

DRAFT AQUATIC METHODOLOGY

Oxford Natural Heritage Study
March 2005 Steering Committee

SIGNIFICANT AQUATIC RESOURCES

- A significant proportion of Southwestern Ontario's remnant trout streams
- The presence of fish and freshwater mussel "Species at Risk"
- Despite intense agricultural and urban development very productive and diverse fish communities



PROJECT COMPONENTS

- Develop aquatic habitat significance and sensitivity mapping based on
 - Flow and thermal regimes
 - Habitat assessments
 - Fish community
 - Based on a modified and extended version of the municipal drain classification (MDC) protocol

- Develop a water quality / stream health monitoring network

METHODOLOGY - AQUATIC MAPPING - Thermal Regime

- Primarily intended to identify sensitive coldwater habitats
- Potential coldwater will be identified using historic information, fisheries data, MDC information and GIS analysis (correlating groundwater data)
- Coldwater habitat will be confirmed using the DFO Thermal Regime Protocol or by sampling for indicator species.

METHODOLOGY - AQUATIC MAPPING - Flow

- Intended to differentiate between permanent and intermittent watercourses
- Will rely on MDC data and anecdotal information
- Some field reconnaissance will be required, particularly for headwater natural watercourses

METHODOLOGY - AQUATIC MAPPING - Habitat

- Existing habitat data will be compiled and augmented through GIS analysis
- High quality habitats and data gaps will be identified
- Field habitat assessments will be conducted as required

METHODOLOGY - AQUATIC MAPPING - Fish Community

- Identifies habitat supporting or likely to support sensitive and significant aquatic populations
- Will rely on habitat quality assessments and historical and MDC fish data
- Fish Sampling will be conducted where required to fill gaps and update old data



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Aquatic Methods

METHODOLOGY - MONITORING NETWORK

- Initially will be based on Provincial Water Quality Monitoring Network (PWQMN) - existing water quality data compiled and samples will be collected
- Benthic sampling utilizing the Ontario Benthic Biomonitoring Network (OBBN) or similar protocol
- Additional benthic sites will be added to provide representative geographical coverage (and as requested)



Sampling Cor
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AQUATICS - DELIVERABLES

- Current mapping of aquatic habitat significance and sensitivity
- An assessment of the aquatic ecosystem and the ability to monitor changes over time

