



# The Explorer

The Official Newsletter of the Lewis & Clark Conservation District

Volume 55, Issue 3

Summer 2016

## Congratulations Helena High - Envirothon State Champions 2016!



**Figure 1-This year's Championship Team**

### What is Envirothon?

Envirothon is an annual state-wide natural resources competition sponsored by the Montana Association of Conservation Districts to assist high-school age students in learning more about five different natural resource areas: Wildlife, Aquatics, Forestry, Soils and Range Science. Students work in teams of five to complete tests on each of these areas.

### What Does it Entail?

The students were tasked to produce and present a 10-minute solution to a special topic. This year's special topic was invasive species and students were challenged to design a public fishing access on a private ranch that minimized and prevented the spread of aquatic and terrestrial invasive species. The presentations were judged by a panel of experts from local, state and federal agencies.

It's not over yet for Helena High, they have the opportunity to attend the North American Envirothon competition in Ontario in July but they need your help to get there. The team needs your help raising money to help with their travel costs. The Lewis & Clark Conservation District budgets funds annually to support the teams and have been doing so since 2009. However, we can't cover the entire cost so they need you to donate if you can. Tax deductible donations can be made to the Lewis & Clark Conservation District.



**Figure 2-Capital High's team**



**Figure 3-Helena High's second team**

Helena High scored the highest in Aquatics, overall test scores and the special topic presentation in order to take home the gold. Their combined score was 627 out of a possible 800. HHS competed against 33 other high school and FFA teams from 21 locations around the state. These students and their coaches have been invited to compete at the North American Envirothon competition this summer in Petersborough, Ontario from July 24-29. Please wish them luck and help support these excellent leaders for Montana's future.

Envirothon please see their website at <https://www.envirothon.org>. For any further inquiries & or donations please contact the Lewis & Clark Conservation District. Thank you in advance for your support and representation of these bright students in our community.

*Editor's note: 3 Teams were sponsored this year at the Envirothon, 1 team from Capital High and 2 from Helena High. We would like to congratulate all the teams and recognize their hard work!*

## Over Grazing Solutions for Small to Large Landowners

By: Ashley Rivero

The discovery for us here at the Conservation District was during a stream permitting assessment on the Rocking Z Guest Ranch. The Rocking Z Guest Ranch along Wolf Creek, run by a



**Photo by Ashley Rivero**

ranching family since 1974, offer an innovative range of opportunities to horseback riders, vacations goers, internships, as well as ranching and conservation education with the full Montana experience. They offered to show us some of the environmentally friendly methods they have integrated into their daily operations and one that stuck out the most offers a potential solution to overgrazing problems. The focus of this article is to talk about the groundbreaking way they have discovered and successfully implemented a method to stop overgrazing on their land, reduce the amount of hay needed for their horses, how they are protecting the productivity and sustainability of their land all while saving money and living the life they love.

The owners, Patty and Zack inherited this ranch from Zack's grandfather in 1951, originally homesteaded in 1863. To prosper from their surroundings they found themselves at a Dude Ranch Association convention in San Diego where a speaker was discussing the high cost of hay and the

continuing threat of drought. He demonstrated a cheaper and more environmental alternative to feed livestock through the use of hydroponic fodder/barley production. It was a captivating idea for both Patty and Zack, so they began researching how this system could work for them. Is it safe? What are the nutritional and cost benefits? Is this feasible? What do we really need to make this work? Zack, who had made his living as a contractor, said “there’s a learning curve but the benefits are endless,” and both Patty and Zack feel this could be an excellent approach for landowners large and small. They began this learning experience by raising 20 trays and adding light to their root cellar mainly to provide feed to some of their older horses who had high medical bills. After a short time they noticed healthier horses, glares of interest from the other horses, and together decided to grow this endeavor even more. Those old horses are still thriving and their medical bills have decreased drastically. The *Rocking Z Guest Ranch* is by no means a small ranch, and therefore the work they do is on a larger scale however, Patty, originally from Texas, has been a 4-H leader for 17 years including four years as chairman of the Lewis and Clark County Horse Committee and Zack, a 5th generation Montana rancher who has successfully dabbled in many approaches to conservation and construction, are both advocates for this approach for all landowners with livestock, no matter the size.

The use of fodder is nothing new; in fact it dates back to the 1600’s. However, due to technology and engineering it is becoming economically more competitive for feeding options. Barley seed (not barley feed) in particular is chosen over other grains due to its high germination rate. Barley fodder is also the most nutritious of small grains, it is high in protein, energy, and it is rich in enzymes that improve digestion while also allowing a decreased use of



Photo by Ashley Rivero

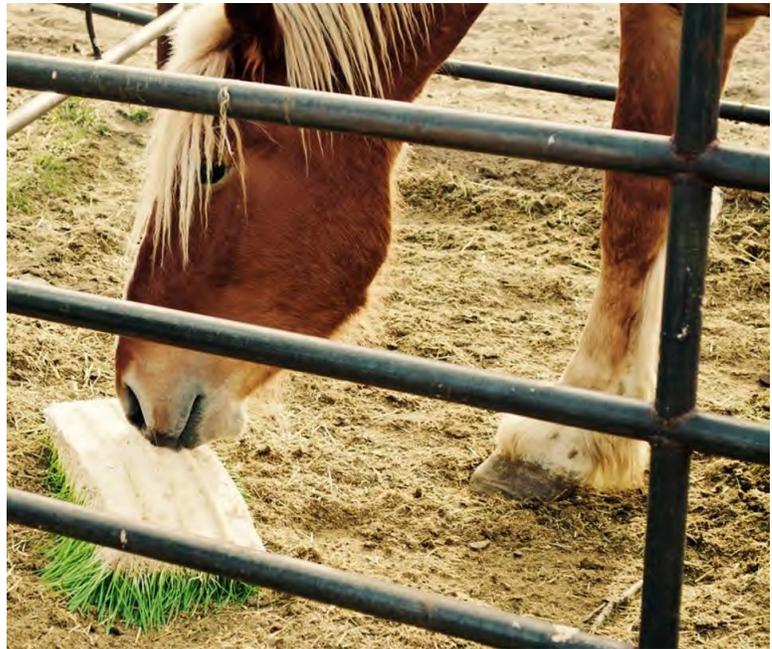
expensive grain. Patty and Zack give each horse two trays a day which comes out to about 3-5% of the horse’s body weight accompanied by some hay. The standard rule of thumb is one pound of barley seed to produce seven - twelve pounds of sprouted fodder. Hay is still part of the livestock diet due to higher calcium and other nutritional components. Fodder is just a supplemental alternative to decrease overall hay costs and reduce over grazing. The use of barley helps to offset the cost of hay while being able to produce fresh live green, high protein barley which is rich in enzymes and nutrients year round. Barley also creates energy and vitality, helps stimulate immune response, reduces anti-nutritional factors, and has antioxidant properties.

So let’s get down to the system. To consistently and economically sprout barley you will need a climate-controlled space. With the use of LED lighting and--depending on the size of your operation--an affordable climate control system, the hydroponic growing of fodder has become both financially feasible and sustainable especially over long periods of time. LEDs also produce wavelength specific light for optimized plant growth. The use of LED lighting allows for easier conversion of energy to electricity which produces lower heat output so growers can increase the light intensity to improve the growth and vitality of their plants. You are still creating heat, which is vital for the plants, and depending on the size of your set up you may need to have a simple ventilation system that can remove some of the heat from

the room. For people who are only supplying a few livestock, the ventilation system is likely unnecessary. This is one of the tricks, finding the right humidity and heat to growth ratio, which is dependent on the structure in which you will be growing. Keep in mind too much heat can also lead to vegetative damage. You also do not want too much humidity because it will cause an excessive outbreak of mold on every surface of the room. Now, here is the thing about mold, you do not need to be overly concerned with this wet mold. Yes, you should try to keep it under control but a little wet mold will not hurt your animals, but too much is not good for anything. With that being said on a larger scale you will need to keep up with the cleaning of your equipment, but do not fear if you have some mold on your trays.

The process is fairly easy but it does take some learning to figure out what is right for your property. The Rocking Z Guest Ranch has 70 horses along with other livestock so they needed a production building and needless to say it is classic, rustic, and is a multipurpose area. The building was constructed with waterproof concrete, Styrofoam ICF forms, and a gravity fed granary. For your small landowner this is not necessary yet keeping your barley dry until it is used is important. For growing, Patty recommends metal racks, at least two tiers high which should provide adequate space to raise four squares a day. The trays need to be one to two inches in depth, a few holes for drainage, and sturdy. Zack explained, "If you put in one pound of seed you produce 10-12 pounds of fodder. The trick is how much you put in the trays. Each tray you need a 3/8th thickness of barley (about 6 cups per tray) so the seeds don't dry out too quickly. You get product to feed in 6 days which works out to about \$35 a tub which beats hay prices. Hay you

have to consider, machine to handle it, ship it, weight, etc." Keep in mind this is not a solution to removing hay from your livestock's diet, it simply adds an area to reduce your hay costs, reduce over grazing, and help your livestock maintain healthy weight all year long. Another thing to note, if you place too much seed in the tray it will not germinate effectively, it won't go to complete waste because other animals will eat the seed although you want the most production of the barley feed for your livestock. Depending on the size of your production you will need a place for the water to drain into, that could be a bucket to reuse or a



drain. Patty and Zack have drip irrigation however, they are producing enough fodder feed for 70 horses. Lights will also need to remain on all

**Photo by Ashley Rivero**

day and you will need to water your seed barley with a gentle spray morning and night. Two trays a day will provide one third of the feed for your livestock. Patty exclaims "it will reduce overgrazing, and a field that will last for on a month of grazing can get up to three months with the use of fodder feed." This ranching family also runs their entire irrigation on straight waste vegetable oil and they have worked with the conservation district to install conservation easements and fencing of the creek to protect their land from erosion due to livestock overgrazing and many other conservation measurements.

### **Pro's**

They enjoy the fact that when Montana is in the middle of a blizzard they have green grass to feed their livestock. They enjoy watching the horses eat the bale, tossing it in the air, and watching the fodder grow. They appreciate that their horses hold their weight all year long, they are in better physical condition, and they maintain their weight even through heavy use. Other positive outcomes that correlate with the hydroponic production of barley is you don't have to move irrigation lines, plow fields, mow, bale, and all other maintenance and moving of larger feed product. You will also see savings on feed prices and will be able to take control of your feeding and production. With the use of this method you can produce a high yield in a small area and it is fairly easy to maintain. This alternative is suited for locations confronting hindered agricultural development as a result of feed shortages, water shortages, drought, adverse climatic conditions, rapid population growth and rapid urbanization and landowners with a few livestock experiencing overgrazing.

### Con's

Both Patty and Zack expressed that it's an every-day job and no matter how much preparation you take into consideration there is nothing like actually doing it. For example, when they first started to grow their operation larger they installed a air to air heat exchange and this was a failure, they then went to a high humidity exhaust fan where they found success. In a large volume it takes a lot of time. For small land owners with only 4-8 trays it shouldn't be as much of a task but it will still be something you need to tend to daily. They also stated that a large part of their learning curve was you have to learn how to water it and figure out the right temperature for optimal growth. Too much water or too little it doesn't grow right but you have new crop every 6 days so mistakes can be made in the beginning with little repercussion. For people in colder climates they emphasized that the "production needs to be in an insulated area and if you are interested you can buy a unit plug in ready, but for a small deal all you need is an entry way with a small drain that can catch extra water, because the trays have to have drainage. When you buy the trays you need drain holes. Do not buy the soft black drain trays, get hard plastic trays and drill 5/16 inch holes in each corner. The drainage and watering is the biggest issue you want to make sure you don't over water.

Getting to see what they have accomplished and watching the horses enjoy the barley was inspiring. Working with Patty and Zack and just hearing their passion for what they do as well as protecting their environment, their way of life, and hosting people from all around the world resonated anything is possible all you have to do is want it and work towards it. If you have any questions or would like to know more please contact the Conservation District. We always look forward to working with you and hope you might be inspired as we were when we saw what this family was doing!

## **Preparing Homes and Outbuildings for Fire Season**

By Jim Williams, NRCS Soil Conservation Technician

Now that the spring yard work season has begun and the summer wildfire season is nearing, it's a good time to prepare homes and outbuildings for fire season. Though the dramatic flaming front of a wildfire is what gets shown on the nightly news, it's not always the front that destroys buildings. Often, it's flying embers, small spot fires, or radiant heat from nearby flames doing the destruction. A building may

survive the main fire front only to burn down from residual spot fires and heat after the front has passed.

Burning embers can blow into flammable material piled next to a building, a dry lawn growing up against a home can carry a slow moving spot fire up to the base of the house, and radiant heat from flames 20 feet away can ignite pine needles and other debris in rain gutters. It seems strange that,

after withstanding an intense fire front, a building could be destroyed by something that a garden hose could extinguish. But, when you pair these small ignitions with delayed suppression because homeowners were evacuated and firefighting resources are managing other parts of the fire, it makes more sense.

Whether it's the headquarters of a farm or ranch, a homestead on the outskirts of town, or even a house in town, homes and outbuildings can be protected from wildfire by decreasing their ignition potential. One way to do this is to use non-flammable building materials, like metal roofing and siding, when building a new structure or renovating an older one. But another, often overlooked, way to protect structures is to regularly manage the combustible material surrounding them, which can be easily and inexpensively done during spring cleanup. The checklist below outlines some things to do during spring cleanup to protect homes and buildings:

- Remove vegetation away from the side of houses and buildings especially highly flammable plants like grass, junipers, conifer trees, and dense shrubs.
- In flower beds that are located against homes, replace flammable mulches, like bark, with decorative gravels. Rake leaves and debris out of the gravel often.
- Irrigate the grass surrounding homes and buildings. If the area can't be irrigated, keep the area mowed short and keep larger debris like sticks and leaves raked out of it. When mowing unirrigated areas, be careful of sparks from mowers and consider mowing in the morning or in the evening when temperatures are cooler and humidity is higher.

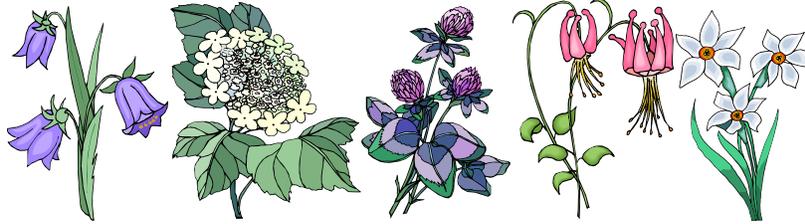
- Remove tree branches that overhang houses and other buildings
- Clean leaves and debris out of gutters regularly.
- Put screens over soffit and foundation vents to prevent embers from entering attics and crawl spaces
- Store firewood and flammable building materials, like lumber and plastics, inside of, or well away from buildings. If stored outside, regularly remove leaves and other debris that collect within and around the piles.
- Rake leaves and debris out from under elevated porches and decks and screen the areas to prevent the seasonal buildup of flammable material beneath these structures
- Store oil, fuel, and other flammable liquids safely. On the farm, use gravel and concrete to create a non-flammable area around fuel storage tanks and regularly remove all vegetation, leaves, and debris from around the tanks. In the fueling area, clean up all spills thoroughly. At home keep the fuel and oil for lawn equipment and propane tanks for barbecue grills in a metal cabinet, preferably one designed to store these materials safely.
- Replace all vegetation around household propane tanks with concrete or gravel to isolate the tanks from surface fires.

Doing some small, simple things now may make a big difference this fire season. You can find more information about protecting your structures by visiting the Firewise website at [www.firewise.org](http://www.firewise.org), talking with your local fire chief, or by calling the Helena NRCS office.

*NRCS: Helping People Help the Land*  
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## Wildflower Seed

The Conservation District has wildflower seed available to landowners. It's 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 Spring 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](mailto:lccd@mt.net).

## Some More Interesting Reading

By Supervisor Scott Blackman

**Book: Pastured Poultry Profit\$--By Joel Salatin**

This book was written in 1993 by Joel Salatin, who has Polyface, Inc., a farm located in Swope, Virginia. He has been raising chickens since he was a child and has developed a marketing plan to sell about 5000 broiler chickens per month May through October. These chickens are all raised on pasture with supplemental feed and harvested at 8 to 9 weeks of age. He also raises layers of 1000 or more and direct sells the eggs. These chickens are also grazed on pasture through controlled grazing methods following cows.

Joel goes in depth in his almost 400 page book of all facets of chicken production using MIG grazing and marketing of the chickens and eggs. It is easy reading and has pictures to help explain his operation.

You can purchase this book and others that he has written about his operation from the Stockman Grass Farmer, Amazon and other sources. There are some videos on YouTube that are interesting to watch also.

Even if you don't want to raise chickens, it is an interesting read, to see what out of the box thinking can do.

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## PARTNER NEWS

### **Protect Your Crop or Grazing Acres for Only \$250**

For a minimal \$250 service fee, you may be able to cover your crop or grazing acres that are not eligible for crop insurance coverage through the Farm Service Agency's (FSA) Non-Insured Crop Disaster Assistance Program (NAP).

NAP provides financial assistance to eligible producers when natural disasters cause low yields or prevented planting of an eligible non-insurable crop. NAP is available on commercially produced agricultural commodity crops for which the catastrophic risk protection level of crop insurance is not available.

Losses that exceed 50 percent of expected production may be eligible for a payment at 55 percent of the average market price for the crop. If you choose to "buy-up" to a higher coverage level by paying a premium, a higher level of coverage is available up to 65 percent at 100 percent of the average market price for the crop.

Beginning farmers or ranchers, limited resource producers, and underserved farmers or ranchers, including minorities or women, may receive a waiver of the service fees and a 50 percent premium reduction when eligibility requirements are met. For all other producers, the service fee is the lesser of \$250 per crop or \$750 per producer per administrative county (for 3+ crops), not to exceed a total of \$1,875 for a producer with farming interests in multiple county offices.

The deadline to apply for 2017 NAP coverage for certain non-insurable crops is approaching:

- ✓ Value loss crops (such as nursery, Christmas trees, grass sod, ginseng, aquaculture, floriculture, root stock sets, and mushrooms) is **September 1, 2016**
- ✓ Perennial grass or mixed forage intended for hay or grazing is **September 30, 2016**
- ✓ Annual mixed forage, wheat, triticale, speltz, rye, clover, vetch, or garlic is **September 30, 2016**

Additional crops are eligible for NAP coverage, but may have a later deadline to apply. For further information, please contact the Lewis & Clark County FSA at (406) 449-5000 Ext. 2.

## **FSA County Committee Nominations Open June 15 to August 1**

Farm Service Agency (FSA) county committees are a link between the agricultural community and the U.S. Department of Agriculture. Farmers and ranchers who serve on county committees make many of the decisions necessary to administer the programs in their counties. They work to ensure FSA agricultural programs serve the needs of local producers. County committees provide local input on commodity price support loans and payments, conservation programs, emergency programs, payment eligibility, incentive, and disaster payments for some commodities. FSA county committees operate within official regulations designed to carry out federal rules. County committee members apply their judgment and knowledge to make local decisions.

For election purposes, counties are divided into local administrative areas, or LAAs. Each LAA contributes one producer to serve a three-year term on the FSA county committee. Nominations will be open for specific LAA's in each county from June 15 to August 1, 2016. Nominees must complete and sign a Nomination Form FSA-669A available at USDA Service Centers and online at: <http://www.fsa.usda.gov/elections>. Nomination forms for the 2016 election must be postmarked or received in the applicable FSA County Office by close of business on August 1, 2016. Agricultural producers who participate or cooperate in an FSA program may be nominated for candidacy for the county committee.

## District Report – Chris Evans

In the past quarter the Conservation District has been busy with increasing numbers of stream permits, and planning events for the coming summer. To-date, we have 17 permit applications in 2016 with a few complaints and emergencies.

The Board has begun their "road show" season of board meetings. Every May, the CD meeting is in Augusta in the afternoon. June-August we're usually at the Dearborn Community Center outside of Wolf Creek on Highway 434. These meetings are morning meetings, beginning at 8:30 a.m. In September we're in Lincoln, usually at the Lambkins restaurant, in the meeting room. This meeting is also a morning meeting, beginning at 9:30 a.m. As is the case with all CD meetings, the public is welcome to attend these meetings, whether they have something on the agenda or not.

The office staff, Chris Evans and Ashley Rivero participated (and hosted) the East Valley Middle School Flood Awareness Day this past Friday. The rain held off til afternoon, the kids seemed to have a great time and the presenters all did a great job.



One of the walls built during the sandbag competition



Big Sky Watershed Corps member, Ashley Rivero demonstrating the Blue Reads of the Missouri River

The next quarter we'll be busy with stream permits, and are planning to host the Local Work Group meeting after the July board meeting. In addition we are planning on collaborating with the NRCS on a landowner workshop for fall. In August, the CD will be helping to host an Easement Workshop, put on by NRCS. If you want more information about the workshop – or anything else we're working on – please contact the office at 406-449-5000 ext. 112 or via email at [lccd@mt.net](mailto:lccd@mt.net).



# LEWIS & CLARK CONSERVATION DISTRICT

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<b>Contents:</b>	<b>Pg.</b>
Envirothon	1
Overgrazing	2
Fire Season	5
Interesting Reading	7
FSA News	8
District Report	9

*Come see us on the newly expanded website! [www.lccd.mt.nacdnet.org](http://www.lccd.mt.nacdnet.org) We're also on Facebook at [www.facebook.com/lewisandclarkcd](http://www.facebook.com/lewisandclarkcd)*

## LCCD SPONSORS-"Those who assume responsibility."

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