



The Verdant Element

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ARE YOU AN AGVOCATE?

Lets face it, you are in agriculture because you love it. You love your land, your animals and the open spaces. The time in the tractor, the hardships of spending time on your operations instead of with your family during seeding, calving and harvest, the volatility of the market and weather, the sacrifices that you make to keep farming. You are involved in agriculture because it is something that you have to do. Sure there are easier jobs, better pay with different benefits. But you have a very important job, feeding your neighbors, friends, family and people around the globe.

But for all the love we have for this industry, why are we doing such a poor job of promoting ourselves?

Do you tell your neighbors, friends and family what you are doing on your operation? How you tended to the calf born when it was -35°C ? Have you shared when you changed practices, such as to no-till, and how it was better for the land? Do you talk about the love that you have for the industry and your operation?

This is an era of people so far removed from where their food comes from. The generation that thinks milk comes magically from the grocery store and not from cows. The disinformation that circulates at the touch of a button on social media and the horror stories on the news of e-coli, GMOs and appalling animal care. I am sure we have all watched the A&W ads which states no added hormones, which leads people to believe that all other beef is inferior. And that farmers are pumping their animals full of extra hormones and steroids. We need to use the local food movement to showcase our farms and educate the public to make more informed choices to how they perceive food. How do we do this? One conversation at a time. If you do one thing today, share your story with someone and give them the same appreciation we have for our industry that feeds the world.



A Picture Says A Thousand Words about why I LOVE agriculture

I LOVE Agriculture because FOOD IS BEAUTIFUL! We grow things with multiple purposes such as grapes, to be eaten fresh, dried or as WINE! One Word: Coffee. Because bale forts are always awesome! I love the thrill of having your crop emerge. There is always the thought that no matter how terrible the job seems at the time there is always something worse (such as harvesting onion seed by hand). No one is ever too young to check out the equipment and love farming. BABIES! BABIES! BABIES! So much cuteness. I love being able to use equipment that no one else does (such as a tree shaker or walnut harvester).



Nutrient Loading Calculator for Wintering Feeding Systems

A new nutrient loading calculator, designed to help livestock producers plan and manage their in-field winter feeding systems, is now available. The calculator is designed to estimate the amount of nutrients being added to the landscape by a winter feeding system that imports feed to a site, such as bale grazing. It can also be used to determine feed requirements to meet the needs of an identified number of animals for a designated number of feeding days.

Trevor Wallace, Nutrient Management Specialist with Alberta Agriculture and Rural Development, worked with Agriculture and Agri-Food Canada and technical experts from the other Prairie Provinces to develop this windows-based (Excel) program. He says, “When producers are importing feed onto the land, a lot of the imported nutrients are left behind on the land as manure and wasted feed. Excessive nutrient additions increase the risk of nutrient loss to the environment and can negatively impact the growth of subsequent crops.” This tool estimates the amount of nitrogen, phosphorus, potassium and sulfur that is being brought onto the site by the winter feeding system.

“By knowing the amount of nutrients being imported onto a site, a producer can better manage the feeding system and the animals to take advantage of those nutrients as well as reduce excessive nutrient loading and loss to the environment,” comments Wallace. The calculator can also be used as a record keeping tool of feed and cow management, and nutrient additions on specific sites.

The calculator can be used to run ‘what if’ scenarios comparing various winter feeding options. “At this time of year, the calculator can be used to help determine the amount of nutrients that your feeding system is leaving behind, and then allows the producer to plan spring operations to take advantage of those nutrients, says Wallace”. For example, this can help producers to save money on unnecessary fertilization applications.

By completing an assessment now the producer can start to evaluate the current feeding system and think of potential changes to the system that can be adopted to take advantage of these available nutrients.

The calculator only estimates the amount of nutrients that are added to the landscape when importing feed from offsite. It can be used to evaluate the impact of a variety of different feeds being fed through one of three different feeding systems: whole bales, windrows on the ground, and feeding in a movable trough. It was not designed to estimate nutrient loading for winter feeding systems where feed is generated on site such as swath grazing, corn grazing, grazing stockpiled forages, and annual crop residue grazing.

There are two versions of this calculator: a Feed to Cow version and a Cow to Feed version. The feed to cow version asks for feed management factors first and then cow management factors. The cow to feed version starts by inputting the cow management factors first and then the feed management factors. Both versions will provide the same outputs and information they just approach the inputting of data from different angles. The feed to cow version is preferable to use if

suitable fields have more than enough space to accommodate feed for one feeding season for the entire herd. The cow to feed version is preferable to use if there is a chance the field may not have enough space to accommodate feed for the entire herd over the full winter feeding season.

To access the calculator go to www.agriculture.alberta.ca and click on Decision Making Tools, then Livestock and the calculator will be on the right hand side. In addition, there is a pdf user manual available for download that walks the user through using both versions of the calculator. By completing an assessment now the producer can start to evaluate the current feeding system and think of potential changes to the system that can be adopted to take advantage of these available nutrients.

Right: An example of the whole bale calculator screen in the Nutrient Loading Calculator

1. Cow Management Number of cows: 100 My Own Value Average cow weight (lbs): 1300 Value Daily feed requirement of cow (lb dry matter/day): 33.8 Area of land used for feeding (acres): 10.7 Number of feeding days: 120 Cow Days per Acre: 1121 Animal Unit Days per Acre: 1458 Net feed density (tons dry matter/acre): 18.9		4. Supplementary Feed Type Grain: My Own Value Barley: My Own Value Dry matter content of feed (%): 89 Protein content of feed (% dry matter basis): 12.5 Nitrogen content of feed (% dry matter basis): 2.00 Phosphorus content of feed (% dry matter basis): 0.38 Potassium content of feed (% dry matter basis): 0.54 Sulfur content of feed (% dry matter basis): 0.14																															
2. Primary Bale Type Hay Perennials: My Own Value Brome: My Own Value Dry matter content of feed (%): 90 Protein content of feed (% dry matter basis): 10.6 Nitrogen content of feed (% dry matter basis): 1.70 Phosphorus content of feed (% dry matter basis): 0.17 Potassium content of feed (% dry matter basis): 1.50 Sulfur content of feed (% dry matter basis): 0.14 Percent of total bales provided by primary type: 75 Average bale weight (actual lbs): 1300 Percentage of primary feed on a dry matter basis: 76.6 Feed wastage of primary bale type (%): 10		5. Supplementary Feed Management Amount of feed provided at one time (lbs): 300 Number of feedings per day (eg. 2 = twice per day): 1 Contribution to daily feed requirement of cow (lbs dry matter/day): 2.66 Total supplementary feed needed (actual tons): 18.0 Supplementary feed density (tons dry matter/acre): 1.49																															
3. Secondary Bale Type Straw: My Own Value Wheat: My Own Value Dry matter content of feed (%): 89 Protein content of feed (% dry matter basis): 3.9 Nitrogen content of feed (% dry matter basis): 0.62 Phosphorus content of feed (% dry matter basis): 0.08 Potassium content of feed (% dry matter basis): 1.40 Sulfur content of feed (% dry matter basis): 0.12 Percent of total bales provided by secondary type: 25 Average bale weight (actual lbs): 1200 Percentage of secondary feed on a dry matter basis: 23.4 Feed wastage of secondary bale type (%): 10		6. Whole Bale Management Feed density (tons dry matter/acre): 19.2 Bale density (#/acre): 33.6 Number of bales needed: 360 Bales fed per day: 3.0 Bale spacing: -within row (feet): 36 -between row (feet): 36																															
7. Nutrient Deposits on Land <table border="1"> <thead> <tr> <th></th> <th>Nitrogen</th> <th>Phosphorus</th> <th>Potassium</th> <th>Sulfur</th> </tr> <tr> <th></th> <th colspan="4">(lb/acre)</th> </tr> </thead> <tbody> <tr> <td>Nutrient loading from imported feed</td> <td>615</td> <td>88.5</td> <td>583</td> <td>56.1</td> </tr> <tr> <td>Nutrients removed by cattle weight gain</td> <td>8.4</td> <td>2.0</td> <td>1.2</td> <td>0.56</td> </tr> <tr> <td>% of time cattle spend outside of feeding area</td> <td colspan="4">15</td> </tr> <tr> <td>Net nutrient loading in feeding area from manure and waste feed</td> <td>515</td> <td>86.5</td> <td>495</td> <td>47.2</td> </tr> </tbody> </table>					Nitrogen	Phosphorus	Potassium	Sulfur		(lb/acre)				Nutrient loading from imported feed	615	88.5	583	56.1	Nutrients removed by cattle weight gain	8.4	2.0	1.2	0.56	% of time cattle spend outside of feeding area	15				Net nutrient loading in feeding area from manure and waste feed	515	86.5	495	47.2
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The **Wintering Site Assessment and Design Tool** has been developed to assist producers in identifying the environmental risks associated with their in-field wintering sites. This tool evaluates five main wintering site factors: site characteristics, feeding strategies, bedding and shelter management, water source management and post-wintering site management.

Before spring, farmers will have to consider their wintering site location and runoff. The greatest environmental risk from wintering sites is the potential of water contamination from runoff carrying nutrients, pathogens and sediments. Under the *Agricultural Operation Practices Act* (AOPA), wintering sites must be located at least 30 metres away from a common body of water. If this cannot be achieved, the operator must have either designed the site to divert runoff away from the common body of water or move the accumulated manure and bedding to an appropriate location away from the common body of water prior to the runoff event. Vegetative buffers are very ineffective when it comes to spring runoff because vegetation is dormant and the soil is frozen.

“This is a great tool for farmers to evaluate their wintering site,” says Dennis Lastuka, Senior Conservation Technician with Agriculture and Agri-Food Canada, and the lead in the development of this tool. “Not only does it look at potential risks, it also provides beneficial management practice (BMP) options to address these risks. So over the summer if producers want to address these risks they can apply to the Growing Forward 2 (GF2) On-Farm Stewardship Program.”

The GF2 On-Farm Stewardship program provides producers access to funding to implement projects and management practices. Producers can apply for multiple projects under the program with a maximum matching grant of \$50,000 for each producer. In the grazing management category, year-round/portable watering systems and portable shelters/windbreaks are two types of cost-shared projects available for producers. The GF2 program opened in April 2013, and will close on or before March 2018, depending on funding availability.

To be eligible for the program, producers must be actively operating in Alberta and must have completed an Alberta Environmental Farm Plan. An application for each project must be submitted and approved before any work begins



WINTERING SITE ASSESSMENT TOOL

AGRICULTURE AND RURAL DEVELOPMENT

As spring is arriving (as slowly as possible it seems this year), now is a good time to assess if you have an appropriate wintering site for your cattle. If your bedding and feeding sites are underwater, or the runoff is moving your cattle’s ‘nutrient deposits’ into wetlands, creeks or lakes, it may be time to consider moving or altering your wintering site.



As spring is arriving (as slowly as possible it seems this year), now is a good time to assess if you have an appropriate wintering site for your cattle. If your bedding and feeding sites are underwater, or the runoff is moving your cattle’s ‘nutrient deposits’ into wetlands, creeks or lakes, it may be time to consider moving or altering your wintering site.

Wintering sites must be at least 30 meters away from a water body. The areas between your feeding and bedding site and the water body would greatly benefit with the creation of a vegetative buffer, with adequate coverage to be able to slow runoff and capture nutrients. This area would be highly productive and should be harvested for feed to prevent nutrient accumulation and leaching.

Water sources can be extremely vulnerable to contamination. Surface water is susceptible to contamination from runoff. Sloughs and wetlands often serve as a groundwater recharge area and the contamination that enters those water bodies will filter down into your aquifer. Well sites with improper casing seals, location (area prone to flooding or standing water), have a well pit or an improperly abandoned well can create a direct pathway for contaminants to enter your aquifer and putting your health and the health of your animals at risk.

Growing Forward 2 provides programs and services to achieve a profitable, sustainable, competitive and innovative agriculture, agri-food and agri-products industry that is market-responsive, and that anticipates and adapts to changing circumstances and is a major contributor to the well-being of Canadians.

GROWING FORWARD

Growing Forward Stewardship Programs

Program Area	Eligible Costs	Cost Share
Riparian Area Fencing and Management	Permanent fencing (controlled access or exclusion): <ul style="list-style-type: none"> • Permanent barbed/electric fencing systems • Construction materials and supplies. NOTE: all materials must be new materials and not materials on hand • Labour and equipment will be paid at a 1:1 ratio to materials expenses. (NOTE: refer to section 7.4 in the Terms and Conditions); Purchase and planting of native trees and shrubs and/or native or non-invasive introduced species of grass and legumes; Seed and seeding operation for revegetation; Cultural weed control systems and mulch	70% to a funding maximum of \$50,000
Year Round / Summer Watering Systems	Deeply buried, shallow buried, or surface pipeline installation used to distribute water within a pasture and protect a water body/water source; Portable watering systems; Year-round watering systems; Troughs, stock tanks, plastic tanks (or similar water storage); Frost free nose pumps; Pumping systems; Power sources such as solar panels, windmills etc. And other electrical supplies; Plumbing materials	50% to a funding maximum of \$30,000
Portable Shelters and Windbreaks	Construction materials and supplies for portable windbreaks/shelters; In-kind labour (\$25/hour); Note: costs are eligible to a maximum of 120 feet per 100 cows	50% to a funding maximum of \$10,000
Wetland Restoration	Earthwork related to construction or plugging of old drains; Engineering consultant fees for design and construction; Re-vegetation costs (seed plantings etc.); Applicant's equipment use at custom rates; In-kind labour at set program rates (\$25/hour)	70% at funding maximum of \$50,000
Livestock Facility and Permanent Wintering Site Relocation	Construction costs to rebuild an equivalent facility or adequately sized facility in a more suitable location; Plumbing, electrical, fence lines, feeding areas, shelter/wind protection; Earthwork; Engineering design and fees (if applicable); Tear down and removal costs of the old livestock facility; Re-vegetation costs of the old site; Applicant's equipment use and in-kind labour	50% at funding maximum of \$50,000
Improved Pesticide Management	Low-drift nozzles and air-induction nozzles; Selectable nozzle bodies (hold 2-5 nozzles); Sprayer cones or shrouds; Chemical handling system with jug rinse; Sectional control operating system and hardware; Auto boom height operating system and hardware; Pumps designed specifically for chemical transfer from totes and barrels; Chemical meters	50% at funding maximum of \$10,000
Fuel Storage	Double wall fuel tanks that are ULC or CSA approved; Meters, hoses and auto shut-off nozzles; Electrical, connections and installation	30% at a funding maximum of \$3,000
Used Oil and Lubricant Storage	Double wall steel storage tank design expressly for the temporary storage of used oil and lubricants that have a ULC or CSA approved stamp or plate indicating it is for that purpose (ULC-652)	50% at a funding maximum of \$2,000
On-Farm Water Management	Wells (including test drilling, new pump and well casing, electroseismology test, disinfection of new well); Dugouts (including aeration, fencing and floating intakes); Dams (including intake and fencing); Spring Development; Water tanks/storage/cisterns for low producing wells or as part of a permanent water supply; Buried pipelines Special projects include: Specified water conservation measures (purchase and installation of water use meters, well depth meters for agricultural use of water, well decommissioning by a certified contractor, well pit conversions by a certified contractor; Tie-ins	Various funding levels, refer to the terms of reference

The environment is becoming a more prominent issue. It is a large factor in marketing agriculture and food products in today's global markets. Consumers are demanding more transparency and are demanding high quality and safe products. Reputation of food safety is critical to retain and gain access to domestic and international markets.

Environmental Farm Plans (EFP) provide a tool for producers to self analyze their operation and identify environmental risks, current standards, areas for improvement and also highlight what they are doing well.

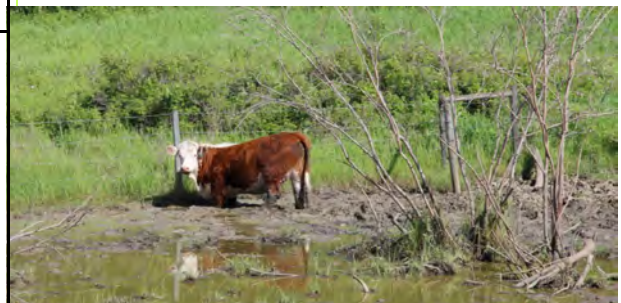
Having a completed EFP allows producers to access different funding opportunities, such as the Growing Forward Stewardship Program. It is also useful in product branding that demonstrates specific environmental standards.

The EFP Process

An EFP can be completed through workshops or one-on-one session(s). The EFP first identifies the soil and farm site characteristics. Following this, the producer completes only the relevant chapters that apply to their operation; such as wintering sites, fertilizer, pesticides, crop management etc. Upon completion the EFP is submitted to a Technical Assistant for review. Once reviewed the EFP will be returned along with a letter of completion.

The EFP is a living document and should be reviewed and updated periodically.

If you wish to complete an EFP or have any questions regarding EFP please contact the LARA office at 780-826-7260

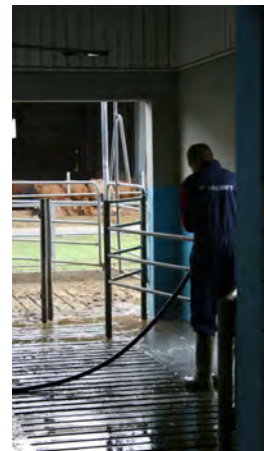


Stuck in the mud? Consider an offsite watering system.

ENVIRONMENTAL FARM PLANS

Spring is a great time to get your well water tested. Go pick up the routine chemistry and coliform bottles at your local health unit. The Beaver River area is also known to have a high occurrence of Arsenic. You can request this test at the health unit as well for a very reduced rate.

HOW DOES MY WATER WELL GET CONTAMINATED?



When most people think of groundwater they think of underground rivers with moving water that is plentiful and clean. The reality is that most peoples water wells are accessing water from aquifers that can take extremely long amounts of time to replenish and are susceptible to contamination from the surface. These aquifers are formed from thin sand and gravel glacial deposits and can be as small as a few hectares in size that are a few meters thick or can be over 100 meters thick and thousands of square kilometers wide.

Human activity is continually on the rise as we both shape the landscape and utilize more groundwater to meet our needs, overuse can lead to decrease in both the quantity and quality of our groundwater resource.

Surface water and groundwater are connected in the watershed. Drought is one of the largest factors in groundwater recharge, which humans have no control over, what we do have control over how is how we shape the landscape. The removal of wetlands, destruction of riparian areas and fracturing the land with roads and infrastructure change the way water moves across the surface, often times speeding up run-off or removing areas (wetlands and riparian areas) that capture and allow the water to seep into the ground to recharge aquifers.

Contamination can occur from point sources such as landfills, leaking petroleum storage tanks, leaking septic tanks and accidental spills. Non-point source contamination can include infiltration from land treated with pesticides or fertilizers or from roadways that use de-icing salt in the winter. Soils that are highly permeable such as gravel/sand are at a higher risk of groundwater contamination compared to clay soils which are more susceptible to surface contamination (run-off).

Wells that are not maintained or installed correctly can be susceptible to contamination. Inadequate annular seals create a direct pathway for surface contaminants to flow directly into your aquifer through the space between the borehole and the casing. The grade around your well should be designed so surface water flows away from your well and does not pool there. Well pits are a huge source for aquifer contamination and are no longer permitted for newly constructed wells. If you have a well pit, funding is available through Growing Forward 2 for the installation of a pitless adaptor and removal of the well pit. Proper removal of abandoned wells will prevent surface contamination from entering your water supply.

Contamination can compound over time and groundwater contamination can spread far beyond the original site of contamination. Often groundwater contamination is extremely difficult and expensive to clean up, and more likely impossible to clean up at all.

As a landowner YOU are responsible for all water wells on your property. So make sure you educate yourself, test your water and maintain your well to ensure your water supply for generations to come.

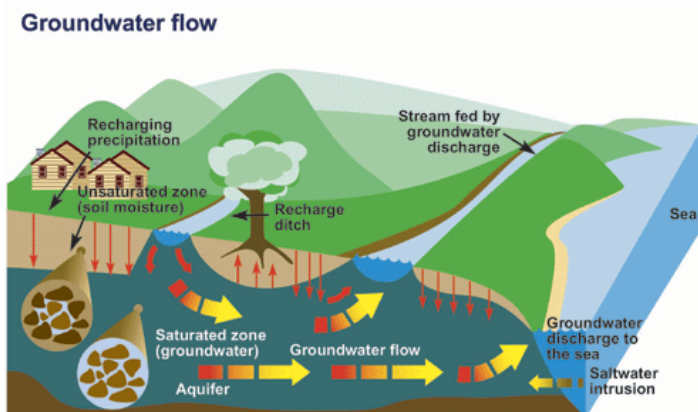


Figure from Environment Canada <http://www.ec.gc.ca/eau-water/default.asp?lang=En&n=300688DC-1#introduction>

Septic effluent percolates to the water table

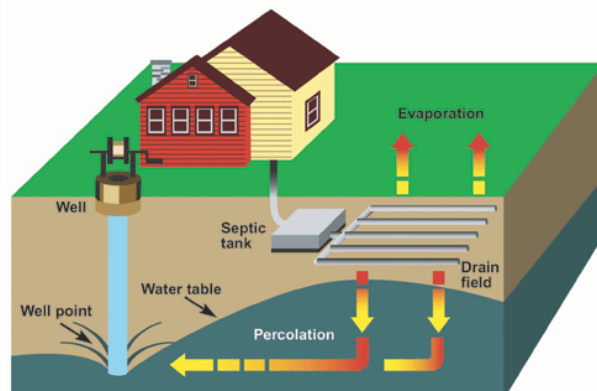


Figure from Environment Canada <http://www.ec.gc.ca/eau-water/default.asp?lang=En&n=6A7FB7B2-1>

So God Made A Farmer -Paul Harvey

And on the 8th day, God looked down on his planned paradise and said, "I need a caretaker."

So God made a farmer.

God said, "I need somebody willing to get up before dawn, milk cows, work all day in the fields, milk cows again, eat supper and then go to town and stay past midnight at a meeting of the school board."

So God made a farmer.

"I need somebody with arms strong enough to rustle a calf and yet gentle enough to deliver his own grandchild. Somebody to call hogs, tame cantankerous machinery, come home hungry, have to wait lunch until his wife's done feeding visiting ladies and tell the ladies to be sure and come back real soon -- and mean it."

So God made a farmer.

God said, "I need somebody willing to sit up all night with a newborn colt. And watch it die. Then dry his eyes and say, 'Maybe next year.' I need somebody who can shape an ax handle from a persimmon sprout, shoe a horse with a hunk of car tire, who can make harness out of haywire, feed sacks and shoe scraps. And who, planting time and harvest season, will finish his forty-hour week by Tuesday noon, then, pain'n from 'tractor back,' put in another seventy-two hours." So God made a farmer.

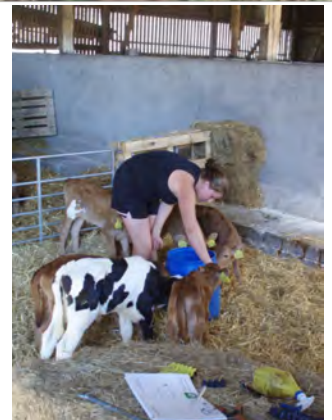
God had to have somebody willing to ride the ruts at double speed to get the hay in ahead of the rain clouds and yet stop in mid-field and race to help when he sees the first smoke from a neighbor's place.

So God made a farmer.

God said, "I need somebody strong enough to clear trees and heave bails, yet gentle enough to tame lambs and wean pigs and tend the pink-combed pullets, who will stop his mower for an hour to splint the broken leg of a meadow lark. It had to be somebody who'd plow deep and straight and not cut corners. Somebody to seed, weed, feed, breed and rake and disc and plow and plant and tie the fleece and strain the milk and replenish the self-feeder and finish a hard week's work with a five-mile drive to church.

"Somebody who'd bale a family together with the soft strong bonds of sharing, who would laugh and then sigh, and then reply, with smiling eyes, when his son says he wants to spend his life 'doing what dad does.'"

So God made a farmer.



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Sustainable farming encompasses a wide range of practices and principles; combining environmental stewardship with profitability and ensuring that the family farm will be there for generations to come.



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RIPARIAN HEALTH ASSESSMENT

The riparian zone is the interface between the upland and a water course. This area is heavily influenced by water, how and where it flows and is reflected in the plants, soil characteristics and wildlife that are found there. Riparian areas have a large role in water quality, quantity and biodiversity. They provide eight key functions to: trap and store sediment; build and maintain banks and shorelines; store water; recharge aquifers; filter and buffer water; reduce and dissipate energy; create primary production; and maintain biodiversity by providing habitat for plants, wildlife and fish.

This Riparian Health Assessment is a tool designed to evaluate the selected site. It can provide a foundation to build an action plan and identify priorities. The assessment provides a snapshot in time and to be an effective tool for monitoring should be done on the same riparian area several years apart.

If you would like a FREE Riparian Health Assessment conducted on your property please call Kellie at the LARA office.

Upcoming Events to Watch For:

- ◆ Water Treatment Workshop
- ◆ Poo and You; Septic Workshop
- ◆ Weeds Field Tour
- ◆ LARA Summer Field School



NEW BMPs Covered by Growing Forward 2

- ◆ Shelterbelt Establishment
- ◆ Sectional Control for Seeding and Fertilizing Equipment
- ◆ Grain Bag Plastic Rolling Equipment

Happy Planting!