



**LAKE
WINNIPEG
FOUNDATION**

Past Recipients

2017 grant recipients

Village of St-Pierre Jolys

The Village of St-Pierre-Jolys expanded its sewage lagoon in 2017 with the installation of a natural wetland cell that uses plants to filter water and improve water quality. This treatment wetland is the first of its size in Manitoba, designed to service a population of over 2,300 people for the next 20 years in a way that is both sustainable and economical.

LWF's grant will fund interpretive signage to educate citizens about the function of this innovative treatment wetland and promote the value of water-quality improvement in the surrounding watershed.

Assiniboine River Basin Initiative

The Assiniboine River basin covers 162,000 square kilometres across Manitoba, North Dakota and Saskatchewan, and is home to over 1.5 million people (excluding the City of Winnipeg). Within this area, nine major cities, and multiple smaller towns and villages operate wastewater treatment systems - and each jurisdiction has operating guidelines in regard to the process and release of its effluent.

LWF's grant will be used to compile these guidelines into one document so that wastewater treatment facility operators and other stakeholders can easily access information on their downstream neighbours. The document can also be used as a resource by area communities when planning upgrades to their respective operating systems.

West Souris River Conservation District

With increased agricultural production and drainage, water-storage capacity on the landscape has been reduced, creating more frequent flooding events and more phosphorus loading to Lake Winnipeg.

The West Souris River Conservation District will use LWF's grant to hold consultation sessions with local producers about water storage in southwestern Manitoba to identify how beneficial management practices (BMPs) could be used to re-establish storage capacity in targeted areas and reduce phosphorus loading to nearby tributaries.

West Souris River Conservation District

Oak Lake is located in Southwest Manitoba and is commonly used for recreation and fishing. The lake is surrounded by agricultural land and two resort communities which are home to both seasonal and year-round residents, while the Oak Lake basin is one of Manitoba's Important Bird Areas.

LWF's grant will be used to develop a water-sampling program conducted by community volunteers and local students to evaluate and monitor water quality and watershed health. This program will operate as part of the Lake Winnipeg Community-Based Monitoring Network, using scientifically vetted protocols to generate data which can be used to measure phosphorus inputs to the lake due to agricultural activities and resort communities.

Little Saskatchewan River Conservation District

The residents at Kerr Lake (located south of Riding Mountain National Park between the Rural Municipalities of Rosedale and Clanwilliam-Erickson) have proactively contacted the Little Saskatchewan River Conservation District (LSRCD) to remedy water-quality concerns such as algae blooms.

LWF's grant will be used to implement a water-quality monitoring program with a goal of identifying the sources of phosphorus loading to Kerr Lake, establishing lake water nutrient concentrations and calculating phosphorus export from Kerr Lake into the Little Saskatchewan River, which eventually drains into the Assiniboine River. This program will operate as part of the Lake Winnipeg Community-Based Monitoring Network, using scientifically vetted protocols. Collected data will enable LSRCD to target phosphorus hotspots and implement beneficial management practices (BMPs) in order to minimize phosphorus loading into the lake.

2016 grant recipients

Canadian Parks and Wilderness Society (CPAWS) - Manitoba Chapter

CPAWS - Manitoba will move forward with a community and stakeholder engagement process created in partnership with Fisher River Cree Nation and the Manitoba government. The purpose of this process is to explore opportunities to expand Fisher Bay Provincial Park and establish other protected areas in

the region, located on the western side of Lake Winnipeg. Maintaining the ecological health of this region is an essential key to restoring Lake Winnipeg, our beloved Great Lake.

FortWhyte Alive

FortWhyte Alive will bring together stakeholders, educators and the general public to develop opportunities for citizen science in urban freshwater monitoring, using LWF's standardized water-sampling protocols and working with partners to archive and share gathered data. This project will also enhance and expand on the education opportunities at FortWhyte Alive – including school programs, public education programs, volunteer engagement, public demonstration sites and interpretive displays. Immersive training for University of Manitoba and Winnipeg students will be offered using FortWhyte Alive as a field site for research in an urban environment. Lastly, the project will plan for onsite lake restoration, information from which can be transferred to other Canadian sites with poor water quality.

Town of Niverville

The Town of Niverville has used the innovative approach of wetland bioremediation to decommission its former sewage lagoon, and will now further develop the site by planting native vegetation, installing footpaths and interpretive areas, and partnering with the University of Manitoba on additional research opportunities. This project will enhance wildlife habitat, soil and water remediation. In the process, the site will also provide environmental education and recreational opportunities for all Manitobans, and serve as an example to other municipalities of the environmental, economic and social benefits of engineered wetlands for the decommissioning of sewage lagoons.

University of Manitoba

Researchers at the University of Manitoba will study water quality in Manitoba's other "Great Lakes," Lake Manitoba, Lake Winnipegosis and Lake Waterhen, investigating whether satellite imagery can be used to estimate chlorophyll concentrations in surface waters. By combining satellite imagery with surface-water sampling and analysis, scientists can learn more about how nutrients may be contributing to algae blooms. Testing water can also identify any potential algal toxin concerns in these lakes. These toxins cannot be removed by filtration or boiling, and can negatively impact the drinking water of First Nations. Algae blooms that occur near First Nations traditional territories are a concern, since many residents may drink the water untreated while out on the land. In conjunction with the Lake Winnipeg Foundation's community-based monitoring program, participating First Nations community members will be trained on water-quality sampling and sample-processing techniques that can readily be adapted to sampling for potable water quality, enabling First Nations to monitor community priority areas.

2015 grant recipients

Centre for Indigenous Environmental Resources

The Centre for Indigenous Environmental Resources (CIER) will enhance and restore the Brokenhead Wetland in Manitoba on Lake Winnipeg, and build the capacity of the local community, Brokenhead Ojibway Nation (BON), to conduct wetland monitoring. The ultimate goal is to establish wetland monitoring and hands-on restoration practices that will limit erosion to reduce nutrient loading to Lake Winnipeg, improve habitat for rare and culturally important species, and provide information to assist BON with planning and collaboration with other First Nations to improve the health of Lake Winnipeg.

South Basin Mayors and Reeves (operating as Lake Friendly)

Lake Friendly will introduce the Certification For Schools Program to provide school boards, educators and students with clear, easy-to-follow and fun guidelines for introducing best practices in their school to protect our freshwater resources. Building on the H2O iQ program and the soon-to-be-released Aquavist Certification For Municipalities, the school certification program will introduce concepts, provide criteria for system change, and offer opportunities for action and engagement through linkages to existing school clubs and programs. The program will also include a scoring system to benchmark and measure progress, allowing for recognition in one of four categories.

Royal Canadian Geographical Society

The Royal Canadian Geographical Society will design an innovative Lake Winnipeg watershed mapping project, OPEN Water, which will enable students to explore the watershed in both the classroom and the field. A collaborative initiative of three geographic education alliances (Minnesota, North Dakota and Canada) with the support of the National Geographic Education Foundation, the map will be created so that students can visualize the entire watershed, locate their own communities and appreciate the impact of activities in one location on the watershed as a whole. Designed in consultation with teachers in order to tailor it to curricular needs, the map will be produced in three formats: print, digital (to enable data gathering, analyzing and sharing) and tiled (for downloading and classroom assembly).

Ecole St. Norbert Immersion Parent Advisory Council

Ecole St. Norbert Immersion (ESNI) Parent Advisory Council will continue developing its community outdoor classroom, a multi-year project intended to correct schoolyard drainage issues while also reducing runoff to the La Salle River, creating natural wetland and riparian habitats, providing educational opportunities to students, upgrading the schoolyard to conform to safety standards, and welcoming the community. This phase of the project will include the planting of callipered trees, semi-mature shrubs and native plants to create forest habitats which will provide shade, filter air pollution and create an inviting space for community members. Native shrubs and wetland plants will also vegetate a rain garden that will host a myriad of insects and small animals.

University of Winnipeg

Researchers from the University of Winnipeg will work to optimize the physical, chemical and ecological factors that control the removal efficiency of wastewater nutrients and contaminants by the pioneering passive sub-surface filter treatment technology installed at the wastewater treatment facility of Dunnottar, Manitoba. This will be done by characterizing the performance of the full-scale system in its first full season of operations in 2015, and by using

the existing pilot-scale system as an experimental test-bed to gain insights into operational procedures that could potentially enhance nutrient and contaminant removal in the full-scale system.

Upper Assiniboine River Conservation District

The Upper Assiniboine River Conservation District will demonstrate and communicate to annual grain producers that small changes to current practices can have multiple benefits. Healthy Soils, Healthy Watershed will support and measure three distinct farm operations' attempts to improve soil health. Measurements will include infiltration rates, soil tests, and microbe abundance and diversity over a five-year effort between the test fields and adjacent control fields. The costs and results of including cover crops into farm operations at the field scale will also be measured. Species and practices will be tailored to achieving both production improvement as well as increased ecosystem services. The results will be shared with other landowners in the region as local examples of alternatives to current production models, and communicated to government agencies and policy makers with a focus on the potential benefits to the basin if such practices were incentivized and scaled up.

Native Plant Solutions (Ducks Unlimited Canada)

Native Plant Solutions (a branch of Ducks Unlimited Canada) will complete the development and evaluation of an innovative new technology for the removal of phosphorus from natural and waste water, leading to its eventual commercial deployment. There are numerous applications for this technology, which is focused immediately on the restoration of Netley-Libau Marsh.

2014 Grant Recipients

Oak Hammock Marsh Interpretive Centre

Oak Hammock Marsh Interpretive Centre will promote, coordinate and facilitate a contest in which high-school students create and submit realistic, achievable and budgeted proposals on how they can help their watershed. The goal is to implement as many environmental projects as possible. The centre will also offer free workshops for educators and participants, and provide mentorship to students throughout both the contest and implementation stages of the project.

The University of Manitoba and IISD Experimental Lakes Area Inc.

The University of Manitoba and IISD Experimental Lakes Area Inc. will undertake a research project that will use standardized methods to survey Lake Winnipeg for microplastics (i.e., tiny manufactured beads found in cosmetic products). The goal is to understand the current spatial distribution of plastics, as well as help establish a baseline for microplastics in the lake and provide a comparison to other freshwater lakes where comparable surveys have been conducted.

EKOS Communications

EKOS Communications will produce a short video that will highlight the practical benefits of wetlands in relation to issues of water quality, flooding and climate change. The goal is to encourage more investment in wetland protection and restoration by rural landowners and government at all levels.

Seine-Rat River Conservation District

The Seine-Rat River Conservation District (SRRCD) will launch a seasonal water-quality monitoring program on the Rat River and the Lower Seine River, including Joubert Creek. Taking place during spring runoff, this project will identify water-quality issues which will assist the SRRCD in targeting and delivering programs to local landowners. Data collected will also help researchers calculate phosphorus concentrations and discharges from these three waterways into the Red River.

West Interlake Watershed Conservation District

The West Interlake Watershed Conservation District will plan and deliver a water festival for youth, designed for students in Grades 1 through 6 to raise awareness about water issues in Manitoba. These students will take part in hands-on activities to learn about water science and technology, conservation, aquatic species and their ecosystems, and other water-related topics, and hear presentations from a variety of speakers with different perspectives.

University of Winnipeg, department of environmental studies and sciences

Researchers from the University of Winnipeg's department of environmental studies and sciences will examine the contribution of pesticides and pharmaceuticals entering the Red River, and the effects of these substances on Lake Winnipeg. This project will seek to determine how much current-use pesticides and human and veterinary-use pharmaceuticals and personal care products are exported into Canada from the U.S. via the Red River, as well as the net contribution of rural southern Manitoba from the Red and Assiniboine Rivers and the city of Winnipeg and finally, Lake Winnipeg.

2013 Grant Recipients

Centre for Indigenous Environmental Resources

The Centre for Indigenous Environmental Resources (CIER) will initiate a First Nations Alliance focussed on stewardship of Lake Winnipeg, in recognition

that First Nations' relationships with water are complex and include cultural, spiritual, economic, stewardship, governance and rights-based aspects. CIER will hold a gathering with First Nations residing around Lake Winnipeg to share perspectives, identify common goals, and determine how to work together and with the government on broader stewardship decisions.

Little Saskatchewan River Conservation District

The Little Saskatchewan River Conservation District will launch a Student Investigation of Waterways in the Little Saskatchewan River Conservation District, a water sampling and monitoring program conducted by students from Strathclair Community School and Erickson Collegiate Institute. Data collected will be uploaded to the South Central Eco Institute website and be available to the entire watershed community.

South Basin Mayors and Reeves (Lake Friendly)

Lake Friendly, an initiative established by the South Basin Mayors and Reeves, will continue to distribute and promote H2O IQ, a newly created educational resource for students and the public. This resource workbook is designed to provide accessible information, tools and resources to fully explore issues related to the importance of water and to issues facing water in the Lake Winnipeg watershed.

Turtle Mountain Conservation District

The Turtle Mountain Conservation District will implement the Turtle Mountain Conservation District River Watch Program, in which high-school students will monitor and evaluate water quality and watershed health throughout the East Souris and Pembina River watersheds, in partnership with the South Central Eco Institute.

University of Winnipeg, University of Manitoba and Dunnottar wastewater treatment facility

The University of Winnipeg, in partnership with the University of Manitoba, the village of Dunnottar and Dillon Consulting Ltd., will optimize the physical, chemical and ecological factors that control removal efficiency of wastewater nutrients and contaminants by the pioneering passive sub-surface filter treatment technology installed at the wastewater treatment facility in Dunnottar, Manitoba. This will be done by characterizing the performance of the full-scale system (which be operational in spring 2014) and by using the existing pilot-scale system as an experimental test bed to gain insights into operational procedures that could potentially enhance nutrient and contaminant removal in the full-scale system.

Upper Assiniboine River Conservation District

The Upper Assiniboine River Conservation District will develop the Oak River Water Quality Monitoring Initiative, a community-based water sampling effort in Shoal Lake and throughout the Oak River watershed. Broadening the scope of ongoing water testing efforts, this project will see area residents and local students begin a monthly sampling regime using a river watch testing kit.

Watershed Systems Research Program, University of Manitoba - Red River Valley

The Watershed Systems Research Program will investigate the potential options for using water stored on land as a result of traditional flood management schemes for agriculture so that neither water or nutrients are released downstream. Though pilot projects on farms, Keeping water on the land - Monitoring instrumentation for farm retention ponds will examine structures and management systems in the existing drainage network, the use of constructed wetlands and retention ponds to store water, and the option of using water for activities such as forage harvesting, bale grazing and crop irrigation.

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