

Region SCR County Dodge Report Date 8/1991 Classification LAL
 Water Body: Wildcat Creek, Trib to
 Discharger: Iron Ridge WWTP

If stream is classified as Limited Forage Fish (LFF) or Limited Aquatic Life (LAL), check any of the following Use Attainability Analysis factors that are identified in the classification report:

- Naturally occurring pollutant concentrations prevent the attainment of use
- Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met
- Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place
- Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or operate such modification in a way that would result in the attainment of the use
- Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses habitat
- Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact

Supporting Evidence in the report (include comments on how complete/thorough data is)

- Biological Data (fish/invert)
- Chemical Data (temp, D.O., etc.)
- Physical Data (flow, depth, etc.)
- Habitat Description
- Site Description/Map
- Other: photos - slides

Historical Reports in file:

- 8/1991 - Mark Srsing
- 1/12/83 - Keith Hutchinson

Additional Comments/How to improve report:

- intermittent & low flow limit stream & poor habitat.
- good supporting data

TRIBUTARY TO WILDCAT CREEK

IRON RIDGE

TRIENNIAL STANDARDS REVIEW

IRON RIDGE WWTP

AUGUST 1991

MARK SESING - SOUTHERN DISTRICT

BUREAU OF WATER RESOURCES MANAGEMENT

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

TABLE OF CONTENTS

Summary 1
Introduction. 1
General Description 2
Stream Habitat, Water Quality, Biology. 2
References. 5
Stream Habitat Rating Forms Appendix I
Fish Monitoring Log Appendix II
CH. NR 104 (listing of tributary at Iron Ridge; #20.) p.39. Appendix III

SUMMARY

The Iron Ridge Tributary to Wildcat Creek is a small non-continuous flowing stream originating within a moraine landscape characteristic of the Iron Ridge area. The originally designated non-continuous marginal-use classification is supported by existing biological and physical characteristics. Therefore, no change is recommended in the use classification listed in NR 104. The variance designation would therefore be LAL(f) non-continuous flow.

The Village of Iron Ridge is permitted (WPDES permit #0020486) to discharge treated wastewater to the Sinissippi Lake subwatershed (USGS Hydrologic unit UR-08) via the Iron Ridge tributary to Wildcat Creek which enters the Rock River near Hustisford. The Iron Ridge tributary received a water quality variance classification (MARG-E) authorized under Chapter NR 104 of the Wisconsin Administrative Code because they qualified under one or more of the following criteria:

- a) The presence of inplace pollutants
- b) Low natural stream flow
- c) Natural background conditions
- d) Irretrievable cultural alterations

Because of limited size, the recreational classification is limited to partial body contact.

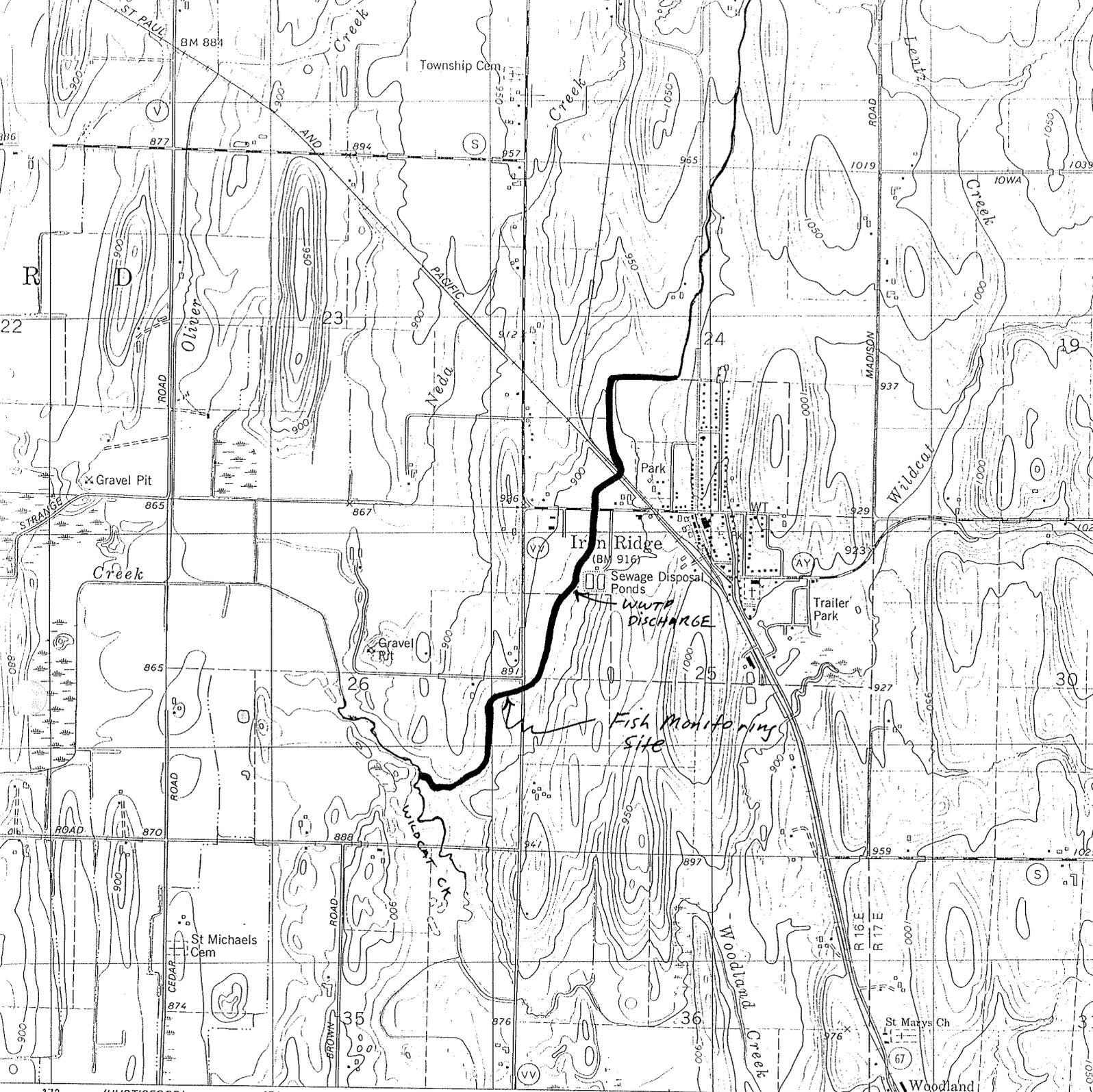
GENERAL DESCRIPTION

This shallow (<1 ft.) and narrow stream receives surface water runoff from a relatively small agricultural watershed located within a drumlin lined region of southeast Dodge County. Stormwater also contributes from the urban industrial areas of Iron Ridge. The Village of Iron Ridge WWTP discharges an average of 0.15 CFS at the discharge point between CTH VV and STH 67. Flowing southwesterly through a mix of farmland and urban-industrial land uses at Iron Ridge, this creek joins Wildcat Creek about 1 mile southwest of Iron Ridge (see map).

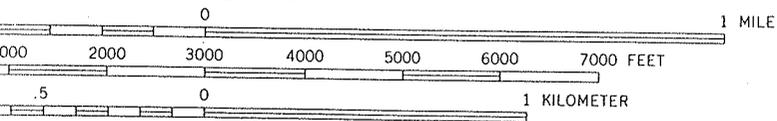
Presently classified a noncontinuous stream, channel morphology and local reports indicate the stream may continuously flow most of the time even without the wastewater discharge. A $Q_{7,10}$ is not available for this tributary but it is likely, however, that it would fall below 0.03 CFS, as Wildcat Creek downstream has a $Q_{7,10}$ of only 0.03 CFS (USGS, 1982). For practical purposes, a $Q_{7,10}$ of 0.0 CFS is realistic.

The reach examined in this survey ran from the railroad tracks north of STH 67 downstream to below CTH VV and included approximately 1,000 m. of stream.

STREAM HABITAT, WATER QUALITY, BIOLOGY



SCALE 1:24 000



CONTOUR INTERVAL 10 FEET
 GEODETIC VERTICAL DATUM OF 1929



QUADRANGLE LOCATION

- ROAD CLASSIFICATION
- Primary highway, hard surface
 - Secondary highway, hard surface
 - Light-duty improved
 - Unimproved
 - Interstate Route
 - U. S. Route

CONFORMS WITH NATIONAL MAP ACCURACY STANDARDS
 U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
 GEOLOGICAL AND NATURAL HISTORY SURVEY, MADISON, WISCONSIN 53706
 A LIST OF TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

MAYVILLE
 NE/4 HORSESHOE
 N4322

IRON RIDGE TRIBUTARY
upstream CTH VV



IRON RIDGE TRIBUTARY
downstream CTH VV

A segment of tributary upstream and downstream of CTH VV was electroshocked on 11-25-87. Species collected included a few Central mudminnows, Umbra limi; and one fingerling Largemouth Bass, Micropterus salmoides.

Considered hardy and tolerant of low oxygen, warm temperatures, and siltation (Becker, 1983) the mudminnow reflects the existing low flows and organic pollution. The one juvenile largemouth bass collected is probably a relic of the streams lost potential to support nursery functions for downstream (Wildcat Ck) game fish populations.

Overall, in-stream habitat was rated "poor." Depths, ranged from 5-7 cm. in riffles to 0.3 meter in pool reaches. Width is narrow, ranging from 1 to 2 m. Siltation over a parent substrate of gravel and rubble reduces the potential for fish spawning and invertebrate colonization. Scour is likely due to stormwater runoff from Iron Ridge. Overhead bank cover is poor to fair with grasses being the dominant provider. Instream cover is lacking and bank vegetation provides only fair conditions for forage species. Cattails are also present in very shallow reaches and may provide limited cover. Filamentous algae predominates some reaches. Some of these conditions are apparent on the photographs within the report.

Oil residuals were present in the sediment below STH 67 and some petroleum odors were noted within the storm sewer pipe located on the right bank at the STH 67 location. Adjacent land use at this point is commercial and includes a gas station. Invertebrate populations and other fish and amphibians may avoid this reach. Urban sources of sediment are likely contributing to loss of

streambed habitat. Overall, shallow depth, low flows, and stormwater impacts suppress the fish and aquatic life values this stream may once have had.

The available biological, habitat, and physical characteristics of the Iron Ridge tributary to Wildcat Creek indicate an unbalanced aquatic community and a non-continuous (i.e. <0.1 CFS) flow, therefore, supporting more than a marginal (MARG-E) biological use called LAL(f) or Limited Aquatic Life.

Therefore, it is recommended that the biological use classification not be changed and the hydrologic classification stay the same as previously designated, i.e. non-continuous flow.

REFERENCES

- Ball, Joe 1982 Stream Classification Guidelines for Wisconsin. Technical Bulletin. Wisconsin Dept. of Natural Resources, Madison, WI.
- United States Geological Survey. 1978 Low-flow Characteristics of Streams in the Rock-Fox River Basin, Wisconsin. Water Resources Investigations 78-85.
- Wisconsin Dept. of Natural Resources. 1988. Upper Rock River Basin Water Quality Management Plan. Section C - Point Source Report. Southern District, Madison.
- Becker, George 1983. Fishes of Wisconsin. University of Wisconsin Press, Madison, WI
- Bozek, et. al. 1985. Methods of Evaluating Stream Habitat Conditions. Wisconsin Dept. of Natural Resources, Southeast District, Milwaukee, WI.
- Wisconsin Administrative Code, Chapter NR 104. 1985. Wisconsin Dept. of Natural Resources, Madison, WI.
- Brodzinski, Dave 1989. Personal communication. Wastewater Management, Southern District, Horicon, WI.

Schlesser, Roger 1989. Personal communication. Water Resources Management,
Southern District, Dodgeville, WI.

Marshall, Dave 1987. Personal communication. Water Resources Management.
Southern District, Madison, WI.

APPENDIX I
STREAM HABITAT RATING
FORM (BALL, J)

APPENDIX I
STREAM HABITAT RATING
FORM (BOZEK)

APPENDIX II
FISH MONITORING LOG

APPENDIX III
CH NR 104, P. 39

Stream Tanabidag Reach Location Between S1467 + WILD CAT CR Reach Score/Rating 213
 County DODGE Date 11-19-87 Evaluator M. S. Conroy Classification _____

Rating Item	Category			
	Excellent	Good	Fair	Poor
Watershed Erosion	No evidence of significant erosion. Stable forest or grass land. Little potential for future erosion. 8	Some erosion evident. No significant "raw" areas. Good land mgmt. practices in area. Low potential for significant erosion. 10	Moderate erosion evident. Erosion from heavy storm events obvious. Some "raw" areas. Potential for significant erosion. 14	Heavy erosion evident. Probable erosion from any run off. 16
Watershed Nonpoint Source	No evidence of significant source. Little potential for future problem. 8	Some potential sources (roads, urban area, farm fields). 10	Moderate sources (small wetlands, tile fields, urban area, intense agriculture). 14	Obvious sources (major wetland drainage, high use urban or industrial area, feed lots, impoundment). 16
Bank Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem. 4	Infrequent, small areas, mostly healed over. Some potential in extreme floods. 8	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow. 16	Many eroded areas. "Raw" areas frequent along straight sections and bends. 20
Bank Vegetative Protection	90% plant density. Diverse trees, shrubs, grass. Plants healthy with apparently good root system. 6	70-90% density. Fewer plant species. A few barren or thin areas. Vegetation appears generally healthy. 9	50-70% density. Dominated by grass, sparse trees and shrubs. Plant types and conditions suggest poorer soil binding. 15	<50% density. Many raw areas. Thin grass, few if any trees and shrubs. 18
Lower Bank Channel Capacity	Ample for present peak flow plus some increase. Peak flow contained. W/D ratio <7. 8	Adequate. Overbank flows rare. W/D ratio 8-16. 10	Barely contains present peaks. Occasional overbank flow. W/D ratio 15-25. 14	Inadequate, overbank flow common. W/D ratio >25. 16
Lower Bank Deposition	Little or no enlargement of channel or point bars. 6	Some new increase in bar formation, mostly from coarse gravel. 9	Moderate deposition of new gravel and coarse sand on old and some new bars. 16	Heavy deposits of fine material, increased bar development. 18
Bottom Scouring and Deposition	Less than 5% of the bottom affected by scouring and deposition. 4	5-30% affected. Scour at constrictions and where grades steepen. Some deposition in pools. 8	30-50% affected. Deposits and scour at obstructions, constrictions and bends. Some filling of pools. 16	More than 50% of the bottom changing nearly year long. Pools almost absent, due to deposition. 20
Bottom Substrate/ Available Cover	Greater than 50% rubble, gravel or other stable habitat. 2	30-60% rubble, gravel or other stable habitat. Adequate habitat. 7	10-30% rubble, gravel or other stable habitat. Habitat availability less than desirable. 17	Less than 10% rubble gravel or other stable habitat. Lack of habitat is obvious. 22
Avg. Depth Riffles and Runs	Cold >1'	0 6" to 1'	6 3" to 6"	18 <3"
	Warm >1.5'	0 10" to 1.5'	6 6" to 10"	18 <6"
Avg. Depth of Pools	Cold >4'	0 3' to 4'	6 2' to 3'	18 <2'
	Warm >5'	0 4' to 5'	6 3' to 4'	18 <3'
Flow, at Rep. Low Flow	Cold >2 cfs	0 1-2 cfs	6 .5-1 cfs	18 <.5 cfs
	Warm >5 cfs	0 2-5 cfs	6 1-2 cfs	18 <1 cfs
Pool/Riffle, Run/Bend Ratio (distance between riffles ÷ stream width)	5-7. Variety of habitat. Deep riffles and pools. 4	7-15. Adequate depth in pools and riffles. Bends provide habitat. 8	15-25. Occasional riffle or bend. Bottom contours provide some habitat. 16	>25. Essentially a straight stream. Generally all flat water or shallow riffle. Poor habitat. 20
Aesthetics	Wilderness characteristics, outstanding natural beauty. Usually wooded or un-pastured corridor. 8	High natural beauty. Trees, historic site. Some development may be visible. 10	Common setting, not offensive. Developed but uncluttered area. 14	Stream does not enhance aesthetics. Condition of stream is offensive. 16

Column Totals: _____ 87 _____ 44 _____ 132

Column Scores E _____ +G _____ +F _____ +P _____ = 213 = Score

<70 = Excellent, 71-129 = Good, 130-200 = Fair, >200 = Poor

APPENDIX I
 STREAM HABITAT RATING
 FORM (BALL, J)

Iron Ridge Trib to Wildcat Ck.

11-19-87

	R		P	RF	K
Stream Reach Type	NA		30	30	100
Stream Reach Length					
Stream Reach Depth (ft.)	0.3		0.7	.2	.7
z present	0.5		1	.3	1
z max. present	2.3				
z low flow					
Stream Reach Width (ft.)	6		8	3	5
x present					
x high flow	2				
x low flow					
Substrate Size (Min. 10%)					
Detritus (P/Present)					
Clay					
Silt	80		10	10	20
Sand	10				
Gravel .25"-3.0"	10		20	70	30
Rubble 3.01"-12.0"			70	20	50
Boulder >12.01"					
Bedrock					
Velocity x present (m e)	.1		<.1	.5	.1
Vel. max. present	.15		.1	.6	.2
Gradient	↓		↓	↑	↓
Bottom Deposition (Min. 10%)					
% area bottom covered	80		20	10	50
x depth sediment	.3		.1	<.1	.1
max. depth sediment	1'		.2	<.1	.2
deposition type	3		inters.		inters
Material Comp. (Min. 10%)					
detritus					
silt	100		100	100	100
sand					
gravel					
Overhead Bank Cover					
x bank width *0' <.25' <.5' etc.	NA		NA	NA	<.5
% of reach (10% Min.)					20
x depth below bank *					.3
x bank + veg. width *	1		1	1	1
% of reach (10% Min.)	50		50	50	100
x depth below bank+veg.*	<.2		.3	.2	.7
Instream Cover Rating	ff		ff	ff	ff
↓ Cover Material (Min. 10%)					
1=np rock/bould. (P/Present)					
2=ff log/tree/roots					
3=gf debris (other)					
4=fg instream veg.	50		50	50	80
5=gg bank+veg. (terrestrial)	50		50	20	20
depth/channel morph.					
% Shading (0,25,50,75,100)	0		75	75	50
Aquatic Veg. (Min.10%) macro					
% coverage meso	30				
Floodplain Vegetation Type	100st				crop
Purple Loosestrife					
Lower Bank Height					
Bank Stability % >90 >70 >50 <50	>90		>90	>90	>90
Lower Bank Deposition	rare				
Channelization	yes		no	no	no
Comments					

OIL RESIDUE IN SEDIMENT

APPENDIX I

STREAM HABITAT RATING FORM (BOZEK)

Triannual Standards Review

DATA SHEET
FORM 3600-49

Fish Monitoring

DEPARTMENT OF NATURAL RESOURCES

11-25-87

Dave Marshall, Mark Seasing

	BROOK STICKLEBACK	FAT HEAD	GREEN SUNFISH	CREEK CHUB	CENTRAL MUD MINN	WHITE SUCKER	BULL HEAD	CARP	L. M. BASS
LOMIRA CK 11-25-87	6	14	5	8	18	1	1	1	
ABOVE STP ~ 50 m									
KUMMEL CK 11-25-87	> 13			1	1				
ABOVE + BELOW STP									
IRON RIDGE TRIB 11-25-87					3				1
BELOW STP, CO. H. VV									

REV. 3-71

APPENDIX II
FISH MONITORING LOG

13. Indian Creek and Tributary (Dickeyville)	Tributary from Dickeyville STP to confluence with Indian Creek Indian Creek from above tributary downstream to confluence with Platte River	Noncontinuous Continuous	II I	NA A
14. Dodge Branch (Dodgeville)	Upstream from a point approximately 3,500 feet downstream from STH "191"	Noncontinuous	I	A
15. Tributary - North Branch Crawfish River (Fall River)	Tributary from the Fall River STP downstream to the North Branch Crawfish River	Noncontinuous	II	Effluent limitations to be determined
16. Gregory Branch (Fennimore)	Upstream from STH "61"	Continuous	I	A
17. Tributary - Rock River (Hidden Meadows Mobile Home Park)	Tributary from the Hidden Meadows Mobile Park STP discharge downstream to the Rock River	Noncontinuous	II	B
18. Big Spring Branch (Highland)	Upstream from the North line of Sec. 19, T9N, R1E	Noncontinuous	I	A
19. Pedler Creek (Iowa Co. Nursing Home)	From the Iowa Co. Nursing Home STP downstream to the confluence with an unnamed tributary, SE¼, SE¼, Sec. 34, T6N, R2E	Noncontinuous	I	A
20. Tributary - Wildcat Creek (Iron Ridge)	From the Iron Ridge STP downstream to Wildcat Creek	Noncontinuous	II	B
21. Tributary & Rock River Tributary (Ixonian San. Dist.)	From the Ixonian San. Dist. STP downstream to the juncture with the Rock River Tributary Rock River Tributary from above tributary to confluence with Rock River	Noncontinuous Continuous	II II	B NA
22. Tributary - Menominee River (Jamestown San. Dist. #2)	From Jamestown San. Dist. #2 STP to the Menominee River	Diffused surface water	II	B
23. Dead Creek (Juneau)	Upstream from CTH "M" From CHT "M" to St. Helena Rd.	Effluent ditch Continuous	II I	B NA
24. Sinnipee Creek (Kiel San. Dist. #1)	From Kiel San. lagoon outfall to Bluff Road	Continuous	I	A
25. Rock Creek (Lake Mills)	From the Lake Mills STP downstream to CTH "V" From CTH "V" to Harper's Mill Pond	Noncontinuous Continuous	I I	A NA
26. Tributary - Pigeon Creek (Lancaster)	Tributary from Lancaster STP downstream to south line of section 10 Tributary from above point downstream to confluence with Pigeon Creek	Continuous Continuous	II I	Effluent limitations to be determined determined
27. Tributary - Baker Creek (Lebanon San. Dist.)	From Lebanon STP downstream to Baker Creek	Noncontinuous	II	B
28. Little Platte River (Livingston)	From Livingston STP downstream to New California Road	Noncontinuous	I	A
29. Tributary-East Branch Rock River (Lomira)	Tributary upstream from confluence with East Branch Rock River.	Noncontinuous	I	A
30. (Madison Metro Sewerage Commission)	From the STP outfall aerator to the Oregon Branch	Effluent ditch	II	Effluent limitations to be determined

- (1) ADDITION. The public water supply standard shall be met on the Wisconsin river in section 8, township 10 north, range 7 east.
(2) VARIANCE. Surface waters in the southern district subject to a variance under NR 104.02(3) are listed in table 3.

TABLE 3
SOUTHERN DISTRICT

Surface Water (Facility Affected)	Reach Description	Hydrologic Classification	Applicable Criteria (1)	Effluent Limitations (2)
1. Goose Lake Tributary (Arlington)	Tributary upstream from Goose Lake	Noncontinuous	II	Effluent limitations to be determined
2. Tributary - East Branch Pecatonica River (Barneveld)	From the Barneveld STP downstream to the East Branch Pecatonica River	Noncontinuous	II	B
3. Williams Creek (Blue Mounds)	From the Blue Mounds STP downstream to the east line of Sec. 14, T6N, R5E	Noncontinuous	I	A
4. Sanders Creek (Boscobel)	From the Boscobel STP downstream to the Wisconsin River	Continuous	I	A
5. Allen Creek (Brooklyn)	Upstream from Butts Corner Road	Continuous	I	A
6. Kummel Creek (Brownsville)	From Brownsville STP downstream to CTH "HH"	Noncontinuous	I	A
7. Spring Brook and Tributary (Clinton)	Tributary from the Clinton STP to Spring Brook	Effluent ditch	II	B
8. Tributary - Dead Creek (Clyman)	Spring Brook in Clinton Township Tributary from Clyman STP downstream to Dead Creek	Continuous Noncontinuous	II II	NA B
9. West Branch Pecatonica River (Cobb)	From the Cobb STP downstream to confluence with an unnamed tributary NE¼, NW¼, Sec. 2, T5N, R1E.	Continuous	I	A
10. Door Creek (Cottage Grove)	Door Creek upstream from STH 12 & 18 From STH 12 & 18 downstream to Lake Kegonsa	Noncontinuous Continuous	I I	A NA
11. Coon Branch (Cuba City)	Upstream from westerly tributary approximately 1 mile above STH "11" Downstream from above tributary to confluence with Galena River	Noncontinuous Continuous	II I	B NA
12. Mud Creek and Tributary (Deerfield)	Tributary from Deerfield STP to confluence with Mud Creek Mud Creek from above tributary downstream to confluence with Koshkonong Creek	Effluent ditch Continuous	II I	B

II = marginal
I = intermediate

APPENDIX III
CH NR 104, P 39

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Horicon DNR

Date: January 12, 1983

File Ref: 3200

To: Files

From: Keith F. Hutchison

Subject: Stream Classification for Tributary to Wildcat Creek at Iron Ridge

On November 8, 1982, the tributary to Wildcat Creek was assessed at the Iron Ridge Wastewater Treatment Plant (WWTP) in Dodge County. At Highway 67 the stream was about five feet in width and about $\frac{1}{2}$ foot in depth. The bottom was mostly silt and the stream was choked with canary grass and cattails. Water currents formed a small pool at the downstream end of the culvert under highway 67 and a few minnows were observed in the pool. Some slimes were observed. The stream appears to have been ditched.

Another check was made at CTR VV just below the WWTP. The bottom substrate again was primarily silt and choked with grass except for a small area where the stream constricted and rubble and gravel were exposed. The stream was only 20 inches wide and 3 inches deep at this point. It was apparent that flows reach zero at times. A classification was conducted on September 23, 1976, and at that time the stream was dry. During the November 8, 1982, survey some slimes were observed and sowbugs were the dominant macroinvertebrate.

The stream system habitat rating form was used and a value of 183 was assigned, which indicates a D "use class." However, the lack of habitat, silt substrate and occasional zero flows limit the stream to an E "use class." Based on the above information this tributary to Wildcat Creek should be classified as a class E stream, or noncontinuous marginal surface waters at Iron Ridge.

KFH:bes

cc: Tom Bainbridge - SD

→ Dan Moran - WRM/2

NOTED:

Date

Iron Ridge Sewage Treatment Plant
Dodge County
September 23, 1976

Wildcat Creek Tributary

Iron Ridge sewage lagoons discharge into Wildcat Creek Tributary. It is a small intermittent watercourse which has been ditched and straightened and at the present time is dry in its headwaters.

Wildcat Creek - Surface Acres = 40.7, length = 12.0 miles, gradient = 21.0 feet per mile.

Originating in the high drift hills east of Iron Ridge, this stream follows a southwesterly course to the Rock River, joining it just below the dams at Hustisford. The swiftly moving headwaters portion has a rock and gravel bottom, which gives way to silt as the creek widens and loses velocity downstream. Northern pike, carp, suckers and walleyes may enter the creek during the spring spawning run. Species inhabiting the upper reaches are the central stoneroller, bluntnose minnow, creek chub and brook stickleback. Problems include fluctuating flow and erosion within the watershed.

Recommendations

From the Iron Ridge lagoon outfall downstream to the juncture with Wildcat Creek the classification should be noncontinuous marginal surface waters. From this point and for the remainder of Wildcat Creek the classification should be ~~non~~continuous fish and aquatic life.

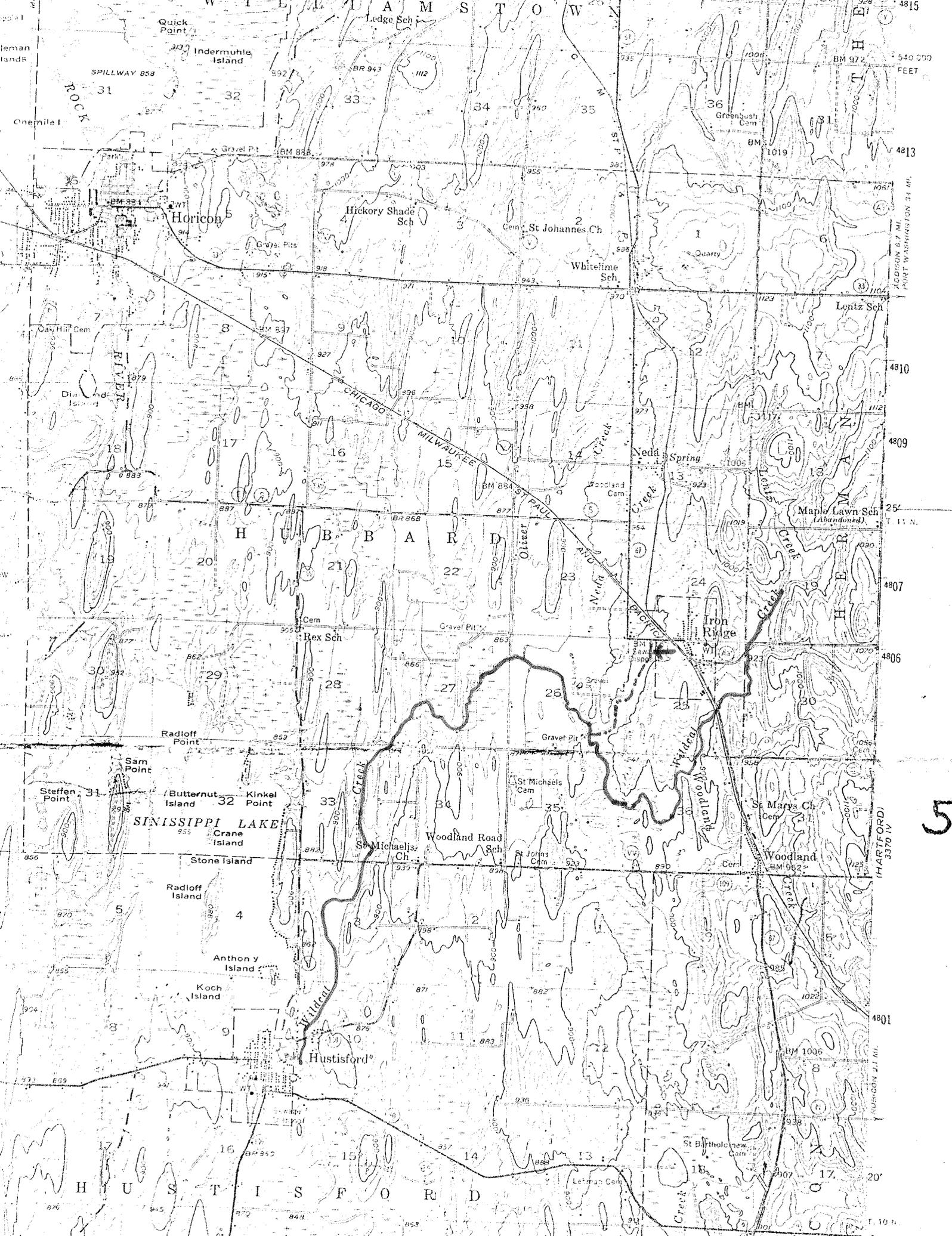
The above recommendations represent a concurrence of opinion of the stream classification team who are as follows:

Robert Weber - District Engineer
Jim Congdon - Area Fish Manager
Tom Bainbridge - District Biologist
Roger Schlessler - Natural Resources Technician

Respectfully submitted,


Thomas Bainbridge
Stream Classification Coordinator

RS:lg



5