"Soil & Water: Yours for Life"

Study Guide for 2017 Conservation Poster Contest

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WAKE SOIL AND WATER CONSERVATION DISTRICT | WAKE COUNTY

CONSERVATON POSTER MESSAGE

Through your poster, teach someone what you've learned about soil and water conservation**:**

- **What** lessons did we learn from the Dust Bowl? Who's the "Father of Soil Conservation?"
- **What** are the 3 steps in the soil erosion process?
- **What** are best management practices (BMPs)? **How** do they prevent erosion and build healthy soil?
- **Why** is it important to protect topsoil? **Why** should people care?

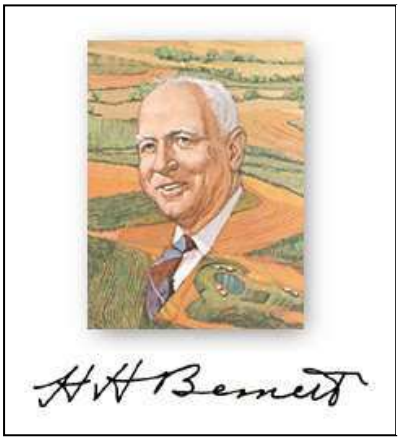
STEP 1: The DUST BOWL: It wasn't a football game!

No, the Dust Bowl was not a legendary football game like the annual Cotton Bowl or Rose Bowl. Instead, the Dust Bowl was an ecological disaster and a very hard lesson for America to learn. Back in the 1930's there was a "gold rush" – not for the yellow metal – but for golden wheat. Farmers planted acres of wheat as it was the cash crop at the time. However, this continuous planting and harvesting, planting and harvesting, planting and harvesting took its toll on the topsoil. The crop plants used up all the nutrients in the topsoil and no organic matter was added to replenish the nitrogen, phosphorus, potassium, and other nutrients and minerals that plants need. Poor farming practices "plowed the land to death" and coupled with a severe drought, the lifeless soil blew away in tremendous wind storms.

The first thing America had to do was teach its farmers to farm in a new way that conserved precious topsoil and made the most of every water drop. Programs were started to help farmers break traditional habits of over-tilling or over-plowing farm soil and understanding why it's important to build, rather than destroy soil structure that holds water, nutrients, and millions of microbes. Typically North Carolina is not included on the Dust Bowl maps. But our state had gullies that were as deep as any on the Great Plains. North Carolina also played an important leadership role in America's recovery thanks to a special person that you'll meet on the very next page →

Meet the Father of Soil Conservation!

Do you know this man? If you live in North Carolina you should because he played an important role in your state's history and also U.S. history. This is **Hugh Hammond Bennett** who is known as the **"Father of Soil Conservation."** How did he earn this prestigious title?



Hugh Hammond Bennett on right.

Hugh Hammond Bennett was born on a farm in Wadesboro, NC. As a boy, he saw muddy water run off his father's cotton fields. After graduating college from UNC, "Big Hugh" got a job inventorying our country's soils. He saw much erosion and was troubled by the loss of valuable topsoil from local farms. Bennett appreciated and valued soil in a time when most people took soil for granted. He understood that soil that took hundreds of years to form, could be harmed or lost in a matter of minutes by careless human actions. Bennett was very vocal about soil erosion and called it a "national menace." In the throes of the Dust Bowl in 1933, Bennett was named the Director of our nation's first Soil Erosion Service (SES.) He quickly set up model farms to show farmers how conservation practices reduce erosion and improve yields. In 1935, the SES was re-named Soil Conservation Service and today it's the Natural Resources Conservation Service. In 1937, President Franklin D. Roosevelt established soil conservation districts across the U.S. with the first being in Bennett's home county of Anson. During the 1930s, the Civilian Conservation Corps (CCC) worked on erosion control projects throughout the country. You can see remnants of CCC projects that were completed on worn-out farmland that is now Umstead State Park in Raleigh! As his legacy, Hugh Hammond Bennett lifted America out of the Dust Bowl, making soil conservation a national priority and sparking a worldwide conservation movement! Today we are still seeking new ways to protect, restore, and enhance soil with its dynamic life-filled and life-giving properties.

Take care of the land
and
the land will take care
of you.

Hugh Hammond Bennett
Father of Soil Conservation
1881-1960

I consider the soil conservation districts movement one of the most important developments in the whole history of agriculture.

~Hugh Hammond Bennett
Father of Soil Conservation

STEP 2: THINK LIKE A SOIL CONSERVATIONIST!

Today there are 3,000 soil and water conservation districts across America. The Wake Soil and Water Conservation District is <u>your</u> local district for Wake County, NC and <u>you</u> are entering its annual conservation poster contest!

Professional soil conservationists at each district work with local farmers and landowners to assist them, free of charge, with natural resources conservation. To do this job, soil conservationists must have a good background in soil science, ecology, math, and computers. They must also have good listening, speaking and writing skills to communicate and work well with people. They must also…

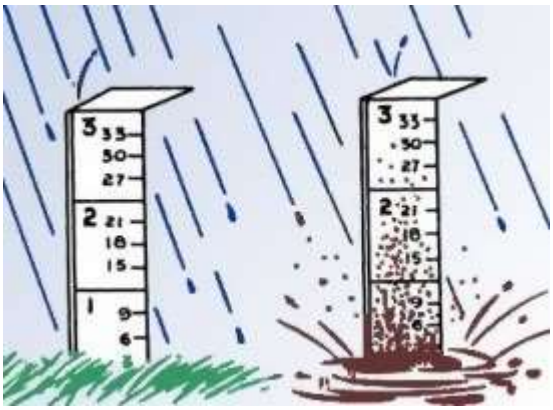
Understand the 3 Steps to Erosion and 3 Types of Erosion!

Erosion is a natural process, but human activities are rapidly accelerating the rate of erosion.

When raindrops fall on bare soil, the water erosion process begins. Look at this picture to the right and consider two facts→

1. Falling raindrops are clear.
2. Raindrops fall at speeds reaching 20 miles per hour!

Question: What do you notice about the raindrop after it's hit the bare soil?
Answer: The "splash" of the raindrop is "dirty".

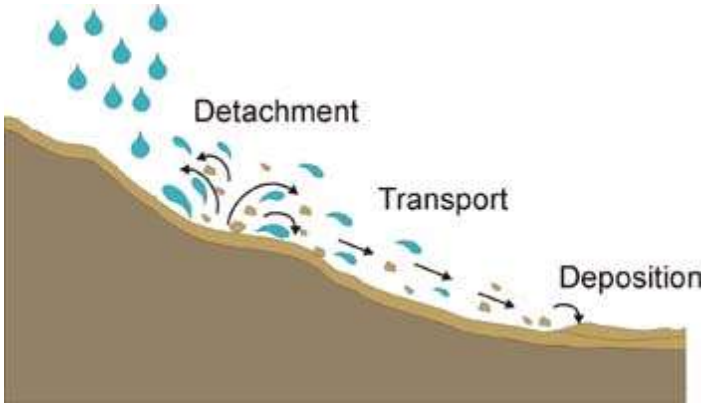


Why? Because the raindrop "exploded" against unprotected soil, creating tiny craters and splashing detached soil particles as high as 3 feet into the air and as far away as 5 feet!

← Compare these two splashboards to the left.

Scientists demonstrate soil detachment by using splashboards, which are white painted boards with increments of inches and feet marked on them. By installing splashboards, scientists can observe the height and amount of soil particles detached by rains of varying intensities.

3 PARTS OF THE SOIL EROSION PROCESS by WATER
(wind erosion also has a 3-step process, but different names)

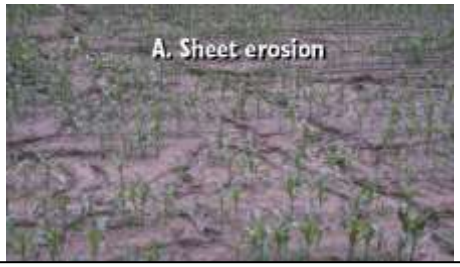


1. **DETACH:** Raindrops "explode" on bare soil, breaking the soil particles loose from the soil mass.

2. **TRANSPORT:** Soil particles are picked up & float, roll, or are dragged by water runoff that flows downhill pulled by gravity.

3. **DEPOSIT:** Soil particles are deposited in a new location. Soil that is deposited into water is "sediment" and is our #1 water pollutant by volume!

3 TYPES OF EROSION from MOVING WATER



Sheet erosion is the hard-to-see removal of soil from the surface by water runoff.

Water runoff forms many small channels in the soil that can be several inches deep.

C. Gully erosion

Rills are made much deeper by water runoff, creating a gully.

Identify the Problem and Recommend the Solution!

Soil conservationists in many ways are "Dirt Doctors" in that they heal soil and restore it to good health. And even in this day and age, soil conservationists make "house calls" or visits to farmers' fields. Once on-site, the soil conservationist asks the farmer many questions and makes numerous observations to diagnose the following:

- **What crops and/or livestock are raised?**
- **Are crops planted up & downhill –or- on the contour?**
- **How steep are the fields? How long are the field slopes?**
- **What soil type(s) is/are in each field?**
- **How healthy are crop plants? Any yellow leaves or stems? Poor growth?**
- **What tillage (plow) is used & how often? Any strip tillage or no-till?**
- **How much residue/organic matter covers bare soil after harvest?**
- **Any evidence of erosion? What type? Any sediment deposits? Is a stream or pond nearby?**
- **Any invasive weeds? Invasive pests? Any endangered or threatened species? Wetlands?**

Living plant roots…the BEST soil and water conservation going!

The soil conservationist also takes several measurements using a laser level or clinometer and may use an auger to take soil samples. Other tools include a Munsell soil color chart, soil pH kit, and a county Soil Survey.

Powerful Water – Go with the Flow and Watch where it Goes

How can water runoff have the power to pick up and move heavy soil? One answer is that we are experiencing more intense rain events. A second answer is in the topography of the land. On a farm, one of the first things a soil conservationist measures is the slope of the farmer's fields. Steep slopes allow water runoff to gain both speed and power. Long slopes can have the same erosive effect. So the conservationist measures "percent slope" and "length of slope" before recommending a best management practice that will work to slow down the water runoff and shorten the slope length, thus reducing water's erosive power.

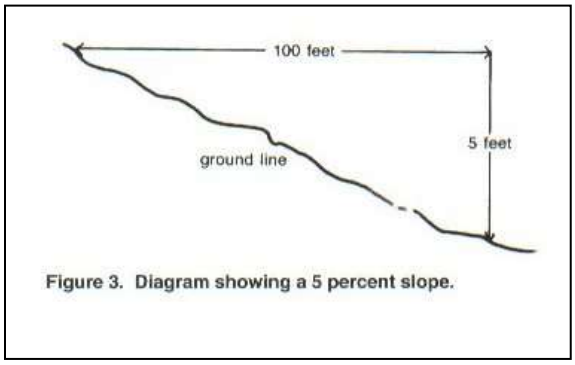


Figure 3. Diagram showing a 5 percent slope.

Once back at the office, a soil conservationist will enter all the collected field data into a computer to create a farm map. After doing many math calculations to determine soil loss while factoring in all the other data, the soil conservationist will meet with the farmer again to recommend specific conservation best management practices (BMPs) for the farmer's specific natural resources, budget, machinery, crop(s) and livestock. They will discuss cost-share funding that is available to help install the conservation BMPs. This is where the farmer and state or federal government may both put money towards the cost. Then the farmer may enter a financial contract, agreeing to maintain the conservation BMP for a certain number of years. Conservation isn't cheap, but its benefits to soil, people, and all living things are priceless!

What conservation BMPs does a soil conservationist recommend to farmers? See the next 5 pages → to learn about 12 different BMPs, and select one to research & showcase on your conservation poster!

STEP 3: BEST MANAGEMENT PRACTICES – A NEW WAY OF FARMING!

There are many different conservation practices -or- "best management practices" (BMPs) that people are using to preserve precious topsoil and protect it from erosion by wind or water. Every day soil research tests new approaches to determine what works "best" in different situations and regions of the state. Oftentimes, the "new" practice that works best is the one that has been used 2,000 years ago!

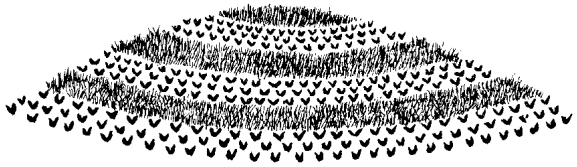
Below are real-world conservation BMPs that soil conservationists recommend to farmers across North Carolina. Many are used in combination together to be extra effective. Choose one or two BMPs to research and illustrate on your poster!

Contour Farming **Stripcropping** **Crop Rotation** **Cover Crop** **No-Till** **Terrace**

Field Border **Grassed Waterway** **Riparian Buffer** **Rotational Grazing** **Livestock Exclusion Fencing**

CONTOUR FARMING

When you till in curving rows across the hill, not up & down which causes erosion and a frown



Compared to regular up & down hill farming, contour farming can cut soil losses by as much as 50% on long, gentle slopes.

Instead of planting crops up and down a hill which leads to soil erosion, the farmer plants crops across the hill along the contour (on a nearly level grade following the curves of the land.) Each crop row acts like a "mini speed bump" that slows the speed of water runoff, reducing its power to erode precious topsoil. Slower water has a better chance to soak into the soil where it's needed for thirsty plant roots. Contour farming reduces sheet and rill erosion, as well as the transport of contaminants such as fertilizers and pesticides in runoff. Farmers save on tractor fuel too since contour farming is on nearly level grade.

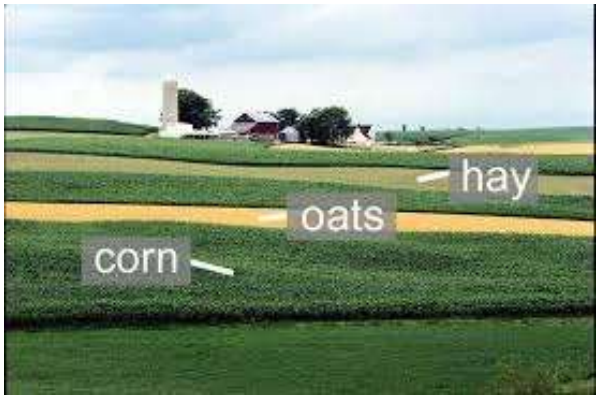
← Have you ever placed a penny in a spiral wishing well and watched the coin slowly slide down the sides before it finally went down the funnel?!

That's another good way to think of contouring farming.

STRIPCROPPING

Yipes stripes! From the window of an airplane, stripcropping looks like stripes on the land!

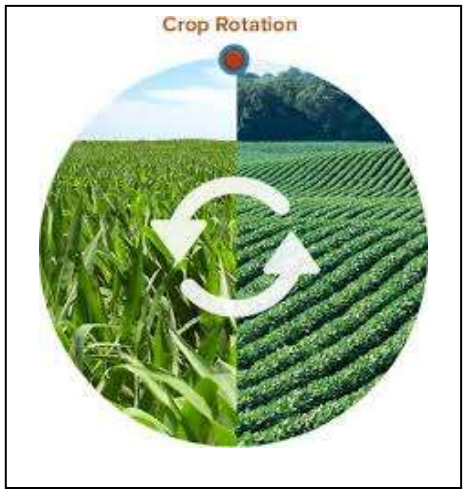
According to NRCS, planting alternate contoured strips of row crops + small grains + hay on a hillside can reduce soil losses up to 75% from those on hillsides farmed up and down hill with only row crops.

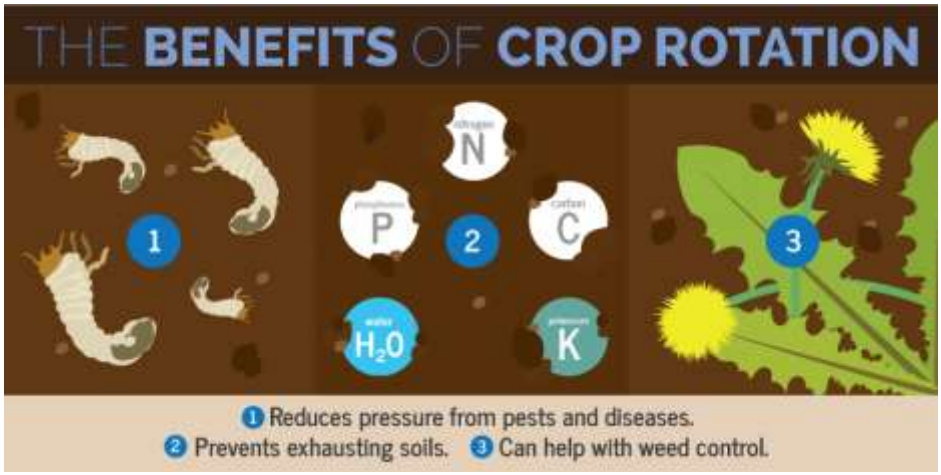


Stripcropping is when a farmer alternates strips of row crops like corn, wheat, or soybeans with a strip of close-growing perennial plant like grass and clover or small grain like rye. The close-growing crops hold water and protect the soil from erosion better that row crops do. When used in combination with other BMPs, stripcropping on the contour can maximize erosion control, and rotating the strips can result in soil savings like in crop rotations.

CROP ROTATION

Flip-flop that crop!
Just like colorful quilt squares grandma sews, different crops in each field the farmer sows.





Crop rotation is a system of growing first one crop then a different crop in different seasons in the same field. This keeps the same crop plant from depleting the soil of certain nutrients. For instance, corn takes up a large amount of the nutrient nitrogen to be healthy. But in several years, the corn plants can use up all the nitrogen from the soil if planted in the same field season after season. Instead, the farmer will plant soybeans in that corn field so the nitrogen-fixing bacteria on the soybean roots (and found on all legume plants) can add more nitrogen to the soil. Not only does rotating the main crop balance the soil's plant nutrients, but it also breaks up plant pest cycles from weeds, insects and diseases. Overall, this is better for the crops and improves soil health!

A popular crop rotation in Wake County, NC is tobacco, followed by wheat, then soybeans, and finally a cover crop the 4th year.

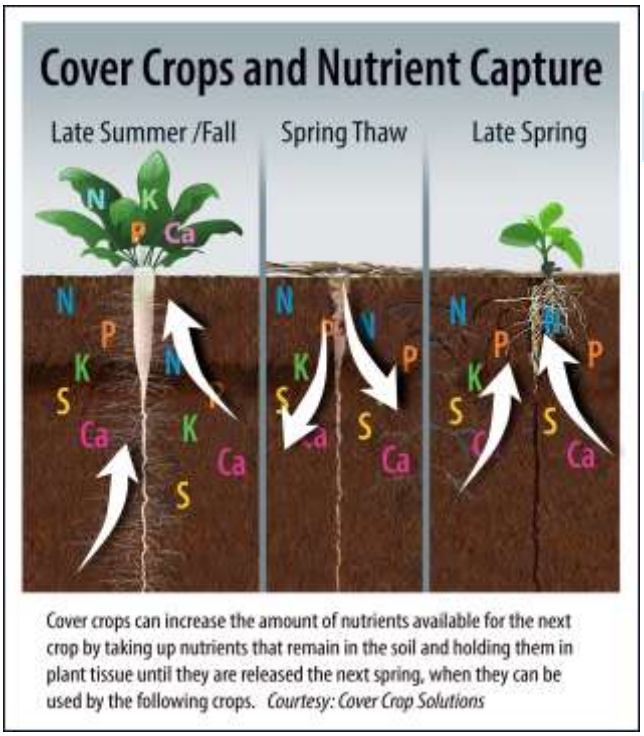
COVER CROP

Cover it or lose it!
Got erosion? Living roots -- we got your soil covered!

Just as a blanket covers and protects you while you sleep, a cover crop is planted to protect bare soil from the erosive power of wind and water. Cover crops are planted in fields year-round, even in seasons when crops don't grow. Timing is critical. In NC cover crops are typically planted in the fall as winter cover between the harvest and planting of cash crops.

The living roots of cover crops anchor topsoil in place, hold in moisture, discourage weeds, increase biodiversity, & capture and recycle nutrients in the soil profile as shown here. →

Cover crops include cereal grains such as rye, oats and winter wheat, as well as legumes such as alfalfa and sweet clover. The next crop is planted into the cover crop residue.



Cover crops can increase the amount of nutrients available for the next crop by taking up nutrients that remain in the soil and holding them in plant tissue until they are released the next spring, when they can be used by the following crops. *Courtesy: Cover Crop Solutions*

If you want "healthy" soil, cover crops can make that happen because they feed both the plants and soil organisms! How does this work?

Living plant roots transfer their "cake & cookies" (the food that plants make through photosynthesis) to the soil organisms, who respond by collecting and sending nutrients back to the plant roots. It's a win-win!

Especially when live roots grow a thriving network of fungal hyphae that secrete lots of glomalin (i.e. a protein that acts like soil super glue), creating great soil structure! The better structure a soil has, the more air, water and nutrients it can hold!
Win-win, again & again!

NO-TILL

There's no-telling how great no-tilling can be for soil health!


The color of soil – can you see it, can you? Nope! Thanks to no-till and crop residue!

Some people think if there's no plow, there's no how they can plant a crop. With no-till conservation, a farmer uses a special no-till planter that does NOT till and turn the soil, but rather slices a "slit" and slips in a seed. The no-till planter does not make numerous trips across the fields, so this saves the farmer time and fuel, while saving the soil from compaction.

No-till also leaves the residue from the previous crop on the ground such as the corn stalks after ears of corn are harvested. The residue blankets the soil, preventing erosion, weed growth and moisture loss. The residue provides cover, shade & food for small wildlife and soil organisms. The residue eventually decomposes, adding nutrients to enrich the soil.

TERRACE

Terraces are like "speed bumps" that slow down runoff!

Terraces are mounds of soil built around a hillside. Like "larger speed bumps", they reduce sheet and rill erosion by breaking long slopes into a series of shorter slopes. On shorter slopes, water doesn't build up as much speed and has less power to tear away soil particles. Terraces catch water at intervals down the slope and temporarily store it before delivering it through underground tile or a grassed waterway at the slope bottom.

Combined with no-till, terraces give excellent soil protection on most slopes, especially those greater than 300 feet in length.

FIELD BORDER

Frame your farm fields with field borders that feed wildlife and are pretty as a picture!

A field border is a strip of grass, legumes (like clover), or a mixture of the two established at the edge of a field. This prevents up & down hill end rows that could cause soil erosion. Plus, the vegetation captures and filters pollutants before they can reach and contaminate water.

More and more, farmers are planting native plants to provide habitat for wildlife, especially native bees and other important pollinators. Field borders also give farmers an area where they can turn their farm machinery around.

GRASSED WATERWAY

Good golly, bad gully! You need a grassed waterway!

Wherever a gully is forming or where water is going to run downhill, a grassed waterway comes to the rescue! A grassed waterway is a broad, shallow channel planted in grass that's designed to move surface water across farmland without causing erosion. The grass slows the flow of water that comes from crop rows, terraces, diversions or large rainstorms without causing flooding.

Grassed waterways also protect soil from erosion, reducing sediment delivery to local waterways. Another benefit for farmers is that grassed waterways, once established, can be driven on by farm vehicles, construction equipment, and forestry trucks.

A grassed waterway works like a giant water slide, guiding water safely off a field!

RIPARIAN BUFFER

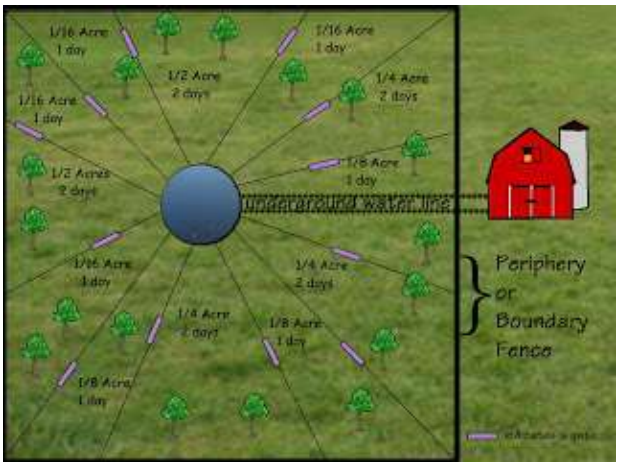
Trees are the oldest new thing in soil and water conservation!

Riparian buffers are areas of native trees, shrubs and perennials planted on both sides of a stream, river, or lake. The plants slow stormwater runoff and filter out its pollutants. In Wake County, landowners are required to maintain 50-feet of riparian buffer along both sides of perennial streams.

Research has shown that rivers and streams are cleaner when grass, trees and other plants grow along the banks in these buffer areas. Buffers also keep water temperatures cool, prevent erosion of streambanks, and provide vital wildlife habitat and travel corridors.

ROTATIONAL GRAZING

A moo-ooving feast for cows, pigs, and sheep!



Just as they rotate their plant crops, farmers also rotate their livestock herds to different pastures using movable electric fencing.

This allows grass and forbs to re-grow, allows manure to decompose and enrich soil, reduces soil compaction, and results in healthier pasture for healthier livestock.

LIVESTOCK EXCLUSION FENCING

Good fences make good neighbors! A BMP where a farmer fences his livestock out of streams, rivers and ponds. Instead of drinking directly from a stream, the livestock drink fresh water from a watering tank and a heavy use area is designed to handle the foot traffic of many animals around the watering tank. This prevents animal waste from entering the watershed, as well as stops soil erosion from the animals climbing up and down the streambanks.

What's WRONG with this PHOTO?

What's RIGHT with this PHOTO?

WHY WE NEED SOIL …

why we all owe our existence to less than 7 inches of soil and the fact that it rains

← **THIS**

NOT THIS →

SOIL and the RICHNESS & QUALITY OF LIFE

Soil is **alive**! Our quality of life is greatly influenced by the quality of soil and water resources. Without living soil, we and the **ecosystems** in which we live could not exist. Ecosystems are made up of interrelated communities of plants, animals and other living species such as bacteria and fungi. All of these AND humans are dependent on soil for their existence in one way or another. A widespread decline in soil quality and productivity would have a major impact on entire ecosystems. Soil is habitat for billions of living microorganisms that comprise a tremendous share of the earth's **biodiversity**. It is a home crammed and crawling with all forms of life. The greater the biological activity of a "living soil", the more productive and life-giving it is to sustain life on earth.

SOIL and the WATER CYCLE

Soil is a **living water filter** & **storage tank!** Soil pores are very important because they store water and make it available to plants. As water seeps downward through soil, it is filtered, cleansed of pollutants and stored as ground water. In septic systems, domestic wastes are slowed down as they pass through soil to allow time for decomposition before they enter the ground water. Hydric soils grow hydrophytic vegetation that supports wetland ecosystems. **Wetlands** filter surface water, maintaining and improving water quality by removing and retaining nutrients, processing chemical and organic wastes, and reducing sediment loads to receiving waters. Wetlands also recharge aquifers. Soil is a critical component of the global water cycle.

SOIL and the AIR CYCLE

Soil is a **living gas exchanger!** Again, soil pores are very important because they provide air for living plants and animals. Plants that grow in soil convert carbon dioxide into the oxygen that all animals need to live. As dead plants and animals decompose they complete the **carbon cycle** by releasing CO_2 in the atmosphere. An estimated 85% of atmospheric CO_2 comes from biological oxidation reactions in the soil. On the other hand, soil is effective in storing or **"sequestering" carbon** in soil as organic matter and in trees, which reduces the amount of CO_2 in the atmosphere, thus reducing the greenhouse effect and climate change.

SOIL and the NUTRIENT CYCLE & ENERGY CYCLE

All living things on earth require **energy**! In the living soil, most organisms derive their energy from dead plant and animal matter. Through the process of **decomposition**, 13 of the 16 **nutrients** that growing plants require for photosynthesis and healthy growth are recycled in the soil. This chemical food energy is then transferred from producers, to herbivores, to carnivores and omnivores. Thus, soil is intricately connected in the **transfer of energy** through food chains, complex food webs, and all trophic levels of food pyramids. Soil supports the energy cycle that supports many a living organism's life cycle!

SOIL and OUR HUMAN NEEDS

We live soiled lives! Living soil produces our **food, fiber (clothing) and fuel (energy)**. Many of the materials to meet our **shelter** and **transportation** needs are derived from soil. Soil provides the foundation, sand & gravel for our roads. Soils grow trees for lumber to build houses. Other down-to-earth homes are constructed from sod, adobe, and brick (North Carolina's piedmont is the "brick capital" of the world!)

STEP 4: TALK LIKE A SOIL CONSERVATIONIST!

Best Management Practices (BMPs) = the currently most successful methods or combination of methods adopted by resource users to reduce or prevent harm to the environment from their activities. New and existing BMPs are researched at universities, conservation agencies & organizations, companies, and working farms. Those that are proven most effective are termed "best". BMPs are the "best" solution that science & ingenuity have to offer at this time until we think & design something better!

Chemical weathering = all chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the earth's surface material.

Conservation = the use of natural resources in a way that ensures their continuing availability to future generations; the wise use of natural resources for long-term benefits.

Cover Crop = a crop which is planted in the absence of the normal crop to reduce erosion, control weeds and add humus to the soil once the cover crop is plowed in prior to regular planting.

Drought = the lack of normal precipitation for an extended period of time. A long period with little or no rain.

Ecosystem = an interconnected community of living organisms interacting with and depending on one another and the physical environment. The environment is everything that surrounds an organism and influences it.

Erosion = a natural process that moves soil from one place to another by wind, water, or other forces. The 3 steps to water erosion are: detach, transport, and deposit. Human activities accelerate the rate of erosion, which threatens soil quality, soil productivity, soil biodiversity, and the numerous ecological services soil provides to human and environmental communities.

Gully = a deep rut or miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Legume = plants that bear seeds in a pod. Typically have characteristics that allow them to improve soil fertility by adding nitrogen. Examples: alfalfa, clover, peas, and soybeans.

Mechanical weathering = all physical changes produced in rocks or other deposits at or near earth's surface. These changes result in the physical breakdown and disintegration of earth's surface material without affecting the material's chemical composition.

No-Till = a method of conservation farming where soil is not turned over by a plow; but instead a no-till planter creates a slit in the soil & slips in a seed. Planting is done over the previous crop residue that is left on the surface to protect soil quality and thus, water quality.

Nutrients = chemicals required for plants and animals to grow and exist; a chemical compound required for the life of an organism.

Organic matter = chemical compounds of carbon combined with other chemical elements and generally manufactured in the life processes of plants and animals. Most organic compounds are a source of food for bacteria and are usually combustible.

Rill = removal of soil through small water channels, resulting from accelerated erosion. A rill is generally a few inches deep but not wide enough to be an obstacle to farm machinery.

Row crops = agricultural crops, such as corn and soybeans, that are grown in rows.

Sediment = soil that is eroded off the land and deposited in water. By volume, sediment is North Carolina's #1 water pollutant. Sediment can carry water pollutants like chemicals, nutrients and pathogens into waterways. Sediment is no longer part of the soil ecosystem!

Sheet erosion = the removal of a fairly uniform layer of soil by the action of rainfall and surface runoff without producing water channels.

Slope = the inclination of the land surface from the horizontal. A slope of 20% is a drop of 20 feet in 100 feet of horizontal distance.

Soil Quality = the health and capability of soil to support plant growth and provide a reservoir that buffers the flow of water, nutrients, and energy through an ecosystem**.** Measures of soil quality include: soil texture, structure, water-holding capacity, porosity, organic matter content, and biodiversity (# and diversity of soil organisms). Healthy soil is an indicator of a healthy ecosystem!

SOURCES: Natural Resources Conservation Service, Iowa's "Lines on the Land," and NC Envirothon Resource Manual.

STEP 5: BE CREATIVE in USING ARTISTIC ELEMENTS of DESIGN!

- **Keep it simple!** Choose one or two of your favorite soil conservation BMP(s) to showcase on your poster.
- **Keep it legal!** Poster must be NO LARGER THAN 24" x 36" and mounted materials can extend NO HIGHER THAN 1/8" above the poster's surface (so go easy on the 2-D items! If in doubt…go flatter than higher!)
- **Tout the theme!** Position the contest title in a prominent place on your poster in an interesting way!
- **Keep your balance!** Thoughtfully arrange & balance your illustrations and text.
- **Get their attention!** Let your illustration help people visualize your message.
- **Craft a clever conservation message!** Carefully choose your words to briefly describe the soil conservation BMP, explaining how it prevents erosion, protects water quality, and/or builds healthy soils.
- **Ask for help!** Ask an adult to read & edit your work for accuracy, spelling, and effectiveness.
- **Use your imagination!** Ask an Art teacher or a local artist for a helpful critique!
- **Be original!** Do your own artwork and lettering by hand! Avoid copying or using the work of others.
- **Go Van Gogh!** Use artistic elements of design!

Here are some ideas:

- Use **bright colors**! Add gift wrap, foil, glitter, and cut-out letters in unique ways.
- Draw a poster in **comic strip** fashion with your own cartoon characters. If it looks like "Garfield" or "Bart Simpson", that's someone else's creation. *Yours will be better!*
- Artistically arrange **real photographs that you've taken** to portray your message.
- Use **2-D materials** (NOT higher than 1/8" from poster surface) to add eye-appeal & texture like real sand & clay, cotton balls, paper, fabric, fur, ribbons, etc.
- Incorporate **moving parts**: turn-the-circle, lift-up-the-flap, pull-down-the-tab, & slide-the-door.
- Look less wordy by **"hiding text"** under interactive parts as described above. Have fun with "paper engineering." People will have fun interacting with and learning from your poster!

SIGN YOUR MASTERPIECE -- PUT YOUR NAME ON BACK OF POSTER!

All student artists are asked to "sign" their artwork on the poster back with the label provided below. Students can write their wordier reports on the poster back or place it in an envelope taped to back.

POSTER I.D Please complete and glue this label on the back of each poster entry. Thank you!

STUDENT'S NAME:_____**GRADE:**_____

SCHOOL:_____**COUNTY:** **_WAKE_**

TEACHER'S NAME:_____

BEST THING I LEARNED FROM THIS POSTER CONTEST:_____

_____

_____

_____

_____

THANK YOU FOR ENTERING the 2017 CONSERVATION POSTER CONTEST!
Wake Soil & Water Conservation District, 4001-D Carya Drive, Raleigh, NC
(919) 250-1050 www.WakeGov.com