Ducks Unlimited Canada
Conserving Canada's Wetlands

7 November 2011

Manitoba Water Stewardship
Watershed, Planning and Programs

Ducks Unlimited Canada (DUC) would like to thank the Intermountain (IMCD) and Turtle River Watershed (TRWCD) Conservation Districts for the opportunity to contribute in the development of the Dauphin Lake Watershed Integrated Watershed Management Plan. Looking at the results on the IMCD website from public meetings held in March 2011, it is apparent your stakeholders are committed to developing a watershed management plan that equally integrates the needs of the community and that of the environment.

Drainage into Dauphin Lake from Duck Mountain Provincial Park and Riding Mountain National Park is understandably a major concern to many of the stakeholders attending the public meetings. For DUC, drainage is also a concern, though our specific concern relates to the increasing loss of wetlands and the ecosystem functions associated with these losses as a result of drainage. It is encouraging to see that your stakeholders are likewise concerned about wetlands, habitat protection, downstream effects and wetland functions such as water quality, nutrient-loading, sediment control and flood damage reduction.

Surface Water Quality: Wetlands naturally function to collect and store rain or snowmelt from surrounding uplands. On average, draining one acre of wetland also drains four additional acres of adjacent upland in the process. Our research has shown that we lose 15 acres of wetlands every single day in southwest Manitoba which means that we are increasing the drainage area contributing to downstream flows by 75 acres every day - that's over 110 square kilometres annually. During wet periods, the additional volume of drained water can severely impact downstream residents and damage public infrastructure, potentially resulting in significant flood compensation and infrastructure repair/maintenance costs. Protecting wetlands will ensure the storage of flood waters, thereby reducing downstream impacts by helping to control the flow. During dry periods, the water stored in wetlands provides the land with the resiliency to be able to withstand the ecological stresses of drought, and Manitoba is forecasted to have many more extreme, both wet and dry, weather events over the next few decades due to the effects of climate change. Protecting wetlands is both economically and ecologically the best strategy to mitigate against damage and adapt to changing environmental conditions.

Nutrient-loading & Sediment Control: One of the most beneficial functions of wetlands is their ability to filter sediments and nutrients from the water as it passes slowly through the system. Draining a wetland forces the water flowing through it to move too quickly for the natural filtering functions to occur resulting in the rapid delivery of all the nutrients and sediments into downstream waterways and drinking water sources. Our research has produced three alarming findings. The first is that drained wetlands increase downstream sediment loading by 62% annually causing considerable problems for lakes like Dauphin Lake. The second is that wetland drainage in southwest Manitoba contributes an additional 6.2 tonnes of phosphorus (equivalent to 30,000 7-kg bags of commercial lawn fertilizer) every year to downstream flows. And the third is that 93% of the total annual phosphorus discharged from the agricultural landscape is in soluble form in surface water flow while the ground is still frozen. Fully functioning wetlands collect most of this surface flow and filter

out the phosphorus (and nitrogen) before slowly releasing the filtered water. Because these nutrients are in dissolved form, even drawing down the level of a wetland allows these nutrients to flow directly downstream and contribute to our water quality issues such as algae blooms on many of the province's lakes, including Dauphin Lake.

Flood Damage Reduction: Flooding and the resulting flood damage are not solely due to extreme soil moisture and weather. Flood damage is also a function of the scale and magnitude of human development, in particular, wetland drainage increases the amount and speed of water movement downstream. Our research has shown that wetland drainage increases peak discharge by 37% and total flow by 62%. Wetland drainage increases flood damage in two ways. First, when wetlands are drained, the surrounding watershed's ability to store water is reduced or completely eliminated. Because wetlands hold and then slowly release water, they reduce and delay peak water flows which helps lessen the impacts of extreme weather events. The second way that wetland drainage increases flood damage is that when a ditch is dug to drain a wetland it doesn't just drain the wetland, it also drains the land that surrounds the wetland. On average, for every acre of wetland drained four additional acres of surround lands is also drained. This exponential increase in the amount of water moving downstream and the speed at which this water travels, only makes flooding and flood damage that much worse.

Societal Impacts: DUC understands that large capital costs, tight margins, high levels of debt and uncertain crop prices make it difficult for producers to be in a position to focus on long-term sustainability. Many of the ecological goods and services that benefit society-at-large are produced on private lands at the landowner's cost. This market distortion is compounded by disincentives (such as property taxes) to conserve natural areas. We also know that when wetlands are drained or degraded, the financial costs incurred by society to replace the ecological goods and services previously provided by wetlands are significant and include: increased water treatment costs; shortages in water supplies during droughts; increased flooding during wet years; decreased property value due to degraded environmental and aesthetic qualities; decreased biodiversity; and decreased revenues from tourism activities associated with healthy ecosystems. These annual replacement costs are often difficult to quantify but occur nonetheless.

As the responses at your public meetings demonstrate, Manitobans are concerned about their water resources. DUC and the University of Alberta conducted a survey recently that showed that the more survey respondents learned about wetland loss, the more willing they were to support and invest in wetland protection and restoration. Those polled said that water quality is the most important reason for an ecological goods and services program and that a) offering incentives to protect wetlands is an important investment in the future, b) it is little to pay for the benefits received and c) it is the right thing to do. The cost of the wetlands lost in southwest Manitoba has been estimated at $15 million per year and that amount is increasing annually as wetland loss continues in the region. DUC believes that Manitobans can no longer economically, or ecologically afford to do nothing.

DUC believes that the conservation districts are uniquely positioned, because of the collaborative nature of their operations, to find innovative solutions to combat drainage-related wetland losses. Including "no net loss" of wetlands, or even "no net loss of wetland functions", as an objective in your integrated watershed management plan could enable your conservation district to achieve significant gains in all of the watershed value categories identified by your stakeholders. I realize the desirable instrument for 'land use change' is through incentives. As one of the leaders of conservation delivery in Manitoba, the CDs experience firsthand the realities of budget constraints and the need to target expenditures. As such, it may be a challenge to be able to provide sufficient incentives to protect and restore all the wetlands in their watersheds necessary to achieve the stated goals. Subsequently, CDs may need to consider "tougher" decisions than perhaps they have

in the past. The need for properly enforced wetland protection regulations was frequently brought up at the wetland public consultations held around the province by the Manitoba Water Council during the summer of 2010. While the provincial government is responsible to ensure that adequate regulations are in place and are enforced to protect public interests, political will is more easily galvanized with strong local support. Provincial delivery agents will likely be in a better position to make the 'tougher' decisions that will ultimately contribute to the stated local watershed goals if support for appropriate regulatory protection of wetlands is clearly noted in the plan.

Saving wetlands will result in: increased protection against both flooding and drought, decreased nutrient and sediment loading in our rivers and lakes, increased groundwater recharge potential, and improved biological diversity – all of which are benefits that would address many of the concerns raised in your consultation process.

Thank you again for the opportunity to identify wetland drainage as the issue of most concern to our organization and we look forward to reviewing the Dauphin Lake Watershed Integrated Watershed Management Plan when it is completed. I have included with this letter some factsheets from some of our recent research that the Management Team might find useful during the next phase of the planning process.

If you should have any questions or would like more information, please do not hesitate to contact me.

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