

April 2016



EAGLE CREEK
WATERSHED GROUP

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EAGLE CREEK WATERSHED NEWS

Water Information on Our Webpage — Glenn Barclay PAg

This Newsletter is devoted to Water. Water Quality and Supply is vital to any farm or ranch.

On our webpage we have added information about water. Check it out at: www.eaglecreekwatershed.ca.

On the home page is a picture of the Eagle Creek taken in the fall with the heading “Water Quality, Testing and Supply for Humans and Livestock”. Press [Get more information](#).

There are four main themes highlighted:

1) Water Quality and Testing for Humans

Where to send samples is covered. A link to SaskH2O is provided with further information on parameter subjects such as coliform bacteria, iron, nitrates, taste & odour etc.

2) Water Quality and Testing for Livestock

Water and Feed Testing Labs are listed. Links to information on water quality from both the federal and provincial government are provided. There is also a 180 page field guide for Livestock Water Quality provided.

3) Water Quality and Herbicides

This area deals with the impact that dissolved minerals have on herbicides. Various guidelines are given.

4) Water Supply on the Farm

The Sask. Water Security Agency provides valuable information under this section. There is a link to a 68 page document “Water Well Management”. Also a link to online driller’s reports provides information on existing wells in the province.

- ♦ A direct link to the Farm & Ranch Water Infrastructure Program is provided.
- ♦ A 127 page pdf document on “Quality Farm Dugouts” from Alberta Agriculture is also available in this section.



Do You Know the Quality of Your Water?

Glenn Barclay PAg

Eagle Creek Board of Directors

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Water that has acceptable appearance, taste, colour and odour may contain contaminants that could affect human health. These contaminants may be microbiological or chemical in nature.

Pathogenic microorganisms include protozoa, bacteria and viruses. The most common disease encountered from these organisms is the gastrointestinal illness of diarrhea. It is not practical (tests are extremely costly) or technically feasible to monitor for all pathogens in drinking water. The microbiological quality of drinking water is evaluated based on indicator microorganisms, such as total coliforms and E.coli.

Groundwater supplies in Saskatchewan are highly mineralized, and can include sulphate, chloride, and magnesium. According to the Saskatchewan Water Security Agency, three trace elements (arsenic, selenium, and uranium) have also been found at above maximum acceptable concentrations for drinking water in a significant number of groundwater supplies throughout the province. While these elements are believed to be naturally occurring, they should be incorporated into the regular testing of groundwater supplies.

It is important to determine if bacterial or nitrate contamination is present in a well, as these are the most commonly encountered forms of contamination. Sources of nitrate in water include agricultural fertilizers, domestic sewage, animal manure, decaying matter and natural geological formations. Maximum acceptable concentration (MAC) of nitrates has been set. Nitrate reduces the ability of blood to transport oxygen to body tissues, resulting in cyanosis or "blue baby syndrome."

Under the link "Water Quality and Testing for Humans" the Saskatchewan Disease Control Laboratory performs a wide range of bacteriological and chemical tests on drinking water supplies. Information on how to collect and submit samples as well as charges for various tests is given. If you have specific questions regarding water testing, please call them at (306) 787-7138.

In Saskatchewan, private water supplies (wells and dugouts) are not subject to testing regulations. There is no guarantee that any untreated water is safe for human consumption. It is the responsibility of the owner and users to have their water supplies tested. **The Eagle Creek Watershed Group encourages regular testing of your water supply.**

Livestock Water Quality

Glenn Barclay PAg

Studies have shown that water quality has a significant impact on weight gain in cattle. On our website Agriculture and Agri-Food Canada provides a good summary of factors affecting water quality for livestock. I have summarized some of the more common problems.

Blue-green algae is actually a bacteria called cyanobacteria and has a shimmering, blue-green colour which looks like spilled paint floating on top of the water. Heavy blooms appear thicker and have an appearance and consistency similar to pea soup. Unlike green algae, blue-green algae are composed of tiny cells which clump together and will usually slip through your fingers when trying to pick it from the water. Blue-green algae produce two types of toxins: Nerve toxins, which can cause sudden death and Liver toxins, which can cause death within hours or days.

Pathogens in water can be prevented by monitoring inflow from manure sources and prevent direct entry of animals into the water source. The sun's ultraviolet rays are effective in killing pathogens in water that is relatively clear. Allowing animals direct entry can stir up particles and prevent ultraviolet rays from destroying harmful pathogens.

High sulphate levels may cause thiamin (vitamin B1) deficiency, which can lead to Polioencephalomalacia (PEM). *Clinical signs of PEM vary (blindness, tremors, drooling, etc.).*

Total dissolved solids (TDS), or salinity, refers to the mineral quantities in water. TDS includes common salts such as sodium chloride, calcium, magnesium, sulphates and bicarbonates. These salts have slightly different effects on animal metabolism, but none are particularly worse than any other. The effects seem to be additive, meaning that a mixture seems to cause the same degree of harm as an equivalent concentration of a single salt. The main symptom from ingesting saline water is diarrhea.

Nitrate toxicity exclusively from water is rare, but is primarily of concern when combined with forages having high nitrate levels. Nitrates are occasionally found in groundwater that has been contaminated by manure or fertilizer.

Recent Webpage Enhancements to the Eagle Creek webpage

Glenn Barclay PAg

- A map with links to the Ministry of Agriculture Regional Offices. Left click on your home RM to find out what office you should contact (phone numbers are provided). Forage, livestock, crop and farm management specialists can then be contacted.
- A 93 page pdf “Stock poisoning plants of Western Canada” with many black and white pictures can be found under “Projects” then “invasive weed awareness.”
- All past Eagle Creek newsletters are now available.
- **If you don't know the Eagle Creek Watershed board members go to the home page and open “Our Board”. These individuals have devoted many years to enhancing and protecting the Eagle Creek watershed.**

You're at home here



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Introducing Stacey Spenst, Regional Forage Specialist for the Ministry of Agriculture — Kindersley Regional Service Branch

Hello Everyone. In March 2016, I became the Regional Forage Specialist for the Ministry of Agriculture, Kindersley Regional Service Branch. I feel very privileged to have this position as Agriculture and Environmental Stewardship are two matters that I have held in the highest regard since an early age. I grew up on a mixed farm east of Swift Current, Saskatchewan which lined the banks of the Swift Current Creek. I was taught during my childhood to respect the land and environment as it plays an integral role in achieving and maintaining a successful agricultural operation. It is this respect that I preserve to the present day and with it, will serve the producers and patrons of the Eagle Creek Watershed.

I am available to provide technical assistance for any of the following Beneficial Management Practices that are available for funding through the Farm Stewardship Program:

Creek and Stream Crossings Native Plant Establishment Shelterbelt Establishment Natural Waterway Erosion Control

Protecting High Risk Erodible and Saline Soils

Riparian Area Grazing Management

Native Rangeland Grazing Management

In addition to providing assistance with the Farm Stewardship Program, I am available to support producers with grazing and pasture management, forage species selection and establishment, weed and pest control actions, range health assessments, forage feed quality, as well as any other questions that may arise pertaining to range and forage management or production.

I look forward to meeting as many patrons and producers of the Watershed as possible and hope to help out in any way that I can!

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