



Weston County Natural Resource District Newsletter

April 2019

DID YOU KNOW?
 You can get garden
 compost at the Newcastle
 City Compost located on
 Fairgrounds road

District Supervisors

Alicia Redding
 Chairman

David Tysdal
 Vice-Chairman

Emily Hartinger
 Treasurer

Gene Norman
 Supervisor

Tucker Hamilton
 Supervisor

District Staff

Lacey Sloan
 WCNRD Coordinator

NWTF
 Austin Sommerville,
 NWTF Forester

District Hours

Monday-Friday
 7:00 a.m.–3:30 p.m.

USDA-NRCS Staff

Paul Eitel
 District
 Conservationist

Building Soils

When we plant or want to grow something it all starts with the soil. The more we know about our soils and how to improve them the more success we will have in growing plants.

Soil is made up from parent material, whether it is from bedrock, or a sedimentary type of deposition. The texture of soil tells us the size of these particles. The largest is sand, the next smaller is silt which can be thought of as flour like material, and the smallest is clay and we would need a microscope to see these individual particles. If we have an extreme of one type or another of these particle sizes it would have severe limits on what can grow. Such as sand does not hold moisture very well however it allows roots to penetrate easily, and clay holds moisture and nutrients really well however roots can have a hard time penetrating. A combination of each of these particle sizes would be something to strive for.

Plants need soil for structure, water, air and nutrients. Roots of plants grow and die and sluff off cells and give off chemicals into the soil. All of this activity is what builds organic matter in our soils over time. We can augment our soils by adding organic matter, since organic matter helps hold water, nutrients, and opens up clay soils for roots, water and air movement. Organic matter has the effect of bring the soil pH level towards neutral. Because the base material of most of Wyoming soils our pH level is alkaline somewhere between 7.5 and 8.5. What this means is at that level some nutrients such as iron, zinc, copper are tied up in the soil and not available to the plants.

Tillage collapses the pores and tunnels that were constructed by soil organisms, and changes the water holding, gas, and nutrient exchange capacities of the soil. Compaction can occur from tillage or heavy traffic or frequent traffic on the soil which then constricts the root growth, water and air movement. There can be a loss of 25% to 50% of the organic matter in the soil each time it is tilled.

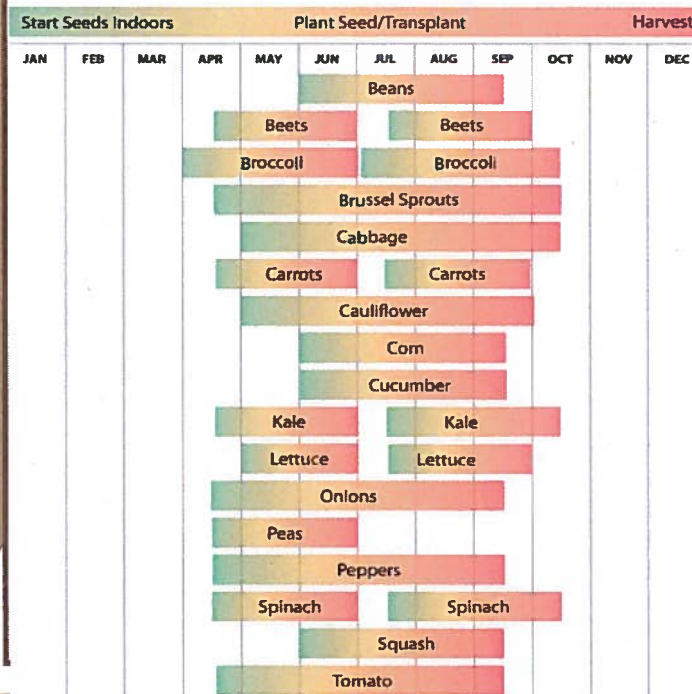
Living in the soil are plant roots, viruses, bacteria, fungi, algae, protozoa, mites, nematodes, worms, ants, maggots and other insects and insect larvae (grubs), and larger animals. Indeed, the volume of living organisms below ground is often far greater than that above ground. Together with climate, these organisms are responsible for the decay of organic matter and cycling of both macro- and micro-nutrients back into forms that plants can use. Microorganisms like fungi and bacteria use the carbon, nitrogen, and other nutrients in organic matter. Microscopic soil organisms like protozoa, amoebae, nematodes, and mites feed on the organic matter, fungi, bacteria, and each other. Together, these activities stabilize soil aggregates building a better soil habitat and improving soil structure, tilth and productivity. Agricultural practices such as crop rotations and tillage affect the numbers, diversity, and functioning of the micro- and larger-organisms in the soil community, which in turn affects the establishment, growth, and nutrient content of the crops we grow.

The more diversity of plants above ground the more diversity there is below ground of organisms. Particularly by adding some kind of legumes (nitrogen fixing) plants such as clover, beans, and peas. All of this activity below ground

especially with the beneficial fungi and bacteria has the symbiotic relationship of the plants providing nutrients to the fungi and bacterial and in return they provide water and minerals to the plants. These good fungi and bacteria fight and help keep under control the bad fungi and bacteria which cause different plant diseases.

We should strive to limit tilling, keeping some kind of organic cover on the soil surface and encourage a mix of plant diversity, or rotation of plant types within our landscaping or gardening areas. Improving the soil is a long term endeavor however, the benefits are priceless.

Zone 4 Planting Schedule



2019-20 Rural Cost Share Applications will be ready in MAY

- Fences for rotational grazing, stream bank stabilization.
 - Solar wells
 - Soil erosion mitigation.
- DUE August 1st, 2019**

FUNGUS AMONG US

“Is my tree dying!?!”

2

The mountain pine beetle epidemic that raged through the Black Hills for the last two decades ended a few years ago. Active MPB attacks are actually rare now, though we still get calls every spring from concerned individuals reporting trees with the all-to-familiar reddish-brown dead needles. Upon inspection, few of these reports in the last few years have been attributed to insect infestations. Most of the red needles we are seeing now are caused by one several tree diseases that are common to Ponderosa pine. Most tree diseases look the same from a distance, but there are subtle differences if you know what to look for.



Diplodia Tip Blight

Perhaps our most common disease, Diplodia tip blight, is a fungal disease that affects new growth. If you look close, you can see tiny black fruiting bodies present throughout the year. Spores are released in the spring as temperatures warm and the tree breaks dormancy. The spores are dispersed by wind and rain, settling lower needles and branches. Damage is restricted to new foliage and can be identified by discoloration of new needles. The new needles eventually die and cankers form on the new shoots. This stunts growth and increases the tree's susceptibility of other diseases. Only in cases of repeated infections year after year does it kill the tree.

Dothistroma Needle Blight

Although not as common, another fungal disease called Dothistroma needle blight, also occurs in the Black Hills. Dothistroma affects trees of all ages, but unlike Diplodia, Dothistroma only affects older needles. In extreme cases, the older needles can fall off prematurely and only leave the tuft of new needles on the end of the twig, giving it a lion's tail appearance. Spore dispersion is facilitated in a similar method as Diplodia, resulting in the lower third of the crown displaying the heaviest infection. Depending on the timing of the infection, the infected needles may not fall until the following year. The damage we are seeing now may have been caused from last spring's infection.



Elytroderma Needle Cast

Another fungal disease we can see in the Black Hills is called Elytroderma needle cast. This fungus invades twigs and branches and spreads into needles and new shoots on the same branch. Needles become discolored, twigs become twisted and distorted. Elytroderma is distinguished from other fungal diseases by the conspicuous witches-broom that forms on lower branches. Mature trees can survive a modest needle cast infection, only in extreme infections will Elytroderma alone kill a mature tree. However, like all infections, it stresses the tree and increases the susceptibility to bark beetle attacks.

Winter Desiccation

February of 2019 was the second coldest on record for the Black Hills region. The harsh conditions exposed many trees to winter burn, or winter desiccate. Winter desiccation occurs when solar warming and/or cold-dry wind causes needles to transpire excessive amounts of moisture while the ground is frozen and soil moisture cannot be absorbed to replenish it. The needles turn brown almost immediately and usually fall off the following summer. Unlike fungal diseases, the upper crown of the tree bears the most damage, as does the southwest portion of the crown. Winter desiccation is most common at high elevations, south-facing slopes, and along tree lines where trees have less protection from wind and sun.



The Five Principles of Soil Health

Paul Eitel, NRCS District Conservationist

Soil health is a very important natural resource concern; however, knowledge of how to build soil health is not widespread.

1. Soil Armor

Soil armor is important for reducing water and wind erosion, decreasing water evaporation, moderating soil temperatures, reducing the impact of energy from raindrops, suppressing weed growth and providing a habitat for surface dwellers, which are an important part of the soil food chain.

2. Minimizing Soil Disturbance

Minimizing soil disturbance, which is divided into biological, chemical and physical tillage, enables the soil armor (surface plant materials/residue) to persist. Biological disturbance includes overgrazing of forages that reduce soil armor and below ground biomass. Physical and chemical disturbance occurs from tillage burying crop residues and over stimulating microbial breakdown and excessive carbon release into the atmosphere.

3. Plant Diversity

Prairie plant diversity aided and allowed soils to develop prior to the introduction of annual cropping systems. Plant diversity uses sunlight and water to sequester carbon and other nutrients, preventing leakages into ground and surface waters. Understanding the four crop types — warm-season grasses and broadleaves, and cool-season grasses and broadleaves — is necessary for designing cropping systems that improve soil health

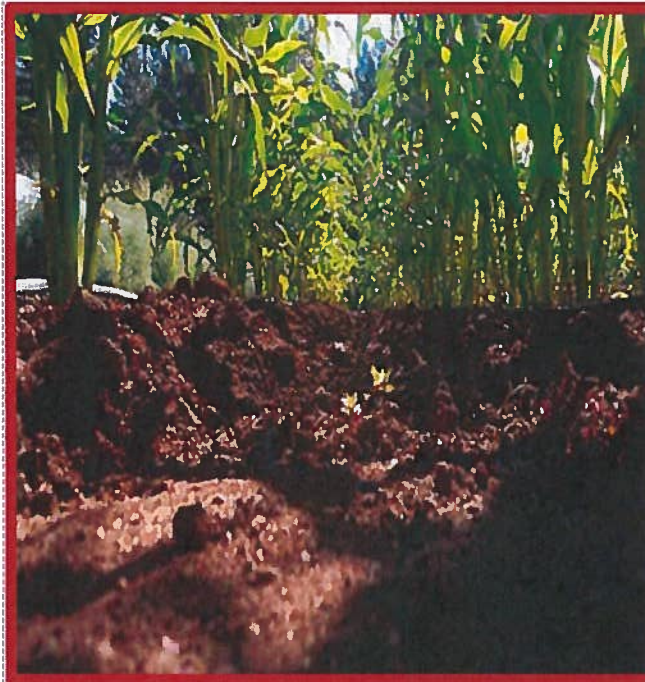
4. Continual Live Plant Root

A continual living plant root either from the commodity crop, cover crop or forage crop provides carbon exudates to feed the soil food web, which is exchanged for nutrients for plant growth. This process is also important for soil aggregate formation, which increases soil pores for improved water and air exchange

5. Livestock Integration

Lastly, livestock integration balances soil carbon and nitrogen ratios by converting high carbon forages to low carbon organic material, reducing nutrient transport from the soil, and promoting pasture and rangeland management in combination with cover crop grazing.

Contact the Newcastle NRCS for more information on Soil Health.



SOIL HEALTH WORKSHOP

MAY 6TH, 2019

Topics:

1. Understanding soil function as demonstrated by the Slake Test, Infiltration of water, and seeing how pore space is created.
2. Basic concepts of soil health and learning / implementing the 5 principles of Nature
3. Soil Biology
4. Maximizing carbon input into the soil eco system through cover crops



**FREE
WORKSHOP**

Where:

USDA SERVICE
CENTER

Conference Room
1225 Washington
Blvd. Newcastle,
WY

Time:

10:00am -2pm

Speaker:

Marlon Winger
*Regional Soil
Health Specialist*

Weston County
Natural Resource
District



307.746.3264 ext. 111
Lacey.sloan@wy.usda.gov



WYOMING BEEF SYMPOSIUM

APRIL 12, 2019

**WESTON COUNTY EVENT CENTER
24 FAIRGROUNDS RD, NEWCASTLE WY
9AM TO 3PM**

This is designed with YOU in mind! We are going to be spotlighting BEEF, our largest commodity produced right here in the great state of Wyoming! The Weston County Natural Resource District is teaming up with Audubon Rockies and UW Extension to offer this **FREE** opportunity for local Ag producers to learn about value added cattle production, conservation ranching, importance of BQA, generational ranching, and to shoot the bull! We hope that you will join us! Be sure to RSVP by April 5th to ensure you are on the list for lunch!



UNIVERSITY
of WYOMING | EXTENSION



Presentations Include

Value Added
Cattle Production
and Ranching
Sustainability

Importance of
Beef Quality
Assurance

Audubon's
Conservation
Ranching Program

Generational
Ranching

RSVP BY
APRIL 5TH

307-746-3264

For Lunch Reservations



**HOUSEHOLD
HAZARDOUS
WASTE**

August 31st

Upton: TBA

Newcastle: 930AM-1PM

Large quantities and businesses **MUST**
call prior to August 16th

Black Hills Natural Resource Youth Camp

June 12th-14th

It's almost time for the kids to be out of school for another summer vacation and time for the Annual Black Hills Natural Resource Youth Camp. **Camp will begin June 12th at 10:30am and run until June 14th at 9 a.m. at Mallo Camp!** Every year we have conservation/nature themed programming activities for the kiddos. The camp will also have fun special events such as our annual talent show, karaoke, and campfire entertainment. This youth camp is designed for boys and girls ages 9-13 and encourages youth to explore natural resource topics and HAVE FUN! **Weston County Natural Resource District will be sponsoring any youth from Weston County who would like to attend camp this year.** District Manager, Lacey Sloan, will be chaperoning again this year and if you have any questions regarding camp or activities please call her at the office, (307)-746-3264, for information.



**Black Hills Natural
Resource Youth Camp**

Applications will be distributed at school so check your kid's backpacks! If your kid doesn't bring one home come by the office at the END OF APRIL & I would be happy to print one off for you!



**Conserve
Water!**

RAIN BARRELS

Capturing and reusing rainwater offers a barrelful of benefits, including saving on utility bills, slowing runoff to encourage rain to soak into the soil more efficiently, and to save rain for those "not so rainy days" in Wyoming!



Features include:

- 50 gallon capacity
- Recycled pepper barrels
- Terra cotta color
- 35" tall and 23" diameter
- Jar top lid and screen for debris

Cost-Share Rate

\$50.00 each

Call US: 307.746.3264

EAVE TROUGH

CUT OFF
DOWNSPOUT
AND INSERT
INTO TOP OF
BARREL

OVER-FLOW VALVE

SPRIGT FOR
HOSE CONNECTION
CEMENT BLOCK
RISER TO IMPROVE
GRAVITY FLOW



**Weston County Natural
Resource District**

Annual Well Water Testing May 15th

WCNRD will be holding their annual Well Water Testing on May 10th. These tests are performed free of charge for district residents on private well drinking water. Please pick up your collection bottles in advance starting April 29th at the District office or the Town of Upton Office. Tests are on a first come first served basis.

Samples must be returned on May 15th by noon in Newcastle and 1pm in Upton. SAMPLES CAN NOT BE MORE THAN 24 HR OLD

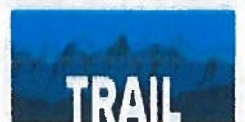
If you have any questions please call: 746-3264

NATIONAL TRAILS DAY HIKE

June 1st 10am at
the
Serenity Trail. See
you there!

**pets welcome
on leashes**

AMERICAN HIKING SOCIETY'S
NATIONAL TRAILS DAY®





**Bulk Rate
U.S. Postage
Rate
Newcastle, WY
Permit No. 52**

**Weston County Natural Resource District
1225 Washington Blvd. Suite 3
Newcastle, WY 82701
Phone: 307-746-3264
E-mail: lacey.sloan@wy.usda.gov**

The mission of the Weston County Natural Resource District is to provide leadership in conserving the natural resources in Weston County by providing information, education and technical assistance to meet the needs of our users.

Meetings are held the second Tuesday of every month at 3:00 p.m., unless otherwise published in the local paper, at the USDA Service Center. Members of the public are welcome to attend.

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UPCOMING EVENTS

April

9th- WCNRD Board Meeting 3PM (WCNRD Office)
12th- **FREE** 2nd Annual Beef Symposium (Weston County Event Center @ Fairgrounds) 9am to 3pm **RSVP FOR LUNCH 307-746-3264**

May

1st-Local Work Group (**Public Invited**)9am-12pm (207N 2nd Meeting Room Sundance WY)
6th- **FREE** Soil Health Workshop (WCNRD Office 10am-2pm)**RSVP FOR LUNCH**
10th- Celebrate ARBOR DAY Tree Planting! (Location TBA)
14th- WCNRD Board Meeting 3PM (WCNRD Office)
15th- RURAL WATER TESTS DUE!!!! (11am in Newcastle and 12pm in Upton)
16th **Rural Cost Share Applications Available**
29th OFFICE CLOSED-Memorial Day

June

1st- FREE FISHING Day!
1st- NATIONAL TRAILS DAY HIKE- 10am at the Serenity Trail for a 1.6 mile hike (Bring a FRIEND or a Furry I)
12-14th- Black Hills Natural Resource Youth Camp!!!! (**Weston County Kids will be financially sponsored by the Weston County Natural Resource District**)

July

4th-OFFICE CLOSED- Independence Day



**NWTF
NORTHEAST WYOMING CHAPTER
VETERAN HUNT/DINNER**

**Call:
307-941-2000
To Purchase
Tickets**

**May 10th, 2019
6:00pm
VFM Post 2516
2990 Main St
Newcastle, WY 82701**

**\$25 - includes meal, ticket for Bushmaster XM15-ORC AR-15, and entertainment by the Stacy Block band! (must be present to win gun)
Only 50 tickets being sold!**

Proceeds to benefit the NWTF taking veterans on turkey hunts in the area.

If you or a friend has too much to drink, the chapter would be pleased to provide you with a ride home. Be smart, do not drink and drive!