

# Wetland management: An analysis of past practice and recent policy changes in Ontario

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## Abstract

The Ontario Government has recently released its latest Provincial Policy Statement (PPS), which includes a policy concerning wetland protection. This paper uses interviews with key respondents and the results of three separate case studies that examined the former PPS in order to assess the ability of the new policy to improve wetland conservation efforts in Ontario. The case studies include wetland conservation and urban stormwater management in the City of London for the periods 1978–1999 and 1978–2000, respectively. As well, agricultural drainage that occurred in the Township of Zorra for the period 1978–1997 is used to address this management dimension. While progress is evident, the current policy will be difficult to implement effectively because it inadequately deals with the fundamental aspects of management: fragmented jurisdiction, interagency communication, financial arrangements, enforcement, and promoting informed decision making.

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## 1. Introduction

As part of a regular 5-year review, the Province of Ontario has issued a new Provincial Policy Statement (PPS) that replaced one that was issued in 1996. The new PPS “provides policy direction on matters of provincial interest related to land use planning and development” and “provides for appropriate development while protecting resources of provincial interest...and the quality of the natural environment” (Ontario, 2005, p. 1). Of relevance to this paper is the Natural Heritage Policy Statement, specifically those sections dealing with wetlands. “Protecting significant natural resource features, such as coastal and other wetlands, and the habitat of endangered and threatened species” is one explicit measure mentioned by the government to protect the environment (Ontario, 2005, p. 15).

The intent of this paper is to review the history of Ontario’s evolving wetland policy and the ability of the new PPS to improve wetland conservation in response to issues identified through past policy analysis and recent stakeholder consultations. The historical discussion provides the context for the current iteration of wetland policy and for the case studies carried out in the City of London and the Township of Zorra. Case studies serve to illustrate actual policy implementation experiences in Ontario, in particular, the integration of wetland conservation into development decisions (1978–1998), urban stormwater management (SWM) (1978–2000) and agricultural drainage (1978–1997).

## 2. Methods

The City of London and Zorra Township are located in Southwestern Ontario (Fig. 1). This region contains some of Canada’s best agricultural land and has the longest growing season. Drainage of wetlands has been associated

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Fig. 1. Southwestern Ontario and the study area.

with agricultural development, and historically, agricultural drainage has been the primary cause of wetland losses in southwestern Ontario. London, located between Windsor and Toronto, has a population of about 330,000. Over the past century, London has undergone numerous land annexations (the most recent in 1992) to increase the potential for and to accommodate growth. Some of this growth has seen the conversion of wetlands to urban uses.

Data sources that supported the research into such land use conflicts are outlined below.

*Planning and engineering files:* The development of land for urban purposes within London requires approval from local government. Subdivision application, zoning by-law amendment and official plan amendment files were reviewed from the City of London's Departments of Planning and Development, and Engineering for the period 1978–1998, and 1978–2000, respectively. Files were selected based on their proximity to evaluated wetlands, or from wetland-related discussion within the file. The following data were accumulated from the selected files: (a) site description, (b) nature of correspondence between the City and referral agencies (e.g. Ontario Ministry of Natural Resources (OMNR), 1993; Upper Thames River Conservation Authority (UTRCA), 1998), (c) decisions in each file, and (d) special provisions or conditions placed on development approval and recommended mitigation measures. Some of these files contained information regarding the completion of environmental impact statements (EIS). During the study period, seven EISs were submitted as required background documentation for wetland-related planning files.

*Drainage files:* There were 139 agricultural drainage works completed between 1978 and 1997 in Zorra Township. Each of these drainage works has a file including information relating to the drain location and design, referral agency comments from the OMNR and UTRCA, the total cost and farmer subsidy. As the PPS excludes agricultural drainage, the Ontario *Drainage Act* is intended

to provide protection of wetlands through a referral process with the OMNR and local conservation authority.

*Interviews:* Interviews were conducted with representatives from the City of London Planning and Engineering Departments, Zorra Township, the UTRCA and the OMNR. Topics included clarification of decision-making processes, perceptions of strengths and weaknesses of existing regulatory and plan review procedures, and how any shortcomings might be addressed.

*Aerial photography:* In each of the case studies, wetland locations were identified through the City of London maps and Ontario Base Maps (OBMs). The changes in wetland boundaries were measured through visual interpretation of aerial photography and soil maps. The changes in wetland area for provincially and locally significant wetlands (LSW) were recorded for the years 1978, 1989 and 2000. These dates represent available aerial ortho-photography coverage for the region. Each of the case studies assessed the protection measures by focusing on the change in form to the wetlands over time. A comparison of the mean annual precipitation 5-years prior to each of the aerial photography being taken indicates there was no significant difference among the three time periods. The mean annual precipitation between 1978 and 2000 was 997 mm, with a standard deviation of 144 mm.

### 3. The evolution of wetland policy in Ontario

The Canadian federal government signed the protocol of the Convention on Wetlands of International Significance (Ramsar Convention) in 1981. At that time, the federal government agreed in principle to “seek to ensure the sustainable, wise use of wetland resources including designation of wetland sites of international importance and to ensure that all wetland resources are conserved, now and in the future” (Environment Canada et al., 2000). Recognizing the important functions and values of wetlands, Canada has 36 designated Ramsar sites of international significance. However, these wetlands represent a small fraction of the wetland sites in Canada. The clear majority of wetlands are not directly covered under the Convention, nor are they within the federal jurisdictional responsibility. Wetland protection is the responsibility of provincial and municipal governments.

In 1981, Ontario began the arduous process of developing its own wetland policies (Fig. 2). In reflection of the issues that brought about the Ramsar Convention, the citizens and government of Ontario began to recognize that the outright loss of, and progressive encroachment on, wetlands had serious long-term negative ecological and socio-economic implications. Furthermore, Ontario, with its share of internationally and nationally significant wetland sites, had a global responsibility to carefully consider the conservation of these ecosystems. Since the early 1980s, Ontario has incrementally adopted what is essentially a three-pronged approach to wetland protection. First, it developed an evaluation system. Second, in

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