

# The Health of Lake Simcoe Tributaries

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# What makes a healthy Tributary?

- **Natural Flow Variations**
- **Diverse Habitat**
- **Diverse Plant Community**
- **Engaged Community**
- **Wise Management**
- **Species Diversity**
- **Good Water Quality**
- **Transport Sediment and Nutrients**

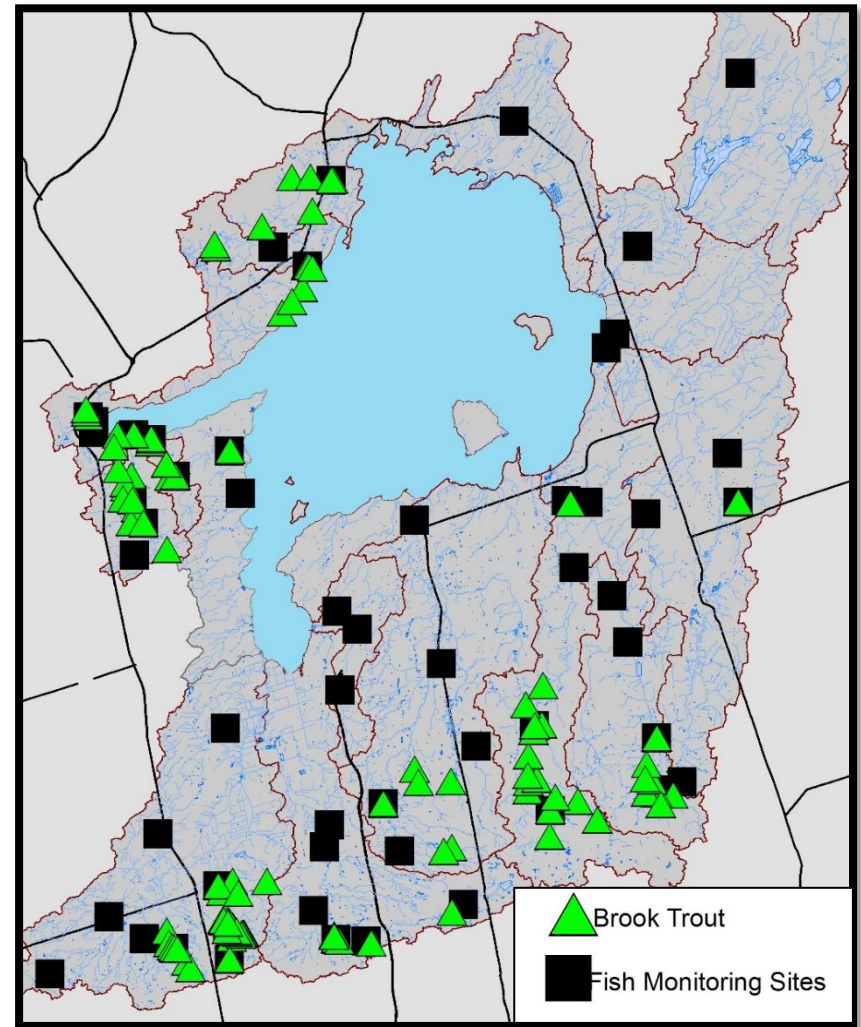


# Species Diversity - Fish Population

- 59 different species of fish
- Invasive species = 2
- Brook trout located at 19 of 54 annual monitoring locations
- Brook trout populations are currently stable



**Fact:** Brook trout need cold, clean water to survive and are a good indicator of a healthy tributary!



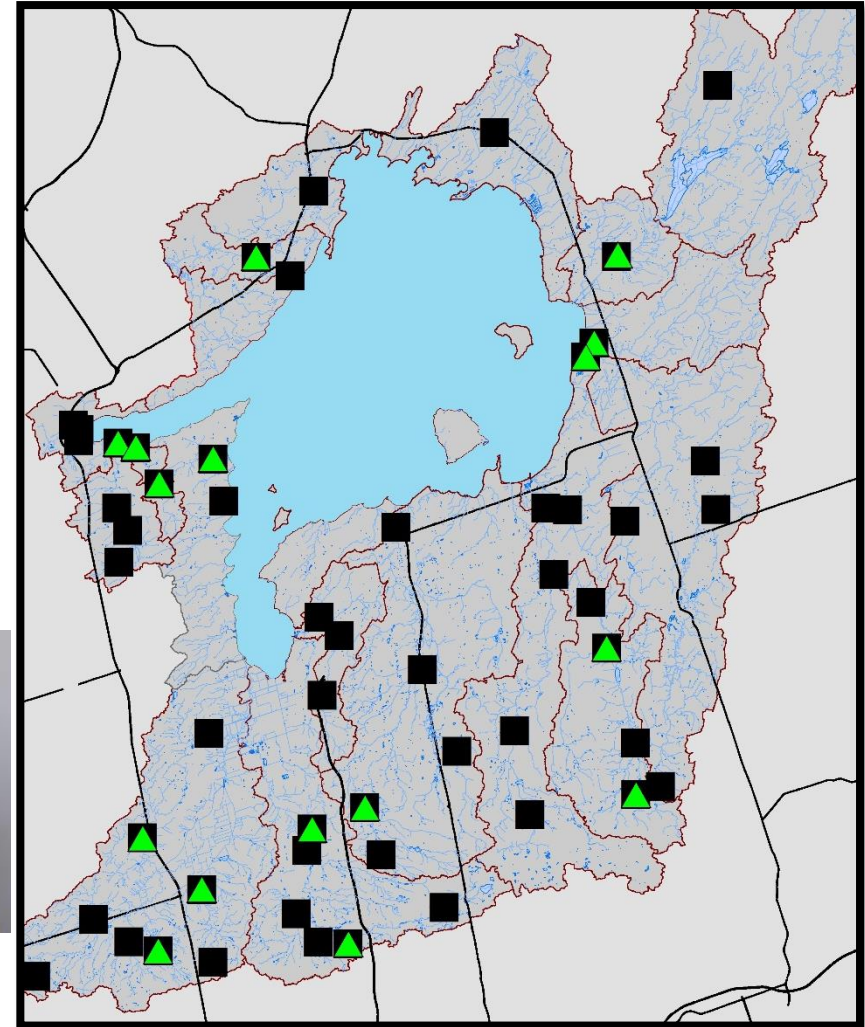
**Brook Trout Capture (2002-2020)**

# Species Diversity - Invertebrates

- ~250 Species of invertebrates
- Invasive species = 3
- Overall invertebrate community status is “Fair”
- Ephemeroptera, Plecoptera and Trichoptera dominant species at 16 of 53 sites



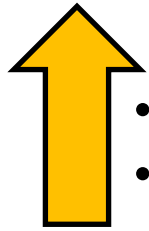
**Fact:** The EPT group, including Mayflies, Stoneflies and Caddisflies, have a very low tolerance for water pollution



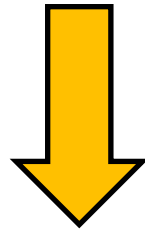
**Ephemeroptera, Plecoptera and Trichoptera Dominant Sites**

# Natural Stream Flow Variation

- Land Use change has increased all components of the flow regime
- Climate change is also altering flow



- January
- June



- March

## Fact:

Environmental Flow Regime - incorporates the variation in timing and quantity of flow that support various river uses and ecological functions

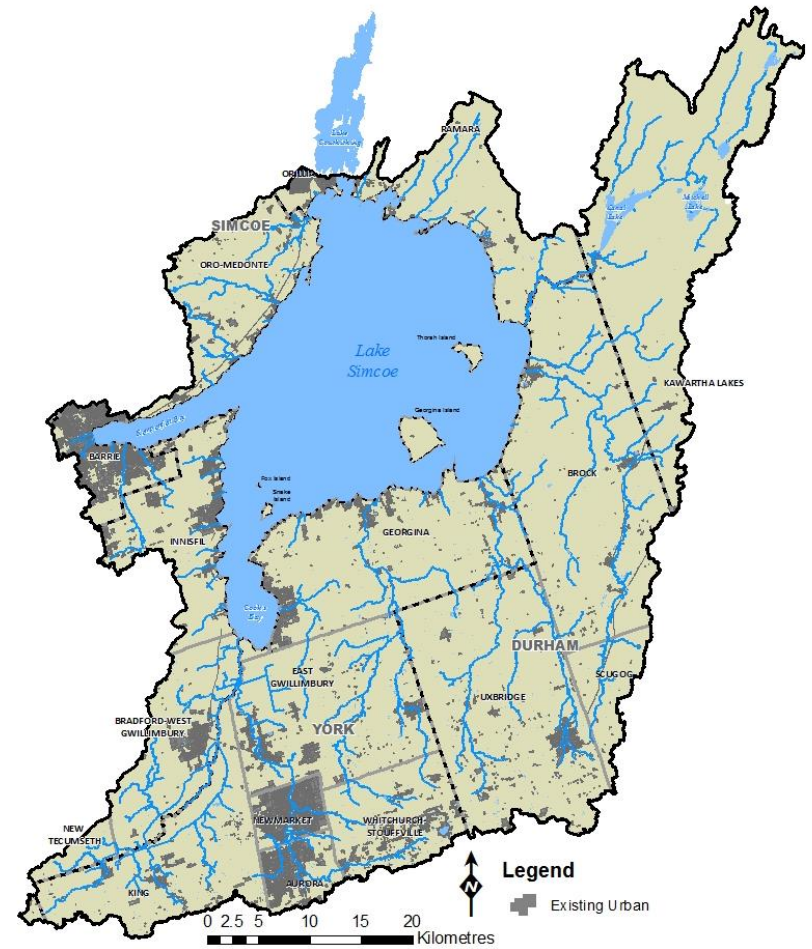


# Water Quality - Phosphorus Concentration Trends

- Of the 22 stations, only 9 are below the guideline more than 50% of the time
- Only 1% of samples are below the guideline at East Holland

**Fact:**

45 water quality parameters are collected as part of the routine monitoring program

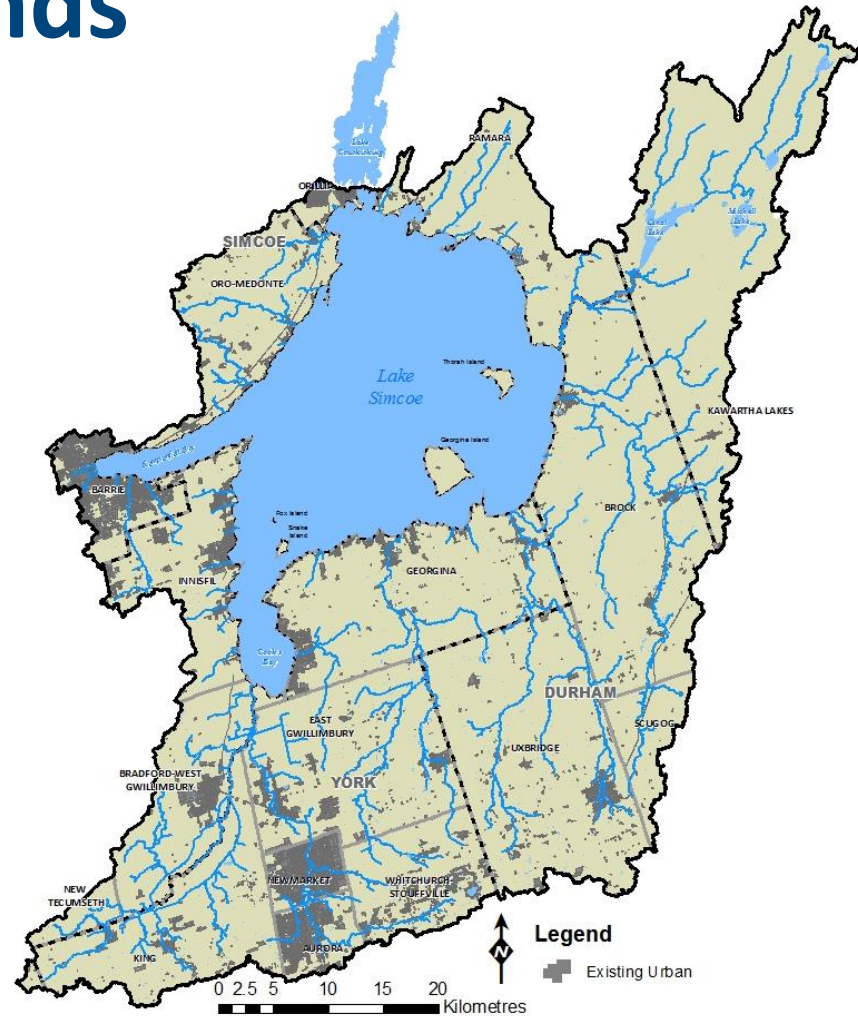


# Water Quality – Chloride Concentration Trends

- 12% of samples at East Holland are below provincial objective
- 6% of samples at Hotchkiss below provincial objective

## Fact:

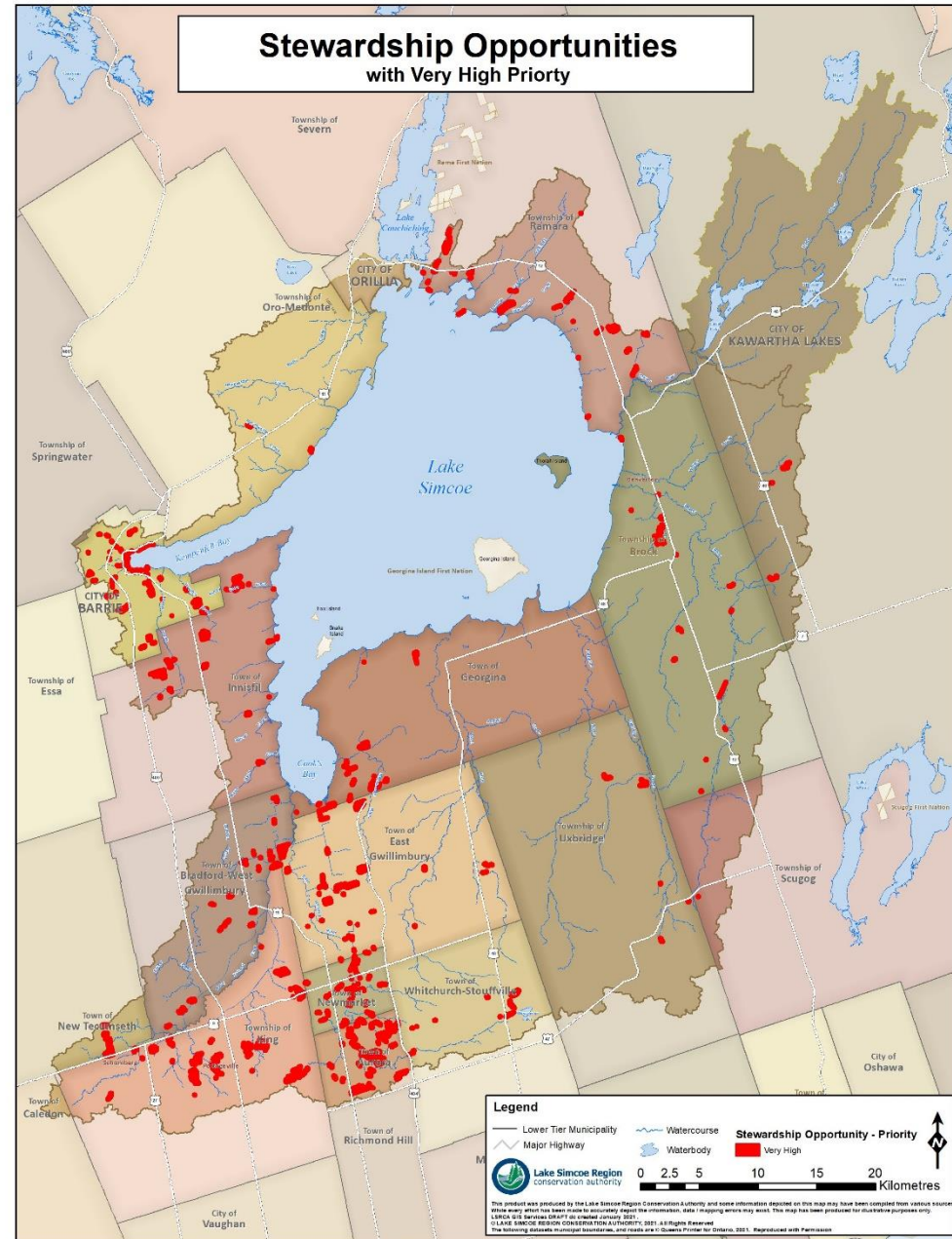
More than 700 samples are collected per year across 22 stations



# Maintaining Diverse Habitat

Impacts to physical habitat

- In-stream barriers
- Channel alteration / hardening
- Riparian buffers
- Temperature

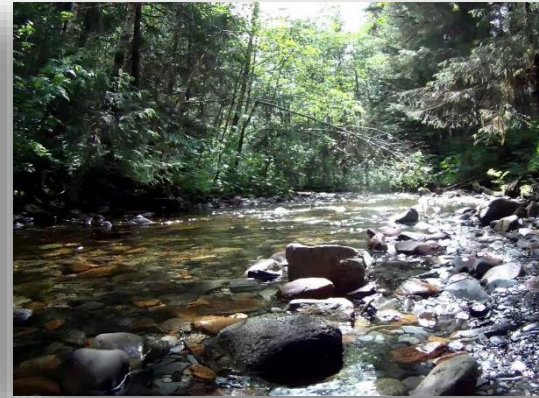




# Watershed Management

## Stressors

- Land Use Change
- Invasive Species
- Climate Change
- Channel Alteration



## Watershed Improvement

- Monitoring & assessment
- Watershed Planning
- Stormwater Management
- In-stream restoration
- Educate & engage the community