Innovative surface water and nutrient management initiatives on-farm

Traditional surface water management schemes in the Prairie region involve networks of shallow surface drains and schemes to flood land temporarily, releasing it later when the drainage network can handle the volume. However, on some soil types this results in an increase in the losses of phosphorus from flooded soils.

There is increasing interest in the concept of storing water on the land to reduce flooding, reduce nutrient losses, and increase climate change resilience. Funding is available to support this practice through Growing Assurance Ecological Goods and Services Program (under Growing Forward 2, a Federal-Provincial initiative), and there is a need to ensure that water is stored in the right place, in the right way, and benefits the businesses storing it and those downstream. The long-term benefits of the Growing Assurance program that supports environmental goods and services and innovation on-farm are dependent on the success of the schemes it supports.

Manitoba Conservation Districts Association is sponsoring a multi-partner project to look that the benefits of this practice in Manitoba.

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Regional Site Network – Conservation Districts (CDs) have a network of sites across Manitoba where they have worked with landowners to develop water management schemes to reduce flooding, create wildlife habitat and improve water quality. This network will provide important information on the technical and socio-economic considerations related to design and management of these schemes. CD staff are also collecting soil, vegetation and water samples at some of these sites, the data from which will help researchers in this and other projects. (Fall 2013 – Spring 2017).

Management of Economic Risk – Dr Karl-Erich Lindenschmidt and his students from University of Saskatchewan will use computer simulations and risk assessment to consider the design, management and economics of drainage, water storage and irrigation, and how they might support climate change adaptation. (Spring 2014 – Spring 2016)

Runoff and nutrient exports in surface and subsurface drainage from agricultural fields – Dr Merrin Macrae and her students from University of Waterloo will use field measurements and observations to compare surface and subsurface drainage systems and their effectiveness at draining agricultural land. (Spring 2014 – Spring 2017)

Flooding tolerances in forages – Dr Doug Cattani and his students from University of Manitoba will study a range of forage species under flooded conditions in a controlled environment before field trials are run at one of the provincial diversification centres. They will be looking for the best options for producers flooding land to reduce run-off. (Spring 2014 – Fall 2016).