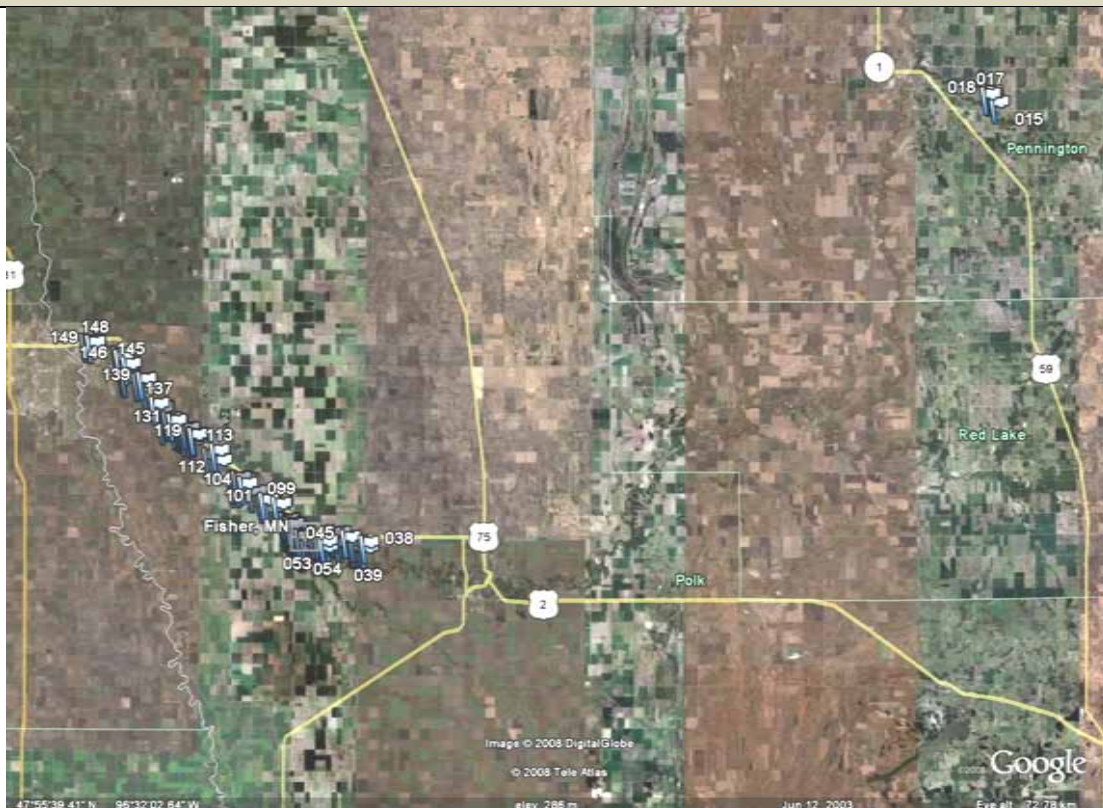






# Red Lake River Erosion Site and Assessment Catalog

Common knowledge holds that erosion is a major problem along the Lower Red Lake River. When it comes to the question of where to start fixing the problem, our knowledge is limited. The need to prioritize erosion problems and site for implementation efforts has become clear. This document catalogs the erosion sites that have, so far, been visited. The RLWD began conducting site visits in 2007, collecting photos and GPS points, of erosion sites along the Red Lake River. Many of these were collected during portions of the red lake River Rendezvous canoe trip. There are many other sites in the watershed that have not been visited yet, so this is just a fraction of the erosion problems that exist along the river. Each page contains a map of the site location and a basic assessment of the severity of the erosion problem. Sites are organized by assessment score – from severe to moderate to minor. There is a separate section for those sites that are threatening roads, buildings, or other infrastructure.

While the eroding stream banks documented here may just be symptoms of a greater problem, the higher priority sites could be addressed, especially those threatening roads, buildings, or infrastructure. Generally, most of the cutbanks on the outside of bends in the Lower Red Lake River are actively eroding. Another general observation is that there seems to be less slumping where the streambanks are wooded and massive slumps are common where farming and other anthropogenic enterprises encroach upon the river and have stripped away the trees.

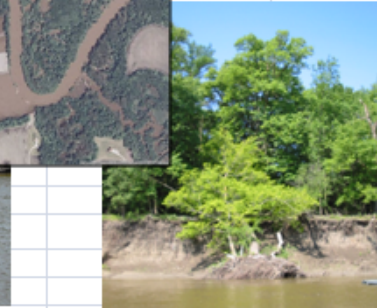
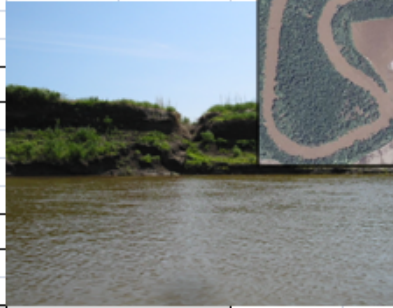
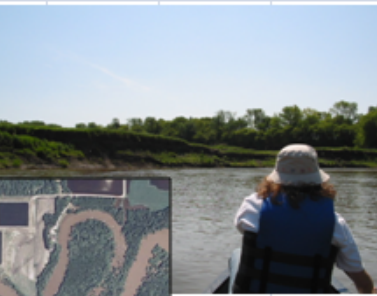


## Threatening Infrastructure or homes

Streambank Erosion Severity Index					
Joe Hanson site upstream of the Highway 32 bridge over the Red Lake River					
First site visit on January 24, 2007					
OBSERVATION		SCORE			
<b>Condition of bank</b>		<b>5</b>			
Toe and upper bank eroding	5				
Toe undercutting	3				
Toe stable, upper bank eroding	1				
<b>Problem Trend</b>		<b>5</b>			
Increasing	5				
Decreasing or stable	1				
<b>Side-slope of bank</b>		<b>5</b>			
Vertical, 1:1	5				
2:1, 3:1	2				
4:1 or flatter	1				
<b>Length of eroded bank</b>		<b>5</b>			
More than 50 ft.	5				
20 to 50 ft.	3				
Less than 20 ft.	1				
<b>Depth of river</b>		<b>2</b>			
More than 3 ft.	2				
Less than 3 ft.	1				
<b>Soil type or texture</b>		<b>3</b>			
Sand	3				
Gravel	2				
Stratified	2				
Clay, loam	1				
<b>Vegetative Cover on bank slope</b>		<b>5</b>			
0-10%	5				
10-50%	3				
50-100%	1				
<b>Apparent cause of erosion</b>		<b>2</b>			
Light access traffic	1				
Obstruction in river	1				
Bank seepage	1				
Gullying by side channels	1				
Bend in river	2				
Wave action (impoundments)	2				
Road-stream crossing; grade/shoulder runoff	3				
Moderate access traffic	3				
Heavy access (foot, horse, etc.) traffic	5				
<b>Mean height of eroded bank</b>		<b>7</b>			
More than 20 ft.	7				
10 to 20 ft.	5				
5 to 10 ft.	3				
Less than 5 ft.	1				
<b>Current</b>		<b>2</b>			
Fast	2		Eventual threat to new Hwy 32 Bridge and the Hwy itself.		
Slow	1				
<b>Total Points for site</b>		<b>41</b>	<b>Severe</b>		
0-30	Minor	30-36	Moderate	>36	Severe

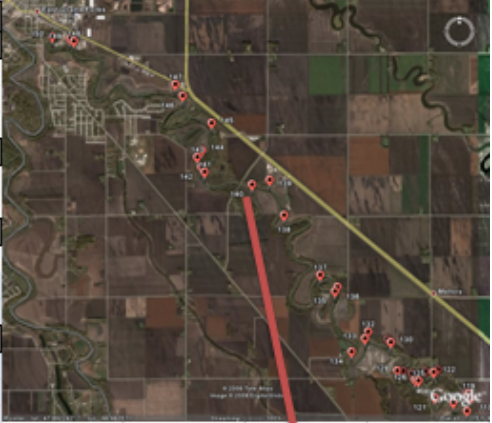



Recommendations: remove sed bar, bendway weirs where possible, stabil. may not be feasil

Streambank Erosion Severity Index		Sites 58-69	
Site Description	Badly eroding bend in the river south of Fisher		
Site visits on	6/8/2007 11:10 - 11:24	lat/long:	N47 47.128 W96 46.201
OBSERVATION	SCORE		
<b>Condition of bank</b>	<b>5</b>		
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>	<b>5</b>		
Increasing	5	x	
Decreasing or stable	1		
<b>Side-slope of bank</b>	<b>5</b>		
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>	<b>5</b>		
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>	<b>2</b>		
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>	<b>1</b>		
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>	<b>5</b>		
0-10%	5	x	
10-50%	3		
50-100%	1		
<b>Apparent cause of erosion</b>	<b>2</b>		
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1	x	
Gully by side channels	1	x	
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>	<b>5</b>		
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>	<b>2</b>		
Fast	2		
Slow	1	x	
<b>Total Points for site</b>	<b>37</b>	<b>Severe</b>	
0-30	Minor	30-36	Moderate
		>36	Severe
This mile long reach is immediately downstream of the confluence of Burnham Creek. There also are newly constructed lagoons near the apex of this bend. These could add weight and moisture to the already unstable banks.			



Streambank Erosion Severity Index			
Site Description	Eroding bank downstream of Hartsville Coulee Diversion structure		
Site visits on	6/10/2007 10:51	lat/long:	N47 53.980 W96 58.439
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>5</b>	
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>5</b>	
Increasing	5	x	
Decreasing or stable	1		
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>5</b>	
0-10%	5	x	
10-50%	3		
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullying by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>3</b>	
More than 20 ft.	7		
10 to 20 ft.	5		
5 to 10 ft.	3	x	
Less than 5 ft.	1		
<b>Current</b>		<b>1</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>34</b>	<b>Moderate</b>
0-30	Minor	30-36	Moderate
		>36	Severe



Streambank Erosion Severity Index							
Site Description	Eroding bank threatening to cut across bend in river near Hwy 200 Crossing						
Site visits on	6/10/2007 10:21	lat/long:	N47 53.686 W96 57.565				
OBSERVATION		SCORE	  				
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding	5	x					
Toe undercutting	3						
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>1</b>					
Increasing	5						
Decreasing or stable	1	x					
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>5</b>					
0-10%	5	x					
10-50%	3						
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gully by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>5</b>					
More than 20 ft.	7						
10 to 20 ft.	5	x					
5 to 10 ft.	3						
Less than 5 ft.	1						
<b>Current</b>		<b>1</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>32</b>	<b>Moderate</b>				
							

Streambank Erosion Severity Index			Site 49	
Site Description	Eroding cutbank 1.7 miles east of Fisher			
Site visits on	6/8/2007 10:28		lat/long:	N47 47.487 W96 45.400
OBSERVATION			SCORE	
<b>Condition of bank</b>			<b>3</b>	
Toe and upper bank eroding	5			
Toe undercutting	3	x		
Toe stable, upper bank eroding	1			
<b>Problem Trend</b>			<b>5</b>	
Increasing	5	x		
Decreasing or stable	1			
<b>Side-slope of bank</b>			<b>5</b>	
Vertical, 1:1	5	x		
2:1, 3:1	2			
4:1 or flatter	1			
<b>Length of eroded bank</b>			<b>5</b>	
More than 50 ft.	5	x		
20 to 50 ft.	3			
Less than 20 ft.	1			
<b>Depth of river</b>			<b>2</b>	
More than 3 ft.	2	x		
Less than 3 ft.	1			
<b>Soil type or texture</b>			<b>1</b>	
Sand	3			
Gravel	2			
Stratified	2			
Clay, loam	1	x		
<b>Vegetative Cover on bank slope</b>			<b>3</b>	
0-10%	5			
10-50%	3	x		
50-100%	1			
<b>Apparent cause of erosion</b>			<b>3</b>	
Light access traffic	1			
Obstruction in river	1			
Bank seepage	1			
Gully by side channels	1			
Bend in river	2	x		
Wave action (impoundments)	2			
Road-stream crossing; grade/shoulder	3			
Moderate access traffic	3	x		
Heavy access (foot, horse, etc.) traffic	5			
<b>Mean height of eroded bank</b>			<b>3</b>	
More than 20 ft.	7			
10 to 20 ft.	5			
5 to 10 ft.	3	x		
Less than 5 ft.	1			
<b>Current</b>			<b>2</b>	
Fast	2			
Slow	1	x		
<b>Total Points for site</b>			<b>32</b>	
			<b>Moderate</b>	
0-30	Minor	30-36	Moderate	>36 Severe
There is a road built along the streambank.				



Streambank Erosion Severity Index		Sites 40-41					
Site Description	Eroding streambank 3.2 miles SE of Fisher			lat/long:	N47 46.926 W96 44.359		
Site visits on	6/8/2007 9:54						
OBSERVATION		SCORE					
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding	5	x					
Toe undercutting	3						
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>1</b>					
Increasing	5						
Decreasing or stable	1	x					
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>3</b>					
0-10%	5						
10-50%	3	x					
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullying by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing; grade/shoulder	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.) traffic	5						
<b>Mean height of eroded bank</b>		<b>3</b>					
More than 20 ft.	7						
10 to 20 ft.	5						
5 to 10 ft.	3	x					
Less than 5 ft.	1						
<b>Current</b>		<b>2</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>29</b>		<b>Minor</b>			
0-30	Minor	30-36	Moderate	>36	Severe		
Power line pole is right on eroding and slumping bank							

Streambank Erosion Severity Index					
Site Description	Washout along a field, outside of a bend, south of Mallory				
Site visits on	6/9/2007 13:40	lat/long:	N47 51.419 W96 54.672		
OBSERVATION		SCORE			
<b>Condition of bank</b>		<b>3</b>			
Toe and upper bank eroding	5	x			
Toe undercutting	3				
Toe stable, upper bank eroding	1				
<b>Problem Trend</b>		<b>1</b>			
Increasing	5	x			
Decreasing or stable	1				
<b>Side-slope of bank</b>		<b>5</b>			
Vertical, 1:1	5	x			
2:1, 3:1	2				
4:1 or flatter	1				
<b>Length of eroded bank</b>		<b>5</b>			
More than 50 ft.	5	x			
20 to 50 ft.	3				
Less than 20 ft.	1				
<b>Depth of river</b>		<b>2</b>			
More than 3 ft.	2	x			
Less than 3 ft.	1				
<b>Soil type or texture</b>		<b>1</b>			
Sand	3	x			
Gravel	2				
Stratified	2				
Clay, loam	1				
<b>Vegetative Cover on bank slope</b>		<b>1</b>			
0-10%	5	x			
10-50%	3				
50-100%	1				
<b>Apparent cause of erosion</b>		<b>2</b>			
Light access traffic	1	x			
Obstruction in river	1				
Bank seepage	1				
Gully by side channels	1				
Bend in river	2				
Wave action (impoundments)	2				
Road-stream crossing;	3				
Moderate access traffic	3				
Heavy access (foot, horse, etc.)	5				
<b>Mean height of eroded bank</b>				<b>7</b>	
More than 20 ft.	7			x	
10 to 20 ft.	5				
5 to 10 ft.	3				
Less than 5 ft.	1				
<b>Current</b>		<b>1</b>			
Fast	2	x			
Slow	1				
<b>Total Points for site</b>		<b>28</b>			
		<b>Minor</b>			
0-30	Minor	30-36	Moderate		
		>36	Severe		





Streambank Erosion Severity Index		Site 99				
Site Description	Tall slumping bank near farm, west of Fisher					
Site visits on	6/9/2007 9:39	lat/long:	N47 48.653 W96 49.012			
OBSERVATION		SCORE				
<b>Condition of bank</b>		<b>1</b>				
Toe and upper bank eroding	5					
Toe undercutting	3					
Toe stable, upper bank eroding	1	x				
<b>Problem Trend</b>		<b>1</b>				
Increasing	5					
Decreasing or stable	1	x				
<b>Side-slope of bank</b>		<b>5</b>				
Vertical, 1:1	5	x				
2:1, 3:1	2					
4:1 or flatter	1					
<b>Length of eroded bank</b>		<b>5</b>				
More than 50 ft.	5	x				
20 to 50 ft.	3					
Less than 20 ft.	1					
<b>Depth of river</b>		<b>2</b>				
More than 3 ft.	2	x				
Less than 3 ft.	1					
<b>Soil type or texture</b>		<b>1</b>				
Sand	3					
Gravel	2					
Stratified	2					
Clay, loam	1	x				
<b>Vegetative Cover on bank slope</b>		<b>1</b>				
0-10%	5					
10-50%	3					
50-100%	1	x				
<b>Apparent cause of erosion</b>		<b>2</b>				
Light access traffic	1					
Obstruction in river	1					
Bank seepage	1					
Gully by side channels	1					
Bend in river	2	x				
Wave action (impoundments)	2					
Road-stream crossing;	3					
Moderate access traffic	3					
Heavy access (foot, horse, etc.)	5					
<b>Mean height of eroded bank</b>		<b>7</b>				
More than 20 ft.	7	x				
10 to 20 ft.	5					
5 to 10 ft.	3					
Less than 5 ft.	1					
<b>Current</b>		<b>2</b>				
Fast	2					
Slow	1	x				
<b>Total Points for site</b>		<b>27</b>	<b>Minor</b>			
0-30	Minor	30-36	Moderate	>36	Severe	



Streambank Erosion Severity Index		Site 98							
Site Description		Gullyng from Oxbow Lake Drainage near Fisher and CSAH 15 Crossing							
Site visits on		6/9/2007 9:29		lat/long:		N47 47.996 W96 48.549			
OBSERVATION		SCORE							
<b>Condition of bank</b>		<b>3</b>							
Toe and upper bank eroding	5								
Toe undercutting	3	x							
Toe stable, upper bank eroding	1								
<b>Problem Trend</b>		<b>5</b>							
Increasing	5	x							
Decreasing or stable	1								
<b>Side-slope of bank</b>		<b>5</b>							
Vertical, 1:1	5	x							
2:1, 3:1	2								
4:1 or flatter	1								
<b>Length of eroded bank</b>		<b>1</b>							
More than 50 ft.	5								
20 to 50 ft.	3								
Less than 20 ft.	1	x							
<b>Depth of river</b>		<b>2</b>							
More than 3 ft.	2	x							
Less than 3 ft.	1								
<b>Soil type or texture</b>		<b>1</b>							
Sand	3								
Gravel	2								
Stratified	2								
Clay, loam	1	x							
<b>Vegetative Cover on bank slope</b>		<b>3</b>							
0-10%	5								
10-50%	3	x							
50-100%	1								
<b>Apparent cause of erosion</b>		<b>1</b>							
Light access traffic	1								
Obstruction in river	1								
Bank seepage	1								
Gullyng by side channels	1	x							
Bend in river	2								
Wave action (impoundments)	2								
Road-stream crossing;	3								
Moderate access traffic	3								
Heavy access (foot, horse, etc.)	5								
<b>Mean height of eroded bank</b>		<b>3</b>							
More than 20 ft.	7								
10 to 20 ft.	5								
5 to 10 ft.	3	x							
Less than 5 ft.	1								
<b>Current</b>		<b>2</b>							
Fast	2								
Slow	1	x							
<b>Total Points for site</b>		<b>26</b>		<b>Minor</b>					
0-30	Minor	30-36	Moderate	>36	Severe				

Streambank Erosion Severity Index			
Site Description	Large area of sloughing river bank near residence NW of Fisher.		
Site visits on	6/9/2007 14:24	lat/long:	N47 52.118 W96 55.723
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>5</b>	
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>1</b>	
Increasing	5		
Decreasing or stable	1	x	
<b>Side-slope of bank</b>		<b>1</b>	
Vertical, 1:1	5		
2:1, 3:1	2		
4:1 or flatter	1	x	
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>1</b>	
0-10%	5		
10-50%	3		
50-100%	1	x	
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullying by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>5</b>	
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>1</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>24</b>	<b>Minor</b>
0-30	Minor	30-36	Moderate
		>36	Severe

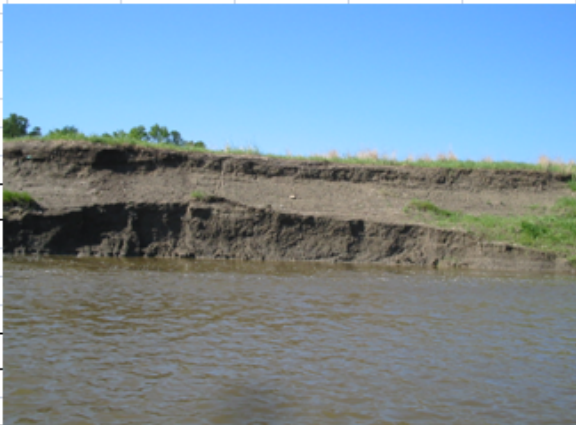


## Severe

Streambank Erosion Severity Index		
Site Description	Tall eroding bank on an outside bend of the river, south of Mallory	
Site visits on	6/9/2007 13:46	lat/long: N47 51.717 W96 54.621
OBSERVATION	SCORE	
<b>Condition of bank</b>	<b>5</b>	
Toe and upper bank eroding	5	x
Toe undercutting	3	
Toe stable, upper bank eroding	1	
<b>Problem Trend</b>	<b>5</b>	
Increasing	5	x
Decreasing or stable	1	
<b>Side-slope of bank</b>	<b>5</b>	
Vertical, 1:1	5	x
2:1, 3:1	2	
4:1 or flatter	1	
<b>Length of eroded bank</b>	<b>5</b>	
More than 50 ft.	5	x
20 to 50 ft.	3	
Less than 20 ft.	1	
<b>Depth of river</b>	<b>2</b>	
More than 3 ft.	2	x
Less than 3 ft.	1	
<b>Soil type or texture</b>	<b>2</b>	
Sand	3	
Gravel	2	
Stratified	2	
Clay, loam	1	x
<b>Vegetative Cover on bank slope</b>	<b>5</b>	
0-10%	5	x
10-50%	3	
50-100%	1	
<b>Apparent cause of erosion</b>	<b>2</b>	
Light access traffic	1	
Obstruction in river	1	
Bank seepage	1	
Gullying by side channels	1	
Bend in river	2	x
Wave action (impoundments)	2	
Road-stream crossing;	3	
Moderate access traffic	3	
Heavy access (foot, horse, etc.)	5	
<b>Mean height of eroded bank</b>	<b>7</b>	
More than 20 ft.	7	x
10 to 20 ft.	5	
5 to 10 ft.	3	
Less than 5 ft.	1	
<b>Current</b>	<b>1</b>	
Fast	2	
Slow	1	x
<b>Total Points for site</b>	<b>39</b>	<b>Severe</b>
0-30	Minor	
30-36	Moderate	
>36	Severe	



Streambank Erosion Severity Index			Site 43-44	
Site Description		Eroding cutbank 2.6 miles east of Fisher		
Site visits on		6/8/2007 10:02		
		lat/long: N47 46.895 W96 44.469		
OBSERVATION		SCORE		
<b>Condition of bank</b>		<b>5</b>		
Toe and upper bank eroding		5	x	
Toe undercutting		3		
Toe stable, upper bank eroding		1		
<b>Problem Trend</b>		<b>5</b>		
Increasing		5	x	
Decreasing or stable		1		
<b>Side-slope of bank</b>		<b>5</b>		
Vertical, 1:1		5	x	
2:1, 3:1		2		
4:1 or flatter		1		
<b>Length of eroded bank</b>		<b>5</b>		
More than 50 ft.		5	x	
20 to 50 ft.		3		
Less than 20 ft.		1		
<b>Depth of river</b>		<b>2</b>		
More than 3 ft.		2	x	
Less than 3 ft.		1		
<b>Soil type or texture</b>		<b>1</b>		
Sand		3		
Gravel		2		
Stratified		2		
Clay, loam		1	x	
<b>Vegetative Cover on bank slope</b>		<b>5</b>		
0-10%		5	x	
10-50%		3		
50-100%		1		
<b>Apparent cause of erosion</b>		<b>2</b>		
Light access traffic		1		
Obstruction in river		1		
Bank seepage		1		
Gully by side channels		1		
Bend in river		2	x	
Wave action (impoundments)		2		
Road-stream crossing; grade/shoulder		3		
Moderate access traffic		3		
Heavy access (foot, horse, etc.) traffic		5		
<b>Mean height of eroded bank</b>		<b>5</b>		
More than 20 ft.		7		
10 to 20 ft.		5	x	
5 to 10 ft.		3		
Less than 5 ft.		1		
<b>Current</b>		<b>2</b>		
Fast		2		
Slow		1	x	
<b>Total Points for site</b>		<b>37</b>		
0-30 Minor		30-36 Moderate		Severe
				>36 Severe






Streambank Erosion Severity Index		Sites 73-79	
Site Description	Cutbank on the Red lake River south of Fisher		
Site visits on	6/8/2007 12:36 - 12:41	lat/long:	N47 47.329 W96 47.891 to N47 47.426 W96 47.986
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>5</b>	
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>5</b>	
Increasing	5	x	
Decreasing or stable	1		
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>5</b>	
0-10%	5	x	
10-50%	3		
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullyng by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>5</b>	
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>2</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>37</b>	
		<b>Severe</b>	
0-30	Minor	30-36	Moderate
		>36	Severe
<p>Together, these photos show about 1/3 mile of eroding cutbank around the bend of the river</p>			






Streambank Erosion Severity Index		Sites 58-69	
Site Description	Badly eroding bend in the river south of Fisher		
Site visits on	6/8/2007 11:10 - 11:24	lat/long:	N47 47.128 W96 46.201
OBSERVATION	SCORE		
<b>Condition of bank</b>	<b>5</b>		
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>	<b>5</b>		
Increasing	5	x	
Decreasing or stable	1		
<b>Side-slope of bank</b>	<b>5</b>		
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>	<b>5</b>		
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>	<b>2</b>		
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>	<b>1</b>		
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>	<b>5</b>		
0-10%	5	x	
10-50%	3		
50-100%	1		
<b>Apparent cause of erosion</b>	<b>2</b>		
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1	x	
Gullying by side channels	1	x	
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>	<b>5</b>		
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>	<b>2</b>		
Fast	2		
Slow	1	x	
<b>Total Points for site</b>	<b>37</b>	<b>Severe</b>	
0-30	Minor	30-36 Moderate	>36 Severe
This mile long reach is immediately downstream of the confluence with Burnham Creek. There also are newly constructed lagoons near the apex of this bend. These could add weight and moisture to the already unstable banks.			



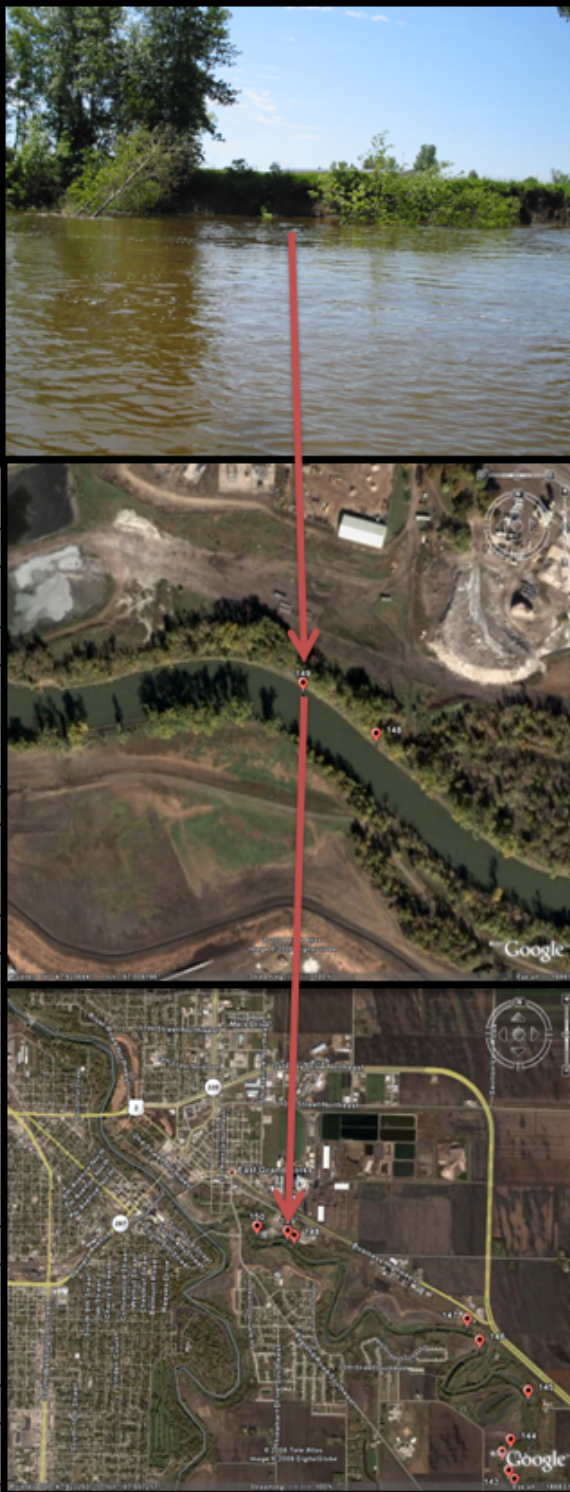
Streambank Erosion Severity Index		Site 95					
Site Description	eroding bank along a field near Fisher						
Site visits on	6/9/2007 9:23		lat/long:				
OBSERVATION		SCORE		  			
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding	5		x				
Toe undercutting	3						
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>5</b>					
Increasing	5		x				
Decreasing or stable	1						
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5		x				
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5		x				
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2		x				
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1		x				
<b>Vegetative Cover on bank slope</b>		<b>5</b>					
0-10%	5		x				
10-50%	3						
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullying by side channels	1						
Bend in river	2		x				
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>5</b>					
More than 20 ft.	7						
10 to 20 ft.	5		x				
5 to 10 ft.	3						
Less than 5 ft.	1						
<b>Current</b>		<b>2</b>					
Fast	2						
Slow	1		x				
<b>Total Points for site</b>		<b>37</b>		<b>Severe</b>			
0-30	Minor	30-36	Moderate	>36	Severe		
GPS wasn't getting correct readings for sites 95-98							








Streambank Erosion Severity Index		Site 112					
Site Description		Tall cutbank, SW of Fisher Rest Area					
Site visits on		6/9/2007 11:28		lat/long:	N47 50.419 W96 52.637		
OBSERVATION		SCORE		  			
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding	5	x					
Toe undercutting	3						
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>5</b>					
Increasing	5	x					
Decreasing or stable	1						
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>2</b>					
Sand	3						
Gravel	2						
Stratified	2	x					
Clay, loam	1						
<b>Vegetative Cover on bank slope</b>		<b>3</b>					
0-10%	5						
10-50%	3	x					
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullying by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>7</b>					
More than 20 ft.	7	x					
10 to 20 ft.	5						
5 to 10 ft.	3						
Less than 5 ft.	1						
<b>Current</b>		<b>1</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>37</b>		<b>Severe</b>			
0-30	Minor	30-36	Moderate	>36	Severe		

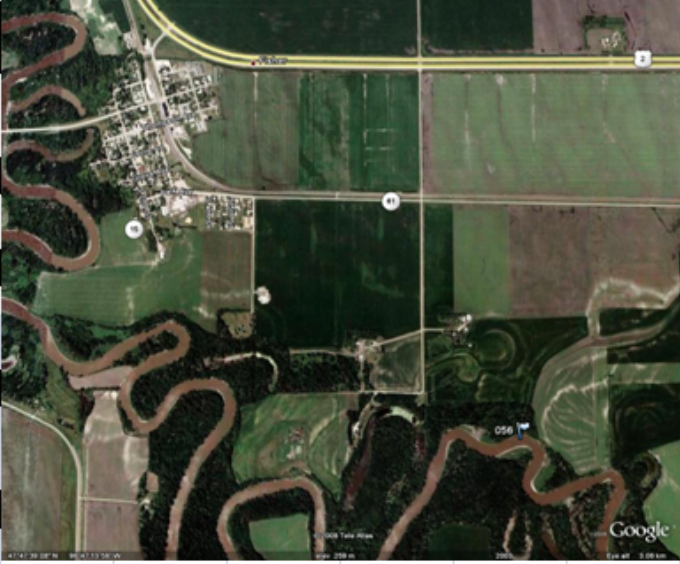


## Moderate





Streambank Erosion Severity Index		
Site Description	Eroding cutbank in East Grand Forks	
Site visits on	6/10/2007	lat/long: N47 55.256 W97 00.483
OBSERVATION	SCORE	
<b>Condition of bank</b>	<b>5</b>	
Toe and upper bank eroding	5	x
Toe undercutting	3	
Toe stable, upper bank erodin	1	
<b>Problem Trend</b>	<b>5</b>	
Increasing	5	x
Decreasing or stable	1	
<b>Side-slope of bank</b>	<b>5</b>	
Vertical, 1:1	5	1:1
2:1, 3:1	2	
4:1 or flatter	1	
<b>Length of eroded bank</b>	<b>5</b>	
More than 50 ft.	5	
20 to 50 ft.	3	x
Less than 20 ft.	1	
<b>Depth of river</b>	<b>2</b>	
More than 3 ft.	2	
Less than 3 ft.	1	x
<b>Soil type or texture</b>	<b>1</b>	
Sand	3	?
Gravel	2	
Stratified	2	
Clay, loam	1	
<b>Vegetative Cover on bank slope</b>	<b>5</b>	
0-10%	5	
10-50%	3	x
50-100%	1	
<b>Apparent cause of erosion</b>	<b>2</b>	
Light access traffic	1	x
Obstruction in river	1	
Bank seepage	1	
Gullyng by side channels	1	
Bend in river	2	x
Wave action (impoundments)	2	
Road-stream crossing;	3	
Moderate access traffic	3	
Heavy access (foot, horse,	5	
<b>Mean height of eroded bank</b>	<b>5</b>	
More than 20 ft.	7	
10 to 20 ft.	5	
5 to 10 ft.	3	x
Less than 5 ft.	1	
<b>Current</b>	<b>1</b>	
Fast	2	x
Slow	1	
<b>Total Points for site</b>	<b>36</b>	
<b>Moderate</b>		
0-30	Minor	30-36
		Moderate
		>36
		Severe



Streambank Erosion Severity Index		Site 115					
Site Description		>1000' stretch of eroded river bank. Some parts unstable with gullies					
Site visits on		6/9/2007 13:15		lat/long:		N47 51.278 W96 54.166	
OBSERVATION		SCORE		   			
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding	5	x					
Toe undercutting	3						
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>5</b>					
Increasing	5	x					
Decreasing or stable	1						
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>5</b>					
0-10%	5	x					
10-50%	3						
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gully by side channels	1	x					
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>5</b>					
More than 20 ft.	7						
10 to 20 ft.	5	x					
5 to 10 ft.	3						
Less than 5 ft.	1						
<b>Current</b>		<b>1</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>36</b>		<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe		


Streambank Erosion Severity Index		Site 39					
Site Description		Eroding streambank 3.3 miles SE of Fisher					
Site visits on		6/8/2007 9:47		lat/long:		N47 46.872 W96 43.725	
OBSERVATION		SCORE		  			
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding		5	x				
Toe undercutting		3					
Toe stable, upper bank eroding		1					
<b>Problem Trend</b>		<b>5</b>					
Increasing		5	x				
Decreasing or stable		1					
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1		5	x				
2:1, 3:1		2					
4:1 or flatter		1					
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.		5	x				
20 to 50 ft.		3					
Less than 20 ft.		1					
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.		2	x				
Less than 3 ft.		1					
<b>Soil type or texture</b>		<b>1</b>					
Sand		3					
Gravel		2					
Stratified		2					
Clay, loam		1	x				
<b>Vegetative Cover on bank slope</b>		<b>5</b>					
0-10%		5	x				
10-50%		3					
50-100%		1					
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic		1					
Obstruction in river		1					
Bank seepage		1					
Gullying by side channels		1					
Bend in river		2	x				
Wave action (impoundments)		2					
Road-stream crossing; grade/shoulder		3					
Moderate access traffic		3					
Heavy access (foot, horse, etc.) traffic		5					
<b>Mean height of eroded bank</b>		<b>3</b>					
More than 20 ft.		7					
10 to 20 ft.		5					
5 to 10 ft.		3	x				
Less than 5 ft.		1					
<b>Current</b>		<b>2</b>					
Fast		2					
Slow		1	x				
<b>Total Points for site</b>		<b>35</b>		<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe		

Streambank Erosion Severity Index		Site 56					
Site Description	Cutbank along bend in Red Lake River SE of Fisher						
Site visits on	6/8/2007 10:59		lat/long:	N47 47.241 W96 46.552			
OBSERVATION		SCORE	  				
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding	5	x					
Toe undercutting	3						
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>5</b>					
Increasing	5	x					
Decreasing or stable	1						
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>5</b>					
0-10%	5	x					
10-50%	3						
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullying by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>3</b>					
More than 20 ft.	7						
10 to 20 ft.	5						
5 to 10 ft.	3	x					
Less than 5 ft.	1						
<b>Current</b>		<b>2</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>35</b>	<b>Moderate</b>				
0-30	Minor	30-36	Moderate	>36	Severe		
Eroding despite the fact that the streambanks are wooded and buffered.							

Streambank Erosion Severity Index		Sites 71-72					
Site Description	Cutbank on the Red Lake River south of Fisher						
Site visits on	6/8/2007 12:35		lat/long:	N47 47.376 W96 47.813			
OBSERVATION		SCORE		   			
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding	5	x					
Toe undercutting	3						
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>5</b>					
Increasing	5	x					
Decreasing or stable	1						
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>5</b>					
0-10%	5	x					
10-50%	3						
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullying by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>3</b>					
More than 20 ft.	7						
10 to 20 ft.	5						
5 to 10 ft.	3	x					
Less than 5 ft.	1						
<b>Current</b>		<b>2</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>35</b>		<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe		
<p>Altogether, this eroded bank extends the full 1/3 mile length of the outside of this bend in the river.</p>							

Streambank Erosion Severity Index		Sites 80-85	
Site Description	Very long stretch of eroding river bank south of Fisher		
Site visits on	6/8/2007 12:56	lat/long:	N47 47.769 W96 48.510
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>5</b>	
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>5</b>	
Increasing	5	x	
Decreasing or stable	1		
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>3</b>	
0-10%	5		
10-50%	3	x	
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullying by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>5</b>	
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>2</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>35</b>	<b>Moderate</b>
0-30	Minor	30-36	Moderate
		>36	Severe
The eroded areas in this group alone occur across a .5 mile length of stream. These sites combine with sites 86 through 94 to form a nearly continuous 1.3 mile stretch of river with eroding banks.			



Streambank Erosion Severity Index		Site 97							
Site Description		Eroding bank on outside of bend in river near Fisher and CSAH 15 crossing							
Site visits on		6/9/2007 9:26		lat/long:					
OBSERVATION		SCORE							
<b>Condition of bank</b>		<b>5</b>							
Toe and upper bank eroding		5	x						
Toe undercutting		3							
Toe stable, upper bank eroding		1							
<b>Problem Trend</b>		<b>5</b>							
Increasing		5	x						
Decreasing or stable		1							
<b>Side-slope of bank</b>		<b>5</b>							
Vertical, 1:1		5	x						
2:1, 3:1		2							
4:1 or flatter		1							
<b>Length of eroded bank</b>		<b>5</b>							
More than 50 ft.		5	x						
20 to 50 ft.		3							
Less than 20 ft.		1							
<b>Depth of river</b>		<b>2</b>							
More than 3 ft.		2	x						
Less than 3 ft.		1							
<b>Soil type or texture</b>		<b>1</b>							
Sand		3							
Gravel		2							
Stratified		2							
Clay, loam		1	x						
<b>Vegetative Cover on bank slope</b>		<b>3</b>							
0-10%		5							
10-50%		3	x						
50-100%		1							
<b>Apparent cause of erosion</b>		<b>2</b>							
Light access traffic		1							
Obstruction in river		1							
Bank seepage		1							
Gullyng by side channels		1							
Bend in river		2	x						
Wave action (impoundments)		2							
Road-stream crossing;		3							
Moderate access traffic		3							
Heavy access (foot, horse, etc.)		5							
<b>Mean height of eroded bank</b>		<b>5</b>							
More than 20 ft.		7							
10 to 20 ft.		5	x						
5 to 10 ft.		3							
Less than 5 ft.		1							
<b>Current</b>		<b>2</b>							
Fast		2							
Slow		1	x						
<b>Total Points for site</b>		<b>35</b>		<b>Moderate</b>					
0-30	Minor	30-36	Moderate	>36	Severe				
GPS wasn't getting correct readings for sites 95-98									









Streambank Erosion Severity Index		Site 111	
Site Description	Eroding bank along field S of Fisher Rest Stop		
Site visits on	6/9/2007 11:03	lat/long:	N47 49.693 W96 51.624
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>5</b>	
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>5</b>	
Increasing	5	x	
Decreasing or stable	1		
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>2</b>	
Sand	3		
Gravel	2		
Stratified	2	x	
Clay, loam	1		
<b>Vegetative Cover on bank slope</b>		<b>3</b>	
0-10%	5		
10-50%	3	x	
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gully by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>5</b>	
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>1</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>35</b>	<b>Moderate</b>
0-30	Minor	30-36	Moderate
		>36	Severe
This spot is eroding the most where the plowed field is nearer to the river			



Streambank Erosion Severity Index			
Site Description	Washout along a field, outside of a bend, south of Mallory		
Site visits on	6/9/2007 13:40	lat/long:	N47 51.419 W96 54.672
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>5</b>	
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>5</b>	
Increasing	5	x	
Decreasing or stable	1		
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>2</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>3</b>	
0-10%	5		
10-50%	3	x	
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gully by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>5</b>	
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>1</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>35</b>	<b>Moderate</b>
0-30	Minor	30-36	Moderate
		>36	Severe



Streambank Erosion Severity Index						
Site Description	Bank sloughing between Fisher and EGF - point #135 on RLRR Tour					
Site visits on	6/9/2007 14:47		lat/long:	N47 52.548 W96 56.247		
OBSERVATION		SCORE	   			
<b>Condition of bank</b>		<b>5</b>				
Toe and upper bank eroding	5	x				
Toe undercutting	3					
Toe stable, upper bank eroding	1					
<b>Problem Trend</b>		<b>5</b>				
Increasing	5	x				
Decreasing or stable	1					
<b>Side-slope of bank</b>		<b>5</b>				
Vertical, 1:1	5	x				
2:1, 3:1	2					
4:1 or flatter	1					
<b>Length of eroded bank</b>		<b>5</b>				
More than 50 ft.	5	x				
20 to 50 ft.	3					
Less than 20 ft.	1					
<b>Depth of river</b>		<b>2</b>				
More than 3 ft.	2	x				
Less than 3 ft.	1					
<b>Soil type or texture</b>		<b>1</b>				
Sand	3					
Gravel	2					
Stratified	2					
Clay, loam	1	x				
<b>Vegetative Cover on bank slope</b>		<b>5</b>				
0-10%	5	x				
10-50%	3					
50-100%	1					
<b>Apparent cause of erosion</b>		<b>1</b>				
Light access traffic	1					
Obstruction in river	1					
Bank seepage	1	x				
Gullying by side channels	1	x				
Bend in river	2					
Wave action (impoundments)	2					
Road-stream crossing;	3					
Moderate access traffic	3					
Heavy access (foot, horse, etc.)	5					
<b>Mean height of eroded bank</b>		<b>5</b>				
More than 20 ft.	7					
10 to 20 ft.	5	x				
5 to 10 ft.	3					
Less than 5 ft.	1					
<b>Current</b>		<b>1</b>				
Fast	2					
Slow	1	x				
<b>Total Points for site</b>		<b>35</b>	<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe	
Erosion may be caused by combination of the force of field runoff from across the river and water saturated stream banks from and oxbow lake.						

**Streambank Erosion Severity Index**

Site Description Tall eroding bank on an outside bend of the river, south of Mallory  
 Site visits on 6/9/2007 13:54 lat/long: N47 51.609 W96 54.984

OBSERVATION		SCORE
<b>Condition of bank</b>		<b>3</b>
Toe and upper bank eroding	5	
Toe undercutting	3	x
Toe stable, upper bank eroding	1	
<b>Problem Trend</b>		<b>5</b>
Increasing	5	x
Decreasing or stable	1	
<b>Side-slope of bank</b>		<b>5</b>
Vertical, 1:1	5	x
2:1, 3:1	2	
4:1 or flatter	1	
<b>Length of eroded bank</b>		<b>5</b>
More than 50 ft.	5	x
20 to 50 ft.	3	
Less than 20 ft.	1	
<b>Depth of river</b>		<b>2</b>
More than 3 ft.	2	x
Less than 3 ft.	1	
<b>Soil type or texture</b>		<b>2</b>
Sand	3	
Gravel	2	
Stratified	2	x
Clay, loam	1	
<b>Vegetative Cover on bank slope</b>		<b>3</b>
0-10%	5	
10-50%	3	x
50-100%	1	
<b>Apparent cause of erosion</b>		<b>2</b>
Light access traffic	1	
Obstruction in river	1	
Bank seepage	1	
Gullyng by side channels	1	
Bend in river	2	x
Wave action (impoundments)	2	
Road-stream crossing;	3	
Moderate access traffic	3	
Heavy access (foot, horse, etc.)	5	
<b>Mean height of eroded bank</b>		<b>7</b>
More than 20 ft.	7	x
10 to 20 ft.	5	
5 to 10 ft.	3	
Less than 5 ft.	1	
<b>Current</b>		<b>1</b>
Fast	2	
Slow	1	x



<b>Total Points for site</b>		<b>35</b>	<b>Moderate</b>
0-30	Minor	30-36	Moderate
		>36	Severe

**Streambank Erosion Severity Index Sites 105, 109, 110**

Site Description Slumping banks NW of Fisher that will eventually cut off a meander in the river





Site visits on 6/9/2007 10:40 lat/long: N47 49.632 W96 51.229

OBSERVATION		SCORE
<b>Condition of bank</b>		<b>5</b>
Toe and upper bank eroding	5	X
Toe undercutting	3	
Toe stable, upper bank eroding	1	
<b>Problem Trend</b>		<b>5</b>
Increasing	5	x
Decreasing or stable	1	
<b>Side-slope of bank</b>		<b>5</b>
Vertical, 1:1	5	x
2:1, 3:1	2	
4:1 or flatter	1	
<b>Length of eroded bank</b>		<b>5</b>
More than 50 ft.	5	x
20 to 50 ft.	3	
Less than 20 ft.	1	
<b>Depth of river</b>		<b>2</b>
More than 3 ft.	2	x
Less than 3 ft.	1	
<b>Soil type or texture</b>		<b>1</b>
Sand	3	
Gravel	2	
Stratified	2	
Clay, loam	1	x
<b>Vegetative Cover on bank slope</b>		<b>1</b>
0-10%	5	
10-50%	3	
50-100%	1	x
<b>Apparent cause of erosion</b>		<b>2</b>
Light access traffic	1	
Obstruction in river	1	
Bank seepage	1	
Gullying by side channels	1	
Bend in river	2	x
Wave action (impoundments)	2	
Road-stream crossing;	3	
Moderate access traffic	3	
Heavy access (foot, horse, etc.)	5	
<b>Mean height of eroded bank</b>		<b>7</b>
More than 20 ft.	7	x
10 to 20 ft.	5	
5 to 10 ft.	3	
Less than 5 ft.	1	
<b>Current</b>		<b>1</b>
Fast	2	
Slow	1	x



<b>Total Points for site</b>		<b>34</b>	<b>Moderate</b>		
0-30	Minor	30-36	Moderate	>36	Severe

This site should be a priority over sites 108 and 106, which will be cut off from river flow if erosion and slumping continues here.

Streambank Erosion Severity Index					
Site Description		Long stretch of actively eroding cutbank along a field NW of Fisher			
Site visits on		6/9/2007 14:20	lat/long: N47 52.039 W96 55.419		
OBSERVATION		SCORE		   	
<b>Condition of bank</b>		<b>5</b>			
Toe and upper bank eroding	5	x			
Toe undercutting	3				
Toe stable, upper bank eroding	1				
<b>Problem Trend</b>		<b>5</b>			
Increasing	5	x			
Decreasing or stable	1				
<b>Side-slope of bank</b>		<b>5</b>			
Vertical, 1:1	5	x			
2:1, 3:1	2				
4:1 or flatter	1				
<b>Length of eroded bank</b>		<b>5</b>			
More than 50 ft.	5	x			
20 to 50 ft.	3				
Less than 20 ft.	1				
<b>Depth of river</b>		<b>2</b>			
More than 3 ft.	2	x			
Less than 3 ft.	1				
<b>Soil type or texture</b>		<b>1</b>			
Sand	3				
Gravel	2				
Stratified	2				
Clay, loam	1	x			
<b>Vegetative Cover on bank slope</b>		<b>3</b>			
0-10%	5				
10-50%	3	x			
50-100%	1				
<b>Apparent cause of erosion</b>		<b>2</b>			
Light access traffic	1				
Obstruction in river	1				
Bank seepage	1	x			
Gully by side channels	1				
Bend in river	2	x			
Wave action (impoundments)	2				
Road-stream crossing;	3				
Moderate access traffic	3				
Heavy access (foot, horse, etc.)	5				
<b>Mean height of eroded bank</b>		<b>5</b>			
More than 20 ft.	7				
10 to 20 ft.	5	x			
5 to 10 ft.	3				
Less than 5 ft.	1				
<b>Current</b>		<b>1</b>			
Fast	2				
Slow	1	x			
<b>Total Points for site</b>		<b>34</b>		<b>Moderate</b>	
0-30	Minor	30-36	Moderate	>36	Severe
Affected by agriculture, bend in river, saturated banks (oxbow lake)					

**Streambank Erosion Severity Index**





Site Description      Actively eroding channel/gully across a bend in the river south of Mallory

Site visits on      6/9/2007 14:07      lat/long:      N47 51.702 W96 55.172

OBSERVATION		SCORE
<b>Condition of bank</b>		<b>3</b>
Toe and upper bank eroding	5	
Toe undercutting	3	x
Toe stable, upper bank eroding	1	
<b>Problem Trend</b>		<b>5</b>
Increasing	5	x
Decreasing or stable	1	
<b>Side-slope of bank</b>		<b>5</b>
Vertical, 1:1	5	x
2:1, 3:1	2	
4:1 or flatter	1	
<b>Length of eroded bank</b>		<b>5</b>
More than 50 ft.	5	x
20 to 50 ft.	3	
Less than 20 ft.	1	
<b>Depth of river</b>		<b>2</b>
More than 3 ft.	2	x
Less than 3 ft.	1	
<b>Soil type or texture</b>		<b>1</b>
Sand	3	
Gravel	2	
Stratified	2	
Clay, loam	1	x
<b>Vegetative Cover on bank slope</b>		<b>5</b>
0-10%	5	x
10-50%	3	
50-100%	1	
<b>Apparent cause of erosion</b>		<b>2</b>
Light access traffic	1	
Obstruction in river	1	
Bank seepage	1	
Gullyng by side channels	1	
Bend in river	2	x
Wave action (impoundments)	2	
Road-stream crossing;	3	
Moderate access traffic	3	
Heavy access (foot, horse, etc.)	5	
<b>Mean height of eroded bank</b>		<b>5</b>
More than 20 ft.	7	
10 to 20 ft.	5	x
5 to 10 ft.	3	
Less than 5 ft.	1	
<b>Current</b>		<b>1</b>
Fast	2	
Slow	1	x



<b>Total Points for site</b>		<b>34</b>	<b>Moderate</b>
0-30	Minor	30-36	Moderate
		>36	Severe

Streambank Erosion Severity Index		Site 52					
Site Description		Cutbank along bend in Red Lake River SE of Fisher					
Site visits on		6/8/2007 10:43		lat/long:		N47 46.912 W96 45.800	
OBSERVATION		SCORE		   			
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding	5	x					
Toe undercutting	3						
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>5</b>					
Increasing	5	x					
Decreasing or stable	1						
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>3</b>					
0-10%	5						
10-50%	3	x					
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gully by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing; grade/shoulder	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.) traffic	5						
<b>Mean height of eroded bank</b>		<b>3</b>					
More than 20 ft.	7						
10 to 20 ft.	5						
5 to 10 ft.	3	x					
Less than 5 ft.	1						
<b>Current</b>		<b>2</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>33</b>		<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe		
This 1/2 mile stretch of streambank is eroding despite the fact that the streambanks are wooded and buffered.							







Streambank Erosion Severity Index		Site 88-93	
Site Description	Long stretch of bare streambank along outside of river bend near Fisher		
Site visits on	6/8/2007 12:58 - 13:03	lat/long:	N47 47.866 W96 48.340 to N47 47.692 W96 48.302
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>5</b>	
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>1</b>	
Increasing	5	x	
Decreasing or stable	1		
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>5</b>	
0-10%	5	x	
10-50%	3		
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullyng by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>5</b>	
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>2</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>33</b>	
0-30	Minor	30-36	Moderate
		>36	Severe






Streambank Erosion Severity Index		Site 54			
Site Description		Erosion by oxbow SE of EGF			
Site visits on		6/8/2007 10:52		lat/long: N47 47.128 W96 46.201	
OBSERVATION			SCORE		
<b>Condition of bank</b>			<b>5</b>		
Toe and upper bank eroding		5	x		
Toe undercutting		3			
Toe stable, upper bank eroding		1			
<b>Problem Trend</b>			<b>5</b>		
Increasing		5	x		
Decreasing or stable		1			
<b>Side-slope of bank</b>			<b>5</b>		
Vertical, 1:1		5	x		
2:1, 3:1		2			
4:1 or flatter		1			
<b>Length of eroded bank</b>			<b>5</b>		
More than 50 ft.		5	x		
20 to 50 ft.		3			
Less than 20 ft.		1			
<b>Depth of river</b>			<b>2</b>		
More than 3 ft.		2	x		
Less than 3 ft.		1			
<b>Soil type or texture</b>			<b>1</b>		
Sand		3			
Gravel		2			
Stratified		2			
Clay, loam		1	x		
<b>Vegetative Cover on bank slope</b>			<b>3</b>		
0-10%		5			
10-50%		3	x		
50-100%		1			
<b>Apparent cause of erosion</b>			<b>2</b>		
Light access traffic		1			
Obstruction in river		1			
Bank seepage		1			
Gullying by side channels		1			
Bend in river		2	x		
Wave action (impoundments)		2			
Road-stream crossing; grade/shoulder		3			
Moderate access traffic		3			
Heavy access (foot, horse, etc.) traffic		5			
<b>Mean height of eroded bank</b>			<b>3</b>		
More than 20 ft.		7			
10 to 20 ft.		5			
5 to 10 ft.		3	x		
Less than 5 ft.		1			
<b>Current</b>			<b>1</b>		
Fast		2			
Slow		1	x		
<b>Total Points for site</b>			<b>32</b>		
			<b>Moderate</b>		
0-30	Minor	30-36	Moderate	>36	Severe







Streambank Erosion Severity Index		Site 103				
Site Description	Eroding and slumping stembank NW of Fisher					
Site visits on	6/9/2007 10:15		lat/long:	N47 49.144 W96 50.523		
OBSERVATION		SCORE				
<b>Condition of bank</b>		<b>5</b>				
Toe and upper bank eroding	5	x				
Toe undercutting	3					
Toe stable, upper bank eroding	1					
<b>Problem Trend</b>		<b>5</b>				
Increasing	5	x				
Decreasing or stable	1					
<b>Side-slope of bank</b>		<b>5</b>				
Vertical, 1:1	5	x				
2:1, 3:1	2					
4:1 or flatter	1					
<b>Length of eroded bank</b>		<b>5</b>				
More than 50 ft.	5	x				
20 to 50 ft.	3					
Less than 20 ft.	1					
<b>Depth of river</b>		<b>2</b>				
More than 3 ft.	2	x				
Less than 3 ft.	1					
<b>Soil type or texture</b>		<b>1</b>				
Sand	3					
Gravel	2					
Stratified	2					
Clay, loam	1	x				
<b>Vegetative Cover on bank slope</b>		<b>1</b>				
0-10%	5					
10-50%	3					
50-100%	1	x				
<b>Apparent cause of erosion</b>		<b>2</b>				
Light access traffic	1					
Obstruction in river	1					
Bank seepage	1					
Gullyng by side channels	1					
Bend in river	2	x				
Wave action (impoundments)	2					
Road-stream crossing;	3					
Moderate access traffic	3					
Heavy access (foot, horse, etc.)	5					
<b>Mean height of eroded bank</b>		<b>5</b>				
More than 20 ft.	7					
10 to 20 ft.	5	x				
5 to 10 ft.	3					
Less than 5 ft.	1					
<b>Current</b>		<b>1</b>				
Fast	2					
Slow	1	x				
<b>Total Points for site</b>		<b>32</b>	<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe	
<p>This is another site that is being farmed right up to the edge of the streambank, which, undoubtedly, contributes very much to the bank instability problem we have here.</p>						

Streambank Erosion Severity Index		Site 104					
Site Description		Eroding cutbank along bend in river NW of Fisher					
Site visits on		6/9/2007 10:24		lat/long:		N47 49.475 W96 51.083	
OBSERVATION		SCORE		   			
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding	5	x					
Toe undercutting	3						
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>5</b>					
Increasing	5	x					
Decreasing or stable	1						
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>1</b>					
0-10%	5						
10-50%	3						
50-100%	1	x					
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullyng by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>5</b>					
More than 20 ft.	7						
10 to 20 ft.	5	x					
5 to 10 ft.	3						
Less than 5 ft.	1						
<b>Current</b>		<b>1</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>32</b>		<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe		
Continued erosion at this site will eventually cut across and cut off a bend in the river to form an oxbow lake.							





Streambank Erosion Severity Index						
Site Description						
Site visits on 6/10/2007 11:02			lat/long:	N47 54.347 W96 58.211		
OBSERVATION		SCORE	  			
<b>Condition of bank</b>		<b>5</b>				
Toe and upper bank eroding	5	x				
Toe undercutting	3					
Toe stable, upper bank eroding	1					
<b>Problem Trend</b>		<b>5</b>				
Increasing	5	x				
Decreasing or stable	1					
<b>Side-slope of bank</b>		<b>5</b>				
Vertical, 1:1	5	x				
2:1, 3:1	2					
4:1 or flatter	1					
<b>Length of eroded bank</b>		<b>3</b>				
More than 50 ft.	5					
20 to 50 ft.	3	x				
Less than 20 ft.	1					
<b>Depth of river</b>		<b>2</b>				
More than 3 ft.	2	x				
Less than 3 ft.	1					
<b>Soil type or texture</b>		<b>1</b>				
Sand	3					
Gravel	2					
Stratified	2					
Clay, loam	1	x				
<b>Vegetative Cover on bank slope</b>		<b>3</b>				
0-10%	5					
10-50%	3	x				
50-100%	1					
<b>Apparent cause of erosion</b>		<b>2</b>				
Light access traffic	1					
Obstruction in river	1					
Bank seepage	1	x				
Gully by side channels	1					
Bend in river	2	x				
Wave action (impoundments)	2					
Road-stream crossing;	3					
Moderate access traffic	3					
Heavy access (foot, horse, etc.)	5					
<b>Mean height of eroded bank</b>		<b>5</b>				
More than 20 ft.	7					
10 to 20 ft.	5	x				
5 to 10 ft.	3					
Less than 5 ft.	1					
<b>Current</b>		<b>1</b>				
Fast	2					
Slow	1	x				
<b>Total Points for site</b>		<b>32</b>	<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe	

The force of water coming into the river from a ditch on the opposite bank and water pool behind the bank may be factors



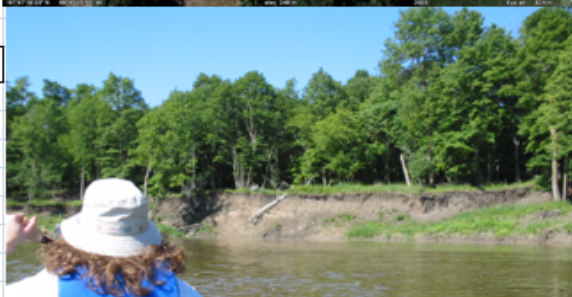

Streambank Erosion Severity Index							
Site Description							
Site visits on		6/9/2007 14:53		lat/long: N47 52.721 W96 56.482			
OBSERVATION			SCORE	   			
<b>Condition of bank</b>			<b>3</b>				
Toe and upper bank eroding	5						
Toe undercutting	3	x					
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>			<b>5</b>				
Increasing	5	x					
Decreasing or stable	1						
<b>Side-slope of bank</b>			<b>5</b>				
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>			<b>5</b>				
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>			<b>2</b>				
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>			<b>1</b>				
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>			<b>5</b>				
0-10%	5	x					
10-50%	3						
50-100%	1						
<b>Apparent cause of erosion</b>			<b>2</b>				
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullying by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>			<b>3</b>				
More than 20 ft.	7						
10 to 20 ft.	5						
5 to 10 ft.	3	x					
Less than 5 ft.	1						
<b>Current</b>			<b>1</b>				
Fast	2						
Slow	1	x					
<b>Total Points for site</b>			<b>32</b>	<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe		

Streambank Erosion Severity Index			Site 38	
Site Description	Eroding streambank 3 1/3 miles SE of Fisher			
Site visits on	6/8/2007 9:43		lat/long:	N47 47.080 W96 43.675
OBSERVATION			SCORE	
<b>Condition of bank</b>			<b>5</b>	
Toe and upper bank eroding	5			
Toe undercutting	3	x		
Toe stable, upper bank eroding	1			
<b>Problem Trend</b>			<b>1</b>	
Increasing	5			
Decreasing or stable	1	x		
<b>Side-slope of bank</b>			<b>5</b>	
Vertical, 1:1	5	x		
2:1, 3:1	2			
4:1 or flatter	1			
<b>Length of eroded bank</b>			<b>5</b>	
More than 50 ft.	5	x		
20 to 50 ft.	3			
Less than 20 ft.	1			
<b>Depth of river</b>			<b>2</b>	
More than 3 ft.	2	x		
Less than 3 ft.	1			
<b>Soil type or texture</b>			<b>1</b>	
Sand	3			
Gravel	2			
Stratified	2			
Clay, loam	1	x		
<b>Vegetative Cover on bank slope</b>			<b>1</b>	
0-10%	5			
10-50%	3			
50-100%	1	x		
<b>Apparent cause of erosion</b>			<b>2</b>	
Light access traffic	1			
Obstruction in river	1			
Bank seepage	1			
Gullying by side channels	1			
Bend in river	2	x		
Wave action (impoundments)	2			
Road-stream crossing; grade/shoulder	3			
Moderate access traffic	3			
Heavy access (foot, horse, etc.) traffic	5			
<b>Mean height of eroded bank</b>			<b>7</b>	
More than 20 ft.	7	x		
10 to 20 ft.	5			
5 to 10 ft.	3			
Less than 5 ft.	1			
<b>Current</b>			<b>2</b>	
Fast	2			
Slow	1	x		
<b>Total Points for site</b>			<b>31</b>	
			<b>Moderate</b>	
0-30	Minor		30-36	Moderate
			>36	Severe



Streambank Erosion Severity Index		Site 42					
Site Description		Eroding streambank 2.8 miles east of Fisher					
Site visits on		6/8/2007 9:57		lat/long:		N47 47.114 W96 44.386	
OBSERVATION		SCORE					
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding		5	x				
Toe undercutting		3					
Toe stable, upper bank eroding		1					
<b>Problem Trend</b>		<b>1</b>					
Increasing		5					
Decreasing or stable		1	x				
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1		5	x				
2:1, 3:1		2					
4:1 or flatter		1					
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.		5	x				
20 to 50 ft.		3					
Less than 20 ft.		1					
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.		2	x				
Less than 3 ft.		1					
<b>Soil type or texture</b>		<b>1</b>					
Sand		3					
Gravel		2					
Stratified		2					
Clay, loam		1	x				
<b>Vegetative Cover on bank slope</b>		<b>5</b>					
0-10%		5	x				
10-50%		3					
50-100%		1					
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic		1					
Obstruction in river		1					
Bank seepage		1					
Gullying by side channels		1					
Bend in river		2	x				
Wave action (impoundments)		2					
Road-stream crossing; grade/shoulder		3					
Moderate access traffic		3					
Heavy access (foot, horse, etc.) traffic		5					
<b>Mean height of eroded bank</b>		<b>3</b>					
More than 20 ft.		7					
10 to 20 ft.		5					
5 to 10 ft.		3	x				
Less than 5 ft.		1					
<b>Current</b>		<b>2</b>					
Fast		2					
Slow		1	x				
<b>Total Points for site</b>		<b>31</b>		<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe		






Streambank Erosion Severity Index		Site 46							
Site Description		Eroding cutbank 2.1 miles east of Fisher		lat/long:		N47 47.253 W96 45.151			
Site visits on		6/8/2007 10:16							
OBSERVATION			SCORE		   				
<b>Condition of bank</b>			<b>5</b>						
Toe and upper bank eroding		5	x						
Toe undercutting		3							
Toe stable, upper bank eroding		1							
<b>Problem Trend</b>			<b>1</b>						
Increasing		5							
Decreasing or stable		1	x						
<b>Side-slope of bank</b>			<b>5</b>						
Vertical, 1:1		5	x						
2:1, 3:1		2							
4:1 or flatter		1							
<b>Length of eroded bank</b>			<b>5</b>						
More than 50 ft.		5	x						
20 to 50 ft.		3							
Less than 20 ft.		1							
<b>Depth of river</b>			<b>2</b>						
More than 3 ft.		2	x						
Less than 3 ft.		1							
<b>Soil type or texture</b>			<b>1</b>						
Sand		3							
Gravel		2							
Stratified		2							
Clay, loam		1	x						
<b>Vegetative Cover on bank slope</b>			<b>3</b>						
0-10%		5							
10-50%		3	x						
50-100%		1							
<b>Apparent cause of erosion</b>			<b>2</b>						
Light access traffic		1							
Obstruction in river		1							
Bank seepage		1							
Gullying by side channels		1							
Bend in river		2	x						
Wave action (impoundments)		2							
Road-stream crossing; grade/shoulder		3							
Moderate access traffic		3							
Heavy access (foot, horse, etc.) traffic		5							
<b>Mean height of eroded bank</b>			<b>5</b>						
More than 20 ft.		7							
10 to 20 ft.		5	x						
5 to 10 ft.		3							
Less than 5 ft.		1							
<b>Current</b>			<b>2</b>						
Fast		2							
Slow		1	x						
<b>Total Points for site</b>			<b>31</b>		<b>Moderate</b>				
0-30	Minor	30-36	Moderate	>36	Severe				

Streambank Erosion Severity Index		Site 57	
Site Description	Cutbank along bend in Red Lake River SE of Fisher		
Site visits on	6/8/2007 11:02	lat/long:	N47 47.246 W96 46.788
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>5</b>	
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>1</b>	
Increasing	5		
Decreasing or stable	1	x	
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>3</b>	
0-10%	5		
10-50%	3	x	
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullyng by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>5</b>	
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>2</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>31</b>	
0-30	Minor	30-36	Moderate
		>36	Severe



Streambank Erosion Severity Index		Site 96					
Site Description	Eroding bank at outlet of drainage (oxbow lake?) near Fisher						
Site visits on	6/9/2007 9:24	lat/long:					
OBSERVATION		SCORE					
<b>Condition of bank</b>		<b>5</b>					
Toe and upper bank eroding	5	x					
Toe undercutting	3						
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>1</b>					
Increasing	5						
Decreasing or stable	1	x					
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>3</b>					
More than 50 ft.	5						
20 to 50 ft.	3	x					
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>3</b>					
0-10%	5						
10-50%	3	x					
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gully by side channels	1	x					
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>7</b>					
More than 20 ft.	7	x					
10 to 20 ft.	5						
5 to 10 ft.	3						
Less than 5 ft.	1						
<b>Current</b>		<b>2</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>31</b>	<b>Moderate</b>				
0-30	Minor	30-36	Moderate	>36	Severe		
GPS wasn't getting correct readings for sites 95-98							



Streambank Erosion Severity Index		Site 101							
Site Description		Eroding bank NW of Fisher		lat/long:		N47 48.813 W96 49.803			
Site visits on		6/9/2007 9:56							
OBSERVATION		SCORE		  					
<b>Condition of bank</b>		<b>5</b>							
Toe and upper bank eroding		5	x						
Toe undercutting		3							
Toe stable, upper bank eroding		1							
<b>Problem Trend</b>		<b>5</b>							
Increasing		5	x						
Decreasing or stable		1							
<b>Side-slope of bank</b>		<b>5</b>							
Vertical, 1:1		5	x						
2:1, 3:1		2							
4:1 or flatter		1							
<b>Length of eroded bank</b>		<b>3</b>							
More than 50 ft.		5							
20 to 50 ft.		3	x						
Less than 20 ft.		1							
<b>Depth of river</b>		<b>2</b>							
More than 3 ft.		2	x						
Less than 3 ft.		1							
<b>Soil type or texture</b>		<b>1</b>							
Sand		3							
Gravel		2							
Stratified		2							
Clay, loam		1	x						
<b>Vegetative Cover on bank slope</b>		<b>5</b>							
0-10%		5	x						
10-50%		3							
50-100%		1							
<b>Apparent cause of erosion</b>		<b>1</b>							
Light access traffic		1	?						
Obstruction in river		1							
Bank seepage		1	?						
Gullying by side channels		1							
Bend in river		2							
Wave action (impoundments)		2							
Road-stream crossing;		3							
Moderate access traffic		3							
Heavy access (foot, horse, etc.)		5							
<b>Mean height of eroded bank</b>		<b>3</b>							
More than 20 ft.		7							
10 to 20 ft.		5							
5 to 10 ft.		3	x						
Less than 5 ft.		1							
<b>Current</b>		<b>1</b>							
Fast		2							
Slow		1	x						
<b>Total Points for site</b>		<b>31</b>		<b>Moderate</b>					
0-30	Minor	30-36	Moderate	>36	Severe				
The bank is slumping where the land is farmed up to the streambank									

Streambank Erosion Severity Index			
Site Description	Long stretch of eroding bank along farmed river bank		
Site visits on	6/9/2007 13:27	lat/long:	N47 51.367 W96 54.379
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>5</b>	
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>1</b>	
Increasing	5		
Decreasing or stable	1	x	
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>3</b>	
0-10%	5		
10-50%	3	x	
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullying by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>5</b>	
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>1</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>30</b>	<b>Moderate</b>
0-30	Minor	30-36	Moderate
		>36	Severe



Streambank Erosion Severity Index			
Site Description	Erosion near the Riverbend Supper Club		
Site visits on	7/10/07	lat/long:	N47 54.639 W96 58.674
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>3</b>	
Toe and upper bank eroding	5		
Toe undercutting	3	x	
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>5</b>	
Increasing	5	x	
Decreasing or stable	1		
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>3</b>	
More than 50 ft.	5		
20 to 50 ft.	3	x	
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>3</b>	
0-10%	5		
10-50%	3	x	
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullying by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>5</b>	
More than 20 ft.	7		
10 to 20 ft.	5	x	
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>1</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>30</b>	
		<b>Moderate</b>	
0-30	Minor	30-36	Moderate
		>36	Severe



Streambank Erosion Severity Index		Site 113								
Site Description	Tall, slumping and eroding bank straight west of Fisher wayside rest									
Site visits on	6/9/2007 11:40		lat/long:	N47 50.829 W96 52.798						
OBSERVATION			SCORE							
<b>Condition of bank</b>			<b>5</b>							
Toe and upper bank eroding	5	x								
Toe undercutting	3									
Toe stable, upper bank eroding	1									
<b>Problem Trend</b>			<b>1</b>							
Increasing	5									
Decreasing or stable	1	x								
<b>Side-slope of bank</b>			<b>5</b>							
Vertical, 1:1	5	x								
2:1, 3:1	2									
4:1 or flatter	1									
<b>Length of eroded bank</b>			<b>5</b>							
More than 50 ft.	5	x								
20 to 50 ft.	3									
Less than 20 ft.	1									
<b>Depth of river</b>			<b>2</b>							
More than 3 ft.	2	x								
Less than 3 ft.	1									
<b>Soil type or texture</b>			<b>1</b>							
Sand	3									
Gravel	2									
Stratified	2									
Clay, loam	1	x								
<b>Vegetative Cover on bank slope</b>			<b>1</b>							
0-10%	5									
10-50%	3									
50-100%	1	x								
<b>Apparent cause of erosion</b>			<b>2</b>							
Light access traffic	1									
Obstruction in river	1									
Bank seepage	1									
Gullying by side channels	1									
Bend in river	2	x								
Wave action (impoundments)	2									
Road-stream crossing;	3									
Moderate access traffic	3									
Heavy access (foot, horse, etc.)	5									
<b>Mean height of eroded bank</b>			<b>7</b>							
More than 20 ft.	7	x								
10 to 20 ft.	5									
5 to 10 ft.	3									
Less than 5 ft.	1									
<b>Current</b>			<b>1</b>							
Fast	2									
Slow	1	x								
<b>Total Points for site</b>			<b>30</b>					<b>Moderate</b>		
0-30	Minor	30-36	Moderate	>36				Severe		
Bank is eroding and unstable where it is being farmed to the edge of the river.										

Streambank Erosion Severity Index							
Site Description		Erosion by oxbow SE of EGF					
Site visits on ___		6/10/2007 11:02		lat/long:			
OBSERVATION			SCORE				
<b>Condition of bank</b>			<b>3</b>				
Toe and upper bank eroding	5						
Toe undercutting	3	x					
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>			<b>5</b>				
Increasing	5	x					
Decreasing or stable	1						
<b>Side-slope of bank</b>			<b>5</b>				
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>			<b>3</b>				
More than 50 ft.	5						
20 to 50 ft.	3	x					
Less than 20 ft.	1						
<b>Depth of river</b>			<b>2</b>				
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>			<b>1</b>				
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>			<b>3</b>				
0-10%	5						
10-50%	3	x					
50-100%	1						
<b>Apparent cause of erosion</b>			<b>2</b>				
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullying by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>			<b>5</b>				
More than 20 ft.	7						
10 to 20 ft.	5	x					
5 to 10 ft.	3						
Less than 5 ft.	1						
<b>Current</b>			<b>1</b>				
Fast	2						
Slow	1	x					
<b>Total Points for site</b>			<b>30</b>	<b>Moderate</b>			
0-30	Minor	30-36	Moderate	>36	Severe		



## Minor

Streambank Erosion Severity Index		Site 47	
Site Description	Eroding cutbank 2 miles east of Fisher		
Site visits on	6/8/2007 10:20	lat/long:	N47 47.069 W96 45.277
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>3</b>	
Toe and upper bank eroding	5		
Toe undercutting	3	x	
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>1</b>	
Increasing	5		
Decreasing or stable	1	x	
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>1</b>	
0-10%	5		
10-50%	3		
50-100%	1	x	
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gully by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing; grade/shoulder	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.) traffic	5		
<b>Mean height of eroded bank</b>		<b>7</b>	
More than 20 ft.	7	x	
10 to 20 ft.	5		
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>2</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>29</b>	
0-30	Minor	30-36	Moderate
		>36	Severe



Streambank Erosion Severity Index			Site 48	
Site Description	Eroding cutbank 1.8 miles east of Fisher			
Site visits on	6/8/2007 10:25		lat/long:	N47 47.365 W96 45.573
OBSERVATION			SCORE	
<b>Condition of bank</b>			<b>5</b>	
Toe and upper bank eroding	5		x	
Toe undercutting	3			
Toe stable, upper bank eroding	1			
<b>Problem Trend</b>			<b>1</b>	
Increasing	5			
Decreasing or stable	1		x	
<b>Side-slope of bank</b>			<b>5</b>	
Vertical, 1:1	5		x	
2:1, 3:1	2			
4:1 or flatter	1			
<b>Length of eroded bank</b>			<b>5</b>	
More than 50 ft.	5		x	
20 to 50 ft.	3			
Less than 20 ft.	1			
<b>Depth of river</b>			<b>2</b>	
More than 3 ft.	2		x	
Less than 3 ft.	1			
<b>Soil type or texture</b>			<b>1</b>	
Sand	3			
Gravel	2			
Stratified	2			
Clay, loam	1		x	
<b>Vegetative Cover on bank slope</b>			<b>3</b>	
0-10%	5			
10-50%	3		x	
50-100%	1			
<b>Apparent cause of erosion</b>			<b>2</b>	
Light access traffic	1			
Obstruction in river	1			
Bank seepage	1			
Gully by side channels	1			
Bend in river	2		x	
Wave action (impoundments)	2			
Road-stream crossing; grade/shoulder	3			
Moderate access traffic	3			
Heavy access (foot, horse, etc.) traffic	5			
<b>Mean height of eroded bank</b>			<b>3</b>	
More than 20 ft.	7			
10 to 20 ft.	5			
5 to 10 ft.	3		x	
Less than 5 ft.	1			
<b>Current</b>			<b>2</b>	
Fast	2			
Slow	1		x	
<b>Total Points for site</b>			<b>29</b>	
0-30	Minor	30-36	Moderate	>36
				Severe




Streambank Erosion Severity Index		Site 53			
Site Description	Cutbank along bend in Red Lake River SE of Fisher				
Site visits on	6/8/2007 10:47		lat/long:	N47 46.898 W96 46.187	
OBSERVATION			SCORE		
<b>Condition of bank</b>			<b>5</b>		
Toe and upper bank eroding	5		x		
Toe undercutting	3				
Toe stable, upper bank eroding	1				
<b>Problem Trend</b>			<b>1</b>		
Increasing	5				
Decreasing or stable	1		x		
<b>Side-slope of bank</b>			<b>5</b>		
Vertical, 1:1	5		x		
2:1, 3:1	2				
4:1 or flatter	1				
<b>Length of eroded bank</b>			<b>5</b>		
More than 50 ft.	5		x		
20 to 50 ft.	3				
Less than 20 ft.	1				
<b>Depth of river</b>			<b>2</b>		
More than 3 ft.	2		x		
Less than 3 ft.	1				
<b>Soil type or texture</b>			<b>1</b>		
Sand	3				
Gravel	2				
Stratified	2				
Clay, loam	1		x		
<b>Vegetative Cover on bank slope</b>			<b>3</b>		
0-10%	5				
10-50%	3		x		
50-100%	1				
<b>Apparent cause of erosion</b>			<b>2</b>		
Light access traffic	1				
Obstruction in river	1				
Bank seepage	1				
Gully by side channels	1				
Bend in river	2		x		
Wave action (impoundments)	2				
Road-stream crossing; grade/shoulder	3				
Moderate access traffic	3				
Heavy access (foot, horse, etc.) traffic	5				
<b>Mean height of eroded bank</b>			<b>3</b>		
More than 20 ft.	7				
10 to 20 ft.	5				
5 to 10 ft.	3		x		
Less than 5 ft.	1				
<b>Current</b>			<b>2</b>		
Fast	2				
Slow	1		x		
<b>Total Points for site</b>			<b>29</b>		
			<b>Minor</b>		
0-30	Minor	30-36	Moderate	>36	Severe
Eroding despite the fact that the streambanks are wooded and buffered. There is an oxbow lake on the upland side of this cutbank, which would add weight and moisture.					



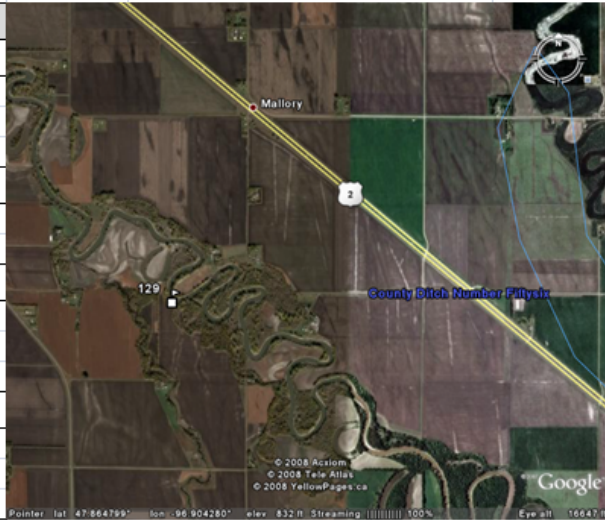
Streambank Erosion Severity Index		Site 55	
Site Description	Cutbank along bend in Red Lake River SE of Fisher		
Site visits on	6/8/2007 10:57	lat/long:	N47 47.112 W96 46.530
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>5</b>	
Toe and upper bank eroding	5	x	
Toe undercutting	3		
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>1</b>	
Increasing	5		
Decreasing or stable	1	x	
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>3</b>	
0-10%	5		
10-50%	3	x	
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullying by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing; grade/shoulder	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.) traffic	5		
<b>Mean height of eroded bank</b>		<b>3</b>	
More than 20 ft.	7		
10 to 20 ft.	5		
5 to 10 ft.	3	x	
Less than 5 ft.	1		
<b>Current</b>		<b>2</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>29</b>	<b>Minor</b>
0-30	Minor	30-36	Moderate
		>36	Severe
Eroding despite the fact that the streambanks are wooded and buffered.			







Streambank Erosion Severity Index		Site 86					
Site Description	Cutbank along bend in Red Lake Rier near Fisher						
Site visits on	6/8/2007 12:56	lat/long:	N47 47.769 W96 48.510				
OBSERVATION		SCORE					
<b>Condition of bank</b>		<b>3</b>					
Toe and upper bank eroding	5						
Toe undercutting	3	x					
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>1</b>					
Increasing	5						
Decreasing or stable	1	x					
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>3</b>					
0-10%	5						
10-50%	3	x					
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullyng by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>5</b>					
More than 20 ft.	7						
10 to 20 ft.	5	x					
5 to 10 ft.	3						
Less than 5 ft.	1						
<b>Current</b>		<b>2</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>29</b>	<b>Minor</b>				
0-30	Minor	30-36	Moderate	>36	Severe		











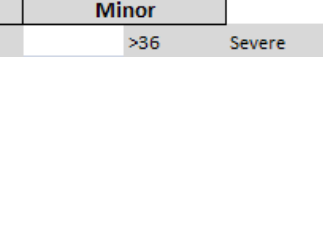




Streambank Erosion Severity Index			
Site Description	A large slump area on the south side of the river south of Mallory		
Site visits on	6/9/2007 14:09	lat/long:	N47 51.705 W96 55.265
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>1</b>	
Toe and upper bank eroding	5		
Toe undercutting	3		
Toe stable, upper bank eroding	1	x	
<b>Problem Trend</b>		<b>1</b>	
Increasing	5		
Decreasing or stable	1	x	
<b>Side-slope of bank</b>		<b>5</b>	
Vertical, 1:1	5	x	
2:1, 3:1	2		
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>3</b>	
0-10%	5		
10-50%	3	x	
50-100%	1		
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1	x	
Gully by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>7</b>	
More than 20 ft.	7	x	
10 to 20 ft.	5		
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>1</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>28</b>	
0-30	Minor	30-36	Moderate
		>36	Severe




Streambank Erosion Severity Index		Site 45					
Site Description	Eroding cutbank 2.1 miles east of Fisher			lat/long:	N47 47.295 W96 44.812		
Site visits on	6/8/2007 10:11						
OBSERVATION		SCORE					
<b>Condition of bank</b>		<b>3</b>					
Toe and upper bank eroding	5						
Toe undercutting	3	x					
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>1</b>					
Increasing	5						
Decreasing or stable	1	x					
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>3</b>					
0-10%	5						
10-50%	3	x					
50-100%	1						
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullying by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing; grade/shoulder	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.) traffic	5						
<b>Mean height of eroded bank</b>		<b>3</b>					
More than 20 ft.	7						
10 to 20 ft.	5						
5 to 10 ft.	3	x					
Less than 5 ft.	1						
<b>Current</b>		<b>2</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>27</b>		<b>Minor</b>			
0-30	Minor	30-36	Moderate	>36	Severe		





Streambank Erosion Severity Index		Sites 50-51					
Site Description	Relatively tall slumping streambank SE of Fisher						
Site visits on	6/8/2007 10:34			lat/long:	N47 47.406 W96 45.765		
OBSERVATION		SCORE		   			
<b>Condition of bank</b>		<b>3</b>					
Toe and upper bank eroding	5						
Toe undercutting	3	x					
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>1</b>					
Increasing	5						
Decreasing or stable	1	x					
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>1</b>					
0-10%	5						
10-50%	3						
50-100%	1	x					
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gully by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing; grade/shoulder	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.) traffic	5						
<b>Mean height of eroded bank</b>		<b>5</b>					
More than 20 ft.	7						
10 to 20 ft.	5	x					
5 to 10 ft.	3						
Less than 5 ft.	1						
<b>Current</b>		<b>2</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>27</b>		<b>Minor</b>			
0-30	Minor	30-36	Moderate	>36	Severe		











Streambank Erosion Severity Index		Site 16-18									
Site Description		Cattle operation 2 1/2 miles SE of Thief River Falls									
Site visits on		6/1/2007 11:19		lat/long:		N48 05.290 W96 05.665					
OBSERVATION		SCORE									
<b>Condition of bank</b>		<b>1</b>									
Toe and upper bank eroding		5									
Toe undercutting		3									
Toe stable, upper bank eroding		1								x	
<b>Problem Trend</b>		<b>5</b>									
Increasing		5								x	
Decreasing or stable		1									
<b>Side-slope of bank</b>		<b>5</b>									
Vertical, 1:1		5									
2:1, 3:1		2									
4:1 or flatter		1								x	
<b>Length of eroded bank</b>		<b>3</b>									
More than 50 ft.		5									
20 to 50 ft.		3								x	
Less than 20 ft.		1									
<b>Depth of river</b>		<b>2</b>									
More than 3 ft.		2									
Less than 3 ft.		1								x	
<b>Soil type or texture</b>		<b>1</b>									
Sand		3									
Gravel		2									
Stratified		2									
Clay, loam		1		x							
<b>Vegetative Cover on bank slope</b>		<b>1</b>									
0-10%		5									
10-50%		3									
50-100%		1								x	
<b>Apparent cause of erosion</b>		<b>5</b>									
Light access traffic		1									
Obstruction in river		1									
Bank seepage		1									
Gullying by side channels		1									
Bend in river		2									
Wave action (impoundments)		2									
Road-stream crossing; grade/shoulder		3									
Moderate access traffic		3									
Heavy access (foot, horse, etc.) traffic		5								x	
<b>Mean height of eroded bank</b>		<b>1</b>									
More than 20 ft.		7									
10 to 20 ft.		5									
5 to 10 ft.		3									
Less than 5 ft.		1		x							
<b>Current</b>		<b>2</b>									
Fast		2									
Slow		1		x							
<b>Total Points for site</b>		<b>26</b>		<b>Minor</b>							
0-30	Minor	30-36	Moderate	>36	Severe						

Streambank Erosion Severity Index		Site 98					
Site Description	Gullyng from drainage near Fisher and CSAH 15 Crossing						
Site visits on	6/9/2007 9:29	lat/long:					
OBSERVATION		SCORE					
<b>Condition of bank</b>		<b>3</b>					
Toe and upper bank eroding	5						
Toe undercutting	3	x					
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>5</b>					
Increasing	5	x					
Decreasing or stable	1						
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>1</b>					
More than 50 ft.	5						
20 to 50 ft.	3						
Less than 20 ft.	1	x					
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>3</b>					
0-10%	5						
10-50%	3	x					
50-100%	1						
<b>Apparent cause of erosion</b>		<b>1</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullyng by side channels	1	x					
Bend in river	2						
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>3</b>					
More than 20 ft.	7						
10 to 20 ft.	5						
5 to 10 ft.	3	x					
Less than 5 ft.	1						
<b>Current</b>		<b>2</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>26</b>	<b>Minor</b>				
0-30	Minor	30-36	Moderate	>36	Severe		
GPS wasn't getting correct readings for sites 95-98							



Streambank Erosion Severity Index		Site 102									
Site Description		Slumping streambank along a bend in the river NW of Fisher									
Site visits on		6/9/2007 9:58		lat/long:		N47 48.726 W96 49.943					
OBSERVATION		SCORE		   							
<b>Condition of bank</b>		<b>1</b>									
Toe and upper bank eroding		5									
Toe undercutting		3									
Toe stable, upper bank eroding		1								x	
<b>Problem Trend</b>		<b>1</b>									
Increasing		5									
Decreasing or stable		1								x	
<b>Side-slope of bank</b>		<b>5</b>									
Vertical, 1:1		5								x	
2:1, 3:1		2									
4:1 or flatter		1									
<b>Length of eroded bank</b>		<b>5</b>									
More than 50 ft.		5								x	
20 to 50 ft.		3									
Less than 20 ft.		1									
<b>Depth of river</b>		<b>2</b>									
More than 3 ft.		2								x	
Less than 3 ft.		1									
<b>Soil type or texture</b>		<b>1</b>									
Sand		3									
Gravel		2									
Stratified		2									
Clay, loam		1		x							
<b>Vegetative Cover on bank slope</b>		<b>1</b>									
0-10%		5									
10-50%		3									
50-100%		1		x							
<b>Apparent cause of erosion</b>		<b>2</b>									
Light access traffic		1									
Obstruction in river		1									
Bank seepage		1									
Gullying by side channels		1									
Bend in river		2		x							
Wave action (impoundments)		2									
Road-stream crossing;		3									
Moderate access traffic		3									
Heavy access (foot, horse, etc.)		5									
<b>Mean height of eroded bank</b>		<b>7</b>									
More than 20 ft.		7		x							
10 to 20 ft.		5									
5 to 10 ft.		3									
Less than 5 ft.		1									
<b>Current</b>		<b>1</b>									
Fast		2									
Slow		1		x							
<b>Total Points for site</b>		<b>26</b>		<b>Minor</b>							
0-30	Minor	30-36	Moderate	>36	Severe						
The bank is slumping where the land is farmed up to the streambank											

Streambank Erosion Severity Index							
Site Description	Sloughing bank along field between Fisher and East Grand						
Site visits on	6/9/2007 14:26	lat/long:	N47 52.046 W96 55.775				
OBSERVATION		SCORE		   			
<b>Condition of bank</b>		<b>3</b>					
Toe and upper bank eroding	5						
Toe undercutting	3	x					
Toe stable, upper bank eroding	1						
<b>Problem Trend</b>		<b>1</b>					
Increasing	5						
Decreasing or stable	1	x					
<b>Side-slope of bank</b>		<b>5</b>					
Vertical, 1:1	5	x					
2:1, 3:1	2						
4:1 or flatter	1						
<b>Length of eroded bank</b>		<b>5</b>					
More than 50 ft.	5	x					
20 to 50 ft.	3						
Less than 20 ft.	1						
<b>Depth of river</b>		<b>2</b>					
More than 3 ft.	2	x					
Less than 3 ft.	1						
<b>Soil type or texture</b>		<b>1</b>					
Sand	3						
Gravel	2						
Stratified	2						
Clay, loam	1	x					
<b>Vegetative Cover on bank slope</b>		<b>1</b>					
0-10%	5						
10-50%	3						
50-100%	1	x					
<b>Apparent cause of erosion</b>		<b>2</b>					
Light access traffic	1						
Obstruction in river	1						
Bank seepage	1						
Gullying by side channels	1						
Bend in river	2	x					
Wave action (impoundments)	2						
Road-stream crossing;	3						
Moderate access traffic	3						
Heavy access (foot, horse, etc.)	5						
<b>Mean height of eroded bank</b>		<b>5</b>					
More than 20 ft.	7						
10 to 20 ft.	5	x					
5 to 10 ft.	3						
Less than 5 ft.	1						
<b>Current</b>		<b>1</b>					
Fast	2						
Slow	1	x					
<b>Total Points for site</b>		<b>26</b>		<b>Minor</b>			
0-30	Minor	30-36	Moderate	>36	Severe		

Streambank Erosion Severity Index		Site 114				
Site Description		Large slump with limited erosion along a bend in the river SE of Mallory				
Site visits on		6/9/2007 11:51		lat/long: N47 50.635 W96 53.242		
OBSERVATION		SCORE		   		
<b>Condition of bank</b>		<b>0</b>				
Toe and upper bank eroding	5					
Toe undercutting	3					
Toe stable, upper bank eroding	1					
<b>Problem Trend</b>		<b>1</b>				
Increasing	5					
Decreasing or stable	1	x				
<b>Side-slope of bank</b>		<b>5</b>				
Vertical, 1:1	5	x				
2:1, 3:1	2					
4:1 or flatter	1					
<b>Length of eroded bank</b>		<b>5</b>				
More than 50 ft.	5	x				
20 to 50 ft.	3					
Less than 20 ft.	1					
<b>Depth of river</b>		<b>2</b>				
More than 3 ft.	2	x				
Less than 3 ft.	1					
<b>Soil type or texture</b>		<b>1</b>				
Sand	3					
Gravel	2					
Stratified	2					
Clay, loam	1	x				
<b>Vegetative Cover on bank slope</b>		<b>1</b>				
0-10%	5					
10-50%	3					
50-100%	1	x				
<b>Apparent cause of erosion</b>		<b>2</b>				
Light access traffic	1					
Obstruction in river	1					
Bank seepage	1					
Gully by side channels	1					
Bend in river	2	x				
Wave action (impoundments)	2					
Road-stream crossing;	3					
Moderate access traffic	3					
Heavy access (foot, horse, etc.)	5					
<b>Mean height of eroded bank</b>		<b>7</b>				
More than 20 ft.	7	x				
10 to 20 ft.	5					
5 to 10 ft.	3					
Less than 5 ft.	1					
<b>Current</b>		<b>1</b>				
Fast	2					
Slow	1	x				
<b>Total Points for site</b>		<b>25</b>		<b>Minor</b>		
0-30	Minor	30-36	Moderate	>36	Severe	

Streambank Erosion Severity Index		Site 106	
Site Description		Slumping bank on bend in river near farm NW of Fisher	
Site visits on		6/9/2007 10:47	lat/long: N47 49.342 W96 51.324
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>3</b>	
Toe and upper bank eroding	5		
Toe undercutting	3	x	
Toe stable, upper bank eroding	1		
<b>Problem Trend</b>		<b>1</b>	
Increasing	5		
Decreasing or stable	1	x	
<b>Side-slope of bank</b>		<b>2</b>	
Vertical, 1:1	5		
2:1, 3:1	2	x	
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>1</b>	
0-10%	5		
10-50%	3		
50-100%	1	x	
<b>Apparent cause of erosion</b>		<b>2</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1	x	
Gullying by side channels	1		
Bend in river	2	x	
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>7</b>	
More than 20 ft.	7	x	
10 to 20 ft.	5		
5 to 10 ft.	3		
Less than 5 ft.	1		
<b>Current</b>		<b>1</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>25</b>	
		<b>Minor</b>	
0-30	Minor	30-36	Moderate
		>36	Severe
The slump is approaching some farm buildings			



Streambank Erosion Severity Index			
Site Description	Bare soil and erosion in floodplain behind potatoe warehouses		
Site visits on	6/10/2007	N47 55.278 W97 00.769	
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>1</b>	
Toe and upper bank eroding	5		
Toe undercutting	3		
Toe stable, upper bank eroding	1	x	
<b>Problem Trend</b>		<b>1</b>	
Increasing	5		
Decreasing or stable	1	x	
<b>Side-slope of bank</b>		<b>1</b>	
Vertical, 1:1	5		
2:1, 3:1	2		
4:1 or flatter	1	1:1	
<b>Length of eroded bank</b>		<b>3</b>	
More than 50 ft.	5		
20 to 50 ft.	3	x	
Less than 20 ft.	1		
<b>Depth of river</b>		<b>2</b>	
More than 3 ft.	2	x	
Less than 3 ft.	1		
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>5</b>	
0-10%	5	x	
10-50%	3		
50-100%	1		
<b>Apparent cause of erosion</b>		<b>5</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullyng by side channels	1		
Bend in river	2		
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5	x	
<b>Mean height of eroded bank</b>		<b>3</b>	
More than 20 ft.	7		
10 to 20 ft.	5		
5 to 10 ft.	3	x	
Less than 5 ft.	1		
<b>Current</b>		<b>1</b>	
Fast	2		
Slow	1	x	
<b>Total Points for site</b>		<b>23</b>	<b>Minor</b>
0-30	Minor	30-36	Moderate
		>36	Severe



Streambank Erosion Severity Index		Site 100	
Site Description	Gullying tributary ditch W of Fisher		
Site visits on	6/9/2007 9:45	lat/long:	N47 48.453 W96 49.499
OBSERVATION		SCORE	
<b>Condition of bank</b>		<b>1</b>	
Toe and upper bank eroding	5		
Toe undercutting	3		
Toe stable, upper bank eroding	1	x	
<b>Problem Trend</b>		<b>5</b>	
Increasing	5	x	
Decreasing or stable	1		
<b>Side-slope of bank</b>		<b>2</b>	
Vertical, 1:1	5		
2:1, 3:1	2	x	
4:1 or flatter	1		
<b>Length of eroded bank</b>		<b>5</b>	
More than 50 ft.	5	x	
20 to 50 ft.	3		
Less than 20 ft.	1		
<b>Depth of river</b>		<b>1</b>	
More than 3 ft.	2		
Less than 3 ft.	1	x	
<b>Soil type or texture</b>		<b>1</b>	
Sand	3		
Gravel	2		
Stratified	2		
Clay, loam	1	x	
<b>Vegetative Cover on bank slope</b>		<b>1</b>	
0-10%	5		
10-50%	3		
50-100%	1	x	
<b>Apparent cause of erosion</b>		<b>1</b>	
Light access traffic	1		
Obstruction in river	1		
Bank seepage	1		
Gullying by side channels	1	x	
Bend in river	2		
Wave action (impoundments)	2		
Road-stream crossing;	3		
Moderate access traffic	3		
Heavy access (foot, horse, etc.)	5		
<b>Mean height of eroded bank</b>		<b>1</b>	
More than 20 ft.	7		
10 to 20 ft.	5		
5 to 10 ft.	3		
Less than 5 ft.	1	x	
<b>Current</b>		<b>2</b>	
Fast	2	x	
Slow	1		
<b>Total Points for site</b>		<b>20</b>	<b>Minor</b>
0-30	Minor	30-36	Moderate
		>36	Severe
Channel entering the river is eroding. Score is based on characteristics of the gully.			

