

Building Resilient and Water Secure Prairie Communities

PROJECT SUMMARY

The overarching goal of Prairie Water is to enhance the resilience of Prairie communities through sustainable water management. The program focuses on improving knowledge of surface and groundwater availability, aquatic ecosystem health, economics of on-farm water management, and water governance.

CONTACT OR RESEARCH TEAM:

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Prairie Water

Progress

- Basin classification system
- Virtual basin framework for modelling water budget components, nutrient loads and biodiversity.
- Mapped groundwater recharge rates in Alberta and Saskatchewan
- Prairie Hydrology Design and Analysis Product (PHyDAP)
- Analysis of agrochemical use and creation of an index of pesticide exposure
- Development and implementation of Experimental Decision Labs
- Three Faucet Framework

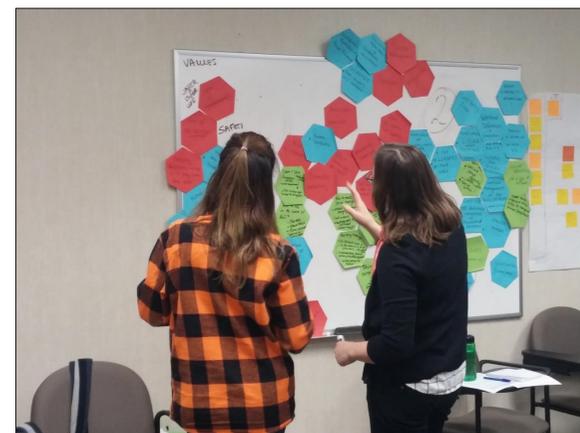


Results

- Each of the seven Canadian Prairie basin types responds differently to climate and wetland drainage
- There is no threshold below which drainage does not enhance streamflow and nutrient loads
- Deep groundwater is not well connected to the surface hydrologic cycle
- Land use is a strong predictor of phosphorus in pothole ponds
- Participatory modelling and mapping enhances social learning and reduces disaster risk
- There are divergent mental maps of prairie landscapes among different prairie communities

User Engagement

- Prairie Habitat Joint Venture webinar series
- Articles in The Conversation, Western Producer, Star Phoenix
- Synthesis statement on wetland drainage in the Canadian Water Resources Journal
- Presentations at meetings of provincial watershed and other associations
- Improved understanding of wetland management and conservation decisions via producer surveys
- Participation in the GWF Virtual Water Gallery
- Participation on the SK Agricultural Water Management committee



Outcomes and application uptake

- Virtual basin modelling water budget outputs used by the Water Security Agency of Saskatchewan Community Drought Risk Program
- The Lower Souris Watershed Association and Saskatchewan Ministry of Highways are beta testing PHyDAP
- Data Visualization Dashboard is in development with VisForce
- Wetland Conservation Costs Assessment Tool