



THE DISTRICT DIRT

ANNE ARUNDEL SOIL CONSERVATION DISTRICT

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SUMMER 2022

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2022 ANNE ARUNDEL COUNTY ENVIROTHON

by John Czajkowski

We were able to hold our local Envirothon training sessions and competition this year at Arlington Echo Outdoor Education Center. A special thanks to Melanie Parker and Tanya Marushak for providing the facility and bus transportation.

Ten teams from six different schools competed. For those of you who are not familiar with the Envirothon program, both public and private high schools have the opportunity to participate each year with a team or teams consisting of 5 students per team.

There are five subjects, four of which occur every year and a fifth one that changes every year. The four permanent subjects are soils, aquatics, forestry, and wildlife. This year's fifth topic was Waste to Resources.

Arlington Echo and the District organize training sessions and a competition day, held at Arlington Echo. During the training sessions, the students visit each subject area to get hands-on experience using the tools of the trade and talk to resource people in that profession.

Long time participant as a resource instructor is Bud Reaves, one of our county foresters. He teaches the students on how to use the tree log scale stick and the rectangular cruising prism among other tools. The fifth issue was taught by Dave Myers, Principal Agent for Anne Arundel County.

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IMPORTANT DATES

Maryland Buy Local Week
July 22 - 31, 2022
buylocalchallenge.com

Buy Local Challenge 15th Anniversary
Celebration
August 1, 2022, 5:00PM to 8:00PM
Serenity Farm, Benedict

Field Crops Research Twilight,
Barbecue and Ice Cream Social
August 3, 2022
Barbeque begins at 4:00 PM
Ice cream Served at 5:15 PM
Crops Twilight at 6:00 PM
Maryland Research & Education Center,
2005 Largo Road, Upper Marlboro

2022 NACD Northeast Region & MASCD
Annual Meeting
August 28 - September 1, 2022
Hyatt Regency Chesapeake Bay Golf
Resort, Spa & Marina in Cambridge

Cover photo by Maryland Department
of Agriculture, Anne Arundel County's
team from Arundel High won second
place in the Maryland Envirothon.

ENVIROTHON...

Other resource instructors include Anne Marie Rossi, Soil Scientist for the Natural Resources Conservation Service, who is the soils instructor. Anne was assisted by Dean Cowherd (NRCS retired) and Philip Clements, NRCS Soil Scientist, as well as District staff. Wildlife is led by Jane Burgess, Wildlife Response Manager with the Department of Natural Resources and aquatics is taught by Sally Albright, Grant Manager for the Department of Public Works.

This year's winner was Team 1 from Arundel High School scoring 441 points out of 591. They went on to the State Envirothon competition on June 22, at the University of Maryland Clarksville Research Farm and placed second overall.

Richard Montgomery High School won first place in the Maryland Envirothon and will compete at the national event at the Miami University in Ohio on July 24-30, 2022.

John Czajkowski, District Manager, john@ascd.org



MDA COVER CROP PLUS PROGRAM

The Maryland Department of Agriculture introduced a new program to improve soil health through the incorporation of agronomic practices into crop production systems. These practices include organic matter incorporation, crop rotation and using minimum tillage such as no-till, strip till, ridge till. This is a 3-year program, where the cooperators agree to incorporate the above-mentioned soil health practices along with annual cover crop planting.

Visit mda.maryland.gov for more information.



Soils Training



Aquatics Training



Fifth Issue Training



Wildlife Training



Forestry Training



Arundel High School Teams 1 and 2

AASCD BOARD WELCOMES NEW ASSOCIATE MEMBERS

AASCD's Board of Supervisors is made up of 5 voting members. One is appointed by the County Executive, one by the Farm Bureau, one by the University of Maryland Extension and two are what the State Soil Conservation Committee (SSCC) calls At Large.

The At Large members are filled by advertising locally. As with the Farm Bureau and Extension, candidates submit their application to the SSCC and the SSCC votes on who is elected or reelected. Members serve for 5 years and can reapply.

There can also be associate members. Associate members do not have voting privileges but serve an important role in the decision-making process of the Board. Associates are elected by the Board members and are reinstated every year. Serving as an associate puts you in a position to fill a vacant voting board member position when a seat becomes available.

We are lucky to have 4 new associate members on our Board this year. They are Robert Schaefer, Billy Ford, Mark Hopkins, and Lisa Barge. I am sure these new associates will bring to the table new insight and ideas.

To find out more about joining the AASCD Board, or attending our meetings, contact District Manager, John Czajkowski, john@ascd.org



THE REAL FARMSTEWARDS OF ANNE ARUNDEL COUNTY: WHAT SHOULD I CONSIDER BEFORE BUYING?

by Shelley Garrett

It's no secret that the real estate market is booming in Anne Arundel County. As soon as a for sale sign goes up, there's a SOLD sign hanging the next day. You've been on the hunt for a small acreage parcel, and you feel like as soon as you've viewed the sale ad and told your realtor let's go look, they've already responded with it's gone. After months of looking, you've finally found what you think to be your perfect five acre farmette to move your horses home to, or start your lifelong dream of small livestock. The real estate agent has it advertised with the headline "BRING YOUR HORSES" or "PERFECT LOCATION FOR YOUR FARM DREAMS!". It's just enough to feel like you have your own space, but not too much to maintain on your own and spend all day mowing. With the market being so hot, you feel like you have to jump immediately and commit to the property before you even had a chance to think about what you just looked at. Waived appraisals, waived inspections, waived loan contingencies. But, what shouldn't you waive?

When looking at a property for

horses or livestock there are special considerations to think about. It's not always as easy as finding a plot of land that was advertised as being great for horses. Water, shelter, and carrying capacity are important to understand prior to making the financial commitment of buying new real estate. Let's take a closer look.

It's important to note that farming is allowed on all zonings in Anne Arundel County, except Maritime. However, zoning laws restrict the number of animals allowed on properties based on 40,000 square feet per animal unit. One animal unit is defined by County Code as: 2 horses, 2 cows, 4 ponies/donkeys, 10 sheep/goats, 8 pigs/llamas/alpacas, or other livestock up to 2,000 pounds. This means, on your prospective 5 acre farmette, you could have up to ten horses. Your real estate agent told you it's perfect for what you're looking for! You only have four horses, you can add your friends horses too! Maybe board some horses and make some money! Insert "Hold your horses" pun here.

The Maryland Department of Agriculture (MDA), defines an animal

unit as 1,000 pounds, which is what we at Anne Arundel Soil Conservation District (AASCD) also follow when we make recommendations. We also recommend two acres for the first horse, and one acre for every horse added after to help keep grass cover on the pastures and ultimately keep your new farmette from turning into a swamp-ette. Working with this recommendation, we are at four horses from the County allowed ten. "Ok, I'm back to my original plan of just my horses. Where do I sign?!" Pump the brakes, still more to consider.

Yes, your property is 5 acres in total, but how many of those are going to be dedicated to pasture? Let's do some estimated math. Your property comes with existing improvements of a house, driveway, garage, and a pool you can't wait to cool off in after a long day riding and caring for your horses. Don't forget your front lawn. We're down about a half to one acre now, let's call it one for argument, leaving four acres. We're down a space for one horse. "That's fine, I'll sell Tina the chestnut mare with four white socks and a wide blaze" (horse people know why she made the cut list). You're so close to buying that farmette, you can taste the sweat from unloading your hay into your very own hayloft! Hayloft? Did you say hayloft? We didn't subtract that from our lot coverage. More square footage lost for pasture. Riding ring to work your horses in to get them in tip top shape for horse shows? More lost. I'll give you back the half acre from the first improvements subtraction, and take it away with the barn and ring, losing you an acre and a half now. Are you feeling the pinch of the farmette getting smaller yet?

So, what do you do now? Go back on the hunt? That's a dread. Sell another horse? You don't have anymore opinionated red mares to let go of to make this work. Well, we're in a pickle, and seller wants their money.

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REAL FARMSTEWARDS...

Enter your local Soil Conservation District sales pitch: we have the people to help with that. Anne Arundel County farms are slowly being sold off one by one. Large acreages are being subdivided, and they're typically going to houses or horses. The subdivided lots are many times these same 5 acres we just discussed. This article isn't to deter you from purchasing these farmettes, it's to help open the door to talk with a Soil Conservation Specialist in our office to make these properties work for you, your horses, and the soil.

You need the County code acreage to start. Find the property you hope will work and call our office. We'll come out and give you a professional opinion on if what you're hoping for can work, and give suggestions on how to help your pastures thrive and make the most out of the space you have. This may include heavy use areas for poor weather to keep horses off pasture and reduce mud, seeding and nutrient application recommendations, and manure management. Good pastures make happy horses, with an added bonus of a reduced hay bill. The resources of best management practices to help do a lot with a little are right in your backyard, or possibly, and hopefully, your future backyard.

Shelley Garrett, Soil Conservation Specialist, s.garrett@aascd.org



WHAT IS A CONSERVATION BUFFER?

Conservation buffers are strips of land established in permanent vegetation around row crops. Their function is to intercept sediments and nutrients, reduce soil erosion, protect the soil and if established in grass, provide access around the field during the growing season. Buffers can be planted in cool or warm season grasses, shrubs and or trees.

Compensation for installing a buffer is through the Conservation Reserve Program (CRP). The financial incentive is based on soil productivity and local average rental fee for comparable land. There are programs to help establish and maintain buffers. They include the Environmental Quality Incentives Program (EQIP) and Wildlife Incentives Program (WIP).

If interested in installing a conservation buffer, contact our office for information on the various programs.



MARYLAND 'AG TAG' CELEBRATES 20 YEARS

The bright orange "Ag Tag" has been on Maryland highways since 2001. In the more than two decades since it was created by the Maryland Agricultural Education Foundation (MAEF), the Ag Tag has raised more than \$12 million.

The Ag Tag funds support K-12 and post-secondary opportunities to increase agricultural education and literacy, including MAEF's Mobile Science Labs, professional development programs for teachers, agriculture literacy book programs, "Lab in a Box"; kits, garden grants, Maryland Future Farmers of America (FFA) and support for agricultural science teachers, and more.

Learn more about MAEF or order your "Ag Tag at: maefonline.com



POND THERMAL STRATIFICATION: PART FOUR OF THE POND SERIES

by John Czajkowski

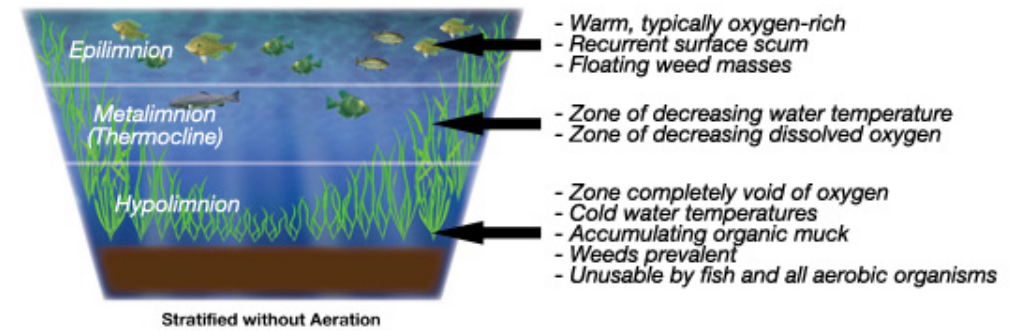
Last time, we talked about the importance of pond water temperature and how it can affect your aquatic life. But I ran out of space to explain thermal stratification. So, let's look into temperature layers.

If you've ever been swimming in a farm pond or lake, you know what I mean by thermal stratification. Your upper body is in the warm water and your feet are cool because of the cooler temperature of the deeper water. This can be a potentially dangerous condition for your pond. If the cooler dissolved oxygen (DO) depleted bottom layer is larger, as far as volume of water, than the oxygen infused warmer top layer, when it flips or turns over, the amount of DO can drop dramatically. This may result in a fish kill.

So, let's take a look at what is happening here. The density of water is related to temperature. As water cools, it becomes denser and is at its greatest density at 39°F. Water that is cooler than 39° becomes less dense. This is why ice floats. Otherwise, ice would sink to the bottom of the pond and the pond would freeze throughout.

The upper warm layer that has a fairly uniform temperature is called the epilimnion. The cooler bottom layer which is also uniform in temperature is called the hypolimnion layer. The layer between the two is called the metalimnion in which the temperature declines rapidly with depth (a thermocline).

In the winter, the cooler water is at the surface of the pond and the warmer water at the bottom. As the water cools to 39°F, it sinks. But as it cools below 39°F it is less dense and remains at the surface turning into ice if it gets cold enough. Your temperature range may be 32°F at the surface and 39°F on the



bottom.

The bottom, still, cool layer, holds more oxygen than warm summer water and the metabolism of the aquatic life slows down in the winter. Even though the bottom layer is not having its oxygen replenished, the oxygen depletion is not severe at this time. However, a prolonged cap of ice can cause problems by not allowing diffusion of oxygen into the surface water. With the lower level already low on oxygen, all the layers can become low on DO. If you see fish gathering around a hole in the ice, it probably means the dissolved oxygen is low.

As we leave winter and the water temperature nears 50°F, the pond starts to stratify as we experience sunny, calm days. The warm water remains on the surface while the cool water settles to the bottom. As you can imagine, as we get into the summer season, the difference in temperature between the bottom of the pond and the surface becomes greater. Unlike in winter, a temperature difference may be as great as 20°.

As the summer progresses, the bottom, cooler water's oxygen begins to be depleted by the respiration of fish and microbes that use oxygen to break down organic matter, such as plants and plankton along with feces. Fish will begin to avoid this low oxygen layer.

When fall comes and the air temperature begins to drop, as well as the intensity of the sun, the water temperature declines on the surface. As this happens the cool surface water begins to sink and displace the water below, which has accumulated toxins

and has a low dissolved oxygen content. This is the fall turnover.

If this happens rapidly, it can be stressful for fish, and the possibility of a fish kill exists. If it happens over time, the water mixes and oxygen levels are brought back up with circulation and plant photosynthesis, and all is well.

A way to ensure oxygen levels do not reach critical levels is to aerate your pond.

Aeration creates destratification of the water column. The main purpose of aeration is to stabilize the amount of dissolved oxygen in the entire water column. This would allow fish to populate the entire pond.

Other benefits of aeration are the stabilization of the pH, reducing alkalinity and removing carbon dioxide.

It can also reduce the amount of algae in the pond by circulating the algae spores into deeper water out of the reach of sunlight. Since Aerators create ripples on the pond surface, they can decrease the mosquito population.

Aerator types include floating fountains, submersed diffused aerators and nanobubble aerators.

Contact an aeration company to see what type and size aerator you would need.

If you have any questions regarding ponds, please do not hesitate to contact the office.

John Czajkowski, District Manager,
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LEADERSHIP ANNE ARUNDEL TOUR

On May 12, the Anne Arundel Soil Conservation District and the Anne Arundel Economic Development Corporation helped organize an agricultural tour for Leadership Anne Arundel. Leadership Anne Arundel provides people of diverse backgrounds with education, resources, and networks necessary to become successful, productive leaders.

In keeping in Leadership Anne Arundel's mission, we try to provide a snapshot of what is going on in the agricultural community in Anne Arundel County. This year's bus tour included stops at Holiday Memories cut your own Christmas Trees farm, Central Sod's operation in Churchton, New Roots Farm's in west River featuring grass fed protein, Honey's Harvest Farm in Lothian offering nutrient rich food and medicine, an equine operation at Obligation Farm in Harwood, Dodon Vineyards in Davidsonville, and Homestead Gardens Horticultural Supply in Davidsonville.

At each stop, the landowner had 45 minutes to describe their operation and point out aspects of their operation. The number of students for this year's class numbered 44 and most were on the tour. The students learned about framing practices such as no-till and cover crop as well as what Best Management Practices (BMPs) are.

We highlighted Economic Developments equipment rental program as well as their other programs and talked about nutrient management plans. We know spring is a busy time for farmers, so we appreciate the landowners who gave up time from their schedules to participate. We are looking forward to providing an agricultural tour next year.



Obligation Farm: Deana Tice with Enticement Farms



Harvesting Sod at Central Sod Farm



Left to Right: Holiday Memories Farm, Gary Palmer; Homestead Gardens, Brian Riddle; The Vineyards at Dodon, Tom Croghan



MARYLAND DEPARTMENT OF AGRICULTURE COVER CROP PROGRAM

Cover crop is a long-term investment to improve your soil. It slows erosion, improves soil health, enhances water availability, helps to smother weeds, helps control pests and disease, and increases biodiversity. Deep rooted cover crops have the ability to break through a plow pan, add organic matter to the soil, and attract pollinators.

Farmers can expect a 4.9% increase in soybean yield and a 3% increase in corn yields after five consecutive years of cover crop use. In the drought year of 2012, farmers reported increased yields of 9.6% in corn and 11.6% in soybeans. Cover crops should be reviewed as long-term investments that improve the soil over time.

When selecting the type of cover crop to use you should identify your primary objectives for adding them to your rotation. Is your primary objective to add nitrogen to the soil, increase organic matter to improve soil health, reduce erosion, provide weed control, manage nutrients or conserve soil

moisture? Most cover crops provide many of these benefits, but some are better than others when it comes to specific needs.

Legume cover crops such as red clover, crimson clover, crown vetch and peas can fix from 50 to 150 pounds of nitrogen per acre. They also support beneficial insects and pollinators. They are not as good as grasses for adding organic matter to the soil.

Non-legumes include the cereals such as rye, wheat, barley, triticale and oats along with grasses which include annual ryegrass. Non-legume broadleaf species are buckwheat, mustards and brassicas. These non-legumes produce a large amount of residue that adds soil organic matter. They are good at suppressing weeds and scavenge nutrients still remaining in the soil after the primary crop. Non-legumes will take up 30 to 50 pounds of nitrogen per acre.

Cocktails and mixtures are more complicated but allow you to attain multiple objectives. They can however

cost more and may be difficult to seed. When using a grass and legume combination, they do provide more biomass, provide good ground cover, improved weed control and attract a wider range of beneficial insects.

For organic farmers, cover crops provide nitrogen, manage weeds and improve soil health. No-till organic farmers can use a roller-crimper to kill the cover crop, which in turn becomes a mulch that conserves moisture and protects against erosion. Or it can be tilled in as “green manure”.

When allowed to flower, buckwheat and clovers attract beneficial insects. Cover crop mulches reduce splashing of soil borne pathogens onto leaves and sudangrass, brassicas and mustards help control verticillium wilt.

For more information on the cover crop program, and how to sign up for the cover crop grant program, contact David Scheler in our office.



FIELD CROPS TWILIGHT, BBQ AND ICE CREAM SOCIAL

August 3, 2022

4:00-9:00 PM

The Fields Crops Research Twilight, BBQ and Ice Cream Social will take place at the Central Maryland Research & Education Center, 2005 Largo Road, Upper Marlboro, Maryland. A barbecue dinner will be served at 4:00 pm followed by homemade ice cream prior to the evening tour. University of Maryland Extension Educators and Specialists will showcase their field crop, vegetable and fruit research plots.

Visit the University of Maryland Extension, Anne Arundel County for more information: <https://extension.umd.edu/locations/anne-arundel-county>

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