



March 12, 2010

Backgrounder

Making the Connection: Water and Land in Alberta

Why is it urgent to address water and land in Alberta now?

- Alberta is feeling the effects of climate change and water supplies are beginning to dwindle as predicted. 2010 is shaping up to be Alberta's second summer of drought in a row, and the seventh water-stressed year in the last decade. For more information, see *An impending water crisis in Canada's western prairie provinces* by David Schindler and W.F. Donahue. (<http://www.pnas.org/content/103/19/7210.full>) and Alberta Environment's latest drought report ([www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/all/dis13027](http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/dis13027))
- Recent budget cuts could cripple our ability to responsibly manage Alberta's water and other natural resources. Sustainable Resource Development's budget dropped by \$42 million, and Alberta Environment saw a budget cut of approximately \$16 million, which means less frequent water monitoring in some areas.
- While the Land-Use Framework and related regional planning processes look good on paper, it will take years to develop and the Alberta government has not provided sufficient profile to the challenging choices ahead if the province is serious about land-use planning.

Protecting Alberta's watersheds can save Albertans billions of dollars

- *Making the Connection* demonstrates that Alberta's watersheds are valuable economic assets (p. 8) that must be managed much more carefully if they are to maintain their value in the face of increasing populations and development (pp. 37-44).
- Together Alberta's forests, wetlands, riparian areas, and groundwater recharge zones provide Albertans with millions of dollars of ecosystem goods and services every year. Forests, for instance, provide higher water quality, a more natural flow regime, and healthier aquatic ecosystems. Wetlands are another great example of a watershed component that provides valuable goods and services (pp.8-18).
- Although no comprehensive studies have been done to value Alberta's watersheds, a study of southern Manitoba's Lake Winnipeg watersheds, which are similar to those in southern Alberta, estimated the value of the ecosystem services provided by forests – including climate regulation, pest control by birds, habitat, food production, recreation, and water supply services – are as much as \$677.54 per hectare annually. The same study found that the value of ecosystem services provided by wetlands is \$939 to \$1567.47 per hectare per year (pp. 11,13).
- In Alberta, 90,000 square kilometres of forests safeguard the upper reaches of the Athabasca and Saskatchewan River systems, and more than 100,000 square kilometres of wetlands store and filter water over 18 per cent of the province (pp. 10,13).
- Kept intact and healthy, New York City politicians saved taxpayers \$6 billion by investing approximately one billion dollars in 1997 to protect the 32,000-hectare Catskills-Delaware watershed. This investment ensures that New Yorkers have safe, clean drinking water while precluding the need to build two new water filtration plants (p. 9).

Alberta's watersheds are under threat

Making the Connection makes it clear that the cumulative effects of various types of human activities can severely impact water quality and quantity.

- Approximately 1.6 million hectares of Alberta's forests already have been harvested since the 1950s, but another 8.4 million hectares are predicted to be cut by 2105 (p. 21).
- The total footprint of the energy sector will more than double to 1.4 million hectares by 2105, likely amplifying current impacts on water and watershed functioning (p. 23).
- Oil sands mining is predicted to forever alter 134,079 hectares of wetlands and boreal forest, and *in situ* developments will use large quantities of surface and groundwater (p. 22).
- A total of 200,000 kilometres of roads have been constructed over the last century in Alberta. Approximately 400,000 kilometres of seismic lines are visible in the province and 412,555 kilometres of pipelines are networked across Alberta. Based on projected infrastructure needs by forestry, energy, and rural residential trajectories, the road network is likely to quadruple over the next century (p. 23).
- For example, the cumulative effects of agriculture, septic fields, and growing urban development on the southwestern edge of Calgary are contributing to the decline of water quality in the Elbow River watershed, which provides drinking water for more than 40 percent of Calgarians (p. 37).

Protecting the land to protect Alberta's water

Currently, Alberta does not adequately incorporate the value and importance of water and watersheds into the decision-making processes that affect them (p. 30). If we are to head off a looming water crisis in Alberta, it is imperative that decision makers incorporate the value and importance of water into the Land-Use Framework planning processes that largely will determine the future of all our natural resources, including water (p. 45).

Recommendations from Making the Connection:

- Adopt indicators that are specifically geared to watershed protection.
- Ensure that in every regional plan, decision makers adopt a threshold for the amount of land in a given watershed that remains in a natural state.
- Ensure that in every regional plan, decision makers adopt a threshold for road density. Example listed on page 42.
- Develop a framework of source water protection at the macro-level.
- Adopt market-based instruments that are designed to help reach objectives set for watershed health.

About Water Matters

Citizens concerned about watershed protection in Alberta founded Water Matters in 2007. Water Matters was founded to provide strong leadership from an independent non-government organization with expertise and resources to address province-wide watershed issues. This leadership is vital as Alberta charts its course on water resources management. For more information visit: www.water-matters.org

About Making the Connection – Downloads, Responsibility and Support

Making the Connection: Water and Land in Alberta is available on Water Matters' website at <http://www.water-matters.org/pub/making-the-connection>. Water Matters is solely responsible for the opinions and any errors contained in the document. The document was made possible with the generous support of the Alberta Real Estate Association, TD Friends of the Environment Foundation, the Alberta Conservation Association.

