

**WATER QUALITY STANDARDS REVIEW  
AND STREAM CLASSIFICATION FOR  
EAGLE CREEK, FOX (ILLINOIS) RIVER BASIN  
RACINE COUNTY, WISCONSIN  
MAY, 1992**

by Will Wawrzyn, Southeast District

## INTRODUCTION

A Water Quality Standards Review and Stream Classification was completed for Eagle Creek located in Racine County, Wisconsin. This report contains survey results, an updated Stream Classification, and other water quality management recommendations.

## BACKGROUND

Eagle Creek is located in the Fox (Illinois) River Basin, Middle Fox River Watershed in southwestern Racine County. From its source at the outlet of Eagle Lake the stream flows for approximately 5.5 miles before its confluence with the Fox River at T3N, R19E, S.14, SE, NE. It is a first order stream, has an average gradient of 8 ft/mi, and drains approximately 14 mi<sup>2</sup> (WCD, 1961). The reported Q<sub>7,2</sub> and Q<sub>7,10</sub> discharge upstream of the Village of Eagle lake POTW discharge are both <0.1 cfs (Hollstrom, 1992).

The Eagle Lake S.U.D. POTW (WI-0031526) is the only known point source discharge to Eagle Creek. The Eagle Lake POTW is a contact stabilization plant with a supplemental RBC. The RBC is presently not being used because there is no downstream solids limits. It has a design flow of 0.4 MGD, 680 lbs/BOD<sub>5</sub>, and serves a projected year 2000 population of 4,000 but organic loading is approximately 20% of design and flow is usually about 50% of design except during wet weather. The plant has generally been operated below 10 mg/l for BOD<sub>5</sub> and suspended solids, has met its dissolved oxygen limit of 4 mg/l, and has met its ammonia-N limits of 3 mg/l and 6 mg/l for the summer and winter periods, respectively (Gottlieb, 1993).

Agriculture is the dominant watershed land use. Prior to settlement and drainage improvements, much of these lands were wetlands. The Varna-Elliott-Ashkum is the primary soil association along the upper-half of the watershed. These soils are characterized as being well drained to poorly

drained soils that have a silty clay loam to clay subsoil. Soils present along drainageways and depressions are poorly drained and are dominated by water-tolerant grasses. These characteristics have encouraged stream channelization and tiling to improve agricultural land drainage.

The Fox-Casco soil association dominates the lower half of the watershed. These soils are characterized as being well-drained soils that have a clay loam and silty clay loam subsoil. The sloping soils are erodible if cropped and as such, may contribute to water quality problems (USDA, 1970).

Eagle Creek was most recently classified as a "non-continuous, marginal fish and aquatic life stream from Eagle Lake downstream to CTH J" and a "continuous, intermediate fish and aquatic life stream from CTH J to the confluence with the Fox River (WDNR, 1980). These classifications were completed prior to the development and use of the Wisconsin Stream Classification guidelines (Ball, 1984).

## METHODS

The stream classification for Eagle Creek is based on guidelines developed by Ball (1984). Fish community and habitat surveys were completed at one Eagle Creek site during October of 1992. The sample site was located immediately downstream of CTH N approximately 0.5 mile downstream of the Village of Eagle Lake POTW discharge. Fish community samples were obtained along a 300-ft. reach using a DC backpack shocker operating at 2.0 amps and between 150 and 175 volts. Sampling efficiency was estimated at less than 25%. Fago (1978) also reported an earlier fish community sample.

In-stream habitat was evaluated at two sites, CTH N and South River Rd.

## RESULTS

### Water Quality

—No recent (post-1980) physical or chemical water data is available for Eagle Creek. Dissolved oxygen concentrations and temperatures were obtained at five sites along Eagle Creek during the 1980 stream classification survey (Appendix 1). Dissolved oxygen concentrations met full fish and aquatic life water quality standards at all sites. Instantaneous dissolved oxygen concentrations ranged from 11.3 mg/l to 16.5 mg/l and temperatures ranged from 7 C to 12.8 C. pH values ranged

from 7.8 su to 8.1 su.

## Habitat

Eagle Creek habitat quality was rated "poor" at the CTH N site and "fair" at the South River Rd. site (Appendix 2). Overhanging stream bank vegetation, macrophytes and limited amounts of undercut banks provides fish and aquatic life cover along the CTH N reach. Substrate is dominated by silt and sand or silt and sand over gravel and clay. Bank erosion as scour is present along some short reaches and is probably result of past channelization. The entire reach is located in an incised channel. Row crops, as corn or soy bean, abut the upper stream bank. Woody bank vegetation is all but absent. Water depths are generally adequate for smaller forage and sport fish species. Average depths in runs were 1 ft. along the well defined thalweg but 0.5 ft. or less outside the thalweg where deep deposits of silt have been deposited. Pools were absent except below the scour hole created by the culvert at CTH N.

Woody and overhanging stream bank vegetation and some woody snags provide cover along the South River Rd. reach. Substrate is dominated by silt and sand and lesser amounts of gravel. The lower bank extends well into the adjacent floodplain meadow providing good potential spring spawning habitat for forage and sport fish species. Banks are stable and well vegetated with a diverse community of grasses, shrubs, forbs and trees. Run and pool depths are generally adequate for larger forage and sport fish species. Average depths in runs and pools were 1 ft. and 3-4 ft., respectively.

Factors and sources responsible for limiting habitat quality include historical stream channelization, modification or draining of wetlands, sedimentation from agricultural sources of nonpoint source pollution including bank and upland erosion and runoff. Bank erosion and potential animal wastes resulting from livestock pasturing has been observed along one lower stream reach upstream near CTH J. Greater than 75% of Eagle Creek has been channelized to accommodate agricultural drainage.

All of these factors and sources, which limit habitat quality, are controllable. Installation of agricultural land use best management practices, and other stream and riparian management practices could enhance or restore Eagle Creek habitat quality.

## Fish Community

Twenty fish species have been collected at two different sites since 1978 (Appendix 3). Eagle Creek supports a moderately diverse and abundant forage fish community including species considered intolerant to very tolerant of environmental degradation. Largemouth bass are the most abundant sport fish species. Green sunfish, northern pike, pumpkinseed, bluegill and black bullhead are also resident sport fish species.

## Recreational Use

Potential or existing recreational uses for Eagle Creek and its corridor include wading, fishing, hunting, trapping, hiking, bait fish collection, aesthetics, nature study, and others. However, no public lands or access are known to exist along the stream or its tributaries.

Full body contact forms of recreation, such as swimming, are not likely to occur on a frequent basis. Therefore disinfecting of the Eagle POTW effluent is not considered necessary for recreational purposes.

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A Stream Classification was completed for Eagle Creek in August, 1992. In 1980, Eagle Creek was classified as a non-continuous, marginal fish and aquatic life stream from Eagle Lake downstream to CTH J and a continuous, intermediate fish and aquatic life stream from CTH J to the confluence with the Fox River. It receives treated effluent from the Eagle Lake S.U.D. POTW. The potential impacts of this discharge have never been determined.

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Eagle Creek supports a diverse forage fish, and lesser numbers of sport fish species. Twenty different fish species have been identified. Forage fish include species intolerant to very tolerant of degraded habitat. Largemouth bass are the most common sport fish species.

## RECOMMENDATIONS

1. Eagle Creek contains a diverse community of fish species including forage and sport fish species. While in-stream and riparian habitat can be moderately degraded, it is suitable for sustaining these species. Based on these biological and physical habitat conditions Eagle Creek shall be reclassified as a **Warm Water Sport Fish Community** according to Stream Classification Guidelines for Wisconsin Streams.
2. Discharge limits for the Eagle Lake S.U.D. POTW should be modified based on the revised stream classification.
3. Significant improvements in Eagle Creek biological and recreational uses could be attained. The following land and stream management practices should be implemented, whenever practicable, to enhance or restore aquatic life and wildlife communities, water quality, and recreational use opportunities;
  - a. Prevent future modifications to the stream channel, stream corridor and wetlands throughout the watershed.
  - b. Restore former wetlands whenever feasible, especially along the stream corridor.
  - c. Protect and restore riparian habitats that provide important fish and wildlife habitats. Woody plant growth along the banks should be encouraged.
  - d. Restore riparian habitat, and control bank erosion and scour by isolating livestock from stream banks and stream channel.
  - e. Encourage installation of soil erosion control practices on lands that exhibit channelized flow to Eagle Creek and its tributaries.

## REFERENCES

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Fago, Donald. 1982. Distribution and Relative Abundance of Fishes in Wisconsin. Volume 1. Root, Milwaukee, Des Plaines and Fox River Basins. Technical Bulletin No. 147. Wisconsin Department of Natural Resources, Madison, Wisconsin.

Hollstrom, Barry, K. 1992. Low-Flow Characteristics of Wisconsin Streams at Sewerage Treatment Plants and Industrial Plants. U.S. Geological Survey, Madison, Wisconsin.

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United States Department of Agriculture. 1970. Soil Survey. Racine County, Wisconsin.

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Wisconsin Department of Natural Resources. 1989. Natural Resource Administrative Code NR 104. Register February, 1989, No. 398.

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cc: Municipal Waste Water file for Eagle Lake S.U.D. POTW/SEH  
Water Resource file for Eagle Creek/SEH

## Appendix 1

### Stream Classification Determinations Prior to 1992

Appendix 2

Stream System Habitat Rating Forms

### Appendix 3

#### Fish Distribution, Relative Abundance and Tolerance for Eagle Creek

Sample Date	Sample Location	Common Name (status)	Number	Classification*
7/25/75	R.M. 2.1 T3N,R19E,S13 NE,SE at CTH A	Central mudminnow	7	VT
		Common carp	>99	VT
		Spotfin shiner	3	T
		White sucker	12	T
		Black bullhead	2	S
		Green sunfish	7	S
		Northern pike	1	S
		Bluegill	2	S
		Largemouth bass	86	S
10/20/92	R.M. 4.7 T3N,R20E,S20 NE,NE	Horneyhead chub	5	IT
		Common shiner	46	T
		Sand shiner	235	T
		Blacknose shiner	3	IT
		Bluntnose minnow	214	T
		Spotfin shiner	193	T
		White sucker	11	T
		Central stoneroller	1	IT
		Fathead minnow	1	VT
		Green sunfish	5	S
		Central mudminnow	7	VT
		Golden shiner	1	T
		Pumpkinseed	4	S
		Golden redhorse	1	IT
		Mimic shiner	7	-

water temperature = 5.0

dissolved oxygen = 9.0 mg/l

* Classification:	IT	Intolerant
(Ball, 1982)	T	Tolerant
	VT	Very Tolerant
	S	Sport
	-	not classified

C.4 Eagle Creek up of CTH N,  
Racine Co. Upstream of fish  
sample collection reach.  
October 20, 1992.

C.3 Eagle Creek downstream of  
CTH N, Racine Co. Looking  
upstream through fish and  
survey reach. October 20, 1992.

C.5 Unnamed tributary to Eagle Creek downstream of private road T3N, R20E, Sec.20, NE,NW, Racine Co. October 20, 1992.

C.6 Eagle Creek upstream of South River Rd., Racine Co. Looking upstream through habitat survey reach. October 20, 1992.

# CORRESPONDENCE/MEMORANDUM

State of Wisconsin  
Department of Natural Resources

DATE: January 26, 1998

FILE REF: 3200

TO: Joe Ball WT/2  
Greg Pilarski SER/Annex

FROM: Will Wawrzyn SER

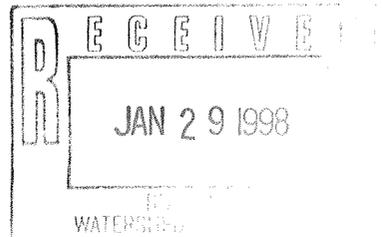
SUBJECT: Stream Classification for Eagle Creek, Fox River Basin

Attached for your information and files is a copy of the Stream Classification report for Eagle Creek completed in May 1992. Eagle Creek was previously classified as a Limited Aquatic Life stream from the Eagle Lake outlet downstream to CTH J. This report recommends that **Eagle Creek be classified as a Warm Water Sport Fish Community** throughout its entire length. If you have any questions, please call me at (414) 263-8699.

attachment

cc: Diane Figiel WT/2  
Sharon Gayan SER

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The lower-half of the watershed is dominated by the Fox-Casco soil association. These soils are characterized as being well drained

soils that have a clay loam and silty clay loam subsoil. The sloping soils are erodible if cropped and as such, may contribute to water quality problems (USDA, 1970).

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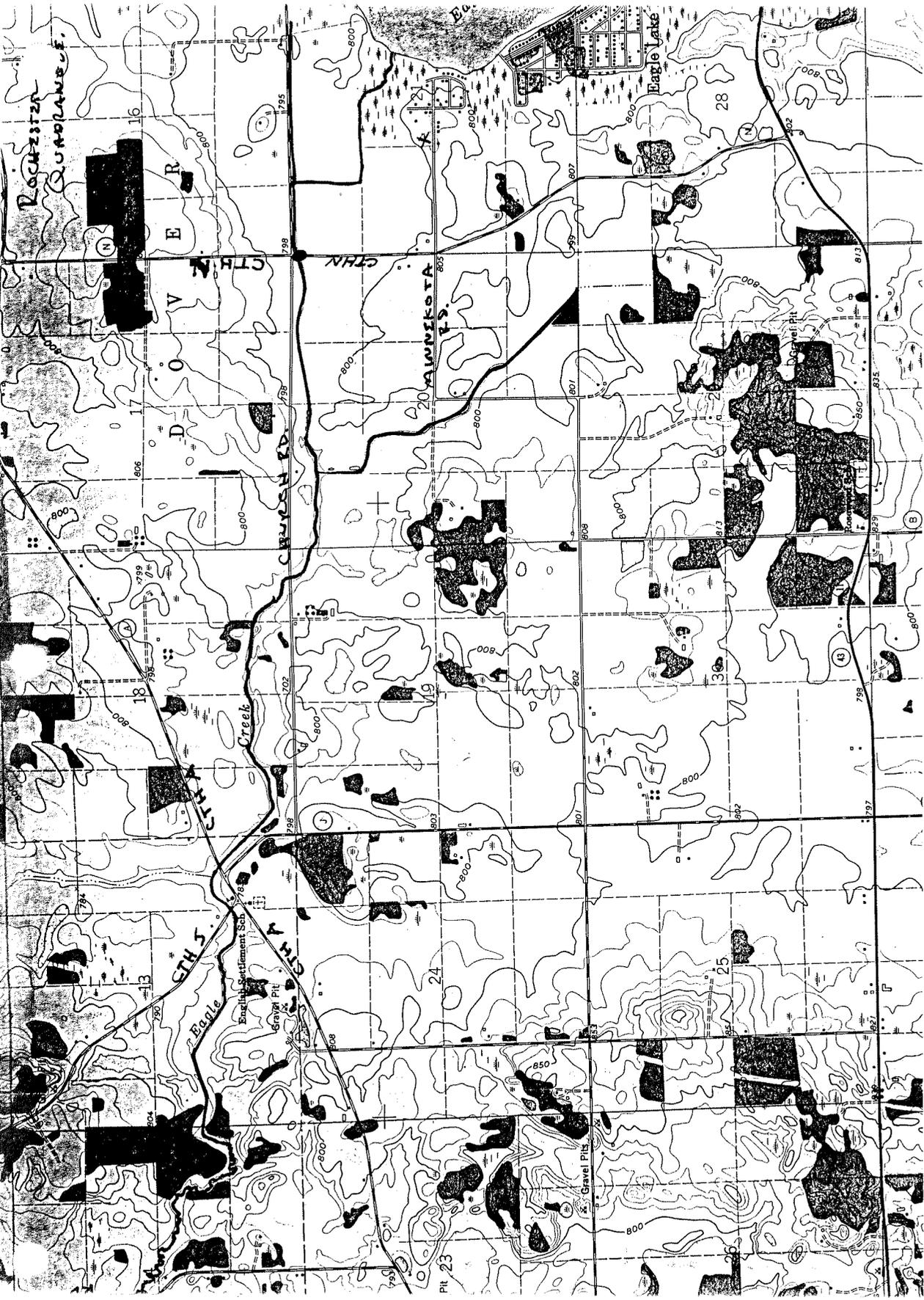
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cc: Municipal Waste Water file for Eagle Lake S.U.D. POTW/SEH  
Water Resource file for Eagle Creek/SEH

TE Eagle Creek - Downstream of CTH N

MATRIX	VALUE	SCORE		
total # of fish	496	n/a	Stream width (ft) =	6.9 *
total # of native spp.	11	5	Ln stream width (m)	0.74
total # of darter spp.	0	0	Distance shocked (ft)	300
total # of sucker spp.	1	5	Distance shocked (m)	91
<=8km from lake	n/a			
total # of sunfish spp.	0	0	* The IBI is not calibrated for stream width	
>8km from lake	n/a		<2.5 m (8.2 ft.) see Lyons, 1992, p. 39.	
total # of sunfish spp.	2	10		
total # of intolerant spp.	1	5		
total # of tolerant fish	237	5	% of tolerant spp.	48
total # of omnivores	225	0	% of omnivorous spp.	45
total # of insectivores	270	5	% of insectivores	54
total # of top carnivores	0	0	% of carnivores	0
total # of simple lithophils	57	0	% of simple lithophilous	11
	subtotal	35	Correction Factors	
Correction Factors		35	# of nontolerant fish per 300m	854
total # of DELT fish	0	35	% DELT	0
Total after correction factors =		35		
IBI SCORE =		35		

Biotic Integrity Rating

FAIR

\*\* STREAM WIDTH BELOW IBI MODEL CALIBRATION

# of fish Fish species

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214	Bluntnose Minnow
193	Spotfin Shiner
46	Common Shiner
11	White Sucker
7	Central Mudminnow
7	Mimic Shiner
5	Hornyhead Chub
5	Green Sunfish
4	Pumkinseed
3	Blacknose Shiner
1	Central Stoneroller

STREAM AND SITE BACKGROUND

PERSONNEL: AARTILA DATE: 10/20/92 TIME: \_\_: \_\_  
WAINRYN  
\_\_\_\_\_  
\_\_\_\_\_

STREAM INFORMATION

STREAM NAME: EXALO CREEK WBIC: \_\_\_\_\_ STREAM LENGTH (mi.): \_\_\_\_\_  
MAJOR BASIN CODE: 3 MINOR BASIN CODE: 210  
TOWNSHIP: T \_\_ N RANGE: R \_\_ E SEC: \_\_ 1/16: \_\_ 1/4: \_\_ STREAM ORDER: \_\_  
(at confluence) (at confluence)

SITE INFORMATION

COUNTY CODE: 52 WATERSHED CODE: \_\_ SUBWATERSHED CODE: \_\_ SEGMENT NO.: \_\_  
SITE NO.: \_\_  
TOWNSHIP: T \_\_ N RANGE: R \_\_ E SEC: \_\_ 1/16: \_\_ 1/4: \_\_ STREAM ORDER: \_\_  
(at site) (at site)

LOCATION DESCRIPTION: DOWNSTREAM OF CTH N

SITE WATER QUALITY INFORMATION

T. P. (C): 5.0 DISS. O2 (mg/l): \_\_ DISS. O2 (% sat): \_\_  
TURB. (htu): \_\_ pH (su): \_\_ COND. (umhos/cm): \_\_  
OTHER: \_\_\_\_\_

LIST HISTORICAL WATER RESOURCE REFERENCES:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_

(eg. previous basin plans, SEWRPC/DNR phys./chem. WQ data, HBI's, fisheries, stream classifications, water quality, Surface Water Resource publ. etc. incl. date of publ.)

- |               |                    |               |                    |
|---------------|--------------------|---------------|--------------------|
| Major basins: | Minor basins:      | County codes: | Watershed Codes:   |
| L. Michigan 2 | Milwaukee R. 20    | Kenosha 30    | Upper Fox UF       |
| Mississippi 3 | Fox R. 210         | Milwaukee 41  | Milwaukee South SO |
|               | Rock R. 221        | Ozaukee 46    | Milwaukee E/W EW   |
|               | Root/Pike R. 10    | Racine 52     | Milwaukee North NO |
|               | Des Plaines R. 200 | Sheboygan 60  | Menomonee ME       |
|               | Sheboygan R. 30    | Walworth 65   | Cedar Cr. CE       |
|               |                    | Washington 67 | Sheboygan SH       |
|               |                    | Waukesha 68   |                    |

## FISH ASSEMBLAGE (Lyons)

ORDER MILEAGE CODING: \_\_\_\_\_

STATION MILEAGE: \_\_\_\_\_ JAR(S) IDENTIFICATION: \_\_\_\_\_  
 (use subwatershed/segment/site codes)

DISTANCE FROM NEAREST LAKE >10AC (mi): \_\_\_\_\_ DISTANCE SAMPLED (ft.): ~300'

DISTANCE FROM NEAREST STREAM WITH MEAN Q >1500 cfs (mi): \_\_\_\_\_

MEAN CHANNEL WIDTH (ft.): 6.9 n=10: 6 5 8 5 6 7 7 7 6 12

GEAR: Backpack Sucker ELECTROSHOCKER VOLTS: 150<sup>-175</sup> ELECTROSHOCKER AMPS: 2

MACROINVERTEBRATE COMMUNITY OBSERVATIONS (inc. relative abundance):  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Common Name	Spec Code	Number	Taxa	Tol Val	Feed Gr	Spawn	DELT
BLUNTNOSE MINNOW	24						
HORNHEAD							
CHUB	5						
SPOTFIN SHINER	193						
COMMON SHINER	46						
WHITE SUCKER	11						
GREEN SUNFISH	5						
CENTRAL MUDMINNOW	7						
PUMPKINSEED	A						
BLACKNOSE SHINER	3						
MIMIC SHINER	7						
CENTRAL STONEWORM	1						



Appendix 2  
Stream System Habitat Rating Forms

Stream EAGLE CR. Reach Location DOWNSTREAM OF CTH N 300' Reach Score/Rating \_\_\_\_\_  
 County LAINE Date 10/20/92 Evaluator W. WAWRZYN Classification \_\_\_\_\_

Rating Item	Category			
	Excellent	Good	Fair	Poor
Watershed Erosion <i>(14)</i>	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. <i>(14)</i>	Heavy erosion evident. Probable erosion from any run off. 16
Watershed Nonpoint Source - <u>NARROW BUFFER ALONG CORRIDOR</u> <i>(14)</i>	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). <i>(14)</i>	Obvious sources (major wetland drainage, high use urban or industrial area, feed lots, impoundment). 16
Bank Erosion, Failure <i>(12)</i>	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. <i>(12)</i>	Many eroded areas. "Raw" areas frequent along straight sections and bends. 20
Bank Vegetative Protection <i>(10)</i>	90% plant density. Diverse trees, shrubs, grass. Plants healthy with apparently good root system. 8	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. <i>(15)</i>	<50% density. Many raw areas. Thin grass, few if any trees and shrubs. 18
Lower Bank Channel Capacity <i>(8)</i> <u>W = 7.0</u> <u>2.9-2.3 LB = 2.5-3.0'</u>	Ample for present peak flow, plus some increase. Peak flow contained. W/D ratio <7. <i>(8)</i>	Adequate. Overbank flows rare. W/D ratio 8-15. 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 <i>(18)</i>	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. 15	Heavy deposits of fine material, increased bar development. <i>(18)</i>
Bottom Scouring and Deposition <i>(16)</i>	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. <i>(16)</i>	More than 50% of the bottom changing nearly year long. Pools almost absent due to deposition. 20
Bottom Substrate/Available Cover <i>(12)</i>	Greater than 50% rubble, gravel or other stable habitat. 2	30-50% rubble, gravel or other stable habitat. Adequate habitat. 7	10-30% rubble, gravel or other stable habitat. Habitat availability less than desirable. <i>(17)</i>	Less than 10% rubble gravel or other stable habitat. Lack of habitat is obvious. 22
Avg. Depth Riffles and Runs <i>(18)</i>	Cold >1' 0 Warm >1.5' 0	6" to 1' 6 10" to 1.5' 6	3" to 6" 18 6" to 10" <i>(18)</i>	<3" 24 <6" 24
Avg. Depth of Pools <i>(24)</i>	Cold >4' 0 Warm >5' 0	3' to 4' 6 4' to 5' 6	2' to 3' 18 3' to 4' 18	<2' 24 <3' <i>(24)</i>
Flow, at Rep. Low Flow <i>(24)</i>	Cold >2 cfs 0 Warm >5 cfs 0	1-2 cfs 6 2-5 cfs 6	.5-1 cfs 18 1-2 cfs 18	<.5 cfs 24 <1 cfs <i>(24)</i>
Pool/Riffle, Run/Bend Ratio (distance between riffles ÷ stream width) <i>(10)</i>	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 <i>(14)</i>	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. <i>(14)</i>	Stream does not enhance aesthetics. Condition of stream is offensive. 16

Column Totals: \_\_\_\_\_  
 Column Scores E \_\_\_\_\_ + G \_\_\_\_\_ + F \_\_\_\_\_ + P \_\_\_\_\_ = 205 = Score

*APPEARS THAT CHANNELIZATION MAY HAVE OCCURRED AS RECENTLY AS 10-15 YRS. ASO BASED ON THIS SIZE*

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

See reverse side for additional habitat features, water quality impacts, and comments.

Stream EAGLE CR. Reach Location UPSTREAM OF SOUTH RIVER RD. 350' Reach Score/Rating \_\_\_\_\_

County LACINE Date 10/20/92 Evaluator W. WAWRZYK Classification \_\_\_\_\_

Rating Item	Category			
	Excellent	Good	Fair	Poor
Watershed Erosion 14	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 14	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 4	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 6	90% plant density. Diverse trees, shrubs, grass. Plants healthy with apparently good root system. 8	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 30-40 CB = 4	Ample for present peak flow plus some increase. Peak flow contained. W/D ratio <7. 8	Adequate. Overbank flows rare. W/D ratio 8-15. 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 18	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. 15	Heavy deposits of fine material, increased bar development. 18
Bottom Scouring and Deposition 16	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 22	Greater than 50% rubble, gravel or other stable habitat. 2	30-50% 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 4	Cold >1' 0 Warm >1.5' 0	6" to 1' 6 10" to 1.5' 6	3" to 6" 18 6" to 10" 18	<3" 24 <6" 24
Avg. Depth of Pools 18	Cold >4' 0 Warm >5' 0	3' to 4' 6 4' to 5' 6	2' to 3' 18 3' to 4' 18	<2' 24 <3' 24
Flow, at Rep. Low Flow 24	Cold >2 cfs 0 Warm >5 cfs 0	1-2 cfs 6 2-5 cfs 8	.5-1 cfs 18 1-2 cfs 18	<.5 cfs 24 <1 cfs 24
Pool/Riffle, Run/Bend Ratio (distance between riffles ÷ stream width) 8	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 10	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:

Column Scores E \_\_\_\_\_ +G \_\_\_\_\_ +F \_\_\_\_\_ +P \_\_\_\_\_ = 170 = Score

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

See reverse side for additional habitat features, water quality impacts, and comments.

Appendix 3

Fish Distribution, Relative Abundance and  
Tolerance for Eagle Creek

Sample Date	Sample Location	Common Name (status)	Number	Classification*
7/25/75	R.M. 2.1 T3N,R19E,S13 NE,SE at CTH A	Central mudminnow	7	VT
		Common carp	>99	VT
		Spotfin shiner	3	T
		White sucker	12	T
		Black bullhead	2	S
		Green sunfish	7	S
		Northern pike	1	S
		Bluegill	2	S
		Largemouth bass	86	S
		10/20/92	R.M. 4.7 T3N,R20E,S20 NE,NE	Horneyhead chub
Common shiner	46			T
Sand shiner	235			T
Blacknose shiner	3			IT
Bluntnose minnow	214			T
Spotfin shiner	193			T
White sucker	11			T
Central stoneroller	1			IT
Fathead minnow	1			VT
Green sunfish	5			S
Central mudminnow	7			VT
Golden shiner	1			T
Pumpkinseed	4			S
Golden redhorse	1			IT
Mimic shiner	7			-

water temperature = 5.0  
dissolved oxygen = 9.0 mg/l

\* Classification: IT Intolerant  
(Ball, 1982) T Tolerant  
VT Very Tolerant  
S Sport  
- not classified

2 210 1175.8R 239.8L 138.4R 2.1B EAGLE CR 11 2 06 7/25/78 3N19E13NSE52  
 O 2  
 SP=09 HY=00 UNSP=00 FISH CENTRAL MUDMINNOW 7 NORTHERN PIKE 1 COMMON CARP 99 SPOTFIN  
 SHINER 3 WHITE SUCKER 12 BLACK BULLHEAD 2  
 GREEN SUNFISH 7 BLUEGILL 2 LARGEMOUTH BASS 86

2 210 1175.8R 239.8L 138.4R 5.5 + EAGLE L 94 Q 48 9/28/77 3N20E21SWNE52  
 O 3  
 SP=06 HY=00 UNSP=00 FISH NORTHERN PIKE 99 PUMPKINSEED 17 BLUEGILL 99 LARGEMOUTH BASS 61  
 GREEN SUNFISH 18  
 WALLEYE 99

2 210 1175.8R 239.8L 138.4R 5.5 + EAGLE L 94 Q 48 6/15/77 3N20E21SWNE52  
 O 3  
 SP=07 HY=01 UNSP=00 FISH NORTHERN PIKE 99 NORTHERN PIKE X MUSKELLUNGE 2 FATHEAD MINNOW 1  
 GREEN SUNFISH 20 PUMPKINSEED 19 BLUEGILL 98 LARGEMOUTH BASS 28  
 WALLEYE 8

2 210 1175.8R 239.8L 138.4R 5.5 + EAGLE L 94 7 45 3/18/77 3N20E21SWNE52  
 O 3  
 SP=06 HY=01 UNSP=00 FISH CENTRAL MUDMINNOW 1 NORTHERN PIKE 99 NORTHERN PIKE X MUSKELLUNGE 96  
 GREEN SUNFISH 3 BLUEGILL 9 LARGEMOUTH BASS 9 WALLEYE 3

2 210 1175.8R 239.8L 138.4R 5.5 + EAGLE L # 182 94 4 14 7/11/76 3N20E21SWNE52  
 O 3  
 SP=03 HY=00 UNSP=01 FISH NORTHERN PIKE 9 LARGEMOUTH BASS 97 WALLEYE 99  
 SUNFISHES 6

2 210 1175.8R 239.8L 138.4R 5.5 + EAGLE L 96 / /76 3N20E21SWNE52  
 O 3  
 SP=05 HY=01 UNSP=00 FISH NORTHERN PIKE 99 NORTHERN PIKE X MUSKELLUNGE 99 FATHEAD MINNOW 99  
 CHANNEL CATFISH 99  
 LARGEMOUTH BASS 99 WALLEYE 99

2 210 1175.8R 239.8L 138.4R 5.5 + EAGLE L 94 5 10/ 8/74 3N20E21SWNE52  
 O 3  
 SP=01 HY=00 UNSP=00 FISH MIMIC SHINER 2  
 759800

2 210 1175.8R 239.8L 138.4R 5.5 + EAGLE L 94 7 6/10/66 3N20E21SWNE52  
 O 3  
 SP=09 HY=00 UNSP=02 FISH NORTHERN PIKE 24 COMMON CARP 5 WHITE SUCKER 3 BULLHEADS 99  
 WHITE BASS 34  
 CRAPPIES 99 PUMPKINSEED 99 BLUEGILL 67 LARGEMOUTH BASS 3 YELLOW  
 PERCH 3 WALLEYE 11

2 210 1175.8R 239.8L 138.4R 5.5 + EAGLE L 94 7 6/ 4/58 3N20E21SWNE52  
 O 3  
 SP=09 HY=00 UNSP=01 FISH NORTHERN PIKE 1 YELLOW BULLHEAD 7 WHITE BASS 8  
 CRAPPIES 99 PUMPKINSEED 13 BLUEGILL 99 WHITE CRAPPIE 19 BLACK  
 CRAPPIE 19 YELLOW PERCH 31 WALLEYE 1

Appendix 1

Stream Classification Determinations Prior to 1992

June 2, 1980

Central Office - Madison

3200

(Becky Wallace WR/2)

→ Joe Kurz JF K

Stream Classifications for Eagle Lake STP and Holy Redeemer College

At the request of Lyman Wible of the Southeast Wisconsin Regional Planning Commission a field check was conducted on Eagle Creek (Eagle Lake STP) and Dover Ditch (Holy Redeemer College) to determine if the presently assigned stream classifications still held true. Enclosed are copies of my field checks along with the past classification.

As you can see by the two classifications on each stream there is only a slight change in the classification for Holy Redeemer College and no change for Eagle Lake STP. In both cases the non-continuous, agricultural portions of the streams were reclassified to non-continuous, marginal fish and aquatic life. I would doubt that these classifications will change the present categorical limits.

If you have any questions on these please give me a call.

JK:bg

Encl.

cc: Frank Schultz

---

STREAM: Eagle Cr.

DISCHARGER: Eagle Lake STP

COUNTY Racine

CLASSIFICATION RECOMMENDATION

It is recommended that Eagle Cr. be classified as follows:

- 1) Non-continuous, marginal fish and aquatic life - from Eagle Lake downstream to CTH "J"
- 2) Continuous, intermediate fish and aquatic life - from CTH "J" to the Fox R. confluence

ADDITIONAL COMMENTS

Channelization has affected the potential productivity of this stream through much of its length.

ATTACHMENTS

- USGS map
- Fish data at CTH "A"

REFERENCES USED

- 1) Surface Water Resources of Racine Co.
- 2) Low-flow Characteristics of Wisconsin Streams at Sewage Treatment Plants and Industrial Plants. USGS Water Res. Invest 79-31

CC: Becky Wallace - WR/s  
Frank Schultz - SED Wastewater Section

WISCONSIN ( PARTMENT OF NATURAL RESOURCES  
 STREAM CLASSIFICATION WORKSHEET

Receiving Watercourse : Eagle Cr.  
 District : Southeast  
 Location : NW 1/4 , Sec 21 , T 3 N , R 20 E.  
 Major Basin : Fox R. (Illinois)  
 Discharger : Eagle Lake STP  
 Flow (Design & Actual) : Design - 0.4 MGD  
 Type of Treatment : Secondary

Recommended No.	Reach	Classification Location
	1	E. River Road , above confluence w/ Fox R.
	2	CT# "A"
	3	Church Road
	4	Sunnyside Dr.
	5	Below Eagle Lake , above STP

Date of Field Observations : 24 April 80

Personnel : Joe Kurz Class : ES-4

Other Persons Contacted : Owner of Eagle L. Dam property

Noted by WQES :

Date :

PHYSICAL FEATURE		STREAM CLASS REACHES				
		1	2	3	4	5
Watershed Character (maps or observations)	Size (sqmi)					
	Vegetation Type					
	Predominant Land Use	Agriculture, some residential	Heavy Agriculture	Heavy Agriculture	Heavy Agriculture	Agriculture right to Marshland
	Wetland Type	Marsh	—	—	—	Marsh
Hydrologic Features  (indicate if estimated or actual measurements)	Width (ave)	12'	10'	8'	6'	8'
	Depth (ave/max)	1.5'/2.0'	1.5'/1.5'	1.1'/1.1'	0.7'/0.8'	0.5'/0.6
	Velocity (est)(fps)	0.5 fps	0.4 fps	0.75 fps	0.75 fps	0.25 fps
	Flow (cfs) (est)	9 cfs	6 cfs	6.5 cfs	3.2 cfs	2 cfs
	Pools or Refuges for Fish No. observed, depth					
	% Bottom Type					
	Silt	25%	100%	60%	100%	30%
	Sand	50%		30%		30%
	Gravel	20%		<5%		30%
	Rubble	5%		<5%		10%
	Other					
Control Structures or Obstructions		1 dam	None	None	None	Spillway, No water level control
Irretriev. Channel Alterations		None	None, Channelized reach	None, Channelized reach	None Channelized reach	None Channelized reach
Discharge Q <sub>7.10</sub>		—	—	—	<.01 cfs	—



BIOLOGICAL CHARACTERISTICS

STATIONS ON RECEIVING ATER

	1	2	3	4	5
Bank Vegetation	Marsh vegetation grasses, shrubs, trees	Wetland grasses, plowed land <10' from banks	grassed banks, some trees but many cut down	grassed banks trees cut down	grasses
Aquatic Macrophytes	None	None	None	None	None
Invertebrates	Not observed	Not observed	Not observed	Not observed	Not observed
<del>Phytoplankton</del> (algae)	Filamentous ~ 5% cover good peri-phyton cover	None visible	Filamentous ~ 30% cover	Filamentous ~ 40% cover	Filamentous ~ 20% cover
Fish Observed	None seen	None seen	None seen	None seen	None seen
Fishery Classification	Forage fish in upper reaches. Some game- and panfish in downstream reaches				

BIOLOGICAL CHARACTERISTICS  
(continued)

STATIONS ON RECEIVING WATER

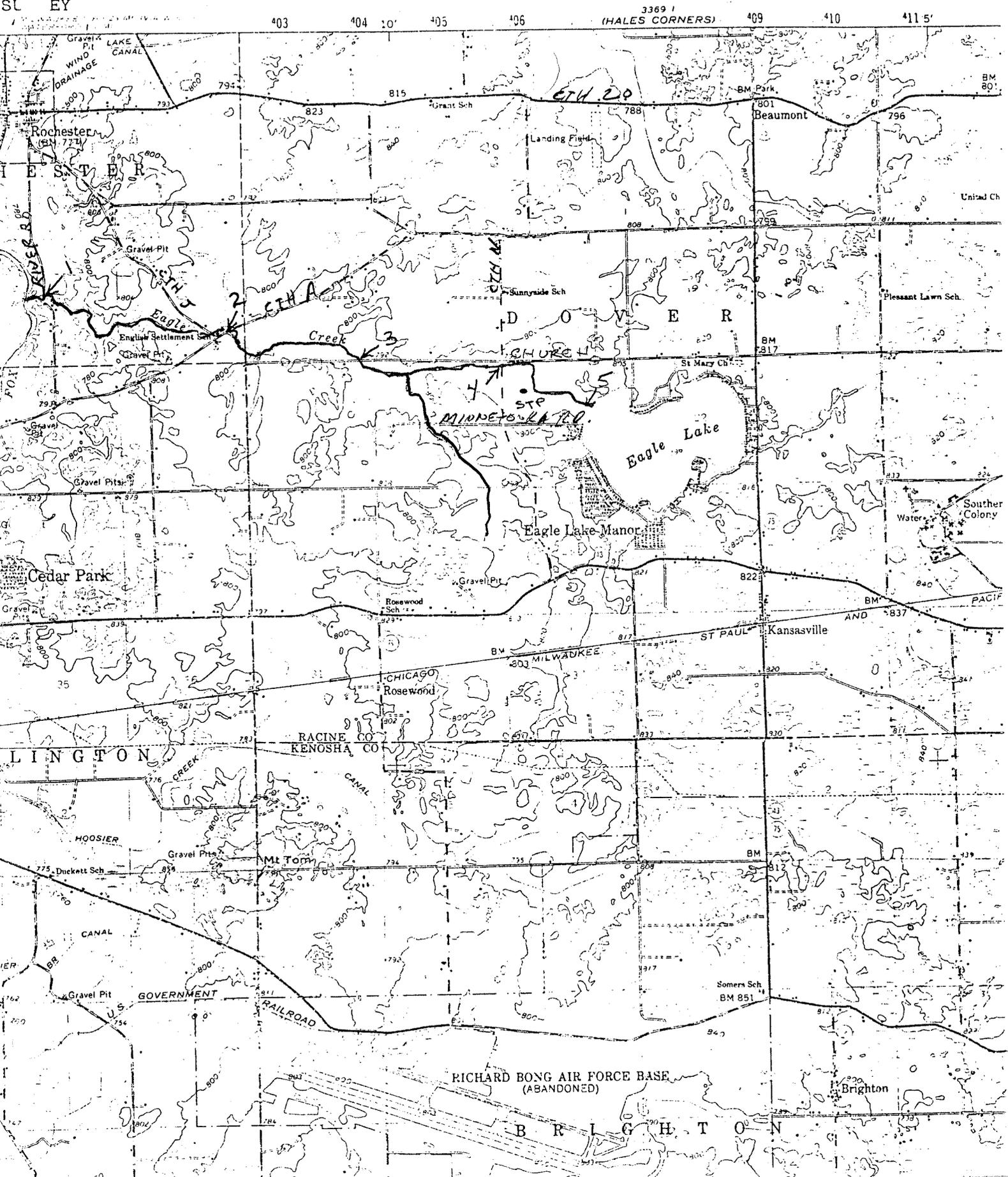
		1	2	3	4	5
Reaches of Critical or Particular Wildlife Value eg:	Spawning Areas	None critical	None	None	None	None
	Critical Habitats	Area is a licensed shooting preserve				

CULTURAL FEATURES

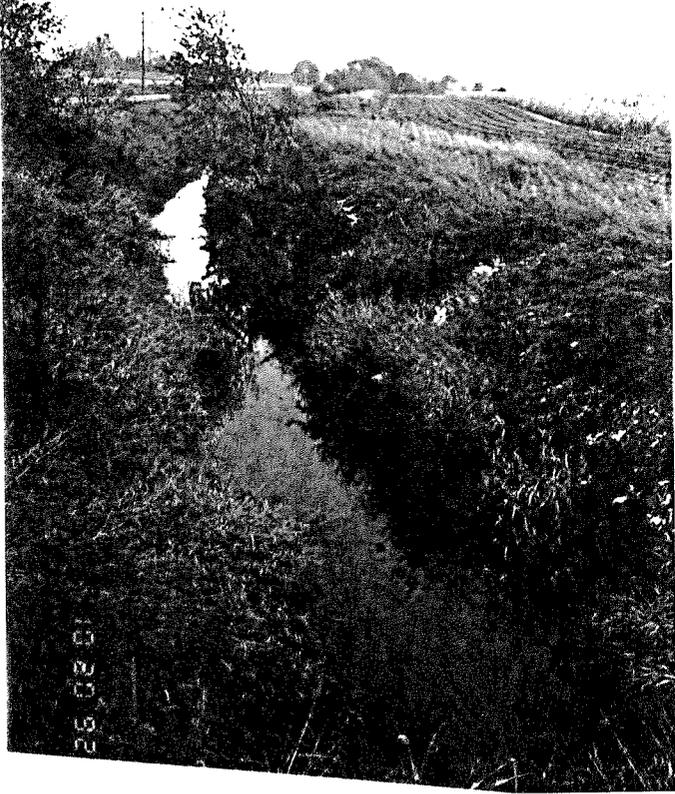
STATIONS ON RECEIVING WATER

		1	2	3	4	5
Recreational Uses		Possible fishery	Very little use expected	Very little use expected	Very little use expected	Very little use
Type of Drainage Sources Observed		Agricultural surface	Heavy Agricultural surface	Agricultural surface and drain tile drainage	Agricultural surface & drain tile	Agricultural surface lake
Other Dischargers		None	None	None	None	None
		.....	.	...		

ATES  
THE INTERIOR  
SU EY



C.4 Eagle Creek up of  
CTH N, Racine Co.  
Upstream of fish  
sample collection  
reach. October 20,  
1992.



C.3 Eagle Creek downstream of  
CTH N, Racine Co. Looking  
upstream through fish and  
survey reach. October 20, 1992.



C.5 Unnamed tributary to Eagle Creek downstream of private road  
T3N, R20E, Sec.20, NE,NW, Racine Co. October 20, 1992.



C.6 Eagle Creek upstream of South River Rd., Racine Co. Looking  
upstream through habitat survey reach. October 20, 1992.



Eagle Creek, Racine County  
Fox River Drainage Basin

Eagle Creek is a small intermittent stream which flows from Eagle Lake (Section 21, T3N, R20E) to the Fox River.

The 3.5 mile reach of stream from Eagle Lake to CTH J flows in an altered channel through intensively worked farm land. The adjacent land is cultivated to the edge of the stream. Several pastures border the stream and cows are able to enter the stream. The substrate consists of muck and supports seasonal dense growths of emergent aquatic vegetation.

The 1.5 mile reach of stream from CTH J to the Fox River flows in a natural channel through mostly undeveloped land. The substrate is primarily gravel.

A small tributary joins with the first reach halfway between Eagle Lake and CTH J. This reach of stream and the surrounding land are similar to the first reach.

Recommendations

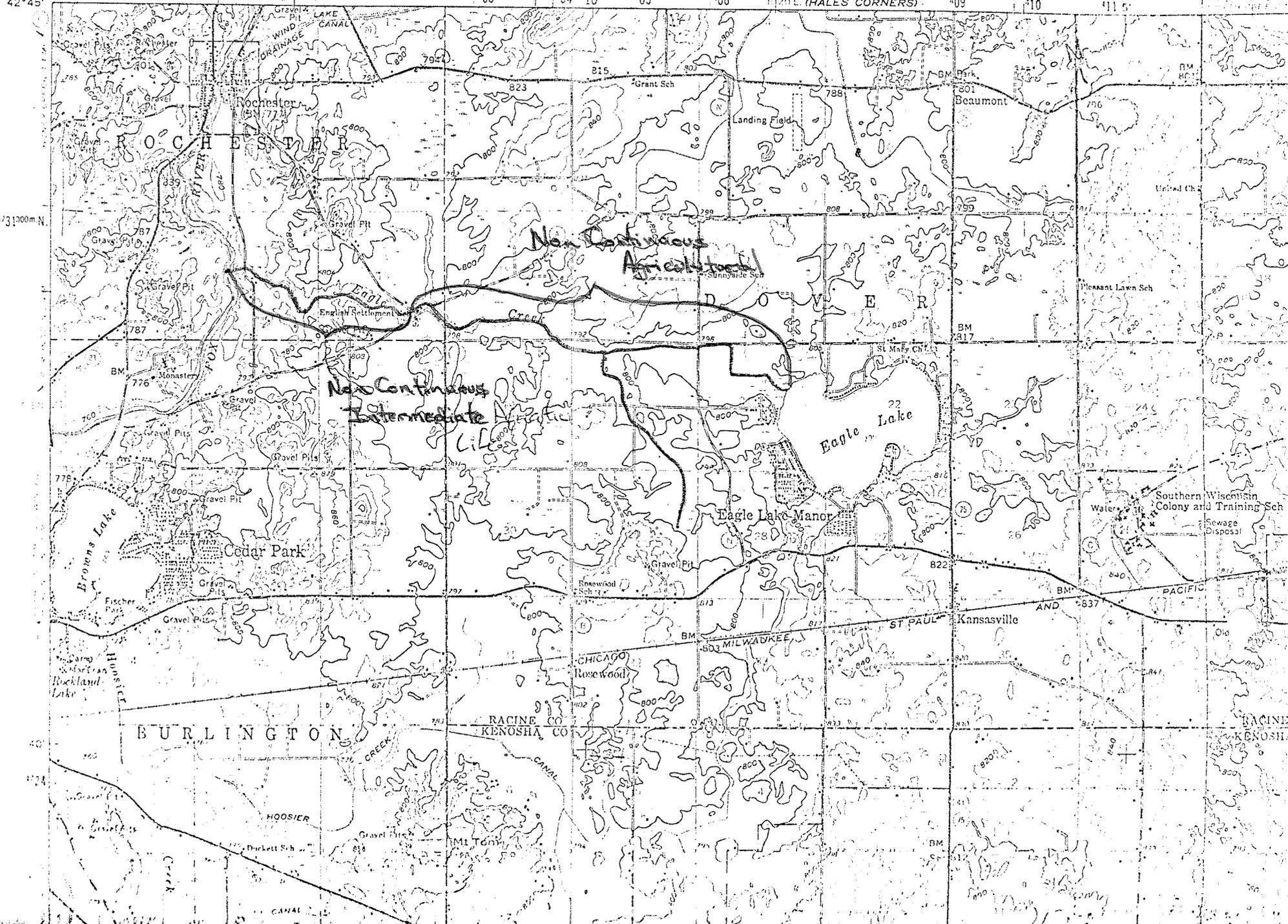
The section of Eagle Creek from Eagle Lake to CTH J shall be classified as a non-continuous agricultural stream. The section of stream from CTH J to the Fox River shall be classified as a non-continuous intermediate aquatic life stream. The tributary shall be classified as a non-continuous agricultural stream. The Fox River shall be classified as a continuous fish and aquatic life stream.

3399 N  
(EAGLE)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

88° 15' 398000m E. 1 20 MI. VIA WIS. 30  
MILWAUKEE (CH) 20 MI. VIA WIS. 30

42° 45'



DATE: 24 April 80

STREAM: Eagle Cr.

DISCHARGER: Eagle Lake STA

COUNTY Racine

CLASSIFICATION RECOMMENDATION

It is recommended that Eagle Cr. be classified as follows:

- 1) Non-continuous, marginal fish and aquatic life - from Eagle Lake downstream to CTH "J"
- 2) Continuous, intermediate fish and aquatic life - from CTH "J" to the Fox R. confluence

ADDITIONAL COMMENTS

Channelization has affected the potential productivity of this stream through much of its length.

ATTACHMENTS

USGS map

Fish data at CTH "A"

REFERENCES USED

- 1) Surface Water Resources of Racine Co.
- 2) Low-flow Characteristics of Wisconsin Streams at Sewage Treatment Plants and Industrial Plants. USGS Water Res. Invest 793

CC: Becky Wallace - WR/2

→ Frank Schultz - WR/2

WISCONSIN DEPARTMENT OF NATURAL RESOURCES  
 STREAM CLASSIFICATION WORKSHEET

Receiving Watercourse : Eagle Cr.  
 District : Southeast  
 Location : NW 1/4, Sec 21, T 3 N, R 20 E.  
 Major Basin : Fox R. (Illinois)  
 Discharger : Eagle Lake STP  
 Flow (Design & Actual) : Design - 0.4 MGD  
 Type of Treatment : Secondary

Recommended No.	Reach	Classification Location
	1	E. River Road, above confluence w/ Fox R.
	2	CTH "A"
	3	Church Road
	4	Sunnyside Dr.
	5	Below Eagle Lake, above STP

Date of Field Observations : 24 April 80

Personnel : Joe Kurz Class : ES-4

Other Persons Contacted : Owner of Eagle L. Dam property

Noted by WQES :

Date :

PHYSICAL FEATURE		STREAM CLASS REACHES				
		1	2	3	4	5
Watershed Character (maps or observations)	Size (sqmi)					
	Vegetation Type					
	Predominant Land Use	Agriculture, some residential	Heavy Agriculture	Heavy Agriculture	Heavy Agriculture	Agriculture, light brush, Marshland
	Wetland Type	Marsh	—	—	—	Marsh
Hydrologic Features (indicate if estimates or actual measurements)	Width (ave)	12'	10'	8'	6'	8'
	Depth (ave/max)	1.5'/2.0'	1.5'/1.5'	1.1'/1.1'	0.7'/0.8'	0.5'/0.5'
	Velocity (est)(fps)	0.5 fps	0.4 fps	0.75 fps	0.75 fps	0.75 fps
	Flow (cfs) (est)	9 cfs	6 cfs	65 cfs	3.2 cfs	3 cfs
	Pools or Refuges for Fish No. observed, depth					
% Bottom Type	Silt	25%	100%	60%	100%	30%
	Sand	50%		30%		30%
	Gravel	20%		<5%		30%
	Rubble	5%		45%		10%
	Other					
Control Structures or Obstructions	None	None	None	None	Spillway No water level control	
Irretriev. Channel Alterations	None	None, Channelized reach	None, Channelized reach	None, Channelized reach	None, Channelized reach	
Discharge Q <sub>7,10</sub>	—	—	—	<.01 cfs	—	



BIOLOGICAL CHARACTERISTICS

STATIONS ON RECEIVING WATER

	1	2	3	4	5
Bank Vegetation	Marsh vegetation	Wetland grasses,	grassed banks,	grassed banks	grasses
	grasses, shrubs, trees	plowed land <10' from banks	some trees but many cut down	many trees cut down	
Aquatic Macrophytes	None	None	None	None	None
Invertebrates	Not observed	Not observed	Not observed	Not observed	Not observed
Phytoplankton (algae)	Filamentous ~ 5% cover good peri-phyton cover	None visible	Filamentous ~ 30% cover	Filamentous ~ 40% cover	Filamentous ~ 20% cover
Fish Observed	None seen	None seen	None seen	None seen	None seen

Fishery Classification

Forage fish in upper reaches.  
Some game- and panfish in

BIOLOGICAL CHARACTERISTICS  
(continued)

STATIONS ON RECEIVING WATER

		1	2	3	4	5
Reaches of Critical or Particular Wildlife Value eg: ↙	Spawning Areas	None critical	None	None	None	None
	Critical Habitats	Area is a licensed shooting preserve				

CULTURAL FEATURES

STATIONS ON RECEIVING WATER

		1	2	3	4	5
Recreational Uses		Possible fishery	Very little use expected	Very little use expected	Very little use expected	Very little use
Type of Drainage Sources Observed		Agricultural surface	Heavy Agricultural surface	Agricultural surface and drain tile drainage	Agricultural surface & drawble	Agricultural surface lake
Other Dischargers		None	None	None	None	None

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY



Don Fago's Fish Distribution Study (DNR)  
Fish collected at CTH "A" in Eagle Cr.

25 July 78

<u>Species</u>	<u>Number Collected</u>
Central Mudminnow	7
Northern Pike	1
Carp	> 98
Spottin shiner	3
White sucker	12
Black bullhead	2
Green sunfish	7
Bluegill	2
Large mouth bass	86

# CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: June 2, 1980  
To: Central Office - Madison

File Ref: 3200  
(Becky Wallace WR/2)

From: Joe Kurz *JK*

*JUN - 4 1980*

Subject: Stream Classifications for Eagle Lake STP and Holy Redeemer College

At the request of Lyman Wible of the Southeast Wisconsin Regional Planning Commission a field check was conducted on Eagle Creek (Eagle Lake STP) and Dover Ditch (Holy Redeemer College) to determine if the presently assigned stream classifications still held true. Enclosed are copies of my field checks along with the past classification.

As you can see by the two classifications on each stream there is only a slight change in the classification for Holy Redeemer College and no change for Eagle Lake STP. In both cases the non-continuous, agricultural portions of the streams were reclassified to non-continuous, marginal fish and aquatic life. I would doubt that these classifications will change the present categorical limits.

If you have any questions on these please give me a call.

JK:bg

Encl.

cc: Frank Schultz

Holy Redeemer College, Racine Co.  
Wind Lake Canal

The effluent from the Holy Redeemer College Wastewater Treatment Plant (Section 7, T3N, R20E) discharges to the Dover Ditch which drains to the Goose Lake Branch Canal. The Goose Lake Branch Canal is tributary to Wind Lake Canal draining to the Fox River's main stem near Rochester.

The effluent from the treatment plant is discharged to an agricultural drain tile in Section 8, Dover Township (T3N, R20E), which runs underground in an agricultural drain tile to the Dover Ditch. Dover Ditch then flows approximately 2.3 miles to Dover Line Road. Here the ditch is channelized to improve drainage of the surrounding flat farm land. Row crops are the primary form of agriculture with the crop rotation consisting of corn, oats, hay and soybeans. The substrate of the ditch is silt and natural soil. The ditch does not flow during dry weather. Dover Ditch joins with a similar non-continuous agricultural channel approximately 1.8 miles downstream of the discharge.

Downstream of Dover Line Road the Dover Ditch flows through a pool and riffle system for approximately 1.25 miles before entering the Goose Lake Canal Branch. The ditch is joined by three similar non-continuous agricultural tributaries upstream of the confluence with the Goose Lake Branch Canal. The primary land use is agricultural with the land directly adjacent to the stream being wooded. The substrate consists of silt over rock and gravel. This reach of stream is intermittent.

The Goose Lake Branch Canal is channelized approximately 50 feet wide with a silt substrate. The stream flows at a low gradient for approximately 1.6 miles to the Wind Lake Canal. Although this stream stagnates during dry weather, it is always wet.

The Wind Lake Canal flows through a straightened channel for approximately 7 miles from Wind Lake to the Fox River. The Goose Lake Branch Canal enters approximately 3.5 miles downstream of Wind Lake. The water within the canal is turbid and becomes stagnant during dry weather, although the canal always remains wet.

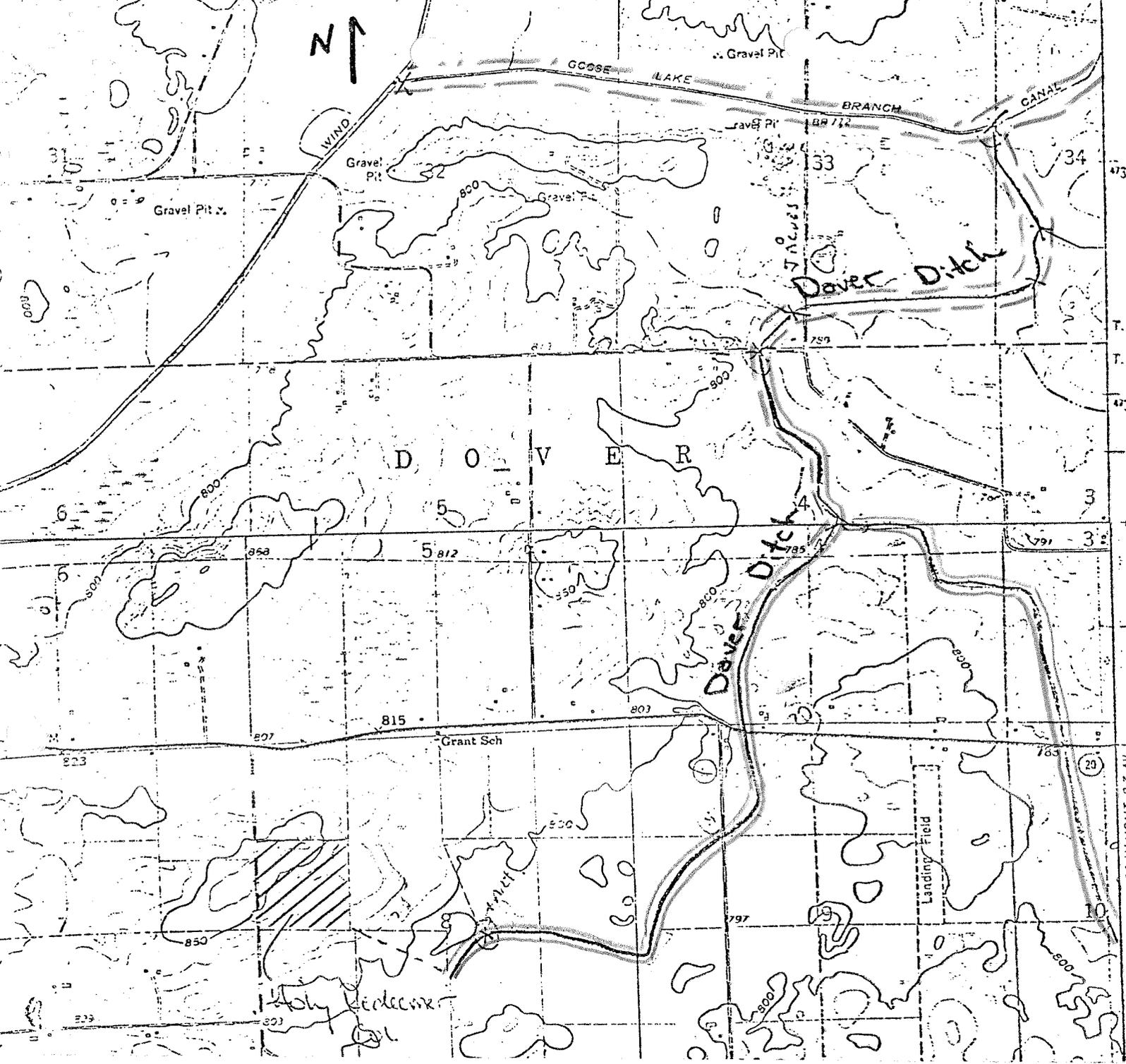
The biological characteristics of these waterways reflect the heavy nutrient loadings contributed by the surrounding farm land. Dover Ditch upstream of Dover Line Road has little in the way of aquatic life except grasses growing in the waterway. An electro-fishing survey conducted by Department of Natural Resources personnel on the Dover Ditch at Jacobs Road collected the following fish: Mud Minnows, Bluegills, Northern Pike (young of the year), Largemouth Bass (young of the year). The Goose Lake Branch Canal

is managed for forage fish, however seasonal fluctuations in flow discourage resident fish populations. No algae or rooted aquatic growths were observed. The Wind Lake Canal is managed for forage fish but does contain game fish during the spring. An electrofishing survey conducted by Department of Natural Resources in the spring of 1976 found 21 species of fish including a large number of game fish. Algal mats and dense macrophytic growths are common during the summer.

The recreational potential of all of these waterways is limited to some fishing in the Wind Lake Canal.

#### Recommendations

The section of Dover Ditch upstream of Dover Line Road shall be classified as a non-continuous agricultural stream. The section of Dover Ditch downstream of Dover Line Road shall be classified as a continuous fish and aquatic life stream. *Game Lake Branch canal shall be classified as a continuous fish and aquatic life stream.*



Old Classification

- noncontinuous, agricultural
- continuous, fish & aquatic life

New Classification

- noncontinuous, marginal fish & aquatic life
- noncontinuous, intermediate fish & aquatic life
- continuous, fish & aquatic life