



The Explorer

The Official Newsletter of the Lewis & Clark Conservation District

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Willow Versus Rock

Jeff Ryan, Lewis and Clark Conservation District Supervisor

In the early spring of 2015 the CD was approached by a landowner to obtain a 310 permit to do two 80 foot segments of rock armoring (riprap) on Little Prickly Pear Creek NW of Helena. Robert Putsch was losing irrigated hay ground to stream erosion and wanted to stabilize the streambanks using rock.

We met with Robert on site and explained to him we would issue him a 310 permit for the riprap but encouraged him to consider an alternative technique that would stabilize his bank and possibly save him some money for the installation. The alternative we suggested was a willow soil lift. Robert was receptive to this on one of the eroding banks and it would be an excellent comparison to the other segment which used riprap.



The willow soil lift is a relatively simple technique and the pictures pretty well explain the process. A machine operator excavates a terrace into the eroding bank down to the low water elevation.



Then conifers, bundled together in a tubular shape, are staked along the edge of the water. On top of the conifer bundle willow cuttings are placed in a density of 12-15 stems per foot and on top of them a coir fabric filled with soil about one foot thick (similar to a taco shape) is laid down.

On top of the soil filled fabric more willow cuttings are placed and then the topsoil removed from the original terrace excavation is placed on top of the willow and graded to match the height of the adjoining field. Approximately 1800 willow were cut for this project but most were cut by members of the Putsch family as was most of the labor provided for installation. The

willow was cut in early spring and stored dormant under a snow stash on the north side of Robert's shop until installation in late march.

There are more details to the installation and preparation, but for anyone who is interested in the technique, just stop by our Conservation District office and we can assist you with your project planning. Overall Robert was very satisfied with the project and stated "it cost a lot less" than the adjacent riprap project.



At left, a picture of the "after" with the willow soil lift. The fence will be removed soon. For reference at right, a picture of the riprap segment, which also was a success We will leave it up to the reader as to which technique they would prefer.

Small Acreage Landowner Workshop!!

When: Saturday November 5, from 10 a.m. to 3 p.m.

Where: 4-H Building at the Fairgrounds

Topics covered: Soil Health, Slake Test, Rainfall Simulation, Discussion about individual soil maps, Grazing/Plant health, Well testing and maintenance, Pollinators, Native Seeding

*****REGISTER TODAY! Seating is limited and the cost is \$10/person*****

High Tunnels—What Are They and Why do they Matter?

By Ashley Rivero, BSWC



NRCS currently offers a **High Tunnel System** program to assist producers.

What is it?

The High Tunnel System is a unique conservation practice used to extend growing season, improve plant and soil quality, reduce nutrient & pesticide transportation, improve air quality, and reduce the amount of energy used to produce crops for consumers. This method also assists with crop production in climates with shorter growing periods.

Why consider this?

The High Tunnel System supports conservation practices which address environmental concerns that correlate to the installation and use of irrigation to prevent erosion, and runoff from irrigation. This practice can help with additional conservation considerations such as: crop rotation, irrigation water management, salinity management, nutrient management, integrated pest management, critical area planting, mulching, roof runoff structure, diversions, underground outlets, heavy use protection, and cover crops.

Who's it for?

The High Tunnel System program is there for producers with land that is *already* producing crops and where sun or wind can potentially damage your crops. This system is also beneficial if you have a shorter growing season.

What you need?

First, you need a plan and to identify your purpose, growing season, layout, procedures and timing. Crops must be grown in the natural soil profile. Raised beds may be installed to improve soil condition, fertility, and access, and are only to be raised a maximum of 12 inches in depth. You will also need to know where buried public utilities are located and avoid placing this system over them. You will also need access to a viable water source for irrigation. The High Tunnel system must also be planned, designed, and constructed from a manufactured kit. The structure must be constructed of metal, wood, or durable plastic and be at least 6 feet in height at the peak of the structure.

Things to consider?

Snow loads, Wind loads, sunlight intensity and duration, amount of water and drainage, gradient on which structure will be built, and exposed surfaces. You may even want to

consider runoff recapture to use for irrigation purposes but this method should not be relied on. You also need to minimize soil disturbance and maintain plant diversity.

How to get involved?

NRCS accepts applications on a continuous basis. Producers must submit and complete a program application and other supporting documentation to be considered for financial assistance through EQIP. If you have any questions please contact us you can contact NRCS directly. The Helena Field Office staff can be reached at 406-449-5000 ext. 3.

Fall Seeding Pasture Species

Diane Fitzgerald, NRCS Helena Field Office



Dormant seedings of dryland pasture species can be successful in late fall as long as winter annuals such as cheatgrass and others are not abundant and soil temperatures are low enough that seeds won't germinate until spring.

Cicer milkvetch, Indian ricegrass, Green needlegrass, and others with hard seed coats need to be planted in the fall unless a standard germination test is over 50%, and then spring seeding is acceptable. Spring seeding is also acceptable if these species are a minor component of the mix, or if the seed is scarified.

Fall seeding should be performed after October 15th, or when soil temperatures two inches below the surface are 40 degrees or less for 10 or more days.

Fall can be an excellent time to plant. People generally have more time, as opposed to springtime when calving, irrigating, fencing, harrowing pastures and hayfields, branding, and artificial insemination are going on. Fall may be the only time possible

to get into wet pastures. Legumes can be planted in the fall where winter moisture is low & soils are well drained.

For irrigated pastures, choose species that are adapted to the local climate and soils, and that will respond to improved inputs and management such as fertilizer, water management, and grazing system improvement. They should be long lived, palatable, nutritious, and capable of regrowth after haying or grazing. Rest should be provided between grazing periods and/or hay cuttings to allow for root recovery and to maintain the stand.

Seedbed preparation can be accomplished by conventional tillage or seeding directly into standing stubble from a previous grain crop. Conventional tillage is not recommended for saline or sodic soils. It destroys soil structure and residue and brings salts to the surface, inhibiting drainage. Plant residue, including weeds, should be used to no-till into saline or sodic soils. Seeding into standing stubble works best in sandy to medium textured soils. For fluffy seed, lower drill speed to 3-5 miles per hour. Placement of small seeds should be between ¼ and ½ inch below the surface.

Most forages grown in Montana are cool season species. Monocultures of any species are rarely recommended. Mixtures are more stable due to differences in rooting depth and other characteristics. A stand of mixed species makes better use of available nutrients and water. A simple mixture would be one or two grasses and a legume. Complex

mixtures may be appropriate with variability in water tables, sodic/saline concentrations, etc. where single species might not be adapted across the whole field, and individual site conditions may be too small to seed or fence separately. Each cultivar should establish where it is best adapted. For example, a saline soil with a high water table may call for a mixture of beardless wildrye, Altai wildrye, and Garrison creeping foxtail. This mixture is expensive, and soil analysis could be used to find areas large enough for a simple mixture.

Grasses and legumes differ in season of growth, dormancy, and resistance to pests and diseases. Each species should serve a purpose and be compatible with the other species in the mix. Similar palatability should result in more uniform pasture grazing. Hay cut at the proper growth stage improves quality and stand longevity, which makes

matching up species important for hay crops as well.

Alfalfa does not tolerate high water tables and has a high bloat hazard. Birdsfoot trefoil, cicer milkvetch and several clover species might be a better legume choice for a mixture intended for grazing with a high water table.

Risk of livestock loss due to bloat is reduced if legumes are less than 40 percent of the stand and if bloat blocks are fed at least 24 hours before grazing. Bloat is less of a threat when birdsfoot trefoil, cicer milkvetch or sainfoin are used instead of alfalfa. However, these species are generally less productive and harder to establish than alfalfa, and sainfoin is also short-lived.

Careful planning considering these and other factors should make forage establishment successful.

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Tree Ordering Time! – Chris Evans

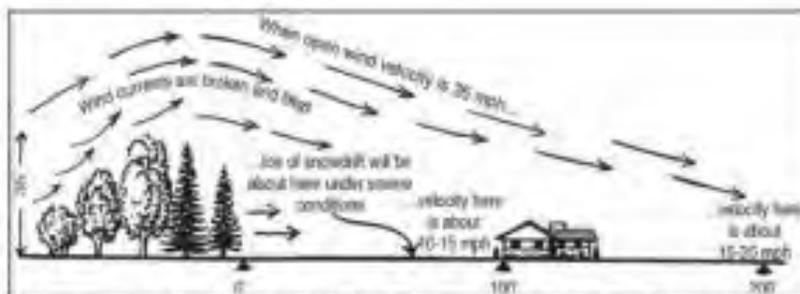
Fall brings with it the time to order trees for spring planting! Lewis & Clark Conservation District used to have a program that they ran via a nursery in North Dakota, but after a few years of bad experiences, we have opted to go with working out of the DNRC Conservation Seedling Nursery in Missoula.

Because of the minimums required for ordering, another alternative is to submit the order to the County Extension office where they'll bundle your order together with other smaller orders.

All of the trees come in the spring, usually in April, and will be delivered to the Fairgrounds in Helena unless other arrangements are made.

Remember when planning a windbreak, distances are important, as is locating well, septic, water lines and other information. Plan on watering your trees often at least for the first few years. Drawing or printing a map of your property showing buildings and other features can be helpful. Conservation District staff is happy to help with planting plans and species selection.

Species selection for our area can be tricky. The Conservation District has good experience on species that should work well for you and so does the County Extension office. Please give us a call if you need information.



A dense windbreak provides good wind protection and snow drift control. Adapted from Montana State University Extension Bulletin 366.

Current inventory and order forms can be found at <http://dnrc.mt.gov/divisions/forestry/forestry-assistance/conservation-seedling-nursery>. For more information on planning a

windbreak, some other good sources are:

http://www.msuextension.org/cascade/ag_pages/Trees%20and%20Shelter%20Belts%202012.pdf
and

http://www.nrcs.usda.gov/wps/portal/nrcs/detail/mt/home/?cid=nrcs144p2_027140

Wildflower Seed

The Conservation District has wildflower seed available to landowners. Fall is a great time to seed this mix! It is a mixture of native and non-native seed and costs \$35 per pound. While not all the seed is native, it's a nice mix that many people have had good luck with in the area. For more information, contact the District office at 449-5000 ext. 112.



An additional source for wildflower seed is Valley Farms or Agri Feeds for a seed mix or mixes through Treasure State Seed in Fairfield.

It's time to think about Fall Stream Projects!

If you need to do ANY work in or near a stream, contact the Conservation District Office to see if you need to obtain a 310 permit. A permit takes 30-45 days to obtain. Failure to obtain a permit could result in a violation of State Law and fines for the violator. Streams covered under the law include all perennial streams including the Reservoirs on the Missouri River (Canyon Ferry, Hauser and Holter).

If an emergency occurs and you need to work in the stream (if Life, Crops or Property are at imminent risk), please contact the Conservation District Office about filling out an Emergency Notification form. **These forms are required in the CD office no later than 15 days *after* the work is started.**

The office can be reached by calling 406-449-5000 ext. 112, or by emailing at lccd@mt.net.

PARTNER NEWS

Sevenmile Creek Restoration- Prickly Pear Land Trust

Just over six months ago, in early February, Prickly Pear Land Trust acquired two properties totaling over 550 acres in the Helena Valley. The properties aptly named Tenmile Creek and Sevenmile Creek after the waterways that run through them make up the bulk of PPLT's Peaks to Creeks Initiative. The Peaks to Creeks Initiative is an ambitious project aiming to provide community connections through the development of recreational trails and creek access for folks in Helena and the surrounding valley. In addition, PPLT intends to simultaneously restore the damaged landscapes and return them to a healthier state.

The bulk of the restoration work will fall on the Sevenmile property; this 350 acre property has been damaged by years of overgrazing, poor land-use practices, and the channelization of Sevenmile Creek in places. The creek itself will be the focus of the majority of the efforts as the channel is deeply incised, has limited vegetation cover, contains a barrier to fish passage, and is

one of the top contributors of sediment to the Tenmile watershed. Restoration options vary from relatively passive techniques such as vegetation plantings, installation of beaver mimicry structures, and weed management to more intensive methods involving significant earth-moving in order to reestablish connections to the historic floodplain.

At this point PPLT is working to secure funding for some of the upper reaches on the property and is hopeful that tools can be put in the ground as early as 2018, if not sooner. This project will have the added benefit of providing opportunities to engage the public, local students, and other volunteers in the restoration work itself; getting one's hands dirty and seeing the work first hand goes a long way to connecting people to their local landscape. This will be the biggest restoration project ever pursued by PPLT and provides an exciting chance to showcase what being a good steward means and why restoration and the protection of our waterways is so important. Stay tuned for future updates!

Natural Resources Conservation Service

NRCS runs the [ACEP \(Agricultural Conservation Easement Program\)](#).

Landowners in Montana who may be interested in specifically the Wetland Reserve Easement program (WRE) need to be aware that the application deadline for this program is October 21, 2016. Easements can be another tool that landowners can use to keep their property working for them for the long-term. If you need more information in the program, you can check out <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/mt/programs/easements/acep/?cid=nrcseprd400837>

or contact the Helena Field Office at 406-449-5000 ext. 3.

District Report – Chris Evans

Third quarter for the Conservation District was extremely busy. For the year, we're up to 38 permit applications for stream work, as well as 9 complaints/violations and 3 emergencies. District Supervisors toured the Upper Blackfoot Mining Complex restoration on the Mike Horse after the September board meeting in Lincoln in September. An amazing amount of work has been completed there with more to come.

In late September, district staff and supervisors attended the MACD Area 6 meeting in Ennis bringing 2 resolutions for the group to review. The first, on allowing industrial hemp to be grown more effectively in the state, passed on to the greater association business for the November meeting. The 2nd, and the 2nd time we brought this resolution, had to do with priority resource concerns as defined by the Local Work Group and the desire by the board to have them allow for more than one concern for funding priority, as well as the concern that the board has on the push for Resource Management System contracting by NRCS, and the CD's belief that it is exclusionary to landowners who cannot afford to implement RMS contracts and therefore whose projects don't rank as well. Unfortunately, that resolution failed again. The CD will be looking toward other solutions to that problem.

We look forward to our Small Acreage Landowner workshop in early November! Year end will find us planning for a probably Cheat Grass Management workshop as a follow up to last year's event. That event was co-hosted with the Lewis & Clark Weed District and will be again. November is the state MACD meeting, this year in Sidney. It's uncertain as to whether anyone from Lewis & Clark CD will attend.





LEWIS & CLARK CONSERVATION DISTRICT

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