



# The Explorer

The Official Newsletter of the Lewis & Clark Conservation District

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Summer 2017

## Ladies Day on the Range

The Natural Resource Conservation Service is hosting a Ladies Day on the Range in Lewis and Clark County.

The Lewis and Clark County event will be held from 9:30am to 3pm on Wednesday July 26<sup>th</sup> at the Dearborn Community Center and the Bay Ranch.

Topics for the event will include:

- soil health
- soil's connection to rangeland health and productivity
- range plants identification
- Grizzly Bear management and safety in Montana

For more information or to register contact Darcy Goodson at 406-449-5000 ext. 117 or [darcy.goodson@mt.usda.gov](mailto:darcy.goodson@mt.usda.gov) you may also RSVP to Chris Evans at [lccd@mt.net](mailto:lccd@mt.net).

The cost of the event is \$8 and lunch will be provided by the Lewis & Clark Conservation District. Payment should go to Lewis & Clark Conservation District, 790 Colleen Street, Helena MT 59601.

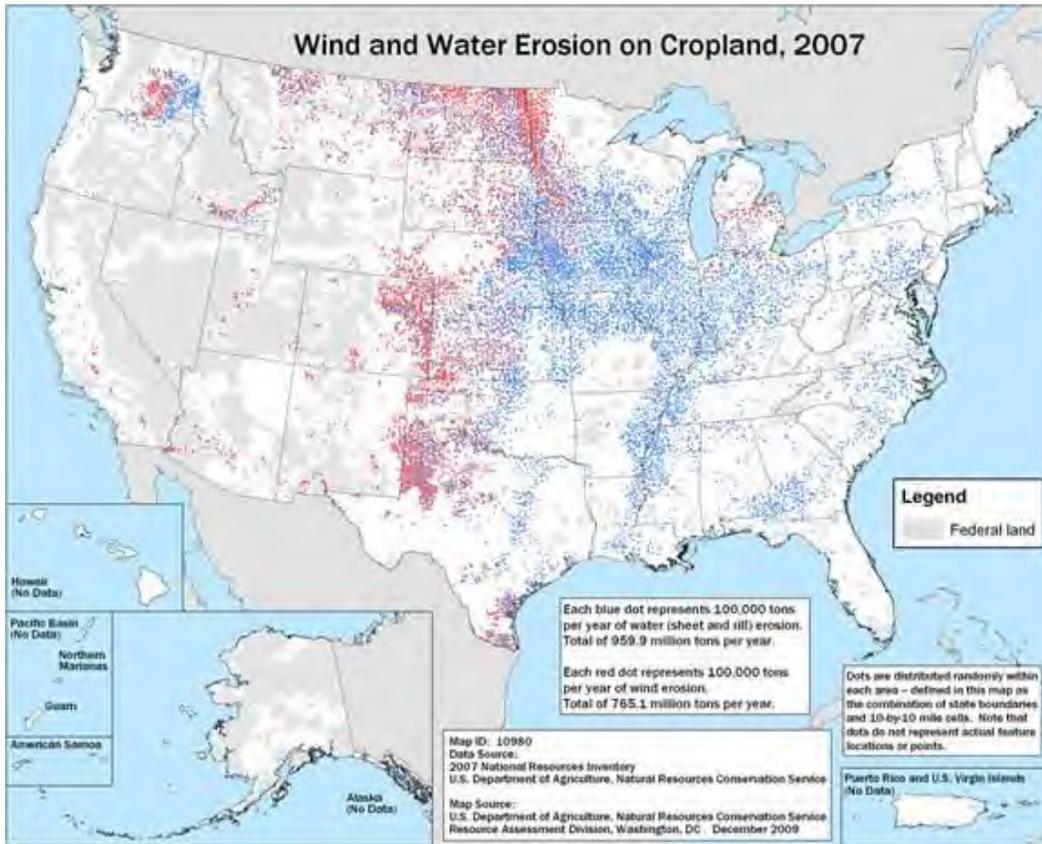
***RSVP no later than July 19 in order to have enough food for everyone.***

## Stewardship: Part 3 of 4

### **Cropland stewardship – by Darcy Goodson, NRCS**

A friend recently commented to me, “take care of the land and it will take care of you.” Making a living off the land is the foundation of agriculture and essential to maintaining the way of life that agriculture provides. Many places in Montana have been blessed with fertile soils that make living off the land possible. It is important, then, that our cropland soils be treated as resource, and that we practice good stewardship to continue that way of life.

When looking at soil resources, the top couple of inches in a soil profile are where the bedrock or other parent material that forms the soil has weathered into fine particles and has combined with living and decomposed plant material to form “top soil”. This top soil is the primary source of fertility and organic matter which dictate important physical and chemical traits like infiltration, pH and nutrient cycling. An inch of top soil can take between 500 and 1000 years to form, but can be lost quickly to erosive forces like wind and water.



operations not only helps to increase the fertility of the soil and crop health, but also protects soil from erosion. Experts have outlined several principles of soil health that seek to accomplish these goals.

*Minimize disturbance.* Soil that is not tilled forms a structure with soil particles, air and water which

The good news is that wind and water erosion in the United States has steadily declined over the last 25 years according to data collected as part of a National Resources Inventory (NRI). This shows the good work of cropland stewards in the US. There is still, however, over 959 million tons of soil lost from wind erosion and 765 million tons lost from water erosion every year. Between 1982 and 2007 The US also lost 14 million acres of prime farm land to development. For these reasons, continuing to improve stewardship and soil health is key to long-term, sustainable agricultural production.

The term "Soil Health" has been thrown around a lot lately and can be a little confusing. How can a soil be "healthy" and what does it have to do with stewardship? If we break it down, health refers to the proper structure and function of a system. So, soil health refers to the ability of the soil to perform its essential functions like infiltrating and holding water or cycling nutrients with the ultimate goal of being a good habitat for crops. Promoting soil health into cropland

promotes soil biology and increases water infiltration.

*Keep the soil armored.* Maintaining residue on a crop field reduces its exposure to erosive forces and adds organic matter.

*Keep a living root in the soil.* Keeping something growing in the soil for as long as possible adds organic matter and keeps soil biology functioning.

*Increase crop diversity.* Maintaining a diverse rotation breaks disease cycles while each crop type adds unique benefits to the soil.

The use of these principles over time should result in increased soil organic matter, which is the key objective of improving soil health. They are also important for the fight against erosion and holding onto the fertility that we work so hard for. Cropland soil is vulnerable to degradation and erosion precisely because we use it as a resource. It is also a valuable resource that can take hundreds of years to replace, making cropland stewardship a worthwhile cause.

## New Face in the Helena Field Office

Natural Resource Conservation Service (NRCS) in Helena, MT received a summer pathways student named Nathan Matteson for the short summer months of May- August.

Nathan was born and raised in Butte, MT where he generated an interest for conservation and the outdoors. This interest is what drove him to go to The University of Montana Western to pursue a degree in Environmental Sciences and a minor in Sustainable Natural Resource Management. With one year left of school, and two years of hands on training with NRCS, Nathan hopes to use his knowledge and understanding of the natural world to help make a difference in the place he calls home. He sees no better way of doing this than working directly with the source and helping the individuals who make a difference every day

## Rebirth and Sevenmile Creek

by Lisa Bay, Consultant for Prickly Pear Land Trust



When PPLT first acquired the 350-acre Sevenmile parcel as part of the Peaks to Creeks project, it wasn't immediately evident just what a treasure had been secured. The streambanks were deeply eroded and incised, weeds out-competed native plants, and the stream often ran chocolate brown from sedimentation.

After 1.5 years of rest, a different picture is emerging, even to the untrained eye. Native willows, all but gone at the time of acquisition, are sending up new growth along the streambanks, and nesting birds are returning to the thickening overstory. With extraordinary support from

professionals as well as volunteers and generosity from several funders, Sevenmile stands a chance to reclaim its former glory – with a little help from PPLT.

### *Getting the restoration right*

The first step PPLT took was to hire noted geomorphologist Karin Boyd and restoration specialist Mike Sanctuary to conduct a scientific analysis of past damage to the stream's natural function and potential restoration actions that could revive it. This initial assessment led in two directions: 1) securing the help of local experts and scientists to help us establish baseline conditions at the site so that restoration actions could be measured and adaptively managed, and 2) hiring restoration contractors to conduct the physical restoration to help correct identified problems.



## *The experts*

In April 2017, Last Chance Audubon Chapter called upon its membership to help PPLT establish baseline monitoring for bird species and populations at the site. Project leader Shane Sater registered an eBird site with Cornell University to track the monitoring electronically and has since been conducting twice-weekly surveys using strict protocols to track data. As of June 12, 77 species have been documented at the site, including sandhill cranes and long-billed curlews.

In May, Jordan Tollefson, from the Montana Department of Environmental Quality, led a streamside staff-training about protocols for measuring bank stability and erosion and sedimentation potential, as well as vegetation cover. This endeavor not only trained local professionals and PPLT Project manager, Nate Kopp, but also provided PPLT with baseline data for comparison with future restoration actions and outcomes.

Then in June, Natural Resources and Conservation Service staff leader Darcy Goodson headed up a team, including NRCS staff Diane Fitzgerald, PPLT restoration consultant Lisa Bay, and Montana Aquatic Resources Services' Lauren Alleman, to conduct "greenline" vegetation monitoring to establish current conditions with which to measure future results of vegetative restoration. "I was astonished to see the rate of re-growth of the native coyote willows, just from removing the cattle from the stream," said Darcy Goodson. "We found them rebounding in all but the barest banks, when last year at this time there was hardly a willow to be found."



## *Weeds*

One of the greatest challenges on the Sevenmile site is the level of weed infestation. Not only is there substantial weed coverage by at least eleven noxious weed species, but the list includes tenacious, hard-to-manage species such as leafy spurge and whitetop. Since weeds rob the streambanks and surrounding land of ecological value and health, and because PPLT is trying to be a responsible neighbor, it is employing an aggressive integrated weed management approach of chemical, mechanical, and biological methods – spraying at optimal seasons, hand-pulling or tree removal (in the case of Russian olive), and release of biological control insects for Russian knapweed and leafy spurge. Lewis & Clark Conservation District has generously contributed to on-site weed control at both the Tenmile and Sevenmile sites.

Spraying has been deployed for the first time this year, with annual treatments anticipated for several years. A mighty crew of volunteers from Deloitte Consulting participated in a streamside weed pull in 2016, and Russian olive will be removed over the course of 2017. Other weed pulls may be scheduled to control leafy spurge in sensitive streamside areas harboring recolonizing willows.

In May, Lisa Bay accompanied Montana State



University researcher Jeff Littlefield and assistant Annie deMeij in releasing the biocontrol Russian knapweed gall wasp. These tiny insects, first released in Montana in 2009, are being studied as possible control agents for this invasive species. Release sites at Sevenmile were marked with flagging and GPS points, with the hope of periodic inspections to see if the minute creatures are winning the day. Further, Lewis and Clark Weed District's Larry Hoffman supplied leafy spurge beetles to PPLT for distribution in 2016, with the promise of more to come in 2017.

## ***Restoration activities***

As of June, restoration contractors McNeal and Associates and Confluence, Inc. are preparing the necessary permit applications in anticipation of fall restoration activities on 1.8 miles of the stream. Restoration activities will range from relatively passive actions, such as removal of rock rip-rap in the upstream (westernmost) portions, to bank recontouring and rechannelization, plugging of the old channel, and revegetation in downstream portions. A fish passage will be constructed around the on-site irrigation diversion that currently disconnects fish populations up- and downstream.



The remaining 0.4 mile of stream is slated for restoration in 2018-2019, with fundraising to begin later this year. Restoration of this last segment will likely be completed sometime in 2019.

***Public access***

This ambitious menu of activities will require restriction of public access for at least two years. Public health and safety concerns are implicit in spraying and construction activities and post-construction restoration

will need some time to manifest. But patience will pay off – in a relatively short while, this natural area will be ready and waiting for your footprints.

## ***Thanks to our funders***

Major funding for Sevenmile restoration has been provided by Northwestern Energy, Willow Springs Foundation, The Cross Foundation, the Future Fisheries Improvement Program, the City of Helena, and the Montana Trout Foundation. PPLT anticipates securing funding from the Montana Aquatic Resources Services in the near future.



## **Hardening of the Arteries**

An opinion by Jeff Ryan, Supervisor - Lewis & Clark Conservation District

Before you turn the page on this - it isn't just another old guy lamenting about cardiovascular issues that has befallen him. It's about hardening of Montana's arteries - our rivers and streams.

Our rivers and streams are the lifeblood of Montana. Much of our municipal drinking water, irrigation and recreational use rely on this resource. However, we are hardening many of these arteries with riprap (rock). So what? Well if you are an old person with hardening of the arteries that is an easy answer. But if it involves a hardening of a waterway with riprap, the answer is more complicated.

I retired from the Montana Department of Environmental Quality after 20 years of service doing primarily river and stream permitting. I reviewed thousands of projects, many of them for rock or even

big wood riprap and a myriad of other structures to direct flows away from eroding banks. Most of the proposals were in valley settings where the nature of the stream is to move around a lot in the floodplain.

So again, what's the problem? Well one of the things I didn't understand initially was that it just isn't the water moving through the stream that forms the stream. The sediment/cobble that the water carries is really the workhorse of stream function. That material, from eroding banks, is what causes the stream to move in its floodplain. It settles out in bigger flow events and causes the stream to move away from the deposition area - usually causing another eroding bank. So the initial response is good - we will armor the bank and it won't move into our center pivot, barn, house or drinking water intake, costing on the average hundreds of dollars per foot. Problem is you can do that, but just a fact of nature, the stream will capture that sediment/cobble in another eroding bank and impact your upstream or downstream neighbors with increased bank erosion.

What's the answer? Well with the old person problem, more exercise and fewer french fries, but with our river/streams a bit more to consider. First, if you are privileged to own property on a stream and have concerns about eroding banks, contact your local conservation district. You will likely need a 310 permit from them and other permits for the bank work, but they can also provide a lot of information to help with your decision on what you might do. They have access to resources and expertise on these issues. It may be that those feet of bank that eroded last spring were near the end of the stream's migration in that direction or if not, what could you do to harden your bank with vegetation such as more riparian tree vegetation.

A lot of questions, but not as simple as a pill and more exercise.

## **Jumping Creek Project**

In April, the Lewis and Clark Conservation District helped out on a project in Meagher County, a willow soil lift on Jumping Creek. They went out and took some recent photos. Below left is the project in April, below right shows willow growth.



## **PARTNER NEWS**

### **From Fish Wildlife and Parks Biologist, Eric Roberts:**

"I was out and about yesterday and checked in on some of the willow plantings from last fall and spring. Exactly 50% (9/18) of the stems we sprigged on Tenmile with the stinger last fall leafed out. There wasn't any pattern that I could discern regarding what survived and what didn't.

A very high percentage (guessing 75%) of stems on Prickly Pear also leafed out – this includes willows sprigged by volunteers, the stinger, and the MCC crew. I also had a MCC crew sprig a bunch on Spokane Creek this spring, and nearly all of those leafed out. I'd say the conditions this spring were just about perfect for this type of thing. Attached is a picture of one of the willows on Tenmile."

Also from Eric, regarding the Aquatic Invasive Species Issues that the State of Montana is facing:

"AIS crews have begun monitoring for invasive species throughout Montana. Water samples will be collected throughout the state to check for presence of invasive mussels. Crews also look for invasive plants, amphibians, and pathogens. FWP has hired additional laboratory personnel for quicker processing of samples, which allows faster response time for positive or suspected positive samples.

AIS check stations are in place at primary points of entry to Montana as well as other popular corridors for recreational boaters. Four boat decontamination stations are in place at Canyon Ferry at the Silos, Goose Bay, Hellgate, and at the Bureau of Reclamation office on the north end of the lake. All boats leaving Canyon Ferry have to be inspected, and some boats may need to be decontaminated. Boaters at Canyon Ferry (or anywhere) can speed the inspection process by pulling all drain plugs, lowering and draining your motor, and drying any wet areas with a towel or sponge. For more information on the Montana AIS program visit <http://fwp.mt.gov/fishAndWildlife/species/ais/>."



## Nominations Open for the 2017 County Committee Elections

The U.S. Department of Agriculture (USDA) Farm Service Agency (FSA) is accepting nominations for the local County Committees from June 15 to August 1.

FSA's County Committees are a critical component of the day-to-day operations of FSA and allow grassroots input and local administration of federal farm programs.

Committees are comprised of locally elected agricultural producers responsible for the fair and equitable administration of FSA farm programs in their counties. If elected, members become part of a local decision making and farm program delivery process.

The Lewis & Clark County Committee is composed of three elected members from local administrative areas (LAA). The current area open for nominations is the Augusta area, which includes all land North of Township 16 North within Lewis & Clark County. Each Committee member serves a three-year term. One seat on the Lewis & Clark County Committee is open for election each year.

All nomination forms for the 2017 election must be postmarked or received in the local USDA service center by August 1, 2017. For more information on FSA county committee elections and appointments, refer to the FSA fact sheet: *Eligibility to Vote and Hold Office as a COC Member* available online at: [www.fsa.usda.gov/elections](http://www.fsa.usda.gov/elections).



# LEWIS & CLARK CONSERVATION DISTRICT

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<b>Contents:</b>	<b>Pg.</b>
Ladies Day on the Range	1
Stewardship Part 3	1
7Mile Ck & New Employee	3
Arteries	5
Jumping Creek	6
Partner News	7

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