

North Saskatchewan River Basin Council



Photo by Nick Redman, www.nickredman.com

NSRBC – Grassroots and growing

In the last couple years the NSRBC has come a long way. We secured funding from the Saskatchewan Watershed Authority in April 2009. Recently we have expanded our staff to expand our capacity. We will also be having our first AGM this month, January 19th at the Western Development Museum in North Battleford. With the close of 2009 we completed our first year of implementation. This year, we were involved with decommissioning 4 abandoned wells, we also acquired educational materials such as booklets and water models. School presentations, workshops with farmers and ranchers and a couple of hazardous waste collection days are on the agenda for this spring. Slowly but surely, we are reaching across this vast watershed and engaging people in activities that will protect our source waters and ultimately ourselves.

Invasive Species – Watch for Stowaways

Invasive species can have a detrimental impact on the local environment. Leafy Spurge, for example, can reduce the carry capacity of cattle on rangeland by 50-75%. Though invasive species are often aggressive and spread on their own, humans play an important role in their distribution. Invasive species can spread during activities such as haying (particularly ditch hay), ATVing, grading, mowing, snow plowing, and moving earth.

Invasion can be reduced by taking care to thoroughly clean equipment as it moves from site to site. Proper identification of noxious weeds will allow you to know when cleaning is most critical. Dust off pants and boots (treads) after visiting an infected site; as well as, wash down ATVs, farming or municipal equipment when you leave a site.

When considering spraying an infected area, keep in mind the residual or permeability of each pesticide. Tordon 22K, for example, should not be used in sandy soils or where there is a shallow water table. If a waterway (ditch, flood plain or riparian area) is infected, it is important to weigh the impact of the invasive species vs. the probability of the pesticide making its way into the water system and the potential negative (health) impacts.

For more information about invasive species or treatment options contact Dave Whitehead, P.Ag. Manager, 306-445-6849 or dklwhitehead@sasktel.net.



Current Events in the North Saskatchewan Watershed

- AGM January 19th, 2010 at the Western Development Museum in North Battleford.
- Hazardous Waste Collection days this Winter!
- Check out our website at www.nsrbc.ca

“There is no life without water”

-Albert Szent-Gyorgyi



Leafy Spurge

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Household Hazardous Waste Collection in the Basin.

The NSRBC is planning to facilitate several household hazardous waste collection days this March. Wastes are deemed hazardous if they are corrosive, toxic, flammable, reactive, explosive or an irritant. If not properly disposed of they can find their way into our environment and could become harmful. Examples of common hazardous wastes are:

- Household paint
- Electronics
- Used motor oil/filters
- Car batteries
- Pharmaceuticals
- Propane tanks
- Pesticides/poisons
- Thermostats
- Fluorescent bulbs



The household hazardous waste collection days will be facilitated in partnership with local communities in the North Saskatchewan River Watershed who have not yet hosted a hazardous waste collection day. Watch for advertising in your local paper. Remember, old paints and electronics can be properly disposed of at your local SARCAN. Instead of throwing them into the dump take them into SARCAN so they don't contaminate our local environment and water supply!

Don't Know What You've Got Till It's Gone Ecological Goods and Services

If you go to a grocery store, you expect to pay for the items you select off the shelf. If clean air came in a box, we would expect to pay for it. Even though clean air has a value, as an ecological good, we don't think of assigning one to it. Some other examples ecological goods are crops, livestock, clean water, and timber. Some ecological services are water purification, erosion control, pollination, and decomposition. These are all things that we rely inherently on. But how do we go about putting a tangible value on something like pollination?

Without bees a lot of produce would fail. Pollination is critical to a number of economic sectors, but how does that translate into ecological value when it comes time to decision making: where these services and goods may be impacted by development or other activities.

What is the value of the native prairie found along the river valleys? To the First Nations who still collect medicinal plants for their



healing it is very valuable. Is this value considered in the cost benefit analysis of a run-of-the-river dam proposal? Or how much does the water filtration performed by a slough go for? Could a producer cash in on that when considering whether or not to drain the area because of the hassle or potential crop value of that marginal land? These are all things to consider the more our developed world infringes upon our natural world. It is important to consider the impact of our activities on these services and consider their value during the decision making process.



Showcase: Moose Jaw River Watershed Stewards – Wetland Lagoon.

I always get a gross look from people who are new to learn that many municipalities discharge their sewage effluent into a local water way every spring. This includes the Cities of Edmonton, Lloydminster, North Battleford and Prince Albert discharging their effluent into the North Saskatchewan River: A major point-source of pollution! Though the sewage is treated following provincial standards, I think we all could agree that this treatment could come along way, especially when considering the waste water as a drinking water source!

The technology to improve sewage treatment is out there but it is still new to the province. I am proud to showcase the Moose Jaw River Watershed Stewards in their successful effort to pilot a Manufactured Wetland Lagoon project in the Village of Avonlea. We contacted them for a brief interview. Here is what we learned:

Q: What will the total cost of the project be?

A: It will be approximately \$400,000. We hope to it completed by fall 2010.

Q: What is the population this wetland lagoon will be servicing?

A: Avonlea's population is 450 people.

Q: What type of system is being built?

A: Presently, Avonlea has only a single cell system that is undersized and is continuously flowing down an intermittent stream. Our goal is to construct a small secondary cell and have it discharge into an engineered constructed wetland for tertiary treatment prior to being released down the stream.

Q: What have been some successes and challenges?

A: Our number one success has been the positive attitude of the Avonlea community. They are quite excited about the project and have taken ownership of it.

Our second success has been our partners. The Building Canada Infrastructure Funding has been our number one source of funding. The Lower Souris Watershed and the Moose Jaw River Watershed have provided funding for the project, along with TD Bank, Friends of the Environment, Saskatchewan Watershed Authority and Farm Credit Corporation. There is no way that this project would be possible without the funding support of these organizations.

Lastly, this project has demonstrated that the treatment of effluent can be a natural process and it is a win-win situation for the village and for the environment. This project will decrease the operating cost and the effluent quality is predicted to be better than that of a two cell lagoon system.

Our major stumbling block was securing funding for the project. This took a lot of time, but once it was secured we have never looked back. We have also had issues with permitting. Due to the innovation of the project it has taken more time to reach the permitting stage but now we are finally moving ahead.

Good Work Moose Jaw River Watershed Stewards!

There are 61 lagoons in the North Saskatchewan River Watershed. In the North Battleford area there are 19 and 11 in the Prince Albert Area. Of these, 11 discharge their effluent into a stream or waterway that could enter the North Saskatchewan River. Ten other systems have effluent that could enter the groundwater.

First Nation Source Water Protection Planning.

By Donna Rae Paquette



Editing the Source Water Protection Plan at Sweetgrass First Nation. Omer White, Wes Paskemin, Katherine Finn, and Tom Whitecalf.

The range of projects planned by First Nations to protect their lands and water are as diverse as the agents of destruction they are fighting against. Air borne pesticides, wild land damage, drained creeks and leaking sewage lagoons are all threats to their environment. Contaminants and damage from these sources have motivated residents to focus on the safety and quality of their water supply.

Muskeg Lake, Witchekan Lake and Sweetgrass First Nations completed Source Water Protection Plans earlier this spring. Aided by a small grant through the North Saskatchewan River Basin Council these communities rallied to decommission abandoned wells, repair sewer lines and provide in-home water filters.

Currently, Thunderchild residents are developing their SWPP blueprint while Poundmaker, Mosquito, Sauleaux and Moosomin have indicated support for the concept.

Initial discussions with Mosquito and Poundmaker have proven fruitful. Both First Nations have issues they wish to have addressed under the NSRBC mandate. Future meetings are planned in the hope cooperation can be established for source water protection action in their communities.

First Nations activities are being matched by Indian & Northern Affairs Canada (INAC). The federal agency conducted an aggressive water well decommissioning campaign this summer on several First Nations in the watershed. INAC also has funds available through its Land & Environmental Action Fund (LEAF). First Nations can apply for up to \$10,000 for activities related to protection and enhancement of the environment.

Saskatchewan's First Nations have long been plagued by poor water quality. This money is a welcome injection that allows for a wider scope of key actions aimed at ensuring all residents have both access to and assurance of safe drinking water.



Community Planning at Thunderchild First Nation. Jeremy Brown, SWA; Norma Sunchild, and Arnold Wapass.

We're Growing..... Check Out Our Expanding Team



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Off Site Watering – Why and How



There is no set system for livestock management as each producer's needs vary. When considering a management system, it not only has to provide for the needs of the animals, but also suite the lifestyle of the producer. Above all it has to make sense and should save time or money or both. There is a mosaic of possibilities that can be considered when it comes to riparian area management.

Riparian areas are an important feature in a landscape. The lush vegetation is an excellent filter for water flowing overland. It slows runoff, reduces erosion and traps suspended sediments and other particles. A healthy riparian area leads to healthy water.

When considering watering management options, the first item to consider is the source of water. Is it a dugout, a well, a slough or a creek? Is there adequate

water? How often will you be checking the system? In what seasons will you be using it? From there a system can be selected and established.

Some of the benefits of feeding and watering cattle away from water bodies are

- Reduced bank degradation and erosion
- Soil and other contaminants stay out of the water
- livestock are forced to traverse more which spreads their manure over a further area

All of these will keep the water supply cleaner and more secure for years to come.

A stable healthy riparian area can maintain or improve source water quality – this can lead to increased production which could return on the investment. Financial support is available for off-site watering projects through the Saskatchewan-Canada Farm Stewardship Program. For more information on this contact the NSRBC or PCAB at 306-955-5477.



Wind Erosion – Don't Let It Blow Away

If you live in Saskatchewan you know the wind. Not only can it drop core temperatures by an easy ten degrees but it can have a toll on the landscape. When we talk about soils we know that it is the top couple inches that dictate production capacity. This capacity can be dramatically reduced by the effects of wind erosion. The wind can erode soil just as easily as water. The best way to prevent wind erosion, just like water erosion, is to slow it down. The higher the velocity of wind or water the more force it has to pick up and move soil particles.

Things like shelterbelts, wetlands, stubble or any other obstruction the wind has to pass through will reduce the velocity and erosion potential. Erosion control mats can be used after construction to keep soil where it belongs. Plant roots also play a vital role in protecting against wind erosion. Permanent cover such as forage or reduced till will have a significant impact on keeping soil on the ground. It is likely that the impact of the thirties could have been dramatically reduced by proper management practices.

If you are interested in implementing an erosion control practice contact the Agri-Environmental Services Branch (PFRA) 306-446-4050 or PCAB 306-955-5477 for more information on what will work best in your scenario.



Dustbowl, Straford Texas, April 1935

Planning for Flood – Not If but When

People seemed pretty convinced that our climate is changing. What this may mean still has many interpretations and contradictions. Some models demonstrate there will be increased rainfall, others predict decrease rainfall. Though the outcome is still uncertain, we can rest assured that we will probably witness something we know well in Saskatchewan: drought and flood. Either there is not enough water or there is too much. Both are highly unpredictable and can have dramatic impacts on our lives. Both are manageable, but this requires preparedness planning.



HWY 16, Denholm, SK, July 2009

The NSRBC will be facilitating three workshops in late February that will address drought and flood management. Jeremy Pittman is the Climate Adaptation Specialist for Saskatchewan, addressing drought and flood preparedness planning. He and a bouquet of experts will discuss what can be done to mitigate the impacts of extended drought or flood events.

Another project on the go is the Land Infrastructure Resilience Assessment or LIRA. This is a preparedness planning initiative spawned by the Agri-Environmental Services Branch (PFRA). The concept is to analyze the impacts of a 1/25, 1/50, and 1/250 year flood events. The cost of mitigating the impacts of these events are compared to the cost to repair the damages caused by them. LIRA is a pilot project aimed to help municipalities, producers, or watersheds assess if money invested now will save detrimental expenses down the road. The Redberry Lake agriculture environmental group plan (AEGP) is one of the organizations involved in this pilot project. Watch for future updates on this project.

Ground Water – How Much Can We Take?

Out of all the water in the world, only a 3% sliver of it is fresh. The majority of this is locked up as ice, and the remaining bulk is underground. This makes ground water supply and quality a significant interest to most people. 46% of Saskatchewan's population is reliant on ground water and over 63% of Saskatchewan communities use ground water as source water.

Ground water is a difficult thing to study and understand. It can be challenging to tell how large an aquifer is or what the capacity is. Anytime a hole is punched in the ground the Saskatchewan Watershed Authority (SWA) should be notified. SWA regulates who is using the water and how much. With a limited understanding it is hard to know if the allocations are appropriate for the aquifer's supply capacity. A lot more information needs to be gathered in order to properly understand groundwater. Larger consumers, such as the oil and gas industry or agriculture, need to fit their water demands within the supply capacity of the aquifer. But that is a difficult thing to dictate when our understanding of ground water is so limited. It just goes to show the need for more studies.

