

TEIR TWO
MISSISSIPPI VALLEY
CONSERVATION AUTHORITY
WATERSHED PLAN
BACKGROUND SERIES
SUPPLEMENTARY COMMUNITY
QUESTIONS

Contents

Backgrounder Series Tier Two Summary	2
Introduction to Summary Documents and Project Materials	2
Question Justification	3
Community Questions	Error! Bookmark not defined.
Backgrounder 1: The Physical Environment	Error! Bookmark not defined.
Backgrounder 2: People & Property	Error! Bookmark not defined.
Backgrounder 3: Natural Systems	Error! Bookmark not defined.
Backgrounder 4: Asset Management	Error! Bookmark not defined.
Supplementary Questions	4
Food Production	4
Hazards, Flooding, and Fire Mitigation	6
Indigenous History, Language, and Culture	7
Natural Resource Management	10
Water Supply and Sources	11
Wildlife Management	14
Resource and Engagement Materials	17
Definitions and Acronyms	29
Definitions	29
Acronyms	33

Backgrounder Series Tier Two Summary

Introduction to Summary Documents and Project Materials

The Mississippi Valley Conservation Authority (MVCA) is committed to integrating Indigenous knowledge into their endeavours to protect and conserve the environment. The Watershed Plan Backgrounder series is designed to provide technical information about the region and the MVCA is seeking assistance from First Nations Communities to gather both traditional and modern knowledge first-hand to include in the Mississippi River Watershed plan and other future documents.

The MVCA has prepared in-depth materials for Communities and individuals to access and in partnership with CIPS developed summary documents to provide a multi-tiered perspective on all documents included in the project. The summary documents are designed as an overview of the project materials and are comprised of comments and questions generated during the CIPS Team review of the Backgrounder series. They have been developed with the intention to hopefully help in making the Community review easier. The Backgrounder series is the comprehensive and detailed information collected thus far in the development of the Watershed Plan and seek to obtain Indigenous perspectives and knowledge that can be integrated into the materials. Backgrounders contain the comments given by the CIPS Team. Questions and opportunities to collect information via feedback have been compiled in this document, along with resource and engagement materials, to ensure all participants are fully informed and understand what they are being asked to do, to assist in simplifying the process, and to ensure that Communities feel that their voices are being heard and the MVCA has accurate information to integrate into their operations.

Understanding the capacity restraints within Communities the Tier One Summary document has been developed to bring attention to areas in which information from Communities would be most beneficial. The Tier Two Summary document (*This Document*) has been developed to allow those Communities that have capacity to provide more in depth information that would

help to create more of an understanding of the relationships, concerns etc.. of the Indigenous Peoples to the watershed.

Question Justification

These questions are all taken directly from the materials covered in the backgrounders that have been identified by the CIPS Team to be relevant to Indigenous Peoples and can benefit from their perspectives. The variety of questions are intended to function as prompts, helping people think about the sort of materials and information that they can share for mutual benefit, leaving it open for anyone to add to these questions with related information. These questions do not all need to be answered by everyone, they're not mandatory, they're designed to elicit useful information for the project, as well as potential future projects.

The following are Community questions have been derived from notes in each of the four backgrounders of the series. The answers to these important questions for Communities will be the basis for integration of Indigenous knowledge into the Mississippi Valley Conservation Authority's (MVCA) Mississippi River Watershed Plan and will also contribute to the knowledge accumulated for use in all future endeavours. Each group of questions is accompanied by the relevant page number of the existing backgrounders for Communities to reference and understand where the information being requested fits into the existing materials.

Below the questions corresponding to the notes in the backgrounder are more in-depth questions on these topics for Communities to answer. The questions are opportunities for Communities to provide more information and expand on subjects and issues that particularly concern the Community.

Supplementary Questions

These questions cover miscellaneous information related to the material presented in the backgrounder series that were not directly posed in the notes. These questions can give further context to the information provided by Communities from Tier One questions and will allow the project to include more in-depth materials to provide the MVCA with more Indigenous knowledge to utilize and share, now and in the future. These questions are intended to operate as prompts to assist Communities in understanding the sort of information this project is seeking, they are not mandatory, and there is no expectation for this section to be completed.

If the Community would like to further elaborate on subjects raised in the questions in Tier One or Two, that information is welcome, please include it under a relevant section. If there is any information or knowledge that the Community members would like to share that is not related to any questions, please add it to the bottom under a new section, and it will be included as well.

Questions

Food Production

Maple Syrup Production, Backgrounder 2, page 26-28

Maple syrup production has always been at the core of Anishinaabeg culture, it is a staple of the traditional diet, and many adizookan (teaching stories) are centred around it. Maple syrup production has changed due to climate change, with unpredictable spring temperatures alter the flow of maple water, interfering with the process. Indigenous voices have a lot to add to this topic, and their knowledge about maple trees and ability to report details about impacts of climate change make their perspectives valuable.

1. Maple Syrup Production (Backgrounder 2, page 26-28)
 - a. Would the Community like to share information regarding their maple syrup production? Is the maple syrup produced in the Community done by individuals on their own lands or by the Community itself?
 - b. What traditional and modern technologies are utilized in the production of maple syrup?
 - c. Does the Community possess important traditional knowledge and processes regarding production?
 - d. Has climate change altered the yields of syrup or when the syrup can be harvested?

Wild Rice, Backgrounder 2, page 26-27

Wild rice is another staple of the traditional Anishinaabeg diet, it is a cultural practice, and its production is also threatened by climate change. Many Communities lost their wild rice when dams and other structures were built, and there are many Communities attempting to reintroduce wild rice into their lands. All this knowledge, from the history of the waterways and the harvest of wild crops to first-hand experience with climate change, can add value to the discussion. (a-h)

2. Wild Rice Harvest and Production (Backgrounder 2, page 26-27)
 - a. Does the Community harvest wild rice together? Are there specific members who participate?
 - b. Do individuals organise their own groups?
 - c. Does the Community as a single entity, or do any Community members, have a permit to sell their harvests?
 - d. Are the harvests shared within the Community free of charge or through trade?

Hazards, Flooding, and Fire Mitigation

Natural Hazard Policies and Floodplain Mapping, Backgrounder 1, page 24-27

Seeking information about the actions of Communities regarding the threats of natural hazards, specifically if they have performed any studies or mapping, instituted any policies or regulations, what they may be, and if they would be willing to work with conservation authorities on existing or future actions. This opens a discussion about what Communities are doing and if there can be a mutual exchange of benefit.

3. Natural Hazard Policies and Floodplain Mapping (Backgrounder 1, page 24-27)
 - a. Does the Community have any policies or regulations regarding natural hazards?
 - b. Are there any restrictions or prohibitions regarding development or other activities on or near natural hazard areas (shorelines, wetlands, unstable slopes, etc.)?
 - c. If not, would the Community be interested in working with the conservation authority to create and implement comprehensive natural hazard policies?
 - d. Has the Community done any floodplain mapping or identified key areas that are potentially hazardous (due to erosion, flooding, etc.)?
 - e. Would the Community be interested in working with the conservation authorities to identify regulation (flood hazard and erosion hazard) limits and map these potential hazards?

Fire Suppression and Mitigation Assets, Backgrounder 1, page 24-27

These questions also seek the same type of information for the same reasons but focus specifically on fire and how the Community currently deals with fire control and how they utilize water in relation to those control efforts.

4. Fire Suppression and Mitigation Assets (Backgrounder 1, page 24-27)
 - a. Does the Community have a forest management plan in place?
 - b. Does the Community have a comprehensive wildfire mitigation program in place?

- c. Has the Community coordinated with local or municipal fire services?
- d. Does the Community maintain its own fire control services?
- e. Does the Community have a water supply designated for emergency response or are rivers, streams, lakes, etc. used as the water supply for firefighting?

Indigenous History, Language, and Culture

Historical and Contemporary Information, Backgrounder 2, page 3 & 10

These questions relate to important information regarding the history of the land. Anishinaabemowin names for landmarks can be integrated into materials, and histories of important areas and sites, as well as any changes over time, offer perspectives that cannot be attained through studying these locations.

These names can be integrated whenever the English names for places are used.

5. **Historical and contemporary information (Backgrounder 2, page 3 & 10)**
 - a. What are some of the traditional and contemporary names for places in the area (names for notable landmarks, bodies of water, etc.)?
 - b. Have there been any significant changes to the landscape or features in the region (loss of forested areas, changes to waterways, filled in swamps, etc.)?
 - c. Are there any locations or areas in the region that the Community consider particularly culturally significant? If so, could details be included, such as the traditional name and the contemporary name, the location, etc.?

European Settlement in the Area and its Impact on Indigenous Communities and People, Backgrounder 2, page 3-4

This section discusses the industries and lifestyles taken up by settlers on these lands but does not share the impacts experienced by Indigenous Peoples, these questions seek any historical information regarding the impacts of industry upon the Communities. Information from Indigenous perspectives is not usually included in historical accounts, and these accounts can add context and further understanding of the watershed.

6. European settlement in the area and its impact on Indigenous communities and people. (Backgrounder 2, page 3-4)
 - a. How did settlement of the area specifically impact the Community (for example, free use of natural resources, ability to access areas used for traditional purposes, ability to maintain traditional lifestyle)?
 - b. Does the Community have records regarding the impacts that the lumber industry, dam construction, the introduction of the railway, or any other significant historical developments have had on the Community or the local area?
 - c. Does the Community have any other relevant historical information? Please share any knowledge that could help balance perspectives on the historical record of the region.

Indigenous Perspectives Circa Colonisation Backgrounder 3, page 3-4 & 10

This section of the backgrounder is dedicated to European settlement and solely gives information about the settlers, however there is no similar section or any accounts from Indigenous perspectives. These questions aim to attain any histories that share those stories and cultural events. As with the questions about locations, these questions help give context and further information on colonisation.

7. Indigenous Perspectives Circa Colonisation (Backgrounder 3, page 3-4 & 10)
 - a. The historical portion includes information on the settlers but does not have Indigenous history from an Indigenous perspective from the same period. Would the Community be interested in sharing some knowledge to be added to this section?
 - b. For instance, what the traditional and contemporary names for places in the area (names for notable landmarks, bodies of water, etc.)?
 - c. Are there any locations or areas in the region that the Community consider particularly culturally significant? If so, could details be included, such as the traditional name and the contemporary name, the location, etc.?

- d. If there is any other relevant historical information about the Community and region that was not addressed in the questions, but the Community would like to share?

Various Uses of Land and Water Within Watershed Over Time by Indigenous Peoples, Backgrounder 2 page 3-4, 10 & 26

How Indigenous Peoples have been using these lands vary greatly to how they are used today. From historic portage trails to winter and summer lands, Communities hold oral accounts of the way things were, and can also share how their usage of the lands have changed since colonisation, and why. This information can enrich the understanding of how the watershed has been throughout time and the ways it was used in the past.

8. Various uses of land and water within the watershed over time by Indigenous peoples. (Backgrounder 2, page 3-4, 10 & 26)
 - a. What were the traditional uses of the land in the watershed (for example, areas where specific foods were found, where the people originally lived)?
 - b. What are the contemporary uses of the land in the watershed (agricultural operations, towns, and residential areas)?
 - c. What sort of trade and travel routes ran through the waterways of the watershed prior to European settlement?
 - d. What were the traditional uses of the waterways of the watershed (fishing, growing wild rice, etc.)?

Urban, Rural, and On-Reserve Populations, Backgrounder 2, page 8-10

Understanding the populations of Communities as well as rural and urban populations within the watershed can assist in understanding the impacts of human populations in the area. Data such as occupants of a land is useful for many purposes.

9. Urban, rural, on-reserve populations. (Backgrounder 2, page 8-10)
 - a. How many members live on-reserve? How many live on waterfront properties?

- b. How many members live rurally outside of the Community but within the watershed? How many live on waterfront properties?
- c. How many members live in urban areas within the watershed? How may live on waterfront properties?

Natural Resource Management

Thresholds and Targets, Backgrounder 3, page 3-4

If Communities have engaged in any sort of studies regarding the lands and its features, if they plan to, and what they are can start a dialogue of information and data sharing that would benefit everyone involved. Data collected in previous endeavours can provide information that would otherwise need to be obtained by funding new studies.

10. Thresholds and Targets (Backgrounder 3, page 3-4)

- a. Does the Community have any goals or objectives regarding the study, protection, or management of natural systems and features in the area?
- b. Is the Community currently engaged in any processes to study and protect natural resources using measurable and comparable objectives?

Woodlands, Backgrounder 3, page 15-19

Information regarding the forests and woodlands of Communities, such as regulations on tree cutting and specially designated areas such as Significant Woodlands are basic questions to obtain an understanding of forest management in Communities

11. Woodlands (Backgrounder 3, page 15-19)

- a. Has the Community instituted any forest conservation by-laws or regulations?
- b. Does the Community regulate tree cutting?
- c. Does the Community provide guidance or direction to landowners on sustainable management of woodland on their properties for financial or ecological benefit?
- d. Are there Significant Woodlands within the Community territories?

Nature Conservation Assets, Backgrounder 4, page 23-25

Determining what portions of land in Communities is privately owned, public land, conservation land, wetland, woodland, and crownland gives a basic idea of the lands of each Community and therefore its needs and opportunities to benefit the members. Understanding where the impact of human activity and how the watershed is used can be applicable to many projects.

12. Nature Conservation Assets (Backgrounder 4, page 23-25)

- a. The watershed includes private properties, communities, provincial parks, etc. totaling over 18,000 ha, what portion of that land is protected and controlled by the Community?
- b. Is any of that land considered crownland?
- c. What portion of that territory is considered conservation land?
- d. How is the Community territory divided (wetland, woodland, etc.)?
- e. Has the Community voluntarily adopted any land use policies or forest management plans that govern crownland?

Water Supply and Sources

Drinking Water Supply and Sources, Backgrounder 2, page 15-21

Understanding how Communities access drinking water, the quality of their drinking water, any regulations, or policies in place regarding water (Clean Water Act, etc.), and if they would like to participate in an SWPP (Source Water Protection Plan) with Conservation Authorities, are all relevant to understanding water usage in the watershed.

13. Drinking water supply and sources (Backgrounder 2, page 15-21)

- a. What type of water systems are used by the Community (private wells, communal wells, surface water intakes, etc.)?
- b. Are there any concerns regarding vulnerability to contamination due to high concentrations of private septic systems in the area?

- c. How does the Community regulate septic systems? Are there rules regarding the creation and servicing of private septic systems in the Community?
- d. Are there any concerns with the water treatment in the area?
- e. Does the Community have any concerns or major issues regarding their water, water supply system, or water treatment?
- f. Has the Community chosen to adopt any source water protection measures such as the Clean Water Act (CWA) or Drinking Water Source Protection Program (DWSPP)?
- g. Would the Community be interested in working with the conservation authorities to develop a Source Water Protection Plan (SWPP)?

Wastewater and Septic Services, Backgrounder 2, page 22-25

Like the drinking water, this explores the methods of sewage treatment, septic systems, policies in place, programs, etc. to determine the status of wastewater in the Community. This also asks if they would be interested in training for voluntary inspection programs to obtain data about the wastewater in the future.

14. Wastewater and Septic Services (Backgrounder 2, page 22-25)

- a. Does the Community access the municipal sewage treatment facilities or rely upon private on-site sewage disposal systems?
- b. What percentage of the Community uses private septic systems?
- c. Does the Community follow any federal or provincial acts, codes, or regulations for private residential septic systems?
- d. Does the Community conduct reinspection programs? Are they voluntary or mandatory?
- e. Would the Community be interested in training regarding voluntary inspection programs?

Water Quality and Monitoring, Backgrounder 1, page 18-20

Questions that cover how Communities deal with water sources and bodies.

Asking if the Community would like to participate in programs like the MVCA LMP (Lake Monitoring Project) and the PWQMN (Provincial Water Quality Monitoring Objectives) can lead to further collaborations.

15. Water Quality and Monitoring (Backgrounder 1, page 18-20)

- a. Does the Community monitor the water quality in the lake, river, and other local bodies of water?
- b. What kind of testing does the Community do? Is this testing done on a schedule?
- c. Would the Community be interested in participating in citizen science volunteer programs, such as the MECP Lake Partner Program (LLP) or Water Rangers program?
- d. Would the Community participate in water quality data collection with the MVCA Lake Monitoring Program and the Provincial Water Quality Monitoring Network (PWQMN)?
- e. Does the Community have any official water quality objectives or guidelines for drinking water?
- f. Does the Community follow Provincial Water Quality Objectives (PWQO), Canadian Water Quality Guidelines (CWQG), or any other set standards?
- g. Does the Community monitor levels of chloride, phosphorus, nitrogen, etc. in the drinking water supply?
- h. Does the Community have thresholds in place to regulate the amounts of various nutrients and elements in the water supply?
- i. Does the Community monitor blue-green algae (cyanobacteria) growth in the nearby bodies of water?
- j. Has the Community taken any action to combat invasive cyanobacteria? Have the impacts of the cyanobacteria on the ecosystem been monitored or noted?

Dams and Crossings, Backgrounder 4, page 25-17

These questions inquire about the status and needs of Communities for water crossings and the impacts upon the bodies of water. This also assists in understanding what areas are at risk for natural hazards like flooding.

16. Dams and Crossings (Backgrounder 4, page 5-17)

- a. Are there any water control structures located within or nearby the Community (dams, culverts, diversions, etc.)?
- b. Are any of those water control structures in need of repair, upgrade, or replacement?
- c. Have any of those structures failed, flooded, caused disruptions in the flow of water, or any other issues for the Community?
- d. Are there any river crossings (bridges, railways, road crossings, etc.) located within or nearby the Community?
- e. Are any of those river crossings in need of repair, upgrade, or replacement?
- f. Have any of those river crossings failed, flooded, washed out, or otherwise caused issues for the Community?
- g. Are any of the river crossings that have flooded, washed out, etc. private roads?
- h. Does the Community have any buildings, developments, or infrastructure that is at risk of suffering or causing issues with flooding or other disruptions?

Wildlife Management

Wildlife Asset Management, Backgrounder 4, page 32-36

These questions determine the policies and regulations in place or hunting and fishing to understand the status of wildlife in the area, such as populations and use of licensing.

17. Wildlife Asset Management (Backgrounder 4, page 32-36)

- a. Does the Community work with the province or other bodies on wildlife management?

- b. Has the Community established formal guidelines or regulations on hunting, fishing, or harvesting (recovery plans, etc.)?
- c. Do Community members voluntarily obtain licenses and tags in accordance with government regulations, acts, and zonings?
- d. Has the Community generated a database or list of wildlife assets within the Community lands?

Fish Management, Backgrounder 3, page 46-49

Conservation efforts and regulations regarding fish directly relates to the health of the watershed, and knowing what Communities are doing is valuable information

18. Fish Management (Backgrounder 3, page 46-49)

- a. Is the Community engaged in any preservation or conservation initiatives regarding fish and fish populations?
- b. Has the Community put any regulations or policies in place for Community members or visitors regarding fishing?
- c. Does the Community voluntarily obey any provincial or federal policies regarding fishing or fish conservation?

Species at Risk, Backgrounder 4, page 35

These questions are the same as the questions about fish, but regarding regulations, types of species at risk in the area, and population data the Community may have, that would be useful for projects regarding these at-risk species.

19. Species At Risk (Backgrounder 4, page 35)

- a. Does the Community monitor the populations of any at-risk species in the watershed?
- b. Has the Community recorded the various at-risk species found in the area?
- c. Has the Community noted changes in species populations?

Invasive Species and Climate Change, Backgrounder 3, page 50-51

These questions are also requesting the same information regarding the invasive species catalogued in the area, partnerships to counter invasive species, and how climate change is impacting the prevalence of invasive species.

20. Invasive Species and Climate Change (Backgrounder 3, page 50-51)

- a. What invasive species have been found in and around the Community?
- b. Has the Community established partnerships with the Ontario Federation of Anglers and Hunters (OFAH), Ontario Invasive Plants Council (OIPC), or any other organizations to create and implement programs to combat invasive species and their impacts on local ecosystems?
- c. Has the Community noticed an increase in the populations and varieties of invasive species due to climate change?
- d. What changes have led to the problems worsening (warmer temperatures, shorter winters, drier summers)?
- e. Have negative impacts on native species been noted (lower body weights, lower populations, disruptions in mating season, habitat loss)?
- f. Has the Community taken any steps to mitigate the impacts of invasive species? Have containment measures been implemented?
- g. Does the Community have any programs dedicated to Community awareness or instructional sessions with Community members on how they can take steps to help control the problem on their properties?
- h. Would the Community be interested in participating in a monitoring program for invasive species with the MVCA?

Resource and Engagement Materials

Mississippi Valley Conservation Authority (MVCA) Website

<https://mvc.on.ca/>

MVCA Watershed Interactive Map

<https://mvc.on.ca/water-levels/>

MVCA Watershed Plan

<https://mvc.on.ca/watershedplan/>

National Geographic Information on Watersheds

<https://education.nationalgeographic.org/resource/watershed>

Ontario Low Water Response

http://omafra.gov.on.ca/english/environment/facts/low_waterbr.htm

Canada Water Act

<https://laws-lois.justice.gc.ca/eng/acts/C-11/index.html>

Ministry of the Environment, Conservation and Parks

<https://www.ontario.ca/page/ministry-environment-conservation-parks>

Source Water Protection

<https://conservationontario.ca/conservation-authorities/source-water-protection/>

Ecoregions and Ecozones of Ontario

<https://www.ontario.ca/page/ecosystems-ontario-part-1-ecozones-and-ecoregions>

Invasive Species in Ontario

<https://www.ontario.ca/page/invasive-species-ontario>

Guidance for Safe Drinking Water

<https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidance-safe-drinking-water-canada-intake-health-canada-2001.html>

Design Guidelines for First Nations Water Works

<https://sac-isc.gc.ca/eng/1100100034922/1533666798632>

Crownland of Ontario

<https://www.ontario.ca/page/crown-land>

Conservation Ontario Floodplain Mapping

<https://conservationontario.ca/conservation-authorities/flood-erosion-management/floodplain-mapping/>

Surface Water Monitoring Centre

<https://www.ontario.ca/page/surface-water-monitoring-centre>

Provincial (Stream) Water Quality Monitoring Network

<https://data.ontario.ca/dataset/provincial-stream-water-quality-monitoring-network>

Ontario Invasive Plant Council

<https://www.ontarioinvasiveplants.ca/>

Provincial Groundwater Monitoring Network

<https://www.ontario.ca/page/map-provincial-groundwater-monitoring-network>

Environment and Climate Change Canada Freshwater Quality Monitoring Online Data

<https://www.canada.ca/en/environment-climate-change/services/freshwater-quality-monitoring/online-data.html>

Natural Hazards

<https://www.canada.ca/en/services/policing/emergencies/hazards.html>

Regional Hazards Ontario

<https://www.getprepared.gc.ca/cnt/hzd/rgnl/on-en.aspx>

Natural Resources Canada Natural Hazard Monitoring

<https://www.nrcan.gc.ca/science-and-data/science-and-research/natural-hazards/10657>

Valuing Natural Capital

<https://www.conservation.org/projects/valuing-and-accounting-for-natural-capital>

Mapping Natural Capital

<https://www.conservation.org/projects/mapping-natural-capital>

Canada Protected and Conserved Areas Database

<https://www.canada.ca/en/environment-climate-change/services/national-wildlife-areas/protected-conserved-areas-database.html>

Wetland Conservation Ontario

<https://www.ontario.ca/page/wetland-conservation>

Environment and Climate Change Canada

<https://www.canada.ca/en/environment-climate-change.html>

Ministry of Northern Development, Mines, Natural Resources and Forestry

<https://www.ontario.ca/page/ministry-northern-development-mines-natural-resources-forestry>

Ministry of the Environment, Conservation and Parks District Locator

<https://www.ontario.ca/page/ministry-environment-conservation-and-parks-district-locator>

Natural Heritage Map Ontario

<https://www.ontario.ca/page/make-natural-heritage-area-map>

Canada's Wetlands

<https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/extent-wetlands.html>

Ontario Species at Risk

<https://www.ontario.ca/page/species-risk>

Ontario Plant Species at Risk

<https://wilderinstitute.org/conservation/ontario-plant-species-at-risk/>

Physiographic Regions of Canada

<https://atlas.gc.ca/phys/en/index.html>

Ontario Maps and Facts

<https://www.worldatlas.com/maps/canada/ontario>

Aquifers and Aquitards

<https://civilenggascent.com/what-is-aquifer-aquiclude-aquitard-and-aquifuge/>

Aquifer Systems in Southern Ontario

https://www.searchanddiscovery.com/pdfz/abstracts/pdf/2015/90224geo/abstracts/ndx_carter.pdf.html

Hydrogeology of Southern Ontario

<https://archive.org/details/hydrogeologyofso01singuoft>

Water Management: Policies, Guidelines, Provincial Water Quality Objectives

<https://www.ontario.ca/page/water-management-policies-guidelines-provincial-water-quality-objectives>

Environmental Guidelines for Access Roads and Water Crossings

<https://www.ontario.ca/page/environmental-guidelines-access-roads-and-water-crossings>

Ontario Hydro Network – Watercourses

<https://data.ontario.ca/dataset/ontario-hydro-network-watercourses>

Drainage Conflict – Natural Watercourses

<http://omafra.gov.on.ca/english/landuse/drain-eref/natural.htm>

Provincial Watersheds, Historical Datasets

<https://data.ontario.ca/dataset/provincial-watersheds-historical>

Types of Drains in Ontario

<http://omaf.gov.on.ca/english/landuse/drain-eref/types.htm>

Map of Areas of Natural and Scientific Interest (ANSI) in Ontario

<https://geohub.lio.gov.on.ca/datasets/areas-of-natural-and-scientific-interest-ansi>

Areas of Natural and Scientific Interest (ANSI) Canada

<https://open.canada.ca/data/en/dataset/fca45f18-2d4a-4acc-9c98-fc362af6ac91>

Ontario Wastewater Certification Office

<https://owwco.ca/>

Canadian Drinking Water Guidelines

<https://www.canada.ca/en/health-canada/services/environmental-workplace-health/water-quality/drinking-water/canadian-drinking-water-guidelines.html>

Municipal Wastewater Treatment

<https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/municipal-wastewater-treatment.html>

Environmental Conservation and Protection

<https://www.canada.ca/en/services/environment/conservation.html>

MVCA Lake Monitoring Program (Water Rangers)

<https://app.waterrangers.ca/groups/mississippi-valley-conservation-authority-lake-monitoring-program>

Mississippi-Rideau Source Protection Plan (MRSP)

<https://www.mrsourcewater.ca/en/>

Difference Between Dams and Weirs

<https://www.differencebetween.com/difference-between-weir-and-vs-dam/>

What is a Weir?

<https://practical.engineering/blog/2019/3/9/what-is-a-weir>

Natural Heritage Systems Planning

<https://ontarionature.org/campaigns/natural-heritage-systems-planning/>

Natural Heritage System

<https://storymaps.arcgis.com/stories/a14d1706c86b4c16ac0822ee682d1623>

Natural Heritage Information Centre

<https://www.ontario.ca/page/natural-heritage-information-centre>

Summary of Agricultural System and Natural Heritage System Policies in Ontario

<http://omafra.gov.on.ca/english/landuse/agsys-sum.htm>

Natural Heritage System Environmental Registry of Ontario

<https://ero.ontario.ca/comment/1382>

National Geographic Hydrology

<https://education.nationalgeographic.org/resource/hydrology>

Ontario Federation of Anglers and Hunters

<https://www.ofah.org/>

Surface Water Intake

<https://www.lawinsider.com/dictionary/surface-water-intake>

Significant Woodlands: Guidelines for Identification, Evaluation, and Impact Assessment

<http://ottwatch.ca/meetings/file/572913>

Forestry Act, R.S.O 1990 c. F.26

<https://www.ontario.ca/laws/statute/90f26>

American Eel is in Danger of Extinction

<https://www.scientificamerican.com/article/american-eel-is-in-danger-of-extinction/>

FireSmart Ontario

<https://www.ontario.ca/page/firesmart>

Forest Fire Management Ontario

<https://www.ontario.ca/page/forest-fire-management>

Water Supplies for Fire Fighting

<http://www.johnivison.com/water-supplies-for-fire-fighting/>

Fire Safety Legislation and Ontario's Fire Code

<https://www.ontario.ca/page/fire-safety-legislation-and-ontarios-fire-code>

Definition of Land Conservation

<https://www.reference.com/science/definition-land-conservation-b4db4e0c156aa4ed>

Definitions and Acronyms

Definitions

Subwatershed

- A portion of a region of an identified watershed

Surface Water Intake

- Systems that harvest water from reservoirs, lakes, and other surface waters through an artificial opening that allows drainage from the surface into a water line and diverts it to water treatment plants before it is used to supply water to public and private buildings

Crownland

- Territorial area belonging to the monarch, the personification of the crown, in Canada this land is public and considered separate from the monarch's private estates

Watershed

- A topographic region that drains into a specific river, river system, or other body of water

Watershed Boundary

- The outlining border where one watershed ends, and another begins

Weir

- A small type of dam that controls the flow of water by creating an obstruction, with rectangular, triangular, or V-shaped openings
- A low head dam that blocks water, with the built-up water generating power, diverting flow to low-water areas, or recreational purposes

Well

- Drilled openings from the surface to access groundwater aquifers
- Wells built for the use of a private property or series of private properties (private wells)
- Wells built for the use of a series of homes or buildings that are publicly managed (communal wells)

Hydrology

- Study of movement and distribution of water both on and below the surface, as well as the impacts of human activity

Hydrogeology

- Study of the occurrence, distribution, and effect of groundwater, both standing and flowing beneath the surface, especially concerning the biological and chemical properties of the movement and occurrence of the water

Natural Heritage

- Sum of natural features of biodiversity, including both flora and fauna, ecosystems and geological structures of a region or area

Physiography

- Study of earth's exterior features, including climate and life, including movements and changes on earth's surface, as well as the currents in the atmosphere and oceans

Aquifer

- Waterbed found below a layer of permeable rock, sediment or soil, ranging between a few square kilometers to thousands of kilometers in size

Aquitard

- A body of rock or sediment that slows but does not prevent the flow of groundwater from one aquifer to another

Hazardous Land

- Unstable lands susceptible to issues such as flooding, erosion, fire, landslides, etc.

Topography

- A graphic representation of the features of an area or region, particularly elevations and their positions relative to surrounding areas

Wastewater

- Water that has been used in some human activity, domestic and industrial, and collected some form of waste during the usage

Significant Woodland

- Any treed area that meets Ontario's definition within the Forestry Act (over 1,000 trees per hectare)

Land Laws

- Designated laws that govern the uses and supply of land which are equally binding to all members of a Community

Land Conservation

- Preservation and maintenance of lands, ensuring correct waterflow, reducing atmospheric carbon emissions, prohibiting development, reducing risk of natural hazards, and sustaining the natural features and habitats to ensure health and biodiversity

Blue-green algae (cyanobacteria)

- A toxic photosynthetic bacterium of various species that form into sheets and/or filaments within bodies of water, some of which are invasive to Ontario

Acronyms

Water Response Team (WRT)

Ontario Low Water Response Program (OLWR)

Mississippi Valley Conservation Authority (MVCA)

Clean Water Act (CWA)

Drinking Water Source Protection Program (DWSP)

Provincially Significant Wetlands (PSW)

Provincial Policy Statement of 2014 (PPS)

Ministry of Natural Resources and Forestry (MNRF)

Environmental and Climate Change Canada (ECCC)

Provincial Water Quality Monitoring Network (PWQMN)

Ministry of the Environment, Conservation and Parks (MECP)

Non-Governmental Organization (NGO)

Areas of Natural and Scientific Interest (ANSI)

Mississippi-Rideau Source Protection Plan (MRSP)

Lake Partner Program (LLP)

Source Water Protection Plan (SWPP)

Provincial Water Quality Objectives (PWQP)

Canadian Water Quality Guidelines (CWQG)

Ontario Federation of Anglers and Hunters (OFAH)

Ontario Invasive Plants Council (OIPC)