

**Appendix C**

**Updated October, 2022**

**Emburo Dam Area**

**Fish and Benthic Records 2015-2022**

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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	11
Bluntnose Minnow	G5		S5	Abundant	widespread	1
Brook Stickleback	G5		S5	Abundant	widespread	25
Brook Trout	G5T		S5	Uncommo	localized	44
Creek Chub	G5		S5	Abundant	widespread	1
Fathead Minnow	G5		S5	Abundant	widespread	15
Johnny Darter	G5		S5	Abundant	widespread	3
Northern Redbelly	G5		S5	Abundant	locally common	4
White Sucker	G5		S5	Abundant	widespread	25

### Fish Diversity Downstream of Embro Pond

Species	Status – Global	Can	Ont.	Thames	Thames	Times Sampled
Black Bullhead	G5		S4	Common	widespread	1
Blacknose Dace	G5		S5	Abundant	widespread	14
Bluegill	G5		S5	Common	localized	1
Bluntnose Minnow	G5		S5	Abundant	widespread	6
Brook Stickleback	G5		S5	Abundant	widespread	5
Brook Trout	G5T		S5	Uncommon	localized	16
Central Stoneroller	G5		S4	Abundant	widespread	10
Common Shiner	G5		S5	Abundant	widespread	12
Creek Chub	G5		S5	Abundant	widespread	12
Fantail Darter	G5		S4	Abundant	widespread	5
Fathead Minnow	G5		S5	Abundant	widespread	9
Golden Shiner	G5		S5	Common	localized	1
Greenside Darter	G5		S4	Abundant	widespread	1
Hornyhead Chub	G5		S4	Abundant	widespread	4
Johnny Darter	G5		S5	Abundant	widespread	8
Largemouth Bass	G5		S5	Abundant	widespread	1
Northern Hog	G5		S4	Abundant	widespread	2
Northern Sunfish	G5	SC	S3			1
Northern Redbelly	G5		S5	Abundant	locally common	9
Pumpkinseed	G5		S5	Abundant	Widespread	1
Rainbow Darter	G5		S4	Abundant	Widespread	1
Rock Bass	G5		S5	Abundant	Widespread	1
Rosyface Shiner	G5		S4	Abundant	Widespread	2
Smallmouth Bass	G5		S5	Abundant	Widespread	2
Spotfin Shiner			S4	Abundant	Widespread	2
Striped Shiner	G5		S4	Abundant	Widespread	1
White Sucker	G5		S5	Abundant	Widespread	13

**Embro Dam Area Fish Sampling (2015-2022)**

<b>Upstream of Embro Dam</b>							
<b>Species Common Name</b>	<b>Scientific Name</b>	<b>COSEWIC</b>	<b>SARA</b>	<b>ESA</b>	<b>2007 SRank</b>	<b>Abundance</b>	<b>Distribution</b>
Site UT.MU117 (Youngsville Drain Oxford)		UTM x: 506759		UTM y: 4780111		17/11/2016	
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	Widespread
Bluntnose Minnow	Pimephales notatus				S5	Abundant	Throughout
Brook Stickleback	Culaea inconstans				S5	Abundant	Throughout
Brook Trout	Salvelinus fontinalis				S5	Uncomm	Localized
White Sucker	Catostomus commersoni				S5	Abundant	Throughout
Site UT.MU117 (Youngsville Drain Oxford)		UTM x: 506759		UTM y: 4780111		13/08/2019	
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	Widespread
Brook Stickleback	Culaea inconstans				S5	Abundant	Throughout
Brook Trout	Salvelinus fontinalis				S5	Uncomm	Localized
Fathead Minnow	Pimephales promelas				S5	Abundant	Widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant	Widespread
White Sucker	Catostomus commersoni				S5	Abundant	Throughout
Site UT.MU117 (Youngsville Drain Oxford)		UTM x: 506759		UTM y: 4780111		17/06/2022	
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	Widespread
Brook Stickleback	Culaea inconstans				S5	Abundant	Throughout
Site UT.MU118 (East of 35th Line 2 km North of Road 84)		UTM x: 505741		UTM y: 4781834		11/11/2015	
Brook Trout	Salvelinus fontinalis				S5	Uncomm	Localized
Site UT.MU118 (East of 35th Line 2 km North of Road 84)		UTM x: 505741		UTM y: 4781834		17/11/2015	
Brook Trout	Salvelinus fontinalis				S5	Uncomm	Localized
White Sucker	Catostomus commersoni				S5	Abundant	Throughout
Site UT.MU118 (East of 35th Line 2 km North of Road 84)		UTM x: 505741		UTM y: 4781834		19/11/2015	
Brook Trout	Salvelinus fontinalis				S5	Uncomm	Localized
Site UT.MU118 (East of 35th Line 2 km North of Road 84) UTM x: 505741				UTM y: 4781834		14/05/2016	
Brook Trout	Salvelinus fontinalis				S5	Uncomm	Localized
Site UT.MU118 (East of 35th Line 2 km North of Road 84) UTM x: 505741				UTM y: 4781834		14/11/2016	
Brook Trout	Salvelinus fontinalis				S5	Uncomm	Localized
White Sucker	Catostomus commersoni				S5	Abundant	Throughout
Site UT.MU118 (East of 35th Line 2 km North of Road 84)		UTM x: 505741		UTM y: 4781834		16/11/2016	
Brook Trout	Salvelinus fontinalis				S5	Uncomm	Localized

Site UT.MU118 (East of 35th Line 2 km North of Road 84)		UTM x: 505741	UTM y: 4781834		25/11/2016
Brook Trout	Salvelinus fontinalis		S5	Uncomm	Localized
Site UT.MU119 (East of 35th Line 1.4 km North of Road 84)		UTM x: 505996	UTM y: 4781291		19/11/2015
Brook Stickleback	Culaea inconstans		S5	Abundant	Throughout
Brook Trout	Salvelinus fontinalis		S5	Uncomm	Localized
Site UT.MU119 (East of 35th Line 1.4 km North of Road 84)		UTM x: 505996	UTM y: 4781291		16/11/2016
Brook Stickleback	Culaea inconstans		S5	Abundant	Throughout
Brook Trout	Salvelinus fontinalis		S5	Uncomm	Localized
Fathead Minnow	Pimephales promelas		S5	Abundant	Widespread
White Sucker	Catostomus commersoni		S5	Abundan	Widespread
Site UT.MU119 (East of 35th Line 1.4 km North of Road 84)		UTM x: 505996	UTM y: 4781291		22/11/2016
Brook Trout	Salvelinus fontinalis		S5	Uncomm	Localized

#### **Downstream of Embro Dam**

<b>Species Common Name</b>	<b>Scientific Name</b>	<b>COSEWIC</b>	<b>SARA</b>	<b>ESA</b>	<b>2007 SRank</b>	<b>Abundance</b>	<b>Distribution</b>
Site UT.MU116 (Rd 84, Embro C.A., Downstream of Pond)		UTM x: 506879		UTM y: 4779791		19/11/2015	
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	Widespread
Brook Trout	Salvelinus fontinalis				S5	Uncomm	Localized
Central Stoneroller	Campostoma anomalum				S4	Abundant	Widespread
Common Shiner	Luxilus comutus				S5	Abundant	Widespread
Creek Chub	Semotilus atromaculatus				S5	Abundant	Widespread
Northern Redbelly	Phoxinus eos				S5	Abundant	locally
White Sucker	Catostomus commersoni				S5	Abundant	Widespread
Site UT.MU116 (Rd 84, Embro C.A., Downstream of Pond)		UTM x: 506879		UTM y: 4779791		16/11/2016	
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	Widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommo	Localized
Central Stoneroller	Campostoma anomalum				S4	Abundant	Widespread
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	locally
White Sucker	Catostomus commersoni				S5	Abundant	Widespread
Site UT.MU116 (Rd 84, Embro C.A., Downstream of Pond)		UTM x: 506879		UTM y: 4779791		22/11/2016	
Brook Trout	Salvelinus fontinalis				S5	Uncommo	Localized
Site UT.MU116 (Rd 84, Embro C.A., Downstream of Pond)		UTM x: 506879		UTM y: 4779791		23/08/2018	
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	Widespread
Bluntnose Minnow	Pimephales notatus				S5	Abundant	Widespread

Brook Stickleback	Culaea inconstans		S5	Abundant	Throughout
Brook Trout	Salvelinus fontinalis		S5	Uncommo	Localized
Central Stoneroller	Campostoma anomalum		S4	Abundant	Widespread
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
Johnny Darter	Etheostoma nigrum		S5	Abundant	Widespread
Largemouth Bass	Micropterus salmoides		S5	Abundant	Widespread
Pumpkinseed	Lepomis gibbosus		S5	Abundant	Widespread
Spotfin Shiner	Cyprinella spiloptera		S4	Abundant	Widespread
White Sucker	Catostomus commersoni		S5	Abundant	Throughout
Site UT.MU116 (Rd 84, Embro C.A., Downstream of Pond)		UTM x: 506879	UTM y: 4779791	13/08/2019	
Black Bullhead	Ameiurus melas		S4	Common	Widespread
Blacknose Dace	Rhinichthys atratulus		S5	Abundant	Widespread
Brook Trout	Salvelinus fontinalis		S5	Uncommo	Localized
Brook Stickleback	Culaea inconstans		S5	Abundant	Throughout
Central Stoneroller	Campostoma anomalum		S4	Abundant	Widespread
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
Hornyhead Chub	Nocomis biguttatus		S4	Abundant	Widespread
Johnny Darter	Etheostoma nigrum		S5	Abundant	Widespread
Northern Redbelly Dace	Pimephales promelas		S5	Abundant	Locally
Northern Sunfish	Lepomis peltastes	Special Concern	S3		
White Sucker	Catostomus commersoni		S5	Abundant	Throughout
Site UT.MU116 (Rd 84, Embro C.A., Downstream of Pond)		UTM x: 506879	UTM y: 4779791	17/06/2022	
Blacknose Dace	Rhinichthys atratulus		S5	Abundant	Widespread
Bluntnose Minnow	Pimephales notatus		S5	Abundant	Widespread
Brook Trout	Salvelinus fontinalis		S5	Uncommo	Localized
Central Stoneroller	Campostoma anomalum		S4	Abundant	Widespread
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
Northern Redbelly Dace	Pimephales promelas		S5	Abundant	Locally
Rainbow Darter	Etheostoma caeruleum		S4	Abundant	Widespread
Spotfin Shiner	Cyprinella spiloptera		S4	Abundant	Widespread

**Embro Dam Area Fish Sampling (2015)**

Species (Common)	Scientific Name	COSEWIC	SARA	ESA 2007	SRank	Abundance	Distribution
<b>Youngsville Drain</b>							
East of 35th Line 2 km North of Road 84		UTM x: 505741	UTM y: 4781834	Source: UTRCA		Site Code UT. MU118	Sample Date 10/9/2015
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	localized
<b>Youngsville Drain</b>							
East of 35th Line 1.2 km North of Road 84		UTM x: 506031	UTM y: 4781231	Source: UTRCA		Site Code UT.MU119999999	Sample Date 5/7/2015
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
White Sucker	Catostomus commersoni				S5	Abundant	Widespread
<b>Embro Pond</b>							
Embro CA, Rd 84		UTM x: 506858	UTM y: 4779995	Source: UTRCA		Site Code UT.MU133	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
White Sucker	Catostomus commersoni				S5	Abundant	Widespread
<b>Youngsville Drain</b>							
Rd 84, Embro C.A., downstream of pond		UTM x: 506879	UTM y: 4779791	Source: UTRCA		Site Code UT.MU116	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				S4	Abundant	Widespread
Creek Chub	Semotilus				S5	Abundant	Widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant	Widespread
White Sucker	Catostomus commersoni				S5	Abundant	widespread
Rd 84, Embro C.A., downstream of pond		UTM x: 506879	UTM y: 4779791	Source: UTRCA		Site Code UT.MU116	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
White Sucker	Catostomus commersoni				S5	Abundant	Widespread
Rd 84, Embro C.A., downstream of pond		UTM x: 506879	UTM y: 4779791	Source: UTRCA	Site Code UT.MU	Sample Date 7/8/2015	Rd 84, Embro C.A., downstream
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				S5	Abundant	Widespread
Fantail Darter	Etheostoma flabellare				S4	Abundant	Widespread
Fathead Minnow	Pimephales promelas				S5	Abundant	Widespread
Golden Shiner	Notemigonus				S5	Common	Localized
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	locally
White Sucker	Catostomus commersoni				S5	Abundant	Widespread

**Embro Dam Area Fish Sampling (2009 – 2014)**

Species (Common)	Scientific Name	COSEWIC	SARA	ESA 2007	SRank	Abundance	Distribution
<b>Youngsville Drain</b>							
East of 35th Line 2 km North of Road 84		UTM x: 505741	UTM y: 4781834			Site Code UT.MU118	Sample Date 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 1.2 km North of Road 84		UTM x: 505741	UTM y: 4781834			Site Code UT. MU118	Sample Date 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			Site Code UT. MU118	Sample Date 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			Site Code UT. MU118	Sample Date 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			Site Code UT. MU118	Sample Date 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			Site Code UT. MU118	Sample Date 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			Site Code UT. MU118	Sample Date 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			Site Code UT. MU118	Sample Date 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			Site Code UT. MU118	Sample Date 12/05/2013
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
East of 35th Line 2 km North of Road 84		UTM x: 505741	UTM y: 4781834			Site Code UT. MU118	Sample Date 12/09/2013
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
East of 35th Line 2 km North of Road 84		UTM x: 505741	UTM y: 4781834			Site Code UT. MU118	Sample Date 11/24/2014
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 North of Road 84		UTM x: 505741	UTM y: 4781834			Site Code UT. MU118	Sample Date 11/17/2014
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
East of 35th Line 2 km North of Road 84		UTM x: 505741	UTM y: 4781834			Site Code UT. MU118	Sample Date 11/26/2014
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			Site Code UT. MU118	Sample Date 12/02/2014
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 North of Road 84		UTM x: 505741	UTM y: 4781834			Site Code UT. MU118	Sample Date 12/05/2014
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
Fathead Minnow	Pimephales promelas				S5	Abundant	Widespread
White Sucker	Catostomus commersoni				S5	Abundant	widespread
<b>Youngsville Drain</b>							
East of 35th Line 1.4 km North of Road 84		UTM x: 505996	UTM y: 4781291			Site Code UT. MU119	Sample Date 9/3/2009
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	widespread
White Sucker	Catostomus commersoni				S5	Abundant	widespread
East of 35th Line 1.4 km North of Road 84		UTM x: 505996	UTM y: 4781291			Site Code UT. MU119	Sample Date 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 North of Road 84		UTM x: 505996	UTM y: 4781291			Site Code UT. MU119	Sample Date 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 North of Road 84		UTM x: 505996	UTM y: 4781291			Site Code UT. MU119	Sample Date 12/2/2013
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 North of Road 84		UTM x: 505996	UTM y: 4781291			Site Code UT. MU119	Sample Date 10/27/2014
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	widespread
White Sucker	Catostomus commersoni				S5	Abundant	widespread
East of 35th Line 1.4 km North of Road 84		UTM x: 505996	UTM y: 4781291			Site Code UT. MU119	Sample Date 11/3/2014
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 North of Road 84		UTM x: 505996	UTM y: 4781291			Site Code UT. MU119	Sample Date 11/13/2014
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
East of 35th Line 1.4 km North of Road 84		UTM x: 505996	UTM y: 4781291			Site Code UT. MU119	Sample Date 12/5/2014
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Blacknose Dace	Rhinichthys atratulus				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 North of Road 84		UTM x: 505996	UTM y: 4781291			Site Code UT. MU119	Sample Date 12/12/2014
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
Fathead Minnow	Pimephales promelas				S5	Abundant	widespread
White Sucker	Catostomus commersoni				S5	Abundant	widespread

Youngsville Drain							
Road 84		UTM x: 506759	UTM y: 4780111			Site Code UT. MU117	Sample Date 11/1/1999
Blacknose Dace	Rhinichthys atratulus				S5	Abundant	widespread
Brook Stickleback	Culaea inconstans				S5	Abundant	widespread
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
Creek Chub	Semotilus				S5	Abundant	widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	Locally
Road 84		UTM x: 506759	UTM y: 4780111			Site Code UT. MU117	Sample Date 11/12/2010
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized
Road 84		UTM x: 506759	UTM y: 4780111			Site Code UT. MU117	Sample Date 11/12/2013
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
Road 84		UTM x: 506759	UTM y: 4780111			Site Code UT. MU117	Sample Date 11/15/2013
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		UTM x: 506759	UTM y: 4780111			Site Code UT. MU117	Sample Date 11/26/2014
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
Youngsville Drain							
Road 84, Embro C.A., downstream of pond		UTM x: 506759	UTM y: 477979			Site Code UT. MU116	Sample Date 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				S4	Abundant	widespread
Common Shiner	Luxilus cornutus				S5	Abundant	widespread
Creek Chub	Semotilus				S5	Abundant	widespread
Fathead 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				S5	Abundant	widespread
Northern Redbelly Dace	Phoxinus eos				S5	Abundant	Locally
White Sucker	Catostomus commersoni				S5	Abundant	widespread
Road 84, Embro C.A., downstream of pond		UTM x: 506879	UTM y: 4779791			Site Code UT. MU116	Sample Date 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				S5	Abundant	widespread
Fathead Minnow	Pimephales promelas				S5	Abundant	widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant	widespread
Northern Hog Sucker	Hypentelium nigricans				S5	Abundant	Locally
Striped Shiner	Luxilus chrysocephalus				S5	Abundant	widespread
White Sucker	Catostomus commersoni				S5	Abundant	widespread
Road 84, Embro C.A., downstream of pond		UTM x: 506879	UTM y: 4779791			Site Code UT. MU116	Sample Date 11/12/2010
Brook Trout	Salvelinus fontinalis				S5	Uncommon	Localized

Road 84, Embro C.A., downstream of pond		UTM x: 506879	UTM y: 4779791		Site Code UT. MU116	Sample Date 11/12/2011
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				S5	Abundant widespread
Road 84, Embro C.A., downstream of pond		UTM x: 506879	UTM y: 4779791		Site Code UT. MU116	Sample Date 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
Rosyface Shiner	Notropis rubellus				S4	Abundant widespread
Smallmouth Bass	Micropterus dolomieu				S5	Abundant widespread
White Sucker	Catostomus commersoni				S5	Abundant widespread
Road 84, Embro C.A., downstream of pond		UTM x: 506879	UTM y: 4779791		Site Code UT. MU116	Sample Date 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				S4	Abundant widespread
Common Shiner	Luxilus cornutus				S5	Abundant widespread
Creek Chub	Semotilus				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
Road 84, Embro C.A., downstream of pond		UTM x: 506879	UTM y: 4779791		Site Code UT. MU116	Sample Date 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
Creek Chub	Semotilus				S5	Abundant widespread
Fathead Minnow	Pimephales promelas				S5	Abundant widespread
Johnny Darter	Etheostoma nigrum				S5	Abundant widespread
Northern Redbelly Dace	Phoxinus eos				S5	Abundant Locally
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](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](https://www.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/sct0/rpt/rpt_csar_e.pdf)

[http://www.cosewic.gc.ca/eng/sct5/index\\_e.cfm](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**

<b>Youngsville Drain upstream of dam</b>		
Accessed from 35th Line 1.2 km north of Rd 84		
Site code: UT.MU119		
UTM X Coordinate: 506031		
UTM Y Coordinate: 4781231		
Date	FBI	Quality
11/21/2003	6.11	Fairly Poor
<b>Youngsville Drain upstream of dam</b>		
Oxford Road 84 North of Embro CA		
Site code: UT.MU117		
UTM X Coordinate: 506776		
UTM Y Coordinate: 4780094		
Date	FBI	Quality
7/9/2008	6.04	Fairly Poor
5/5/2015	5.82	Fairly Poor
9/23/2015	6.06	Fairly Poor
05/03/2016	6.09	Fairly Poor
09/13/2017	6.07	Fairly Poor
09/09/2019	6.02	Fairly Poor
09/02/2021	5.84	Fairly Poor
<b>Youngsville Drain downstream of dam</b>		
Embro C.A., below dam		
Site code: UT.MU116		
UTM X Coordinate: 506879		
UTM Y Coordinate: 4779791		
Date	FBI	Quality
9/29/2010	5.81	Fairly Poor
5/5/2015	5.84	Fairly Poor
9/23/2015	6.37	Fairly Poor
05/03/2016	7.17	Poor
09/13/2017	8.82	Fairly Poor
09/09/2019	5.6	Fair
09/02/2021	5.74	Fairly Poor

**Embro Dam Area Benthic Sampling Data (2016 – 2021)**

<b>Youngsville Drain upstream of pond</b>				
Youngsville Youngsville Drain Oxford Rd 84				
Sampled: 03/05/2016				
Site Code: UT.MU117				
Latitude: 43.173578				
Longitude: -80.916632				
<b>Scientific Name</b>	<b>Common Name (family/order)</b>	<b>Life Stage</b>	<b># in Subsample</b>	<b>Biotic Index</b>
Unionidae	Mussel	PUPA	1	6
Oligochaeta		ADULT	6	8
Asellidae	Sow Bug	ADULT	25	8
Acariformes		ADULT	41	6
Elmidae	Riffle Beetle	ADULT	1	5
Elmidae	Riffle Beetle	LARVAE	4	5
Hyalellidae	Sideswimmer	ADULT	2	8
Dytiscidae	Predacious Diving Beetle	LARVAE	2	5
Chironomidae	Midge	PUPA	18	6
Chironomidae	Midge	LARVAE	173	6
Ceratopogonidae	Biting Midge	LARVAE	3	6
Hydropsychidae	Net-spinning Caddisfly	LARVAE	3	5
Empididae	Dance Fly	LARVAE	3	6
Lepidostomatidae	Lepistomatid Caddisfly	LARVAE	4	1
Lepidostomatidae	Lepistomatid Caddisfly	PUPA	1	1
Baetidae	Small Mayfly	NYMPH	22	6
Capniidae	Stonefly	NYMPH	1	3
Pisidiidae	Peaclams	ADULT	3	6
Ostracoda	Seed Shrimp	ADULT	9	6
Family Biotic Index: 6.086956522				
Stream Health: Fairly Poor				

<b>Youngsville Drain upstream of pond</b>			
Sampled: <b>13/09/2017</b>			
Location: <b>Youngsville Drain Oxford Rd 84</b>			
Site Code: UT.MU117			
Latitude: 43.173578			
Longitude: -80.916632			
<b>Scientific Name</b>	<b>Common Name (family/order)</b>	<b>Life Stage</b>	<b># in Subsample</b>
Oligochaeta		ADULT	41
Asellidae	Sow Bug	ADULT	17
Acariformes		ADULT	20
Elmidae	Riffle Beetle	ADULT	1
Elmidae	Riffle Beetle	LARVAE	1
Chironomidae	Midge	PUPA	14
Chironomidae	Midge	LARVAE	192
Ceratopogonidae	Biting Midge	LARVAE	1
Simuliidae	Black Fly	LARVAE	5
Hydropsychidae	Net-spinning Caddisfly	LARVAE	3
Hydroptilidae	Micro-caddisfly	LARVAE	2
Tabanidae	Horse Fly	LARVAE	1
Lepidostomatidae	Lepistomatid Caddisfly	LARVAE	16
Baetidae	Small Mayfly	NYMPH	5
Nematoda		ADULT	1
Pisidiidae	Peaclams	ADULT	2
Ostracoda	Seed Shrimp	ADULT	24
Pisidiidae	Peaclams	ADULT	3
Ostracoda	Seed Shrimp	ADULT	9
Family Biotic Index: 6.069364162			
Steam Health: Fairly Poor			



<b>Youngsville Drain upstream of pond</b>				
Location: Youngsville Drain Oxford Rd <b>84</b>				
Sampled: <b>09/09/2019</b>				
Site Code: UT.MU117				
Latitude: 43.173578				
Longitude: -80.916632				
<b>Scientific Name</b>	<b>Common Name (family/order)</b>	<b>Life Stage</b>	<b># in Subsample</b>	<b>Biotic Index</b>
Oligochaeta		ADULT	16	8
Asellidae	Sow Bug	ADULT	11	8
Acariformes		ADULT	24	6
Elmidae	Riffle Beetle	LARVAE	3	5
Planorbidae	Orb Snail	ADULT	1	6
Chironomidae	Midge	PUPA	7	6
Chironomidae	Midge	LARVAE	207	6
Simuliidae	Black Fly	LARVAE	5	5
Hydropsychidae	Net-spinning Caddisfly	LARVAE	7	5
Hydroptilidae	Micro-caddisfly	LARVAE	4	6
Empididae	Dance Fly	LARVAE	1	6
Limnephilidae	Northern Caddisfly	LARVAE	16	4
Pyralidae	Pyralid Moth	LARVAE	1	5
Tipulidae	Crane Fly	LARVAE	1	4
Muscidae	Muscid Fly	LARVAE	1	6
Psychodidae	Sand Fly	LARVAE	1	10
Baetidae	Small Mayfly	NYMPH	21	6
Pisidiidae	Peaclams	ADULT	1	6
Family Biotic Index: 6.086956522				
Stream Health: Fairly Poor				

<b>Youngsville Drain upstream of pond</b>				
Location: Youngsville Drain Oxford Rd <b>84</b>				
Sampled: <b>02/09/2021</b>				
Site Code: UT.MU117				
Latitude: 43.173578				
Longitude: -80.916632				
<b>Scientific Name</b>	<b>Common Name (family/order)</b>	<b>Life Stage</b>	<b># in Subsample</b>	<b>Biotic Index</b>
Glossiphoniidae	Leech	ADULT	7	8
Oligochaeta		ADULT	30	8
Asellidae	Sow Bug	ADULT	28	8
Acariformes		ADULT	17	6
Elmidae	Riffle Beetle	ADULT	1	5
Elmidae	Riffle Beetle	LARVAE	5	5
Turbellaria		ADULT	3	6
Corixidae	Water Boatmen	ADULT	13	5
Chironomidae	Midge	PUPA	2	6
Chironomidae	Midge	LARVAE	121	6
Ceratopogonidae	Biting Midge	LARVAE	1	6
Simuliidae	Black Fly	LARVAE	2	5
Hydropsychidae	Net-spinning Caddisfly	LARVAE	19	5
Empididae	Dance Fly	LARVAE	4	6
Limnephilidae	Northern Caddisfly	LARVAE	1	4
Psychodidae	Sand Fly	LARVAE	1	10
Lepidostomatidae	Lepistomatid Caddisfly	LARVAE	28	1
Baetidae	Small Mayfly	NYMPH	25	6
Pisidiidae	Peaclams	ADULT	1	6
Family Biotic Index: 5.84				
Stream Health: Fairly Poor				

<b>Youngsville Drain downstream of dam</b>				
Location: Youngsville Drain Embro CA				
Sampled: <b>02/09/2021</b>				
Site Code: UT.MU117				
Latitude: 43.173578				
Longitude: -80.916632				
<b>Scientific Name</b>	<b>Common Name (family/order)</b>	<b>Life Stage</b>	<b># in Subsample</b>	<b>Biotic Index</b>
Oligochaeta		ADULT	175	8
Gammaridae	Sideswimmer	ADULT	1	6
Asellidae	Sow Bug	ADULT	18	8
Elmidae	Riffle Beetle	LARVAE	7	5
Turbellaria		ADULT	8	6
Planorbidae	Orb Snail	ADULT	1	6
Chironomidae	Midge	LARVAE	81	6
Chironomidae	Midge	PUPA	11	6
Simuliidae	Black Fly	LARVAE	2	5
Hydropsychidae	Net-spinning Caddisfly	LARVAE	6	5
Hydroptilidae	Micro-caddisfly	LARVAE	1	6
Empididae	Dance Fly	PUPA	1	6
Tipulidae	Crane Fly	LARVAE	1	4
Baetidae	Small Mayfly	NYMPH	2	6
Family Biotic Index: 7.17428571				
Stream Health: Poor				

<b>Youngsville Drain downstream of dam</b>			
Location: Youngsville Drain Embro CA			
Sampled: <b>07/09/2019</b>			
Site Code: UT.MU116			
Latitude: 43.173578			
Longitude: -80.916632			
<b>Scientific Name</b>	<b>Common Name (family/order)</b>	<b>Life Stage</b>	<b># in Subsample</b>
Asellidae	Sow Bug	ADULT	34
Acariformes		ADULT	3
Elmidae	Riffle Beetle	ADULT	1
Elmidae	Riffle Beetle	LARVAE	13
Turbellaria		ADULT	15
Chironomidae	Midge	PUPA	6
Chironomidae	Midge	LARVAE	115
Simuliidae	Black Fly	LARVAE	37
Hydropsychidae	Net-spinning Caddisfly	LARVAE	69
Empididae	Dance Fly	LARVAE	4
Philopotamidae	Finger-net Caddisfly	LARVAE	2
Baetidae	Small Mayfly	NYMPH	3
Pisidiidae	Peaclams	ADULT	9
Family Biotic Index: 5.821656051			
Steam Health: Fairly Poor			

<b>Youngsville Drain downstream of dam</b>				
Location: Youngsville Drain Embro CA				
Sampled: <b>09/09/2019</b>				
Site Code: UT.MU116				
Latitude: 43. 170849				
Longitude: -80.915369				
<b>Scientific Name</b>	<b>Common Name (family/order)</b>	<b>Life Stage</b>	<b># in Subsample</b>	<b>Biotic Index</b>
Oligochaeta		ADULT	4	8
Gammaridae	Sideswimmer	ADULT	1	6
Asellidae	Sow Bug	ADULT	11	8
Acariformes		ADULT	9	6
Elmidae	Riffle Beetle	ADULT	1	5
Elmidae	Riffle Beetle	LARVAE	31	5
Turbellaria		ADULT	38	6
Chironomidae	Midge	PUPA	6	6
Chironomidae	Midge	LARVAE	109	6
Simuliidae	Black Fly	LARVAE	5	5
Hydropsychidae	Net-spinning Caddisfly	LARVAE	113	5
Hydroptilidae	Micro-caddisfly	LARVAE	1	6
Empididae	Dance Fly	LARVAE	1	6
Philopotamidae	Finger-net Caddisfly	LARVAE	8	4
Tipulidae	Crane Fly	LARVAE	2	4
Baetidae	Small Mayfly	NYMPH	8	6
Pisidiidae	Peaclams	ADULT	2	6
Family Biotic Index: 5.6				
Stream Health: Fair				

<b>Youngsville Drain downstream of dam</b>				
Location: Youngsville Drain Embro CA				
Sampled: <b>02/09/2021</b>				
Site Code: UT.MU116				
Latitude: 43. 170849				
Longitude: -80.915369				
<b>Scientific Name</b>	<b>Common Name (family/order)</b>	<b>Life Stage</b>	<b># in Subsample</b>	<b>Biotic Index</b>
Asellidae	Sow Bug	ADULT	4	8
Acariformes		ADULT	4	6
Elmidae	Riffle Beetle	ADULT	4	5
Elmidae	Riffle Beetle	LARVAE	3	5
Turbellaria		ADULT	1	6
Chironomidae	Midge	PUPA	7	6
Chironomidae	Midge	LARVAE	248	6
Simuliidae	Black Fly	LARVAE	6	5
Hydropsychidae	Net-spinning Caddisfly	LARVAE	80	5
Hydroptilidae	Micro-caddisfly	LARVAE	2	6
Empididae	Dance Fly	LARVAE	2	6
Philopotamidae	Finger-net Caddisfly	LARVAE	2	4
Tipulidae	Crane Fly	LARVAE	1	4
Tabanidae	Horse Fly	LARVAE	1	5
Baetidae	Small Mayfly	NYMPH	4	6
Pisidiidae	Peaclams	ADULT	2	6
Family Biotic Index: 5.75				
Stream Health: Fairly Poor				

### Embro Dam Area Benthic Sampling Data (2003 – 2015)

<b>Youngsville Drain upstream of pond</b>				
Accessed from 35th Line 1.2 km north of Rd 84				
Site Code: UT.MU116				
UTM X: 506031				
UTM Y: 4781231				
Sampled: 11/21/2003				
<b>Taxonomic Name</b>	<b>Common Name</b>	<b>Life Stage</b>	<b># in Subsample</b>	<b>Biotic Index</b>
Acariformes	Water Mite	A	8	6
Asellidae	Sow Bug	A	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	A	1	5
Oligochaeta	Aquatic Worm	A	11	8
Physidae	Pouch Snail	A	1	8
Pisidiidae	Fingernail Clam	A	1	6
Simuliidae	Black Fly	L	85	5
Tipulidae	Crane Fly	L	3	4
Turbellaria	Flatworm	A	1	6
Family Biotic Index: 6.11				
Stream Health: Fairly Poor				

<b>Youngsville Drain upstream of pond</b>				
Oxford Road 84 North of Embro CA				
Site Code: UT.MU117				
UTM X: 506776				
UTM Y: 4780094				
REP: 1				
Sampled: 7/9/2008				
<b>Taxonomic Name</b>	<b>Common Name</b>	<b>Life Stage</b>	<b># in Subsample</b>	<b>Biotic Index</b>
Acariformes	Water Mite	A	8	6
Baetidae	Small Mayfly	A	51	8
Ceratopogonidae	Biting Midge	N	14	6
Chironomidae	Midge	L	21	6
Corixidae	Water Boatmen	L	1	5
Dytiscidae	Predacious Diving Beetle	L	1	5
Elmidae	Riffle Beetle	L	1	6
Haliplidae	Crawling Water Beetle	L	5	4

Leptoceridae	Long-horned Caddisfly	A	1	5
Nematoda	Thread Worm	A	11	8
Oligochaeta	Aquatic Worm	A	1	8
Pisidiidae	Fingernail Clam	A	1	6
Simuliidae	Black Fly	L	85	5
Family Biotic Index: 6.11				
Stream Health: Fairly Poor				
Sampled: 5/5/2015				

**TYoungsville Drain upstream of pond**

Site code: UT.MU117  
4780094

**Oxford Road 84 North of Embro CA**

UTM X: 506776 UTM Y:

**Sampled -  
7/9/2008**

REP: 1

Acariformes	Water Mite	A	4	6
Baetidae	Small Mayfly	N	1	6
Ceratopogonidae	Biting Midge	L	4	6
Chironomidae	Midge	L	27	6
Corixidae	Water Boatmen	A	18	5
Dytiscidae	Predacious Diving Beetle	L	2	5
Elmidae	Riffle Beetle	L	1	5
Halplidae	Crawling Water Beetle	L	2	5
Leptoceridae	Long-horned Caddisfly	L	1	4
Nematoda	Thread Worm	A	3	5
Oligochaeta	Aquatic Worm	A	22	8
Pisidiidae	Fingernail Clam	A	2	6
Simuliidae	Black Fly	L	1	5
		<b>Stream Health</b>	<b>Fairly</b>	<b>Family Biotic Index</b>
				<b>6.04</b>

**Sampled -**

REP: 1

Acariformes	Water Mite	A	26	6
Asellidae	Sow Bug	A	11	8
Baetidae	Small Mayfly	N	9	6
Ceratopogonidae	Biting Midge	L	1	6
Chironomidae	Midge	P	19	6
Chironomidae	Midge	L	16	6
Dytiscidae	Predacious Diving Beetle	L	1	5
Elmidae	Riffle Beetle	A	4	5
Elmidae	Riffle Beetle	L	20	5
Empididae	Dance Fly	L	9	6
Glossiphoniidae	Leech	A	1	8
Hydropsychidae	Net-spinning	L	9	5
Hydroptilidae	Micro-caddisfly	L	1	6



Taxonomic Name	Common Name	Life Stage	# in Subsample	Biotic Index
Lepidostomatidae	Lepistomatid	L	7	1
Limnephilidae	Northern Caddisfly	L	2	4
Oligochaeta	Aquatic Worm	A	13	8
Perlidae	Stonefly	N	9	3
Simuliidae	Black Fly	L	5	5
<b>Stream Health</b>			<b>Fairly Poor</b>	<b>Family Biotic Index</b>
				<b>5.82</b>

**Sampled -**

REP: 1

Acariformes	Water Mite	A	21	6
Asellidae	Sow Bug	A	18	8
Baetidae	Small Mayfly	N	20	6
Ceratopogonidae	Biting Midge	L	1	6
Chironomidae	Midge	L	22	6
Chironomidae	Midge	P	16	6
Elmidae	Riffle Beetle	L	5	5
Hydropsychidae	Net-spinning	L	9	5
Hydroptilidae	Micro-caddisfly	L	1	6
Hydroptilidae	Micro-caddisfly	P	3	6
Nematoda	Thread Worm	A	1	5
Oligochaeta	Aquatic Worm	A	5	8
Pisidiidae	Fingernail Clam	A	2	6
Simuliidae	Black Fly	L	5	5
Tipulidae	Crane Fly	L	3	4
<b>Stream Health</b>			<b>Fairly Poor</b>	<b>Family Biotic Index</b>
				<b>6.06</b>

**Youngsville Drain downstream of dam Embro C.A., below dam**

Site code: UT.MU116

UTM X: 506879

UTM Y: 4779791

**Sampled -**

REP: 1

Acariformes	Water Mite	A	7	6
Asellidae	Sow Bug	A	15	8
Baetidae	Small Mayfly	N	2	6
Chironomidae	Midge	P	15	6
Chironomidae	Midge	L	76	6
Elmidae	Riffle Beetle	A	4	5
Elmidae	Riffle Beetle	L	23	5
Empididae	Dance Fly	L	7	6
Gammaridae	Sideswimmer	A	13	6
Hydropsychidae	Net-spinning	L	44	5
Oligochaeta	Aquatic Worm	A	10	8
Pisidiidae	Fingernail Clam	A	16	6
Simuliidae	Black Fly	L	16	5
Tipulidae	Crane Fly	L	9	4
Turbellaria	Flatworm	A	39	6
<b>Stream Health</b>			<b>Fairly</b>	<b>Family Biotic Index</b>
				<b>5.81</b>

**Sampled - 5/5/2015**

REP: 1

Acariformes	Water Mite	A	3	6
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Asellidae	Sow Bug	A	11	8
Baetidae	Small Mayfly	N	1	6
Chironomidae	Midge	L	81	6
Chironomidae	Midge	P	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	A	110	6
Hydropsychidae	Net-spinning Caddisfly	L	24	5
Oligochaeta	Aquatic Worm	A	11	8
Philopotamidae	Finger-net Caddisfly	L	1	4
Pisidiidae	Fingernail Clam	A	4	6
Planorbidae	Orb Snail	A	1	6
Simuliidae	Black Fly	P	1	5
Simuliidae	Black Fly	L	4	5
Tipulidae	Crane Fly	L	5	4
Turbellaria	Flatworm	A	6	6
Uenoidae	Caddisfly	L	2	3
	<b>Stream Health</b>	<b>Fairly Poor</b>	<b>Family Biotic</b>	<b>5.84</b>

**Sampled -**

	REP: 1			
Acariformes	Water Mite	A	5	6
Asellidae	Sow Bug	A	39	8
Baetidae	Small Mayfly	N	4	6
Chironomidae	Midge	L	57	6
Chironomidae	Midge	P	8	6
Crangonyctidae	Sideswimmer	A	4	6
Elmidae	Riffle Beetle	A	5	5
Elmidae	Riffle Beetle	L	35	5
Gammaridae	Sideswimmer	A	14	6
Hydropsychidae	Net-spinning Caddisfly	L	11	5
Oligochaeta	Aquatic Worm	A	67	8
Philopotamidae	Finger-net Caddisfly	L	8	4
Pisidiidae	Fingernail Clam	A	3	6
Simuliidae	Black Fly	L	4	5
Tipulidae	Crane Fly	L	10	4
Turbellaria	Flatworm	A	53	6
	<b>Stream Health</b>	<b>Fairly Poor</b>	<b>Family Biotic</b>	<b>6.37</b>

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 = Fairly Poor; 6.50 - 7.25 = Poor; and > 7.25 = Very Poor.

Report prepared - Monday, November 09, 2015