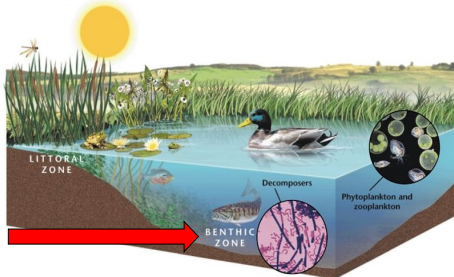




# Benthic Sampling

## What is Benthic Sampling ?

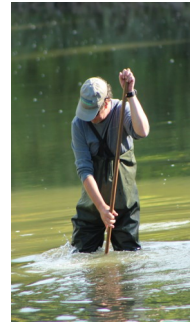
Measuring the organisms (bugs) that live in the sediment in the top layer of the riverbed aka the 'Benthic Zone' as an indicator of water quality.



## Collection of Samples

Same collection protocols used as in the Upper and Lower Thames River Conservation Authorities:

- 3 minute 'Kick and Sweep' method
- Bugs preserved in 95% ethanol
- Samples taken to lab for identification



## Identification of Bugs

The amount and type of bugs found indicate the water quality based on the Family Biotic Index (FBI). The FBI reflects the bugs varying tolerance to water pollution.

TABLE 2.2: HILSENHOFF'S FAMILY LEVEL BIOTIC INDEX

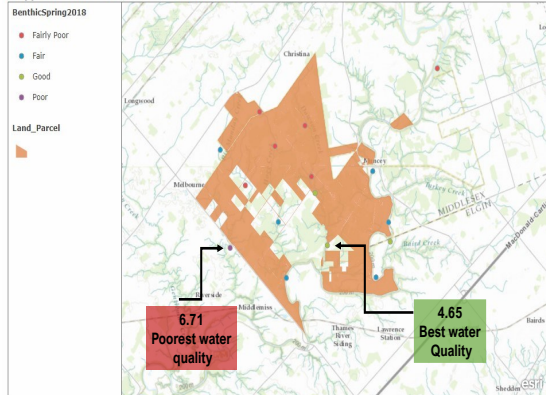
Family Biotic Index	Water Quality	Degree of Organic Pollution
0.00-3.50	Excellent	No apparent organic pollution
3.51-4.25	Very good	Possible slight organic pollution
4.26-5.00	Good	Some organic pollution probable
5.01-5.75	Fair	Fairly substantial pollution likely
5.76-6.50	Fairly poor	Substantial pollution likely
6.51-7.25	Poor	Very substantial pollution likely
7.26-10.00	Very poor	Severe organic pollution likely

(Hilsenhoff, 1988)

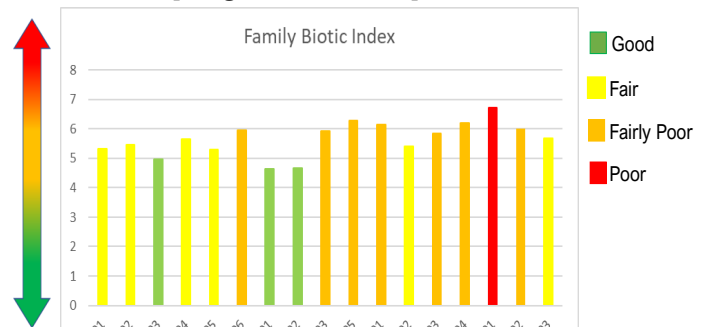
## Spring 2018 Sampling Locations

	SITE CODE	UTM east	UTM north	DESCRIPTION
Thames River	FN1-06	467680	4744856	Thames River at the UWQ Site
	FN1-05	465284	4738615	Thames River 500 meters Upstream of Turtle Spot
	FN1-04	464501	4740695	Thames River 100 meters Upstream of Oneida bridge.
	FN1-03	465344	4737632	Thames River downstream of the water pumping station.
	FN1-02	464641	4735998	East River Road east of Techumseh St.
	FN1-01	460252	4736382	Thames River at Hogg Creek
Dawson Creek	FN2-01	462268	4737694	Dawson Creek, 150 meters downstream of the culvert on Jubilee Road, W/Chippewa Rd.
	FN2-02	461676	4739824	Dawson Creek, Middlemiss Rd. West of Chippewa Rd.
	FN2-03	461504	4740495	Dawson Creek, 75 meters downstream of the culvert by the school on Chippewa Rd.
	FN2-05	461197	4742562	Dawson Creek, Deer Doden, 1.5km east of Chippewa Rd.
	FN3-01	460252	4736382	Hogg Creek, Jubilee Road
Hogg Creek	FN3-02	459871	4738654	Hogg Creek, Side Road 4, 500m north of Middlemiss Rd.
	FN3-03	459727	4741741	Hogg Creek, Deer Doden Rd. 500m west of Chippewa Rd.
	FN3-04	458978	4743136	Hogg Creek, Sutherland Rd. north of Switzer Road
Big Munday Creek	FN4-01	457508	4737520	Big Munday Creek, Melbourne Rd. north of Range 3
	FN4-02	458269	4740152	Big Munday Creek, Deer Doden Rd. 100 meters downstream of the culvert. W/Rd.4
	FN4-03	457049	4741603	Glen Oak Rd. 900m south of Longwoods Road

Chippewa of the Thames - Benthic Locations



## Spring 2018 Site comparison



## How does COTTFN compare?

### Provincially:

The provincial target for Benthic Water Quality Rating is 5.0 and below. This was achieved by COTTFN at 3 of the 17 locations.

### Upper Thames River Watershed:

The average Benthic Water Quality Rating for the Upper Thames River Conservation Authority is **5.97**.

### COTTFN:

The average Benthic Water Quality Rating for COTTFN is **5.66**. According to the Family Biotic Index, this rates COTTFN's average water quality as 'Fair'.

## COTTFN Benthic Results 2017-2018

Site	Spring 2017	Fall 2017	Spring 2018
FN1-06		<b>4.92</b>	5.96
FN1-05		5.53	5.29
FN1-04	5.23	5.20	5.65
FN1-03	5.94	<b>4.93</b>	<b>4.96</b>
FN1-02	<b>4.58</b>	5.59	5.46
FN1-01		5.67	5.32
FN2-01	5.97	5.61	<b>4.65</b>
FN2-02	5.40	5.47	<b>4.68</b>
FN2-03	5.73	6.27	5.92
FN2-05	5.76	6.39	6.28
FN3-01	6.94	5.11	6.16
FN3-02	6.06	5.38	5.40
FN3-03	6.07	6.31	5.84
FN3-04	6.08	6.49	6.19
FN4-01	6.88	6.95	6.71
FN4-02	6.68	6.71	6.01
FN4-03	6.63	6.21	5.67