

Use Attainability Analysis

1 Water Body Name	Unnamed Tributary to Unnamed Tributary to Upper Iowa River
2 Segment Description	Mouth to Upper Iowa Beef, LLC outfall
3 Segment Length (mi)	0.056
4 Drainage Area (sq. mi.)	0.07
5 Segment Start Latitude, Longitude (DD)	43.44702, -92.29934
6 Segment End Latitude, Longitude (DD)	43.44697, -92.29835
7 Route of Flow (Next Downstream Adopted Designated Use)	Unnamed Tributary (A2, BWW2, proposed) to Unnamed Tributary (A2, BWW2, pending, to A3, BWW2, pending) to Upper Iowa River (A1, presumed, BWW1, HH)
8 NPDES Facility and Permit Number (If Applicable)	Upper Iowa Beef, LLC (4500802)
9 Sample Site ID(s)	1, 2, 3, 4
10 Segment County Name(s)	Howard
11 Field Work Date(s)	9/16/2025

12 Aquatic Life Use Attainability Analysis - Conclusion

Recommended Highest Attainable Use: Aquatic Life Use	BWW2
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 (at site #1), 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.

13 Recreational Use Attainability Analysis - Conclusion

Recommended Highest Attainable Use: Recreational Use	A2
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.

14 Flow

Field Work Date	Description
9/16/2025	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 #1
AL/R	15 Latitude, Longitude (DD)	43.446971, -92.298347
AL/R	16 Average Depth (in)	1
AL/R	17 Maximum Depth (in)	1.5
AL/R	18 Stream Width (ft)	5
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)	N/A
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	Water is clear, oily sheen/water discoloration not present. Musty odor present. Black, green, blue algae/moss present at pipe discharge points.

Use	Site parameter	Site ID #2
AL/R	15 Latitude, Longitude (DD)	43.44697, -92.298788
AL/R	16 Average Depth (in)	3.5
AL/R	17 Maximum Depth (in)	10
AL/R	18 Stream Width (ft)	7
AL/R	19 Pools Observed?	Yes
AL only	20 Non-Game Fish Present and Counts (Species: Number)	Minnows (number unspecified)
	21 Game Fish Present and Counts (Species (Size Range): Number)	None
	22 Stream Habitat (See also: #29 Site Photos)	Defined bed and bank present. Sandy loam and gravel substrate present. Run and deep pool microhabitats present. Banks of the channel contain vegetation.
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	Water is clear except for submerged midge larvae (blood worm) tubes. Oily sheen/water discoloration not present. Green algae present on in-stream rocks.

Use	Site parameter	Site ID #3
AL/R	15 Latitude, Longitude (DD)	43.446981, -92.299112
AL/R	16 Average Depth (in)	2
AL/R	17 Maximum Depth (in)	5
AL/R	18 Stream Width (ft)	5

Use	Site parameter	Site ID #3
AL/R	19 Pools Observed?	No
	20 Non-Game Fish Present and Counts (Species: Number)	None
	21 Game Fish Present and Counts (Species (Size Range): Number)	None
AL only	22 Stream Habitat (See also: #29 Site Photos)	Defined bed and bank, slight bank undercutting/shelving present. Silty, gravel, cobble substrate present. Riffle and run microhabitats present. Banks of the channel contain vegetation.
	23 Evidence of Use for Primary Contact Recreation? (Yes*/No)	No
R only	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	Water is clear except for submerged midge larvae tubes. Oily sheen/water discoloration not present.

Use	Site parameter	Site ID #4
AL/R	15 Latitude, Longitude (DD)	43.447024, -92.299338
AL/R	16 Average Depth (in)	2
AL/R	17 Maximum Depth (in)	4
AL/R	18 Stream Width (ft)	4
AL/R	19 Pools Observed?	Yes
	20 Non-Game Fish Present and Counts (Species: Number)	None
	21 Game Fish Present and Counts (Species (Size Range): Number)	None
AL only	22 Stream Habitat (See also: #29 Site Photos)	Defined bed and bank with some bank scouring/erosion. Sandy sludgy substrate with gravel and cobbles. Run and deep pool microhabitats present. Banks of the channel contain vegetation. Water upstream of drainage ditch intersection is clear and has cobble/gravel substrate. Water downstream of the drainage ditch intersection is eutrophic.
	23 Evidence of Use for Primary Contact Recreation? (Yes*/No)	No
R only	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	Water is turbid. Lots of submerged midge larvae tubes present.

AL = Aquatic Life

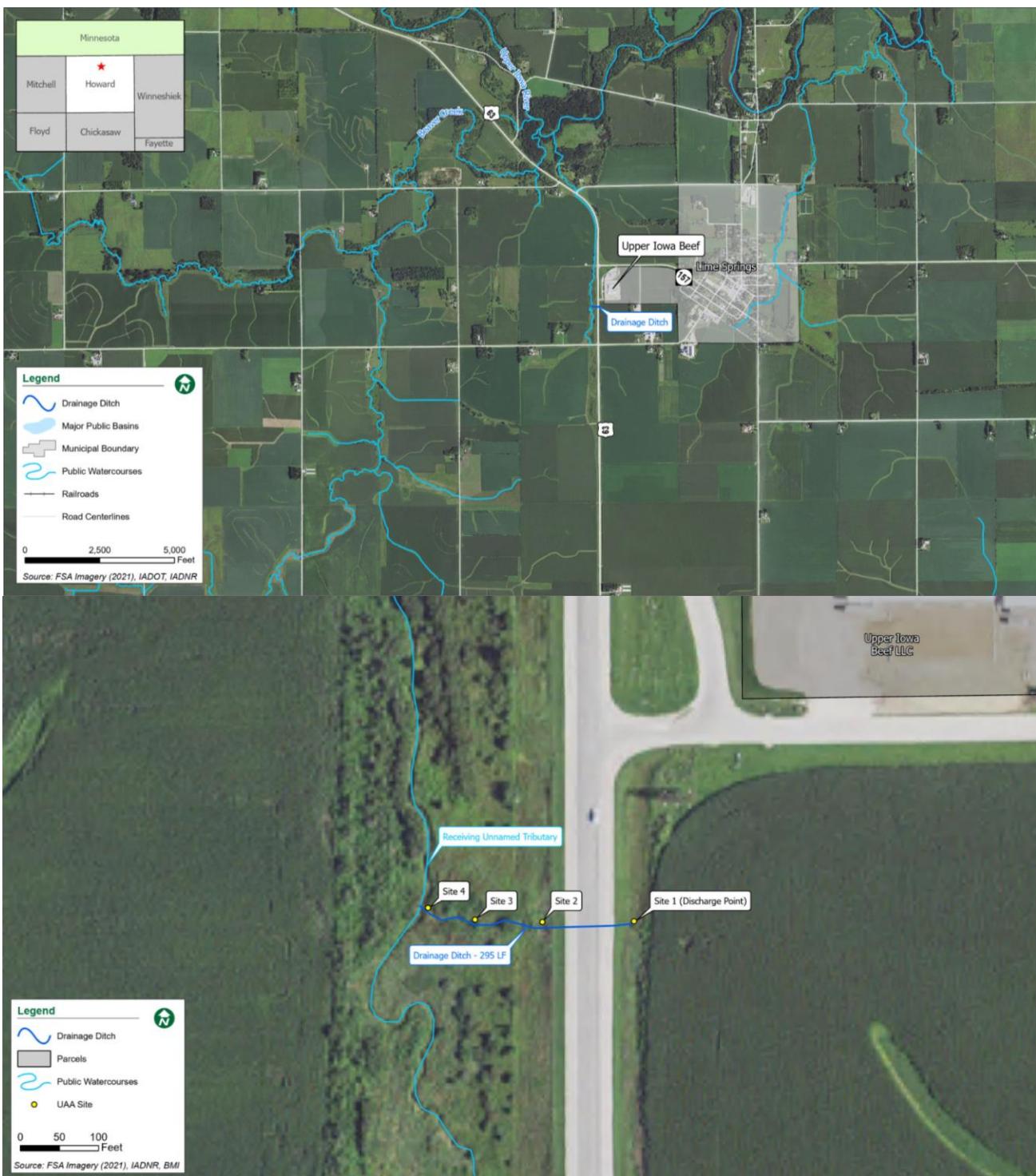
R = Recreation

*If yes, elaborate.

27 Supplemental Data

N/A

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



29 Site Photos



Figure 1. View of Upper Iowa Beef, LLC, facing northeast.



Figure 2. View of Site 1 (Discharge Point), facing downstream/west.



Figure 3. View of three pipes outlets at Site 1.



Figure 4. View of Site 1 from Highway 63, facing east.



Figure 5. View of Site 2, facing upstream/east.



Figure 6. View of Site 2, facing downstream/west.



Figure 7. View of midge larvae tubes at Site 2.



Figure 8. View of midge larvae tubes at Site 2.



Figure 9. View of midge larvae tubes at Site 2, facing west.



Figure 10. View of Site 3, facing upstream/east.



Figure 11. View of midge larvae tubes at Site 3.



Figure 12. View of Site 3, facing downstream/west.



Figure 13. View of Site 4, facing upstream/east.



Figure 14. View of Site 4, facing downstream towards unnamed tributary intersection/west.



Figure 15. Upstream view of the unnamed tributary, facing south.



Figure 16. Downstream view of the unnamed tributary, facing north.



Figure 17. View of midge larvae tubes at Site 4.

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.