

The Ottawa River Institute (ORI) is an incorporated, charitable organization with a mission to foster sustainable communities and ecological integrity in the Ottawa River Watershed (www.ottawariverinstitute.ca).

Most of our activities have taken place in Renfrew County. The County's geographic information system lists 35 provincially significant wetlands (PSWs). ORI has developed a Renfrew County Nature Notebook showing their locations (<http://www.naturenotebook.ca/parks-and-protected-areas/wetlands>) and providing brief descriptions based on information from the Ministry of Natural Resources. ORI has organized paddling trips with visits to some of the PSWs (e.g., Bonnechere Rivermouth, Snake River Marsh, Wilber Lake), has assisted with water quality research in several PSWs (Cobden Marsh, Lake Dore, Mink Creek, Snake River Marsh), and has featured PSWs (e.g., the Sherwood Marsh) in our *Nature in Your Neighbourhood Guide to the Bonnechere River Watershed* (<http://www.ottawariverinstitute.ca/our-projects/nature-in-your-neighbourhood>). Our "Watershed Ways" columns (<http://www.ottawariverinstitute.ca/watershed-ways>) have dealt with topics related to wetlands and the ecosystem services they provide.

ORI is an active partner in research on the Muskrat River Watershed. The Muskrat River discharges into the Ottawa River in Pembroke, Ontario. Its upper watershed is in the Canadian Shield (including portions of Algonquin Park). Its lower elevations include agricultural lands within the former basin of the Champlain Sea near Muskrat Lake in Cobden, Ontario.

Water quality research led by Algonquin College with participation of the provincial Agriculture, Environment and Natural Resources ministries indicates that drainage and channelization projects under the provincial *Drainage Act* are likely major contributors to water quality impairment in the Muskrat River Watershed. Drainage works mostly occurred in the Snake River portion of the Watershed (the Snake River is the main tributary of the Muskrat River and flows into Muskrat Lake). Both the Snake River and Muskrat Lake have extremely high phosphorus and nitrogen levels. Muskrat Lake has annual blooms of toxin-producing blue-green algae.

The former Upper Osceola Marsh, located on the Snake River just upstream from Osceola, has been subject to ditching over the past 100+ years, creating some of Renfrew County's most valuable farmlands. Significant drainage activities took place under the *Drainage Act* in the 1960s and 1970s when a natural rock barrier creating the Marsh was blasted out, and the river itself was channelized and dredged.

Today, the banks of the Snake River are unstable and subject to serious erosion. Bank slumping occurs annually when water levels in the river recede after spring snow-melt. Large blocks of saturated clays fall into the river, and subsequently act as ongoing sources of sediment and nutrients. However, under the *Drainage Act*, the local municipality is obligated to perpetuate this situation so as to conform to the design of the drainage works specified in engineers' reports.

Downstream from Osceola, the Snake River Marsh (a PSW, portions of which are in a provincial conservation reserve) filters out much of the sediment coming from the altered portions of the Snake River further upstream, but much of the phosphorus passes through to Muskrat Lake.

Had provincial agencies fully appreciated the consequences of draining the Upper Osceola Marsh and channelizing the Snake River in the 1960s and 1970s, the engineers' reports would undoubtedly have been modified to address erosion and water quality impairment. That being said, there is now an opportunity to mitigate the ongoing damage through measures such as limited wetland restoration and bank stabilization. Provincial leadership and action will be required for this to happen – this is beyond the capacity of local municipalities or citizens' groups.

Drawing upon our overall knowledge and experiences with wetlands, and the specific case of the Snake River wetlands, ORI wishes to offer the following comments on *Wetland Conservation in Ontario: A Discussion Paper*:

According to the *Discussion Paper*, “Wetland policy in Ontario includes over 20 different pieces of legislation.” Therefore, when “Exploring and/or prioritizing opportunities to strengthen wetland policy,” Ontario should clearly identify opportunities to amend legislation so as to strengthen wetland conservation.

Provisions of the *Drainage Act* that supersede protection of provincially significant wetlands should be amended.

Many PSWs are located on crown lands or along navigable waters and serve as important recreational resources for fishermen, paddlers, naturalists, etc. Ontario should maintain a publicly accessible website, with maps, describing and giving locations of all PSWs.

The *Discussion Paper* mentions wetland ecosystem services only in the context of greater public awareness. It ignores economic incentives to maintain these services, such as property tax breaks for landowners who own portions of PSWs, or incentives for farmers to enhance wetland condition by fencing out cattle or creating buffer zones. Payments for ecosystem services are an extremely important policy tool used in many jurisdictions around the world and warrant full consideration in Ontario in a wetland policy context.

Tax-strapped rural municipalities provide wetland ecosystem services (flood control, recreation, water quality maintenance) that benefit wealthier downstream urban municipalities. Hence, payments for ecosystem services should be addressed at a provincial level, and not downloaded to municipal governments. Provincial wetland policy should address this issue.

Wetland restoration goes hand-in-hand with wetland conservation. The *Discussion Paper* refers to wetland restoration in many places, e.g., on page 14 it states:

One example of a successful initiative conducted in partnership with private landowners is the Wetland Drain Restoration Project which uses the *Drainage Act* to modify existing drains to restore wetlands and their associated functions and benefits. One of the benefits of this program is the reduced cost in drain maintenance along with gains in the quantity and quality of associated wetlands.

Given the scale of wetland loss in southern Ontario, many opportunities exist to identify such “win-win” situations. Wetland restoration would be a critical component of “no net loss” of wetlands and should be specifically addressed in provincial wetland policy.

The three proposed “pillars” of the Strategic Plan (Strengthen Policy, Encourage Partnerships, Improve Knowledge) do not adequately cover actions to conserve and restore wetlands. A fourth pillar entitled “Enable Action” should be fleshed out within provincial wetland policy.