

Use Attainability Analysis

1 Water Body Name	Unnamed Tributary to South River
2 Segment Description	Mouth to Saint Marys STP outfall
3 Segment Length (mi)	5.5
4 Drainage Area (sq. mi.)	4.29
5 Segment Start Latitude, Longitude (DD)	41.31836, -93.67636
6 Segment End Latitude, Longitude (DD)	41.31539, -93.74164
7 Route of Flow (Next Downstream Adopted Designated Use)	Unnamed Tributary (General Use, proposed, to A2, BWW2, proposed) to South River (A2, BWW2)
8 NPDES Facility and Permit Number (If Applicable)	Saint Marys, City of STP (9176001)
9 Sample Site ID(s)	1393-1, 1393-2, 1393-3
10 Segment County Name(s)	Warren
11 Field Work Date(s)	9/28/2018

12 Aquatic Life Use Attainability Analysis - Conclusion

Recommended Highest Attainable Use: Aquatic Life Use	BWW2 (mouth to confluence with unnamed tributary)
40 CFR 131.10(g)(2) (Flow)	The natural low flow conditions of the stream segment are insufficient to create the habitat necessary to support a viable community of game fish. A lack of age ranges and diversity of game fish species indicates a non-reproducing population (see Site Observations Table). A BWW1 designation requires multiple species and age ranges to be viable. Therefore, the highest attainable aquatic life use for this stream segment is BWW2.
40 CFR 131.10(g)(5) (Physical Conditions)	Physical conditions related to the natural features of the water body are insufficient to support a viable community of game fish. Drainage area, stream width, average depth, and maximum depth fall within the “consistently negative” game fish indicator responses (see Table 2 in Appendix I). A lack of age ranges and diversity of game fish species indicates a non-reproducing population (see Site Observations Table). A BWW1 designation requires multiple species and age ranges to be viable. Therefore, the highest attainable aquatic life use for this stream segment is BWW2.

Recommended Highest Attainable Use: Aquatic Life Use	General Use (confluence with unnamed tributary to Saint Marys STP outfall)
40 CFR 131.10(g)(2) (Flow)	The natural low flow conditions of the stream segment are insufficient to create the habitat necessary to support a community of fish (see Site Observations Table). A BWW1 designation requires multiple species and age ranges of game fish to be viable. A BWW2 designation requires permanent flow. A BWW3 designation requires intermittent flow with perennial pools. This segment has none of those. Therefore, the highest attainable use for this stream segment is general use. As this stream segment was not identified as perennial by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) as described in 567 IAC 61.3(1)“b”, it does not require rulemaking for the removal of the presumed aquatic life designation (BWW1).

40 CFR 131.10(g)(5) (Physical Conditions)	Physical conditions related to the natural features of the water body are insufficient to support a community of fish (see Site Observations Table). A BWW1 designation requires multiple species and age ranges of game fish to be viable. A BWW2 designation requires enough habitat beyond non-flowing perennial pools to support an aquatic community. A BWW3 designation requires habitat in perennial pools to support an aquatic community. This segment has none of those. Therefore, the highest attainable use for this stream segment is general use. As this stream segment was not identified as perennial by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) as described in 567 IAC 61.3(1)“b”, it does not require rulemaking for the removal of the presumed aquatic life designation (BWW1).
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13 Recreational Use Attainability Analysis - Conclusion

Recommended Highest Attainable Use: Recreational Use	A2 (mouth to confluence with unnamed tributary)
40 CFR 131.10(g)(2) (Flow)	The natural low flow conditions and water levels of the stream segment prevent the attainment of an A1 recreational use (see Site Observations Table). An A1 designation requires the ability for full body immersion. Therefore, the highest attainable recreational use is A2.

Recommended Highest Attainable Use: Recreational Use	General Use (confluence with unnamed tributary to Saint Marys STP outfall)
40 CFR 131.10(g)(2) (Flow)	The natural low flow conditions and water levels of the stream segment prevent the attainment of any recreational use (see Site Observations Table). A1, A2, and A3 designations require the ability to recreate in and on the water. This segment has no water. Therefore, the highest attainable use for this segment is general use. As this stream segment was not identified as perennial by the U.S. Geological Survey 1:100,000 DLG Hydrography Data Map (published July 1993) as described in 567 IAC 61.3(1)“b”, it does not require rulemaking for the removal of the presumed recreational use (A1).

14 Flow

Field Work Date	Description
9/28/2018	USGS stream gage data for the area indicated stream flows were normal at the time of assessment.

Use Attainability Analysis - Data

Site Observations

Use	Site parameter	Site ID #1393-1
AL/R	15 Latitude, Longitude (DD)	41.31535, -93.73983
AL/R	16 Average Depth (in)	Not measured
AL/R	17 Maximum Depth (in)	Not measured
AL/R	18 Stream Width (ft)	Not measured
AL/R	19 Pools Observed?	No
AL only	20 Non-Game Fish Present and Counts (Species: Number)	None
	21 Game Fish Present and Counts (Species (Size Range): Number)	None
	22 Stream Habitat (See also: #29 Site Photos)	Trickle of water in drainage ditch.
R only	23 Evidence of Use for Primary Contact Recreation? (Yes*/No)	No

Use	Site parameter	Site ID #1393-1
	24 Evidence of Use by Children? (Yes*/No)	No
	25 Evidence of Use for Secondary Contact Recreation? (Yes*/No)	No
AL/R	26 Additional Description	The site is located at the outfall.

Use	Site parameter	Site ID #1393-2
AL/R	15 Latitude, Longitude (DD)	41.31892, -93.73312
AL/R	16 Average Depth (in)	Not measured (Less than one inch)
AL/R	17 Maximum Depth (in)	Not measured
AL/R	18 Stream Width (ft)	1-2
AL/R	19 Pools Observed?	No
AL only	20 Non-Game Fish Present and Counts (Species: Number)	None
	21 Game Fish Present and Counts (Species (Size Range): Number)	None
	22 Stream Habitat (See also: #29 Site Photos)	No pools for fish.
R only	23 Evidence of Use for Primary Contact Recreation? (Yes*/No)	No
	24 Evidence of Use by Children? (Yes*/No)	No
	25 Evidence of Use for Secondary Contact Recreation? (Yes*/No)	No
AL/R	26 Additional Description	There was not enough flow or depth for recreational use. The water in the stream is likely from rainfall during the assessment.

Use	Site parameter	Site ID #1393-3
AL/R	15 Latitude, Longitude (DD)	41.32365, -93.69291
AL/R	16 Average Depth (in)	2.3
AL/R	17 Maximum Depth (in)	6
AL/R	18 Stream Width (ft)	4
AL/R	19 Pools Observed?	No
AL only	20 Non-Game Fish Present and Counts (Species: Number)	Bigmouth shiner: 160 Creek chub: 18 Green sunfish: 22 Bluntnose minnow: 8
	21 Game Fish Present and Counts (Species (Size Range): Number)	Bluegill (unknown): 3
	22 Stream Habitat (See also: #29 Site Photos)	A small stream flowing through a pasture.
R only	23 Evidence of Use for Primary Contact Recreation? (Yes*/No)	No
	24 Evidence of Use by Children? (Yes*/No)	No
	25 Evidence of Use for Secondary Contact Recreation? (Yes*/No)	No
AL/R	26 Additional Description	N/A

AL = Aquatic Life

R = Recreation

*If yes, elaborate.

27 Supplemental Data

N/A

28 Map of Segment, Outfall, and Site(s)



29 Site Photos



Figure 1. 1393-1 Recreational use assessment showing the outfall.



Figure 2. 1393-2 Recreational use assessment looking upstream.



Figure 3. 1393-2 Recreational use assessment looking downstream.

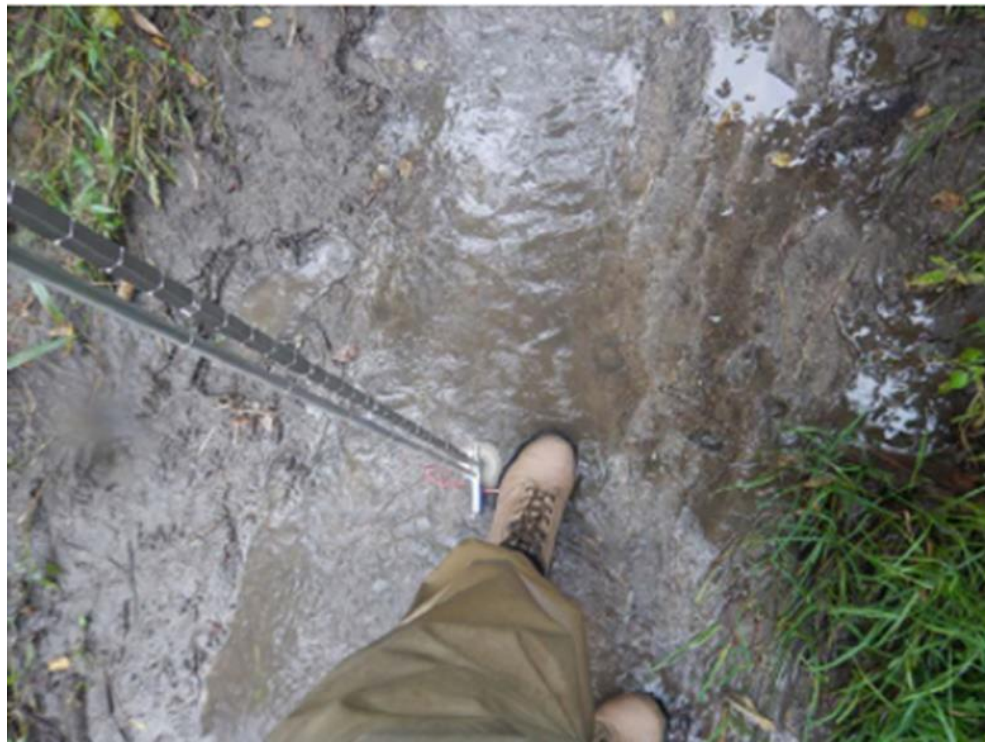


Figure 4. 1393-2 Recreational use assessment showing the stream's shallow depth.



Figure 5. 1393-3 Recreational use assessment upstream looking upstream.



Figure 6. 1393-3 Recreational use assessment upstream looking downstream.



Figure 7. 1393-3 Recreational use assessment downstream looking upstream.



Figure 8. 1393-3 Recreational use assessment downstream looking downstream.

Appendix I.

c. Stream Flow and Habitat Data

Data analysis results for stream flow and habitat variables were similar to game fish indicator results. Stream width, average thalweg depth, maximum depth, and flow appear to be the characteristics that correlate the best with consistently positive game fish indicators. Stream flow and habitat dimensions (where available) were consistently larger for streams with watershed sizes exceeding 275 square miles. Habitat measurements are not available for the largest sample sites that were sampled by boat instead of the typical wading method.

Ranges of stream size, habitat and flow associated with varying levels of game fish indicator responses are listed in Table 2. These are general statewide values, which may assist in decision making related to the recommendation of warm water aquatic life use designations. In general terms, stream segments that have watershed area, flow and habitat characteristics in the green shaded boxes have a greater probability that game fish indicators will be consistently positive (i.e., consistent with Class B(WW-1)), while stream habitat and flow levels that equate to the red boxes are much less likely to support game fish populations (i.e., Class B(WW-2) or Class B(WW-3)). Stream segments that have a mixture of characteristics, mainly in the yellow range, may require consideration of the additional habitat features collected during the field assessment, to determine the appropriate aquatic life use designation.

Table 2. Generalized statewide ranges of stream habitat indicator levels and associated game fish indicator responses.

Game Fish Indicator Responses	Stream Watershed Area (sq.mi.)	Stream Flow (typical base flow - cfs)	Stream Width Average (ft)	Average Depth (ft)	Avg. Thalweg Depth (ft)	Maximum Depth (ft)
Consistently Positive	>275	>30	>65	>1.2	>2.2	>4.4
Mixed	25-275	0.8-30	11-65	0.2-1.2	0.8-2.2	1.8-4.4
Consistently Negative	<25	<0.8	<11	<0.2	<0.8	<1.8

Iowa uses U.S. EPA's Level IV Ecoregions as a template for wadeable stream biological condition assessment. Stream flow and habitat characteristics can vary from ecoregion to ecoregion. To provide additional insight into where the area of overlap exists between Class B(LR/WW-2) and Class B(WW/WW-1) streams, a query of Iowa's bioassessment database produced 476 habitat assessment records from which a summary of habitat characteristics was prepared (Table 3a-f) (see appendix for full spreadsheet). The summary is grouped by ecoregion and former designated uses in order to illustrate the extremes and ranges of overlap in habitat characteristics.