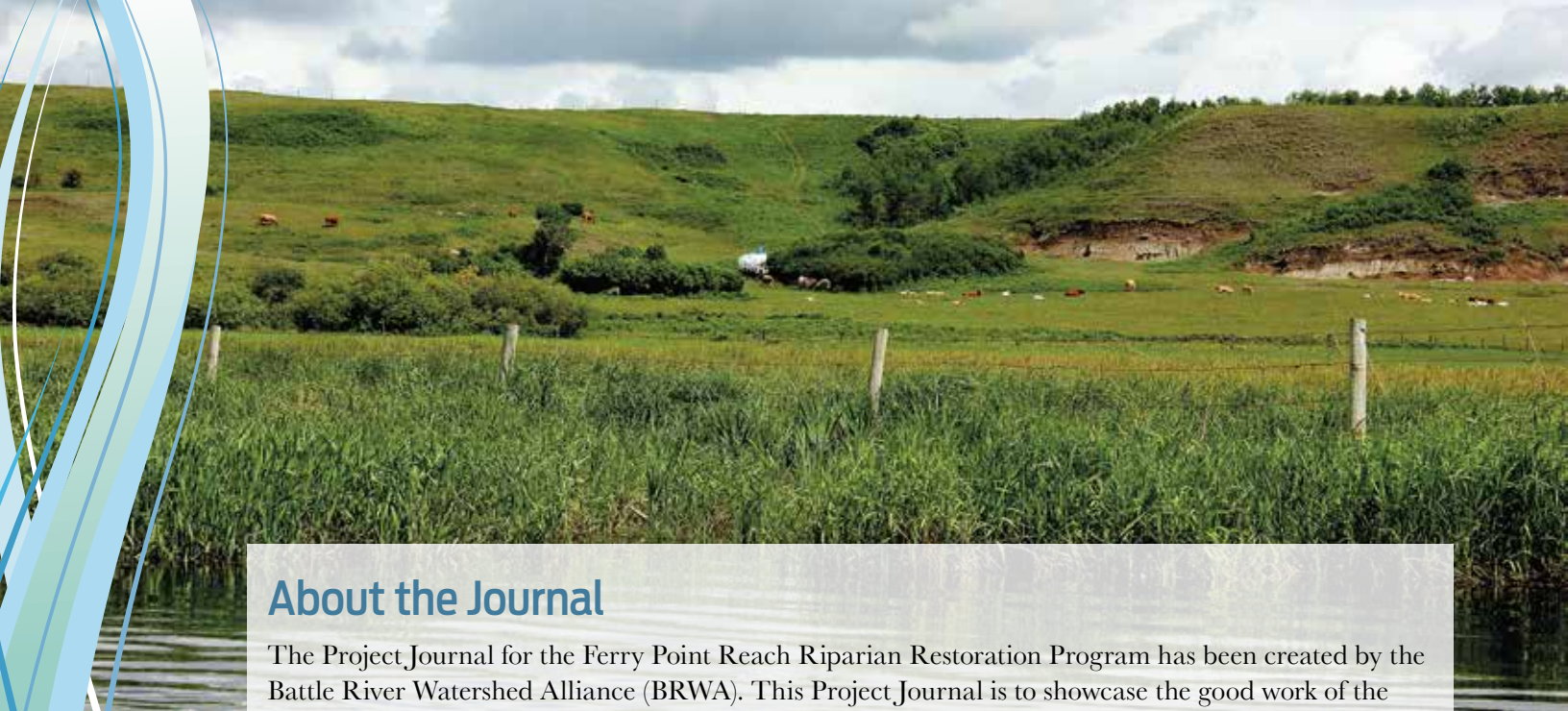


BATTLE RIVER

WATERSHED ALLIANCE



Ferry Point Reach Riparian Restoration Program



About the Journal

The Project Journal for the Ferry Point Reach Riparian Restoration Program has been created by the Battle River Watershed Alliance (BRWA). This Project Journal is to showcase the good work of the landowners who participated in the project, as well as report on the program to the program funders. The projects highlighted are those which were completed by August 2014. The costs outlined were the true costs of the projects in 2014. All photos were taken by the BRWA staff, except where otherwise specified.

About the Battle River Watershed Alliance

“We are landowners, business people, researchers, decision makers. We are the people that live, work and play in the Battle River Watershed. We are the people that will ensure a stable economy, healthy natural areas and resilient communities in this place that we love.

The Battle River Watershed Alliance (BRWA) provides relevant science, social science, policies and education for a diverse community to create solutions to our watershed’s challenges.

We connect people to place for action.”

Advisory Committee

In order to make informed decisions that would ensure the program was successful for the landowners and the river/riparian area, the BRWA invited a committee of specialists to be involved in the program. The committee helped with every aspect of the program, from outlining our goals to designing the program application forms to helping the landowners with their projects. This program would not have been possible without their support.

Committee members:

- Midge Lambert, landowner/BRWA board member
- Shane Mascarin, Department of National Defence
- Kevin MacDonald, Camrose County
- Greg Nelson, Alberta Environment (ESRD)
- Melissa Orr-Langner, Alberta Agriculture (ARD)
- Kerri O’Shaughnessy, Ashley Rawluk, Kelsey Spicer-Rowe, Cows and Fish

Report Authors

Nathalie Stanley
Education and Outreach Coordinator
Battle River Watershed Alliance

Erin Specht
Summer Program Assistant
Battle River Watershed Alliance

Report Type

Project Journal

Contact us

Battle River Watershed Alliance
Box 16, Gateway Centre
4825-51st St.
Camrose AB
T4V 1R9

780.672.0276
Battle.River@gmail.com
www.BattleRiverWatershed.ca

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- Page 4 - Index of Biological Integrity Study. Mike Sullivan.
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Rosalind and District Senior Citizens Society. 1982.
- Page 7 - Erin Murphy-Thompson. Supplied.
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- Page 10 - Cap Solar's M5 12V floating solar-powered water pump. Cap Solar.
Accessed in July 2013 at www.capsolar.com.
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All other photos were taken by the Battle River Watershed Alliance staff.

About the Ferry Point Reach Riparian Restoration Program

OVERVIEW

The Battle River Watershed Alliance (BRWA) launched the *Ferry Point Reach Riparian Restoration Program* in the fall of 2012. The aim of the program was to improve the health of riparian areas to support fish and fish habitat, to increase water quality, and to promote the health of a river that we and our children can enjoy, access, and thrive on. This program has focused on the Ferry Point Reach of the Battle River. The BRWA has defined this reach from starting at the Edberg Dam of Driedmeat Lake downstream past Ferry Point Crossing and ending at the Camrose County boundary. This stretch of the river (along with others) has been found to have poor water quality and a poor fish index (see background section on page 4).

The BRWA worked in partnership with the Alberta Riparian Habitat Management Society, more commonly known as Cows and Fish, to host landowner information meetings, Riparian Health Assessments and on-the-ground restoration work as part of this *Riparian Restoration Program*. This program was funded by Environment Canada's Environmental Damages Fund and The Penn West Foundation. Additional funding for the program was contributed by the Battle River Community Foundation and the Alberta Conservation Association. In kind support was offered by Camrose County, Alberta Agriculture and Rural Development, the Department of National Defense, and several local landowners.

What is the Riparian Area?

The land adjacent to the river or other water body where the plants and soils are strongly influenced by water.

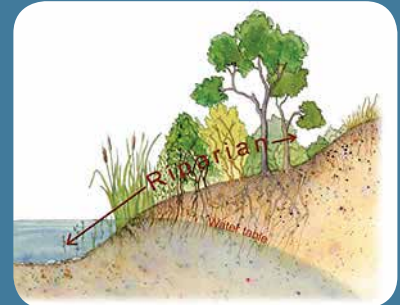


Figure 1: Riparian Areas
Image credit: Cows and Fish



Ferry Point Reach

The Ferry Point Reach Riparian Restoration program is located between Highway 56 and Highway 854 south of Kelsey, AB. The reach runs from the Edberg Dam approximately 20 km along the Battle River.

Background

From 2006-2007, the Alberta Conservation Association led a fish survey of the entire Battle River with the help of Mike Sullivan from Alberta Environment and Sustainable Resource Development. This *“Fish-based Index of Biological Integrity for Assessing River Conditions in Central Alberta”* looked at fish habitat, the abundance of fish and the individual health of fish in order to measure the overall health of the aquatic ecosystem. Overall, the Battle River had a score of 42%, meaning the river has levels of “poor fishing/species of concern” and levels of “no fishing/species at risk”.

The Ferry Point Reach is one of the stretches that had “very poor results; few fish and fish species were found”. Poor water quality has also been measured in the area. The entire study results can be found in the final report, available on the BRWA website at: <http://www.battleriverwatershed.ca/publications/117/view>.

In 2004, Cows and Fish completed a Riparian Health Assessment for portions of Driedmeat Lake and the Battle River within Camrose County. Of the 22 sites assessed, four were rated healthy, 12 were healthy with problems and six were unhealthy. Results indicated excellent overall vegetation cover, good regeneration of trees and shrubs, and good cover of trees and shrubs along the shore/bank to prevent erosion. However there were some concerns with invasive weeds and other disturbance species, over utilization or browsing of trees/shrubs and issues with streambank/shoreline trampling and/or erosion.

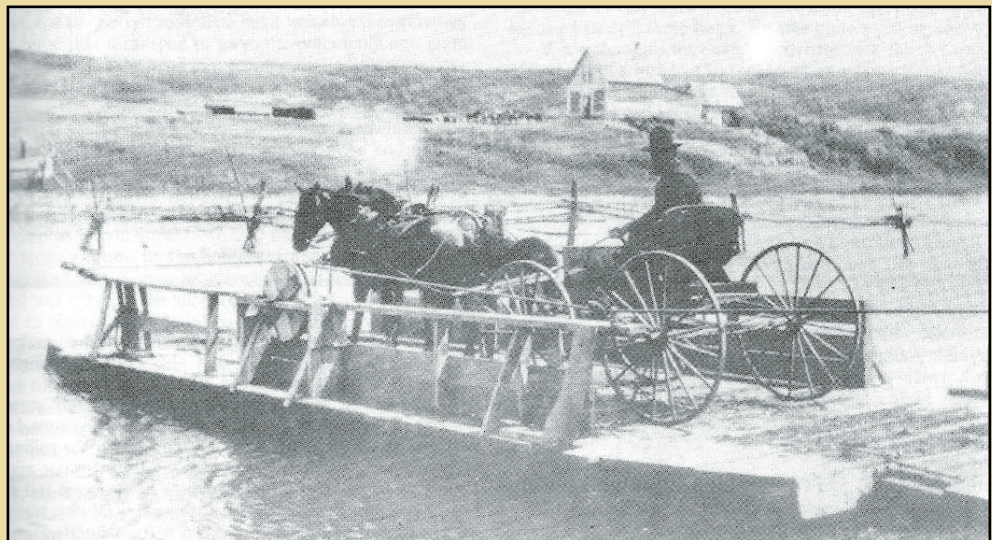


“IBI” Study. Photo Credit: Mike Sullivan

Why Ferry Point?

The Ferry Point Crossing is an important historical landmark and has significant agricultural economic value for local community members. The ferry was used by incoming homesteaders as a material pick-up point from Wetaskiwin.

The townsite was complete with a trading post, general store, blacksmith shop, feed mill and a hotel.



Ferry Point, 1905: Team and buggy on ferry. Photo credit: As the Wheels Turn.

Riparian Health Assessments

Riparian Area Management- Strategy 1

What are Riparian Health Assessments?

A Riparian Health Assessment is a tool used to determine the health of a property adjacent to a water body. The Alberta Riparian Habitat Management Society, commonly known as Cows and Fish, has staff that interpret the health of the riparian areas mainly through visual observation of the soil and plant communities. There are different assessments carried out depending on whether the water body is a stream, river, lake, or wetland.

How do they work?

Riparian Health Assessments begin with a landowner consultation. Landowners are asked about various aspects of their land including grazing patterns. Cows and Fish use this background in their site visit. Highly trained staff who conduct the assessments spend several hours walking the site collecting their data and filling out their score sheets. Back in the office, the staff create a report for the landowner on the plant communities present on their land, areas where cattle may be overgrazing, and suggestions for management options.



Cows and Fish staff surveying the Ferry Point Riparian Area

How much do they cost?

The cost of a Riparian Health Assessment is generally \$2,000, depending on the site and location. Cows and Fish try to offset the cost to the landowners by applying for grants and working with counties and municipalities.

How do Health Assessments help the Riparian Area?

The main goal of a Riparian Health assessment is to create awareness and identify problem areas along the riparian area. Once the problem has been identified, landowners can actively make changes and address land use issues. This is a very useful first step, because it provides landowners with sound advice regarding land management, ensuring they are well informed before they make any major changes. For more information on riparian areas and Cows and Fish's health assessments visit: www.cowsandfish.org.



Cows and fish like the water and so do the staff of Cows and Fish

Getting a Baseline

Riparian Area Management- Strategy 1

The Thompson Farm, comprised of Donald and Lorraine Thompson, as well as their daughter Erin Murphy-Thompson and her husband Casey, is a mixed farm comprised of a cow-calf operation (including pasture management and hay production) and a grain operation. Members of their family have been farming in the Rosalind area since 1902. The river quarter where the riparian project took place was purchased in the 1940s by Erin's grandfather.

The land that was studied in the Riparian Health Assessment had been only very lightly used in the past decade. Erin was curious to see how things had changed from the previous assessment carried out by Cows and Fish. "While one assessment is an interesting

snapshot, multiple assessments over a period of time provide some idea of the changes that are occurring in response to natural and human-caused disturbances," commented Erin. "The second assessment should provide information that points to what the most glaring problems are and in theory should provide a direction for action."

Cows and Fish staff conducting a Riparian Health Assessment.



“ I was most interested in this program because it was action based. It progresses beyond theoretical planning to purpose-led action on the land ”



Three-flowered Avens.
Photo Credit: Erin Murphy-Thompson

Riparian Health Assessment Details

- Cows and Fish met with family for consultation
- Health Assessment conducted summer 2013
- Results report given to family winter 2013

Costs

Riparian Health Assessment.....	\$2000
Total	\$2000

Funding

Cows and Fish in-kind	\$1000
Ferry Point Funding.....	\$1000
Total Amount Funded	\$2000

Erin and her family are now considering their next steps. As with many Riparian Health Assessment reports from the area, the Thompson farm had some areas of high density invasive plant coverage, as compared to native species coverage. The family is considering organizing a group weed-pull, enlisting the help of a 4-H group or a group of other cattle producers.

The Thompson family now has a baseline to refer to that will be beneficial when starting their next pasture management program.

Riparian Fencing

Riparian Area Management- Strategy 2

What is Riparian Fencing?

Riparian Fencing involves installing a fence along the edge of a water body such as a lake or river. The fence creates a buffer between a riparian zone and other land that is excluded from any upland uses. The fence can be used to ensure permanent exclusion from the area, or allow for short term access.

How does it work?

In the case of cattle ranching, the fence prevents direct access of livestock to the water's edge. Excluding the cattle from the riparian area provides the area with the space and time needed to naturally build up its vegetation and establish woody species of trees and shrubs. Alternative watering methods would have to be introduced if the cattle were watering from the river. The fence should be installed outside of the floodplain area to limit damage during spring runoff or years of high water. Alternatively, the fence could be temporary and taken down in the winter and reinstalled in the spring.

How much does it cost?

Fencing is an expensive riparian management option, due to the amount of labour and maintenance required. However, it is also one of the most guaranteed techniques for improving riparian health when

livestock are present.

There are many different kinds of fences that can be installed. Fences can be temporary or permanent. They can be constructed of barbed wire, high tensile wire, or woven wire and can be electrified or not. The most common permanent fence for cattle is barbed wire fence construction. According to Alberta Agriculture and Rural Development's annual survey, barbed wire fence costs between \$2700-\$3500/mile (including labour and equipment).



New fence installation.
Photo Credit: Midge Lambert

How does fencing help the Riparian Area?

Heavy, continual grazing alongside bodies of water has many negative effects. These include bank erosion, soil compaction, and removal of desirable vegetation from the riparian zone. Riparian areas with little vegetative cover are less able to filter nutrients and sediment out of runoff water, which leads to decreased water quality. Fencing allows native riparian plants to thrive and function normally because they are not being disturbed.

Cattle damage to riparian area.

Building a Buffer

Riparian Area Management- Strategy 2

Some fences take a long time to build. This fence in particular was 14 years in the making.

Midge Lambert moved back to the Prairies from Calgary after seeing an advertisement in the Western Producer for land overlooking the Battle River. She fell in love with the land, hills, coulees, and the beautiful view. She enjoys walking down to the river, picking the native chokecherries and Saskatoon



Willow thicket before fence installed:
July 2012

berries, and has tried to limit her footprint on the land. As she rents the land to a neighbour for cattle pasture, her project has been an example of cooperation. Midge wanted to protect the riparian area and installed a new fence along the upper ridge of a high water mark. Because long term riparian management was the goal of this project, permanent, barbed fencing was deemed the best option. It requires less maintenance and has a much longer life span than temporary fencing. The fence was installed using a Drill System which has less of an impact on the landscape and does not require trees to be cut down. The fence has already helped the riparian area grow back thicker and stronger than ever, while still allowing the pasture to be grazed.



Fence installed: May 2013

Fencing Project Expenses

Description	Cost	Total
450 meters of Class "G" fence. Supply and install.	\$7/meter	\$3,150
2x 24' Barb wire gates. Supply and install.	\$175/gate	\$350
Old fence removal (500m).....	\$500	\$500
Brushing, deadfall clean-up.....	\$300	\$300
Fencing Total		\$4,515



Willow thicket after fence installed:
August 2013

Midge's new fence has helped her and her tenant with grazing management, while preserving the riparian area. Midge has loved seeing the plants growing back to their full glory.

All photos: Midge Lambert

Solar Watering System

Riparian Area Management- Strategy 3

What are solar watering systems?

Solar watering systems are composed of a water pump that is powered by photovoltaic cells (solar panels). The photovoltaic cells capture energy from the sun and use it to power the pump. The pump transports water to a trough where it is accessible for cattle or other livestock.

How do they work?

Solar watering systems divert cattle or other livestock from the natural water body to a clean and accessible water source. The pump of a solar watering system runs off an electric motor. There are a number of different styles of solar pumps, including floating pumps, which draw water from the surface, and submersible pumps, which draw water from below the surface. The electricity needed to run the pump is generated by solar panels which convert solar energy to electricity. The pump transfers water from a nearby lake, dugout, stream, or river through pipes to a water tank or trough for livestock to drink from. In order for the pumps to keep working on cloudy days, they should be equipped with batteries that store the energy.

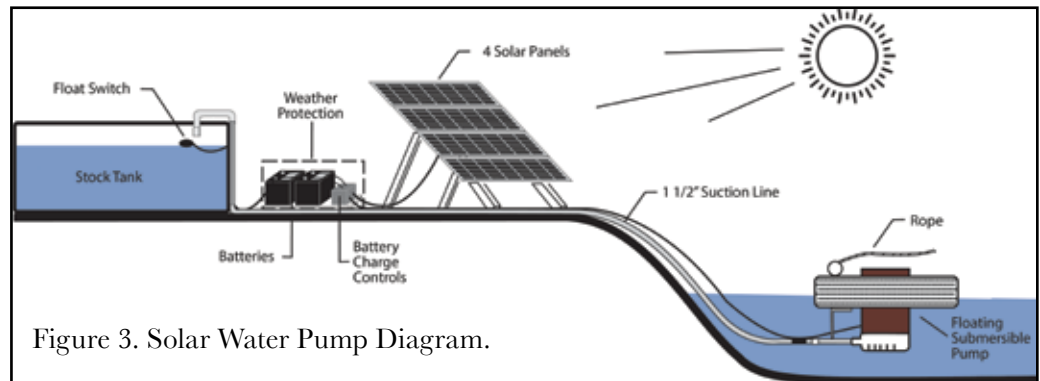
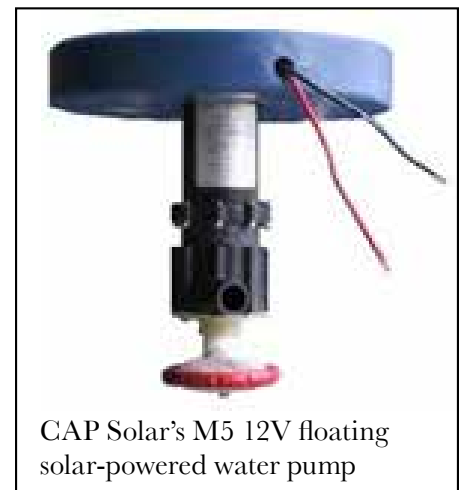


Figure 3. Solar Water Pump Diagram.



CAP Solar's M5 12V floating solar-powered water pump

How much do they cost?

The cost of a solar-powered system varies depending on the style of pump and how far the water would need to be transported. Most systems used for livestock applications range between \$2000 and \$6000.



Cattle drink more and put on more weight when supplied with fresh water.

Photo Credit: ARD

How do solar watering systems help the Riparian Area?

By providing a source of clean and accessible water, the livestock are diverted away from the natural water body. This decreases the disturbance of livestock in the riparian areas, allowing these areas to grow and function fully. In addition to protecting the riverbank, watering systems are beneficial to the cattle as they prevent hoof rot, which occurs when cows' feet are continuously wet.

Water Access, Away from the River

Riparian Area Management- Strategy 3

After receiving news about the BRWA's riparian restoration project, the Van Pettens interest peaked. The father and son team had been considering different projects for their land and knew this was their opportunity. After attending the launch meeting held at the Kelsey Community Hall in December 2012, the Van Pettens decided to install a CAP solar watering system to their dugout.

A dugout had been built on the property in the 1960s as part of a government drought security program. The cattle did occasionally use the dugout, however the Van Pettens believed a watering system would provide cleaner water and encourage cattle to water

there rather than the river.

The Van Pettens purchased a floating solar-powered water pump from CAP Solar, which is designed for open water sources such as dugouts, rivers, or borehole wells.

Even though the river is not fenced, the Van Petten family has noticed that their cattle

are using the new watering system quite extensively. Later in the summer the Van Pettens were able to move the solar watering system to a new pasture and put the pump into the river. This has also worked very well in keeping cattle out of the riparian area.



These cattle can now drink away from the river, without even getting their feet wet!

Pump Details

- CAP Solar's M5-series
- 12V of power supplied by two 6V batteries
- Batteries are charged by 140W solar panel
- Panel provides 11.4 gallons per minute
- Enough water for 190 cow-calf pairs per day

Project Costs

Description	Cost
Cap Solar Pumping Kit (140 Watt panel and batteries)	\$2,399
Camp Solar Tank (200 gal) on trailer	\$3,200
Hose and Cable Extension Kit.	\$250
Total Cost:	\$5,849

For more information on
CAP Solar Pumps visit their website at:
[http://www.capsolar.com/products/
water-pumps/M5-series.html](http://www.capsolar.com/products/water-pumps/M5-series.html)

Alternative Water Source

Riparian Area Management- Strategy 4

What is an Alternative Water Source?

Alternative water sources derive their water from an area other than a river or lake. One alternative source is ground water, which is water that is trapped in bedrock far below the surface. The water is then reached by drilling down into the bedrock and creating a well.

How do they work?

Wells are drilled down into bedrock, which is where the groundwater is trapped in aquifers. The upper portion of a well that is above the bedrock is lined with casing, in order to prevent surface water from entering the hole. Casing also provides structural support, to ensure the hole doesn't fill in or collapse. If there are loose fragments that are entering the water, a well stream is installed. This is a sieve-like material that lines the well to allow water through and prevent sand or small rocks from coming in. After the well has been dug, a submersible pump is installed at the bottom to push the

water up to the surface, and a pressure gauge is often used to trigger the pump to turn off and on. The average depth for a well is 200 ft, but this can vary from less than 100 ft to over 300 ft.

How much do they cost?

The cost of drilling a well varies quite a bit, depending on the size of the drill, the depth of the well, and the medium through which you are drilling. It is not a small investment, and you can expect to pay at least \$10 000 for a single well. In addition, the total cost of the project will not be determined until the well has been completed. This is due to the fact that the contractor doesn't know how deep a well will be until he is finished.

How do Alternative Water Sources help the Riparian Area?

By installing an alternative water source, such as groundwater from a well, landowners are able to divert their cattle away from the edge of a natural water body. This protects riparian areas along the edge from overgrazing and erosion.



After the drilling is done, only this well cap is left behind from the new water source.

*Drilling photo-
Photo Credit: ARD*



Alternatives

There are many sources of alternative water including:

- Shallow wells
- Deep wells
- Dugouts
- Spring development
- Dams

Digging Deep, a New Water Source

Riparian Area Management- Strategy 4

Brad and Lucy Lohr have enjoyed living on the banks of the Battle River for the past 20 years, although Brad and his family have been in the area his whole life. They have a cow/calf operation of 275 pair head, plus their herd bulls.

The Lohrs use multiple pastures to graze their cattle, and while some of them do have water systems in place, one pasture close to their home did not and the cattle still needed to use the river for water. For this particular location, the Lohrs thought it best to dig a well for use in a new corral.

Brad believes that in the future it will be mandatory to keep cattle off the water. “It’s the way of the future. It will have to be done, so we might as well be on the bandwagon first.”



This waterer supplies groundwater to cattle

Well Details

- Well drilled to 200 ft deep, cased to 120 ft
- Water is slightly salty, which is good for cattle
- Corrals built to direct cattle towards waterers
- Pump House built to house water tank and pumps

Project Costs

	Description	Cost	Total
Well	Drilled and cased water well	\$34/ft	\$4,536
	Steel sleeve and well cap		\$ 126
	Brown shale delivery	\$15/tonne	\$2,509
Waterer	Omnifont Stock Waterer (2)	\$1165	\$2,447
	Waterline supplies		\$1,416
	Backhoe work for waterline	\$115/hr	\$3,321
Pump House	Concrete (for pump house and waterers)	\$8/ft ²	\$2,688
	Building materials & electrical		\$5,218
	Construction labour		\$5,271
	Culvert and lumber		\$ 609
	Water pump and accessories		\$3,268
Total Cost:			\$31,409

The well has been very successful with the cattle using it regularly. The water never froze in the winter, thanks to the continued use. The only issue has been when cow manure entered the trough but, as the saying goes, “manure happens.” After the Lohrs noticed the problem and cleaned the trough, the cows were quickly drinking from it again.

“ The project has been good for us and for the river. ”

Lucy Lohr has already noticed the difference in the riparian area. Willows are growing back and the ground is not as punchy. “It’s amazing how it repairs itself,” comments Lucy. She also knows that with cattle drinking out of the well, they will experience less hoof rot, more weight gain, and be healthier overall, all because of the clean water.

Gravity-Fed Watering System

Riparian Area Management- Strategy 5

What are gravity-fed watering systems?

Gravity fed systems use natural gravitational force to carry water from its source to a tank or water trough downhill. They may be used to supply livestock with water without using any electric power.

How do they work?

In order for a gravity fed system to work, the water source must be located upslope of the watering site. Due to the fact that lakes and rivers are often located at the lowest point of an area, these water sources are often dugouts instead of natural water bodies. All that is required to install a gravity fed system is an appropriate water source, the right length of pipe, and a water tank with a float valve. The pipe should enter the side of the dugout, low enough that it won't be exposed to the atmosphere. It is then buried underground and attached to the water trough. Once the siphon system is started, gravity carries water downslope without using any power. Alberta Agriculture and Rural Development suggests that

the water level of a dugout should be at least 5 ft higher than the water tank, with an additional foot for every 100 ft of pipe used. This is to ensure that there is enough water pressure to provide an adequate flow rate.

How much do they cost?

These systems are relatively inexpensive, due to the fact that they are power free and require few components. However, the price will vary depending on how far away your watering site is from your water source, as well as the size and type of water trough purchased. In general, 300 gallon stock water tanks range from \$100 to \$500. If you were to use 1" PE plastic roll pipe, it can cost around \$0.40-\$0.50 per foot of pipe.

How do gravity-fed systems help the Riparian Area?

The gravity fed watering system follows the same principals as the solar watering system. Both systems carry water from a water source (such as a dugout, river, or lake) to a separate location. They divert livestock away from riparian areas, protecting these areas from damage and allowing native plants to fill in once again.

Cattle are able to drink at this trough from water that is being pumped from a dugout above.

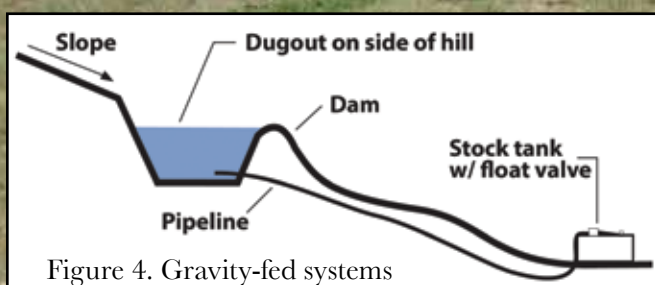


Figure 4. Gravity-fed systems

Water Runs Downhill

Riparian Area Management- Strategy 5

The Orr family has been in the area around Ferry Point since the time Ferry Point was a town. In some ways the area has changed a lot, but in other ways it looks the same. Neil and Donna Orr keep busy with a multitude of projects, including farming cattle and cutting hay. They raised their family along the Ferry Point Reach of the Battle River, a childhood that no doubt contributed to their daughter becoming a Water Engineer with Alberta Agriculture and Rural Development. With a daughter in the field, it is no surprise that the Orrs know the benefits of a healthy water supply for their cattle.

An upland dugout provides a reliable source of clean water, but it was too far out of the way and uphill for the cattle to use, and they preferred to go down to the river. This is why the Orrs decided to install a watering system downhill from the dugout, using a gravity system to draw the water.



March 23rd 1921. 48 horses moving Ferry Point Hall through Jack Orr's ravine, right before it got stuck. *Photo Credit: As the Wheels Turn*

They installed a water float in the dugout attached to 1,300 ft of 1" pipe leading down to the water tank. Once the pipe was attached, they needed only to start the siphon and let gravity do the rest. The pipe was buried to reduce potential damage from cattle and freezing. The Orrs have also installed an electric fence along the river in the pasture portion of their field, resulting in over a mile of protected riparian area.



Pasture pipeline plow is available free of charge from ARD



Neil Orr rigged up the watering system with parts he found at an auction and from around the farm

Photo credit: Donna Orr

Tank Details

- Tank bought at an auction
- 1300 feet of 1" pipe, buried underground

Description	Cost
Water Tank	\$1,645
1300 foot of 1" pipe	\$ 698
Valves, pond strainer and accessories	\$ 173
Pasture Pipeline Plow rental	Free

Total Cost: \$2,516

Program Highlights

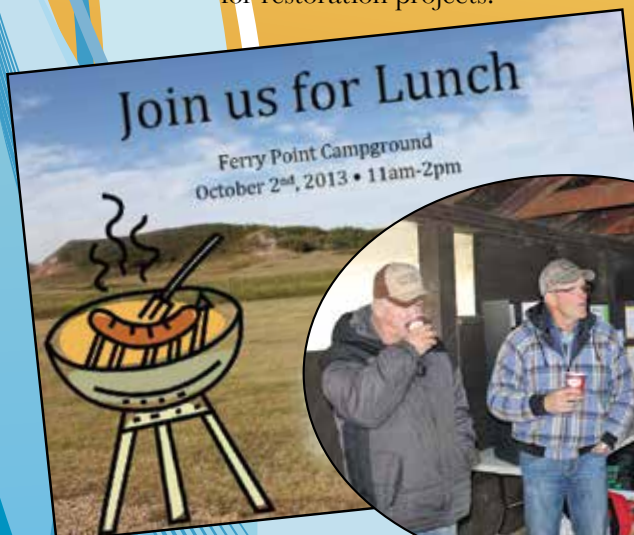
“Getting our Feet Wet” Project Launch Meeting

The Ferry Point Reach Riparian Restoration Program was officially launched on December 5, 2014 at the Kelsey Community Hall. Over 30 local community members including landowners and staff of agricultural organizations and municipalities were in attendance. Attendees enjoyed a BBQ lunch, shared stories of the area, and learned more about the water quality and biodiversity of the area. The highlight of the meeting was our guest speaker Dixon Hammond, rancher and co-ordinator of the Beaver Creek watershed group.



“Off the Record” Riparian Consultation Sessions

Every landowner along the Ferry Point Reach was invited to meet privately with staff of the BRWA and Cows and Fish to discuss their operations. Producers had the opportunity to ask the riparian experts questions about their grazing or crop management, while discussing options for restoration projects and management changes. The meetings were kept confidential and required no further action if none was requested by the landowner. All of the 10 landowners who participated in the consultations had a Riparian Health Assessment completed, and six of them utilized further funding for restoration projects.



“Join us for lunch” community BBQ

On October 2, 2013 local landowners were invited to join the BRWA to celebrate a successful harvest and the stewardship projects in their community. Who would have guessed that October 2 would be the first snowfall? Despite the cold weather, there was a good turnout of landowners who were able to talk to the BRWA staff and, most importantly, to each other about what they are doing on their land.

Out in the Ferry Point Community



“Exploring your River” Grade 5 Field Trip

Students from Donald School were thrilled to be invited to the Ferry Point Campground to learn about the riparian area and the local biodiversity. Their teachers were even more thrilled to be meeting their curriculum needs on a free field trip!

Through a series of lessons, games and activities the students came to understand the importance of riparian areas and the gem of a river right in their backyards. The students also planted over 60 trees and shrubs along the river.



“Paddle with Purpose” Canoe Trip and Open House



What better way to see a riparian restoration project than from the river? Twenty-two paddlers set off from the Edberg Dam in the University of Alberta, Augustana Campus's Voyager canoes. Canoes were led by BRWA and Cows and Fish staff. Many participants were new canoers and/or new to the work of the BRWA. Everyone learned a lot about the river, its riparian area and the work of the local landowners.

On land, BRWA provided a BBQ lunch for the canoists and landowners who came for a break from the fields and an update on the program.



Expanding our Reach



BRWA staff out speaking with the community about the project

Speaking Events

BRWA staff enjoyed the opportunity to use this program as a way of meeting with new audiences and sharing the program goals and successes. On top of the community events held around Ferry Point and other BRWA events we were also invited to speak at the Ecological Agriculture summit at the University of Alberta, Augustana Campus in Camrose and at the Range Management Tour in Wainwright.



MP Peter Kent was happy to hear of the good work being done on the Battle River.

4H Restoration Project

The Golden Prairie 4H club was looking for a way to help improve the watershed. With the help of the BRWA, the group hosted a watershed and riparian education night for the 4H members, and then another for the greater community of Forestburg. They learned firsthand about the river on a canoe trip while scouting out an area that needed restoration. In June 2013, 50 4H club members planted 400 trees along the Battle River near Galahad to improve the riparian area, fish habitat and water quality.



Golden Prairie 4H, making the Battle River a better place for all

Spreading the Word

To help promote the Ferry Point program, the BRWA highlighted the work being done in various newsletters, on our website and through our social media channels. We also submitted regular articles to the Rosalind Ag Newsletter, which is received by the Ferry Point Reach community members. Nathalie Stanley got the chance to tell MP Peter Kent, Environment Minister at the time, about the program while visiting Ottawa!

Agricultural Watershed Enhancement Program

Growing Forward 2: 2013-2018

Alberta Agriculture and Rural Development (ARD) approached the BRWA to help pilot the new Agricultural Watershed Enhancement (AWE) program under Growing Forward 2. This program provided landowners with funding to cover up to 70% of their riparian restoration project costs.

The BRWA provided technical assistance to landowners in the application process.

Additional Resources & References

Riparian Management Specialist in Alberta

Alberta Riparian Habitat Management Society (Cows and Fish)

www.cowsandfish.org

Alberta Agriculture and Rural Development

www.agric.gov.ab.ca

Alberta Watershed Planning and Advisory Councils (WPACs)

Find your local WPAC at www.albertawpacs.ca

Alberta Conservation Association (ACA)

www.ab-conservation.com

Riparian Management Tools and Techniques for livestock

Caring for the green Zone, Riparian and Grazing Management. Cows and Fish. 2003.

www.cowsandfish.org/riparian/caring.html

Solar-powered water pumping systems for livestock watering. Agriculture and Agri-food Canada

www.agr.gc.ca/eng/?id=1189607803338

Remote pasture water systems for livestock. Alberta Agriculture and Rural Development

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex11857#Gravity](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex11857#Gravity)

Waterers and watering systems: A handbook for livestock owners and landowners.

Kansas State University Agricultural Experiment Station and Cooperative Extension Service. Blocksome CE, Powell Gm. 2006. water.okstate.edu/documents/external/KSU-WateringSystems.pdf

Livestock watering factsheet: Understanding gravity-flow pipelines. British Columbia Ministry of Agriculture and Lands. <http://www.agf.gov.bc.ca/resmgmt/publist/500Series/590304-5.pdf>

Riparian factsheet: Livestock Distribution in riparian areas. British Columbia Ministry of Agriculture, Food and Fisheries. www.agf.gov.bc.ca/range/publications/documents/riparian.pdf

Riparian Conservation: A Landowner Guide. Alberta Conservation Association.

www.ab-conservation.com/go/default/index.cfm/programs/land/riparian-conservation-project/

Riparian Factsheet

British Columbia Ministry of Agriculture, Food and Fisheries. Available from:

<http://www.agf.gov.bc.ca/range/publications/documents/riparian.pdf>

Design and construction of water wells. Alberta Agriculture and Rural Development.

[www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/wwg408](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/wwg408)



BATTLE RIVER

WATERSHED ALLIANCE



Special Thanks to our Program Partners Cows and Fish whose expertise and in-kind support were a huge part of this program.

The Ferry Point Reach Restoration Program was led by the Battle River Watershed Alliance with community partners and landowners. The aim of the Riparian Restoration Program is to improve the health of riparian areas to support fish and fish habitat and promote the health of a river that we and our children can enjoy, access, and thrive on.

The program would not have been possible without program partners, funders and the landowners themselves, who are ultimately our biggest ally in stewarding our watershed.

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