

WATERWAYS AND RIPARIAN AREAS WITHIN THE EAST SOURIS RIVER WATERSHED

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Background

Riparian areas are the transitional zones that are found along our waterways, streambanks, lake shores and wetlands. Healthy riparian areas may have any combination of trees, shrubs, grasses, depending on the local conditions. They produce vegetation that is more lush than the surrounding dry land because of better soils and water availability. Healthy riparian areas have many important functions in our watersheds.

When it comes to water quality, riparian areas are the last line of defence for water that's running off the land into our lakes and streams. They are also extremely important for wildlife. Healthy riparian areas have a number of important functions. They act to trap sediment, filter and buffer water, build and maintain streambanks, store floodwater and energy, recharge groundwater, maintain biological diversity, create primary productivity

A healthy riparian area is one that carries out the ecological functions described above. In a healthy riparian area there is vigorous growth trees, shrubs or grasses, stream banks are not eroding beyond what would be considered a normal amount, disturbance by humans or livestock is not excessive, and the watercourse can spill water into the riparian vegetation during a normal flood event.

Some of the key signs that point to the loss of riparian area health include the loss of natural vegetation (quantity, numbers of species and width of the riparian zone) and excessive erosion of the streambanks.

Given that riparian areas are crucial to the health of our surface waters and they are often our only remaining natural areas in some regions, it is especially important that appropriate land use practices are used to maintain or enhance their functions and values.

Waterways

The East Souris River Watershed (ESRW) contains a total of 1127.6 miles of surface channels including 100.6 miles of the Souris River (Table 1). The majority of the waterways are represented by those that are classified as Class 3 or less (83.1%).

Table 1:

Order	Waskada Creek		Medora Creek		Chain Lakes		Whitewater Lake		Miles	% of Total
	Miles	%	Miles	%	Miles	%	Miles	%		
0	202.5	44.0							202.5	18.0
1	77.3	16.8	25.8	20.9	26.1	13.7	128.8	36.3	257.9	22.9
2	85.2	18.5	33.1	26.8	79.5	42.0	110.9	31.3	308.7	27.4
3	54.4	11.8	15.1	12.2	4.1	7.8	89.7	25.3	166.9	14.8
4	13.6	3.0	34.7	28.0	17.1	9.0	25.5	7.1	90.8	8.1
7*	26.7	5.8	15.1	12.2	58.9	31.1			100.6	8.9
TOTAL	459.7		123.8		185.7		354.9		1127.6	

* Souris River

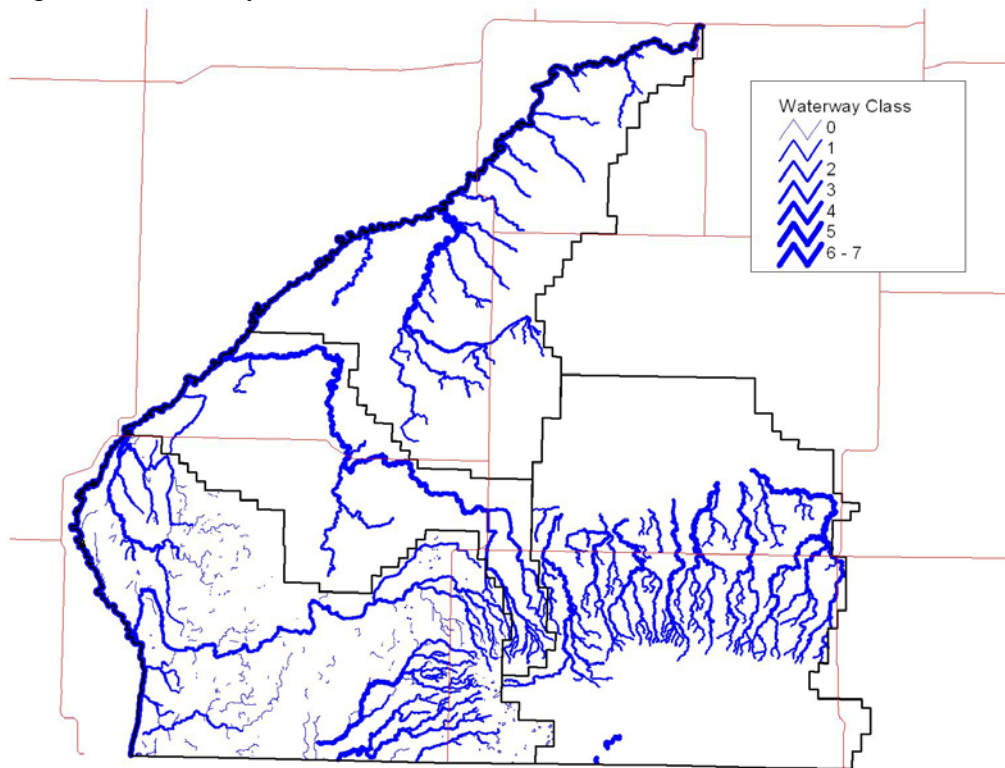
Waskada Creek watershed has been identified as containing 202.2 miles of Class 0 waterways which represents 44% of the waterways identified with its boundaries. This represents 100% of the Order 0 waterways in the ESRW and this class is described as filed or surface drain. The reason for the identification of Class 0, “field drains” in the Waskada Creek subwatershed only should be examined to determine if these waterways are missing in other subwatershed, therefore under-representing waterways, or have been incorporated into other Order classes.

The Medora Creek subwatershed contains a total of 123.8 miles of waterway, representing the shortest total of the subwatersheds and again is dominated by the Order 1 and 2 channels.

The Chain Lakes subwatershed is comprised of 58.9 miles of the Souris River (58.5% of the total length in the ESRW).

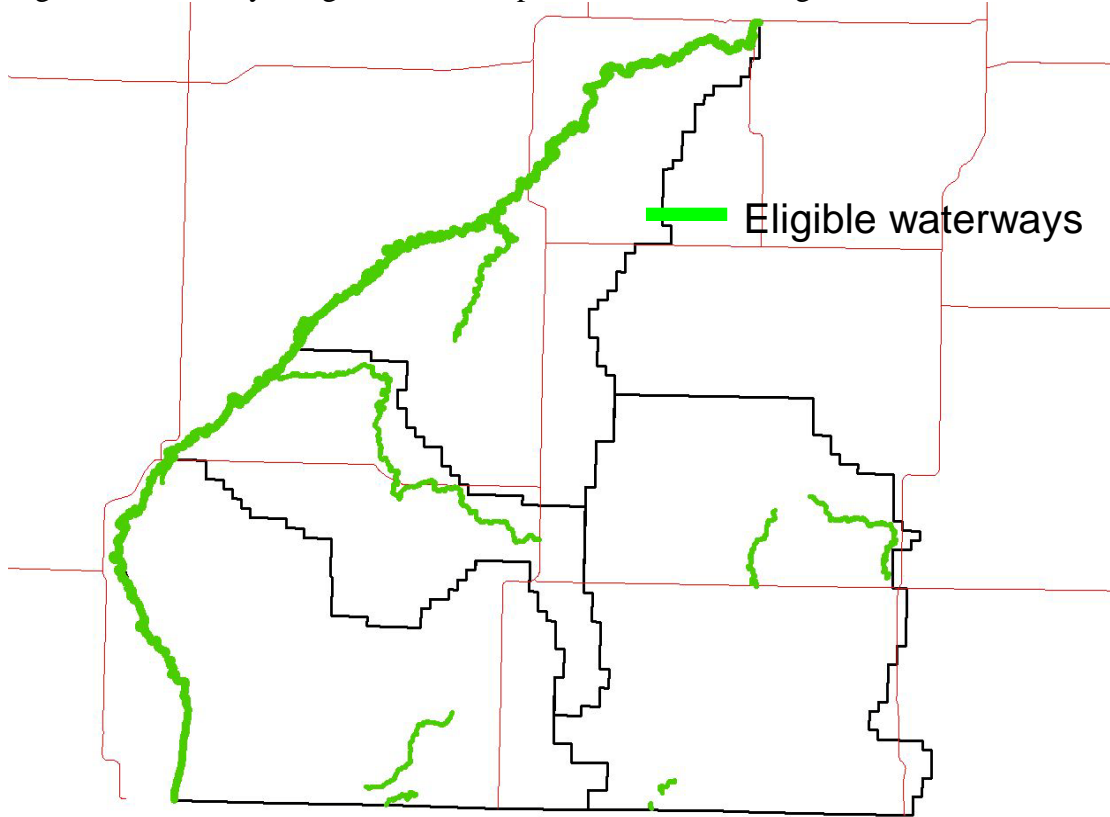
The Whitewater Lake subwatershed is the only subwatershed in the ESRW which does not report into the Souris River, instead reporting to Whitewater Lake. The waterways that make up the Whitewater subwatershed are those responsible for carrying surface water off of the Turtle Mountain to the lake Figure 1.

Figure 1: Waterways within the ESRW



The Riparian Tax Credit Program is applicable to the riparian areas in association with major rivers, or waterways designated as an Order 4, 5, 6, 7 or 8 drain or a natural water channel designated as an Order 3 drain. Grassed waterways, seasonal creeks and dry riverbeds do not qualify. Under these criteria 17% of the waterways (4641 acres) are eligible for this program.

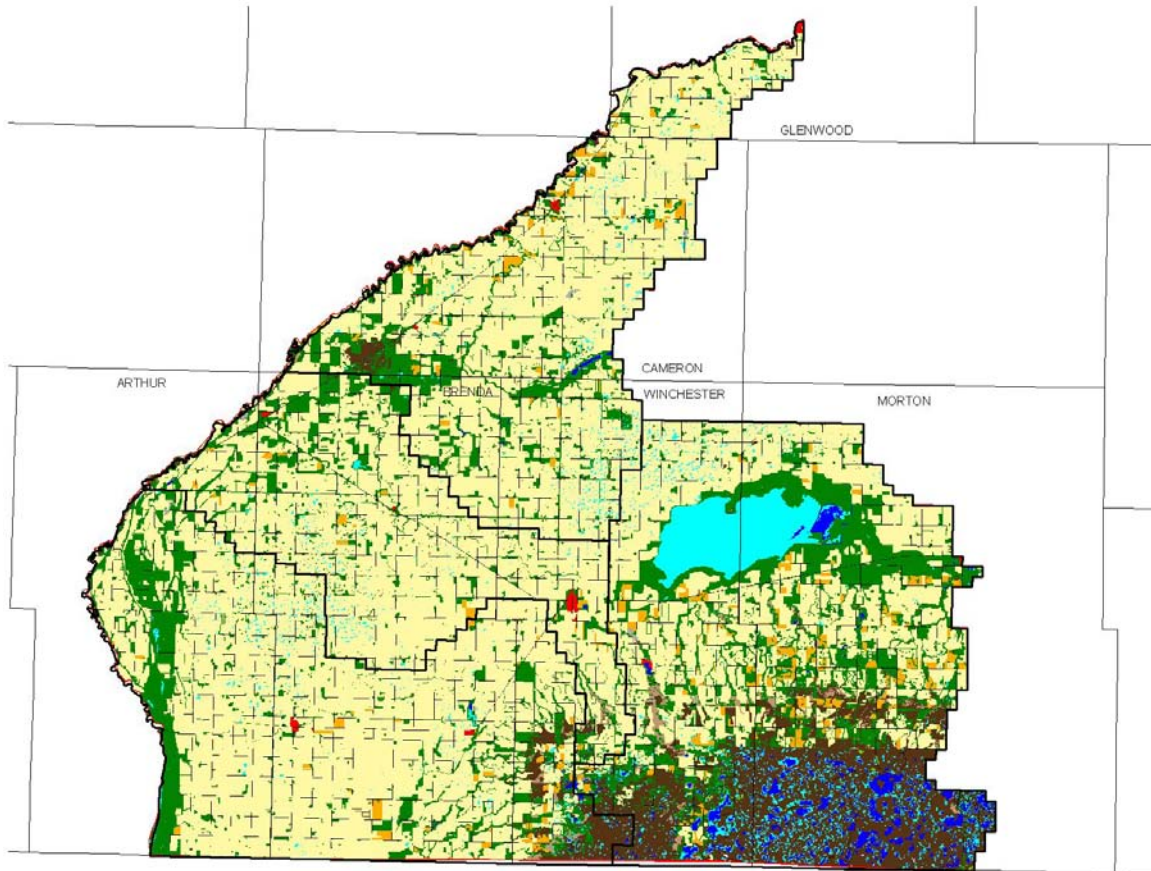
Figure 1: Waterways Eligible for the Riparian Tax Credit Program



Riparian Areas

To determine the landcover types with the riparian areas of the ESRW and its subwatersheds, 30 meter (100ft) buffers were created alongside the watercourses. 2000 PFRA landcover data was then used to determine landcover types (cultivated, native, permanent cover or other). Figure 2 shows landcover within the ESRW and subwatershed boundaries.

Figure 2: 2000 PFRA Landcover of the ESRW



Of the total 24555 acres of riparian buffer, native cover (grass, trees, shrubs) make up 66.2% of all landcover types in the ESRW (Table 2). 7 383 acres of the total riparian buffer is classified as being cultivated with Permanent Cover and the Other category representing less than 5% (1.4% and 2.3% respectively). It is assumed that the Other category is dominated by “cultural features”, most likely roads.

The Waskada Creek subwatershed contains 9 425 acres of 100 ft buffer which is the largest total of the subwatersheds in the ESRW, 5 003 or 52.9% of which is classified as being in native cover. 43.6% (4 123 acres) of the landcover is classified as cultivation, representing the highest percentage of any other single basin. This may be a reflection of the topography of the basin and the higher percentage of lower order (Orders 0 – 3) waterways.

Table 2: Landcover Acreage and Percent of the East Souris River Watershed by Subwatershed

Landcover	Waskada Creek		Medora Creek		Chain Lakes		Whitewater Lake		Acres	% of Total
	Acres	%	Acres	%	Acres	%	Acres	%		
Cultivation	4 123	43.6	822	28.4	1299	30.9	1139	14.2	7 383	30.1
Native Cover	5 003	52.9	1940	67.1	2775	66.1	6531	81.6	16 249	66.2
Permanent Cover	76	0.8	29	1.0	59	1.3	194	2.4	358	1.4
Other	250	2.7	101	3.5	71	1.7	143	1.8	565	2.3
TOTAL	9 425		2892		4204		8007		24 555	

The Medora Creek subwatershed contains the smallest total buffer area at 2892 acres and also the highest percentage in native cover (67.1%).

The Chain Lakes subwatershed contains 4204 acres of riparian buffer of which 2775 acres or 66.1% are classified as Native Cover. 30.9% are classified as cultivation meaning 1299 acres of 100 ft buffer are cultivated.

The Whitewater Lake subwatershed has the lowest percentage of buffer that is classified as being in cultivation at 14.2% and the greatest amount in native cover at 6531 acres or 81.6% of the acreage.

The data presented here is provides some indication of the landcover within the 100 ft riparian buffers within the ESRCD. When considering the functions of riparian areas in maintaining water quality and quantity it provides some opportunity to recognize some opportunities for the development and targeting of programs intended to promote and reward landowners for practices that are complimentary to maintaining and enhancing riparian functions.

While this data can provide some indication of the amount of landcover types it provides no information as to the condition of the respective landcover types. This information would be valuable in further establishing the overall health of the riparian buffers of the ESRW and their abilities to provide the desired protection and enhancement of water quality and quantity.