

Region SOB **County** Dodge **Report Date** 10/1993 **Classification** LAL

Water Body: Baker Creek, Lebanon Trib

Discharger: Lebanon Sanitary District

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
- 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:

- 10/1993 - Richard Dreher / Mark Sesing
- 1/12/83 - Keith Hutchinson
- 9/28/76 - Tom Bainbridge

Additional Comments/How to improve report:

- limited by low flow, in-place pollutants, & irretrievable cultural alterations
- will LAL protect frogs, toads, amphibians?
- is there a possibility (potential) for LFF community? (03)
- Check w/ region on class'n

LEBANON TRIBUTARY

TO BAKER CREEK

TRIENNIAL STANDARDS REVIEW

OCTOBER 1993

RICHARD DREHER / MARK SESING

SOUTHERN DISTRICT

BUREAU OF WATER RESOURCE MANAGEMENT
WISCONSIN DEPARTMENT OF NATURAL RESOURCES

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INTRODUCTION

After an on-site evaluation and review of information relating to stream habitat, water quality, and biology, it is recommended that the Lebanon Tributary to Baker Creek remain classified Limited Aquatic Life, LAL(f). Low natural stream flow, in-place pollutants, and irretrievable cultural alterations all contribute to the fact that the classification not be upgraded.

GENERAL DESCRIPTION, HABITAT, AND STREAM BIOLOGY

Lebanon Tributary is a low-gradient warm water stream which originates just north of Thrush Road and flows north to connect with Baker Creek near County Highway MM in southeastern Dodge County (see map).

The width of the stream varies from 0.5 m to 1.5 m and depths never exceed 1.0 m with most of the stream averaging less than 0.3 meters. There are no pools or riffled areas. Channelization is obvious along most of the stream's route which limits available aquatic life habitat. The tributary in essence can't be considered much more than a shallow ditch.

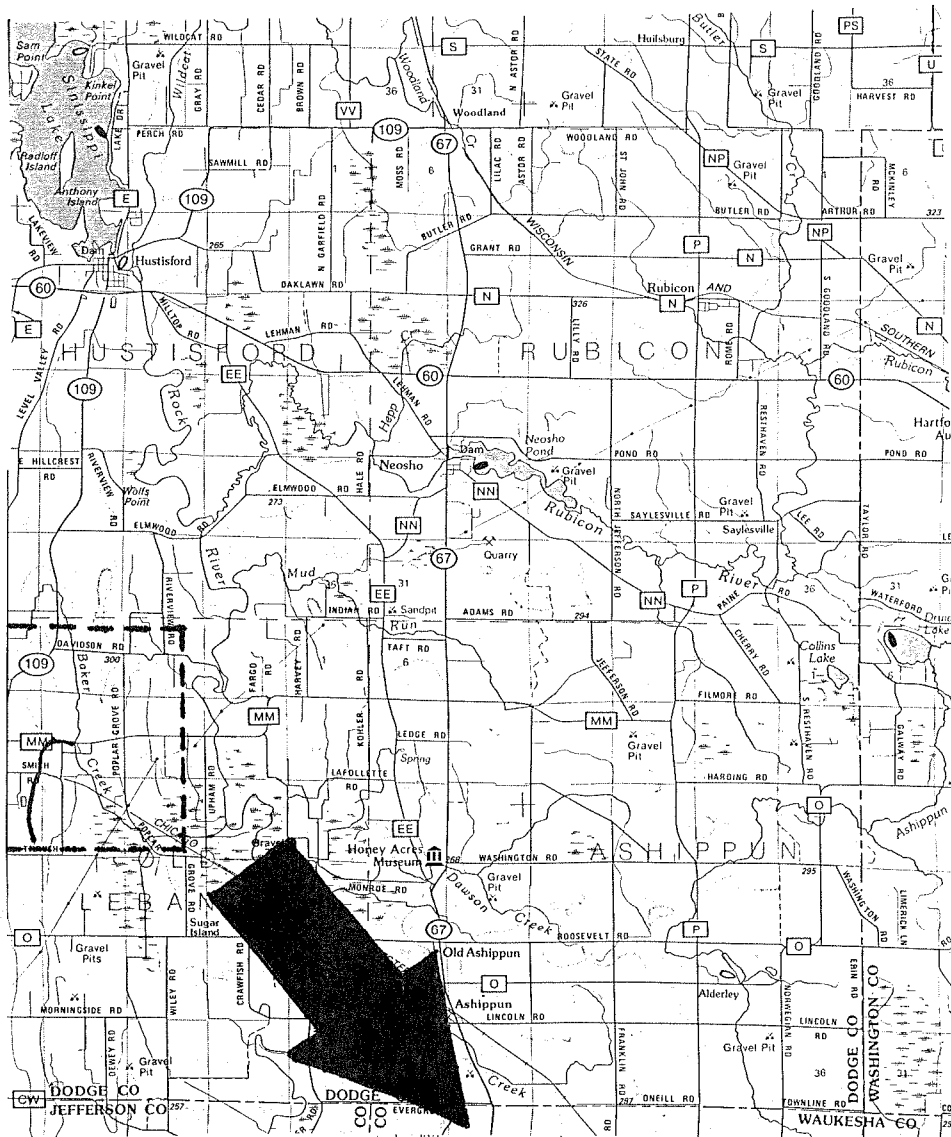
The majority of the riparian land use is agricultural with a few small wetland areas. The tributary flows past the Lebanon stabilization ponds (photo 1). There is no treatment plant here, as natural settling is used as the wastewater treatment. Very little mechanics is used at the ponds since it's all gravity fed.

In regard to instream vegetation, flow, and overhead bank cover, the Lebanon Tributary is lacking. No submergent aquatic macrophytes were noted within the stream. Low flows limit depths, and in a best case situation, it is doubtful if the stream could support anything more than very tolerable forage fish species. The tributary can provide some good cover for turtles, frogs, other amphibians, and possibly some waterfowl.

Riparian cover is monotypical wetland grasses (photo 2). There are no wooded areas and brush and trees are rare (photo 3). Throughout most of the stream's course, row cropping exists near the streambank which increases both erosion and nonpoint source pollution potential during high flow periods.

This row cropping coupled with other evidence suggests that moderate watershed erosion is occurring. Siltation in the stream is extensive causing a high degree of embeddedness (>90%). The stream's substrate is dominated by mud with very little sand or gravel. Along with the extensive siltation, the watershed erosion is prompting an influx of nutrients to the tributary.

Based on the obvious conditions and irretrievable cultural changes to the area and the tributary, it is recommended that the stream use classification remain Limited Aquatic Life, LAL(f).



Lebanon Tributary to Baker Creek



Stabilization Ponds

2 370 000 FEET

35'

Photo 1 - Stabilization
Ponds at Lebanon.
Discharge is located
near area where
photographer is standing.

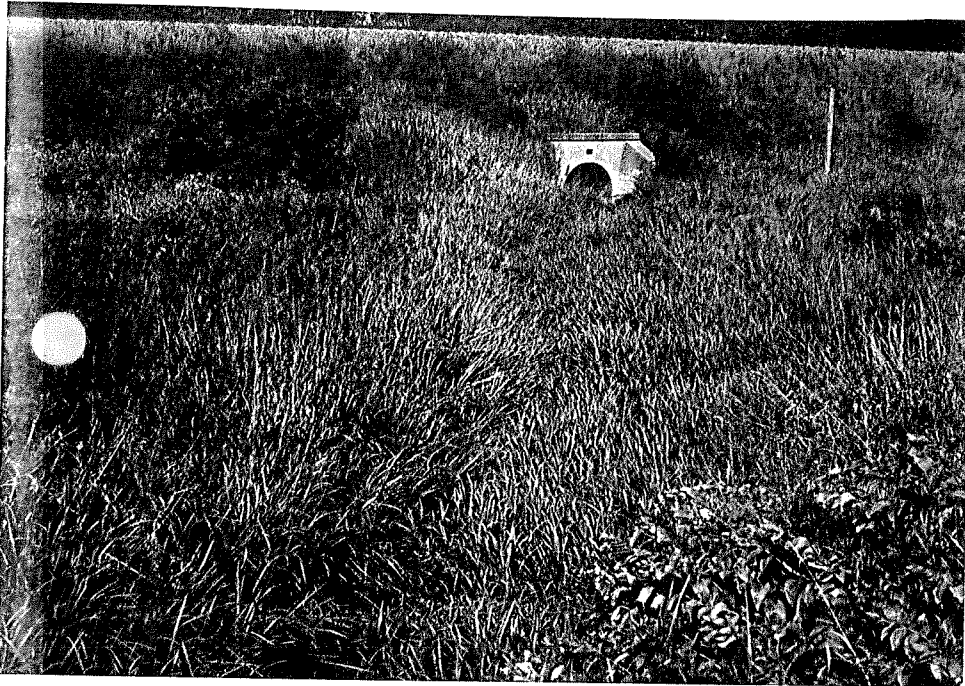
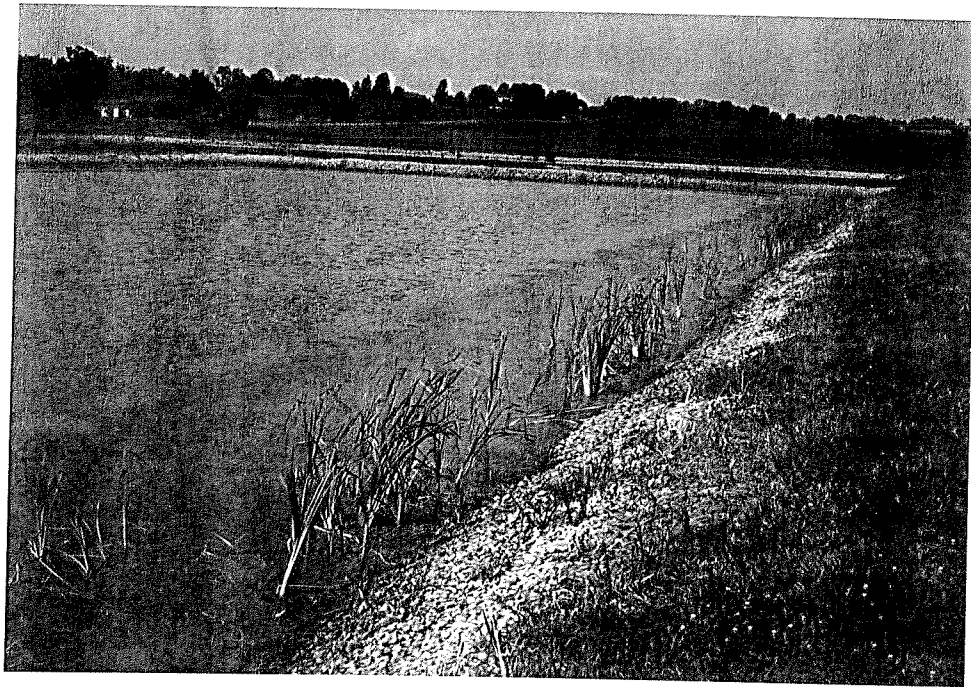


Photo 2 - Downstream
from Smith Rd. Tall
grasses dominate the
stream's banks. Low
flow limits the
stream's potential.

Photo 3 - Upstream from
Smith Rd. Channelization
along with lack of overhead
canopy reduce available
cover for wildlife.



Stream LEBANON TRIBUTARY Reach Location LEBANON TRIB. AT SMITH ROAD Reach Score/Rating 204
 County DODGE Date 9/2/93 Evaluator SEESING Classification POOR LAL

Rating Item	Category							
	Excellent	Good	Fair	Poor				
Watershed Erosion	No evidence of significant erosion. Stable forest or grass land. Little potential for future erosion. 8	Some erosion evident. No significant "raw" areas. Good land mgmt. practices in area. Low potential for significant erosion. 10	Moderate erosion evident. Erosion from heavy storm events obvious. Some "raw" areas. Potential for significant erosion. 14	Heavy erosion evident. Probable erosion from any run off. 16				
Watershed Nonpoint Source	No evidence of significant source. Little potential for future problem. 8	Some potential sources (roads, urban area, farm fields). 10	Moderate sources (small wetlands, tile fields, urban area, intense agriculture). 14	Obvious sources (major wetland drainage, high use urban or industrial area, feed lots, impoundment). 16				
Bank Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem. 4	Infrequent, small areas, mostly healed over. Some potential in extreme floods. 8	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow. 16	Many eroded areas. "Raw" areas frequent along straight sections and bends. 20				
Bank Vegetative Protection	90% plant density. Diverse trees, shrubs, grass. Plants healthy with apparently good root system. 6	70-90% density. Fewer plant species. A few barren or thin areas. Vegetation appears generally healthy. 9	50-70% density. Dominated by grass, sparse trees and shrubs. Plant types and conditions suggest poorer soil binding. 15	<50% density. Many raw areas. Thin grass, few if any trees and shrubs. 18				
Lower Bank Channel Capacity	Ample for present peak flow plus some increase. Peak flow contained. W/D ratio <7. 8	Adequate. Overbank flows rare. W/D ratio 8-15. 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	6" to 1'	6	3" to 6"	18	<3"	24
	Warm >1.5'	0	10" to 1.5'	6	6" to 10"	18	<6"	24
Avg. Depth of Pools	Cold >4'	0	3' to 4'	6	2' to 3'	18	<2'	24
	Warm >5'	0	4' to 5'	6	3' to 4'	18	<3'	24
Flow, at Rep. Low Flow	Cold >2 cfs	0	1-2 cfs	6	.5-1 cfs	18	<.5 cfs	24
	Warm >5 cfs	0	2-5 cfs	6	1-2 cfs	18	<1 cfs	24
Pool/Rifle, 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: 27 77 100

Column Scores E 27 + G 77 + F 100 + P 204 = Score

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

CORRESPONDENCE/MEMORANDUM

Date: January 12, 1983

File Ref: 3200

To: Files

From: Keith F. Hutchison

Subject: Stream Classification of Tributary to Baker Creek at Lebanon

On November 17, 1982, the tributary to Baker Creek was assessed below the Wastewater Treatment Plant (WWTP) at Lebanon in Dodge County. The reach assessed is between the WWTP and Smith Road. This reach of stream has been ditched and contains very little habitat for fish. Grasses were growing in the streambed and it appeared obvious that the stream must dry up during low flow periods. No macroinvertebrates were found on the grasses that were in the water. A stream classification survey was conducted on September 28, 1976, and at that time the streambed was dry.

The stream system habitat rating form was used and the stream was assigned a value of 183, which indicates a D "use class". However, the fact that flows reach zero and the stream dries up, limits it to an E "use class." Based on the above information the tributary to Baker Creek should be classified as a class E stream, or noncontinuous marginal surface waters at Lebanon.

KFH:bes

cc. Tom Bainbridge - SD

→ Dan Moran - GEF II, WRM/2

NOTED:

Date

Lebanon Sanitary District
Dodge County
September 28, 1976
Baker Creek Tributary

Lebanon sewage treatment plant discharges into Baker Creek Tributary, portions of which have been ditched and straightened. Part of the tributary flows through marsh land but at the present time the streambed is dry.

Recommendations

From the Lebanon sewage treatment plant outfall and for the remainder of Baker Creek Tributary, the classification should be noncontinuous marginal surface waters.

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

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

Respectfully submitted,


Thomas Bainbridge
Stream Classification Coordinator

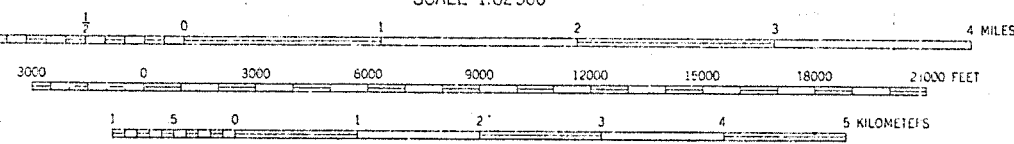
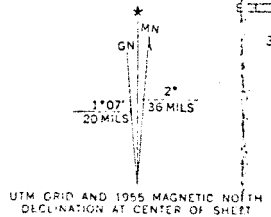
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shed by the Geological Survey

phs by photogrammetric methods
 Field check 1955
 rth American datum
 nsin coordinate system, south zone
 Mercator Grid ticks,

only



CONTOUR INTERVAL 20 FEET
 DATUM IS MEAN SEA LEVEL



ROAD CLASSIFIC
 Heavy duty ——— Light
 Medium-duty ——— Unim
 U.S. Route

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
 FOR SALE BY U.S. GEOLOGICAL SURVEY, WASHINGTON, D. C. 20242
 AND WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, MADISON, WISCONSIN 53706
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST