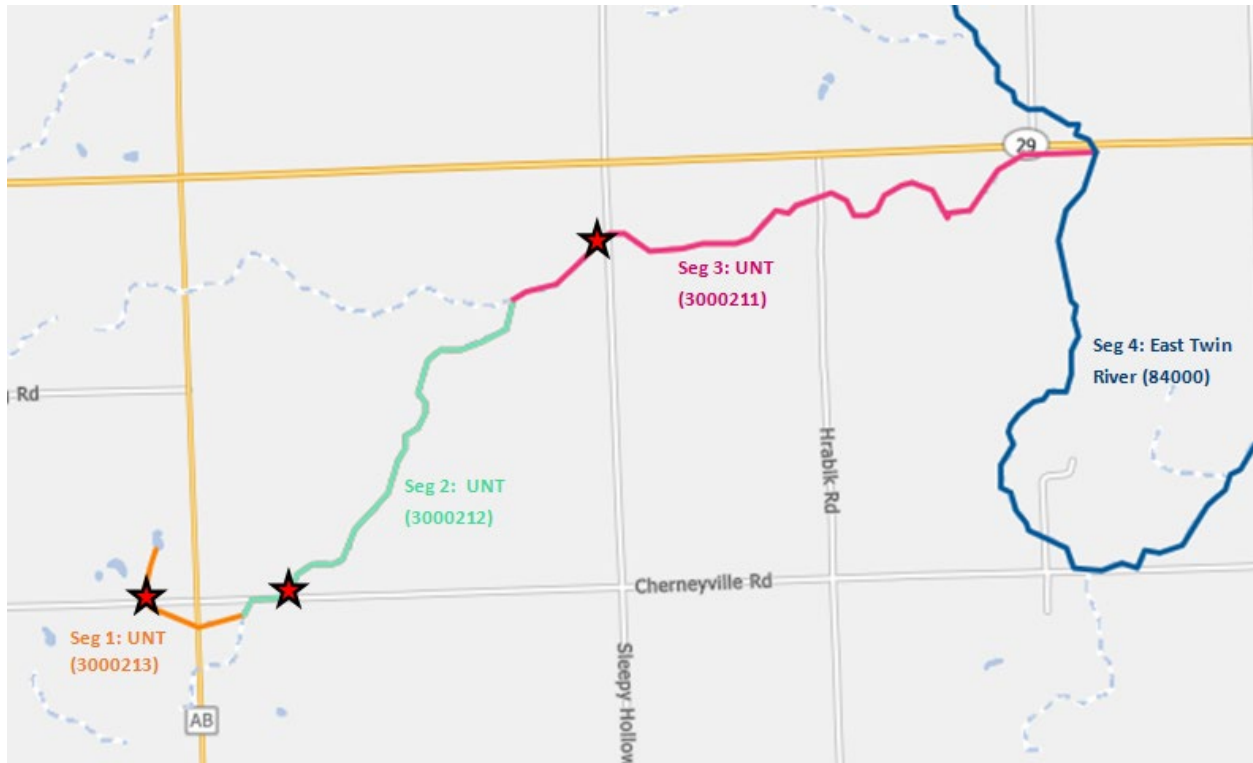


Figure 1. Agropur Facility receiving water segments (with WBIC in parentheses) and sample locations (red stars). Map image from the Surface Water Data Viewer.



Figure 2. Agropur facility outfall, receiving water segments and photo locations. Aerial image from Surface Water Data Viewer – leaf off 2020.

Site observations and habitat survey results

Segment 1 (most upstream): Unnamed (WBIC 3000213)

On June 12, 2025, Eric Evensen (myself) and Brandon Rotolo conducted a receiving water determination for Agropur Luxemburg facility. Unnamed Tributary -WBIC 3000213 (Segment 1) was accessed via the Cherneyville Road crossing. Segment 1 upstream of Cherneyville Road crossing west is a 1-2 meter wide stream with a well-defined streambed and bank. The streambed consisted mostly of sand, gravel and cobble with some boulders mixed in. Subsections of the stream with less gradient did display a larger percentage of softer sediments such as silt. No significant bank erosion was observed within the Unnamed Tributary; this was likely influenced by a well-protected riparian buffer. Flow rate calculated prior to a fish survey yielded 1.41 cfs. Cover for fish was common but not extensive with deeper bends and rock riffles present. A qualitative habitat survey was completed on June 12, 2025 following a fish survey. The habitat survey resulted in a score of 63 which is rated as GOOD.

Prior to completing a fish survey in 2025 water temperature was 26.8°C, dissolved oxygen was 5.82 mg/L, conductivity was 2,244 $\mu\text{S}/\text{cm}$ and pH was 8.23, collected using a calibrated multiparameter probe. Water clarity was greater than 122 cm. Due to high conductivity within the stream, electrofishing effectiveness was limited.

Segment 2: Unnamed (WBIC 3000212)

Stream biologists (Evensen and Rotolo) made a visual inspection of Segment 2 on June 12, 2025. Unnamed Tributary - WBIC 3000212 (Segment 2) at Cherneyville Road crossing east is a 2-meter wide stream with a well-defined streambed and bank. Streambed consisted mostly of sand and silt which is likely influenced by the lack of gradient, an abundance of cattail species lining the stream channel and nonpoint sources with minimal stream buffers. The stream channel displayed characteristics of being artificially straightened in the past which did lead to limited habitat diversity and cover for fish. A qualitative habitat survey was completed on October 12, 2017. The habitat survey resulted in a score of 25 which is rated as FAIR.

Segment 3: Unnamed (WBIC 3000211)

On June 12, 2025, the receiving water determination continued downstream where Unnamed Tributary – WBIC 3000211 (segment 3) was accessed at Sleepy Hollow Road. Segment 3 upstream of Sleepy Hollow Road is a 3-5 meter wide stream with a well-defined streambed and bank. The streambed consisted mostly of sand, gravel and cobble. The stream is comprised of diverse habitats with deeper bends and riffles common, leading to abundant cover and shelter for fish. Flow rate calculated prior to a fish survey yielded 1.41 cfs. A qualitative habitat survey was completed on June 12, 2025, following a fish survey. The habitat survey resulted in a score of 68 which is rated as GOOD.

Prior to completing a fish survey in 2025 water temperature was 19.1°C, dissolved oxygen was 8.69 mg/L, conductivity was 1,687 $\mu\text{S}/\text{cm}$ and pH was 8.37, collected using a calibrated multiparameter probe. Water clarity was greater than 122 cm. Due to high conductivity within the stream, electrofishing effectiveness was limited.

Segment 4: East Twin River (WBIC 84000)

No surveys were conducted on the East Twin River in 2025.

Fish survey results

Segment 1: Unnamed Tributary (WBIC 3000213)

A fish survey was completed in Segment 1 on June 12, 2025. Segment 1 was accessed via Cherneyville Road with the station located upstream of the crossing. The fish survey was completed using a high conductivity backpack shocker unit recommended for use when conductivity is over 700 $\mu\text{S}/\text{cm}$, but its effectiveness is still reduced in extremely elevated conductivity conditions. Due to high conductivity within Segment 1, electrofishing effectiveness was limited, and smaller individuals were observed avoiding capture. Given stream characteristics such as flow and available habitat, it is likely the fish community has more individuals and is more diverse than the 2025 fish survey shows. Conductivity at the time of the 2025 survey was 2,244 $\mu\text{S}/\text{cm}$. Fourteen individuals of one species (Creek Chub) were captured during the 100m electrofishing survey. Segment 1 has sufficient flow (1.41 cfs) and habitat (63-GOOD) to support the cool-warm headwater Natural Community designation even though 25 individuals were not captured in the June 12, 2025 fish survey. Other factors influencing fish populations in Segment 1 include elevated water temperatures and elevated nutrients. Because the IBI tool does not calculate an IBI unless there are at least 25 individuals captured, an IBI score was not calculated for the survey. The modeled Natural Community for Segment 1 was Macroinvertebrate; however, the Macroinvertebrate Natural Community category and the LAL Designated Use category are for streams that do not support fish. Therefore, this segment will be verified as Cool-Warm Headwater because there is an existing fish community present in this stream segment.

Table 1: Fish community data from survey completed June 12, 2025 on Unnamed Tributary (3000213) to East Twin River upstream of Cherneyville Road. Fish species tolerance guild (Tol = Tolerant, Inter = Intermediate, Intol = Intolerant) and temperature guild (Cold, Transitional-Trans, Warm) included.

Waterbody	UNT to East Twin River
WBIC	3000213
SWIMS Station #	10060443
FMDB Station #	371424458
Fish Species	6/12/2025*
Creek Chub (<i>Tol, Trans</i>)	14
Total	14
# of Species	1
Small Steam IBI Score	Not calculated; too few individuals

*High conductivity noted, sampling effectiveness may have been limited.

Segment 2: Unnamed Tributary (3000212)

Fish surveys were completed in Segment 2 in 2008, 2017 and 2022. Due to high conductivity within Segment 2, electrofishing effectiveness may have been limited in 2017 and 2022. Conductivity at the time of the 2017 survey was 2,166 $\mu\text{S}/\text{cm}$ and although no conductivity was recorded in 2022, field notes state that conductivity was high with observations of fish avoiding capture. Segment 2 was modeled as Macroinvertebrate, but it has sufficient flow and habitat to support the cool-warm headwater Natural Community designation even though 25 individuals were not captured in fish surveys. Other factors influencing fish populations in Segment 2 include elevated water temperatures and elevated nutrients. Because the IBI tool does not calculate an IBI unless there are at least 25 individuals captured, IBI scores were not calculated for the surveys.

Table 2: Fish community data from surveys completed July 13, 2022, July 10, 2017, and August 4, 2008 on Unnamed Tributary (3000212) to East Twin River downstream of Cherneyville Road. Fish species tolerance guild (Tol = Tolerant, Inter = Intermediate, Intol = Intolerant) and temperature guild (Cold, Transitional-Trans, Warm) included.

Waterbody	UNT to East Twin River		
WBIC	3000212		
SWIMS Station #	10029041		
FMDB Station #	25502063		
Fish Species	7/13/2022*	7/10/2017*	8/4/2008
Creek Chub (<i>Tol, Trans</i>)	1	11	
Western Blacknose Dace (<i>Tol, Trans</i>)	1		
Cental Mudminnow (<i>Tol, Trans</i>)			4
Total	2	11	4
# of Species	2	1	1
Small Steam IBI Score	Not calculated; too few individuals	Not calculated; too few individuals	Not calculated; too few individuals

*High conductivity noted, sampling effectiveness may have been limited.

Segment 3: Unnamed Tributary (3000211)

A fish survey was completed in Segment 3 on June 12, 2025. Segment 3 was accessed via Sleepy Hollow Road with the station located upstream of the crossing. Additional fish surveys were completed in 2008, 2017 and 2022. Due to high conductivity within Segment 3 electrofishing effectiveness may have been limited in 2017 and 2025. Conductivity at the time of the 2017 survey was 2,141 $\mu\text{S}/\text{cm}$ and 1,687 $\mu\text{S}/\text{cm}$ in 2025. During the 2025 fish survey seven species and 468 total fish were captured. Of the seven species, three have a tolerance of intermediate or intolerant: Johnny Darter, Longnose Dace and Redside Dace. The Redside Dace is the intolerant individual and is also listed as a State Special Concern species and State Species of Greatest Conservation Need. Fish species diversity increased in segment 3 from upstream segments and coldwater individuals were captured in 2022 and 2008. The modeled Natural Community of Segment 3 is Cool-Cold Headwater. Fish survey data from 2025 and previous efforts have verified the Cool-Cold Headwater designation of Segment 3. Small Stream IBI scores for Segment 3 ranged from 70-100 which fall into the Good – Excellent category.

Table 3: Fish community data from surveys completed June 12, 2025, July 13, 2022, July 10, 2017, and August 4, 2008 on Unnamed Tributary (3000211) to East Twin River upstream of Sleepy Hollow Road. Fish species tolerance guild (Tol = Tolerant, Inter = Intermediate, Intol = Intolerant) and temperature guild (Cold, Transitional-Trans, Warm) included.

Waterbody	UNT to East Twin River			
WBIC	3000211			
SWIMS Station #	10029040			
FMDB Station #	25501998			
Fish Species	6/12/2025	7/13/2022	7/10/2017*	8/4/2008
Creek Chub (<i>Tol, Trans</i>)	297	3	89	175
Western Blacknose Dace (<i>Tol, Trans</i>)	155	13	14	49
Cental Mudminnow (<i>Tol, Trans</i>)	2		2	3
Longnose Dace (<i>Inter, Trans</i>)	5			
Johnny Darter (<i>Inter, Trans</i>)	3			
Redside Dace (<i>Intol, Trans</i>)	5		1	
Fathead Minnow (<i>Tol, Warm</i>)	1			
Mottled Sculpin (<i>Intol, Cold</i>)		2		4
Green Sunfish (<i>Tol, Warm</i>)			1	
Pearl Dace (<i>Inter, Trans</i>)			1	9
White Sucker (<i>Tol, Trans</i>)				4
Pumpkinseed (<i>Inter, Warm</i>)				1
Common Shiner (<i>Inter, Warm</i>)				1
Brook Stickleback (<i>Tol, Trans</i>)				6
Northern Redbelly Dace (<i>Inter, Trans</i>)				1
Total	468	18	108	253
# of Species	7	3	6	10
Small Steam IBI Score	70 - GOOD	Not calculated; too few individuals	80 - GOOD	100 - Excellent

*High conductivity noted, sampling effectiveness may have been limited.

Discussion and Designated Use recommendations

Note: Recommendations from this site visit are shown at the top of this memo.

Segment 1 (Unnamed Tributary 3000213) has sufficient flow and habitat to support the cool-warm headwater Natural Community designation even though 25 individuals were not captured in the June 12, 2025 fish survey. The continuous discharge from the Agropur facility contributes to flows at the site of 1.41 cfs; streams with flow above 0.03 cfs are expected to be able to support a fish community (i.e. Macroinvertebrate or Limited Aquatic Life categories are likely inappropriate). A habitat survey completed within segment 1 yielded a score of 63 which is rated as good, meaning there is ample fish habitat within the stream. Elevated water temperatures within segment 1 are a concern and are likely contributing to lack of fish abundance and diversity. Segment 1 was on the impaired waters list for exceedances of the aquatic life temperature criteria but was removed in 2022. Water temperature at the time of the fish survey on June 12, 2025 was 80.24°F which is below the acute maximum of 84°F for the month of June but elevated when compared to other cool-warm headwater streams in the area. Water quality within Segment 1 was extensively studied in 2022. The median total phosphorus concentration for monthly (May-Oct) water samples collected in Segment 1 in 2022 was 510.5 µg/L, well above the state standard of 75.0 µg/L. Elevated nutrients are the likely driver behind filamentous growth observed within segment 1. Temperature, chlorides, ammonia, nitrogen and biochemical oxygen demand were also elevated within Segment 1 in 2022 when compared to other streams in the watershed.

Segment 2 (Unnamed Tributary 3000212) is a continuation of the cool-warm headwater Natural Community described in Segment 1. Sufficient flow and habitat exist to support the cool-warm headwater designation. Human alterations, such as channel straightening, have impacted available habitat, contributing to lack of fish abundance and diversity within Segment 2.

Segment 3 (Unnamed Tributary 3000211) has sufficient flow and habitat to support the cool-cold headwater Natural Community designation. Stream temperature within Segment 3 was 66.4°F on June 12, 2025 which is below the acute maximum for cool-cold headwater systems of 72°F, consistent with this Natural Community designation. A 2025 fish survey did not capture any coldwater species, but coldwater species were captured in 2022 and 2008. Elevated water temperatures within segment 1 are likely contributing to the lack of consistent coldwater species usage within segment 3.

Determining the Designated Use (DU): Under the Clean Water Act framework, a waterbody's Designated Use should be based on the use that is attainable within the waterbody under good land management practices, and the Designated Use can be set no lower than its existing use (the highest use that has been attained at any time since 1975).

- **Existing use:** The existing fish community present throughout Segment 1 and 2 is a cool-warm headwater Natural Community (NC), which falls under the Warmwater Designated Use (DU). Therefore, the Designated Use can be no less stringent than a Warmwater DU. The Limited Forage Fish (LFF) designation is not warranted in Segment 1 and 2 due to ample fish habitat; existing habitat limitations are generally human-induced. The existing fish community present throughout Segment 3 is a cool-cold headwater Natural Community (NC), which falls under the Coldwater Designated Use (DU). Therefore, the Designated Use can be no less stringent than a Coldwater DU.
- **Attainable use:** The second step in determining the appropriate DU is to determine what would be attainable in this system under good land management practices (while maintaining similar land uses, such as percent agriculture/urban).

- **Segment 1:** The Unnamed Tributary (30000213) downstream of the Agropur outfall had measured flow of 1.41 cfs and good fish habitat but with only tolerant fish species present. The attainable use for Segment 1 is not expected to be higher than the existing warmwater DU due to local watershed characteristics.
- **Segment 2:** The Unnamed Tributary (30000212) has sufficient flow and habitat for the cool-warm Natural Community and warmwater DU but with only tolerant fish species present. The attainable use for Segment 2 is not expected to be higher than the existing warmwater DU due to local watershed characteristics.
- **Segment 3:** The Unnamed Tributary (30000211) upstream of Sleepy Hollow Road had measured flow of 1.41 cfs and good fish habitat with tolerant, intermediate and intolerant species present. Elevated water temperatures from the Agropur facility threaten the existing DU of Coldwater for Segment 3 but the attainable use cannot be higher than the existing coldwater DU.

Are code changes and/or a Use Attainability Analysis needed?

None of the segments are currently listed in ch. NR 104 as LAL or LFF. Due to the existing fish communities and sufficient flows and habitat, none are recommended to be added to the code as LAL or LFF, so no code update is needed and no Use Attainability Analysis needs to be done.

Attachments

- Attachment 1: Photolog
- Attachment 2: Fish survey and Natural Community verification results at Cherneyville Rd
- Attachment 3: Fish survey and Natural Community verification results at Sleepy Hollow Rd
- Attachment 4: Fish survey field data and Habitat survey at Cherneyville Rd
- Attachment 5: Fish survey field data and Habitat survey at Sleepy Hollow Rd

**Attachment 1: Photolog
Segment 1 – Unnamed Tributary (3000213)**



Photo 1: Unnamed Tributary (3000213) upstream of west Cherneyville Road crossing. Pictured is a rocky riffle providing valuable fish habitat. June 12, 2025 at 0927.



Photo 2: Unnamed Tributary (3000213) upstream of west Cherneyville Road crossing. Filamentous growth observed throughout Segment1 growing on rocks and vegetation. June 10, 2025 at 0906.



Photo 3: Unnamed Tributary (3000213) upstream of west Cherneyville Road crossing. Looking downstream at a rock riffle followed by deeper run habitat. June 12, 2025 at 0926.



Photo 4: Unnamed Tributary (3000213) upstream of west Cherneyville Road crossing. Pictured is a narrow chute with great overhead vegetative cover. June 10, 2025 at 0915.



Photo 5: Unnamed Tributary (3000213) upstream of west Cherneyville Road crossing. Small log jam creating a pool on the upstream side and riffle downstream. June 10, 2025 at 0914.



Photo 6: Unnamed Tributary (3000213) upstream of west Cherneyville Road crossing. Filamentous growth observed throughout Segment 1 growing on rocks and vegetation. June 10, 2025 at 0908.



Photo 7: Unnamed Tributary (3000213) upstream of west Cherneyville Road crossing Agropur outfall. June 10, 2025 at 0909.



Photo 8: Unnamed Tributary (3000213) upstream of Agropur outfall. Channel is dominated by Phragmites and cattail species. June 10, 2025 at 0909.

Segment 3 – Unnamed Tributary (3000211)



Photo 9: Unnamed Tributary (3000211) upstream of Sleepy Hollow Road crossing. Excellent rock riffle habitat with overhead shading. June 12, 2025 at 1013.



Photo 10: Unnamed Tributary (3000211) upstream of Sleepy Hollow Road crossing. Excellent rock riffle habitat just downstream of a large woody debris complex. June 10, 2025 at 0941.



Photo 11: Unnamed Tributary (3000211) upstream of Sleepy Hollow Road crossing. Deeper run with coarse woody habitat. June 12, 2025 at 1158.



Photo 12: Unnamed Tributary (3000211) upstream of Sleepy Hollow Road crossing. Excellent rock riffle habitat with overhead shading. June 12, 2025 at 1158.



Photo 13: Redside Dace, State Special Concern species, captured in fish survey on Unnamed Tributary (3000211) upstream of Sleepy Hollow Road crossing. June 12, 2025 at 1151.

Attachment 2: Fish survey and Natural Community verification results at Cherneyville Rd, 6/12/2025

Natural Community Verification -Data Entry Spreadsheet			Form V6. 3-23-2017			
Only enter data into the cells shaded in orange. The rest will autofill/autocalculate.						
Biologist:	Eric Evensen			KEY:		
Today's Date:	12/23/2025			Enter data in cell; these entries are used to lookup/autocalculate values in green cells		
Sample Date:	6/12/2025			Value will autocalculate based in on data entered in orange cells		
Station Number:	10060443					
Station Name/Description:	UNT to East Twin R. 8m US Cherneyville Rd					
Fieldwork Description:	100m station US Cherneyville Rd					
Waterbody Name:	UNT to East Twin River					
Counties:	Kewaunee					
AUs:	5500585					
WBIC:	3000213					
HUC10 (req'd for weather data):	0403010101			<i>Must enter all 10 digits including preceding zeros</i>		
Modeled Natural Community:	Macroinvertebrate			<i>Click for picklist: This field must be entered exactly as shown in the tables on tab 2 for autocalculations to work.</i>		
Fish Catch (enter each species and the number found)						
Species (common name)	Number	Thermal Guild (C,T,W)	Stream Size (S,M,L)	Tolerance (IT,IM,T)	Number of Stream Species	NOTE
Creek Chub	14	T	S	T	14	
		0	0	0	0	
		0	0	0	0	

ENTER THE FOLLOWING AFTER THE ASSESSMENT BELOW HAS BEEN COMPLETED:

Modeled Natural Community	Macroinvertebrate
Model "Verified as correct", OR "Proposed change"?	Proposed change
If a change is proposed, what is the new proposed NC?	Cool-Warm Headwater

TO BE FILLED IN BY THE REVIEW TEAM, IF APPLICABLE:

Reviewed by review team? If so, enter date reviewed:	
Decision:	
Status (proposed for rule change, etc):	

MODELED NATURAL COMMUNITY (do not change):	Macroinvertebrate
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1. COMPARE OBSERVED VERSUS EXPECTED SPECIES GUILDS

The following tables will autocalculate based on the modeled NC and data provided in the data-entry tab.

Total number of individuals observed in each Guild (this will autocalculate)

Thermal		Stream Size		Tolerance	
Coldwater	0	Small Stream	14	Intolerant	0
Transitional	14	Medium Stream	0	Intermediate	0
Warmwater	0	Large River	0	Tolerant	14

Observed & Expected Guild Percentages (these will autocalculate)

Thermal				
Guild	Observed	Expected Range		Within Range?
		Low End	High End	
Coldwater	0%	NA	NA	N
Transitional	100%	NA	NA	N
Warmwater	0%	NA	NA	N

Stream Size				
Guild	Observed	Expected Range		Within Range?
		Low End	High End	
Small Stream	100%	Total catch of fish	0%	N
Medium Stream	0%	0%	0%	Y
Large River	0%	0%	0%	Y

Based on the "Within Range" assessments above (Y/N), is the modeled Natural Community verified as correct? Yes, No, Uncertain, etc.; add notes if needed:

No

- If the modeled NC is verified as correct, you may stop here and make your verification recommendation.

IF THE MODELED NC APPEARS TO BE INCORRECT AFTER CONSIDERING TOLERANCE AND WEATHER, TEST ALTERNATIVE NCS USING THE THREE TESTING AREAS IN THIS SECTION.

FIRST TEST NATURAL COMMUNITY (use picklist): Cool-Warm Headwater

1. COMPARE OBSERVED VERSUS EXPECTED SPECIES GUILDS

The following tables will autocalculate based on the test NC entered above.

Total number of individuals observed in each Guild (this will autocalculate)

Thermal		Stream Size		Tolerance	
Coldwater	0	Small Stream	14	Intolerant	0
Transitional	14	Medium Stream	0	Intermediate	0
Warmwater	0	Large River	0	Tolerant	14

Observed & Expected Guild Percentages (these will autocalculate)

Thermal				
Guild	Observed	Expected Range		Within Range?
		Low End	High End	
Coldwater	0%	0%	5%	Y
Transitional	100%	25%	100%	Y
Warmwater	0%	0%	75%	Y

Stream Size				
Guild	Observed	Expected Range		Within Range?
		Low End	High End	
Small Stream	100%	50%	100%	Y
Medium Stream	0%	0%	50%	Y
Large River	0%	0%	10%	Y

Based on the "Within Range" assessments above (Y/N), is this test NC proposed as the correct one?

Notes if needed:

Yes

7. IN CELLS 19A & 20A, ENTER WHETHER THE MODELED NC IS VERIFIED OR A DIFFERENT NC IS PROPOSED. MORE NCS CAN BE TESTED TO THE RIGHT.

Attachment 3: Fish survey and Natural Community verification results at Sleepy Hollow Rd, 6/12/2025

Natural Community Verification -Data Entry Spreadsheet			Form V6. 3-23-2017			
Only enter data into the cells shaded in orange. The rest will autofill/autocalculate.						
Biologist:	Eric Evensen		KEY:			
Today's Date:	12/23/2025		Enter data in cell; these entries are used to lookup/autocalculate values in green cells			
Sample Date:	6/12/2025		Value will autocalculate based in on data entered in orange cells			
Station Number:	10029040					
Station Name/Description:	unnamed trib to East Twin R at Sleepy hollow					
Fieldwork Description:	140m station US Sleepy Hollow					
Waterbody Name:	UNT to East Twin River					
Counties:	Kewaunee					
AUs:	5534458					
WBIC:	3000211					
HUC10 (req'd for weather data)	0403010101		<i>Must enter all 10 digits including preceding zeros</i>			
Modeled Natural Community:	Cool-Cold Headwater		<i>Click for picklist: This field must be entered exactly as shown in the tables on tab 2 for autocalculations to work.</i>			
Fish Catch (enter each species and the number found)						
Species (common name)	Number	Thermal Guild (C,T,W)	Stream Size (S,M,L)	Tolerance (IT,IM,T)	Number of Stream Species	NOTE
Creek Chub	297	T	S	T	297	
Western blacknose dace	155	T	S	T	155	
Longnose Dace	5	T	M	IM	5	
Central Mudminnow	2	T	S	T	2	
Johnny Darter	3	T	M	IM	3	
Redside Dace	5	T	S	IT	5	
fathead minnow	1	W	S	T	1	
		0	0	0	0	
		0	0	0	0	

ENTER THE FOLLOWING AFTER THE ASSESSMENT BELOW HAS BEEN COMPLETED:					
Modeled Natural Community			Cool-Cold Headwater		
Model "Verified as correct", OR "Proposed change"?			Verified as correct		
If a change is proposed, what is the new proposed NC?					
TO BE FILLED IN BY THE REVIEW TEAM, IF APPLICABLE:					
Reviewed by review team? If so, enter date reviewed:					
Decision:					
Status (proposed for rule change, etc):					
<hr/>					
MODELED NATURAL COMMUNITY (do not change):			Cool-Cold Headwater		
1. COMPARE OBSERVED VERSUS EXPECTED SPECIES GUILDS					
<i>The following tables will autocalculate based on the modeled NC and data provided in the data-entry tab.</i>					
Total number of individuals observed in each Guild (this will autocalculate)					
Thermal		Stream Size		Tolerance	
Coldwater	0	Small Stream	460	Intolerant	5
Transitional	467	Medium Stream	8	Intermediate	8
Warmwater	1	Large River	0	Tolerant	455
Observed & Expected Guild Percentages (these will autocalculate)					
Thermal					
Guild	Observed	Expected Range		Within Range?	
		Low End	High End		
Coldwater	0%	5%	75%	N	
Transitional	100%	25%	100%	Y	
Warmwater	0%	0%	25%	Y	
Stream Size					
Guild	Observed	Expected Range		Within Range?	
		Low End	High End		
Small Stream	98%	50%	100%	Y	
Medium Stream	2%	0%	50%	Y	
Large River	0%	0%	10%	Y	
<i>Based on the "Within Range" assessments above (Y/N), is the modeled Natural Community verified as correct? Yes, No, Uncertain, etc.; add notes if needed:</i>					
Yes, surveys from 2022 and 2008 indicate the presence of coldwater species. Wastewater discharge upstream has elevated water temperatures within the tributary.					
<i>- If the modeled NC is verified as correct, you may stop here and make your verification recommendation.</i>					

Attachment 4: Fish survey field data and habitat survey at Cherneyville Rd

State of Wisconsin
 Department of Natural Resources
 dnr.wi.gov

Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

Form 3800-532A (R 6/07)

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Instructions: Bold fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name UNT to E. Twin River		Waterbody ID Code 3000213	SWIMS Station ID 10060443	FH Database ID
Date (MMDDYYYY) 06122025	Station Name Cherneyville			
Latitude - Longitude Determination Method Used				Datum Used
Start Latitude 44.4290	Start Longitude -87.6866	End Latitude	End Longitude	County Kewaunee

Water Characteristics

Time (24-hr clock) 0930	Air Temperature (C) 17.0	Water Temperature (C) 26.8	Conductivity (µs/cm) 2244	Transparency (cm) >122
Dissolved Oxygen (mg/l) 5.82		Dissolved Oxygen % Saturation 73.3		pH 8.23
Flow (m³/sec) 0.04	Water Level (check one - measure distance if Above or Below Normal): <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Below: _____ (m) <input type="checkbox"/> Above: _____ (m)			Water Clarity: <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Stained

Channel and Basin Characteristics

Mean Stream Width (m) 1.5	Station Length (m) 100			
Channel Condition: (check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> > 20-year-old Channelization <input type="checkbox"/> 10- to 20-year-old Channelization <input type="checkbox"/> < 10-year-old Channelization <input type="checkbox"/> Concrete Channel				
Percent Channelization 0	Sinuosity 1.5	Gradient (m/km) 0.95	Stream Order 1	Basin Area (km²) 0.65

Comments / Notes

Flow
 0.04 m³/sec → 1.41 #/sec

• Likely channelization US of 100m fish station

Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

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Rating Item	Excellent	Good	Fair	Poor	Score
Riparian Buffer Width (m) Width of contiguous undisturbed land uses; meadow, shrubs, woodland, wetland, exposed rock	Riparian zone well protected; buffer wide (> 10.0 m)	Riparian zone protected, but buffer width moderate (5.0 - 10.0 m)	Riparian zone moderately disturbed, buffer narrow (1.0 - 4.9 m)	Most of the riparian zone disturbed, buffer very narrow or absent (< 1.0 m)	15
Bank Erosion Width of bare soil on bank, along transects	No significant bank erosion; < 0.20 m of bank is bare soil	Limited erosion; 0.20 - 0.50 m of bank is bare soil	Moderate erosion; 0.51 - 1.0 m of bank is bare soil	Extensive erosion; > 1.0 m of bank is bare soil	15
Pool Area % of stream length in pools	Pools common; wide, deep, slow velocity habitat, balanced by other habitats; 40 to 60% of station	Pools present; not frequent or over-abundant; 30 to 39% or 61 to 70% of station	Pools present, but either rare or overly dominant, few other habitats present; 10 to 29% or 71 to 90% of station	Pools either absent or dominant, not balanced by other habitats; < 10% or > 90% of station	3
Width:Depth Ratio Average stream width divided by average thalweg depth in runs and pools	Streams very deep and narrow; width/depth ≤ 7	Stream relatively deep and narrow; width/depth 8-15	Stream moderately deep and narrow; width/depth 16-25	Stream relatively wide and shallow; width/depth > 25	10
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25	5
Fine Sediments % of the substrate that is < 2 mm (sand, silt, or clay)	Fines rare or absent, < 10% of the stream bed	Fines present but limited, generally in stream margins or pools; 10 to 20% of stream bed	Fines common in mid-channel areas, present in riffles and extensive in pools; 21 to 60%	Fines-extensive in all habitats; > 60% of stream bed covered	5
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; > 15% of stream	Cover common, but not extensive; 10 - 15% of stream	Occasional cover, limited to one or two areas; 5 - 9% of stream	Cover rare or absent; limited to < 5% of stream	10
Total Score					63

Entered 11/5/25 DR

Attachment 5: Fish survey field data and habitat survey at Sleepy Hollow Rd

State of Wisconsin
Department of Natural Resources
dnr.wi.gov

Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

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Instructions: Bold fields must be completed. Record all measurements in metric units.

Station Summary

Stream Name	Waterbody ID Code	SWIMS Station ID	FH Database ID
UNT to E. Twin River	3000211	10029040	25501998

Date (MMDDYYYY)	Station Name
06122025	Sleepy Hollow

Latitude - Longitude Determination Method Used	Datum Used

Start Latitude	Start Longitude	End Latitude	End Longitude	County
44.4410	-87.6644			Kewaunee

Water Characteristics

Time (24-hr clock)	Air Temperature (C)	Water Temperature (C)	Conductivity (us/cm)	Transparency (cm)
1135	17.0	19.1	1687	>122

Dissolved Oxygen (mg/l)	Dissolved Oxygen % Saturation	pH
8.69	94.4	8.37

Flow (m ³ /sec)	Water Level (check one - measure distance if Above or Below Normal):	Water Clarity:
0.04	<input checked="" type="checkbox"/> Normal <input type="checkbox"/> Below: _____ (m) <input type="checkbox"/> Above: _____ (m)	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Stained

Channel and Basin Characteristics

Mean Stream Width (m)	Station Length (m)
4.0	140

Channel Condition: (check one)	<input checked="" type="checkbox"/> Natural	<input type="checkbox"/> > 20-year-old Channelization	<input type="checkbox"/> 10- to 20-year-old Channelization	<input type="checkbox"/> < 10-year-old Channelization	<input type="checkbox"/> Concrete Channel
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Percent Channelization	Sinuosity	Gradient (m/km)	Stream Order	Basin Area (km ²)
0	1.2	0.80	2	5.91

Comments / Notes

Wadable Stream Qualitative Fish Habitat Rating for Streams < 10 m wide

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Rating Item	Excellent	Good	Fair	Poor	Score
1/2 E 1/2 P Riparian Buffer Width (m) Width of contiguous undisturbed land uses; meadow, shrubs, woodland, wetland, exposed rock	Riparian zone well protected; buffer wide (> 10.0 m)	Riparian zone protected, but buffer width moderate (5.0 - 10.0 m)	Riparian zone moderately disturbed, buffer narrow (1.0 - 4.9 m)	Most of the riparian zone disturbed, buffer very narrow or absent (< 1.0 m)	15 10 5 0
Bank Erosion Width of bare soil on bank, along transects	No significant bank erosion; < 0.20 m of bank is bare soil	Limited erosion; 0.20 - 0.50 m of bank is bare soil	Moderate erosion; 0.51 - 1.0 m of bank is bare soil	Extensive erosion; > 1.0 m of bank is bare soil	15 10 5 0
Pool Area % of stream length in pools	Pools common; wide, deep, slow velocity habitat, balanced by other habitats; 40 to 60% of station	Pools present; not frequent or over-abundant; 30 to 39% or 61 to 70% of station	Pools present, but either rare or overly dominant, few other habitats present; 10 to 29% or 71 to 90% of station	Pools either absent or dominant, not balanced by other habitats; < 10% or > 90% of station	10 7 3 0
Width:Depth Ratio Average stream width divided by average thalweg depth in runs and pools	Streams very deep and narrow; width/depth ≤ 7	Stream relatively deep and narrow; width/depth 8-15	Stream moderately deep and narrow; width/depth 16-25	Stream relatively wide and shallow; width/depth > 25	15 10 5 0
Riffle:Riffle or Bend:Bend Ratio Average distance between riffles or bends divided by average stream width	Diverse habitats; meandering stream with deep bends and riffles common; ratio < 10	Diverse habitats; bends and riffles present, but not abundant; ratio 10 to 14	Habitat diversity low; occasional riffles or bends, ratio 15 to 25	Habitat monotonous; riffles or bends rare; generally continuous run habitat; ratio > 25	15 10 5 0
Fine Sediments % of the substrate that is < 2 mm (sand, silt, or clay)	Fines rare or absent, < 10% of the stream bed	Fines present but limited, generally in stream margins or pools; 10 to 20% of stream bed	Fines common in mid-channel areas, present in riffles and extensive in pools; 21 to 60%	Fines-extensive in all habitats; > 60% of stream bed covered	15 10 5 0
Cover for Fish % of the stream area with cover	Cover/shelter for fish abundant; > 15% of stream	Cover common, but not extensive; 10 - 15% of stream	Occasional cover, limited to one or two areas; 5 - 9% of stream	Cover rare or absent; limited to < 5% of stream	15 10 5 0
Total Score					68

