Water Resources Objectives

To maintain a current use of a valuable forage fishery (FAL(C)) and seasonal trout fishery by:

- reducing sediment and oxygen demand (manure) loading from this subwatershed by 50%.

Pollutants from Nonpoint Sources

Eroding Croplands (sediment and nutrients). Greater than 90% of the sediment reaching Wendt Creek from this subwatershed is from eroding croplands. Based on cropland soil erosion estimates,

TABLE 20. Cropland Soil Erosion in Wendt Creek Subwatershed.

Erosion Rate	Tons/year	%
> 10 tons/acre/yr.	22,651	79
7-to-10 tons/acre/yr.	494	2
4-to-7 tons/acre/yr.	2,884	10
< 4 tons/acre/yr.	2,589	9
totals	28,618	100
Erosion Rate	**Acres**	**%**
> 10 tons/acre/yr.	612	25
7-to-10 tons/acre/yr.	49	2
4-to-7 tons/acre/yr.	426	17
< 4 tons/acre/yr.	1,381	56
totals	2,464	100

Table 20 shows about 79% is from croplands with very high erosion rates (greater than about 10 tons/acre/year) and about 2% is from croplands with high erosion rates (greater than about 7-to-10 tons/acre/year). Table 20 also shows that these very high/high erosion cropland fields comprise about 27% of the croplands. Locations of these critical croplands are shown on Figure 16. Overall, they comprise about 15% of the area of the subwatershed.

Eroding and Trampled Stream Banks (sediment and direct habitat impairment).

Stream bank erosion occurs in scattered locations along Wendt Creek. Although not the major source, stream bank erosion adds to the sedimentation problems in Wendt Creek.

Animal Lots (oxygen demand and nutrients). Manure from animal lots and winter spread fields are the most probable source of oxygen demanding substances. Overall the pollutant loadings

TABLE 21. Animal Lot Pollutant Loads for Wendt Creek Subwatershed.

Phosphorus Load Range	Operations	Lbs.*	%
> 20 lbs. phosphorus **	5	286	79
15-to-20 lbs. phosphorus	0	0	0
10-to-15 lbs. phosphorus	4	51	14
5-to-10 lbs. phosphorus	3	20	6
< 5 lbs. phosphorus	5	7	2
Total	17	365	100

* Pounds for a 10-year, 24-hour storm

** Phosphorus is used as an indicator of the amount of manure reaching streams. The amount of BOD or COD is proportional to the amount of phosphorus.

from animal lots in this subwatershed are the highest in the Black Earth Creek watershed. Table 21 shows the number of animal lots and pollutant loads by range of phosphorus load. Locations of these animal lots are shown on Figure 16.

Winter Spread Manure (oxygen demand and nutrients). Winter spread manure was not analyzed. However, based on the erodibility of the soils and the steepness of slopes, it is likely a number of the 17 livestock operations in this subwatershed are sources of manure to the stream from winter spread sites.

Nonpoint Source Control Needs to meet the Water Resources Objectives

To achieve the water resources objectives identified for Wendt Creek the nonpoint sources identified below must be controlled. Each type of source and its control need is briefly described and discussed.

1. Cropland Management Needs:

   Erosion needs to be controlled on an estimated 661 acres of cropland.

The cropland analysis estimated most of the tons of erosion occurs on fields with very high or high erosion rates (greater than 10-to-15 tons/acre/year and 7-to-10 tons/acre/year). These very high/high erosion rates occur on about 661 acres.

2. Stream Bank Management Needs:

   Stream bank erosion due to cattle access and stream meandering need to be controlled.

Eroding stream banks add to the degradation of the fish habitat in this segment of Wendt Creek. Cattle access needs to be controlled. Stream bank erosion caused by high stream velocities cutting into the banks should also be controlled.

3. Animal Lot Management Needs:

   The amount of manure from animal lot runoff needs to be reduced on 12 of the 17 operations.

Based on the simulation of runoff controls, it is estimated that a 96% reduction can be achieved by reducing the amount of phosphorus on the 12 of 17 operations with estimated amounts of 5 or more pounds.

4. Manure Spreading Management Needs:

Manure spreading management plans need to be prepared for the 17 livestock operations to minimize the amount of manure entering the stream.

Although the amount of manure could not be quantified and significant sites could not be identified, the very high oxygen demand levels in nearby streams warrant control of this type of nonpoint source.

Fishery Management and Other Resource Needs

1. Habitat Improvement Needs:

Stream bank stabilization described above should improve the fish habitat. No special habitat improvement needs have been identified.

BLACK EARTH CREEK - HALFWAY PRAIRIE TO BLUE MOUNDS
SUBWATERSHED - HB

Subwatershed Description

The Black Earth Creek - Halfway Prairie to Blue Mounds Subwatershed covers a 5.1 square mile drainage area. Black Earth Creek is the main waterbody of concern. The Village of Mazomanie is on the eastern border of the subwatershed.

This subwatershed is primarily rural, but contains the Village of Mazomanie. Overall the land use is:

agriculture	54%
woodlands	24%
wetlands	<1%
incorporated (urban)	11%
other	11%

Other land use includes roads, scattered residences and commercial buildings. Figure 17 shows the environmental corridors and sewer service area for the village of Mazomanie.

Water Resources Conditions

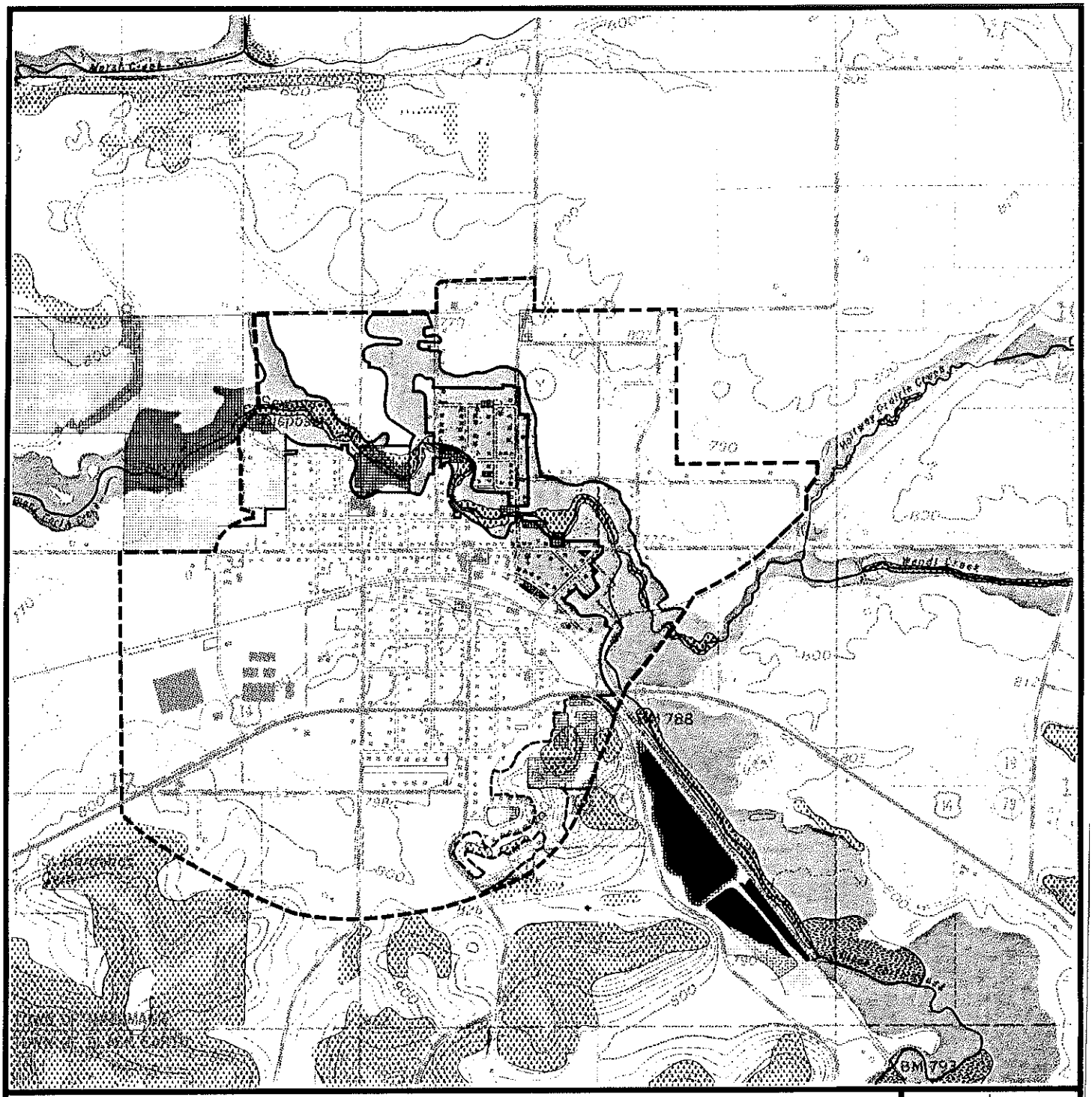
This part of Black Earth Creek is classified as a warmwater sports fishery (FAL (B)). This section of the stream has a very low gradient.

Water Resources Objectives

No specific objectives have been identified for this segment of Black Earth Creek from Halfway Prairie Creek to Blue Mounds Creek.

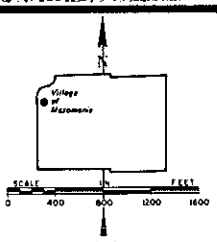
VILLAGE OF MAZOMANIE

DANE COUNTY WISCONSIN



ENVIRONMENTAL CORRIDORS

- ENVIRONMENTAL CORRIDORS
- URBAN SERVICE AREA
- ISOLATED RESOURCE FEATURE
- EXISTING PARKS, GREENWAYS, AND CONSERVANCY AREAS
- PROPOSED PARKS, GREENWAYS AND CONSERVANCY AREAS
- PUBLIC LANDS, NO ACCESS
- PERENNIAL STREAMS
- INTERMITTENT STREAMS
- OPEN CHANNEL DRAINAGE-WAYS
- LAKES AND OTHER WATER BODIES
- WETLANDS
- 100-YEAR FLOODPLAIN
- STEEP SLOPE (GREATER THAN 12%)
- WOODLANDS
- LINKAGES



12/27/84

Prepared by: THE DANE COUNTY REGIONAL PLANNING COMMISSION

FIGURE 17

Pollutants from Nonpoint Sources

Eroding Croplands (sediment and nutrients). Generally, the soil erosion in this subwatershed is the lowest of all the subwatersheds. Much of the sediment reaching Black Earth Creek - Halfway to Blue Mounds from this subwatershed is from eroding croplands. Some sediment is also coming from eroding stream banks. Based on cropland soil erosion estimates, Table 22 shows that about 57% of the sediment is from croplands with very high erosion rates (greater than about 10 tons/acre/year) and about 9% is from croplands with high erosion rates (greater than about 7-to-10 tons/acre/year). Table 22 also shows that these very high/high erosion cropland fields comprise about 7% of the croplands. Overall, they comprise about 4% of the area of the subwatershed.

TABLE 22. Cropland Soil Erosion in Black Earth Creek - Halfway to Blue Mounds Subwatershed.

Erosion Rate	Tons/year	%
> 10 tons/acre/yr.	3,260	57
7-to-10 tons/acre/yr.	488	9
4-to-7 tons/acre/yr.	311	5
< 4 tons/acre/yr.	1,627	29
totals	5,686	100
Erosion Rate	**Acres**	**%**
> 10 tons/acre/yr.	88	5
7-to-10 tons/acre/yr.	43	2
4-to-7 tons/acre/yr.	60	3
< 4 tons/acre/yr.	1,576	89
totals	1,766	100

Eroding and Trampled Stream Banks (sediment and direct habitat impairment).

Stream bank erosion occurs in scattered locations along Black Earth Creek - Halfway to Blue Mounds. Although eroding stream banks are not the major source, they add to the sedimentation problems in Black Earth Creek - Halfway to Blue Mounds.

Animal Lots (oxygen demand and nutrients). Manure from animal lots and winter spread fields are the most probable source of oxygen demanding substances. Overall, the pollutant loadings from animal lots in this subwatershed are the lowest in the Black Earth Creek watershed. Table 23 shows the number of animal lots and pollutant loads by range of phosphorus load.

TABLE 23. Animal Lot Pollutant Loads for Black Earth Creek - Halfway to Blue Mounds Subwatershed.

Phosphorus Load Range	Operations	Lbs.*	%
> 20 lbs. phosphorus **	0	0	0
15-to-20 lbs. phosphorus	0	0	0
10-to-15 lbs. phosphorus	0	0	0
5-to-10 lbs. phosphorus	0	0	0
< 5 lbs. phosphorus	5	3	100
Total	5	3	100

* Pounds for a 10-year, 24-hour storm

** Phosphorus is used as an indicator of the amount of manure reaching streams. The amount of BOD or COD is proportional to the amount of phosphorus.

Winter Spread Manure (oxygen demand and nutrients). Winter spread manure was not analyzed. However, based on the low soil erosion and the shallowness of slopes, it is unlikely the 5 livestock operations in this subwatershed are sources of manure to the stream from winter spread sites.

Nonpoint Source Control Needs to meet the Water Resources Objectives

No specific water resources objectives identified for Black Earth Creek - Halfway to Blue Mounds the nonpoint sources identified below must be controlled. The nonpoint source controls are identified based on an equivalent level of control as upstream subwatersheds.

1. Cropland Management Needs:

   Erosion control is needed on an estimated 125 acres of cropland.

The cropland analysis estimated most of the tons of erosion occurs on fields with very high or high erosion rates (greater than 10-to-15 tons/acre/year and 7-to-10 tons/acre/year). These very high/high erosion rates occur on about 125 acres.

2. Stream Bank Management Needs:

   Stream bank erosion due to cattle access needs to be controlled.

Eroding stream banks add to the degradation of the fish habitat in this segment of Black Earth Creek - Halfway to Blue Mounds. Cattle access needs to be controlled.

Animal Lot Management Needs:

None identified.

Manure Spreading Management Needs:

None identified.

Fishery Management and Other Resource Needs

Habitat Improvement Needs:

None identified.

Figure 18 shows the soil erosion over the entire watershed summarized by 40 acres cells.