Tillage Survey & Best Management Practice Inspections

Over the next year, the Prince William Soil and Water Conservation District (Prince William SWCD) will be participating in two projects documenting agricultural Best Management Practices (BMPs) in Prince William County (PWC). The EPA's Chesapeake Bay Program manages a computer model to predict how nutrients and sediment will affect the Bay's ecosystem. The predictions from this model drive bay related environmental policies and regulations. As with any computer model, the information that comes out is only as accurate as the data put into it. To ensure the agricultural BMP data from PWC going into the model is accurate, the District is working with the Virginia Department of Conservation and Recreation (DCR) to conduct a tillage survey and an inspection of older structural BMPs in PWC.

The tillage survey will be an on the ground statistical assessment to determine the percentage of PWC cropland planted in 2015 using conventional tillage, minimum tillage, and no-tillage methods. It is believed that since the last survey of this type was conducted more than 10 years ago, significantly more land is being farmed using minimum-till and no-till methods. The computer model sees reduced tillage as beneficial to the bay ecosystem, so it is very important that there is an accurate assessment of current tillage practices in the model. These accuracies in recording BMP adoption will help prevent unnecessary regulations in the future.

In addition to the tillage survey, district staff will be working on inspecting older structural BMPs to see if they are still functioning. These structural BMPs primarily include animal waste structures and stream exclusion fencing. The computer model is programmed to remove the water quality benefit of these BMPs once the life of the maintenance contract ends. This is usually 10 years after the project is completed. Since most, if not all, of these practices are still functioning, we will be contacting landowners to get their approval to inspect the BMPs on their properties, and to confirm they are still working. Once documented, the BMPs will be reinstated in the Bay Model, ensuring that the computer has the most accurate data available. We are only inspecting BMPs that were installed as part of the Virginia Ag BMP Cost-Share and Tax-Credit program. If you have a BMP on your property you installed without financial assistance, the water quality benefit of what you have done is not being reflected in the computer model. If you are in this situation, contact the PWSWCD and one of our technical staff will assist you in documenting your voluntary BMP, so you will receive credit in the Bay Model for your effort to improve water quality.

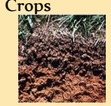
Soils Health Workshop

Thursday, August 6th 6-8:30pm

Fauquier Education Farm
8428 Meetze Rd,
Warrenton, VA 20187

Topics to be covered include:

- Multiple Species Cover Crops
- Soil Biology
- Plant Species ID
- Soil Pit walkthrough



If you are interested in this workshop, you can register at: http://goo.gl/forms/ARo3br4yxE.
For more information, please contact Nicole at nicoleethier@pwswcd.org, 571-379-7514.

The Prince William Soil and Water Conservation District programs and employment are open to all, regardless of race, color, religion, sex, age, veteran status, national origin, disability, or political affiliation.

If you would like to be removed from the newsletter mailing list or would prefer to receive it by e-mail, call 571-379-7514, or email pwswcd@pwswcd.org.

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PRINCE WILLIAM SOIL AND WATER CONSERVATION DISTRICT

Conservation InFARMation

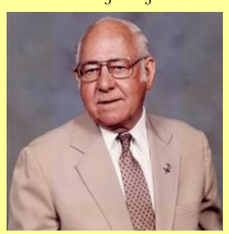
The mission of the Prince William Soil & Water Conservation District is to provide leadership in the conservation of soil, water, and related resources to all Prince William County citizens, through technical assistance information and education.

In This Issue:

In Memory

T. Clay Wood, Honorary Director for Prince William Soil & Water Conservation District, passed away on May 1, 2015.
As a passionate farmer in Nokesville, he served on the founding board of the District, and henceforth 19 years.

He will be greatly missed.



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Conservation Tillage: An Ecological and Economical Investment

As we approach the middle of planting season, we must remember the importance of maintaining healthy soils. This is particularly critical as it's been a wet spring, and with rain comes erosion, and with erosion comes the loss of good, productive soils. However, erosion can be greatly minimized and controlled depending on the type of tillage used for planting crops. The type of tillage has a direct correlation to soil health, crop yields, and other economic factors for this year and for years to come.

Soil erosion from conventional tillage

There are three main types of tillage used in modern agriculture; conventional-till, reduced-till, and no-till/strip-till. While all three of these are used in current agricultural practices with varying impact to the soil health, only reduced-till and no-till/strip till are considered to be conservation tillage practices that positively affect soil health. Conservation tillage practices help promote soil health by leaving 30% or more organic material from previous crops on the soil surface after planting is complete. Conventional tillage on the other hand, inverts the soil, incorporating most of the organic material below the surface. This process is very labor intensive, disturbs or eliminates many of the beneficial soil microbes, reduces the water holding capacity of the soil, and leaves the surface exposed for a high potential of erosion from wind and rain. Both ecologically and economically, conventional tillage is no longer a viable method of agriculture.

Corn no-tilled into residue

As stated above, conservation tillage offers a multitude of benefits that simply cannot be achieved with conventional tillage practices. According to the Conservation Technology Information Center the top ten benefits are:

1) **Reduces labor, saves time** *As little as one trip for planting, compared to two or more tillage operations, means fewer hours on a tractor, fewer labor hours to pay, and/or more acres to farm. For instance, on 500 acres the time savings can be as much as 225 hours per year. That's almost four 60-hour weeks.*
2) **Saves Fuel** *Save an average of 3.5 gallons an acre, or 1,750 gallons on a 500-acre farm.*
3) **Reduces machinery wear** *Fewer trips save an estimated $5 per acre on machinery wear and maintenance costs—a $2,500 savings on a 500-acre farm.*
4) **Improves soil tilth** *A continuous no-till system increases soil particle aggregation (small soil clumps) making it easier for plants to establish roots. Improved soil tilth can also minimize compaction. Of course, compaction is also reduced by reducing trips across the field.*
5) **Increases organic matter** *The latest research shows the more soil is tilled, the more carbon is released to the air and the less carbon is available to build organic matter for future crops. In fact, carbon accounts for about half of organic matter.*
6) **Traps soil moisture to improve water availability** *Keeping crop residue on the surface* traps *water in the soil by providing shade. The shade reduces water evaporation. In addition, residue acts as tiny dams slowing runoff and increasing the opportunity for water to soak into the soil. Another way infiltration increases is by the channels (macropores) created by earthworms and old plant roots. In fact, continuous no-till can result in as much as two additional inches of water available to plants in late summer.*
7) **Reduces soil erosion** *Crop residues on the soil surface reduce erosion by water and wind. Depending on the amount of residues present, soil erosion can be reduced by up to 90%, compared to an unprotected, intensively tilled field.*
8) **Improves water quality** *Crop residue helps hold soil, along with associated nutrients (particularly phosphorous), and pesticides on the field to reduce runoff into surface water. In fact,*

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If you would like to join our **mailing list**, e-mail **pwswcd@pwswcd.org**, or visit our website at **www.pwswcd.org** (left hand column). Future newsletters may only be delivered electronically to save paper and be more environmentally conservative.
For our events calendar and board meeting dates visit: www.pwswcd.org/calendar.html (board meetings are open to the public).

PWSWCD is a non-regulatory agency funded by Prince William County Public Works and Virginia Department of Conservation and Recreation (DCR)

...Conservation Tillage: An Ecological and Economical Investment, Continued from Page 1

residue can cut herbicide runoff rates in half. Additionally, microbes that live in carbon-rich soils quickly degrade pesticides and utilize nutrients to protect groundwater quality.

9) **Increases wildlife** *Crop residues provide shelter and food for wildlife, such as game birds and small animals.*
10) **Improves air quality** *Crop residue left on the surface improves air quality because it: reduces wind erosion, thus reducing the amount of dust in the air; reduces fossil fuel emissions from tractors by making fewer trips across the field; and reduces the release of carbon dioxide into the atmosphere by tying up more carbon in organic matter.*

The staff here at the Prince William Soil and Water Conservation District (Prince William SWCD) is committed to giving the residents of the county technical assistance on a wide variety of conservation issues. We also offer educational outreach opportunities through programs that we offer throughout the year. For more information, please visit our website at www.pwswcd.org or call us at (571) 379-7514 to talk with our technical staff about upcoming programs or technical assistance.

Interested in Cover Crops?

Kritter Cropdusting Inc. is able to seed cover crops into standing crops before harvest for maximum establishment. We are looking for interested farmers to collaboratively meet the minimum 200 acre criteria for a Fall 2015 cover crop planting.

If you are interested, please contact the Prince William SWCD by **August 15, 2015** at 571-379-7514 or e-mail Jay Yankey at jayyankey@pwswcd.org.

Adopt-A-Stream Update

David Letterman might have signed off from Late Night television and his Top Ten List faded into the sunset, but fear not, the Prince William SWCD in partnership with Clean Virginia Waterways, continues its own version of the Top Ten List! These are the top ten items collected during stream cleanups last year:

#10 Foam cups and plates
#9 Straws and stirrers
#8 Glass beverage bottles
#7 Plastic bottle caps
#6 Plastic grocery bags
#5 Other plastic bags
#4 Beverage cans
#3 Plastic beverage bottles
#2 Food wrappers (candy, chips, etc.)
And topping the list at #1 is cigarette butts!

How do we eliminate all this litter that is clogging up our streams and waterways? Consider joining one of our Adopt-A-Stream programs! A stream cleanup involves volunteers walking along a stream or paddling a stream channel, collecting trash and gathering information. Information gathered can include types and quantities of trash, debris too large to move, and problems encountered.

The Prince William SWCD can help individuals or groups find a stream, or you can select a stream on your property.

There are four different programs you can be a part of.

- The **Adopt-A-Stream Program** involves cleaning a portion of a waterway (at least ¼ of a mile) at least once a year for a two year commitment.
- Each April, the District partners with the **Alice Ferguson Foundation** for the **Potomac River Watershed Cleanup**. This is a one-time cleanup and can be established as an annual event.
- **International Coastal Cleanup (Clean VA Waterways)** has a one-time cleanup in September and/or October. This can be established as an annual event.
- Lead or be part of the **Earth Team Volunteer Cleanup. This is a one-time cleanup.**

Consider bringing your Scout Troops, 4-H clubs, ecology clubs, schools or school clubs, families, businesses, church groups, sports teams, home-school groups, or other organizations. Students can use

Continued on Page 3...

Welcome Veronica Tangiri, Associate Director, and Save Our Streams Biological Citizen Water Quality Monitoring Program Manager

Born and raised in Cameroon, Veronica has always had a keen interest in the earth's natural beauty. She believes the environment is a web and looks forward to learning even more about the connections through physical/data analyses and tools like Geographic Information System (GIS).

She received a graduate program admission in Sweden where she pursued environmental sciences, and began exploring GIS as a vital tool for the environment. She has a Master's Degree in Environmental Sciences from Mid-Sweden University, GIS certificate from Umea University, and a Bachelor of Science in Geology with a minor in Biology from the University of Buea in Cameroon. When her family immigrated to the United States, she joined them in Virginia in 2009. Since then, she has also received a certificate in Disasters and Ecosystems: Resilience in a Changing Climate by the United Nation Environmental Program, and a Python Programming certificate from George Mason University.

Currently she serves as a certified stream monitor for the Northern Virginia Soil & Water Conservation District. She is also a certified Virginia Master Naturalist, a board member of the Prince William Wildflower Society, and a member of the Student Conservation Association/AmeriCorps - Society for Conservation GIS and the Ecological Society of America (ESA). She was awarded a certificate for Community Stream Stewardship from the Prince William Conservation Alliance (PWCA) and holds the Stadia Board Society honors from the National Map Corps of the United States Geological Survey (USGS). Veronica also wrote several articles for environmental awareness-raising, and amongst them was "Empower the Woman and Save the Environment".

Veronica was appointed as an Associate Director in April 2015 for the Prince William SWCD board. She has been organizing water quality monitoring sites and training Save Our Streams certified monitors for the Biological Citizen Water Quality Monitoring Program in Prince William County. She welcomes anyone interested in water quality monitoring in PWC to join the team in collecting data for DEQ. If interested, you can contact her at waterquality@pwswcd.org.

Thanks to our Education and Outreach Volunteer/Intern, Alysha Rayner.

Alysha joined us in September 2014 as a volunteer with our Education and Outreach program, which then led to a spring semester internship. Alysha received her Bachelor's degree in Sustainability and Environmental Studies with a Conflict Analysis and Resolution minor from George Mason University. Alysha performed significant course work in Permaculture, Sustainable Business Practices, Ecology, Anthropology, Sustainable Economics; Conflict Analysis, Techniques and Practices, and Information Technology.

Major projects she was involved with included grant writing and presentation on behalf of Patriot Green Fund, as well as winterization and management of bee hives as part of a Sustainable World project. She has also designed an on-campus rain garden. Alysha volunteered with the Norfolk Botanical Gardens planning and teaching pre-kindergarten nature camps designed to educate children about sustainability and natural sciences using a museum, gardens, and hands-on activities.

Alysha's duties at the District included delivering education programs in classrooms, design, manage and maintain education program capsules, represented the District at community events and festivals, assisted with Adopt-A-Stream cleanup programs, etc.. Alysha was a great help, particularly while the education department went through a reorganization effort.

Alysha completed her internship on April 30, 2015, and is our new Education & Outreach Specialist.

...Adopt-A-Stream Update, Continued from Page 2

their volunteer time toward community service hours. Businesses can participate in company team building exercises and receive recognition for their stewardship of the environment.

Your group or organization can help preserve, protect and revitalize community streams. The Adopt-A-Stream program benefits our local Potomac River and Chesapeake Bay watersheds. It is easy, fun, and a great team-building experience for all ages. Join us and you will really make a difference!

For more information or to schedule a speaker for your group about the Adopt-A-Stream program, please visit our website at www.pwswcd.org, call 571-379-7514 or e-mail the Adopt-A-Stream coordinator at education@pwswcd.org.

Pesticide Disposal Program
Sept. 16, 2015
Evergreen Volunteer Fire Department
3510 James Madison Highway, Haymarket, VA 20169
Collection Times: 9am-1pm
For more information, please visit: www.vdacs.virginia.gov/pesticides/disposal.shtml