Appendix C

Updated Oct 13, 2016 Embro Dam Area Fish and Benthic Records

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Fish diversity upstream of Embro Pond

Species	Status - Global	Can	Ont.	Thames	Thames Distribution	Times Sampled
Blacknose Dace	G5		S5	Abundant	widespread	8
Brook Stickleback	G5		S5	Abundant	widespread	20
Brook Trout (coldwater)	G5T		S5	Uncommon	localized	32
Creek Chub	G5		S5	Abundant	widespread	1
Fathead Minnow	G5		S5	Abundant	widespread	13
Johnny Darter	G5		S5	Abundant	widespread	2
Northern Redbelly Dace	G5		S5	Abundant	locally common	4
White Sucker	G5		S5	Abundant	widespread	21

Fish diversity downstream of Embro Pond

Species	Status - Global	Can	Ont.	Thames	Thames Distribution	Times Sampled
Blacknose Dace	G5		S5	Abundant	widespread	9
Bluegill	G5		S5	Common	localized	1
Bluntnose Minnow	G5		S5	Abundant	widespread	4
Brook Stickleback	G5		S5	Abundant	widespread	3
Brook Trout (coldwater)	G5T		S5	Uncommon	localized	10
Central Stoneroller	G5		S4	Abundant	widespread	5
Common Shiner	G5		S5	Abundant	widespread	8
Creek Chub	G5		S5	Abundant	widespread	8
Fantail Darter	G5		S4	Abundant	widespread	2
Fathead Minnow	G5		S5	Abundant	widespread	6
Golden Shiner	G5		S5	Common	localized	1
Greenside Darter	G5		S4	Abundant	widespread	1
Hornyhead Chub	G5		S4	Abundant	widespread	3
Johnny Darter	G5		S5	Abundant	widespread	6
Northern Hog Sucker	G5		S4	Abundant	widespread	1
Northern Redbelly Dace	G5		S5	Abundant	locally common	6
Rock Bass	G5		S5	Abundant	widespread	1
Rosyface Shiner	G5		S4	Abundant	widespread	2
Smallmouth Bass	G5		S5	Abundant	widespread	2
Striped Shiner	G5		S4	Abundant	widespread	1
White Sucker	G5		S5	Abundant	widespread	9

Embro Dam area fish sampling (2015)

Species (Common Name Youngsville Dra		COSEWIC	SA	RA	ESA 2007	SRank	Abundance	Distribution
East of 35th Line 2 km No	rth of Road 84		TM x: 05741	UTM y: 4781834	Source: UTRCA		Site Code MU24	Sample Date 10/9/2015
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
Youngsville Dra	in							
East of 35th Line 1.2 km	North of Road 84		TM x: 06031	UTM y: 4781231	Source: UTRCA		Site Code MU41	Sample Date 5/7/2015
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
White Sucker	Catostomus commersoni					S5	Abundant	widespread
Embro Pond								
Embro CA, Rd 84			TM x: 06858	UTM y: 4779995	Source: UTRCA		Site Code MU25	Sample Date 4/15/2015
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos					S5	Abundant	locally commor
White Sucker	Catostomus commersoni					S5	Abundant	widespread
Youngsville Dra	in							
Rd 84, Embro C.A., down	stream of pond		TM x: 06879	UTM y: 4779791	Source: UTRCA		Site Code MU40	Sample Date 4/15/2015
Blacknose Dace	Rhinichthys atratulus					S5	Abundant	widespread
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
Central Stoneroller	Campostoma anomalum					S4	Abundant	widespread
Creek Chub	Semotilus atromaculatus					S5	Abundant	widespread
Johnny Darter	Etheostoma nigrum					S5	Abundant	widespread
White Sucker	Catostomus commersoni					S5	Abundant	widespread
Rd 84, Embro C.A., down	stream of pond		TM x: 06879	UTM y: 4779791	Source: UTRCA		Site Code MU40	Sample Date 7/8/2015
Blacknose Dace	Rhinichthys atratulus					S5	Abundant	widespread
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
Common Shiner	Luxilus cornutus					S5	Abundant	widespread
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos					S5	Abundant	locally commor
White Sucker	Catostomus commersoni					S5	Abundant	widespread

Species (Common Nar	ne) Scientific Name	COSEWIC	SA	RA	ESA 2007	SRank	Abundance	Distribution
Rd 84, Embro C.A., dow	instream of pond		M x: 6879	UTM y: 4779791	Source: UTRCA		Site Code MU40	Sample Date 10/19/2015
Blacknose Dace	Rhinichthys atratulus					S5	Abundant	widespread
Bluntnose Minnow	Pimephales notatus					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon I	ocalized
Common Shiner	Luxilus cornutus					S5	Abundant	widespread
Creek Chub	Semotilus atromaculatus					S5	Abundant	widespread
Fantail Darter	Etheostoma flabellare					S4	Abundant	widespread
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
Golden Shiner	Notemigonus crysoleucas					S5	Common I	ocalized
Northern Redbelly Dace	Phoxinus eos					S5	Abundant I	ocally common
White Sucker	Catostomus commersoni					S5	Abundant	widespread

Embro Dam area fish sampling (2015)

Species (Common N Youngsville D	,	COSEWIC	SAI	RA	ESA 2007	SRank	Abundance	Distribution
East of 35th Line 2 km North of Road 84			UTM x:	UTM y:	Source:		Site Code	Sample Date
			505741	4781834	UTRCA		MU24	10/9/2015
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
Youngsville D	rain							
East of 35th Line 1.2 k	m North of Road 84		UTM x:	UTM y:	Source:		Site Code	Sample Date
			506031	4781231	UTRCA		MU41	5/7/2015
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
White Sucker	Catostomus commersoni					S5	Abundant	widespread

Embro Pond

Embro CA, Rd 84		UTM x: 506858	UTM y: 4779995	Source: UTRCA		Site Code MU25	Sample Date 4/15/2015
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Fathead Minnow	Pimephales promelas				S5	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	locally common
White Sucker	Catostomus commersoni				S5	Abundant	widespread

Youngsville Drain

Rd 84, Embro C.A., downstream of pond		UTM x:	UTM y:	Source:		Site Code	Sample Date
		506879	4779791	UTRCA		MU40	4/15/2015
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
Central Stoneroller	Campostoma anomalum				S4	Abundant	widespread
Creek Chub	Semotilus atromaculatus				S5	Abundant	widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant	widespread
White Sucker	Catostomus commersoni				S5	Abundant	widespread

Rd 84, Embro C.A., down	stream of pond	UTM x: 506879	UTM y: 4779791	Source: UTRCA		Site Code MU40	Sample Date 7/8/2015
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
Common Shiner	Luxilus cornutus				S5	Abundant	widespread
Fathead Minnow	Pimephales promelas				S5	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	locally common
White Sucker	Catostomus commersoni				S5	Abundant	widespread

Species (Common Nar	ne) Scientific Name	COSEWIC	SA	RA	ESA 2007	SRank	Abundanc	e Distribution
Rd 84, Embro C.A., dow	Instream of pond		ITM x: 06879	UTM y: 4779791	Source: UTRCA		Site Code MU40	Sample Date 10/19/2015
Blacknose Dace	Rhinichthys atratulus					S5	Abundant	widespread
Bluntnose Minnow	Pimephales notatus					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
Common Shiner	Luxilus cornutus					S5	Abundant	widespread
Creek Chub	Semotilus atromaculatus					S5	Abundant	widespread
Fantail Darter	Etheostoma flabellare					S4	Abundant	widespread
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
Golden Shiner	Notemigonus crysoleucas					S5	Common	localized
Northern Redbelly Dace	Phoxinus eos					S5	Abundant	locally common
White Sucker	Catostomus commersoni					S5	Abundant	widespread

Embro Dam area fish sampling (2009 – 2014) Species (Common Name) Scientific Name COSEWIC SARA

Youngsville Drain

2007	SRank	
	2007	

ESA 2007 SRank Abundanc Distribution

Youngsville D	rain				
East of 35th Line 2 km	North of Road 84	UTM x: 505741	UTM y: 4781834	MU24	11/21/2003
Brook Trout	Salvelinus fontinalis		S5	Uncommon	localized
Fathead Minnow	Pimephales promelas		S5	Abundant	widespread
White Sucker	Catostomus commersoni		S5	Abundant	widespread
East of 35th Line 2 km	North of Road 84	UTM x: 505741	UTM y: 4781834	MU24	11/23/2010
Brook Stickleback	Culaea inconstans		S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis		S5	Uncommon	localized
White Sucker	Catostomus commersoni		S5	Abundant	widespread
East of 35th Line 2 km	North of Road 84	UTM x: 505741	UTM y: 4781834	MU24	11/27/2012
Brook Trout	Salvelinus fontinalis		S5	Uncommon	localized
White Sucker	Catostomus commersoni		S5	Abundant	widespread
East of 35th Line 2 km	North of Road 84	UTM x: 505741	UTM y: 4781834	MU24	11/30/2012
Brook Stickleback	Culaea inconstans		S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis		S5	Uncommon	localized
Fathead Minnow	Pimephales promelas		S5	Abundant	widespread
White Sucker	Catostomus commersoni		S5	Abundant	widespread
East of 35th Line 2 km North of Road 84		UTM x: 505741	UTM y: 4781834	MU24	11/18/2013
Brook Trout	Salvelinus fontinalis		S5	Uncommon	localized
East of 35th Line 2 km	North of Road 84	UTM x: 505741	UTM y: 4781834	MU24	11/20/2013
Brook Stickleback	Culaea inconstans		S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis		S5	Uncommon	localized
Fathead Minnow	Pimephales promelas		S5	Abundant	widespread
White Sucker	Catostomus commersoni		S5	Abundant	widespread
East of 35th Line 2 km	North of Road 84	UTM x: 505741	UTM y: 4781834	MU24	11/27/2013
Brook Stickleback	Culaea inconstans		S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis		S5	Uncommon	localized
Fathead Minnow	Pimephales promelas		S5	Abundant	widespread
East of 35th Line 2 km	North of Road 84	UTM x: 505741	UTM y: 4781834	MU24	11/29/2013
Brook Trout	Salvelinus fontinalis		S5	Uncommon	localized
East of 35th Line 2 km	North of Road 84	UTM x: 505741	UTM y: 4781834	MU24	12/5/2013
Brook Trout	Salvelinus fontinalis		S5	Uncommon	localized
East of 35th Line 2 km	North of Road 84	UTM x: 505741	UTM y: 4781834	MU24	12/9/2013
Brook Trout	Salvelinus fontinalis		S5	Uncommon	localized

Species (Common Nan	ne) Scientific Name	COSEWIC SA	ARA	ESA 2	007	SRank	Abundanc	Distribution
East of 35th Line 2 km No	orth of Road 84	UTM x:	505741	UTM y	y :	4781834	MU24	11/12/2014
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
White Sucker	Catostomus commersoni					S5	Abundant	widespread
East of 35th Line 2 km No	orth of Road 84	UTM x:	505741	UTM	y:	4781834	MU24	11/17/2014
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
East of 35th Line 2 km No	orth of Road 84	UTM x:	505741	UTM	y:	4781834	MU24	11/26/2014
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
White Sucker	Catostomus commersoni					S5	Abundant	widespread
East of 35th Line 2 km No		UTM x [.]	505741	UTM	V:	4781834	MU24	12/2/2014
Brook Stickleback	Culaea inconstans				,		Abundant	
Brook Stickleback Brook Trout	Salvelinus fontinalis					S5 S5	Uncommon	widespread localized
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
White Sucker	Catostomus commersoni					S5	Abundant	widespread
East of 35th Line 2 km No		UTM x:	505741	LITM	<i>V</i> .	4781834	MU24	12/5/2014
		01101 X.	505741	UTW	у.			
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
White Sucker	Catostomus commersoni					S5	Abundant	widespread
Youngsville Drai						1701001		
		UTM x:	505996	UTM	y:	4781291	MU41	9/3/2009
Blacknose Dace	Rhinichthys atratulus					S5	Abundant	widespread
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	
Northern Redbelly Dace	Phoxinus eos					S5	Abundant	locally common
White Sucker	Catostomus commersoni					S5	Abundant	widespread
East of 35th Line 1.4 km I	North of Road 84	UTM x:	505996	UTM	y :	4781291	MU41	11/18/2010
Blacknose Dace	Rhinichthys atratulus					S5	Abundant	widespread
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
White Sucker	Catostomus commersoni					S5	Abundant	widespread
East of 35th Line 1.4 km I	North of Road 84	UTM x:	505996	UTM	y:	4781291	MU41	11/22/2013
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommon	localized
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
White Sucker	Catostomus commersoni					S5	Abundant	widespread
East of 35th Line 1.4 km N	North of Road 84	UTM x:	505996	UTM	y:	4781291	MU41	12/2/2013
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread

Species (Common Nam	e) Scientific Name	COSEWIC	SA	ARA	ESA 2007	SRank	Abundanc	Distribution
Brook Trout	Salvelinus fontinalis					S5 S5	Uncommor	localized
Fathead Minnow	Pimephales promelas					S 5	Abundant	widespread
White Sucker	Catostomus commersoni						Abundant	widespread
East of 35th Line 1.4 km N	lorth of Road 84	U	TM x:	505996	UTM y:	4781291	MU41	10/27/2014
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommor	localized
Northern Redbelly Dace	Phoxinus eos					S5	Abundant	locally common
White Sucker	Catostomus commersoni					S5	Abundant	widespread
East of 35th Line 1.4 km N	lorth of Road 84	U	TM x:	505996	UTM y:	4781291	MU41	11/3/2014
Brook Trout	Salvelinus fontinalis					S 5	Uncommor	localized
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
White Sucker	Catostomus commersoni					S5	Abundant	widespread
East of 35th Line 1.4 km N	lorth of Road 84	U	TM x:	505996	UTM y:	4781291	MU41	11/13/2014
Brook Trout	Salvelinus fontinalis					S5	Uncommor	localized
East of 35th Line 1.4 km N	lorth of Road 84	U	TM x:	505996	UTM y:	4781291	MU41	12/5/2014
Blacknose Dace	Rhinichthys atratulus					S5	Abundant	widespread
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommor	localized
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
White Sucker	Catostomus commersoni					S5	Abundant	widespread
East of 35th Line 1.4 km N	lorth of Road 84	U	TM x:	505996	UTM y:	4781291	MU41	12/12/2014
Blacknose Dace	Rhinichthys atratulus					S5	Abundant	widespread
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommor	localized
Fathead Minnow	Pimephales promelas					S5	Abundant	widespread
White Sucker	Catostomus commersoni					S 5	Abundant	widespread
Youngsville Drai		1		506759	UTM y:	4780111	837-UT	11/1/1999
Road 84				500759	O TWI y.			
Blacknose Dace	Rhinichthys atratulus					S5	Abundant	widespread
Brook Stickleback	Culaea inconstans					S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis					S5	Uncommo	
Creek Chub	Semotilus atromaculatus					S5	Abundant	widespread
Johnny Darter	Etheostoma nigrum					S5	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos					S5	Abundant	locally common
Road 84		L	JTM x:	506759	UTM y:	4780111	837-UT	11/12/2010
Brook Trou	Salvelinus fontinalis					S5	Uncommo	n localized
Road 84		L	JTM x:	506759	UTM y:	4780111	837-UT	11/21/2013
Blacknose Dace	Rhinichthys atratulus					S5	Abundant	widespread

Species (Common Name	e) Scientific Name	COSEWIC	SARA	ESA 2007	SRank	Abundanc	Distribution
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
White Sucker	Catostomus commersoni				S5	Abundant	widespread
Road 84		TU	TM x: 506759	UTM y:	4780111	837-UT	11/25/2013
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
Johnny Darter	Etheostoma nigrum				S5	Abundant	widespread
Road 84		TU	ГМ х: 506759	UTM y:	4780111	837-UT	11/26/2014
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
White Sucker	Catostomus commersoni				S5	Abundant	widespread
<u> Youngsville Drai</u>	<u>n</u>						
Rd 84, Embro C.A., down	stream of pond	UT	M x: 506879	9 UTM y:	4779791	MU40	9/3/2009
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Bluntnose Minnow	Pimephales notatus				S5	Abundant	widespread
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
Central Stoneroller	Campostoma anomalum				S4	Abundant	widespread
Common Shiner	Luxilus cornutus				S5	Abundant	widespread
Creek Chub	Semotilus atromaculatus				S5	Abundant	widespread
athead Minnow	Pimephales promelas				S5	Abundant	widespread
Greenside Darter	Etheostoma blennioides				S4	Abundant	widespread
Hornyhead Chub	Nocomis biguttatus				S4	Abundant	widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant	widespread
Northern Hog Sucker	Hypentelium nigricans				S4	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	locally commor
White Sucker	Catostomus commersoni				S5	Abundant	widespread
Rd 84, Embro C.A., down	stream of pond	TU	ΓM x: 50687	9 UTM y:	4779791	MU40	9/2/2010
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Bluegill	Lepomis macrochirus				S5	Common	localized
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
Central Stoneroller	Campostoma anomalum				S4	Abundant	widespread
Common Shiner	Luxilus cornutus				S5	Abundant	widespread
Creek Chub	Semotilus atromaculatus				S5	Abundant	widespread
athead Minnow	Pimephales promelas				S5	Abundant	widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	locally common
Striped Shiner	Luxilus chrysocephalus				S4	Abundant	widespread
					04	/ wandunt	widespicad

Species (Common Nan	•	COSEWIC SA	ARA	ESA 2007	SRank	Abundanc	Distribution
Rd 84, Embro C.A., down	stream of pond	UTM x:	506879	UTM y:	4779791	MU40	11/12/2010
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
Rd 84, Embro C.A., down	stream of pond	UTM x:	506879	UTM y:	4779791	MU40	7/15/2011
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
Common Shiner	Luxilus cornutus				S5	Abundant	widespread
Creek Chub	Semotilus atromaculatus				S5	Abundant	widespread
Hornyhead Chub	Nocomis biguttatus				S4	Abundant	widespread
White Sucker	Catostomus commersoni				S5	Abundant	widespread
Rd 84, Embro C.A., down	stream of pond	UTM x:	506879	UTM y:	4779791	MU40	8/28/2012
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Bluntnose Minnow	Pimephales notatus				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
Common Shiner	Luxilus cornutus				S5	Abundant	widespread
Creek Chub	Semotilus atromaculatus				S5	Abundant	widespread
Fantail Darter	Etheostoma flabellare				S4	Abundant	widespread
Hornyhead Chub	Nocomis biguttatus				S4	Abundant	widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	locally commor
Rosyface Shiner	Notropis rubellus				S4	Abundant	widespread
Smallmouth Bass	Micropterus dolomieu				S5	Abundant	widespread
White Sucker	Catostomus commersoni				S5	Abundant	widespread
Rd 84, Embro C.A., down	stream of pond	UTM x:	506879	UTM y:	4779791	MU40	10/18/2012
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Bluntnose Minnow	Pimephales notatus				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
Central Stoneroller	Campostoma anomalum				S4	Abundant	widespread
Common Shiner	Luxilus cornutus				S5	Abundant	widespread
Creek Chub	Semotilus atromaculatus				S5	Abundant	widespread
Fathead Minnow	Pimephales promelas				S5	Abundant	widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant	widespread
Rock Bass	Ambloplites rupestris				S5	Abundant	widespread
Rosyface Shiner	Notropis rubellus				S4	Abundant	widespread
Smallmouth Bass	Micropterus dolomieu				S5	Abundant	widespread
White Sucker	Catostomus commersoni				S5	Abundant	widespread
Rd 84, Embro C.A., down	stream of pond	UTM x:	506879	UTM y:	4779791	MU40	6/25/2014
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
Central Stoneroller	Campostoma anomalum				S4	Abundant	widespread
Common Shiner	Luxilus cornutus				S5	Abundant	widespread
					S5	Abundant	widespread

Species (Common Nan	ne) Scientific Name	COSEWIC	SARA	ESA 2007	SRank	Abundanc	Distribution
Fathead Minnow	Pimephales promelas				S5	Abundant	widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	locally common
White Sucker	Catostomus commersoni				S5	Abundant	widespread

Global Rank (GRANK): Global ranks are assigned by a consensus of the network of natural heritage programs (conservation data centres), scientific experts, and The Nature Conservancy to designate a rarity rank based on the range-wide status of a species, subspecies or variety. The most important factors considered in assigning global (and provincial) ranks are the total number of known, extant sites world-wide, and the degree to which they are potentially or actively threatened with destruction. Other criteria include the number of known populations considered to be securely protected, the size of the various populations, and the ability of the taxon to persist at its known sites. The taxonomic distinctness of each taxon has also been considered. Hybrids, introduced species, and taxonomically dubious species, subspecies and varieties have not been included.

G1 Extremely rare; usually 5 or fewer occurrences in the overall range or very few remaining individuals; or because some factor(s) making it especially vulnerable to extinction.

G2 Very rare; usually between 5 and 20 occurrences in the overall range or with many individuals in fewer occurrences; or because of some factor(s) making it vulnerable to extinction.

G3 Rare to uncommon; usually between 20 and 100 occurrences; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

G4 Common; usually more than 100 occurrences; usually not susceptible to immediate threats.

G5 Very common; demonstrably secure under present conditions.

COSEWIC Status: The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assesses species for their consideration for legal protection and recovery (or management) under the Species at Risk Act (SARA).

Extinct: A wildlife species that no longer exists.

Extirpated: A wildlife species no longer existing in the wild in Canada, but exists elsewhere.

Endangered: A wildlife species facing imminent extirpation or extinction.

Threatened: A wildlife species likely to become endangered if limiting factors are not reversed.

Special Concern: A wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.

Not at Risk: A wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

Data Deficient: A category that applies when the available information is insufficient (a) to resolve a wildlife species' eligibility for assessment or (b) to permit an assessment of the wildlife species' risk of extinction.

References: http://www.sararegistry.gc.ca/species/schedules_e.cfm?id=1 https://www.registrelep-

sararegistry.gc.ca/sar/index/default_e.cfm?stype=speciesindex=1cosid=common=scientific=population=taxid=3locid=0desid= 0schid=0desid2=0 http://www.cosewic.gc.ca/eng/sct0/rpt/rpt_csar_e.pdf http://www.cosewic.gc.ca/eng/sct5/index_e.cfm (current to September 2009)

Provincial Rank (SRANK): Provincial (or Subnational) ranks are used by the Natural Heritage Information Centre to set protection priorities for rare species and natural communities. These ranks are not legal designations. Provincial ranks are assigned in a manner similar to that described for global ranks, but consider only those factors within the political boundaries of Ontario. By comparing the global and provincial ranks, the status, rarity, and the urgency of conservation, needs can be ascertained. The NHIC evaluates provincial ranks on a continual basis and produces updated lists at least annually. The NHIC welcomes information which will assist in assigning accurate provincial ranks.

S1 Extremely rare in Ontario; usually 5 or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation. S2 Very rare in Ontario; usually between 5 and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances. Most species with an S3 rank are assigned to the watch list, unless they have a relatively high global rank.

S4 Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 Very common and demonstrably secure in Ontario.

S? Unranked, or, if following a ranking, rank uncertain (e.g. S3?). S? species are thought to be rare in Ontario, but there is insufficient information available to assign a more accurate rank.

SE Exotic; not believed to be a native component of Ontario's flora

Embro Dam area benthic water quality sampling summary

DATE FBI QUALITY Youngsville Drain upstream of dam Accessed from 35th Line 1.2 km north of Rd 84 Site code: MU24 UTM X Coordinate: 506031 UTM Y Coordinate: 4781231 11/21/2003 6.11 Fairly Poor Youngsville Drain upstream of dam Oxford Road 84 North of Embro CA Site code: MU26 UTM X Coordinate: 506776 UTM Y Coordinate: 4780094 7/9/2008 6.04 Fairly Poor 5/5/2015 5.82 Fairly Poor 9/23/2015 6.06 Fairly Poor Youngsville Drain downstream of dam Embro C.A., below dam MU40 Site code: UTM X Coordinate: 506879 UTM Y Coordinate: 4779791 9/29/2010 5.81 Fairly Poor 5/5/2015 5.84 Fairly Poor 9/23/2015 6.37 Fairly Poor

Taxonomic Name	Common Name	Life Stage	# in Subsample	Biotic Inde
<u>Youngsville Drain u</u>	upstream of pond	Accessed from 35th Li	ne 1.2 km north of Rd 84	
•	Site code: MU24	UTM X: 50603	UTM Y: 478123	1
Sampled - 11/21/2003				
•	REP: 1			
Acariformes	Water Mite	А	8	6
Asellidae	Sow Bug	А	51	8
Baetidae	Small Mayfly	N	14	6
Chironomidae	Midge	L	21	6
Dytiscidae	Predacious Diving Beetle	L	1	5
Elmidae	Riffle Beetle	L	1	5
Hydroptilidae	Micro-caddisfly	L	1	6
Limnephilidae	Northern Caddisfly	L	5	4
, Nematoda	Thread Worm	А	1	5
Oligochaeta	Aquatic Worm	А	11	8
Physidae	Pouch Snail	А	1	8
Pisidiidae	Fingernail Clam	А	1	6
Simuliidae	Black Fly	L	85	5
Tipulidae	Crane Fly	L	3	4
Turbellaria	Flatworm	А	1	6
	Stream Health	Fairly Poor	Family Biotic Index	6.11
		2	-	•
Youngsville Drain u		Oxford Road 84 North		
	Site code: MU26	6 UTM X: 506776	6 UTM Y: 478009	4
Sampled - 7/9/2008				
	REP: 1			
	REP: 1 Water Mite	А	4	6
Acariformes		A N	4 1	6 6
Acariformes Baetidae	Water Mite			
Acariformes Baetidae Ceratopogonidae	Water Mite Small Mayfly	Ν	1	6
Acariformes Baetidae Ceratopogonidae Chironomidae	Water Mite Small Mayfly Biting Midge	N L	1 4	6 6
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae	Water Mite Small Mayfly Biting Midge Midge	N L L	1 4 276	6 6 6
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen	N L A	1 4 276 18	6 6 5
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle	N L A L	1 4 276 18 2	6 6 5 5
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle	N L A L L	1 4 276 18 2 1	6 6 5 5 5
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle	N L A L L L	1 4 276 18 2 1 2	6 6 5 5 5 5
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-horned Caddisfly	N L A L L L	1 4 276 18 2 1 2 1 2 1	6 6 5 5 5 5 4
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-horned Caddisfly Thread Worm	N L A L L L A	1 4 276 18 2 1 2 1 3	6 6 5 5 5 4 5
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-homed Caddisfly Thread Worm Aquatic Worm	N L A L L L A A	1 4 276 18 2 1 2 1 3 22	6 6 5 5 5 5 4 5 8
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-homed Caddisfly Thread Worm Aquatic Worm Fingemail Clam	N L L L L L A A A	1 4 276 18 2 1 2 1 3 22 2	6 6 5 5 5 4 5 8 6
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-hormed Caddisfly Thread Worm Aquatic Worm Fingemail Clam Black Fly	N L L L L L A A A L	1 4 276 18 2 1 2 1 3 22 2 2 1	6 6 5 5 5 5 4 5 8 6 5
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Crawling Water Beetle Long-horned Caddisfly Thread Worm Aquatic Worm Fingernail Clam Black Fly Stream Health	N L L L L L A A A L	1 4 276 18 2 1 2 1 3 22 2 2 1	6 6 5 5 5 5 4 5 8 6 5
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-horned Caddisfly Thread Worm Aquatic Worm Fingemail Clam Black Fly Stream Health	N L A L L L A A A A L Fairly Poor	1 4 276 18 2 1 2 1 3 22 2 1 5 Family Biotic Index	6 6 5 5 5 4 5 8 6 5 6.04
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae Sampled - 5/5/2015 Acariformes	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-horned Caddisfly Thread Worm Aquatic Worm Fingemail Clam Black Fly Stream Health REP: 1 Water Mite	N L L L L L L A A A L Fairly Poor	1 4 276 18 2 1 2 1 3 22 2 1 Family Biotic Index	6 6 5 5 5 4 5 8 6 5 6.04
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae Sampled - 5/5/2015 Acariformes Asellidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-horned Caddisfly Thread Worm Aquatic Worm Fingemail Clam Black Fly Stream Health REP: 1 Water Mite Sow Bug	N L L L L L L A A A L Fairly Poor	1 4 276 18 2 1 2 1 3 22 2 1 Family Biotic Index 26 11	6 6 5 5 5 4 5 8 6 5 6.04 6 8
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae Sampled - 5/5/2015 Acariformes Asellidae Baetidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-horned Caddisfly Thread Worm Aquatic Worm Fingemail Clam Black Fly Stream Health REP: 1 Water Mite Sow Bug Small Mayfly	N L L L L L L A A A L Fairly Poor	1 4 276 18 2 1 2 1 3 22 2 1 Family Biotic Index 26 11 9	6 6 5 5 5 4 5 8 6 5 6.04 6 8 6
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae Sampled - 5/5/2015 Acariformes Asellidae Baetidae Ceratopogonidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-horned Caddisfly Thread Worm Aquatic Worm Aquatic Worm Black Fly Stream Health REP: 1 Water Mite Sow Bug Small Mayfly Biting Midge	N L L L L L L A A A L Fairly Poor A A N L	1 4 276 18 2 1 2 1 3 22 2 1 Family Biotic Index 26 11 9 1	6 6 5 5 5 4 5 8 6 5 6.04 6 8 6 6 6
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae Sampled - 5/5/2015 Acariformes Asellidae Baetidae Ceratopogonidae Chironomidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Riffle Beetle Crawling Water Beetle Long-horned Caddisfly Thread Worm Aquatic Worm Aquatic Worm Fingemail Clam Black Fly Stream Health REP: 1 Water Mite Sow Bug Small Mayfly Biting Midge Midge	N L L L L L A A A L Fairly Poor A A N L P	1 4 276 18 2 1 2 1 3 22 2 1 Family Biotic Index 26 11 9 1 19	6 6 5 5 5 4 5 8 6 5 6.04 6 8 6 6 6 6
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae Sampled - 5/5/2015 Acariformes Asellidae Baetidae Ceratopogonidae Chironomidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Crawling Water Beetle Crawling Water Beetle Long-horned Caddisfly Thread Worm Aquatic Worm Aquatic Worm Fingemail Clam Black Fly Stream Health REP: 1 Water Mite Sow Bug Small Mayfly Biting Midge Midge Midge	N L L L L L A A A L Fairly Poor A A A L P L	1 4 276 18 2 1 2 1 3 22 2 1 Family Biotic Index 26 11 9 1 19 160	6 6 5 5 5 4 5 8 6 5 6.04 6 8 6 6 6 6 6
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae Sampled - 5/5/2015 Acariformes Asellidae Baetidae Ceratopogonidae Chironomidae Dytiscidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Crawling Water Beetle Crawling Water Beetle Long-homed Caddisfly Thread Worm Aquatic Worm Aquatic Worm Fingernail Clam Black Fly Stream Health REP: 1 Water Mite Sow Bug Small Mayfly Biting Midge Midge Midge Predacious Diving Beetle	N L L L L L A A A L Fairly Poor A A N L P L L	1 4 276 18 2 1 2 1 3 22 2 1 Family Biotic Index 26 11 9 1 9 1 19 160 1	6 6 5 5 5 4 5 8 6 5 6.04 6 8 6 6 6 5
Acariformes Baetidae Ceratopogonidae Chironomidae Corixidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae Sampled - 5/5/2015 Acariformes Asellidae Baetidae Ceratopogonidae Chironomidae Chironomidae Dytiscidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Crawling Water Beetle Crawling Water Beetle Long-homed Caddisfly Thread Worm Aquatic Worm Aquatic Worm Fingernail Clam Black Fly Stream Health REP: 1 Water Mite Sow Bug Small Mayfly Biting Midge Midge Midge Predacious Diving Beetle Riffle Beetle	N L L L L L A A A L Fairly Poor A A N L P L L A	1 4 276 18 2 1 2 1 3 22 2 1 Family Biotic Index 26 11 9 1 9 1 19 160 1 4	6 6 5 5 5 4 5 8 6 5 6.04 6 8 6 6 6 6 5 5
Acariformes Baetidae Ceratopogonidae Chironomidae Dytiscidae Elmidae Haliplidae Leptoceridae Nematoda Oligochaeta Pisidiidae Simuliidae Sampled - 5/5/2015 Acariformes Asellidae Baetidae Ceratopogonidae Chironomidae Chironomidae Dytiscidae Elmidae Elmidae	Water Mite Small Mayfly Biting Midge Midge Water Boatmen Predacious Diving Beetle Crawling Water Beetle Crawling Water Beetle Long-homed Caddisfly Thread Worm Aquatic Worm Aquatic Worm Fingernail Clam Black Fly Stream Health REP: 1 Water Mite Sow Bug Small Mayfly Biting Midge Midge Midge Predacious Diving Beetle	N L L L L L A A A L Fairly Poor A A N L P L L	1 4 276 18 2 1 2 1 3 22 2 1 Family Biotic Index 26 11 9 1 9 1 19 160 1	6 6 5 5 5 4 5 8 6 5 6.04 6 8 6 6 6 6 5

Embro Dam area benthic sampling data (2003 – 2015)

Ola a sin ha suïista a	L h	•	4	0
Glossiphoniidae Hydropsychidae	Leech Net-spinning Caddisfly	A	1 9	8 5
Hydroptilidae	Micro-caddisfly	L	9	5
	-			
laxonomic Name	Common Name	Life Stage	# in Subsample	Biotic Index
epidostomatidae	Lepistomatid Caddisfly	L	7	1
imnephilidae	Northern Caddisfly	L	2	4
Dligochaeta	Aquatic Worm	A	13	8
Perlidae	Stonefly	N	9	3
Simuliidae	Black Fly	L	5	5
	Stream Health	Fairly Poor	Family Biotic Index	5.82
ampled - 9/23/2015				
	REP: 1			
cariformes	Water Mite	A	21	6
sellidae	Sow Bug	A	18	8
aetidae	Small Mayfly	N	20	6
Ceratopogonidae	Biting Midge	L	1	6
hironomidae	Midge	L	226	6
hironomidae	Midge	Р	16	6
Imidae	Riffle Beetle	L	5	5
lydropsychidae	Net-spinning Caddisfly	L	9	5
lydroptilidae	Micro-caddisfly	L	1	6
lydroptilidae	Micro-caddisfly	P	3	6
lematoda	Thread Worm	A	1	5
Digochaeta	Aquatic Worm	A	5	8
lisidiidae	Fingernail Clam	A	2	6
ISIUIIUAE		~	2	
	Plack Elv	1	5	5
Simuliidae	Black Fly	L	5	5
Simuliidae	Crane Fly	L	3	4
Simuliidae Fipulidae	Crane Fly Stream Health	∟ Fairly Poor	3 Family Biotic Index	
Simuliidae Fipulidae Youngsville Drain de	Crane Fly Stream Health ownstream of dam	L	3 Family Biotic Index	4
Simuliidae Fipulidae	Crane Fly Stream Health	∟ Fairly Poor	3 Family Biotic Index	4 6.06
Simuliidae Tipulidae Youngsville Drain d e	Crane Fly Stream Health ownstream of dam	L Fairly Poor Embro C.A., below dan	3 Family Biotic Index	4 6.06
imuliidae ipulidae Youngsville Drain d e	Crane Fly Stream Health ownstream of dam	L Fairly Poor Embro C.A., below dan	3 Family Biotic Index	4 6.06
imuliidae ipulidae Y <mark>oungsville Drain de</mark> ampled - 9/29/2010	Crane Fly Stream Health ownstream of dam Site code: MU40	L Fairly Poor Embro C.A., below dan	3 Family Biotic Index	4 6.06
imuliidae ipulidae Youngsville Drain d e ampled - 9/29/2010 cariformes	Crane Fly Stream Health ownstream of dam Site code: MU40 REP: 1 Water Mite Sow Bug	L Fairly Poor Embro C.A., below dan UTM X: 506879	3 Family Biotic Index N UTM Y: 47797	4 6.06 91
imuliidae ipulidae Toungsville Drain d e ampled - 9/29/2010 cariformes sellidae	Crane Fly Stream Health ownstream of dam Site code: MU40 REP: 1 Water Mite	L Fairly Poor Embro C.A., below dan UTM X: 506879 A	3 Family Biotic Index UTM Y: 47797 7	4 6.06 91 6
imuliidae ipulidae Toungsville Drain d e ampled - 9/29/2010 cariformes sellidae aetidae	Crane Fly Stream Health ownstream of dam Site code: MU40 REP: 1 Water Mite Sow Bug	L Fairly Poor Embro C.A., below dan UTM X: 506879 A A	3 Family Biotic Index UTM Y: 47797 7 15	4 6.06 91 6 8
imuliidae ipulidae ' <mark>oungsville Drain de</mark> ampled - 9/29/2010 cariformes sellidae aetidae hironomidae	Crane Fly Stream Health Ownstream of dam Site code: MU40 REP: 1 Water Mite Sow Bug Small Mayfly	L Fairly Poor Embro C.A., below dan UTM X: 506879 A A N	3 Family Biotic Index UTM Y: 47797 7 15 2	4 6.06 91 6 8 6
imuliidae ipulidae ' <mark>oungsville Drain de</mark> ampled - 9/29/2010 cariformes sellidae aetidae hironomidae hironomidae	Crane Fly Stream Health OWNSTREAM OF dam Site code: MU40 REP: 1 Water Mite Sow Bug Small Mayfly Midge	L Fairly Poor Embro C.A., below dan UTM X: 506879 A A N P	3 Family Biotic Index UTM Y: 47797 7 15 2 15	4 6.06 91 6 8 6 6 6
imuliidae ipulidae oungsville Drain d e ampled - 9/29/2010 cariformes sellidae aetidae hironomidae hironomidae Imidae	Crane Fly Stream Health Ownstream of dam Site code: MU40 REP: 1 Water Mite Sow Bug Small Mayfly Midge Midge	L Fairly Poor Embro C.A., below dan UTM X: 506879 A A N P L	3 Family Biotic Index UTM Y: 477979 7 15 2 15 76	4 6.06 91 6 8 6 6 6 6 6
imuliidae ipulidae ' <mark>oungsville Drain de</mark> ampled - 9/29/2010 cariformes sellidae aetidae hironomidae hironomidae Imidae Imidae	Crane Fly Stream Health OWNSTREAM OF dam Site code: MU40 REP: 1 Water Mite Sow Bug Small Mayfly Midge Midge Riffle Beetle	L Fairly Poor Embro C.A., below dan UTM X: 506879 A A N P L A	3 Family Biotic Index UTM Y: 477979 7 15 2 15 76 4	4 6.06 91 6 8 6 8 6 6 6 5
imuliidae ipulidae 'oungsville Drain d e ampled - 9/29/2010 cariformes sellidae aetidae ihironomidae ihironomidae imidae imidae imidae	Crane Fly Stream Health OWNSTREAM OF DAM Site code: MU40 REP: 1 Water Mite Sow Bug Small Mayfly Midge Midge Riffle Beetle Riffle Beetle	L Fairly Poor Embro C.A., below dan UTM X: 506879 A A A N P L L A L	3 Family Biotic Index UTM Y: 477979 7 15 2 15 76 4 23	4 6.06 91 6 8 6 6 6 6 5 5 5
imuliidae ipulidae Youngsville Drain de ampled - 9/29/2010 cariformes sellidae aetidae chironomidae chironomidae ilmidae ilmidae impididae ammaridae	Crane Fly Stream Health OWNSTREAM OF DAM Site code: MU40 REP: 1 Water Mite Sow Bug Small Mayfly Midge Riffle Beetle Riffle Beetle Riffle Beetle Dance Fly	L Fairly Poor Embro C.A., below dan UTM X: 506879 A A A N P L L A L L L	3 Family Biotic Index UTM Y: 47797 7 15 2 15 76 4 23 7	4 6.06 91 6 8 6 6 6 5 5 6 6 6
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imuliidae ipulidae Zoungsville Drain d ampled - 9/29/2010 cariformes sellidae taetidae thironomidae thironomidae thironomidae timidae impididae Sammaridae lydropsychidae Vigochaeta	Crane Fly Stream Health OWNSTREAM OF DAM Site code: MU40 REP: 1 Water Mite Sow Bug Small Mayfly Midge Midge Riffle Beetle Dance Fly Sideswimmer Net-spinning Caddisfly Aquatic Worm	L Fairly Poor Embro C.A., below dan UTM X: 506879 A A A N P L A L A L L A L A L A A L A A A A A A	3 Family Biotic Index UTM Y: 47797 7 15 2 15 76 4 23 7 4 23 7 13 44 10	4 6.06 91 6 8 6 6 5 5 6 6 5 8
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Chironomidae	Midge	Р	8	6
Elmidae	Riffle Beetle	L	40	5
Elmidae	Riffle Beetle	A	9	5
Empididae	Dance Fly	L	1	6

Taxonomic Name	Common Name	Life Stage	# in Subsample	Biotic Index
Gammaridae	Sideswimmer	А	110	6
Hydropsychidae	Net-spinning Caddisfly	L	24	5
Oligochaeta	Aquatic Worm	А	11	8
Philopotamidae	Finger-net Caddisfly	L	1	4
Pisidiidae	Fingernail Clam	А	4	6
Planorbidae	Orb Snail	А	1	6
Simuliidae	Black Fly	Р	1	5
Simuliidae	Black Fly	L	4	5
Tipulidae	Crane Fly	L	5	4
Turbellaria	Flatworm	А	6	6
Uenoidae	Caddisfly	L	2	3
	Stream Health	Fairly Poor	Family Biotic Index	5.84
Sampled - 9/23/2015				
	REP: 1			
Acariformes	Water Mite	А	5	6
Asellidae	Sow Bug	А	39	8
Baetidae	Small Mayfly	Ν	4	6
Chironomidae	Midge	L	57	6
Chironomidae	Midge	Р	8	6
Crangonyctidae	Sideswimmer	А	4	6
Elmidae	Riffle Beetle	А	5	5
Elmidae	Riffle Beetle	L	35	5
Gammaridae	Sideswimmer	А	14	6
Hydropsychidae	Net-spinning Caddisfly	L	11	5
Oligochaeta	Aquatic Worm	А	67	8
Philopotamidae	Finger-net Caddisfly	L	8	4
Pisidiidae	Fingernail Clam	А	3	6
Simuliidae	Black Fly	L	4	5
Tipulidae	Crane Fly	L	10	4
Turbellaria	Flatworm	А	53	6
	Stream Health	Fairly Poor	Family Biotic Index	6.37

Benthic Samples were obtained using a Rapid Bioassessment Protocol developed by the United States Environmental Protection Agency and modified by Dr. Robert Bailey of the University of Western Ontario Zoology Department. A representative section of stream is selected, incorporating a riffle if present, and sampled by moving upstream along a diagonal transect, dislodging and capturing invertebrates with a .5 mm mesh "D"- frame net. Samples are preserved in the field and analyzed in the lab to randomly select a 100 bug subsample which is identified to the Family taxonomic level.

The biotic index is a value assigned to benthic invertebrate taxa indicating their pollution sensitivity and tolerance on a scale from 0 to 10. Lower numbers indicate pollution sensitivity and high numbers tolerance. A value of -1 indicates that no biotic index value has been assigned to these taxa.

The Family Biotic Index is the weighted average of the biotic index and number of bugs in each taxa in the sample. The water quality ranges for the FBI values are as follows: < 4.25 = Excellent; 4.25 - 5.00 = Good; 5.00 - 5.75 = Fair; 5.75 - 6.50 - 7.25 = Poor; and > 7.25 = Very Poor.

Report prepared - Monday, November 09, 2015