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2009 Red River Valley Flood: Impact on Agriculture

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- . not available for any reference period
- .. not available for a specific reference period
- ... not applicable
- 0 true zero or a value rounded to zero
- 0^s value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
- ^P preliminary
- ^r revised
- X suppressed to meet the confidentiality requirements of the *Statistics Act*
- ^E use with caution
- F too unreliable to be published
- * significantly different from reference category ($p < 0.05$)

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After the [April 23, 2009 release](#), the Red River flood continued its expansion in terms of agricultural area affected. After reaching 46,800 hectares of flooded agricultural land on April 14, the amount of flooded land was still expanding to reach 86,400 hectares on April 24, 2009. After an increase of 80% of the flooded land between April 14 and 18, the water level remained relatively stable until April 24, after which a decrease was observed to 64,600 hectares on April 28 and to 38,500 hectares on May 5.

The first area affected by the flood on March 31 was still under water on May 5, which indicates that the flooded area did not move from one region to another, but only increased in size. On May 5, some of the land around the municipality of Emerson, along the Canada – United States border, had been under water for at least 36 consecutive days.

The variation of the flooded area between April 4 and May 5, 2009 is shown on Figure 1. On April 24, the flooded area was at 61% of the 142,000 hectares of agricultural land that was affected by the Red River flood in 1997.

From the data of Table 1, the estimated number of farmers affected went from 124 to 235 from April 14 to April 18, 2009, where close to 350 farmers were affected in 1997.¹

Table 1
Area of flooded agricultural land and number of farmers affected between March 31 and May 5, 2009 and comparison with the 1997 flood

Standard table symbols

| Date | Estimate of flooded agricultural land (hectares) | Estimate of number of farmers affected |
|-------------|--------------------------------------------------|----------------------------------------|
| 2009 | | |
| March 31 | 1,300 | x |

| | | |
|-------------|---------|-----|
| April 4 | 4,200 | x |
| April 8 | 12,700 | 39 |
| April 11 | 26,900 | 73 |
| April 14 | 46,800 | 124 |
| April 18 | 84,100 | 235 |
| April 21 | 79,800 | 195 |
| April 24 | 86,400 | 225 |
| April 28 | 64,600 | 138 |
| May 5 | 38,500 | 99 |
| 1997 | | |
| May 8 | 141,900 | 346 |

Chart 1 allows following the rate of the progression of the flood between March 31 and May 5, 2009. The progression was the most important between April 8 and April 18, after which stable conditions were observed for a period of about one week, followed by a decrease after April 24.

The acquisition of radar imagery from the Canadian satellite Radarsat-2, launched in December 2007, allowed the delineation of the flooded areas. This type of sensor allows image acquisition at any time (day or night), and in all weather conditions.

Note

1. 2006 Census of Agriculture data was used to compare the number of farmers affected by the 1997 and 2006 floods to allow direct comparison between the two years. 1996 Census data would provide better estimates for the 1997 flood, but would not allow this direct comparison.



Figure 1

Map showing the progression of the flooded area of the Red River between April 4 and May 5, 2009, and comparison with the 1997 flood

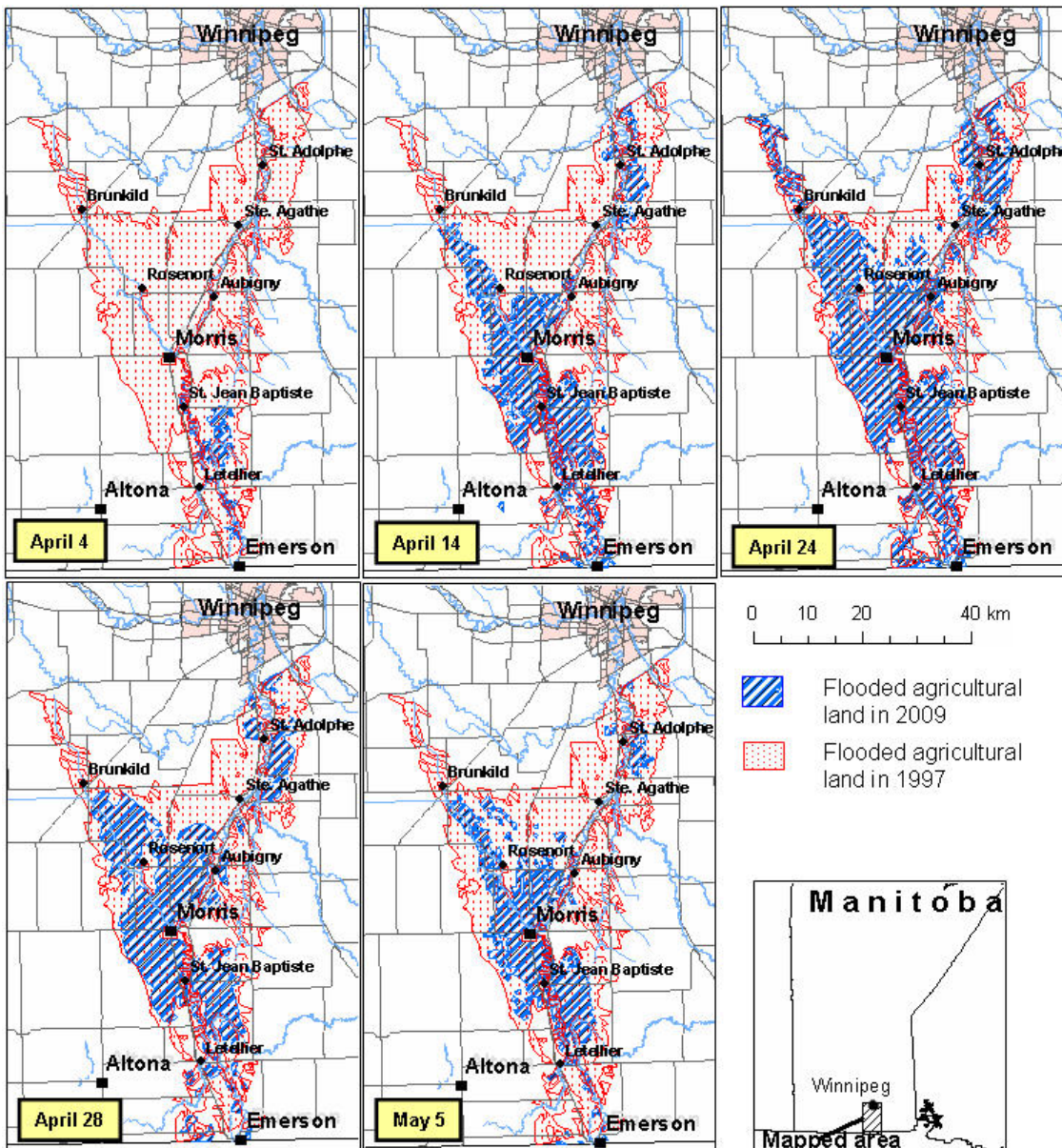
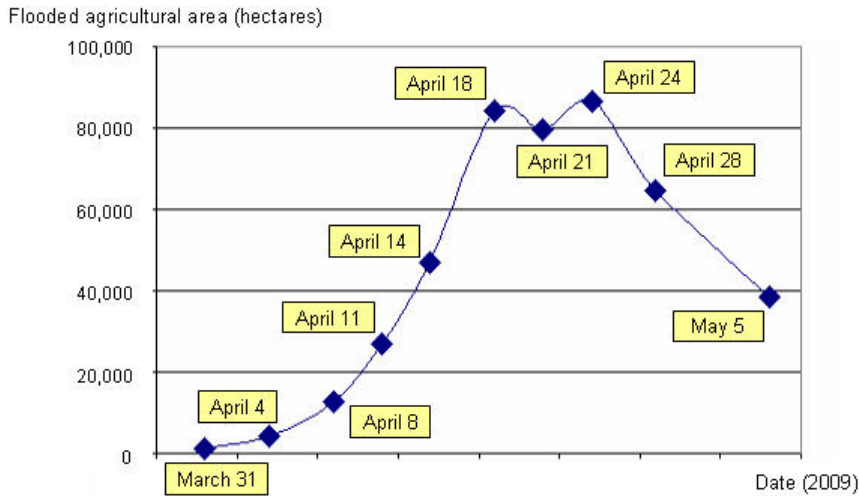


Figure source: Statistics Canada, 2009, "2009 Red River Valley Flood: Impact on Agriculture", catalogue number 18-504-X.



Chart 1

Variation of the flooded agriculture land by the Red River between March 31 and May 5, 2009



Source: Radarsat-2 images provided courtesy of the Canadian Space Agency (CSA), Canada Centre for Remote Sensing, Natural Resources Canada and MacDonald Dettwiler and Associates Ltd. (MDA).

Chart source: Statistics Canada, 2009, "2009 Red River Valley Flood: Impact on Agriculture", catalogue number 18-504-X.