The Harford Resource

A Publication of the Harford Soil Conservation District

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www.harfordscd.org

UPCOMING EVENTS

April 11
Board of Supervisors Meeting

April 12
Harford County Envirothon Competition

May 5
Harford County Agricultural Services Open House & Ribbon Cutting

If you would like to:

- Receive a digital version of this newsletter or
- Would like to submit an article or
- Have an idea for an article...

Please contact the Editor, **Leslie Zink,** at leslie.zink@maryland.gov

Best Management Practices Spotlight:
Ford Stream Crossings

By Andrew League

It is an age old problem: How can we get our equipment and livestock across a stream in the most economically viable method while still protecting the stream's water quality, surrounding riparian wildlife habitat as well as any aquatic life that lives in those waters? There are several different ways to get there from here: Bridge Crossings, Culvert Crossings (Pipes), and Ford Crossings. Each type of stream crossing has its advantages and disadvantages and the type used is based on selection criteria such as: existing stream characteristics, watershed size and conditions, the frequency and expected use of the crossing, and economic factors. In this article we will explore the Ford Stream Crossing.

A Ford Stream Crossing can simply be a path through a stream that allows passage from one side of a stream to the other. It can also be a more engineered solution consisting of an entrance and exit ramp made of durable surfaces like gravel, rock, or cement and by using the natural stream bottom provided it is stable and unlikely to erode. For example, a stream with a channel bottom of bedrock provides a stable surface for crossings. However, if the natural stream bottom is composed of materials likely to erode or be moved by storm waters, such as sand, fines, or small gravel, that stream bottom would need to be armored using a durable surface material, such as large rock or pre-cast slatted concrete panels, that won't be moved by high stream flows.

Ford Stream Crossings generally work best when the stream channel is wide, flat, and not very deeply incised – bank heights less than 4 feet. Frequency of use is also part of the decision criteria. For example, if the stream crossing will only be used seasonally for planting, tending and harvesting then Fords are a more economical option. If year round, high frequency use is expected then bridges might be a better option. Culvert Crossings are generally not recommended because of their more frequent maintenance requirements, their restriction of the stream channel, and impediments they pose to aquatic life in the stream. In any case, a stream crossing should always be aligned perpendicular to the stream channel. (***Continued on Page 2)***

Ford Stream Crossings *Continued…*

Ford Stream Crossings are often used to replace older Culvert Crossings if stream morphology is appropriate. There are a number of reasons for replacing older, failed Culvert Crossings with Ford Crossings. First, older Culvert Crossings were typically constructed using several sections of concrete pipe which were keyed into each other during initial installation. Over time and with repeated use and typical flooding conditions those concrete sections will deteriorate and separate from each other resulting in gaps between the pipes that allow stream and flood waters to erode the material surrounding the pipe. As that erosion continues the stability and structural integrity of the crossing can deteriorate to the point of failure. Metal piping used in older crossings is susceptible to rust and deterioration. Second, Culvert Crossings require regular maintenance to ensure their structural and hydraulic integrity. In many instances maintenance quite often does not get performed on a regular basis and the cumulative result is a failed Culvert Crossing. For example, culvert openings must be kept free and clear of any obstructions such as tree limbs, leaf blockades, or trash and debris. If this maintenance is not performed subsequent stream flooding in the blocked culvert will lead to out of bank stream flooding, erosion of the stream banks and eventual dislodging of the culvert from its original placement. Lastly, older Culvert Crossings were often under sized for the size of the watershed or they did not take into account changing land use within the watershed such as an increase in impervious surfaces or loss of forested areas, both of which can lead to an increase in stream flow as well as stream velocity.

No discussion of stream crossings or any type of work in a stream would be complete without acknowledging the Maryland Department of the Environment's (MDE) permit requirements. By law in Maryland, any work that takes place in a wetland, stream, or other body of water requires a permit from MDE. In addition to the permit, all such work must be performed in compliance with best management practices to eliminate or reduce disturbance to the water body, eliminate or reduce sediments and nutrients from entering the water body, and can only be performed during certain periods of the year in order to not impact aquatic resources. Streams in Maryland are given designated *Use Classes* which define the periods when no in-stream work can be performed.

If you have any questions or are interested in additional information please contact the Harford Soil Conservation Office at (410) 638 - 4828.

Meet Rick Holloway …

Treasurer, Harford SCD Board of Supervisors

Rick Holloway is a sixth generation farmer, born and raised in Harford County. Immediately after graduating from high school he began working full time for his father and uncle on the family's farm. In 2013, he and his brother Jeff took ownership of the farm as Holloway Brothers. As Harford County natives, they both have a passion for agriculture.

Holloway Brothers grows corn, soybeans, wheat and hay on 1,300 acres of owned and rented ground. They also have a beef cow herd of 90 animals. As you can imagine, this is a year-round operation; feeding, calving, and machinery repair in the Winter; spraying and planting in the Spring; making hay and straw in the Summer, and harvesting in the Fall.

In addition to his work on the farm, Rick serves as Treasurer on the Harford SCD Board of Supervisors. He also serves on the Board of Harford County Farm Bureau and is a member of the Maryland Farm Bureau.

Rick wants to educate people on the importance of soil conservation and water quality, and about keeping the Bay clean. During the rare occasions that Rick has down time, he likes to hunt and fish. He has been married to his wife, Mel, for 18 years.

Introduction to USDA's Web Soil Survey

By Tim Gerber

"How is the soil? Is it fertile or poor?" About 3,500 years ago, the leader of a nation on the move wanted to know the answer to these questions about the land where they were going. The U.S. Dept. of Agriculture (USDA) has provided answers to these questions for Harford County since 1901, when the first edition of the *Soil Survey of Harford County, Maryland* was published.

The second edition was published in 1927 and the third, in 1975. Information from this 118-page 1975 edition, with 34 different kinds of soils identified on 49 aerial photographs covering all of the county except the Aberdeen Proving Grounds, became available on USDA's Web Soil Survey (WSS) website about ten years ago. Updates to 20th century soil survey information for the county have been added annually since then.

The WSS home page is easy to access, by typing "Web Soil Survey" in any search engine or using this URL: https://websoilsurvey.sc.egov.usda.gov. The column on the right of the home page offers multiple links to helpful information about WSS use. The lower half of the page describes four basic steps to using the WSS. A circular green button labeled "START WSS" is near the top of the home page. To begin Step 1, simply click on that button and another web page will appear.

Step 1: Use the Area of Interest tab

You can identify what land you're interested in learning about, in a variety of ways. The simplest is to click on "Address" on the left side of the page, enter a street address and click on the rectangular "View" button. That location will appear in the center of a satellite image on the right side of the page. It's the "Area of Interest Interactive Map." Click on the next-to-the-last button above the image, the one with a red rectangle outline and labeled "AOI" (Area of Interest).

Visualize a rectangle that covers the area you're interested in learning about and hold down the left side of the mouse when it's over the upper left corner of that rectangle. Keep the left side of the mouse down and move the cursor down and to the right until the box that appears covers your "area of interest." Then, release the mouse and wait for the website to gather information. The area will be marked with diagonal blue lines.

Step 2: Click the Soil Map tab

If you scroll to the top of the web page, you'll see four tabs to the right of the "Area of Interest" tab. Soon after you click on the second one, a soil map will appear in your AOI. The orange lines are boundaries between different kinds of soils.

Step 3: Click the Soil Data Explorer tab

This is so much more interesting than Step 2! You can produce color-coded maps identifying how the various soils differ or how each one is suited to lots of different uses.

Step 4: Use the Shopping Cart tab

You can save and print information by adding it to your "Shopping Cart." It's free.

Pigweeds in Maryland Pasture

By Brian Campbell: *Grazing Specialist,*
Natural Resources Conservation Service

Palmer amaranth - Alan Cressler, Lady Bird Johnson Wildflower Center

"Pigweed" can refer to any weedy member of the genus Amaranthus (which includes the popular love-lies-bleeding flower). In Maryland agriculture, the most problematic of these summer annuals include redroot pigweed (A. retroflexus), smooth pigweed (A. hybridus), tall waterhemp (A. tuberculatus), and the notoriously herbicide-resistant Palmer amaranth (A. palmeri). By far, though, the most prevalent pigweed in Maryland pastures is spiny amaranth (A. spinosus). It is important to be aware that there are other pigweeds in Maryland and that they can cross-pollinate to create hybrids. In 2011, an herbicide-resistant cross between spiny amaranth and Palmer amaranth was discovered in Mississippi. Identification of pigweeds can be challenging, even at maturity. Spiny amaranth's most distinguishing characteristic is the painful spines located where its branches meet the stem.

Livestock usually eat pigweeds without any apparent harm and the foliage can be a high-quality forage – low in cellulose and high in crude protein. However, pigweeds can store relatively large amounts of nitrates, making them potentially dangerous to livestock via nitrate poisoning. Ruminants like cattle, goats, and sheep are most at risk, with hogs and horses less so. Many other forage plants and pasture weeds that can be excellent forages also pose nitrate-poisoning potential when grown in nitrogen-rich environments. These include cereal grains – especially corn, millet, oats, rye, and sorghum; close relatives johnsongrass and sorghum-sudangrass; and forbs like dock, lambsquarter, ragweed, smartweed, and sunflower.

Pigweeds tend to be tolerant of drought and a wide range of soil conditions. In my experience, spiny amaranth is most prevalent in heavy-use areas like dirt sorting pens, holding areas, sacrifice lots, and around watering troughs. Because it is one of the few plants that can thrive in these highly compacted soils, spiny amaranth gets to take advantage of the large levels of nitrogen that livestock deposit at these sites. For these reasons, the places where spiny amaranth is likely to be prolific are also the nitrogen-rich places where it is most likely to cause nitrate poisoning.

Herbicide-resistance in pigweeds is relatively high and will continue to grow, even as farmers increasingly rotate through different classes of herbicides to fight that resistance. Some states are experiencing pigweed that is resistant to 3 or 4 classes of herbicide: a scary situation for row crops that rely on herbicide applications! Managers of pastureland have much more flexibility than those growing row crops in that they can spot-mow clusters of pigweed as needed to prevent these annuals from producing seed. A targeted mowing campaign that cuts the plants near the ground before or during flowering should greatly reduce the incidence of pigweed over time. Pre-emergent herbicides and post-emergent herbicides with multiple modes-of-action (that are labelled for pigweed) are also important options.

Spiny amaranth - Edwin Martin, Lady Bird Johnson Wildflower Center

The second half of any battle with weeds is to fill the void with plants that you actually want. One suggestion for the nitrogen-rich, compacted soils dominated by spiny amaranth is sorghum-sudangrass. Without vegetation, heavy-use livestock areas will erode or become extremely compacted. Even if nothing else about the plant is appealing, spiny amaranth does a good job of repairing soils damaged by compaction and excess nitrogen.

On Saturday June 2, 2018, the Anita C. Leight Estuary Center will hold its annual Wade-In event. The event is free and runs from 1:00 until 4:00 pm. The event has something for every member of the family. The Wade-In features pontoon boat rides, canoeing, face painting, and a decoy carving demonstration, to name just a few of the events that day. USDA-NRCS and the Harford SCD will host a booth with displays that describe the work that we do. Mark your calendars for this event on the first Saturday in June!

For more information, visit http://www.otterpointcreek.org/

21st Annual Wade-In Festival

Join us as we pull up our pants legs and wade into Otter Point Creek to measure water quality the way retired Maryland State Senator Bernie Fowler did 29 years ago with his "sneaker index." No reservations needed.

Where: Anita C. Leight Estuary Center, 700 Otter Point Rd. Abingdon, MD

When: Saturday, June 2, from 1:00 – 4:00 p.m. (No rain date.)

Who: Everyone is invited! No admission charge. Great fun for all ages!

- Free Pontoon Boat Rides
- Free Canoeing
- Fish Seining
- Live Animals
- Face Painting
- Meet DPW's "Seymour Clearwater"
- Fun with Water Chemistry
- Fish Printing
- Decoy Carving demonstration

SPRING CERTIFICATION HAPPENING NOW!

Spring kill-down or suppression may not occur before March 1, 2018.

Within two weeks after the Operator's kill-down or suppression of the Cover Crop, but no later than ***June 1, 2018***, the Operator shall certify to the Soil Conservation District that the Cover Crop has been suppressed or killed down.

Call ahead to insure District staff are available to assist you at (410) 638 - 4828.

The Harford Soil Conservation District is now located at the new **Harford County Agricultural Center** located at:

3525 Conowingo Road
Suite 500
Street, Maryland 21154

Our new phone number is **(410) 638 - 4828**

We look forward to seeing you at our new location!

Student's Corner

Supervised Agricultural Experiences at NORTH HARFORD HIGH SCHOOL

By Brennan Stewart

As a sophomore in the Natural Resources Agricultural Sciences (NRAS) Program at North Harford High School, I am having a very engaging and fun year. My name is Brennan Stewart and I am in the Natural Resources strand of the NRAS program with hopes to have a local in-county career in soil when I am out of high school and college. I am currently on my school's Envirothon team and on my school's Future Farmers of America (FFA) Land Judging team. This is my second year on both teams.

Every student in the NRAS program at North Harford must do what is called a Supervised Agricultural Experience, or SAE for short. SAEs are projects where NRAS students journey out of their classrooms and find an agricultural activity/workplace to work in or study. SAEs are meant to give students an idea on what they want to do as a future career in the real world. There are four types of SAEs. The first is a Placement SAE, where students place themselves in an agricultural workspace to work for pay, or no pay depending on the location. The second type is Entrepreneurship, where students produce an agricultural product or service with hopes to make a profit and maintain a business. The third type is Research, where students research an agricultural topic and collect data on it as the year progresses. The fourth and final type of SAE is Exploratory. Exploratory SAEs are where students shadow someone working in the agricultural field with hopes of becoming an expert on a certain career they are shadowing. Every student must complete fifty hours in their SAE and get a good passing grade.

My SAE in the program is in the Entrepreneurship category, and it deals with tree products. I chose this SAE because I have lived in the woods my whole life and have made hiking sticks for myself in the past, so I thought it would be easy to develop it into my project. Since June, I have been making hiking sticks for friends and family members and selling them for a profit. By February, I will be tapping Red Maple and Sugar Maple trees in hopes to boil the sap and make products like candy and syrup. This may be difficult because maple syrup production in Maryland is very low and more common out in the western counties. However, the hiking stick business has been great and soon my sticks will be in different antique stores and consignment shops in local areas. I enjoy my SAE because not many students in the program do entrepreneurship SAEs, so I feel very unique. Although I want a career focused more around soils, I am satisfied with doing an SAE centered on trees because trees and soil certainly cross paths when it comes to topics like erosion and nutrient composition.

Spring "TO DO" List

The Harford Soil Conservation District (HSCD) has solutions to correct common erosion issues found on farms such as; muddy pastures, muddy feed and gate areas, and farm lane erosion. The detailed illustrations below provide easy directions to install best management practices (BMP's) to correct these issues, and they are DIY (do it yourself)! So when April showers bring "boot sucking" muddy conditions and the gravel is washing away from your farm lanes, you will be ready to complete your "To Do" list to improve your farms' condition and appearance.

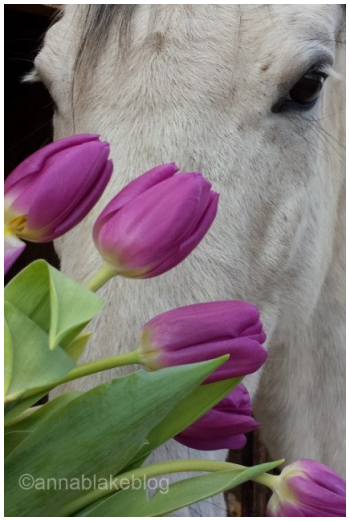
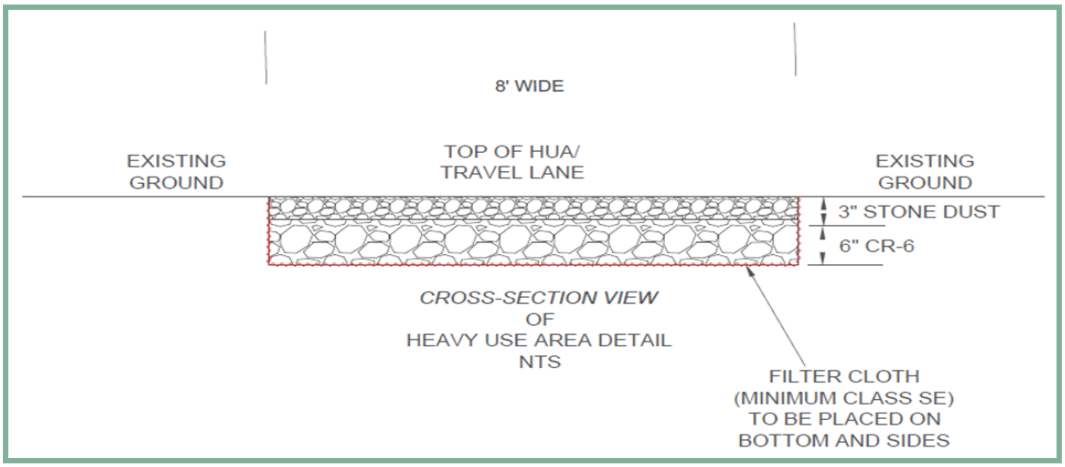


Photo: Relaxed & Forward:
AnnaBlakeBlog
A Horse/Life Blog

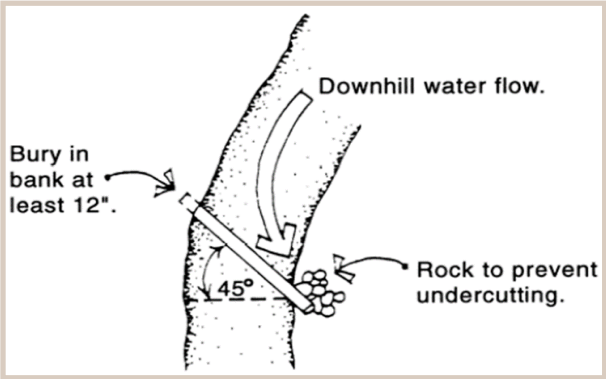
For muddy feed pads and gate areas (this can also be used for sacrifice areas):

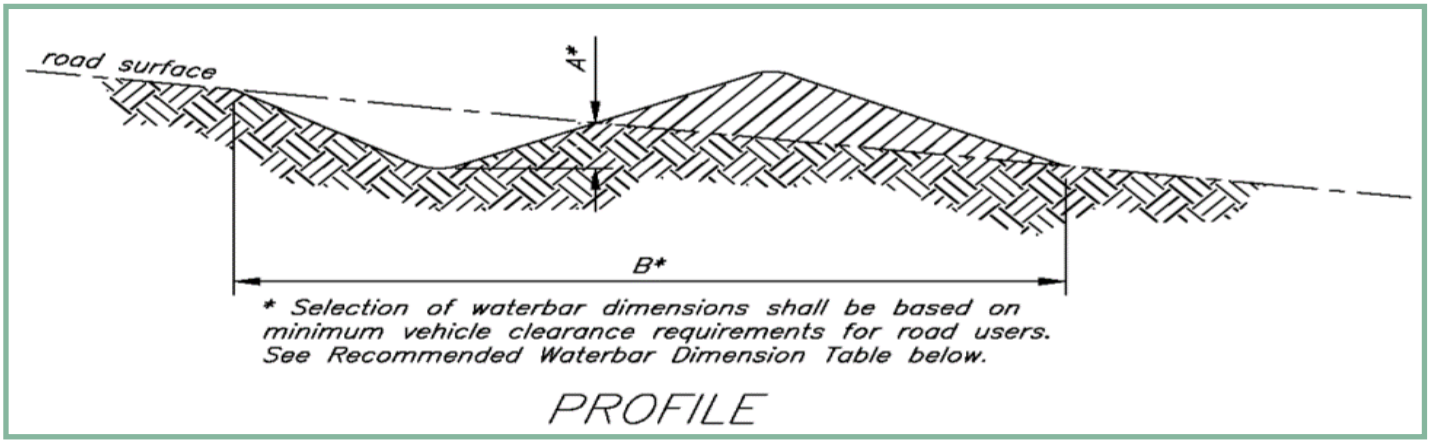


The Waterbar Detail can be installed to control ruts and washing away of farm lanes:

DEEP WATERBAR	SHALLOW WATERBAR
A = 24 to 30 inches	A = 8 to 12 inches
B = 6 to 10 feet	B = 6 to 12 feet

(Recommended Waterbar Dimensions)





Harford Soil Conservation District
3525 Conowingo Road, Suite 500
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(410) 638 - 4868

Join us on
Saturday, May 5th
for an
OPEN HOUSE!
Details at
www.harfordscd.org.

Find Us on the Web at **www.harfordscd.org**

UNIVERSITY OF MARYLAND EXTENSION

UPCOMING EVENTS:

Location: Baltimore County Agriculture Center
1114 Shawan Road, Cockeysville, MD 21030

Tuesday, May 1	Equine Nutrition Seminar	5:30 - 8:30 PM

Topics include: maximizing your horse's nutrition for optimal health; gastric ulcers; and hay and forages. Registration fee is **$10** per person and includes dinner; if you have any dietary restrictions, please let us know by April 17.

Call the Baltimore County Extension Office to register and for more details at (410) 887 - 8090.

Tuesday, May 15	Pasture Walk	6:00 - 7:30 PM

Join us for a hands-on walking educational program through University of Maryland's Rotational Grazing Site at the Baltimore County Agricultural Center. This spring's pasture walk will focus on: weed and pasture plant identification; fertility; and pasture management. There is no charge for this program, but please register ahead of time.

Call the Baltimore County Extension Office to register and for more details at (410) 887 - 8090.