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## UPCOMING EVENTS

**June 21 - July 17**  
Cover Crop Program  
Sign Up

**Wednesday, July 12**  
Board of Supervisors  
Meeting

**July 24 - 29**  
Harford County  
Farm Fair

**Saturday, August 12**  
Ag Night at  
Ripken Stadium

### 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](mailto:leslie.zink@maryland.gov)

# The Harford Resource

A Publication of the Harford Soil Conservation District

VOLUME 1, ISSUE 2

JULY 1, 2017

## Spring or Groundwater Fed Watering Facilities

By Andrew League

Who wouldn't want to have a naturally occurring source of water available for their livestock all day, every day, all year long? Think of the Roman Aqua-ducts constructed thousands of years ago to provide safe, clean water to their villages and cities. The aqua-ducts transported upland mountain stream or lake waters downhill to valleys where it was needed for consumption and irrigation. In much the same way, spring or ground water fed watering facilities collect and transport water from up-gradient locations to an area down-gradient where livestock can have better access. Interested? Let's cover a few basic terms and see what it takes to harness this resource. We'll take a look at some advantages and disadvantages of this Best Management Practice (BMP) as well as alternates for livestock watering systems if springs, seeps or shallow ground water areas are not available on your land.

Springs are natural outflows of water from an underground supply to the surface, usually at a defined opening/location. Seeps are like springs however they lack a defined opening and generally make an area 'squishy' to walk on – the water may stay on the surface to create a stream or stay just under the surface until it reaches a stream. Streams are flowing bodies of fluid, the cumulative result of springs and seeps combining to create larger concentrations of water – we call them creeks, brooks, and rivers. Wells are horizontal or vertical holes dug or drilled into the earth in order to obtain water from openings in the rocks or voids in the geologic section penetrated.

So what is involved in assessing the viability of harnessing a spring, seep, or stream to provide livestock drinking water? First, one needs to locate the source and observe it during a typical year. In Harford

County, the spring and fall seasons generally have plenty of rain to recharge the shallow ground water which can be observed at the source. However, it is very important to observe the source area during the typically dry or droughty months of summer and winter to confirm whether or not the source 'dries-up' or has less flow. If a spring or seep typically has a 'dry' period during the year it is not a likely source for year round watering of livestock. **(CONTINUED on Page 2)**



*A newly installed round, spring fed watering trough with associated Heavy Use Area surrounding it.*

## Spring or Groundwater Fed Watering Facilities... *continued*

Second, an assessment of the change in elevation from the source to the anticipated delivery area should be made. Typically a minimum of 6 feet of elevation change is needed between the water's source (spring or seep) and the proposed location of a watering trough. Ideally an elevation change of 8 feet or more ensures adequate elevation fall to supply a watering trough. Third, the delivery site (watering trough location) must be selected based on the following criteria: must be on level to nearly level ground; must be a minimum of 25 feet from adjacent streams or wetlands; must have and an outlet (overflow) area down slope for excess water to outlet without ponding on the surface or creating erosion problems.



In older installations of stream fed watering troughs, a collection ring was placed directly in the stream and the water flowed through a delivery pipe to a watering trough some distance down gradient. In these stream fed watering troughs it is very typical for sediment carried by the stream during storm events to enter the collection ring and flow with the water to the trough where it begins to accumulate in the collection ring, the delivery pipe and the watering trough. These types of in stream collection rings require diligent maintenance monitoring and cleaning in order to remove accumulated sediment to insure successful functioning of the system. Note that this older method of placing collection rings directly in or directly adjacent to streams is no longer utilized.

Some additional criteria should also be considered in the design and construction of a spring or seep fed watering system such as: the collection area of a spring or seep must be kept free of livestock and cultivation to prevent contamination of the water from chemical or biological matter (fence off the area); the pipeline delivering water from the source to the trough and finally to the outlet must be buried sufficiently deep (minimum of 3 feet) to withstand impacts from livestock and equipment traffic; the area surrounding the watering trough is considered a "Heavy Use Area" and must be protected from degradation due to livestock traffic by placing concrete, asphalt millings, or stone a minimum of 6 feet out from the trough.

The advantages of a spring or seep fed watering facility include a virtually free and reliable source water for livestock. In addition, spring or seep fed watering facilities typically do not freeze in the cold winter months because of their constantly flowing water. However, there are disadvantages to these types of systems. For example if a spring or seep dries up due to a lowered water table that facility may become unreliable or even un-useable. Likewise, if the collection area and associated piping become clogged with sediment or other obstructions it is difficult to pin point the precise location of the blockage as the pipeline is buried and not visible from the surface. In addition, the cost of installing spring or seep fed watering facilities is typically more expensive than providing a pressure fed watering facility in which the water is supplied by a farm or homestead well and piping.



The Harford Soil Conservation District has experienced technical staff able to help you determine if your land and practices would be a good candidate for the installation of a spring or seep fed watering facility.

Contact the Harford Soil Conservation District at **(410) 838-6181, Ext. 3**, for more information.



## Beware of Poisonous Weeds in Horse Pastures

Do you know what toxic plants are in your pastures?

Poisonous plants can include chemical compounds that can be harmful, if not deadly to a horse; or cause physical irritants, like Foxtail grass that has a barb on the seed that can cause mouth sores.

Take the time to identify unwanted plant species in your pastures, fence lines, hedgerows, woods, and landscaped areas with ornamental trees and shrubs. Inspect your hay bales and bedding material, know the source. Weed seeds are spread by horses, mowing equipment, spreading manure, wind, runoff from rain, and wildlife.

Use valuable resources such as the Internet, Extension Office, and Soil Conservation District to help identify the plant, then educate yourself about the plants' toxicity level. Learn what time of year the plant grows, understand how the plant spreads by seed, creeping rhizomes, or bulbs, and what choices there are on how to control the plant and elimination methods.

To prevent poisoning from plants, walk the pastures and surrounding areas, identify the plants, and use best management practices (BMP's).

Removal and management of poisonous plants:

1. Dragging pastures – breaks up manure piles and evenly spreads nutrients from manure.
2. Mowing – repeated mowing reduces the spreading of unwanted plants, prevents seed production, minimum 3-4 times per year.
3. Grazing use – rotational grazing method as a BMP; graze to 2 - 3" in height, remove horses, drag, mow, rest pasture to allow grass to grow to 6"+ before re-grazing.
4. Lime and Fertilizer – take soil samples for a soil test analysis to determine pH and nutrient level for your soil, follow soil test recommendations.
5. Manual and mechanical removal – remove seed head before seeds can spread, hand pull shallow rooted weeds.
6. Herbicide treatment – best time to control weeds with herbicides:
  - Cool season weeds: October through December, February through April
  - Warm season weeds: April through mid July
  - Recommendation: apply early and follow manufacturer's labels

For help identifying common poisonous plants visit: University of Maryland Extension at [extension.umd.edu/horses](http://extension.umd.edu/horses), in the Search box enter "[Common Plants Poisonous to Horses and Livestock in Maryland](#)" under [Ag Publications](#).

### Foxtail Grass



### Poison Hemlock



### Wild Cherry Tree



# Student's Corner

**George Schiminger:** Student, North Harford High School

**Laura O'Leary:** Teacher, North Harford High School

**Melanie Kane:** Teacher, Harford Glen Outdoor Education Center

## What's happening to our Monarch Butterfly Populations?



### **A female monarch butterfly.**

Females can be distinguished from males by the presence of thicker wing veins.

The monarch butterfly (*Danaus plexippus*) is a species of *Nymphalidae* that is native to most of the New World as well as many Pacific islands. Over the last several decades, the migratory North American monarch butterfly population has experienced a significant and sudden population decline. This decline can be attributed to habitat loss along with the loss of milkweed (Genus: *Asclepias*), the monarchs host plant. The monarchs decline can also be linked to a recent outbreak of parasite *Ophryocystis elektroscirrha* (OE), a protozoan parasite that affects the health of adult monarchs.

A study conducted in 2010 evaluated sex ratio data from a monarch overwintering site in Mexico and found that over the course of three decades the female monarch population had substantially decreased, the authors concluded that a possible reason for the decline could be a prevalence of OE in female monarch butterflies.

In an effort to determine if female monarch butterflies were more susceptible to OE contraction, wild monarch butterflies and caterpillars were captured and tested for OE in and around the Harford County area of Maryland. A total of sixty-six individuals were tested for OE and an OE infection ratio of 44% in males and 54% in females but after applying collected data to a two-sample proportion test it was concluded that there were not enough sampled individual monarchs in order to prove to claim that female monarch butterflies are more susceptible to OE contraction. The results concluded that because the sample size of the monarchs for this study was too small and the number of sampled males and females were unequal there was not enough evidence to support the claim that female monarchs are more susceptible to OE contraction.

Breeding monarchs face a number of threats, both anthropogenic and natural. Fewer female monarch butterflies are undertaking the fall migration due to another undetermined factor (Davis and Rendon-Salinas 2009). If OE prevalence is increasing, it is possible that female monarchs are more susceptible to OE contraction at breeding grounds and weigh stations. The lack of migration of female monarchs may exacerbate the OE density in local subpopulations.

The study is being expanded to include outdoor education centers, and other high schools throughout Harford County in order to obtain a sample size of statistical significance.



### **An infected male monarch butterfly.**

The left forewing and hind wing show signs of malformation, a symptom of an OE in recently enclosed monarchs.

# 2017 Annual Coloring Contest Winners!

## CLASS A K - 1st Grade



**Colten Diamond**  
Harford Christian School

## CLASS B 2nd - 3rd Grade



**Aamir Menzie**  
Helping Hands Christian Academy

## CLASS C 4th - 5th Grade



**Elise Wetzelberger**  
Bridges Montessori School



**Dutcher Stigora**  
Harford Christian School



**Kylee Jones**  
Bethel Christian Academy



**Natalie Sandbeck**  
New Covenant Christian School



## What is Geocaching and why does the District have four Geocaches?

By Patrick Jones

Geocaching is a recreational activity looking for and finding a hidden object by using a Global Positioning System (GPS), which is a navigation device. Geocaching is a kind of a high tech scavenger hunt. The joke is you use multimillion dollar satellites to find Tupperware in the woods. The geocache container, or “Tupperware” may contain a message or a small item left by previous geocachers. The general rule of geocaching is that if you take something from the “cache”, leave something of equal or greater value behind. With just a smartphone and a free application you can geocache. It is also a great motivator to get outside and do some exploring.

For just that reason, the Harford SCD (the District) has hidden four geocaches. They are hidden in three locations that were conservation projects the District helped to develop. These geocaches are an outreach to let citizens of Harford county, and beyond, know how the District has been involved with these projects. The District is little known outside the farming community but our impact is so much more. The geocaches are located at the *Eden Mill wetland*, *Plumtree Park in Bel Air*, and two at *Swan Harbor shallow water habitat*.

**Eden Mill Wetland** - When Eden Mill was looking to educate the public about wetlands they asked the District for help. The District helped with the design, construction, and secure funding for the wetland. The wetland provides a habitat for many amphibians, mammals, birds, and wetland plants.

**Plumtree Park in Bel Air** - The District assisted the Town of Bel Air, MD with the day lighting of a stream in Plumtree Park that had been put underground into a culvert pipe for many years. The stream now provides habitat for many fish, amphibians and birds.

**Swan Harbor Shallow Water Habitat** - The farmer of the Swan Harbor property could not plant a crop on a large portion of the field because it was too wet for long periods of time during the growing season. The decision was made to convert that portion of the field to a shallow water wetland habitat. The area now attracts all kinds of wildlife as well as bird watchers.

Over 200 log entries have been recorded on the four caches. For more information about each geocache site, visit the “ABOUT” page on the District website at [www.harfordscd.org](http://www.harfordscd.org). If you would like more information about geocaching visit [www.geocaching.com](http://www.geocaching.com).



## Noxious Weeds: Maryland Department of Agriculture's Weed Control Program

The WEED CONTROL PROGRAM enforces the Maryland Weed Control Law and assists farmers or landowners in the battle against the designated noxious weeds Johnsongrass, shattercane and thistles. The law requires landowners to manage noxious weeds on all types of land. Johnsongrass and thistles are considered two of the more persistent and destructive weeds in Maryland since they are very difficult to eradicate. Both the seed and the root system of these weeds must be managed for effective control. Control methods include cultural, physical, mechanical, biological or chemical. MDA enters into an agreement with each of the 16 participating counties to provide technical assistance to landowners for initiating noxious weed control programs.

The Weed Control Specialist assigned to Harford County is **Anthony (Jim) Calao**. Jim can be reached at (410) 841-5920 or at [jim.calao@maryland.gov](mailto:jim.calao@maryland.gov).

For more information visit the “Plants/Pests” page at [mda.maryland.gov](http://mda.maryland.gov).

# Meet Lee McDaniel... Board Chairman, Harford Soil Conservation District



Lee McDaniel operates his family's Indian Spring Farm in Darlington, Maryland. He has served on the Harford Soil Conservation District's (HSCD) Board of Supervisors since 1997 and as held the title of Chairman of Board since 2005. He has served two terms as president of the Maryland Association of Soil Conservation Districts (2005 - 2009), and has also served on the NACD Board of Directors and Executive Board (2005 - 2016). Lee holds a B.S. in agricultural economics from Cornell University.

Lee and his wife Connie, a retired school teacher, grow corn, soybeans, and alfalfa on their 850-acre farm. Conservation practices on the farm include cover crops, no-till, grassed waterways, diversions, spring developments, strip cropping, stream bank protection, grassed and wooded buffers, and stream crossings.

Lee has just completed his two year term as NACD President. He is past Chairman of the Board at Harford Community College and former President of the Harford County Farm Bureau.

## **HARFORD LEADERSHIP AT THE NATIONAL LEVEL**

We are pleased to announce that Frank Richardson, Vice-Chairman of the Harford Soil Conservation District's Board of Supervisors was recently elected by the Maryland Association of Soil Conservation Districts' (MASCD) Board to represent Maryland on the National Association of Conservation Districts' (NACD) Board of Directors.

Frank joins HSCD Chairman, Lee McDaniel, who serves on the NACD Executive Board as Past President. Both will be leading conservation efforts at the national level. Frank and Lee will be attending the NACD's summer meeting in Des Moines, Iowa.

Frank also represents the central area of Maryland on the State Soil Conservation Committee (SSCC). Lee also serves as a Trustee of the National Conservation Foundation (NCF) that is the lead sponsor of the NCF Envirothon. NCF is the foundation arm of NACD. The international event will take place in Maryland this summer with teams from the US, Canada and China competing.



FARM SERVICE AGENCY

## **Nominations now being accepted for the 2017 County Committee Election in Harford County FSA**

The U.S. Department of Agriculture (USDA) Farm Service Agency (FSA) county committees are a critical component of the day-to-day operations of FSA and allow grassroots input and local administration of federal farm programs.

Committees are comprised of locally elected agricultural producers responsible for the fair and equitable administration of FSA farm programs in their counties. Committee members are accountable to the Secretary of Agriculture. If elected, members become part of a local decision making and farm program delivery process.

The county committee is composed of three elected members from the local administrative area (LAA). Each member serves a three-year term. To be eligible for nomination and hold office as a committee member or alternate, a person must fulfill each of the following requirements: (1) be a producer with an interest in farming or ranching operations, (2) participate or cooperate in any FSA program provided for by law, (3) be a U.S. citizen, (4) be of legal voting age, (5) meet the basic eligibility requirements, and (6) reside in the county or multi-county jurisdiction in which they will be serving. This year's election will be held in Harford County's LAA #2 which is the area from Route 136 West to Route 24; both roads running north to south.

All nomination forms for the 2017 election must be postmarked or received in the local USDA service center by **August 1, 2017**. For more information on FSA county committee elections and appointments, refer to the FSA fact sheet: "Eligibility to Vote and Hold Office as a COC Member" available online at [www.fsa.usda.gov/elections](http://www.fsa.usda.gov/elections).



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**2017  
Nomination  
Form  
Enclosed**

Do you know someone who is outstanding in Conservation and deserves to be recognized? Nominate them for Conservationist/Cooperator of the Year! Nominations for 2017 can be submitted through *July 31, 2017*.

HARFORD COUNTY AGRICULTURE

Saturday  
August 12, 2017

**Night at Ripken Stadium**

Tickets on sale now! Quantities are limited!  
CASH or CHECK only.

Purchase tickets at the HSCD offices:  
2205 Commerce Road  
Suite C  
Forest Hill, MD 21050

*TICKETS: \$15.00  
Per Person*

We've Got You Covered This Fall

**Maryland's 2017-2018  
Cover Crop Sign-up**

Accepting grant applications June 21 through July 17  
at soil conservation district offices