

ECOLOGICAL AND INSTITUTIONAL ISSUES IN RESPECT OF WATERSHED PLANNING AND PROTECTED AREAS

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I am pleased to have been given the opportunity to offer my perspectives on the conference theme of *Protected Areas and Watershed Management*, with specific reference to ecological and institutional issues. I think it is fairly obvious that natural heritage protection has been a servant to institutional arrangements rather than being regarded as a system worthy of its own “ecosystem approach”, unlike, for example the management of surface water. An important question is: “should we develop a unique institutional approach for natural heritage protection, or are there compelling reasons to tie it to an existing framework, such as watershed planning?” What I hope to demonstrate in these few minutes is the efficacy of planning for natural heritage protection within a watershed planning context.

As proponents of natural heritage protection, we need to:

- recognize that the public expectation for natural heritage protection is increasing rapidly;
- realize that responding to the changing public expectation provides an opportunity to move toward a systems approach for natural heritage protection;
- understand that in order to move toward a systems approach, we have to move beyond the existing policy framework which is effective at protecting patches rather than systems;
- capitalize on the imminent effort in watershed planning which will result from the source water protection planning framework, to fully account for the contribution of natural heritage to watershed management objectives; and,
- persuade municipal and other levels of government to view natural heritage planning in the same way that they plan for other critical infrastructure components.

I want to review the evolution of watershed planning and management and its relationship to natural heritage protection efforts, in order to provide an historical context. I will then discuss the current natural heritage planning framework- the *Planning Act* and *Provincial Policy Statements*, what has been accomplished as well as limitations, finishing with some thoughts about the future.

The Conservation Authority (CA) mandate, as prescribed by the the *Conservation Authorities Act* is: “to establish and undertake, in the area over which it has jurisdiction, a program designed to further the conservation, restoration, development and management of natural resources other than gas, oil, coal and minerals.” (*Conservation Authorities Act*, 1990) The Conservation Authorities of Ontario are widely known as watershed managers, and historically, have played an important role in the protection of natural heritage; through outright acquisition (over 138,000 ha owned), or by helping to

play a supportive role, while some other agent or mechanism regulates (zones), acquires or secures by other means, the area of interest. However, the extent to which natural heritage objectives have been a driving feature of watershed planning and management initiatives varies widely over time and geographic area.

Consider the mandate statement which I just referenced. I believe that the drafters of this forward-thinking legislation in 1946 intended it to be a broad, encompassing mandate. Although the term "natural heritage" is not used, the references to natural resources of the watershed were only qualified by the expressed limitations of the *CA Act* (e.g., gas, oil, coal and minerals.) Complementing this progressive legislation were the watershed-based *Conservation Reports*, prepared by the Conservation Branch of the Department of Planning and Development. There was no reference to "integrated resources management" but the reports included sections on "Land-use", "Forestry", "Water", "Wildlife" and "Recreation", so we know that the concept was understood and promoted (if not universally embraced.)

Some of the specific recommendations of these first generation watershed plans provide even greater clarity in terms of demonstrating an understanding of the role of protected areas in watershed management (Ontario Department of Planning and Development, 1952). Under the topic of Forestry, it was recommended that: the Thames Forest be extended to embrace 7,527 ha; marginal lands be acquired for reforestation; suitable conservation lands be expropriated when they become tax-delinquent; landowners be instructed in encouraging natural regeneration adjacent to woodlots; cattle be fenced from woodlots; and privately owned marginal lands be reforested. In regard to "Water", the report stated: "*that the Forestry and Land Use recommendations be implemented to promote deep seepage and augment the ground water resources.*" It notes that "*the planting and protection of source areas, highly desirable for other reasons, would have a great effect in increasing the volume of water in dry seasons....*" Similarly, under the heading of "Recreation", the report recommended that 900 ha, including the Fanshawe Dam site and the banks of the North Branch of the Thames River (extending as far as St. Marys), be acquired and administered as a multiple use recreation area.

I don't want to mislead you as to the focus of these early watershed plans. As the conference rationale suggests, proposed solutions for water quality and flow problems have generally involved technological applications. In the 1952 *Upper Thames Conservation Report* six large dam and reservoir schemes were proposed at a cost of \$12 million (Ontario Ministry of Natural Resources, 1988). The need for urban water pollution control plants was also identified. Although only the largest three of the six dams proposed were ever constructed, three other smaller existing dams were reconstructed using a watershed management rationale. In spite of this technological focus, and although the Thames Forest and the North Branch Valley Lands acquisition proposals were not completely fulfilled, the Authority has managed to protect through ownership nearly 6070 ha of forests, wetlands, valley lands, and reservoir-based conservation lands. In addition, over the years thousands of acres of privately owned lands have been influenced by Authority-led programs toward some greater level of stewardship, ranging from soil conservation to reforestation to fencing livestock from streams and woodlots. But natural heritage protection, beyond wetlands and floodplains, did not appear to be a prime focus

of early watershed planning and management programs.

The next iteration of watershed planning emerged in the early 1970s following reorganization of the Ontario Government. The newly minted Ministries of Natural Resources and Environment collaborated on a *Water Management Study of the Thames River Basin* (TRBWMS), focusing on the problems of surface water impairment; flooding; erosion; recreation; and other problems (Ontario Ministry of Natural Resources, 1975). Of particular concern was the anticipated growth of the City of London, and the need to deal with related water quality impacts. Yet most of the 29 recommendations stemming from that Report involved technological solutions, including the addition of a fourth major dam and reservoir to the system (Glengowan) (Ontario Ministry of Natural Resources, 1975). Only two or three recommendations even hint at the potential contribution of protected areas to water(shed) management objectives, including protection of selected wetlands from drainage; and vegetated buffers and reforestation. Thus this blueprint for watershed management on the Thames for the next 20 years substantially ignored the potential contribution of natural areas to water planning and management, and it continued to rely on technological applications at considerable capital cost.

During the 1970s and 1980s, the UTRCA was able to continue its program of wetland protection through acquisition of significant properties, usually adjoining established holdings. Additionally, it purchased urban flood plain lands for the dual objectives of providing open space while securing hazardous areas from the threat of development. It also helped to protect, through a joint acquisition scheme with the City of London, a significant natural heritage complex known as the Pond Mills/Westminster Ponds Conservation Area. All of these property acquisitions were financially supported by the Province of Ontario through a capital grants program. And while the rationale for flood plain and wetland acquisition was readily apparent in watershed management terms, the case for the Pond Mills/Westminster Ponds purchase was clearly made from a natural heritage protection perspective.

Ironically, one of the UTRCA's largest naturally significant land holdings is a legacy of the TRBWMS. Purchased between 1975 and 1982 to facilitate implementation of what was believed to be the inevitable outcome of the Glengowan Environmental Assessment, the assembly includes more than 400 ha of some of the most picturesque and ecologically significant portions of the North Branch of the Thames River. With the outcome of the EA and based on contemporary science and values, it is now unthinkable that a dam will ever be constructed to flood this valley, but it illustrates a case of natural heritage protection accidentally arising from a watershed management objective, however misguided!

The third generation of watershed plans emerged in the early 1980s in response to direction from the Conservation Authorities Branch of the Ontario Ministry of Natural Resources. Rather than being a government-driven initiative to develop comprehensive watershed based natural resources management plans, the exercise in retrospect was one of rationalization. Conservation Authorities programs were expanding, and there were perceptions of competition for financial resources and for turf. Watershed Plans were intended only to be a blueprint for surface water management, and references to a "core mandate" of flood control were frequent. Owing to the complete failure by CAs to con-

form to this narrow definition of their mandate, the MNR/CA relationship became strained and the agenda moved to discussions about Role and Mandate; culminating with the *Review of the Conservation Authorities Program* in 1987 (Ontario Ministry of Natural Resources, 1988). The appended table summarizes the government's recommendations for the CAs' role in a suite of components of a comprehensive watershed management program (Ontario Ministry of Natural Resources, 1988). This document introduces the idea of separating responsibility for the management of wetlands of hydrological as over against natural heritage significance! Natural heritage protection was clearly not considered an appropriate objective for the watershed management agencies even though they held title to most of the publicly-owned natural heritage lands in southern Ontario at that time.

While the Role and Mandate and Program Review exercises of the 1980s were frustrating and antithetical to the CAs' view of the requirements of watershed planning and management, there were the beginnings of some positive developments with respect to natural heritage protection which expanded upon the earlier techniques of acquisition and stewardship. Although not directly tied to watershed planning and management, in 1983 changes to the *Planning Act* introduced the concept of provincial policy statements to lead resource protection through land use regulation. The development of the wetland evaluation system in the mid-1980s and the *Wetland Policy* (draft in 1987, 1989 and approval in 1992) became valuable tools to CAs and others, and they ensured at least a level of protection for areas of Provincial Significance. These early protection efforts focused on protecting areas of Provincial Significance - the jewels - while there was only limited consideration of the need for protection of the less "flashy" supporting natural heritage systems. This approach was justified because the legislative approach to securing natural heritage protection was new and contentious, so the natural heritage attributes had to be significant and obvious.

The development of the comprehensive set of Policy Statements introduced the concept of system planning, but the focus was still on protection of the "tea cups". The effect of this policy approach actually resulted in some additional pressure on the rest of the system ("the shelf") because it was often seen as being the compromise available for not touching the tea cups.

This approach is now inadequate, as public expectation is escalating very quickly. We assume that this can be attributed to a number of factors including many years of investment in public education on the importance of natural heritage by CAs and others. There have also been some high profile issues such as the Walkerton tragedy and the Oak Ridges Moraine development issue. Our recent experience is that the public really does not appreciate that a *Natural Hazard Policy* can't be used to protect an entire river valley system. If the public are thinking in a systems way, what is our excuse? Locally, this has precipitated a review of our urban valley lands management strategy so that important pieces don't fall between the cracks of natural hazard and natural heritage policy.

The present difficulty is that provincial policy is "locked in" and although it is up for a five-year review, the update will probably not fully respond to the rapidly changing public expectation that natural heritage be protected regardless of provincial or local signifi-

cance. It is acknowledged that the municipalities currently have the right to go beyond the minimum of provincial policy, and many have, but in many of these cases, the municipalities are required to justify why they go beyond the minimum; and this can lead to costly processes before the Ontario Municipal Board (OMB) with the risk that the OMB will opt for the Provincial minimum. To illustrate this issue, we refer to the City of London example. In 1996 the City of London Council approved a new *Official Plan* which was regarded as meeting, and even exceeding, the minimum requirements of the *Provincial Policy Statement (PPS)* in regard to natural heritage protection. Since the Council approved plan, 177 ha of land designated as Environmental Review in the 1996 OPA were subsequently confirmed and re-designated as Open Space, while 202 ha were re-designated for other land uses. This re-designation from Environmental Review to other uses represents a loss of 12% of the natural heritage area identified in the Council approved OP. 9.5% of the 12% loss can be directly attributed to the OMB decision and this loss includes cultural habitats, tableland woodlands and some swamp forests.

In addition, municipalities are always concerned with the concept of a "level playing field." If a municipality's natural heritage protection requirements are strict, or their requirements for studies are high, they may be vulnerable to lower land values and lesser standards in other municipalities. This could become a significant issue as municipalities become more and more reliant on local property taxes to pay for programs that used to be paid by provincial governments. The PPS can serve as the "great equalizer" for the playing field but it cannot serve this function unless it can be responsive in terms of timing and action, to the changing public sentiment.

Our hope is to move from the patch protection approach which is allowed (or even promoted) in the PPS to more of a systems protection approach. We feel that the protection of the system will give needed consideration to the "tea cups" and the lower profile "shelf." There can also be significant savings with this approach in terms of reducing staff time and costs for reviewing EISs and related matters because it is a much more objective approach than the subjective biological science in arguing ecosystem value. This may sound radical but the same approach has been applied to filling in flood plain areas by CAs since the early 1960s. We have successfully argued that while the impact of a single application may be difficult to demonstrate within the limits of our hydrologic modelling capability, the cumulative impact is measurable and significant.

It is important to remember that natural heritage protection under the PPS is not a CA but a municipal mandate. However, CAs have the ability to negotiate a role with the local municipalities where the municipality may lack the expertise or the volume of activity to justify having the expertise in-house. The Authorities pursue these opportunities since they generally have developed natural heritage expertise in the course of dealing with their watershed-based natural heritage planning needs. It is recognized that natural heritage protection does not have to be watershed based but it can be logically placed in a watershed planning framework using other considerations. It is interesting to note that the five CAs whose jurisdiction coincides with the County of Middlesex, recently collaborated on a Natural Heritage Plan for the County, based on the County's jurisdiction, thereby making their collective expertise available while ensuring a consistent approach to natural heritage protection throughout the County. This will also foster a consistent approach

among the adjoining watershed jurisdictions.

The recommendations of Advisory Committee on Source Water Protection speak to source water protection planning on a watershed basis. While this effort is intended to focus on existing and potential sources of drinking water, the economic and human health implications of source protection planning and implementation will drive comprehensive watershed planning to a new level of sophistication with much greater requirements for science. Economic considerations will be extremely important, and it will be advantageous, even critical to make the case for natural heritage protection in the context of its role in enhancing water quantity and quality. This seems to me to be an area which is ripe for scientific investigation.

In summary, we must:

- recognize that the public expectation for natural heritage protection is increasing rapidly;
- realize that responding to the changing public expectation provides an opportunity to move toward a systems approach for natural heritage protection;
- understand that in order to move toward a systems approach, we have to move beyond the existing policy framework which is effective at protecting patches rather than systems;
- capitalize on the imminent effort in watershed planning, which will result from the source water protection planning framework, to fully account for the contribution of natural heritage to watershed planning context; and,
- persuade municipal and other levels of government to view natural heritage planning in the same way that they plan for other critical infrastructure components.

References

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