

# High Water, Different Cause<sup>1</sup>

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The flood in the Red River valley the spring of 2009 was not well forecast. In large measure, many of the problems can be explained by the unusual winter, especially north of Winnipeg, where frozen culverts and ice jams caused havoc. However, this does not explain the excessive flooding that was not predicted south to the border and beyond.

Clearly, it's time to revisit the models used to predict flooding, and consider whether a broader approach than engineering works might be needed.

On the first point, the prediction models do not adequately take into account the impact of thousands of minor field drainage projects that have occurred and continue to occur on an annual basis within the watershed. The cause of the problem may be human induced, but it's not due to global warming: put simply, water is getting into the major drains and rivers faster than ever before!

In the 1960's, Manitoba entered into a comprehensive program of drainage ditches, particularly within the Red River watershed. These improved the removal of water from the flat area of the valley during spring runoff and heavy rainfall, adding to cultivated land, improving crop conditions and reducing localized flooding in towns and villages.

Since that time, many farmers, in their quest to stay viable, have found it necessary to implement on-farm drainage works. These projects are necessary from the point of view of the individual farmer, as they need to take every possible measure to be able to stay in business: this means draining land that might otherwise be small sloughs or too wet to seed in the early spring. Such drainage allows them to cultivate more acres and get seed in the soil early, giving a greater chance of a good crop. The effect of these individual decisions is to eliminate natural wetlands that previously held water back in the spring and after heavy rains, thereby slowing or preventing its movement into the larger drainage and

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river systems. As a result, more water enters the rivers faster: no wonder the models are wrong...they don't take these small field drainage works into account, because there's no record of their existence other than after the fact in the form of higher water flows than expected.

There are losses in public benefits involved in increased on-farm drainage that are seldom taken into account: wildlife habitat, soil conservation and aquifer recharging being the most obvious. With more intensive use of land, ecological complexity becomes a major factor to be considered. In the area north of Souris, it used to be considered normal for about 135-145 acres being available for cultivation for each quarter section: that meant the remaining 15-25 acres constituted wildlife habitat, native hay land and water retention basins. Obviously, in the Red River flatlands, this ratio would have been much smaller. However, planting would have been delayed in low areas a week or so due to wet ground, so rather than go around these areas and seed them later, a practice much more difficult with today's larger machinery, farmers found it to be in their best interest to improve the drainage...and in many years it worked. This cannot be said for every year. Farmers in North and South Dakota and Minnesota do the same thing for the same reasons.

The small areas of lands that could be maintained for water retention/wildlife habitat, etc., provide no return to the farmer under the current market system. In effect, farmers produce a public good free of charge. Governments spend millions on improved drainage works to address the high water, yet seem to miss the point that by recognising the benefits farmers could provide by retaining wetlands they could save a fortune. All that has to happen is for governments to provide compensation to farmers sufficient to offset the benefits they would otherwise receive from cropping the land. A pilot project underway in the Rural Municipality of Blanchard has shown this approach to be practical. Their implementation of ALUS (Alternative Land Use Services) results in farmers being paid for the public good they provide in the form of wetland protection, thus offsetting the need for drainage.

It would be interesting indeed to calculate the impact of this year's flood with the drainage infrastructure of 1950. Under such circumstances, it is quite likely that the magnitude of damage of the 2009 flood would have been much less.

Would it not be cheaper and more positive to compensate farmers for the public good they could provide by maintaining wetlands than to continue to build drainage and flood control works. Experience has amply demonstrated that an engineering approach alone cannot cope with the increased flow from thousands of farm drainage efforts put in place because the extra production is the only way farm families can keep up with ever increasing expenses over which they have no control.

Maybe Agriculture, Food and Rural Initiatives as a department is too narrow a focus. Separating the best interests of rural residents and areas from urban interests no longer adequately reflects current reality. The flood of 2009, along with the recent floods in the past 15 years has shown that it is time to take an integrated rural\urban perspective in order to develop policies and practices that are economically, socially and environmentally in everyone's best interests.