

Region SCR County Sauk Report Date 5/1990 Classification LFF
 Water Body: Carr Valley Branch, and Trib to
 Discharger: Carr Valley Cheese Co

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 poor 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

Historical Reports in file:

5/1990 Roger Schlessel

Additional Comments/How to improve report:

-good report -- stream not large enough to support a WWFE community.

TRIBUTARY TO AND CARR VALLEY BRANCH
AT IRONTON TOWNSHIP - SAUK COUNTY

STREAM CLASSIFICATION
CARR VALLEY CHEESE FACTORY

MAY, 1990
ROGER SCHLESSER, SOUTHERN DISTRICT

BUREAU OF WATER RESOURCES MANAGEMENT
WISCONSIN DEPARTMENT OF NATURAL RESOURCES

SUMMARY

Carr Valley Cheese Co., Inc. has proposed to discharge 3000 gpd of noncontact cooling water and evacuator condensate to a tributary of Carr Valley Branch. Physical and biological data collected on the tributary indicate that it should be classified as intermediate fish and aquatic life (D). The same data which was collected on Carr Valley Branch at the juncture with the tributary indicates that this section of stream should be classified as full fish and aquatic life (C), forage fish. When limits are generated; the relatively short distance between the entrance of the discharge to the tributary and Carr Valley Branch should be considered, in order to protect water quality in the main stem.

GENERAL DESCRIPTION

Carr Valley Cheese Factory is located in Ironton Township at the juncture of CTH "G" and Barreau Road. They have proposed to discharge 3000 gpd of noncontact cooling water and evacuator condensate to a tributary of Carr Valley Branch. From the CTH "G" bridge to the juncture with Carr Valley Branch the tributary is approximately 1000' in length.

STREAM HABITAT AND BIOLOGY

Most of the watershed is farmed with the steeper slopes being wooded. The streams corridor is pastured, some of it quite heavily.

A large cattle yard is located on the tributary upstream of CTH "G" which contributes a significant amount of soil and manure to it. This barnyard is in a current priority watershed and is signed up for cost-sharing money. Hopefully the landowner will follow through and eliminate this source of nonpoint pollution.

Biological and water quality data was collected on the tributary a short distance above Carr Valley Branch on May 15, 1990. Fish were collected using a backpack shocker (Table I). The sample was dominated by brook stickleback, which is considered a tolerant forage fish.

A macroinvertebrate sample was also collected (Table II). A few intolerant Baetis brunneicolor were present but most of the sample was dominated by tolerant Diptera. The Hilsenhoff Biotic Index was 6.618 which indicates "fairly poor water quality". Several factors contribute to the limited and tolerant aquatic life in the tributary. Due to the recent drought the tributary was essentially dry last fall. Also the agricultural runoff would negatively affect the aquatic life which could live in the tributary. Consequently, a combination of nonpoint source runoff and low stream flows results in a tolerant aquatic community.

Water quality data was also collected and is listed below.

Time:	11:05
Field pH:	7.76
Temp.:	13.5
D.O.:	12.4

Part of the stream below CTH "G" has been straightened and dredged. Habitat has been lost along with sediment and organic material accumulating in that section. Very little gravel-rubble is present with the pools nearly full of sediment. Some bank erosion has occurred but overhanging bank vegetation, where present, provides some habitat.

Carr Valley Branch is much larger at the intersection with the tributary. A section of this stream upstream of Vosen Lane was also surveyed on May 15, 1990.

The stream contained a very diverse population of forage fish, including intolerant and tolerant species (Table III). Intolerant species included a large number of southern redbelly dace and blacknose dace. At least nine species of forage fish were present.

A macroinvertebrate sample was also collected which had an HBI of 5.051 indicating "good water quality" (Table IV). A much more diverse sample was present at this site. It included Baetis brunneicolor and B. flavistriga along with several species of Trichoptera and Coleoptera. Some of the more tolerant species of Diptera were still present probably due to nonpoint source runoff.

Water quality data from Carr Valley Branch is listed below.

Time:	9:50
D.O.:	10.4
Temp.:	12.0

Some bank erosion was present but a lot of cover is created by overhanging vegetation. Excellent substrate is present and includes a good percentage of gravel-rubble. Some sedimentation of the pools has occurred due to nonpoint source runoff and bank erosion. Less erosion would certainly improve the habitat.

STREAM CLASSIFICATION

The tributary of Carr Valley Branch contains a tolerant population of forage fish and macroinvertebrates. Stream flow has been very low and stream habitat is considered to be poor. Because of this, the tributary should be classified intermediate fish and aquatic life (D).

Carr Valley Branch at the juncture with the tributary contains a good mixture of intolerant and tolerant forage fish. The macroinvertebrate population is also much more diverse. Habitat is better but the stream is not large enough to support a viable warm water sport fishery. Fish management does not presently manage it as trout water possibly due to water temperatures or volume of flow. Based on these conditions it is recommended that Carr Valley Branch at the juncture with the tributary be classified as full fish and aquatic life (C), forage fish.

TABLE: I List of fish for sampling site: 125' upstream of confluence

DATE: 5/15/90

TwN 12N Rng 3E Sec 20 1/4 1/4 /NE NW

STREAM: Tributary to Carr Valley Br.

Station mileage: 0.03

County: 57

SOURCE OF DATA: WRM

GEAR: 3

EFFORT: 02

CODE	COMMON NAME	FAMILY	GENUS/SPECIES	# FISH	TOLERANCE LEVEL
M43	SOUTHERN REDBELLY DACE	CYPRINIDAE	Phoxinus erythrogaster	1	Intolerant
M50	CREEK CHUB	CYPRINIDAE	Semotilus atromaculatus	7	Tolerant
U01	BROOK STICKLEBACK	GASTEROSTEIDAE	Culaea inconstans	57	Tolerant
X12	JOHNNY DARTER	PERCIDAE	Etheostoma nigrum	1	Tolerant

HBI _ 6.618 Rep1 _ 0.000 Rep2 _ 0.000 Rep3 _____
 Sample ID # _900515-57-01 Waterbody Name _TRIBUTARY TO CARR VALLEY BR.
 Water Temp (Celsius) _13.5___ Dissolved Oxygen (mg/l) _12.4 _
 Sample Location: NE NW S20 T12N R 3E_ Master Waterbody # _
 Project Name _STREAM CLASSIFICATION Storet Station # _
 Ave. Stream Width (Ft.) at Site _2.0 Ave. Stream Depth (Ft.) at Site _0.1
 Collector _SCHLESSER, R. Field # 01 Rep 1_
 Measured Velocity (fps) _
 Est. Velocity (fps) _
 Sorter _McMULLIN, R. Est. Velocity (fps) _
 Est % of sample sorted _7 _Slow (0.2-0.5)
 Taxonomist _DIMICK, J. Sampled Habitat
 Location Description _DWNS. OF CTH "G" AT WESTERN FIELD _1. Riffle
 _CORNER POST

Est. Time Spent Sampling (Min.) _ 3__

Sampling Device _1. D Frame

Substrate at Site Location (%)

0.0 Bedrock	65.0 Rubble	0.0 Sand	0.0 Clay	0.0 Muck
0.0 Boulders	15.0 Gravel	15.0 Silt	0.0 Detritus	5.0 Debris/Veg

Substrate Sampled (%) (Same as above Yes)

0.0 Bedrock	0.0 Rubble	0.0 Sand	0.0 Clay	0.0 Muck
0.0 Boulders	0.0 Gravel	0.0 Silt	0.0 Detritus	0.0 Debris/Veg

Aquatic Vegetation 0 % of Total Stream Channel at Sampling Site

Observed Instream Water Quality Indicators (Perceived WQ _Fair____)

	Not Present	Insig- nificant	Sig- nificant	Comments
Turbidity	1			
Chlorine or Toxic Scour	1			
Macrophytes	1			
Filamentous Algae		2		
Planktonic Algae	1			
Slimes	1			
Iron Bacteria	1			

Factors Which May Be Affecting Habitat Quality

Sludge Deposits	1		
Silt and Sediment			3
Channel Ditching			3
Down/Up Stream Impoundment	1		
Low Flows			3
Wetlands		2	

Pollutant Sources

Livestock Pasturing			3
Barnyard Runoff			3
Cropland Runoff			3
Tile Drains			
Septic Systems			
Stream Bank Erosion			3
Urban Runoff	1		
Construction Runoff	1		
Point Source(Specify Type)	1		
Other (Specify)			

*** SOUTHERN DISTRICT BIOTIC INDEX REPORT ***

SAMPLE ID# 900515-57-01

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*** TAXA ***	*** SPECIES ***	TAXONOMIC KEY USED	TOL VAL	ORGANISM ID	ORGANISM COUNT	REP1	REP2	REP3
EPHEMEROPTERA								
BAETIDAE								
BAETIS	BRUNNEICOLOR	*1	4.00	02010101	15	0	0	0
COLEOPTERA								
DYTISCIDAE								
AGABUS		*2		07050200	2	0	0	0
DIPTERA								
CHIRONOMIDAE								
	PUPAE	*3		08050002	1	0	0	0
	ADULT	*3		08050003	1	0	0	0
BRILLIA		*4	5.00	08050300	2	0	0	0
CHAETOCLADIUS	SP. A	*4	5.00	08050503	4	0	0	0
CRICOTOPIUS	NR. BICINCTUS	*4	6.00	08051301	2	0	0	0
	NR. INTERSECTUS	*4	7.00	08051302	7	0	0	0
	NR. TRIFACIA	*4	7.00	08051303	1	0	0	0
	SP. A	*4	6.00	08051304	5	0	0	0
	SP. C	*4	7.00	08051306	10	0	0	0
	POOR SPECIMEN	*2	7.00	08051307	1	0	0	0
	SP. D	*4		08051308	2	0	0	0
EUKIEFFERIELLA	SP. A	*4	8.00	08052301	6	0	0	0
LIMNOPHYES		*4	8.00	08053100	38	0	0	0
MICROPSECTRA		*2	7.00	08053400	13	0	0	0
NANOCLADIUS		*2	3.00	08053600	1	0	0	0
ORTHOCLADIUS	SP. D	*4	5.00	08054004	10	0	0	0
THIENEMANNIMYIA		*4		08057000	6	0	0	0
ORTHOCLADINAE	**POOR SPECIMEN**	*2		08059101	7	0	0	0
SIMULIIDAE								
SIMULIUM	VITTATUM	*5	7.00	08110217	7	0	0	0
AMPHIPODA								
GAMMARIDAE								
GAMMARUS	PSEUDOLIMNAEUS	*6	4.00	09010201	1	0	0	0
GASTROPODA								
TERRESTRIAL		*7		14100000	1	0	0	0
OLIGOCHAETA								
NAIDIDAE		*8		16020000	1	0	0	0
TUBIFICIDAE		*8		16030000	9	0	0	0

SAMPLE ID# 900515-57-01

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*** TAXA ***	*** SPECIES ***	TAXONOMIC KEY USED	TOL VAL	ORGANISM ID	ORGANISM COUNT	REP1	REP2	REP3
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*** TOTALS: ***					153		0	0
*** BIOTIC INDEX: ***					6.618			

Taxonomic Key Code References

- *1 Hilsenhoff 1981,82
- *2 Hilsenhoff 1981
- *3 Merritt, Cummins 84
- *4 Hilsenhoff 1981,85
- *5 Hilsenhoff 1985
- *6 Holsinger 1972
- *7
- *8 Klemm 1985

TABLE: III List of fish for sampling site: Ups. Vosen Lane

DATE: 5/15/90

Twn 12N Rng 3E Sec 20 1/4 1/4 NENW

STREAM: Carr Valley Branch

Station mileage: 2.9

County: 57

SOURCE OF DATA: WRM

GEAR: 3

EFFORT: 01

CODE	COMMON NAME	FAMILY	GENUS/SPECIES	# FISH	TOLERANCE LEVEL
M06	CENTRAL STONEROLLER	CYPRINIDAE	Campostoma anomalum	6	Intolerant
M43	SOUTHERN REDBELLY DACE	CYPRINIDAE	Phoxinus erythrogaster	16	Intolerant
M45	BLUNTNOSE MINNOW	CYPRINIDAE	Pimephales notatus	23	Tolerant
M46	FATHEAD MINNOW	CYPRINIDAE	Pimephales promelas	4	Very Tolerant
M48	BLACKNOSE DACE	CYPRINIDAE	Rhinichthys atratulus	19	Intolerant
M50	CREEK CHUB	CYPRINIDAE	Semotilus atromaculatus	14	Tolerant
N09	WHITE SUCKER	CATOSTOMIDAE	Catostomus commersoni	2	Tolerant
U01	BROOK STICKLEBACK	GASTEROSTEIDAE	Culaea inconstans	4	Tolerant
X12	JOHNNY DARTER	PERCIDAE	Etheostoma nigrum	6	Tolerant

SOUTHERN District Biotic Index Report

HBI _ 5.051 Rep1 _ 0.000 Rep2 _ 0.000 Rep3 _____
 Sample ID # _900515-57-02 Waterbody Name _CARR VALLEY BR.
 Water Temp (Celsius) _12.0___ Dissolved Oxygen (mg/l) _10.4 _
 Sample Location: NE NW S20 T12N R 3E_ Master Waterbody # _
 Project Name _STREAM CLASSIFICATION Storet Station # _
 A . Stream Width (Ft.) at Site _3.5 Ave. Stream Depth (Ft.) at Site _0.3
 Collector _SCHLESSER, R. Field # 02 Rep 1_
 Measured Velocity (fps) _
 Sorter _McMULLIN, R. Est. Velocity (fps) _
 Est % of sample sorted _7 _Moderate (0.5-1.5)
 Taxonomist _DIMICK, J. Sampled Habitat
 Location Description _UPS. VOSEN LANE _1. Riffle

Est. Time Spent Sampling (Min.) _ 2__

Sampling Device _1. D Frame

Substrate at Site Location (%)

0.0 Bedrock	60.0 Rubble	5.0 Sand	0.0 Clay	0.0 Muck
0.0 Boulders	20.0 Gravel	10.0 Silt	0.0 Detritus	5.0 Debris/Veg

Substrate Sampled (%) (Same as above Yes)

0.0 Bedrock	0.0 Rubble	0.0 Sand	0.0 Clay	0.0 Muck
0.0 Boulders	0.0 Gravel	0.0 Silt	0.0 Detritus	0.0 Debris/Veg

Aquatic Vegetation 0 % of Total Stream Channel at Sampling Site

Observed Instream Water Quality Indicators (Perceived WQ _Good____)

	Not Present	Insig- nificant	Sig- nificant	Comments
Turbidity	1			
Chlorine or Toxic Scour	1			
Macrophytes	1			
Filamentous Algae		2		
Planktonic Algae	1			
Slimes	1			
Iron Bacteria	1			

Factors Which May Be Affecting Habitat Quality

Sludge Deposits	1	
Silt and Sediment		2
Channel Ditching	1	
Down/Up Stream Impoundment	1	
Low Flows	1	
Wetlands		2

Pollutant Sources

Livestock Pasturing		3
Barnyard Runoff		3
Cropland Runoff		3
Tile Drains		
Septic Systems		
Stream Bank Erosion		3
Urban Runoff	1	
Construction Runoff	1	
Point Source(Specify Type)	1	
Other (Specify)		

SAMPLE ID# 900515-57-02

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TAXA	SPECIES	TAXONOMIC TOL		ORGANISM ID	ORGANISM COUNT		
		KEY USED	VAL		REP1	REP2	REP3
EPHEMEROPTERA							
BAETIDAE							
BAETIS	BRUNNEICOLOR	*1	4.00	02010101	3	0	0
	FLAVISTRIGA	*1	4.00	02010104	4	0	0
TRICHOPTERA							
HYDROPSYCHIDAE							
CHEUMATOPSYCHE		*2	5.00	04040100	2	0	0
CERATOPSYCHE	SLOSSONAE	*3	4.00	04040706	2	0	0
HYDROPTILIDAE							
POOR SPECIMEN		*2		04051100	1	0	0
COLEOPTERA							
ELMIDAE							
OPTIOSERVUS		*2	4.00	07020500	48	0	0
	FASTIDITUS	*1	4.00	07020501	5	0	0
STENELMIS		*2	5.00	07020600	12	0	0
	CRENATA	*4	5.00	07020601	7	0	0
DIPTERA							
CERATOPOGONIDAE							
BEZZIA/PALPOMYIA		*2	6.00	08030215	2	0	0
NILOBEZZIA		*2	6.00	08030900	2	0	0
MALLOCHOHELEA		*2		08031000	2	0	0
CHIRONOMIDAE							
	PUFAE	*5		08050002	2	0	0
CRICOTOPUS	NR. TRIFACIA	*4	7.00	08051303	2	0	0
	SP. C	*4	7.00	08051306	8	0	0
	POOR SPECIMEN	*2	7.00	08051307	3	0	0
EUKIEFFERIELLA	SP. A	*4	8.00	08052301	2	0	0
LIMNOPHYES		*4	8.00	08053100	7	0	0
ORTHOCLADIUS	SP. D	*4	5.00	08054004	15	0	0
POLYPEDILUM	NR. CONVICTUM	*4	5.00	08055001	2	0	0
TANYTARSUS		*2	6.00	08056800	4	0	0
THIENEMANNIELLA		*2	6.00	08056900	1	0	0
RHEOPELOPIA		*4		08058700	3	0	0
ORTHOCLADINAE	**POOR SPECIMEN**	*2		08059101	1	0	0
SIMULIIDAE							
SIMULIUM	VITTATUM	*6	7.00	08110217	4	0	0
TIPULIDAE							
TIPULA		*2	4.00	08141200	1	0	0
OLIGOCHAETA							
TUBIFICIDAE		*7		16030000	1	0	0

*** SOUTHERN DISTRICT BIOTIC INDEX REPORT ***

SAMPLE ID# 900515-57-02

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*** TAXA ***	*** SPECIES ***	TAXONOMIC KEY USED	TOL VAL	ORGANISM ID	ORGANISM COUNT	REP1	REP2	REP3
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*** TOTALS: *** 146 0 0

*** BIOTIC INDEX: *** 5.051

Taxonomic Key Code References

- *1 Hilsenhoff 1981,82
- *2 Hilsenhoff 1981
- *3 Hilsenhoff 1981,86
- *4 Hilsenhoff 1981,85
- *5 Merritt,Cummins 84
- *6 Hilsenhoff 1985
- *7 Klemm 1985

Stream Tributary to Carr Valley Br. Reach Location Upstream & downstream CTH "G" Reach Score/Rating 219/Poor
 County Sauk Date 5/15/90 Evaluator R. Schlessner Classification Int.

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 areas, 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. 11	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. 11	<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 8-15. 10	Barely contains present peaks. Occasional overbank flow. W/D ratio 15-20. 12	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. 15	Heavy deposits of fine material, increased bar development. 16
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. 18
Bottom Substrate/ Available Cover	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	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	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	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 24
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:	0	0	81	138

Column Scores E 0 +G 0 +F 81 +P 138 = 219 = Score

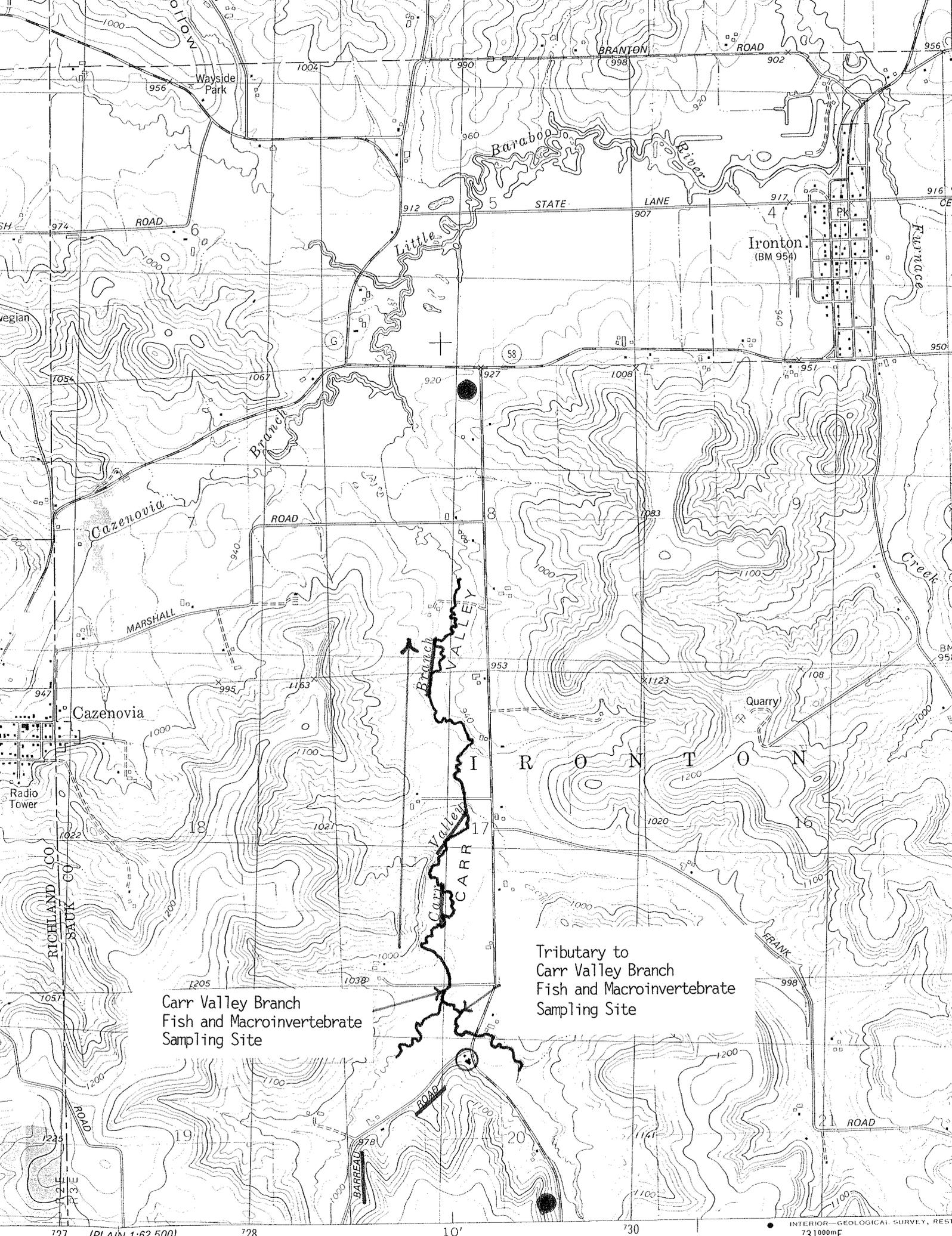
<70 = Excellent, 71-129 = Good, 130-200 = Fair, >200 = Poor

Stream Carr Valley Br Reach Location Upstream of Vosen Lane Reach Score/Rating 162/Fair
 County Sauk Date 5/15/90 Evaluator R. Schlessler Classification FAL/C

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 areas, 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. 10	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 8-15. 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	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	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	30-50% 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	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" 21 <6" 21
Avg. Depth of Pools	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	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 24
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:	<u>2</u>	<u>44</u>	<u>42</u>	<u>74</u>

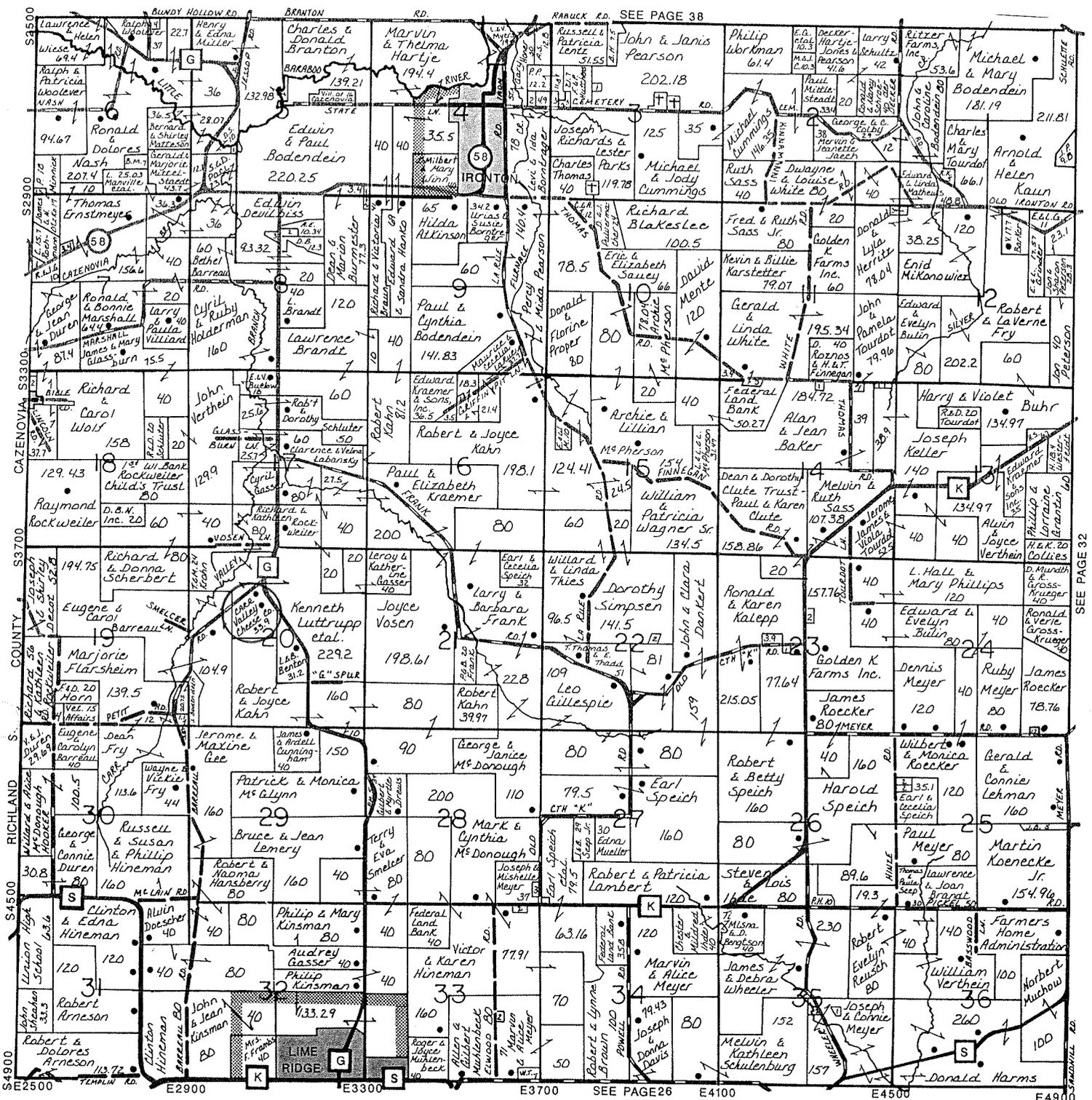
Column Scores E 2 +G 44 +F 42 +P 74 = 162 = Score

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



Carr Valley Branch
Fish and Macroinvertebrate
Sampling Site

Tributary to
Carr Valley Branch
Fish and Macroinvertebrate
Sampling Site



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Carr Valley Cheese Fact.
CTH "G" bridge
Tributary to Carr Valley
Creek.



Road ditch to tributary
of Carr Valley Branch -
shot from Barreau Road.



Tributary to Carr Valley
Branch in background -
shot from Barreau Road.



Tributary to Carr Valley
Branch. Upstream of CTH
"G" ..



Tributary to Carr Valley
Branch. Upstream of CTH
"G".



Tributary to Carr Valley
Branch. Downstream of
CTH "G".



Tributary to Carr Valley Branch. Below CTH "G" fish survey area.



Tributary to Carr Valley Branch. Below CTH "G" macroinvertebrate sampling site.



Carr Valley Branch. Ups. Vosen Lane. Fish and macroinvertebrate sampling site.



Carr Valley Branch.
Downstream of Vosen
Lane.



Carr Valley Branch.
Downstream of Vosen
Lane.