

# **Trout Creek Aquatic Biology**

Meeting

March 12, 2009

# Outline

## ■ Stream health monitoring and research

- Watershed Report Cards
- Fish
- Water Quality – benthic invertebrates
- Freshwater Mussels

## ■ Initiatives

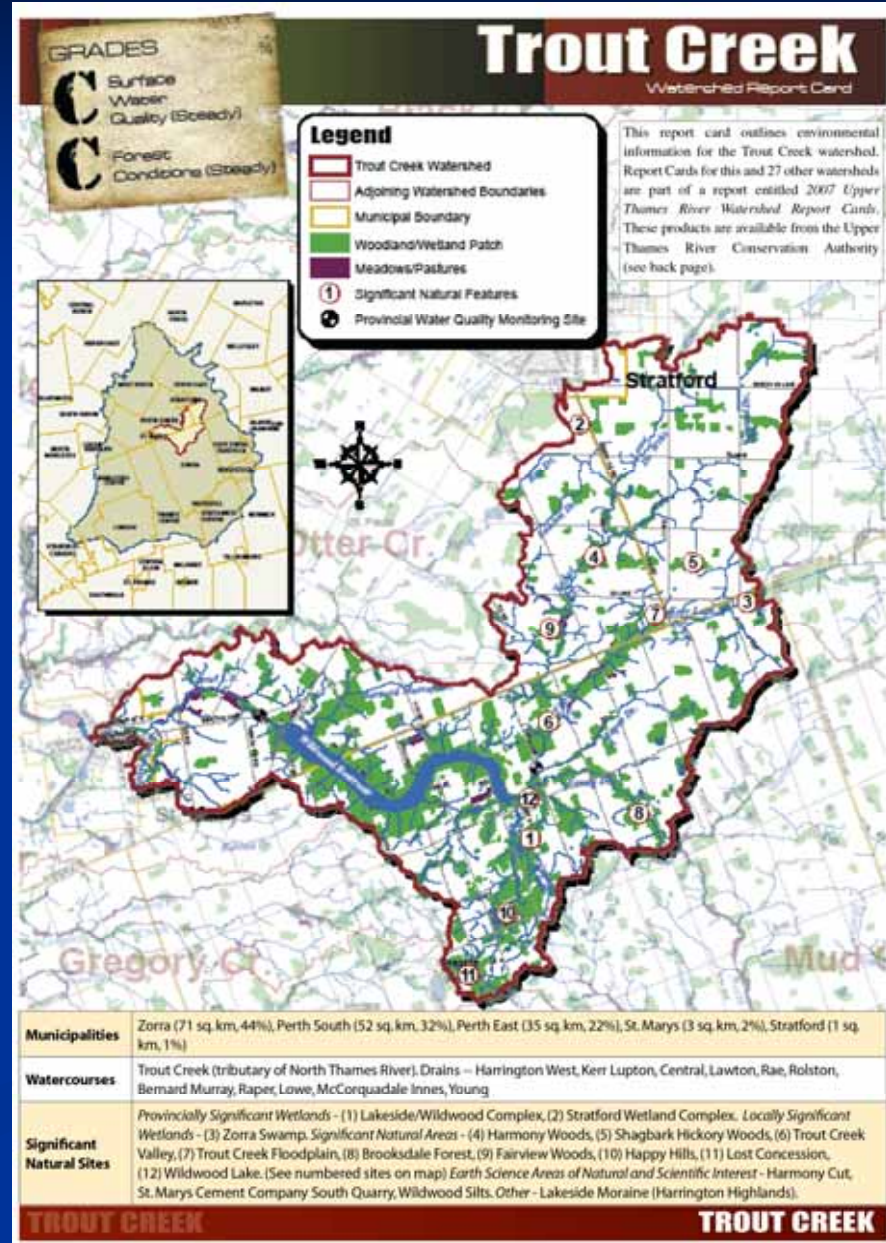
- Species at Risk
- Municipal Drain Classification
- Fisheries Management Plan
- Education and Outreach Programs
- Barriers
- Stream Rehab



2007

# Upper Thames River Watershed Report Cards

## 2007 Upper Thames River Watershed Report Cards



## Surface Water Quality Monitoring

- Benthic Monitoring
- Grade C (declined from a B grade in 2000)

## Fisheries Resources

## Species at Risk

## Watercourse Length and Type

## Dams and Barriers



# Stream Health Monitoring

- Fish
- Water Quality –  
Benthic  
Invertebrates
- Mussels



# Fish Sampling



# Fish of Trout Cr.

Gamefish



# Fish of Trout Cr.

Suckers





# Fish of Trout Cr.

## Catfish



# Fish of Trout Cr.

Minnows



# Fish of Trout Cr.

Darters



# Fish of Trout Cr.

Sunfish



# Fish of Trout Cr.

Others



# Fish of Trout Cr.

Others



# Benthic Macroinvertebrate (BMI) Monitoring

- Evaluates habitat quality at sample site plus water quality contributed by upstream catchment
- Includes invertebrate, habitat and water chemistry analysis



# BMI Monitoring

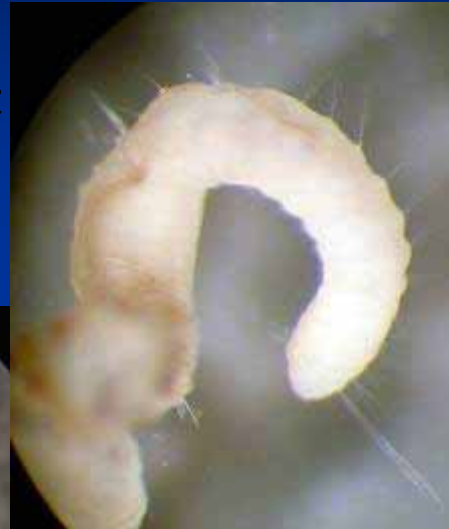
- Includes aquatic worms, crustaceans, dragonflies, damselflies, leeches, stoneflies, mayflies, caddisflies, beetles, true flies.
- Live in the bottom of rivers, streams and lakes on rocks, gravel, plants and in the finer sediments
- Able to identify and sample with relative ease
- Spend most of their lives in water, some for a year or more
- Provide a long term assessment of water and habitat quality
- Have fairly well known tolerances to pollution and habitat disturbances





# BMI Monitoring

- Tolerant of pollution and habitat disturbance – aquatic worms, midge larvae and leeches



# BMI Monitoring

- Sensitive to pollution and habitat disturbance – caddisflies, stoneflies and mayflies



# Mussel Sampling



# Mussel Sampling



# Fisheries Initiatives

- Species at Risk – Monitoring and Remedial Work
- Municipal Drain Classification
- Fisheries Management Plan
- Education and Outreach Programs
- Barriers
- Stream Rehabilitation

# Fisheries Initiatives

## Species at Risk Recovery Plan

- Monitoring
- Remedial Actions
- Over 20 species including fish, reptiles and mussels



# Others Species at Risk Recovery Plan



# Fisheries Initiatives

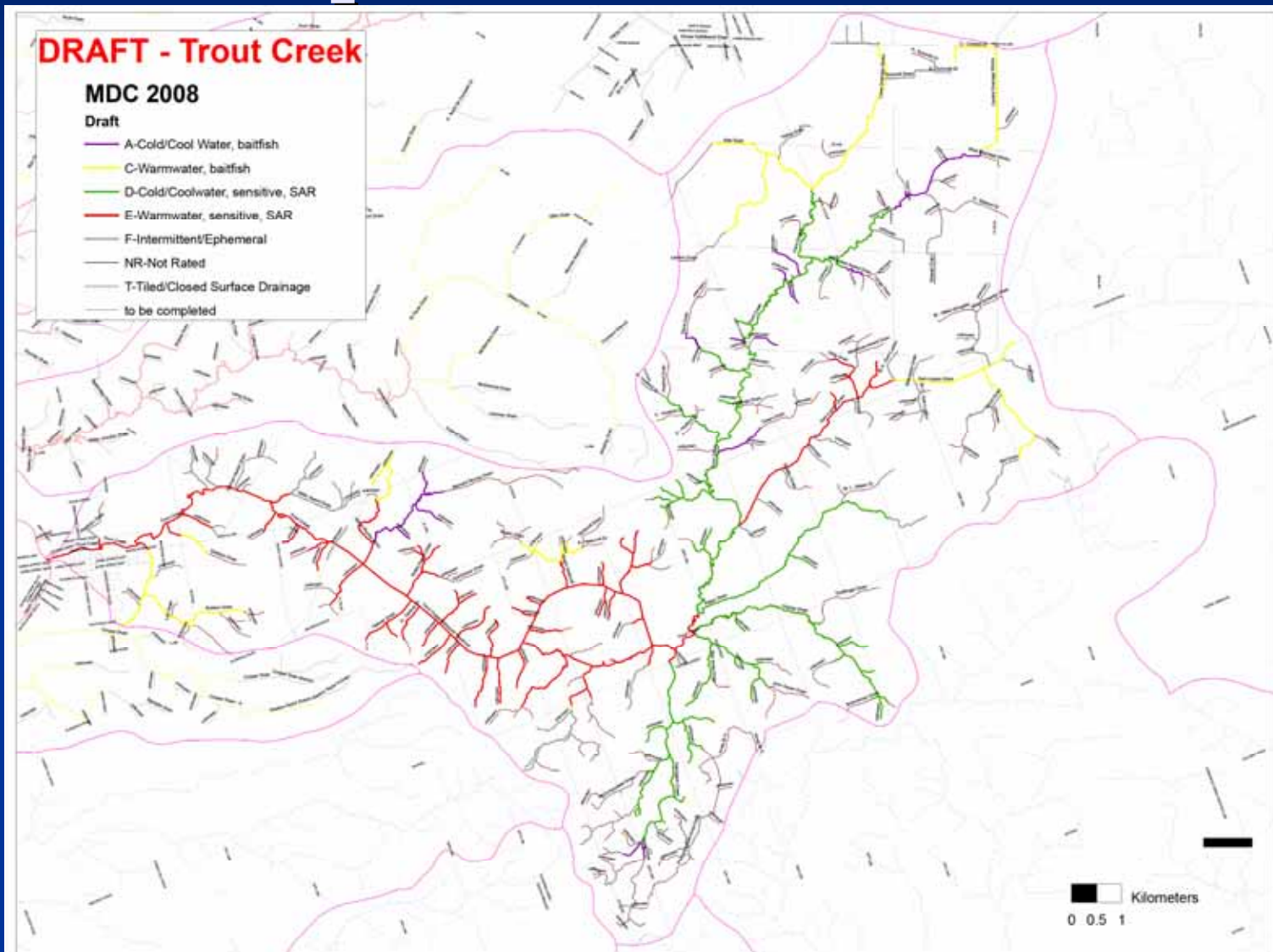
## Municipal Drain Classification

- Designed to expedite Fisheries Act authorization of drain maintenance activities while protecting sensitive fish stocks and habitats
- Needs current fisheries and habitat information
- Required background data compilation, completing field investigations, and conducting fish sampling



# Fisheries Initiatives

## Municipal Drain Classification



[www.thamesfishplan.ca](http://www.thamesfishplan.ca)

Sustainable Fisheries, Healthy Communities

Thames River Fisheries



Management Plan

# Thames River Fisheries Management Plan

- Defines goals and objectives for fisheries management in the Thames watershed
- Guides the protection and enhancement of fisheries resources
- Provides a better understanding of the resource
- Gives current watershed-based direction for fisheries management in order to guide community efforts
- Promotes the river and fisheries resource

# Fisheries Initiatives

## Education and Outreach



# Fisheries Initiatives Barriers

1980's inventory updated in 2001 and ongoing



# Fisheries Initiatives

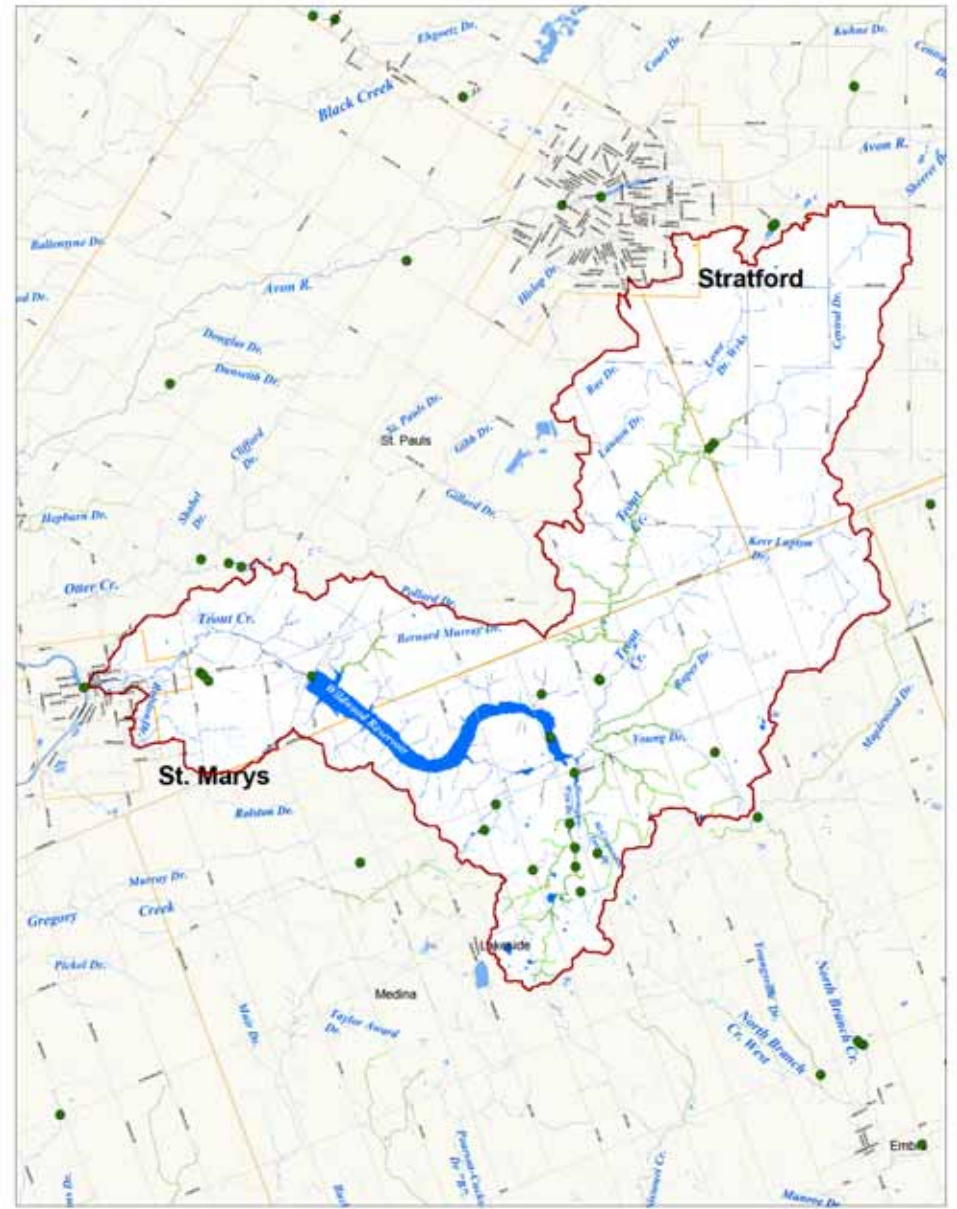
## Barriers

Approximately 12 barriers identified in Trout Creek Subwatershed

The definition of barriers includes dams made by man or beavers, perched culverts, weirs, low flow crossings, gradient, debris, and velocity barriers

### Barriers

- Impact water quality by increasing water temperature
- Isolate aquatic communities by preventing fish migration and movement
- Alter the aquatic habitat with slow flowing water
- Sediment settles in behind dams and barriers



**Trout Creek Watershed  
Watercourse Information**



Legend	
<b>Watercourse Type</b>	
<span style="color: blue;">—</span>	Natural
<span style="color: lightblue;">—</span>	Channelized
<span style="color: green;">—</span>	Tiled
<span style="color: lightgreen;">—</span>	Coldwater - Potential
<span style="color: red;">●</span>	Barriers
<span style="border: 2px solid red; display: inline-block; width: 10px; height: 10px;"></span>	Trout Creek Watershed
<span style="border: 1px solid yellow; display: inline-block; width: 10px; height: 10px;"></span>	Municipal Boundary

# Barrier Mitigation

## Example



1. Perched culvert barrier



2. Placing stones



3. Barrier eliminated

# Stream Rehabilitation





# Questions?

