Date 12/-3/2001

Facility Name Kenosha Beef International

Receiving Water Center Branch of Des Plaines R. and Unnamed Tributary

Evaluated by Zalewski, Steve

This stream classification is not included in the revised code because (select one):

___ The discharger is no longer at this location.

___ A new classification has resulted in a full fish and aquatic life designation.
New survey date _____ Please provide copy of new classification report.

✓ This receiving water should be added to the database and to the code. Specify information, as it should be included in code.

AN UNNAMED TRIBUTARY FROM ITS CONFLUENCE WITH THE CENTER BRANCH OF THE DES PLAINES RIVER IN THE NW NW T1N R21E S2 TO THE KRI OUTFALL SHALL BE CLASSIFIED AS A LRF COMMUNITY.

THE CENTER BRANCH OF THE DES PLAINES R. SHALL BE CLASSIFIED AS WWSF.

___ Other (please explain)

Department of Natural Resources Stream Classification for an Unnamed Tributary to the Center Branch Des Plaines River

Des Plaines River Watershed, Fox (IL) River Basin. Kenosha County.
June 7, 2000

by Steve Galarneau

WWTP and Stream Description

Kenosha Beef International WWTP discharges to an unnamed tributary (at T2N R21E S26 NW NW) which flows to the Center Branch of the Des Plaines River (identified as the Root River on the Pleasant Prairie Quad. Map), which in turn, flows to the main-stem of the Des Plaines River. The discharge mode is fill-and-draw. The design average flow is 0.035 mgd.

Wisconsin Stream Classification System

The Wisconsin Stream Classification System provides a basis for making and supporting water quality management decisions. Surface waters require classification as part of Wisconsin's codified water quality standards so that water quality criteria for specific waters, and point source discharge effluent limits needed to maintain water quality standards, can be designated and regulated. Written guidelines for classifying Wisconsin's streams were first developed in 1982, "Stream Classification Guidelines For Wisconsin". Although these procedures were developed primarily for designating stream uses, they can be applied to any surface water for the purpose of designating water quality standards.

The Wisconsin's Stream Classification system describes the potential biological use of Wisconsin's streams. Although streams can be used for a variety of uses (i.e. recreation, food production, and wastewater assimilation), only those uses that can be described in terms of biological communities are considered. ***Use*** is defined by the biological community a surface water has the natural capacity to support. The stream classification system recognizes that not all stream have the capacity to support all forms of fish and other aquatic life communities due to natural limiting factors (i.e. stream size and depth, and water temperature), or culturally irreversible factors (i.e. dams and concrete channels). The differences in natural water quality and habitat can be measured or predicted and, along with biological data, form the basis for classifying surface waters into their appropriate biological use classifications.

The use classification in this system is also based on a surface water's ***potential*** to support a community type, (i.e., warm water sport fish), not necessarily on its ***existing*** biological community. Use classification based only on existing conditions could perpetuate non-attainment of potential uses by allowing continued discharge of inadequately treated effluent, and could inhibit efforts to manage other water quality problems such as nonpoint source sediment and nutrient impacts.

Existing use is defined by the fish and other aquatic life community currently living in a stream. The existing use is dependent upon current habitat and water quality conditions, and any natural or cultural impacts that may or may not be controllable. The existing use may or may not be the same as the classified use depending on the controllability of water quality and habitat impacts. *Potential use* is the fish and other aquatic life community that could exist in a stream following the removal or management of controllable impacts. The potential use can be different from the existing use where controllable impacts have degraded habitat or water quality to the point that few fish and other aquatic life exist in a stream. Potential use is based on a stream's capacity to improve when controllable impacts are removed or properly managed. A stream's potential use is its designated classification and sets the standards for deriving water quality criteria and for calculating effluent limits needed to attain water quality standards ***and*** the potential use.

Previous Stream Classification for the Unnamed Tributary to Center Branch Des Plaines River

The unnamed tributary to the Center Branch of the Des Plaines River, Des Plaines River Watershed, has a multiple stream class (WDNR 1982). The unnamed tributary to the Center Branch of the Des Plaines River was classified as a Limited Aquatic Life stream from the headwaters to a farm road crossing in the north half of section 35 (stream mile 1.3). Then as Limited Forage Fish Communities downstream to the confluence with the Center Branch of the Des Plaines River (Map 1). No fish surveys were conducted for the 1982 stream classification; however, fish were observed in the unnamed tributary at CTH K during the 1982 stream survey "... at CTH K numerous minnows were observed. No identification was made of the minnow species." (WDNR 1982, p.1). The Center Branch of the Des Plaines River, which is tributary to the main-stem of the Des Plaines River, was classified as a Warm Water Sport Fish communities stream in the same report (WDNR, 1982). A stream classification survey was recommended and conducted in 1998 (Galarneau memo 1/5/1998).

Stream Classification Survey – July 1998

Fish Community Survey

Fish community data used in this stream class consisted of both historical fish collections made in 1965 and 1979 (Fago 1984) and electroshocking collections made during 1998 (Table 1). Historical fish collections recovered a total of 15 species from four fish collections made on the Center Branch Des Plaines River. These collections contained five sport species, the black bullhead, yellow bullhead, green sunfish, bluegill, and northern pike. The fish collection made during the 1998 survey recovered 11 species from a single site on the Center Branch. These included four sport fish with one species not collected during the historical survey. Five species in total, including two game fish species, were collected from a single site on the unnamed tributary to the Center Branch Des Plaines River (Table 1).

Table 1. Fish community for the unnamed tributary to the Center Branch Des Plaines and the Center Branch Des Plaines collected July 17, 1998.

Fish Species	Ball Tolerance[1]	Lyons IBI Tolerance[2]	Center Branch Des Plaines River Historical Fish Collections (Fago 1984)	Center Branch Des Plaines River upstream of CTH MB	Unnamed tributary to Center Branch Des Plaines River upstream of CTH K
Black Bullhead	Sport	N/A	X	7	
Blackstripe Topminnow	N/A	N/A	X		
Bluegill	Sport	N/A	X	1	
Bluntnose Minnow	Tolerant	Tolerant		12	
Iowa Darter	Intolerant	Intolerant	X		
Brook Stickleback	Tolerant	N/A	X	3	1
Central Stoneroller	Intolerant	N/A	X		
Central Mudminnow	Very Tolerant	Tolerant	X	37	49
Pirate Perch	N/A	N/A	X		
Creek Chub	Tolerant	Tolerant	X	54	
Golden Shiner	Tolerant	Tolerant	X		
Fathead Minnow	Very Tolerant	Tolerant	X	4	17
Green Sunfish	Sport	Tolerant	X	44	21
Johnny Darter	Tolerant	N/A		11	
Northern Pike	Sport	N/A	X		
Yellow Bullhead	Sport	Tolerant	X		
Large Mouth Bass	Sport	N/A		5	7
White Sucker	Tolerant	Tolerant	X	8	

[1] Ball (1982)
[2] Lyons (1992)

An Index of Biotic Integrity (IBI) (Lyons 1992) was calculated for both fish collection sites with ratings ranging form 34 (Fair) at the site on the Center Branch to 14 (very poor) from the unnamed tributary to the Center Branch (Table 2). These sites were limited from achieving a

higher classification due to the high number of tolerant fish, the lack of darter species and lithophylic (riffle) spawning species.

Habitat assessments were conducted at both fish collection sites using the Stream System Habitat Rating (SSHR) (Ball 1982) protocols. The SSHR provides a watershed wide perspective on riparian and instream habitat. SSHR scores ranged from 195 (Fair) from a site on the Center Branch Des Plaines to 209 (Poor) for the unnamed tributary to the Center Branch Des Plaines River (Table 2). The unnamed tributary to the Center Branch is habitat limited due to the extensive channelization, and the lack of pool habitat and adequate riffle depth. Water depth is limiting to fish communities.

Table 2. Fish community assessment station locations and habitat survey results for the Center Branch Des Plaines River and an unnamed tributary to the Center Branch sampled during July 17, 1998.

STREAM	SAMPLE SITE	SSHR	IBI
Center Branch Des Plaines River	Upstream of CTH MB	Fair (193)	Fair (34)
Unnamed tributary to Center Branch Des Plaines River	Upstream of CTH K	Poor (209)	Very Poor (14)

Recommendations

Based on all of the available data, the **entire unnamed tributary to the Center Branch Des Plaines River (confluent at T1N R21E S2 NW NW) shall be classified as a Limited Forage Fish Community.** The **Center Branch Des Plaines River shall be classified as Full Fish and Aquatic Life Communities – Warmwater Sport Fish.** The existing fish communities support this classification. The fish community in the unnamed tributary is limited by existing habitat conditions, primarily the destruction of pool depth, coarse riffle substrates from historical channelization and low flows.

References

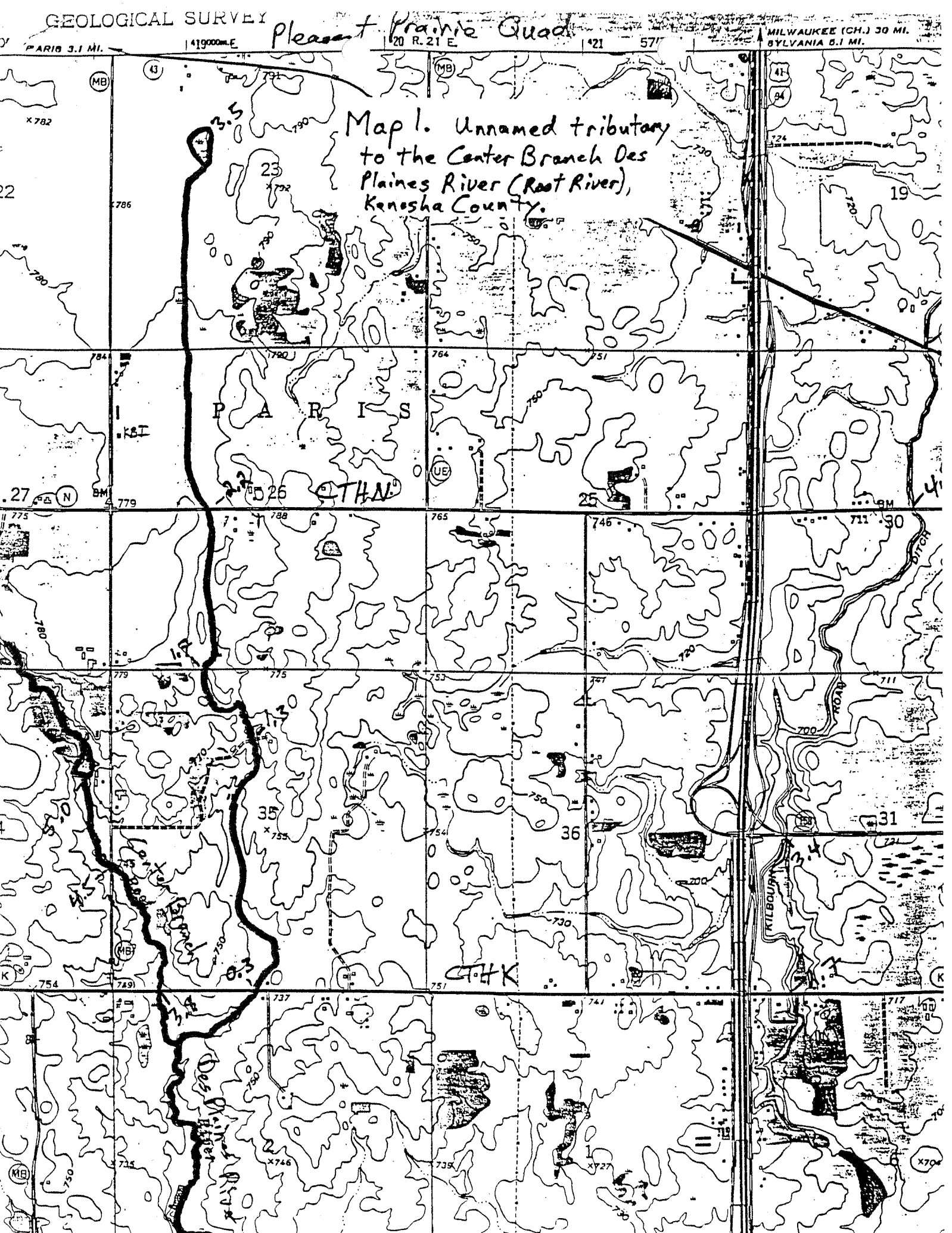
Ball, Joseph. 1982. Stream Classification Guidelines for Wisconsin. Technical Bulletin. Wisconsin Department of Natural Resources, Madison, Wisconsin.

Fago, Donald. 1984. Distribution and Relative Abundance of Fishes in Wisconsin. Volume 1. Fox (IL) River Basin. Technical Bulletin No. 136. Wisconsin Department of Natural Resources, Madison, Wisconsin.

Lyons, John. 1992. Using the Index of Biotic Integrity (IBI) to Measure Environmental Quality in Warmwater Streams of Wisconsin. North Central Forest Experiment Station, Forest Service - U.S. Department of Agriculture. St. Paul, MN.

Simonson, T., J. Lyons and P. Kanehl. 1994. Guidelines for Evaluating Fish Habitat in Wisconsin Streams. U.S. Dept. of Agriculture, Forest Service, North Central Forest Experimental Station. General Technical Report NC-164. St. Paul, MN.

WDNR. 1982. Stream Classification for a Tributary to the Des Plaines River – Center Branch (Kenosha Beef International). Wisconsin Department of Natural Resources, Southeast Region, Milwaukee WI.


GEOLOGICAL SURVEY
Pleasant Prairie Quad
PARIS 3.1 MI.
MILWAUKEE (CH.) 30 MI.
SYLVANIA 6.1 MI.
20 R. 21 E
421
Map 1. Unnamed tributary to the Center Branch Des Plaines River (Root River), Kenosha County.
PARIS
KBI
GTHN
GTHK
Des Plaines River
Root River
KILBOURN
23
26
25
30
35
36
31
1

IBI Calculator for Central and Southern WI (REV. 6/8/2000)

Sample Date 07/17/1998

SITE Unnamed tributary to Center Branch Des Plaines River upstream of CTH K and downstream of KBI discharge

PERSONNEL

MATRIX	VALUE	SCORE		
total # of fish	95	n/a	Equipment Type =	Back Pack
total # of native spp.	5	0	Stream width (m) =	3.66
total # of darter spp.	0	0	Ln stream width (m) =	1.3
total # of sucker spp.	0	0	Distance shocked (m)=	91
<=8km from lake	n/a			
total # of sunfish spp.		0		
>8km from lake	n/a			
total # of sunfish spp.	1	2		
total # of intolerant spp.	0	0		
total # of tolerant fish	87	0	% of tolerant spp.	92
total # of omnivores	17	10	% of omnivorous spp.	18
total # of insectivores	71	10	% of insevtivores	75
total # of top carnivores	7	2	% of carnivores	7
total # of simple lithophils	0	0	% of simple lithophilous	0
	subtotal	24	Correction Factors	
Correction Factors		14	# of nontolerant fish per 300m	26
total # of DELT fish	0	14	% DELT	0
Total after correction factors =		14		
IBI SCORE =		14		

Biotic Integrity Rating VERY POOR

# of fish	Fish species
49	Central Mudminnow
21	Green Sunfish
17	Fathead Minnow
7	Largemouth Bass
1	Brook Stickleback

Calculated number of fish per 150 m = 157

Game fish community: # of individuals / 150 m = 12

Percent Non-game fish Intolerant to low dissolved oxygen (%) = 0

IBI Calculator for Central and Southern WI (REV. 6/8/2000)

Sample Date: 07/17/1998

SITE: Center Branch Des Plaines River upstream of CTH MB

PERSONNEL

MATRIX	VALUE	SCORE
total # of fish	186	n/a
total # of native spp.	11	5
total # of darter spp.	1	2
total # of sucker spp.	1	2
<=8km from lake	n/a	
total # of sunfish spp.		0
>8km from lake	n/a	
total # of sunfish spp.	2	10
total # of intolerant spp.	0	0
total # of tolerant fish	159	0
total # of omnivores	24	10
total # of insectivores	103	5
total # of top carnivores	5	0
total # of simple lithophils	8	0
	subtotal	34
Correction Factors		34
total # of DELT fish	0	34
Total after correction factors =		34
IBI SCORE =		34

Equipment Type =	Back Pack
Stream width (m) =	2.44
Ln stream width (m) =	0.89
Distance shocked (m)=	91

% of tolerant spp.	85
% of omnivorous spp.	13
% of insevtivores	55
% of carnivores	3
% of simple lithophilous	4
Correction Factors	
# of nontolerant fish per 300m	89
% DELT	0

Biotic Integrity Rating: FAIR

# of fish	Fish species
54	Creek Chub
44	Green Sunfish
37	Central Mudminnow
12	Bluntnose Minnow
11	Johnny Darter
8	White Sucker
7	Black Bullhead
5	Largemouth Bass
4	Fathead Minnow
3	Brook Stickleback
1	Bluegill

** STREAM WIDTH BELOW IBI MODEL CALIBRATION (<2.5m or 8.2 ft.)

Game fish cCalculated number of fish per 150 m =	307
Game fish community: # of individuals / 150 m =	21
Percent Non-game fish Intolerant to low dissolved oxygen (%) =	90

CORRESPONDENCE/MEMORANDUM

State of Wisconsin
Department of Natural Resources

DATE: January 5, 1998 **FILE REF:** 3200

TO: Stream Classification File

FROM: Steve Galarneau Water Quality Biologist / SER Steve

SUBJECT: Stream Classification for the Unnamed Tributary to Center Branch Des Plaines River

A fish community assessment and stream classification survey needs to be conducted for the unnamed tributary to Center Branch Des Plaines River to determine the appropriate stream classification for assigning water quality based effluent limits. Regrettably, this survey cannot be conducted in time for the next (first) proposed NR 104 update. A stream survey including electrofishing, and habitat assessments of the unnamed tributary to Center Branch Des Plaines River would take one or two days of field work; hence, I recommend that this survey be conducted next field season (summer of 1998).

WWTP and Stream Description

Kenosha Beef International WWTP discharges to an unnamed tributary (at T2N R21E S26 NW NW) which flows to the Center Branch Des Plaines River (identified as the Root River on the Pleasant Prairie quad. map), which in turn, flows to the Des Plaines River (Map 1). The stream is in Kenosha Co. and is part of the Fox (IL) River Basin. The discharge mode for KBI is fill-and-draw and the design average flow is 0.035 mgd.

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The unnamed tributary to the Center Branch Des Plaines River, Des Plaines River Watershed, has a multiple stream class (WDNR 1982). The unnamed tributary to the Center Branch Des Plaines River was classified as a Limited Aquatic Life stream from the headwaters to a farm road crossing in the north half of section 35 (stream mile 1.3), and as Limited Forage Fish Communities downstream to the confluence with the Center Branch Des Plaines River (Map 1). It should be noted that the Limited Aquatic Life Communities classification implies that there are no fish (nor potential to support any) and very few other aquatic organisms. No fish collections were conducted for the 1982 stream classification; however, fish were observed in the unnamed tributary at CTH K during the 1982 stream survey "... at CTH K numerous minnows were observed. No identification was made of the minnow species." (WDNR 1982, p.1). The Center Branch Des Plaines River, which is tributary to the Des Plaines River, was classified as a Warm Water Sport Fish communities stream in the same report (WDNR, 1982).

Recommendations for the First NR 104 Update for the Unnamed Tributary to the Center Branch Des Plaines River

I recommend that no changes be made to the existing NR 104 code for the unnamed tributary to the Center Branch Des Plaines River at this time pending a stream classification survey which includes a fish community assessment. I further recommend that the survey be conducted next summer and a formal classification report be completed to document the stream classification for the subsequent (second) NR 104 update if the classification changes.

I have discussed and obtained concurrence with this approach from Randy Schumacher (sub-GMU supervisor), Jerry Jarmuz (WW engineer for KBI), Jim Fratrick (Watershed Expert for SER) and Judy Gottlieb (WW engineer - NR 104 Team Member).

c: above mentioned individuals, Diane Figiel WT/2, and Joe Ball WT/2.

CORRESPONDENCE/MEMORANDUM

State of Wisconsin
Department of Natural Resources

DATE: January 5, 1998 **FILE REF:** 3200

TO: Stream Classification File

FROM: Steve Galarneau Water Quality Biologist / SER Steve

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WWTP and Stream Description

Kenosha Beef International WWTP discharges to an unnamed tributary (at T2N R21E S26 NW NW) which flows to the Center Branch Des Plaines River (identified as the Root River on the Pleasant Prairie quad. map), which in turn, flows to the Des Plaines River (Map 1). The stream is in Kenosha Co. and is part of the Fox (IL) River Basin. The discharge mode for KBI is fill-and-draw and the design average flow is 0.035 mgd.

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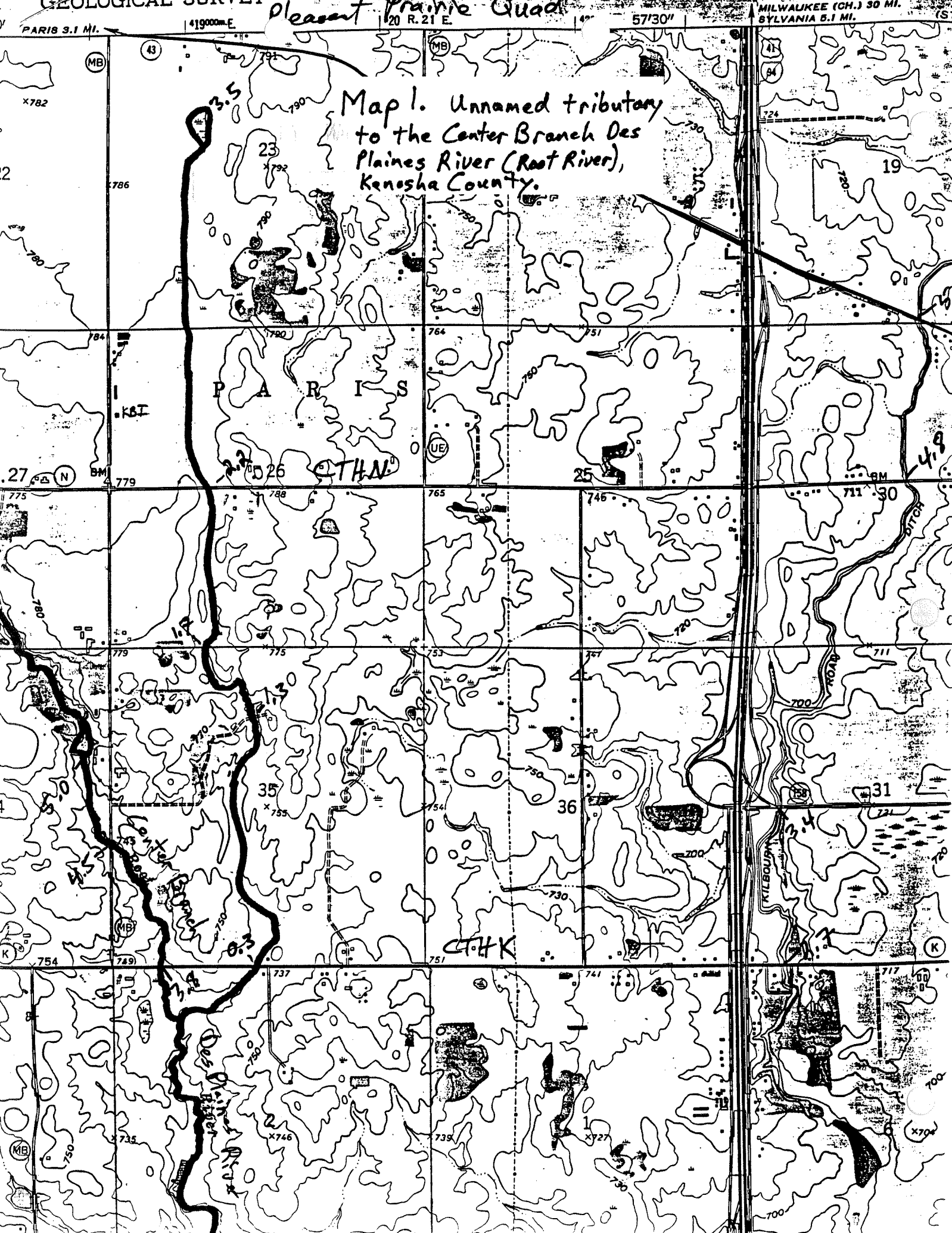
Recommendations for the First NR 104 Update for the Unnamed Tributary to the Center Branch Des Plaines River

I recommend that no changes be made to the existing NR 104 code for the unnamed tributary to the Center Branch Des Plaines River at this time pending a stream classification survey which includes a fish community assessment. I further recommend that the survey be conducted next summer and a formal classification report be completed to document the stream classification for the subsequent (second) NR 104 update if the classification changes.

I have discussed and obtained concurrence with this approach from Randy Schumacher (sub-GMU supervisor), Jerry Jarmuz (WW engineer for KBI), Jim Fratrick (Watershed Expert for SER) and Judy Gottlieb (WW engineer - NR 104 Team Member).

c: above mentioned individuals, Diane Figiel WT/2, and Joe Ball WT/2.


Map 1. Unnamed tributary to the Center Branch Des Plaines River (Root River), Kenosha County.
Pleasant Prairie Quad
PARIS 3.1 MI.
MILWAUKEE (CH.) 30 MI.
SYLVANIA 5.1 MI.
PARIS
CTH N
CTH K
Center Branch
Des Plaines River
KILBOURN
DITCH

dan moran - WRM/2

July 23, 1982 3200

File

Joe Kurz

JUL 26 1982

Stream Classification for a Tributary to the Des Plaines River - Center Branch (Kenosha Beef International)

The tributary of concern discharges to the Des Plaines River - Center Branch in T1N, R21E, Section 2, NW NW and is part of the Des Plaines River drainage basin. The land use in the tributary's watershed is primarily agricultural. A stream classification of this tributary was conducted on July 20, 1982.

The stream originated from a small wetland in T2N, R21E, Section 23, SE NW and flows southward. The majority of the stream channel has been straightened and acts primarily as a drainage ditch for the wetland and surrounding area. The estimated discharge of the tributary during low flow is <0.1 cfs.

No aquatic biota was observed in the tributary at CTH "N", however at CTH "K" numerous minnow schools were observed. No identification was made of the minnow species. Also observed at CTH "K" were various tolerant macroinvertebrates belonging to the families Hydropsychidae, Chironomidae and Hydroptilidae. Of interest was the observed absence of Asellus, a very tolerant organism normally present in small, warm-water streams. The substrate in the tributary, which consists primarily of sand and silt, is not conducive to a wide diversity of macroinvertebrates. Filamentous algae was observed at CTH "K" but was not in nuisance proportions. It was the only observed aquatic plant life in the tributary.

The Des Plaines River - Center Branch, in the vicinity of the tributary confluence, is a very turbid stream. The primary land use in the area is agriculture. No low flow information is available for this stream. Fish species collected from this stream in May, 1979 include several sport fish and tolerant forage fish species.

Based on the observed stream conditions and fish distribution information the following stream classifications are recommended:

1) The tributary at CTH "N" is capable of supporting very tolerant macroinvertebrates (Use Class E or marginal fish and aquatic life).

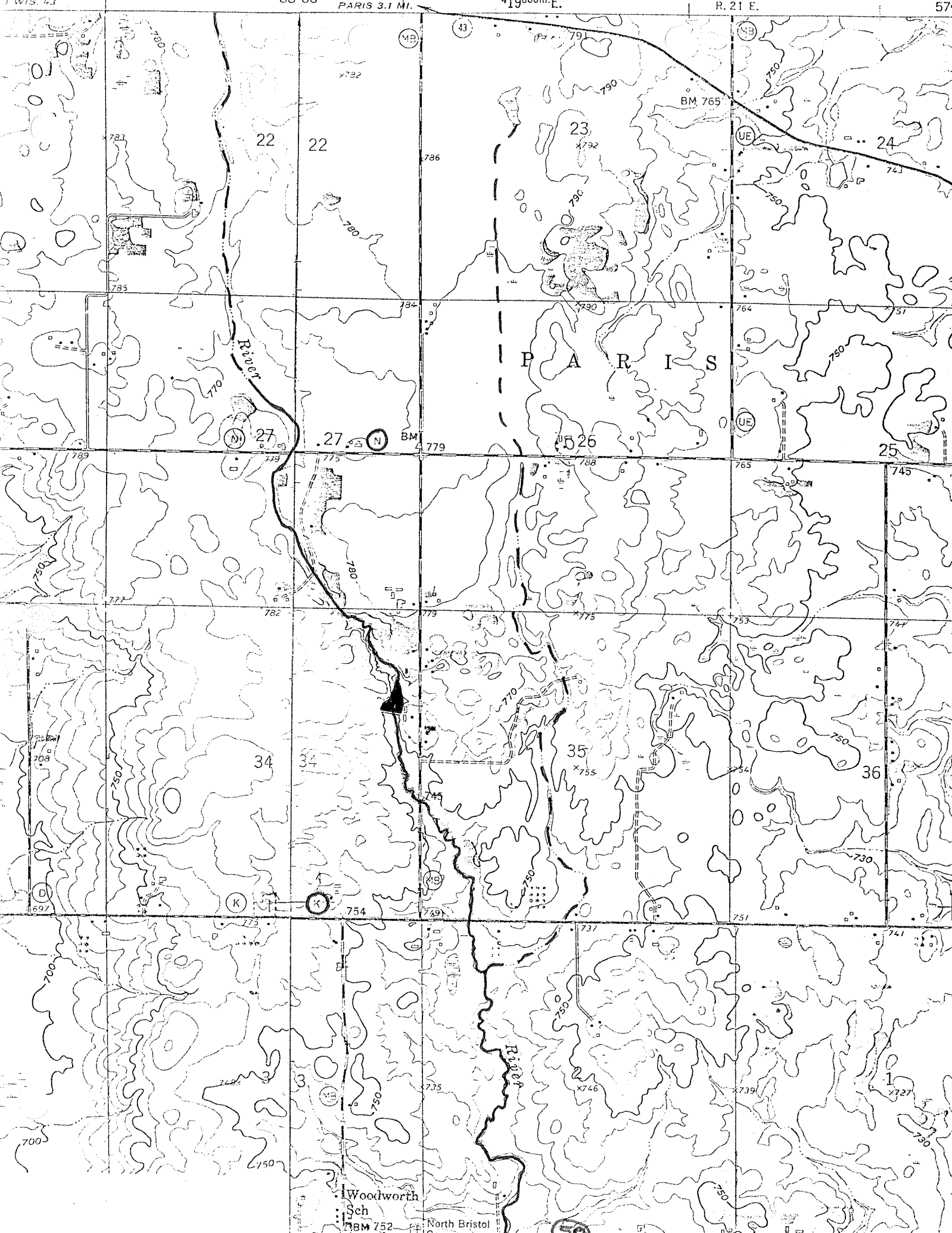
2) The tributary at CTH "K" is capable of supporting tolerant forage fish and macroinvertebrates (Use Class D or intermediate fish and aquatic life).

3) The Des Plaines River - Center Branch, downstream of CTH "N" is capable of supporting warmwater sport fish (Use Class B or full fish and aquatic life).

No attempt was made to actually delineate where Use Class E ends and Use Class D begins in the tributary.

JK:jm

cc: Dan Moran - WRM/2
Dave Olig - WW/2
SED Wastewater Section


PARIS 3.1 MI.
R. 21 E.
PARIS
River
Woodworth Sch
BM 752
North Bristol
BM 765
BM 779

Des Plaines River Drainage Basin Fish Distribution Data

DES PLAINES RIVER - CENTER BRANCH @ CTH "N" 5/09/79

Fathead minnow - 19
Black bullhead - 12
Green sunfish - 8

DES PLAINES RIVER - CENTER BRANCH @ CTH "K" 5/10/79

Central mudminnow - 5
Golden shiner - 1
White sucker - 41
Green sunfish X bluegill - 1
Northern pike - 3
Fathead minnow - 12
Black bullhead - 2
Central stoneroller - 3
Creek chub - 11
Green sunfish - 15

DES PLAINES RIVER - CENTER BRANCH @ STH 50 5/09/79

Central mudminnow - 13
Creek chub - 22
Yellow bullhaed - 2
Fathead minnow - 16
White sucker - 12
Green sunfish - 33
Central stoneroller - 1
Black bullhead - 5
Bluegill - 7

ributary to Des Plaines R.-

STREAM SYSTEM HABITAT RATING FORM

Stream Center Branch Reach Location @ CTH "N" Reach Score/Rating 151

County Kenosha Date 7/20/82 Evaluator J. Kurz Classification E - Marginal Fish & Aquatic Life

Rating Item	Category: Excellent		Good		Fair		Poor	
1. 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 runoff.	16
2. Watershed Nonpoint Source	No evidence of significant source. Little potential for future problem.	4	Some potential sources. (roads, urban area, farm fields).	(8)	Moderate sources. (Small wetlands, tile fields, urban area, intense agriculture).	16	Obvious sources. (Major wetland drainage, high use urban or industrial area, feed lots, impoundment).	20
3. Bank Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem.	(6)	Infrequent, small areas, mostly healed over. Some potential in extreme floods.	9	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow.	15	Many eroded areas. "Raw" areas frequent along straight sections and bends.	18
4. 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
5. Lower Bank Channel Capacity	Ample for present peak flow plus some increase. Peak flows 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 to 25.	14	Inadequate, overbank flow common. W/D ratio >25.	16
6. Lower Bank Deposition	Little or no enlargement of channel or point bars.	(6)	Some new increase in bar formation, mostly from course gravel.	9	Moderate deposition of new gravel and course sand on old and some new bars.	15	Heavy deposits of fine material, increased bar development.	18
7. Bottom Scouring and Deposition	Less than 5% of the bottom affected by scouring and deposition.	4	5 to 30% affected. Scour at constrictions and where grades steepen. Some deposition in pools.	(8)	30 to 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

Rating Item	Category							
	Excellent		Good		Fair		Poor	
8. Bottom Substrate	Greater than 50% rubble, gravel or other stable habitat.	2	30 to 50% rubble, gravel or other stable habitat. Adequate habitat.	7	10 to 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
9. Average Depth at Rep. Low Flow	Greater than 24".	0	12" to 24".	6	6" to 12".	18	Less than 6".	24
10. Flow, at Rep. Low Flow	Warm water >5 cfs. Cold water, >2 cfs	0	Warm water, 2 to 5 cfs. Cold water, 1 to 2 cfs.	6	Warm water, .5 to 2 cfs. Cold water, .5 to 1 cfs. Continuous blow.	18	Less than .5 cfs. Stream may cease to flow in very dry years.	24
11. Pool/Riffle, Run/Bend Ratio	5 to 7. Variety of habitat. Deep riffles and pools.	4	7 to 15. Adequate depth in pools and riffles. Bends provide habitat.	8	15 to 25. Occassional riffle or bend. Bottom contours provide some habitat.	16	Greater than 25. Essentially a straight stream. Generally all "flat water" or shallow riffle. Poor habitat.	20
12. Aesthetics	Wilderness characteristics, outstanding natural beauty. Usually wooded or unpastured 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 inhance aesthetics. Condition of stream is offensive.	16

Column Total Without Effluent -- 151

Column Total With Effluent --

Add Column Scores Without Effluent, E 26 + G 26 + F 31 + P 68 = Reach Score

Add Column Scores With Effluent, E____ + G____ + F____ + P____ = Reach Score

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

0258T

Tributary to Des Plaines R.-

STREAM SYSTEM HABITAT RATING FORM

Stream Center Branch Reach Location @ CTH "K" Reach Score/Rating 15/

County Kenosha Date 7/20/82 Evaluator J. Kusz Classification D- Intermediate Fish & Aquatic Life

Rating Item	Category: Excellent		Good		Fair		Poor	
1. 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 runoff.	16
2. Watershed Nonpoint Source	No evidence of significant source. Little potential for future problem.	4	Some potential sources. (roads, urban area, farm fields).	(8)	Moderate sources. (Small wetlands, tile fields, urban area, intense agriculture).	16	Obvious sources. (Major wetland drainage, high use urban or industrial area, feed lots, impoundment).	20
3. Bank Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem.	(6)	Infrequent, small areas, mostly healed over. Some potential in extreme floods.	9	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow.	15	Many eroded areas. "Raw" areas frequent along straight sections and bends.	18
4. 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
5. Lower Bank Channel Capacity	Ample for present peak flow plus some increase. Peak flows 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 to 25.	14	Inadequate, overbank flow common. W/D ratio > 25.	16
6. Lower Bank Deposition	Little or no enlargement of channel or point bars.	(6)	Some new increase in bar formation, mostly from course gravel.	9	Moderate deposition of new gravel and course sand on old and some new bars.	15	Heavy deposits of fine material, increased bar development.	18
7. Bottom Scouring and Deposition	Less than 5% of the bottom affected by scouring and deposition.	4	5 to 30% affected. Scour at constrictions and where grades steepen. Some deposition in pools.	(8)	30 to 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

Rating Item	Category							
	Excellent		Good		Fair		Poor	
8. Bottom Substrate	Greater than 50% rubble, gravel or other stable habitat.	2	30 to 50% rubble, gravel or other stable habitat. Adequate habitat.	7	10 to 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
9. Average Depth at Rep. Low Flow	Greater than 24".	0	12" to 24".	6	6" to 12".	18	Less than 6".	24
10. Flow, at Rep. Low Flow	Warm water, >5 cfs. Cold water, >2 cfs	0	Warm water, 2 to 5 cfs. Cold water, 1 to 2 cfs.	6	Warm water, .5 to 2 cfs. Cold water, .5 to 1 cfs. Continuous flow.	18	Less than .5 cfs. Stream may cease to flow in very dry years.	24
11. Pool/Riffle, Run/Bend Ratio	5 to 7. Variety of habitat. Deep riffles and pools.	4	7 to 15. Adequate depth in pools and riffles. Bends provide habitat.	8	15 to 25. Occassional riffle or bend. Bottom contours provide some habitat.	16	Greater than 25. Essentially a straight stream. Generally all "flat water" or shallow riffle. Poor habitat.	20
12. Aesthetics	Wilderness characteristics, outstanding natural beauty. Usually wooded or unpastured 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 inhance aesthetics. Condition of stream is offensive.	16

Column Total Without Effluent -- 151

Column Total With Effluent --

Add Column Scores Without Effluent, E 26 + G 26 + F 31 + P 68 = Reach Score

Add Column Scores With Effluent, E____ + G____ + F____ + P____ = Reach Score

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

0258T

STREAM SYSTEM HABITAT RATING FORM

Stream Des Plaines R. - Counter Branch Reach Location @ CTH "K" Reach Score/Rating 126

County Kenosha Date 7/20/88 Evaluator J. Kurz Classification B - Full Fish & Aquatic Life

Rating Item	Category: Excellent		Good		Fair		Poor	
1. 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 runoff.	15
2. Watershed Nonpoint Source	No evidence of significant source. Little potential for future problem.	4	Some potential sources. (roads, urban area, farm fields).	(8)	Moderate sources. (Small wetlands, tile fields, urban area, intense agriculture).	16	Obvious sources. (Major wetland drainage, high use urban or industrial area, feed lots, impoundment).	20
3. Bank Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem.	6	Infrequent, small areas, mostly healed over. Some potential in extreme floods.	(9)	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow.	15	Many eroded areas. "Raw" areas frequent along straight sections and bends.	18
4. 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
5. Lower Bank Channel Capacity	Ample for present peak flow plus some increase. Peak flows 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 to 25.	14	Inadequate, overbank flow common. W/D ratio >25.	16
6. Lower Bank Deposition	Little or no enlargement of channel or point bars.	(6)	Some new increase in bar formation, mostly from course gravel.	9	Moderate deposition of new gravel and course sand on old and some new bars.	15	Heavy deposits of fine material, increased bar development.	18
7. Bottom Scouring and Deposition	Less than 5% of the bottom affected by scouring and deposition.	4	5 to 30% affected. Scour at constrictions and where grades steepen. Some deposition in pools.	(8)	30 to 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

Rating Item	Category							
	Excellent		Good		Fair		Poor	
8. Bottom Substrate	Greater than 50% rubble, gravel or other stable habitat.	2	30 to 50% rubble, gravel or other stable habitat. Adequate habitat.	7	10 to 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
9. Average Depth at Rep. Low Flow	Greater than 24".	0	12" to 24".	6	6" to 12".	(18)	Less than 6".	24
10. Flow, at Rep. Low Flow	Warm water, >5 cfs. Cold water, >2 cfs	0	Warm water, 2 to 5 cfs. Cold water, 1 to 2 cfs.	(6)	Warm water, .5 to 2 cfs. Cold water, .5 to 1 cfs. Continuous blow.	18	Less than .5 cfs. Stream may cease to flow in very dry years.	24
11. Pool/Riffle, Run/Bend Ratio	5 to 7. Variety of habitat. Deep riffles and pools.	4	7 to 15. Adequate depth in pools and riffles. Bends provide habitat.	8	15 to 25. Occassional riffle or bend. Bottom contours provide some habitat.	(16)	Greater than 25. Essentially a straight stream. Generally all "flat water" or shallow riffle. Poor habitat.	20
12. Aesthetics	Wilderness characteristics, outstanding natural beauty. Usually wooded or unpastured 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 inhance aesthetics. Condition of stream is offensive.	16

Column Total Without Effluent -- 126

Column Total With Effluent --

Add Column Scores Without Effluent, E 20 + G 41 + F 65 + P 0 = Reach Score

Add Column Scores With Effluent, E____ + G____ + F____ + P____ = Reach Score

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

0258T

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: December 7, 1982

File Ref: 3200

To: Central Office - Madison
(Jim Schmidt - WRM/2)

From: Joe Kurz JEK

Subject: Kenosha Beef International

This memo is a follow-up to a phone conversation with Dave Olig (IWW) held on November 19, 1982, on a field investigation of the Kenosha Beef International tributary to the Center Branch of the Des Plaines River. The investigation was conducted by Rick Randall of our staff to determine a more precise point in the stream where a change in the stream classification occurs from marginal to intermediate fish and aquatic life.

The following observations were made by Rick:

1) @ Hwy. "K" - minnows were observed.

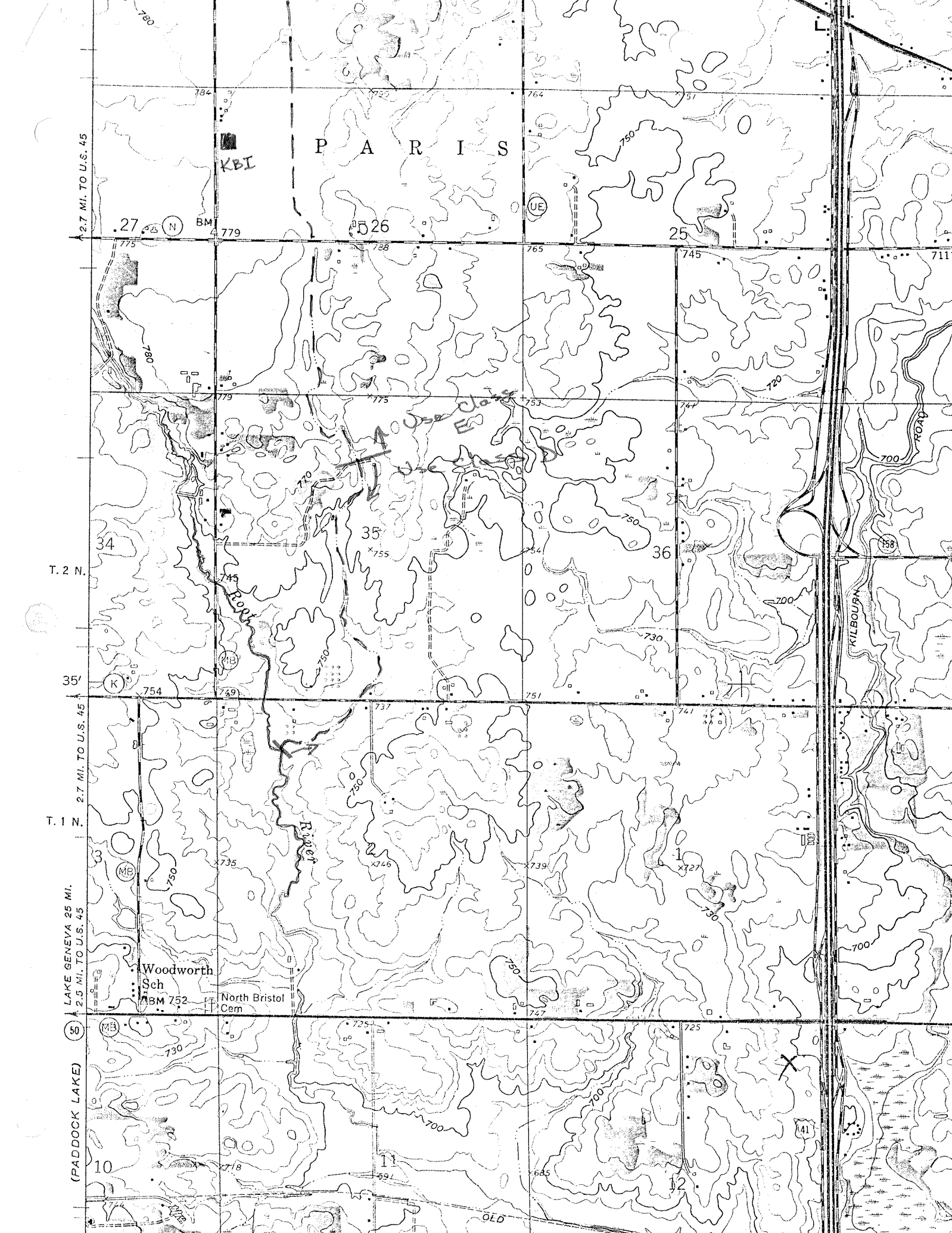
2) 0.5 - 0.75 miles above Hwy. "K" @ farm bride crossing - no fish were observed but numerous tolerant macroinvertebrates were present; good riffle-pool ratio; moderate current (slope is ~ 30 ft./mile at this point); natural meandering channel; substrate is sand, gravel and silt.

3) Upstream of farm bridge - bridge obstructs stream flow; channel less defined, more of wetland area; significant non-point source area; no fish observed; few tolerant amphipods.

Based on the observed stream conditions and aquatic biota, the following revision to the July 20, 1982 classification is recommended: Use Class E (marginal fish and aquatic life) from the headwaters downstream to the farm bridge in Section 35 (see map) and Use Class D (intermediate fish and aquatic life) from the farm bridge downstream to the confluence with the Center Branch of the Des Plaines River.

JK:jm

cc: Dan Moran - WRM/2
Dave Olig - WW/2
Frank Schultz


PARIS
KBI
27
26
25
35
34
36
T. 2 N.
T. 1 N.
2.7 MI. TO U.S. 45
2.7 MI. TO U.S. 45
LAKE GENEVA 25 MI.
2.5 MI. TO U.S. 45
(PADDOCK LAKE)
BM 779
Woodworth Sch
BM 752
North Bristol Cem
Root River
Root River
KILBOURN ROAD
OLD
3
1
10
11
12
50
158
41

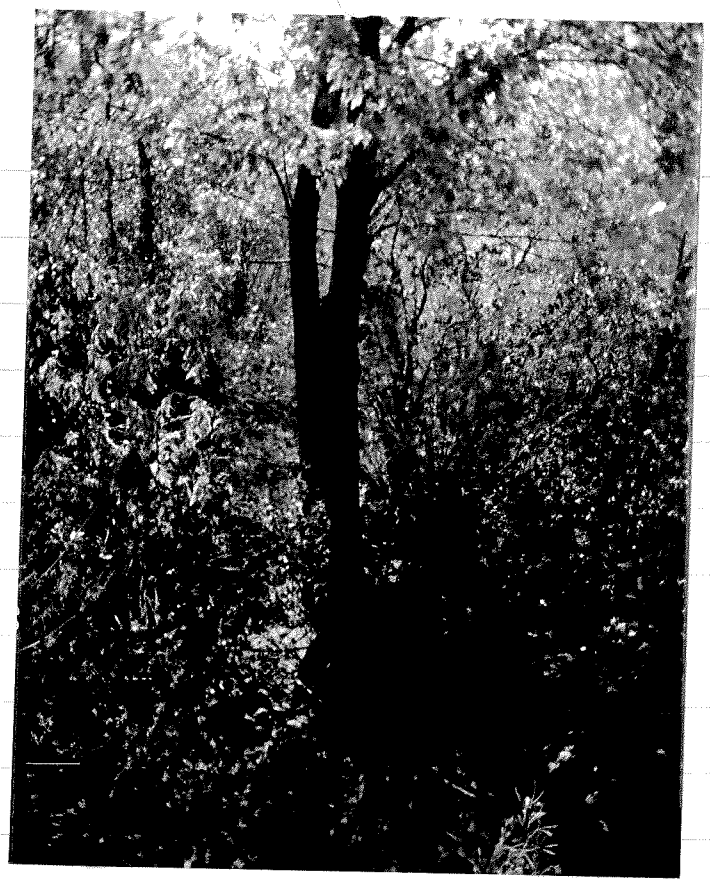
ENOSHA BEEF INT'L — 10/23/82

1) KBI TRIB. LOOKING NORTH OF CTH 'N'

ESSENTIALLY FLAT AREA, FIELDS ON BOTH SIDES. DENSE PLANT GROWTH AROUND TRIB, IS CLASSIFIED MARGINAL. WHITE BUILDING IN DISTANCE IS KBI

2) SAME PICTURE AS ABOVE, FROM NORTH SIDE OF ROAD. CORN FIELDS IN DISTANCE ON WEST SIDE, STREAM VISIBLE ONLY IN DISTANCE.

4) TRIB IMMEDIATELY BELOW 'N.' LESS GRASS GROWTH, MORE OPEN WATER, BUT MORE TREES, SO IT'S MAINLY SHADED. STILL MARGINAL HERE, CHANGES TO INT. BETWEEN 'N' and 'K.' EVIDENCE OF CHANNELIZED FLOW, FLOW INCREASE MUST BE CONSIDERABLE TO RESULT IN AN INCREASE IN STREAM WIDTH.



5) TRIB LOOKING NORTH FROM CTH 'K.' CLASSIFIED AS INTERMEDIATE HERE. PONDING AT BRIDGE, YOU SEE IT IS NARROWED (AND SLIGHTLY CHANNELIZED) FARTHER NORTH. CONFLUENCE W/ CENTER BRANCH OF DES PLAINES ~1/3 MI. BELOW 'K.' FARM ON SOUTH SIDE OF ROAD W/ CATTLE, NO EVIDENCE OF SAME ON NORTH SIDE.

3) TRIB AT CULVERT UNDER CTH 'N'. SOMEWHERE DOWN THERE IS WATER, BUT GRASS IS VERY THICK.

STARRING- JIM SCHMIDT AS "THE SHADOW