Wetlands Working:
Flood Mitigation in the Bow River Basin

The Government of Alberta can increase water storage capacity, lower flood risk and provide many other ecosystem benefits for the residents of southern Alberta by setting clear targets and investing in wetland conservation and restoration in the Bow River and South Saskatchewan River Basins. These targets can be achieved through partnerships between the Government of Alberta, non-governmental organizations (such as Ducks Unlimited Canada), industries and stakeholders throughout the province.

Why Use Wetlands as a Form of Flood Mitigation?

Wetlands are an integral part of any flood mitigation strategy, as they have the ability to store water and slow the release of water into surrounding streams and rivers, thereby reducing flood heights and volumes. Wetland conservation and restoration are **highly cost effective** measures that should be considered as sound investments to decrease flooding in the Bow River Basin. Halting wetland loss on the landscape provides the highest return on investment, as it dramatically reduces the need for new engineered flood mitigation infrastructure, like dry dams, which also require long term mainenance costs.

Beyond that, wetlands are excellent at multitasking. They provide many other ecosystem services that contribute to human health and economic well being like filtering and purifying water, storing carbon, replenishing groundwater, reducing erosion, providing wildlife habitat and providing recreational opportunities. Other types of flood control are not able to deliver the additional benefits that are provided by wetlands.

Wetland Resoration Costs:
$3.5 - $6.7/ m³

Dry Dam Costs:
$1.4 - $7/ m³ plus maintenance

Wetlands are Cost Effective

Wetlands are a cost effective form of flood mitigation, and are on par with costs per unit of water storage when compared to engineered solutions such as dry dams, which don't come with all the other added benefits of wetlands. In addition, wetlands do not require the ongoing maintenance costs that would be required for engineered solutions over time, and do not have the associated environmental risks.

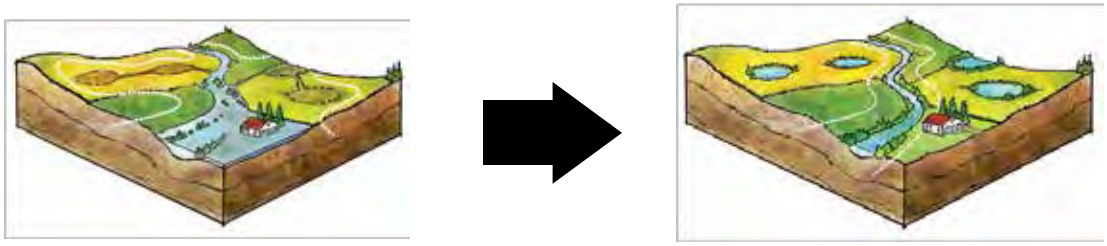
Area of Restored Wetlands (ha)	Total Storage Created (m^3)	Range of Per Unit Cost of Storage ($/m³)	
		Low	High
17,544 (~2%)	50,000,000	3.5	6.7
26,316 (~3%)	75,000,000	3.5	6.7
35,088 (~4%)	100,000,000	3.5	6.7
70,175 (~8%)	200,000,000	3.5	6.7
175,439 (~20%)	500,000,000	3.5	6.7

Ducks Unlimited Canada
Conserving Canada's Wetlands

Wetlands are a Part of the Flood Mitigation Solution

There are lots of ways for the Government of Alberta to put wetlands to work for flood mitigation.

- Halt the continued loss of existing wetlands in the White Zone of Alberta through the application and enforcement of existing legislative tools.
- Utilize the new Alberta Wetland Policy and its accompanying implementation phase as a means to achieve Alberta's flood mitigation objectives (as well as other provincial objectives) by halting ongoing losses and by setting and achieving wetland restoration goals utilizing the tools provided by the policy.
- Incorporate explicit and accountable objectives in the final South Saskatchewan Regional Plan and its accompanying management frameworks consisting of no further loss of existing natural wetlands (which should be embedded in the final plan as a limit or threshold) and achieving a level of net restoration (which should be embedded in the final plan as a management objective/target).
- Ensure the majority of funds derived from wetland loss via the mitigation process are directed to wetland restoration rather than non-restorative options in order to achieve desired outcomes.
- Ensure that wetland conservation and restoration goals are measured, monitored and reported on regularly to ensure success.



Opportunities for Wetland Conservation & Restoration

The White Zone of Alberta (which contains the Bow River and South Saskatchewan River Basins) has currently lost approximately 64% of its wetlands due to development, and this is equivalent to 379,000,000 m^3 of water storage (or nearly 21 times the volume of water in the Glenmore Reservoir). Wetland loss continues at approximately 0.3%-0.5% per year. This represents a significant loss in water storage, and has contributed to the flooding in the Bow River and South Saskatchewan River Basins. Conservation of existing wetlands in these basins is crucial to lowering flood risk by retaining the existing water storage capacity on the landscape. If wetland loss continues, the benefits from other flood mitigation work will be lost over time.

Restoration of only 2% of previously lost wetlands would be comparable to providing the storage capacity found in nearly three Glenmore Reservoirs!

To read a full report, Wetland Conservation and Restoration as Flood Mitigation Tools in the Bow River Basin, contact Tracy Scott at t_scott@ducks.ca.