Global Institute for Water Security
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Water Security for the Prairies

Saskatchewan River Basin
Saskatoon Summer Precipitation 1900-2010

Hydrologic year (Oct 1-Sept 30)
Precipitation [mm]

Summer (April-Sept)

Courtesy of Garth van der Kamp
Current flooding in Manitoba

Farmland in southern Manitoba, along the Red River valley, is covered with water.

Photo Credit: Josh Arason, Global News
Prairie Drought of 1999-2004
Most Expensive Natural Disaster in Canadian History

- $5.8 billion decline in GDP 2001-2002
- $3.6 billion drop in agricultural production, 2001-2002
- 41,000 jobs lost
- BC, Alberta forest fires
- Saskatchewan dust storms
Water resources

South Saskatchewan River - natural and actual flow leaving Alberta

Natural flow: 12% decline over 90 years; Actual flow: 15% decline over 30 years
Water quality

Lake Winnipeg algal blooms covered 15,000 km² in 2007

Photo: Reuters

Image: Greenpeace Canada
The CERC at U of S

- 65 Faculty
- 5 Canada Research Chairs
- Partnership with Environment Canada
- $30 million investment
- Global Institute for Water Security
The CERC programme themes:

a) *Climate change and water security*
   
   Canadian exemplar: Saskatchewan River

b) *Land-water management and environmental change*
   
   Canadian exemplar: South Saskatchewan River

c) *Sustainable development of natural resources*
   
   Canadian exemplar: oil sands development, remediation and risk assessment
Saskatchewan River Basin

Location of research sites within Saskatchewan River basin
Marmot Creek Research Basin
Smith Creek – effects of agricultural drainage?
Global Institute for Water Security

• Approved by University 17 March 2011
• Aims to be a world-leading centre of excellence:
  o providing a framework for interdisciplinary collaboration, across the University, with Environment Canada and other partners
  o supporting the development of a broad water security research agenda, including
    ▪ Policy, Governance and Social Science
    ▪ Water and Health
Socio-hydrology
- understanding and managing complex human-natural systems

Water managers, Decision Center for a Desert City, Phoenix Arizona
Water means the WORLD to Us...

Global Institute for Water Security

www.usask.ca/water