

# APPENDIX C

## Photographs and Field Notes



# APPENDIX C

## C1: Photographs



**Photo 1**

McLean’s Mountain  
Windfarm

October 26, 2004  
North Channel:  
Station #11

Photo taken from  
the south (Little  
Current) side of the  
channel, looking  
east from the swing  
bridge at the shore.



**Photo 2**

McLean’s Mountain  
Windfarm

October 26, 2004  
North Channel:  
Station #11

Photo taken from  
the south (Little  
Current) side of the  
channel, looking  
north across the  
channel.



**Photo 3**

McLean’s Mountain  
Windfarm

October 26, 2004  
North Channel of  
Lake Huron  
Station #11

Photo taken from  
the north side of the  
channel, looking  
south at the shore  
area and channel.





**Photo 4**



McLean’s Mountain  
Windfarm

October 26, 2004  
North Channel of  
Lake Huron  
Station #11

Photo taken from  
the north side of the  
channel, looking  
north at the swing  
bridge and  
shoreline.



<p><b>Photo 5</b></p> <p>McLean’s Mountain Wind Farm</p> <p>May 7, 2010</p> <p>Perch Creek Station #1</p> <p>Marsh area at downstream end of Perch Creek</p> <p>Looking downstream</p>	
<p><b>Photo 6</b></p> <p>McLean’s Mountain Wind Farm</p> <p>May 7, 2010</p> <p>Perch Creek Station #1</p> <p>Looking upstream</p>	

<p><b>Photo 7</b></p> <p>McLean’s Mountain Wind Farm</p> <p>May 7, 2010</p> <p>Tributary of Perch Creek Station #2</p> <p>Upstream grass channel with minimal flow</p> <p>Looking upstream</p>	
<p><b>Photo 8</b></p> <p>McLean’s Mountain Wind Farm</p> <p>May 7, 2010</p> <p>Tributary of Perch Creek Station #2</p> <p>Downstream culvert and open water wetland with small channel</p> <p>Looking downstream</p>	

**Photo 9**

McLean’s Mountain  
Wind Farm

May 7, 2010

Tributary of Perch  
Creek  
Station #3

Blocked upstream  
double CSP culvert  
preventing flow  
downstream

Looking upstream



**Photo 10**

McLean’s Mountain  
Wind Farm



May 7, 2010

Tributary of Perch  
Creek  
Station #3



Double CSP culvert  
downstream

Looking downstream



<p><b>Photo 11</b></p> <p>McLean’s Mountain Wind Farm</p> <p>May 7, 2010</p> <p>Tributary of Perch Creek Station #3</p> <p>Wetland area upstream of back road (extension of Guida’s Sideroad)</p> <p>Looking upstream</p>	
<p><b>Photo 12</b></p> <p>McLean’s Mountain Wind Farm</p> <p>May 7, 2010</p> <p>Tributary of Perch Creek Station #3</p> <p>Wetland area with braided channels downstream of back road (extension of Guida’s Sideroad)</p> <p>Looking downstream</p>	



<p><b>Photo 13</b></p> <p>McLean’s Mountain Wind Farm</p> <p>May 6, 2010</p> <p>Tributary of Perch Lake Station #4</p> <p>Open marsh wetland upstream of dry channel</p> <p>Facing upstream</p>	
<p><b>Photo 14</b></p> <p>McLean’s Mountain Wind Farm</p> <p>May 6, 2010</p> <p>Tributary of Perch Lake Station #4</p> <p>Wet low lying area with standing water downstream of open wetland; no defined channel</p> <p>Facing downstream</p>	

**Photo 15**

McLean’s Mountain  
Wind Farm

May 5, 2010

Tributary of Bass Lake  
Station #5

High gradient stream  
with multiple  
waterfall barriers

Looking upstream



**Photo 16**

McLean’s Mountain  
Wind Farm

May 5, 2010

Tributary of Bass Lake  
Station #5

Cattail wetland area  
upstream

Looking upstream



**Photo 17**

McLean’s Mountain  
Wind Farm

May 6, 2010

Tributary of Bass Lake  
Station #6

Channel formed by  
depressed tire marks  
with small flow  
through culvert north  
of Green Bush Rd.

Looking upstream



**Photo 18**

McLean’s Mountain  
Wind Farm

May 6, 2010

Tributary of Bass Lake  
Station #6

Pool and small  
channel flowing into  
farm field south of  
Green Bush Rd.

Looking downstream



**Photo 19**

McLean’s Mountain  
Wind Farm

May 6, 2010

Tributary of  
Manitowaning Bay  
Station #7

Channel formed by  
depressed tire marks  
with small flow  
through culvert north  
of Green Bush Rd.

Looking upstream



**Photo 20**

McLean’s Mountain  
Wind Farm

May 6, 2010

Tributary of  
Manitowaning Bay  
Station #7

Pool and small  
channel flowing into  
farm field south of  
Green Bush Rd.

Looking downstream



**Photo 21**

McLean’s Mountain  
Windfarm

May 5, 2011

Tributary of  
Manitowaning Bay  
Station #9

West of Boozeneck  
Road.

Facing downstream



**Photo 22**

McLean’s Mountain  
Windfarm

May 5, 2011

Tributary of  
Manitowaning Bay  
Station #9

Pond near Boozeneck  
Road Crossing.

Facing upstream



**Photo 23**

McLean’s Mountain  
Windfarm

May 5, 2011

Unnamed Tributary  
Station #10

Grass channel on the  
south side of  
Harbourview Road.

Facing upstream



**Photo 24**

McLean’s Mountain  
Windfarm

Unnamed Tributary  
Station #10

Undefined grass  
channel on the north  
side of Harbourview  
Road.

Facing upstream.



# APPENDIX C

## C2: Field Notes



① 3567 - Marsh area b/s view  
 3569 - b/s view: blue sections  
 ② 3570 - b/s view

Downstream

Ministry of Transportation  
 Environmental Guide for Fish and Fish Habitat

Section 4: Field Investigations  
 Appendix 4.A: Watercourse Field Record Form

GENERAL INFORMATION									
PROJECT #: 691983		PROJECT DESCRIPTION: McLean's			DAY: 07	MONTH: 05	YEAR: 2010		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: BPG LAK		WEATHER CONDITIONS: overcast			TIME STARTED: 4:10		TIME FINISHED: 5:00		
AIR TEMP: 13			WATER TEMP: —			CONDUCTIVITY (µS/cm): —			
PHOTO NUMBERS AND DESCRIPTIONS: see habitat map									
LOCATION									
NAME OF WATERBODY: Perch Creek		DRAINAGE SYSTEM: Perch lake			CROSSING #: 1	STATION #: 1			
LOCATION OF CROSSING: Perch creek 200m D/S of Atv bridge just w/s of wetland									
GPS COORDINATES: 17T 0415880 5082790					MTO CHAINAGE: N/A				
TOWNSHIP: Manitoulin					MNR DISTRICT: ESPANOLA				
LAND USE AND POLLUTION									
SURROUNDING LAND USE: natural woodlot, open field, wetland					SOURCES OF POLLUTION: Nearby Atv trail				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input type="radio"/>		N/A <input checked="" type="radio"/>	
Other <input type="radio"/> Describe:							Size (w x h) m <sup>2</sup>		
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER: D/S				SECTION LOCATION: (include on habitat map)					
TYPE:	Stream / river <input checked="" type="radio"/>	Channelized <input checked="" type="radio"/>	Permanent <input checked="" type="radio"/>	Intermittent <input type="radio"/>	Ephemeral <input type="radio"/>	ASSOCIATED WETLAND: Yes			
TOTAL SECTION LENGTH (m): 100				CURRENT VELOCITY (m/s): 1 m/s					
SUB-SECTION(S)	Run <input checked="" type="radio"/>	Pool <input type="radio"/>	Riffle <input checked="" type="radio"/>	Flats <input checked="" type="radio"/>	Inside culvert <input type="radio"/>	Other			
Percentage of area	70	—	20	10	—	—			
Mean depth wetted (m)	0.10	—	0.06	0.3	—	—			
Mean width wetted (m)	2.8	—	2.5	20.0	—	—			
Mean bankfull width (m)	3	—	2.5	N/A	—	—			
Mean bankfull depth (m)	0.25	—	0.2	N/A	—	—			
Substrate	br, s, g	—	be, r, g	br, d	—	—			
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Ci	Muck Mu	Detritus D	



BANK STABILITY							
	Stable	Slightly Unstable	Moderately Unstable	Unstable			
Left Upstream Bank	0	0	0	0			
Right Upstream Bank	0	0	0	0			
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
	—		60	Instream 5 Overhanging 5	5	Instream 10 Overhanging 5	10
SHORE COVER (% stream shaded):	100 – 90 %	90 – 60%	60- 30%	30 – 1%	None		
	0	0	0	0	0		
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None
Predominant Species	—		—		15 terrestrial grass		85
MIGRATORY OBSTRUCTIONS:	None ✓		Seasonal —		Permanent —		
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning N/A		Evidence of Groundwater N/A		Other —		
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
<ul style="list-style-type: none"> <li>- addition of finer gravel</li> <li>- increase diversity of instream structure</li> <li>- increase shore cover</li> </ul>							
COMMENTS:							
<ul style="list-style-type: none"> <li>- good flow, good gradient</li> <li>- substrate predominantly broken bedrock</li> <li>- channel becomes less defined as proximity to wetland increases.</li> <li>- 2 beaver dams observed ~80m D/S and 120m D/S</li> <li>- abundant beaver activity</li> </ul>							
Additional Notes Appended? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes      number of pages _____							

SECTION IDENTIFIER: D/S	SECTION LOCATION: 3/5 from Abv bridge	SECTION LENGTH (m): 100	SCALE (cm / m): 5:1
			PROJECT #: 09 1983
			MAPPER: B. Gottfried
			NAME OF WATERBODY: Perch Creek
			CROSSING #: 1
			STATION #: 1
DATE: DD-MMM-YY 07-May-10			
<b>LEGEND</b>			
<p>10d depth (cm)          6w width</p> <p>→ Riffle          ⇨ Run/Glide          ○ Pool          ■ Island/Bar</p> <p>• Fine Substrate          ### Gravel Substrate          oOooO Cobble /Boulder          *** Debris</p> <p>CT Cattail          SV/FV Submerg/Float Veg          EV Emergent Vegetation          W Watercress</p> <p>Fe Iron Staining          // // // // Eroded Bank</p> <p>xxx Riprap / Other Stabilization</p> <p>○ Instream Log/Tree          ^^^ Dam/Weir/Obstruction          ® Riparian Tree</p> <p>└▶ Seep/Spring          ----- Undercut Bank</p> <p>— Barrier to Fish Movement          -S- Seasonal Barrier</p> <p>-x-x- Fence line          □ Culvert</p>			
PROFILE:	Horz. Scale 1:2 Vert. Scale 1:1		

GENERAL INFORMATION												
PROJECT #:	09-1983		PROJECT DESCRIPTION:	McLean's Mountain		DAY:	07	MONTH:	May	YEAR:	2010	
Is STREAM REALIGNMENT required for this section:												
<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown												
COLLECTORS:	LK, BG		WEATHER CONDITIONS:	Cloudy		TIME STARTED:	4:00		TIME FINISHED:			5:00
AIR TEMP:	~ 13°C		WATER TEMP:	—		CONDUCTIVITY (µS/cm):						—
PHOTO NUMBERS AND DESCRIPTIONS:												
3570 (on habitat map)    3571 (on map)												
LOCATION												
NAME OF WATERBODY:	Perch Creek		DRAINAGE SYSTEM:	Perch Lake		CROSSING #:	7		STATION #:			1
LOCATION OF CROSSING: Perch creek ~200m south of ATV bridge just north of wetland.												
GPS COORDINATES:						MTO CHAINAGE:						
17 T 0415878 5082790						N/A						
TOWNSHIP:						MNR DISTRICT:						
manitoulin						Espanola						
LAND USE AND POLLUTION												
SURROUNDING LAND USE:						SOURCES OF POLLUTION:						
marshy thicket, deciduous forest, atv/snowmobile trail						ATV bridge crossing / trails						
EXISTING STRUCTURE TYPE												
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input type="radio"/>		N/A <input checked="" type="radio"/>				
Other <input type="radio"/> Describe:								Size (w x h) m <sup>2</sup>				
SECTION TYPE AND MORPHOLOGY												
SECTION IDENTIFIER:				SECTION LOCATION:								
Upstream				North of wetland along Perch creek (include on habitat map)								
TYPE:	Stream / river	Channelized	Permanent	Intermittent	Ephemeral	ASSOCIATED WETLAND:						
	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Yes						
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s):							
50m					1m/s							
SUB-SECTION(S)	Run	Pool	Riffle	Flats	Inside culvert	Other						
	0	0	0	0	0							
Percentage of area	25	5	70	—								
Mean depth wetted (m)	0.10	0.15	0.10	—								
Mean width wetted (m)	4.5	5.5	6.0	—								
Mean bankfull width (m)	4.5	5.5	6.0	—								
Mean bankfull depth (m)	0.15	0.20	0.15	—								
Substrate	Br, Co, Gr	Br, Co, Gr	Br, Co, Gr	—								
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Ci	Muck Mu	Detritus D				

BANK STABILITY								
	Stable	Slightly Unstable	Moderately Unstable	Unstable				
Left Upstream Bank	0	<del>X</del>	0	0				
Right Upstream Bank	0	<del>X</del>	0	0				
HABITAT								
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris		Organic debris	Vascular Macrophytes	None
	-	5	60	Instream -	Overhanging 5	-	Instream 5 Overhanging 10	15
SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60- 30%		30 - 1%	None		
	0	0	0		<del>X</del>	0		
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None	
	50		-		10		40	
Predominant Species	moss		-		grasses			
MIGRATORY OBSTRUCTIONS:	None		Seasonal lack of flow		Permanent			
	-				-			
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning suitable substrate		Evidence of Groundwater		Other			
			NIA		-			
POTENTIAL ENHANCEMENT OPPORTUNITIES:								
<ul style="list-style-type: none"> <li>increase gravel or sediment substrate. Increase cover on shores and pool areas.</li> </ul>								
COMMENTS:								
<ul style="list-style-type: none"> <li>Landowner said this streams dries up in the summer</li> <li>Entire length is bedrock and cobble</li> <li>High beaver activity in the area</li> </ul>								
Additional Notes Appended? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes number of pages _____								

<b>SECTION IDENTIFIER:</b> Upstream		<b>SECTION LOCATION:</b> 792 Perch Creek near wetland		<b>SECTION LENGTH (m):</b> 50m		<b>SCALE (cm / m):</b> 1/3.13	
						<b>PROJECT #:</b> 09-1983	
						<b>MAPPER:</b> LK	
						<b>NAME OF WATERBODY:</b> Perch Creek	
						<b>CROSSING #:</b> 1	
						<b>STATION #:</b> 1	
<b>DATE: DD-MMM-YY</b> 07-May-10						<b>LEGEND</b>	
						<p>10d depth (cm) 6w width</p> <p>➔ Riffle          ⇨ Run/Glide          ○ Pool          ■ Island/Bar          ● Fine Substrate          ### Gravel Substrate          oOooO Cobble /Boulder          *** Debris          CT Cattail          SV/FV Submerg/Float Veg          EV Emergent Vegetation          W Watercress          Fe Iron Staining          // // // // Eroded Bank          xxx Riprap / Other Stabilization          ○ Instream Log/Tree          ^^^ Dam/Weir/Obstruction          ® Riparian Tree          ▶ Seep/Spring          ----- Undercut Bank          — Barrier to Fish Movement          -S- Seasonal Barrier          -x-x- Fence line          □ Culvert</p>	
<b>PROFILE:</b>		Horz. Scale 1/0.54m		Vert. Scale 1/0.6m		picture 3570	

Fish

GENERAL INFORMATION											
PROJECT #:	09-1983	PROJECT DESCRIPTION:	McLean's Mountain	DAY:	07	MONTH:	May	YEAR:	2010		
COLLECTORS:	BG, LK			TIME STARTED:	5:00		TIME FINISHED:	10:00			
WEATHER CONDITIONS:	Cloudy, cool			SURFACE CONDITIONS (if applicable):							
	Calm	Rippled	Wavy	Rough							
	0	<input checked="" type="checkbox"/>	0	0							
GENERAL LOCATION											
NAME OF WATERBODY:	Perch Creek			LOCATION OF STATION:	Perch creek north of wetland near T42 proposed turbine						
TOWNSHIP:				MNR DISTRICT:	Espanola						
SAMPLING LOCATIONS AND WATER CHEMISTRY											
LOCATION:	LENGTH (m)	AIR TEMP. (°C)	pH	DISSOLVED OXYGEN (mg/L)	WATER TEMP (°C)	CONDUCTIVITY (µS/cm)					
Upstream											
Downstream											
Culvert / Hwy ROW											
WATER COLOUR:	Colourless <input checked="" type="checkbox"/>	Yellow/brown 0	Blue/green 0	Turbid 0	Other 0						
GEAR											
ELECTROFISHER:	<input checked="" type="checkbox"/>										
Length (m):	150m	Settings:	250/60	Seconds:	1116						
NETS and TRAPS:	Dip net (1)										
MINNOW TRAP:	0 #	DIP NET	<input checked="" type="checkbox"/>			TRAP NET	0				
SEINE:	0		GILL	0			OTHER	0 specify			
HAULS (#):	N/A		Period Of Time (24 hour clock):								
	Set Time	N/A			Clear time	N/A					
LENGTH (m):	N/A		MESH SIZE:			DEPTH OF CAPTURE:					
	Smallest (cm):	-----			Minimum (m):	0.10m					
	Largest (cm):	-----			Maximum (m):	0.15m					
SAMPLE COLLECTION											
FISH KEPT?	0 Yes <input checked="" type="checkbox"/> No		# OF BAGS	PRESERVATIVE:							
				Formalin	0	Frozen	0	Alcohol	0	Other	0
COMMENTS:											
Mainly bedrock substrate. Some areas with high debris made shocking/netting difficult											
Additional Notes Appended? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes number of pages _____											

N/A

CAPTURE INFORMATION					
PROJECT NO.: 09-1983			STATION NO.: 1		
NO.	SCIENTIFIC NAME / COMMON NAME	PHYSICAL CONDITION		TOP PREDATOR	
		# fish with blackspot	# fish with lesions, tumours, maturity etc.	Length (mm) F = total fork or L = total length	AGE CLASS YOY / Adult
111	Bluntnose Minnow	Photo 3564		90mm	70mm
111 ### ### ###	Creek Chub			86mm	
1	Brook Stickleback			43mm	
### ### ###	Northern Redbelly Dace	Photo 3565	3566		30mm
### ### ###	Central Mudminnow			73mm	
	Totals				
3	Bluntnose				
23	Creek Chub				
1	Brook Stickleback				
30	N. Redbelly Dace				
13	Central Mudminnow				
70					

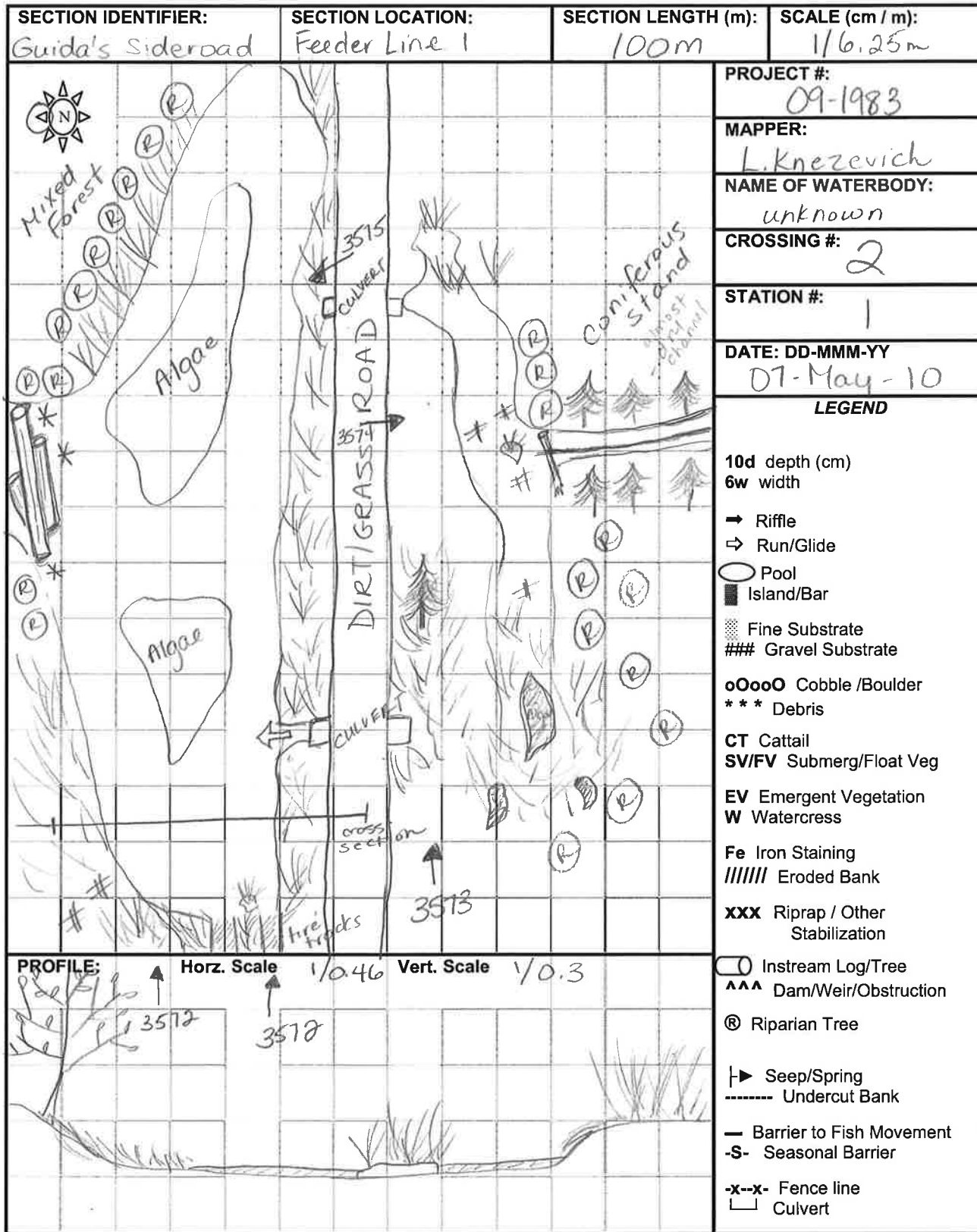
Circle number if a sample was kept

17 T 0417256  
5085130

(3) 3574 - up channel, middle  
(1) 3575 - D/S open water

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Section 4: Field Investigations  
Appendix 4.C: Fish Habitat Mapping



Pictures: 3575 - Downstream open water/wetland (facing south)  
 3574 - Upstream dry channel into open water wetland (north)  
 3573 - Upstream and road (facing west)

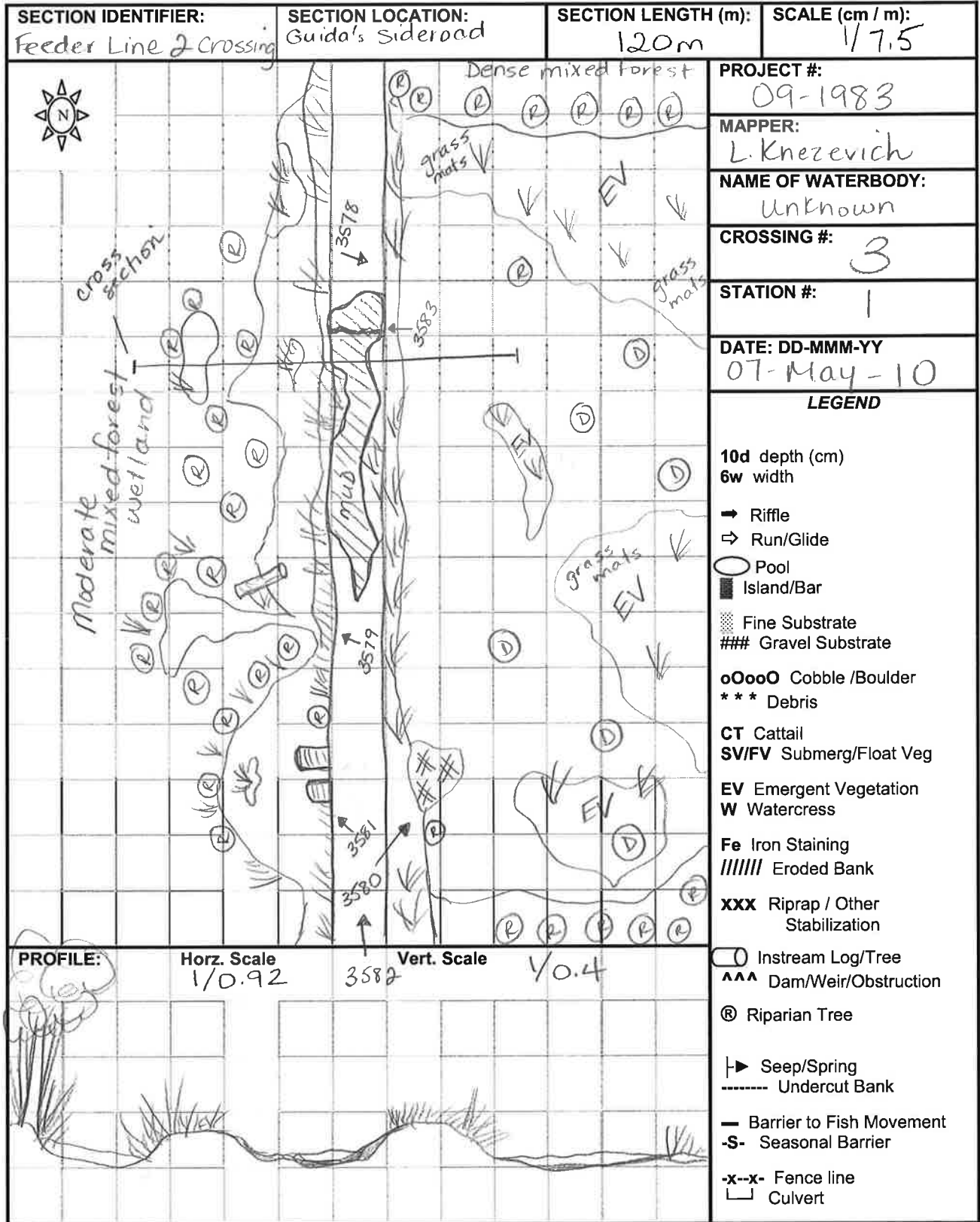


17 T 0417794  
5085106

\* Bear track, American Bittern call,  
ducks observed  
\* pic 3577 - Bear track

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Section 4: Field Investigations  
Appendix 4.C: Fish Habitat Mapping



3583 - stream trickle through road  
 Pictures 3582 - Road w marsh on each side (facing west)  
 — (b) 3581 - Downstream double culvert (facing south)

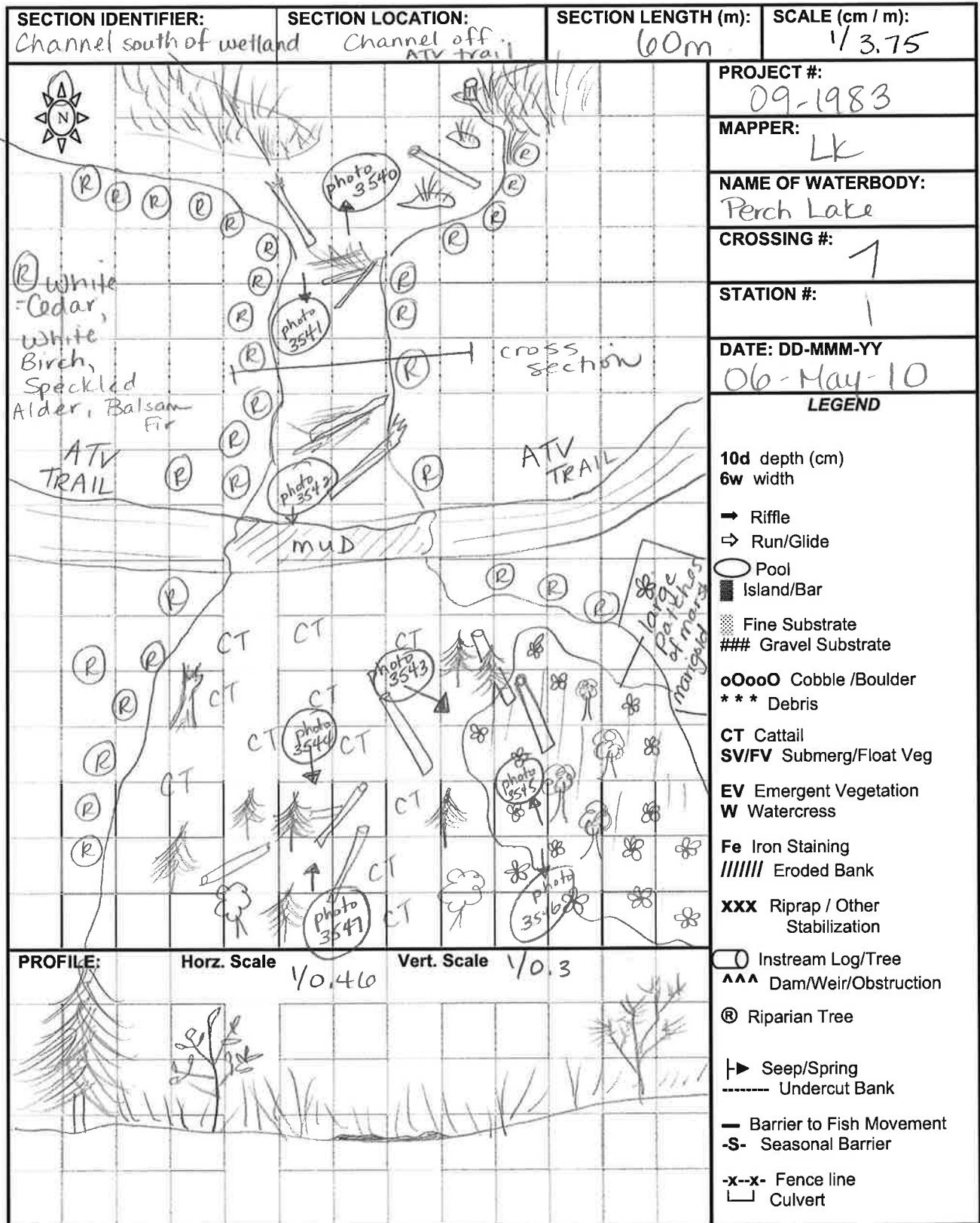
- ⑤ 3580 - Blocked upstream culvert
- ⑥ 3579 - Downstream wetland (facing south)
- ⑦ 3578 - Upstream marsh (facing north)

GENERAL INFORMATION									
PROJECT #: 091983		PROJECT DESCRIPTION: McLeans			DAY: 06	MONTH: 05	YEAR: 2010		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: BPG LK			WEATHER CONDITIONS: Sunny		TIME STARTED: 5:40		TIME FINISHED: 6:30		
AIR TEMP: 12°			WATER TEMP: N/A		CONDUCTIVITY (µS/cm): N/A				
PHOTO NUMBERS AND DESCRIPTIONS: See habitat map									
LOCATION									
NAME OF WATERBODY: _____			DRAINAGE SYSTEM: Perch Lake		CROSSING #: 7		STATION #: 1		
LOCATION OF CROSSING: Small section of channel from wetland to Perch Lake near T23									
GPS COORDINATES: 17T 0423756 5086220					MTO CHAINAGE: N/A				
TOWNSHIP: Manitoulin					MNR DISTRICT: ESPANOLA				
LAND USE AND POLLUTION									
SURROUNDING LAND USE: wetland, forest, atv trail, Perch Lake (unobserved)					SOURCES OF POLLUTION: Nearby Atv trail crossing				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input type="radio"/>		N/A <input checked="" type="radio"/>	
Other <input type="radio"/> Describe:							Size (w x h) m <sup>2</sup>		
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER: whole channel			SECTION LOCATION: (include on habitat map) channel north of Atv trail, wetland south of trail						
TYPE:	Stream / river	Channelized	Permanent	Intermittent	Ephemeral	ASSOCIATED WETLAND:			
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Yes			
TOTAL SECTION LENGTH (m): 65					CURRENT VELOCITY (m/s): N/A				
SUB-SECTION(S)	Run	Pool	Riffle	Flats	Inside culvert	Other			
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>				
Percentage of area	_____			100	_____				
Mean depth wetted (m)	_____			6.02	_____				
Mean width wetted (m)	_____			5	_____				
Mean bankfull width (m)	_____			N/A	_____				
Mean bankfull depth (m)	_____			N/A	_____				
Substrate	_____			mu, d	_____				
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

23  
43  
15  
N 65

BANK STABILITY							
	Stable	Slightly Unstable	Moderately Unstable	Unstable			
Left Upstream Bank	0	0	0	0 (no banks)			
Right Upstream Bank	0	0	0	0 (no banks)			
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
				Instream 10 Overhanging 5	5	Instream 75 Overhanging 5	0
SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60 - 30%	30 - 1%	None		
	0	0	0	0	0		
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None
					100		
Predominant Species					cattails/terrestrial grass/horsetails		marsh marigold
MIGRATORY OBSTRUCTIONS:	None		Seasonal		Permanent		
					Dense wood/mud barriers during low water		
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning		Evidence of Groundwater		Other		
			Yes				
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
- define channel - flow vs standing/pocket water - coarse substrate							
COMMENTS:							
- only somewhat channelized in 1st ~6m (u/s) - No flow - outlet of u/s wetland is isolated due to mud/log barrier + low water - only standing/pocket water in "channel" - No real channelization D/S of top 6m							
Additional Notes Appended? <input type="radio"/> No <input type="radio"/> Yes      number of pages _____							

\* headed South into conifer thicket → no sign of opening (70m South of 17 T 0423675 5086094)  
 (No sign of Lake)



\* other photos

3548 - South looking at marsh  
 3549

Oct-06 3550 - Stream channel through marsh  
 3551

3552 - Marsh, looking to the west

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Environmental Guide for Fish and Fish Habitat

Appendix 4.A: Watercourse Field Record Form

(12) 3518 - Barrier  
 3520 - looking u/s near marsh  
 (13) 3523 - looking u/s cattail wetland/marsh

Section 4: Field Investigations

GENERAL INFORMATION									
PROJECT #: 09-1983		PROJECT DESCRIPTION: McLean's Mountain			DAY: 05	MONTH: 05	YEAR: 2010		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: BG, LK		WEATHER CONDITIONS: Sunny, partial cloud			TIME STARTED: 5:30		TIME FINISHED: 7:40		
AIR TEMP: 15°C			WATER TEMP: —			CONDUCTIVITY (µS/cm): —			
PHOTO NUMBERS AND DESCRIPTIONS: 3518 (D/S Barrier) 3519-22 (u/s where stream meets wetland)									
LOCATION									
NAME OF WATERBODY: Unknown			DRAINAGE SYSTEM: Perch Lake?		CROSSING #: 8		STATION #: 1		
LOCATION OF CROSSING: Channel south of wetland flowing over high gradient channel b/w T30/34 proposed turbines									
GPS COORDINATES: 17T 0423929 5084409					MTO CHAINAGE: N/A				
TOWNSHIP: Manitoulin					MNR DISTRICT: Espanola				
LAND USE AND POLLUTION									
SURROUNDING LAND USE: Moderate forest + open grassland					SOURCES OF POLLUTION: None				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input type="radio"/>		N/A <input checked="" type="radio"/>	
Other <input type="radio"/> Describe:							Size (w x h) m <sup>2</sup>		
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER: Between T30 & T34				SECTION LOCATION: South of Wetland between proposed T30 & T34 turbines					
TYPE: Stream / river <input type="radio"/>		Channelized <input checked="" type="radio"/>		Permanent <input type="radio"/>		Intermittent <input checked="" type="radio"/>		Ephemeral <input type="radio"/>	
ASSOCIATED WETLAND: North of stream → source									
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s): 1/2 m/s				
SUB-SECTION(S)	Run	Pool	Riffle	Flats	Inside culvert	Other			
	<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>				
Percentage of area	—	50	50	—	—				
Mean depth wetted (m)	—	0.10m	0.05m	—	—				
Mean width wetted (m)	—	0.8m	0.5m	—	—				
Mean bankfull width (m)	—	1.0m	0.8m	—	—				
Mean bankfull depth (m)	—	—	—	—	—				
Substrate	—	Mu	Co/Gr	—	—				
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Ci	Muck Mu	Detritus D	

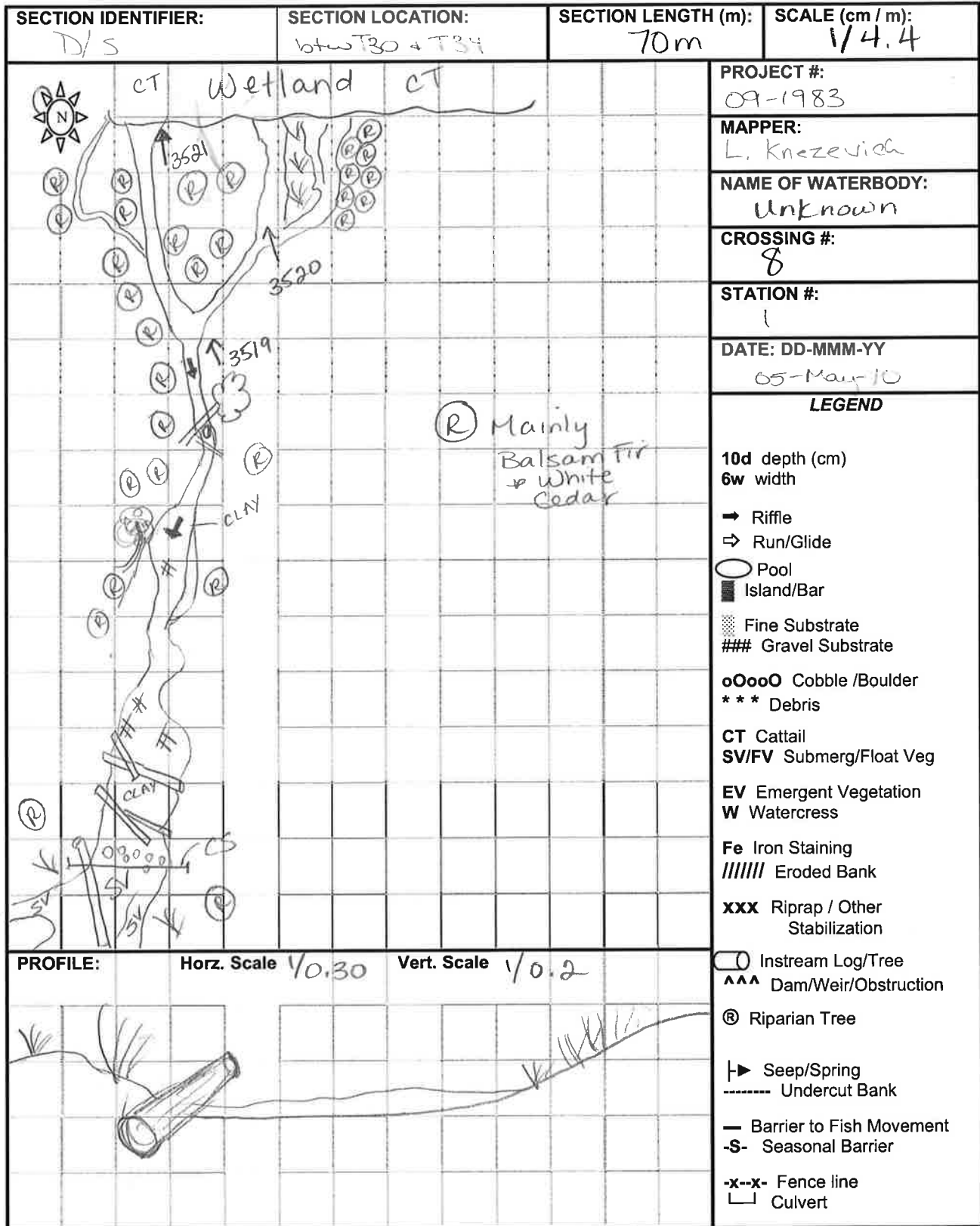
on habitat map.

ed turbines

x high gradient pool/riffle

→ lower part of stream (D/S) involves multiple waterfalls and drops down escarpment

BANK STABILITY							
	Stable	Slightly Unstable	Moderately Unstable	Unstable			
Left Upstream Bank	0	<del>0</del>	0	0			
Right Upstream Bank	0	<del>0</del>	0	0			
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
	20	-	30	5 Instream Overhanging	5	- Instream Overhanging	40
SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60-30%	30 - 1%	None		
	0	<del>0</del>	0	0	0		
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None
	10		-		-		90
Predominant Species							
MIGRATORY OBSTRUCTIONS:	None		Seasonal Lack of flow + waterfall barriers		Permanent multiple drops/escarpment		
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning limited potential habitat exists		Evidence of Groundwater None		Other		
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
Fill in drops to allow fish migration to the wetland. widen stream bed							
COMMENTS:							
n 30 barriers to fish migration, flows down escarpment area - very high graded running down grassy valley down stream - no fish observed							
Additional Notes Appended? <input checked="" type="radio"/> No <input type="radio"/> Yes      number of pages _____							



u/s

Upstream

Ministry of Transportation  
Environmental Guide for Fish and Fish Habitat

Section 4: Field Investigations  
Appendix 4.C: Fish Habitat Mapping

<b>SECTION IDENTIFIER:</b> u/s		<b>SECTION LOCATION:</b> bto T30 + T34		<b>SECTION LENGTH (m):</b> 50m		<b>SCALE (cm / m):</b> 1:3	
						<b>PROJECT #:</b> 09-1983	
						<b>MAPPER:</b> B. Cottler	
						<b>NAME OF WATERBODY:</b> -	
						<b>CROSSING #:</b> 8	
						<b>STATION #:</b> 1	
						<b>DATE: DD-MMM-YY</b> 05-May-10	
<b>LEGEND</b>							
<p>10d depth (cm) 6w width</p> <p>➔ Riffle ⇨ Run/Glide ○ Pool ■ Island/Bar ● Fine Substrate ### Gravel Substrate oOooO Cobble /Boulder *** Debris CT Cattail SV/FV Submerg/Float Veg EV Emergent Vegetation W Watercress Fe Iron Staining ///// Eroded Bank xxx Riprap / Other Stabilization ○ Instream Log/Tree ^^^ Dam/Weir/Obstruction Ⓡ Riparian Tree ▶ Seep/Spring ----- Undercut Bank — Barrier to Fish Movement -S- Seasonal Barrier -x-x- Fence line ┌└ Culvert</p>							
<b>PROFILE:</b>		<b>Horz. Scale</b> 1/1		<b>Vert. Scale</b> 1/1			



D/S

GENERAL INFORMATION											
PROJECT #:	09-1983		PROJECT DESCRIPTION:	McLean's Mountain		DAY:	06	MONTH:	May	YEAR:	2010
Is STREAM REALIGNMENT required for this section:											
<input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown											
COLLECTORS:	LK, BG		WEATHER CONDITIONS:	Sun, light cloud		TIME STARTED:	12:40		TIME FINISHED:		2:20
AIR TEMP:	~13°C		WATER TEMP:	N/A		CONDUCTIVITY (µS/cm):					N/A
PHOTO NUMBERS AND DESCRIPTIONS:											
3527 & 3528 → drawn on map											
LOCATION											
NAME OF WATERBODY:	unknown		DRAINAGE SYSTEM:	—		CROSSING #:	9		STATION #:		1 D/S
LOCATION OF CROSSING: Green Bush Road west of Burnett's Sideroad											
GPS COORDINATES:					MTO CHAINAGE:						
17 T 0426161 5087058					N/A						
TOWNSHIP:					MNR DISTRICT:						
Manitoulin					Espanola						
LAND USE AND POLLUTION											
SURROUNDING LAND USE:					SOURCES OF POLLUTION:						
Savannah grass					Road runoff, sedimentation						
EXISTING STRUCTURE TYPE											
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		N/A <input type="radio"/>			
Other <input type="radio"/> Describe:						Size (w x h) m <sup>2</sup> (diameter) 0.40m — 0.16 m <sup>2</sup>					
SECTION TYPE AND MORPHOLOGY											
SECTION IDENTIFIER:				SECTION LOCATION:							
Culvert along road				(include on habitat map) Downstream							
TYPE:	Stream / river	Channelized	Permanent	Intermittent	Ephemeral	ASSOCIATED WETLAND:					
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	None					
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s):						
~100m					0m/s						
SUB-SECTION(S)	Run	Pool	Riffle	Flats	Inside culvert	Other					
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>						
Percentage of area	—			100	—		—				
Mean depth wetted (m)	—			0.05	—		—				
Mean width wetted (m)	—			2.0	—		—				
Mean bankfull width (m)	—			2.0	—		—				
Mean bankfull depth (m)	—			0.20	—		—				
Substrate	—			Gr, Sa, D, Mu		—					
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D			

BANK STABILITY							
	Stable	Slightly Unstable	Moderately Unstable	Unstable			
Left Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
Right Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
	—	—	—	Instream — Overhanging	—	Instream 90 Overhanging	10
SHORE COVER (% stream shaded):	100 – 90 %	90 – 60%	60- 30%	30 – 1%	None		
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		
VEGETATION TYPE (%):	Submergent	Floating		Emergent		None	
	20	—		70		10	
Predominant Species	—		terrestrial grass				
MIGRATORY OBSTRUCTIONS:	None	Seasonal		Permanent			
	—	Lack of flow		Lack of flow + substrate			
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning	Evidence of Groundwater		Other			
	N/A	N/A					
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
Lacks substrate, depth, pool-riffle sequence and definite channel							
COMMENTS:							
Poorly defined channel running through culvert through savannah type grass plains. Flow is low. High amounts of emergent grasses.							
Additional Notes Appended? <input checked="" type="radio"/> No <input type="radio"/> Yes number of pages _____							

SECTION IDENTIFIER: D/S		SECTION LOCATION: Culvert on Green Bush Rd		SECTION LENGTH (m): 70 m	SCALE (cm / m): 1/4.38
				PROJECT #: 09-198.3	
				MAPPER: LK	
				NAME OF WATERBODY: Green Bush Rd wetland/stream area	
				CROSSING #: 9	
				STATION #: 1	
				DATE: DD-MMM-YY 06-May-10	
				<p align="center"><b>LEGEND</b></p> <p>10d depth (cm) 6w width</p> <p>➔ Riffle ⇨ Run/Glide ○ Pool ■ Island/Bar ● Fine Substrate ### Gravel Substrate oOooO Cobble /Boulder *** Debris CT Cattail SV/FV Submerg/Float Veg EV Emergent Vegetation W Watercress Fe Iron Staining ///// Eroded Bank XXX Riprap / Other Stabilization ○ Instream Log/Tree ▲▲▲ Dam/Weir/Obstruction ⊗ Riparian Tree ▶ Seep/Spring ----- Undercut Bank — Barrier to Fish Movement -S- Seasonal Barrier -x-x- Fence line └┘ Culvert</p>	
PROFILE:		Horz. Scale	1/0.23	Vert. Scale	1/0.1

u/s

GENERAL INFORMATION									
PROJECT #: 09-1983		PROJECT DESCRIPTION: McLean's Mountain			DAY: 06	MONTH: 05	YEAR: 2010		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: B. Gottfried / K. Kozelich		WEATHER CONDITIONS: Sunny / Windy			TIME STARTED: 10:15		TIME FINISHED: 2:20		
AIR TEMP: 13°C			WATER TEMP: _____			CONDUCTIVITY (µS/cm): _____			
PHOTO NUMBERS AND DESCRIPTIONS: See habitat map									
LOCATION									
NAME OF WATERBODY: N/A		DRAINAGE SYSTEM: N/A		CROSSING #: 9		STATION #: 1			
LOCATION OF CROSSING: Greenbush rd West of Burnett's side road									
GPS COORDINATES: 17 T 0426161 5087058				MTO CHAINAGE: N/A					
TOWNSHIP: Manitoulin				MNR DISTRICT: Esplanada					
LAND USE AND POLLUTION									
SURROUNDING LAND USE: open pasture, gravel road, fenced					SOURCES OF POLLUTION: road runoff				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		N/A <input type="radio"/>	
Other <input type="radio"/> Describe:						Size (w x h) m <sup>2</sup> 0.40m			
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER: u/s				SECTION LOCATION: (include on habitat map) 50m u/s crossing of Greenbush rd					
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input type="radio"/>	Intermittent <input checked="" type="radio"/>	Ephemeral <input type="radio"/>	ASSOCIATED WETLAND:			
TOTAL SECTION LENGTH (m): 50				CURRENT VELOCITY (m/s): N/A (still)					
SUB-SECTION(S)	Run <input type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input checked="" type="radio"/>	Inside culvert <input type="radio"/>	Other			
Percentage of area	_____			100	_____		_____		
Mean depth wetted (m)	_____			0.05	_____		_____		
Mean width wetted (m)	_____			3.5	_____		_____		
Mean bankfull width (m)	_____			N/A	_____		_____		
Mean bankfull depth (m)	_____			N/A	_____		_____		
Substrate	_____			Gr, Sa, Mu D		_____			
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

3508-6

BANK STABILITY							
	Stable	Slightly Unstable	Moderately Unstable	Unstable			
Left Upstream Bank	<input checked="" type="radio"/>	0	0	0			
Right Upstream Bank	<input checked="" type="radio"/>	0	0	0			
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
	—	—	—	Instream 5 Overhanging	—	Instream 80 Overhanging 5	10
SHORE COVER (% stream shaded):	100 – 90 %	90 – 60%	60-30%	30 – 1%	None		
	0	0	0	<input checked="" type="radio"/>	0		
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None
Predominant Species	—		—		95 terrestrial grass		5
MIGRATORY OBSTRUCTIONS:	None <input checked="" type="checkbox"/>		Seasonal —		Permanent —		
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning —		Evidence of Groundwater water seep from ground		Other —		
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
- addition of coarse substrate - addition of riffle/pool structure - added depth & shore cover							
COMMENTS:							
- ground seepage ~ 50cm w/s - low gradient, heavily vegetated w/ terrestrial grass - poorly defined channel, no bank full - minor amount of shrubs as shore cover.							
Additional Notes Appended? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes      number of pages _____							

<b>SECTION IDENTIFIER:</b> t/s		<b>SECTION LOCATION:</b> green bush rd w of buckets side road		<b>SECTION LENGTH (m):</b> 60m	<b>SCALE (cm / m):</b> 1/3
					<b>PROJECT #:</b> 09-1983
					<b>MAPPER:</b> B. Gottfried
					<b>NAME OF WATERBODY:</b>
					<b>CROSSING #:</b> 9
					<b>STATION #:</b> 1
					<b>DATE: DD-MMM-YY</b> 06-MAY-10
<b>LEGEND</b>					
<p>10d depth (cm)          6w width</p> <p>➔ Riffle          ⇨ Run/Glide          ○ Pool          ■ Island/Bar</p> <p>• Fine Substrate          ### Gravel Substrate          oOooO Cobble /Boulder          * * * Debris</p> <p>CT Cattail          SV/FV Submerg/Float Veg          EV Emergent Vegetation          W Watercress</p> <p>Fe Iron Staining          // // // Eroded Bank</p> <p>xxx Riprap / Other          Stabilization</p> <p>○ Instream Log/Tree          ^^^ Dam/Weir/Obstruction          ® Riparian Tree</p> <p>▶ Seep/Spring          ----- Undercut Bank</p> <p>— Barrier to Fish Movement          S- Seasonal Barrier</p> <p>-x-x- Fence line          ┌ └ Culvert</p>					
<b>PROFILE:</b>		<b>Horz. Scale</b> 1/1	<b>Vert. Scale</b> 1/0.7		

-960/933  
-1220

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Section 4: Field Investigations  
Appendix 4.E: Fish Community  
Inventory Record Form

1220  
-960  
380  
140  
450  
390

GENERAL INFORMATION									
PROJECT #:	09-1983	PROJECT DESCRIPTION:	McLean's Mountain	DAY:	06	MONTH:	May	YEAR:	2010
COLLECTORS:	BG, LK			TIME STARTED:	3:15		TIME FINISHED:	4:00	
WEATHER CONDITIONS:	Sunny, light cloud			SURFACE CONDITIONS (if applicable):					
	Calm	Rippled	Wavy	Rough					
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
GENERAL LOCATION									
NAME OF WATERBODY:	Unknown			LOCATION OF STATION:	Green Bush Rd. Roadside stream/wetland				
TOWNSHIP:	Manitoulin			MNR DISTRICT:	Espanola				
SAMPLING LOCATIONS AND WATER CHEMISTRY									
LOCATION:	LENGTH (m)	AIR TEMP. (°C)	pH	DISSOLVED OXYGEN (mg/L)	WATER TEMP (°C)	CONDUCTIVITY (µS/cm)			
Upstream	/	13°C	/	/	/	/			
Downstream		13°C							
Culvert / Hwy ROW									
WATER COLOUR:	Colourless <input type="checkbox"/>	Yellow/brown <input checked="" type="checkbox"/>	Blue/green <input type="checkbox"/>	Turbid <input type="checkbox"/>	Other <input type="checkbox"/>				
GEAR									
ELECTROFISHER:	<input checked="" type="checkbox"/>								
Length (m):	55m		Settings:	250, 60		Seconds:	610		
NETS and TRAPS:									
MINNOW TRAP:	<input type="checkbox"/>	#	DIP NET:	<input checked="" type="checkbox"/>		TRAP NET:	<input type="checkbox"/>		
SEINE:	<input type="checkbox"/>		GILL:	<input type="checkbox"/>		OTHER:	<input type="checkbox"/> specify		
HAULS (#):	<del>Period Of Time (24 hour clock):</del>								
	<del>Set Time</del>				<del>Clear time</del>				
LENGTH (m):	<del>MESH SIZE:</del>			<del>DEPTH OF CAPTURE:</del>					
	<del>Smallest (cm):</del>			<del>Minimum (m):</del>			<del>Maximum (m):</del>		
	<del>Largest (cm):</del>								
SAMPLE COLLECTION									
FISH KEPT?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		# OF BAGS	PRESERVATIVE:					
				Formalin <input type="checkbox"/>	Frozen <input type="checkbox"/>	Alcohol <input type="checkbox"/>	Other <input type="checkbox"/>		
COMMENTS:									
All found in small pool near culvert, on upstream side (northern side)									
One additional fish observed									
Additional Notes Appended? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes number of pages _____									

N/A

N/A





D/S

(15) 3532 uls ditch

(16) 3529 D/S pool/ditch

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Section 4: Field Investigations  
Appendix 4.A: Watercourse Field Record Form

GENERAL INFORMATION									
PROJECT #: 09-1983		PROJECT DESCRIPTION: McLean's Mountain			DAY: 06	MONTH: May	YEAR: 2010		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: BG, LK		WEATHER CONDITIONS: Sunny, light cloud			TIME STARTED: 2:30		TIME FINISHED: 3:00		
AIR TEMP: ~13°C			WATER TEMP: —			CONDUCTIVITY (µS/cm): —			
PHOTO NUMBERS AND DESCRIPTIONS: 3529 (road side/culvert) 3530 (downstream) — indicated on map									
LOCATION									
NAME OF WATERBODY: unknown		DRAINAGE SYSTEM: unknown			CROSSING #: 10	STATION #: 1			
LOCATION OF CROSSING: Downstream side of culvert on Green Bush Rd west of Burnetts Sideroad									
GPS COORDINATES: 11T 0426192 5087059				MTO CHAINAGE:					
TOWNSHIP:				MNR DISTRICT: Espanola					
LAND USE AND POLLUTION									
SURROUNDING LAND USE: Open grass savannah					SOURCES OF POLLUTION: road side sedimentation/run off				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		N/A <input type="radio"/>	
Other <input type="radio"/> Describe:						Size (w x h) m <sup>2</sup> 0.4m diam.			
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER: Culvert D/S				SECTION LOCATION: Culvert on Green Bush Rd. (include on habitat map)					
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input type="radio"/>	Intermittent <input checked="" type="radio"/>	Ephemeral <input type="radio"/>	ASSOCIATED WETLAND: None			
TOTAL SECTION LENGTH (m):					CURRENT VELOCITY (m/s):				
SUB-SECTION(S)	Run <input type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input checked="" type="radio"/>	Inside culvert <input type="radio"/>	Other			
Percentage of area	—————			100	—————		—————		
Mean depth wetted (m)	—————			0.05	—————		—————		
Mean width wetted (m)	—————			2.0	—————		—————		
Mean bankfull width (m)	—————			2.0	—————		—————		
Mean bankfull depth (m)	—————			0.20	—————		—————		
Substrate	—————			Gr, Co, Sa, D		—————		—————	
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

BANK STABILITY								
	Stable	Slightly Unstable	Moderately Unstable	Unstable				
Left Upstream Bank	<input checked="" type="radio"/>	0	0	0				
Right Upstream Bank	<input checked="" type="radio"/>	0	0	0				
HABITAT								
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris		Organic debris	Vascular Macrophytes	None
	—	—	15	Instream —	Overhanging —	10	Instream 60 Overhanging 10	5
SHORE COVER (% stream shaded):	100 – 90 %		90 – 60%		60- 30%		30 – 1%	None
	0		0		0		<input checked="" type="radio"/>	0
VEGETATION TYPE (%):	Submergent		Floating		Emergent		None	
	15		15		60		10	
Predominant Species	moss, filamentous algae		algae		grasses			
MIGRATORY OBSTRUCTIONS:	None			Seasonal flow, substrate throughout channel		Permanent flow, substrate, pool/riffle		
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning			Evidence of Groundwater None		Other		
POTENTIAL ENHANCEMENT OPPORTUNITIES:								
More substrate throughout marshy channel, increase in depth								
COMMENTS:								
Similar to site 4. Potential for site 4 + 5 to merge downstream. Grass Savannah marsh/meadow.								
Additional Notes Appended? <input type="radio"/> No <input type="radio"/> Yes number of pages _____								

<b>SECTION IDENTIFIER:</b> D/S End	<b>SECTION LOCATION:</b> Green Bush Rd	<b>SECTION LENGTH (m):</b> ~50m	<b>SCALE (cm / m):</b> 1/3.85
			<b>PROJECT #:</b> 09-1983
			<b>MAPPER:</b> LK
			<b>NAME OF WATERBODY:</b> Green Bush Rd Wetland/Culvert
			<b>CROSSING #:</b> 10
			<b>STATION #:</b> 1
			<b>DATE: DD-MMM-YY</b> 06-May-10
			<b>LEGEND</b>
			<b>10d</b> depth (cm) <b>6w</b> width → Rifle ⇨ Run/Glide ○ Pool ■ Island/Bar ● Fine Substrate ### Gravel Substrate oOooO Cobble/Boulder *** Debris CT Cattail SV/FV Submerg/Float Veg EV Emergent Vegetation W Watercress Fe Iron Staining // // // Eroded Bank XXX Riprap / Other Stabilization ○ Instream Log/Tree AAA Dam/Weir/Obstruction ⊗ Riparian Tree ▶ Seep/Spring - - - - Undercut Bank — Barrier to Fish Movement -S- Seasonal Barrier -x-x- Fence line ┌ └ Culvert
			<b>PROFILE:</b> <b>Horz. Scale</b> 1/0.31 <b>Vert. Scale</b> 1/0.1
			photo 3529 → ROAD CPS CULVERT photo 3530 ↑

u/s

Ministry of Transportation  
Environmental Guide for Fish and Fish Habitat

Section 4: Field Investigations  
Appendix 4.A: Watercourse Field Record Form

GENERAL INFORMATION									
PROJECT #: 091983		PROJECT DESCRIPTION: Make an			DAY: 06	MONTH: 05	YEAR: 2000		
Is STREAM REALIGNMENT required for this section: <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown									
COLLECTORS: B. Goff, Fried, L. Kuznick		WEATHER CONDITIONS: Sunny/Windy			TIME STARTED: 2:25		TIME FINISHED: 3:00		
AIR TEMP: 13°			WATER TEMP: —			CONDUCTIVITY (µS/cm): —			
PHOTO NUMBERS AND DESCRIPTIONS: See habitat map									
LOCATION									
NAME OF WATERBODY: Unknown		DRAINAGE SYSTEM: —			CROSSING #: 10	STATION #: 1			
LOCATION OF CROSSING: on green bush rd west of burnets side rd.									
GPS COORDINATES: 17T 0426193 5087063					MTO CHAINAGE: N/A				
TOWNSHIP: Manitoulin					MNR DISTRICT: Espanola				
LAND USE AND POLLUTION									
SURROUNDING LAND USE: Gravel road, open field					SOURCES OF POLLUTION: road run off				
EXISTING STRUCTURE TYPE									
Bridge <input type="radio"/>		Box Culvert <input type="radio"/>		Open Foot Culvert <input type="radio"/>		CSP <input checked="" type="radio"/>		N/A <input type="radio"/>	
Other <input type="radio"/> Describe:							Size (w x h) m <sup>2</sup> : 6.0 m		
SECTION TYPE AND MORPHOLOGY									
SECTION IDENTIFIER: u/s				SECTION LOCATION: (include on habitat map) Culvert on Green Bush Rd.					
TYPE:	Stream / river <input type="radio"/>	Channelized <input type="radio"/>	Permanent <input type="radio"/>	Intermittent <input checked="" type="radio"/>	Ephemeral <input type="radio"/>	ASSOCIATED WETLAND: N/A			
TOTAL SECTION LENGTH (m): 50					CURRENT VELOCITY (m/s): N/A				
SUB-SECTION(S)	Run <input type="radio"/>	Pool <input type="radio"/>	Riffle <input type="radio"/>	Flats <input checked="" type="radio"/>	Inside culvert <input type="radio"/>	Other			
Percentage of area	—			100	—				
Mean depth wetted (m)	—			0.10	—				
Mean width wetted (m)	—			3.5	—				
Mean bankfull width (m)	—			N/A	—				
Mean bankfull depth (m)	—			N/A	—				
Substrate	—			ls, sa, mu, D	—				
Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D	

BANK STABILITY							
	Stable	Slightly Unstable	Moderately Unstable	Unstable			
Left Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
Right Upstream Bank	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			
HABITAT							
IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris Instream Overhanging	Organic debris	Vascular Macrophytes Instream Overhanging	None
	_____			_____	_____	85 5	10
SHORE COVER (% stream shaded):	100 - 90 %	90 - 60%	60-30%	30 - 1%	None		
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>		
VEGETATION TYPE (%):	Submergent		Floating		Emergent	None	
Predominant Species	_____		_____		85 terrestrial grass		
MIGRATORY OBSTRUCTIONS:	None		Seasonal		Permanent		
	<input checked="" type="radio"/>						
POTENTIAL CRITICAL HABITAT LIMITING:	Spawning		Evidence of Groundwater		Other		
			ground seeps further u/s				
POTENTIAL ENHANCEMENT OPPORTUNITIES:							
<ul style="list-style-type: none"> <li>- addition of coarse substrate</li> <li>- addition of riffle/pool structure + depth</li> <li>- increase shoreline cover</li> </ul>							
COMMENTS:							
<ul style="list-style-type: none"> <li>- grassy ditch line w/ u/s source of ground water</li> <li>- low to no flow currently</li> </ul>							
Additional Notes Appended? <input checked="" type="radio"/> No <input type="radio"/> Yes      number of pages _____							

SECTION IDENTIFIER: u/s	SECTION LOCATION: green bush west of Burnets	SECTION LENGTH (m): ~ 55 m	SCALE (cm / m): 1/3
			PROJECT #: 091983
			MAPPER: B.C.
			NAME OF WATERBODY:
			CROSSING #: 10
			STATION #:
DATE: DD-MMM-YY 06/May/2010			<b>LEGEND</b>
			<p>10d depth (cm) 6w width</p> <p>→ Riffle ⇨ Run/Glide ○ Pool ■ Island/Bar ● Fine Substrate ### Gravel Substrate oOooO Cobble / Boulder *** Debris CT Cattail SV/FV Submerg/Float Veg EV Emergent Vegetation W Watercress Fe Iron Staining ///// Eroded Bank xxx Riprap / Other Stabilization ○ Instream Log/Tree AAA Dam/Weir/Obstruction Ⓟ Riparian Tree ▶ Seep/Spring ----- Undercut Bank — Barrier to Fish Movement -S- Seasonal Barrier -x-x- Fence line ┌└ Culvert</p>
PROFILE:	Horz. Scale 1/1	Vert. Scale 1/1	

#5

Ministry of Transportation  
Environmental Guide for Fish and Fish Habitat

Section 4: Field Investigations  
Appendix 4.E: Fish Community  
Inventory Record Form

GENERAL INFORMATION						
PROJECT #:	PROJECT DESCRIPTION:	DAY:	MONTH:	YEAR:		
091983	McLean's Mountain	06	May	2010		
COLLECTORS:			TIME STARTED:	TIME FINISHED:		
BG, LK			4:00	4:30		
WEATHER CONDITIONS:		SURFACE CONDITIONS (if applicable):				
Sunny, light cloud		Calm	Rippled	Wavy	Rough	
		<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
GENERAL LOCATION						
NAME OF WATERBODY:			LOCATION OF STATION:			
Unknown			Green Bush Rd. West of Burnets Sideroad			
TOWNSHIP:			MNR DISTRICT:			
Manitoulin			Esplanola			
SAMPLING LOCATIONS AND WATER CHEMISTRY						
LOCATION:	LENGTH (m)	AIR TEMP. (°C)	pH	DISSOLVED OXYGEN (mg/L)	WATER TEMP (°C)	CONDUCTIVITY (µS/cm)
Upstream						
Downstream						
Culvert / Hwy ROW						
WATER COLOUR:	Colourless <input checked="" type="radio"/>	Yellow/brown <input type="radio"/>	Blue/green <input type="radio"/>	Turbid <input type="radio"/>	Other <input type="radio"/>	
GEAR						
ELECTROFISHER: <input checked="" type="checkbox"/>						
Length (m):	Settings:	Seconds:				
~50m	250, 60	610				
NETS and TRAPS:						
MINNOW TRAP: <input type="radio"/> #	DIP NET <input checked="" type="checkbox"/>		TRAP NET <input type="radio"/>			
SEINE: <input type="radio"/>	GILL <input type="radio"/>		OTHER <input type="radio"/> specify			
HAULS (#):	Period Of Time (24 hour clock):					
	Set Time			Clear time		
LENGTH (m):	MESH SIZE:			DEPTH OF CAPTURE:		
	Smallest (cm):			Minimum (m):		
	Largest (cm):			Maximum (m):		
SAMPLE COLLECTION						
FISH KEPT?	# OF BAGS	PRESERVATIVE:				
<input type="radio"/> Yes <input checked="" type="radio"/> No		Formalin <input type="radio"/>	Frozen <input type="radio"/>	Alcohol <input type="radio"/>	Other <input type="radio"/>	
COMMENTS:						
No fish caught						
Additional Notes Appended? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes number of pages _____						

N/A

N/A





McCleans Mtn

May 5 2011

Water course crossing on Harbour View Road

photos 9883 - 9885 South Side Harbour View Rd.  
 photos 9886 - 9888 North Side Harbour View Rd.

width 0.5 m

depth 5 cm

culvert ~30 cm

substrate: grass, channel poorly defined.

Water course crossing at Boozeneck Road

photos 9889 - 9891 West side looking downstream  
 photos 9892 - 9894 Crossing at Boozeneck looking  
 Downstream

- width ~ 2.5 - 3 m at crossing

- depth ~ .5 - 1.0 m at crossing

- water from sewage treatment lagoons empties  
 into creek

- water very green

- creek runs along Boozeneck ~ 200 m before  
 crossing under bridge.