

2020

Annual Report Newsletter



CLINTON

COUNTY

CONSERVATION

DISTRICT

Inside the Issue

- YEAR END REVIEW
- DISTRICT STAFF AND BOARD OF DIRECTORS
- WHO WE ARE AND WHAT WE DO
- DISTRICT BUDGET
- WATER ENCROACHMENT PROGRAM
- EROSION AND SEDIMENT CONTROL PROGRAM
- CHESAPEAKE BAY PROGRAM
- DON'T TILL IT – DRILL IT
- WHAT IS A CONSERVATION DISTRICT
- ACT 38 NUTRIENT MANAGEMENT PROGRAM
- FARMING AND SOIL HEALTH DEMONSTRATION PLOTS
- FREE SOIL TEST KITS
- MULTI-SPECIES COVER CROPS
- PROVIDING HABITAT FOR POLLINATORS
- AGRICULTURAL PRESERVATION
- ASSOCIATE DIRECTORS AND NOMINATING ORGANIZATIONS
- CLEAN WATER PLANNING FUNDS SECURED
- THE ROAD LESS TRAVELED
- LIMBS TO LIVE STAKES
- OUTREACH & EDUCATION
- CONSERVATION WORD SEARCH

THANK YOU

Our achievements have been made possible thanks to the many partners we have worked with over the past year. Together, we are helping to protect and enhance the things that make Clinton County our home – the air, the land, the water, our natural resources and our neighbors. As we look forward to the coming year, we would like to thank everyone who has been part of this journey so far to include our local farmers, landowners, contractors, builders, municipalities and watershed associations. We also pass on a huge thank you to the following partners for the continued and unwavering support of our mission:





Dear Friends,

This past year has been one of challenges and change for the Conservation District. In January, Angela Harding joined the District as the County Commissioner Representative to the District's Board of Directors. Commissioner Harding's election was ground-breaking as she became the County's first-ever woman commissioner. In February, Sara Embick was hired as the new Resource Technician and yours truly joined the staff as the Agricultural Resource Conservationist. Mary Ellen Stern departed as the Resource Conservationist and Melanie Bliss joined the staff in March. Days later, COVID19 found its way to Clinton County. Staff were temporarily furloughed, and the District office was closed to the public. Instead of walking through fields and pastures, farm inspections began being conducted by phone. All of our spring and summer programs, workshops, and school events were canceled. For the first time in decades there was no Envirothon, no tree sale, and no District picnic. But we adapted. The pandemic has changed the way we view meetings, trainings, and other in-person events. The Conservation District and our partners have moved to a variety of online platforms to accomplish our daily work. We've worked through technical difficulties while improving our online communication skills. As the year came to an end, Melanie Bliss bid us farewell and the previous manager, Mary Ann Bower, retired after 34 years of service to the District. I was appointed to succeed Mary Ann on December 7th and Scott Koser, who has logged 12 years with the Conservation District, was appointed Deputy District Manager. Although the past year has been filled with challenges, it has also been exciting and, as our team looks to the future, we seek to find new ways to connect with the community, to bring more technology to the field and to build upon our past successes as we continue serving the people and natural resources of Clinton County.

Sincerely,

Wade Jodun, District Manager

DISTRICT STAFF AND BOARD OF DIRECTORS



Mary Ann Bower (District Manager), Melanie Bliss (Resource Conservationist), Susie Peters (Program Assistant), Sara Embick (Resource Technician), Toby Boyer (Watershed Specialist), Wade Jodun (Agricultural Resource Conservationist) and Scott Koser (Dirt and Gravel Roads and Agricultural Technician).



Charles Dotter: Chairperson

Larry Butler: Secretary / Treasurer

Elam Stoltzfus, Jr: Farmer Director

William Hunter: Farmer Director

Angela Harding: Commissioner Director

Philip Courter: Associate Director

Dr. Ralph Harnisfeger: Vice Chairperson

Robert Bowman: Public Director

James Harbach: Farmer Director

Corenna Meyer: Farmer Director

Ron Brungart: Associate Director

Tom Shervinskie: Associate Director

Stewart Ramm: Honorary Associate Director



WHO WE ARE AND WHAT WE DO

The Clinton County Conservation District was organized 74 years ago by the County Commissioners in December 1946. We are a sub-division of state government, supported by the Clinton County Commissioners. We provide technical and educational assistance to the public on proper management of our natural resources (specifically soil & water) and interpretation of environmental related regulations. We are guided by a local Board of nine Directors nominated by local organizations. We administer the following state programs for our County:

- *Ch. 102 Erosion & Sediment Pollution Control*
- *NPDES National Pollutant Discharge Elimination System Permits*
- *Ch. 105 Stream Encroachment General Permits*
- *Chesapeake Bay Program*
- *Act 38 Nutrient Management Regulations*
- *Municipal Dirt & Gravel and Paved Low Volume Road Program*
- *Watershed Specialist Program*
- *Agriculture Preservation Program*

OUR MISSION

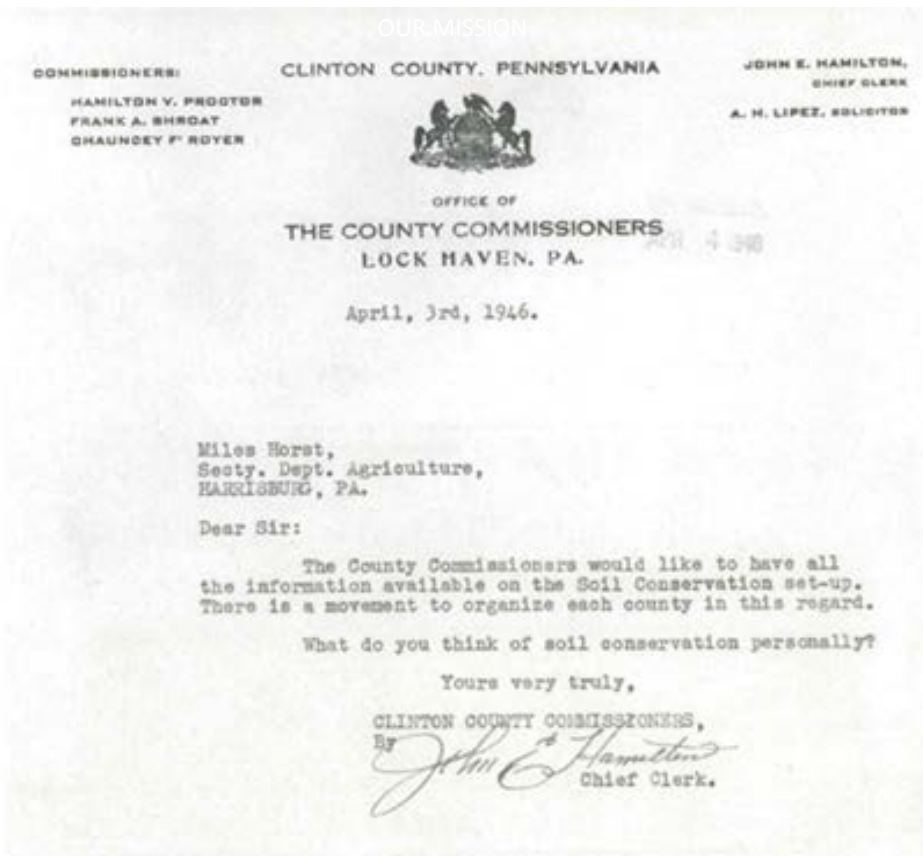
Our mission is to strive to promote voluntary conservation and good stewardship of Clinton County's natural resources while being a leader in balancing environmental responsibility with economic opportunities.

OUR VISION

The Clinton County Conservation District will be the premier conservation organization regarded by all citizens as a leader in innovative stewardship of our natural resources. The District will effectively inspire and foster the application of natural resource conservation. With passion, the District will engage citizens and protect the environment for future generations while encouraging profitable business enterprises.

OUR CORE VALUES

The District operates under the philosophy that the best way to advance the cause of conservation is to educate local citizens to become better environmental stewards. By building partnerships, providing technical assistance, and sharing information, we strive to achieve environmental compliance using common sense to build a culture of responsible stewardship.

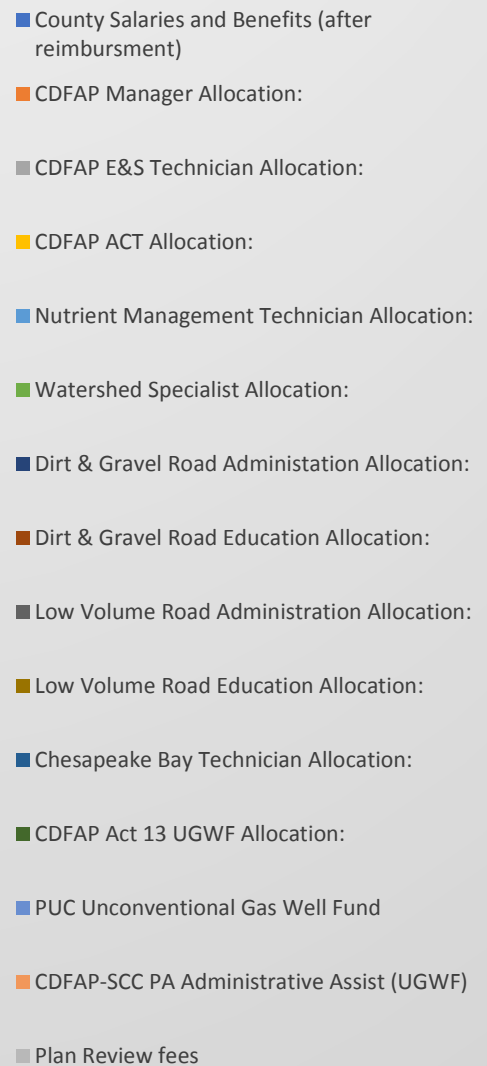
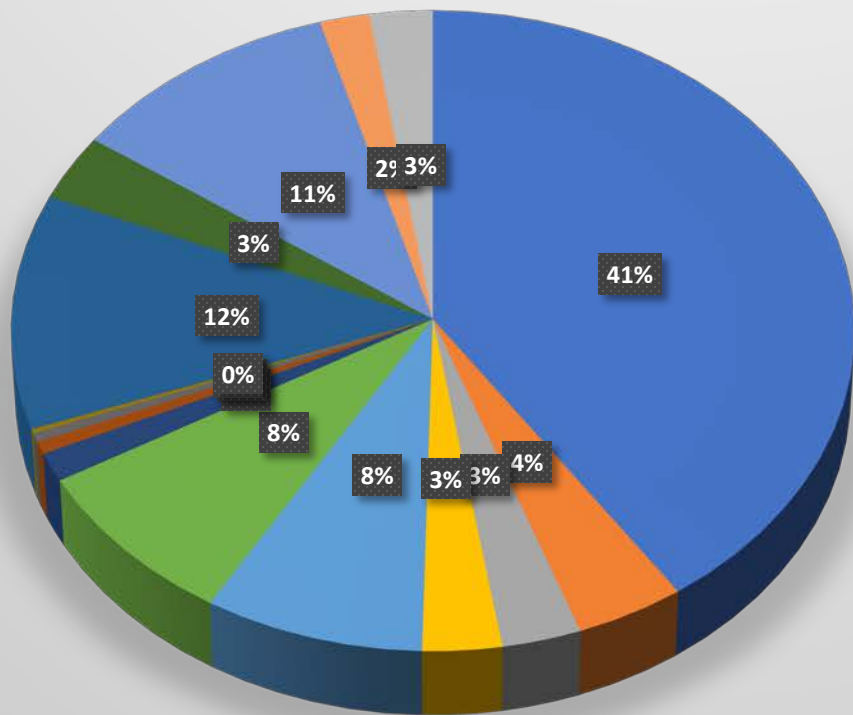


DISTRICT BUDGET (Revenue)

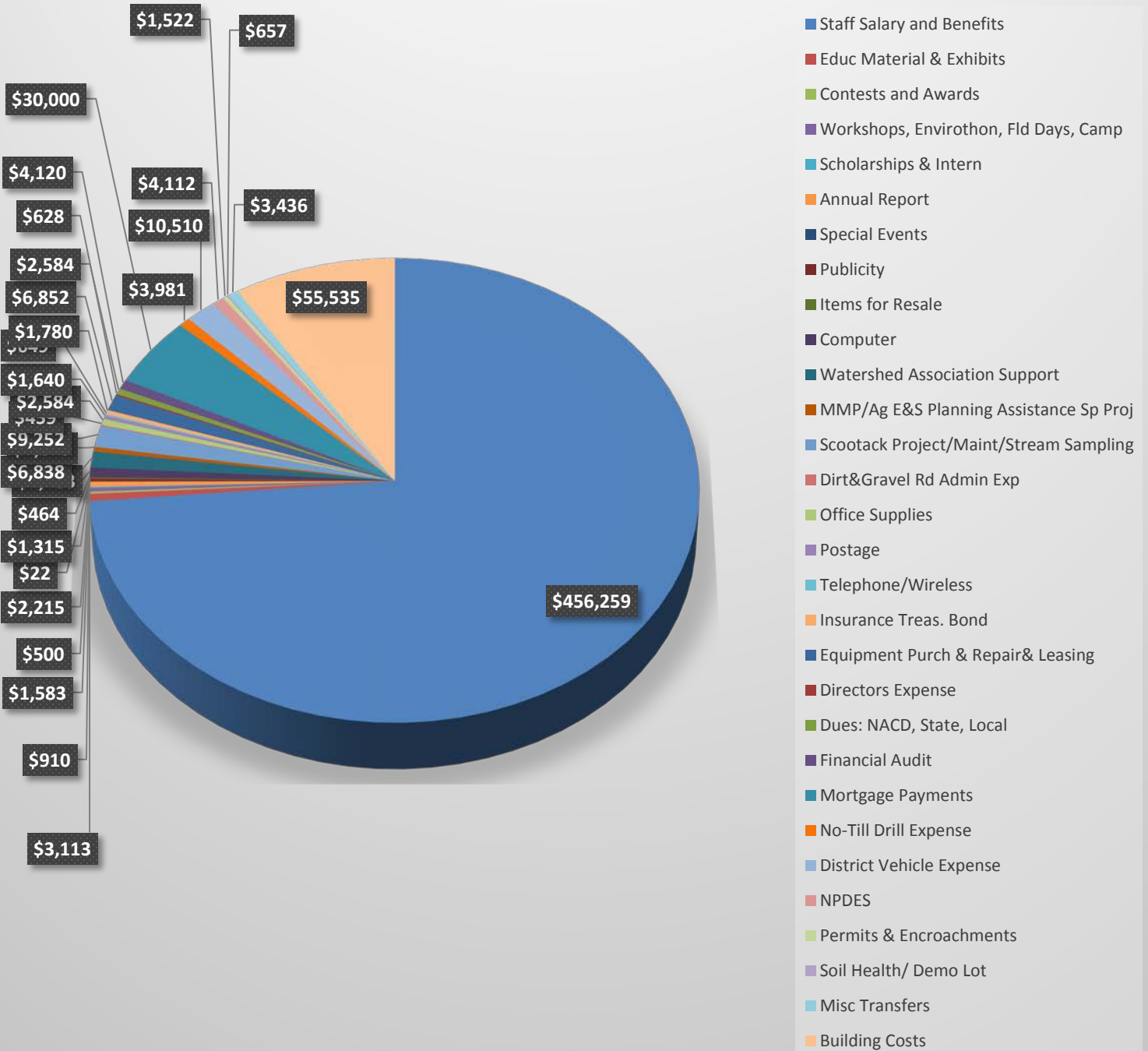
SOURCE

AMOUNT

County Salaries and Benefits (after reimbursement)	\$223,259.00
CDFAP Manager Allocation:	\$22,350.00
CDFAP E&S Technician Allocation:	\$16,225.00
CDFAP ACT Allocation:	\$16,225.00
Nutrient Management Technician Allocation:	\$45,000.00
Watershed Specialist Allocation:	\$45,250.00
Dirt & Gravel Road Administration Allocation:	\$7,980.00
Dirt & Gravel Road Education Allocation:	\$3,420.00
Low Volume Road Administration Allocation:	\$2,520.00
Low Volume Road Education Allocation:	\$1,080.00
Chesapeake Bay Technician Allocation:	\$65,500.00
CDFAP Act 13 UGWF Allocation:	\$18,500.00
PUC Unconventional Gas Well Fund	\$59,800.00
CDFAP-SCC PA Administrative Assist (UGWF)	\$10,845.00
E&S Review fees (estimated)	\$13,855.00



DISTRICT BUDGET (Expenses)





WATER ENCROCHMENT PROGRAM

The District maintains a Level 2 delegation agreement with the Pennsylvania Department of Environmental Protection to be the Department's designee for the administration and enforcement functions of the Water Obstruction and Encroachment Permitting Program within the political boundaries of Clinton County. A 2020 summary of this program is as follows:

14 4 Technical Assists

21 Complaints Investigated

17 Permit Reviews

3 Permits Acknowledged

12 Site Inspections

2 outreach/education events



EROSION & SEDIMENTATION CONTROL PROGRAM

The Clinton County Conservation District maintains a Level 2 delegation agreement with the Pennsylvania Department of Environmental Protection to assume responsibilities in the Erosion and Sediment Control Program and the National Pollutant Discharge Elimination System Permit Program. The purpose of this program is to protect surface waters of the Commonwealth from sediment and storm water pollution through the utilization of best management practices which minimize accelerated erosion and sedimentation and manage post-construction storm water runoff, both during and after earth disturbance activities. A 2020 summary of this program is as follows:

243 Technical Assists

41 Plan Reviews

3 NPDES Permits Issued

43 Complaints Investigated

27 Site Inspections

1 ESCGP-1 permit issued

2 outreach/ education events



CHESAPEAKE BAY PROGRAM

The Susquehanna River is the largest tributary to the bay, providing 90 percent of the freshwater flow to the upper bay and half of the total freshwater flow to the bay. Simply stated, the water quality of the Chesapeake Bay cannot be restored without Pennsylvania's support. But even more important, local water quality in Pennsylvania must be restored. In 2020, the District continued to work hand-in-hand with local farmers by implementing best management practices to reduce soil and nutrient loss, thereby making the farm more profitable while cleaning up our streams in the process. Throughout 2020, the District continued to provide technical assistance services including hosting manure management workshops to help farmers develop their required manure management plans; conducting farm inspections, and providing assistance in applying for funds for farm projects and REAP tax credits just to name a few.

A summary of 2020 activities for this program is as follows:

- 58 Chesapeake Bay farm inspections conducted.
- 18 Manure / Nutrient planning activities covering 771.14 acres.
- 7 Agricultural E&S planning activities covering 728.87 acres.
- 41 Technical assists.
- 22 Complaints investigated.
- No-till drill rented to 42 landowners for the planting of 605 acres.
- Dispensed 111 soil test kits to 47 residents.



DON'T TILL IT - DRILL IT!

There are a number of practices that can help rebuild and reinvigorate soil. Many farmers are transitioning to no-till farming to counteract the decades of damage. No-till farming involves planting the seed directly into the soil without plowing, tilling or disking. There are a number of benefits to this type of farming. It saves the farmer time and fuel costs by not having to make so many passes across the field. No-till practices also allow the soil structure to stay intact and protects the soil by leaving crop residue on the soil surface. Improved soil structure and cover increase the soil's ability to absorb and infiltrate water, which in turn reduces soil erosion and runoff and prevents pollution from entering nearby water sources. The Clinton County Conservation District has two no-till drills and available for rent. In 2020, these were made available to 26 local farmers who used them on 385.5 acres. Our 7' Sukup no-till drill is a 12-row unit with approximately 7" row spacing. It has two hoppers for planting both small and large size seed. It has a Honda motor with a self-contained hydraulic system. We also have a 10' no-till drill which can also be used as an Interseeder to establish cover crops between rows of standing corn, soybeans, sunflowers or any other crop planted at a 30" spacing – including vegetables. It interseeds four 30" rows at a time.

What is a Conservation District?

Conservation Districts were first formed as local grassroots groups to encourage farm conservation planning in response to the "dust bowl" in the 1930's. The idea behind them was that local people knew best how to handle soil and water conservation problems in their own areas. The emphasis was on educating landowners about wise land use and encouraging voluntary cooperation to achieve farm conservation planning. Technical conservation expertise was made available free to all landowners through the USDA Soil Conservation Service (Now the Natural Resources Conservation Service.) The Conservation District board was made up of farmer volunteers who directed the local program. Frequently, these conservation pioneers spent their time convincing their neighbors to adopt measures to save their topsoil and keep local streams free of pollution. The movement was catching. Today there are Conservation Districts in every state in the union. In Pennsylvania, districts follow county boundaries.

NUTRIENT MANAGEMENT PROGRAM

The goal of Pennsylvania's Nutrient Management Act (NMA) regulations is to minimize surface and groundwater nutrient loads from high density animal operations by ensuring proper and efficient distribution of nutrients. The Clinton County Conservation District has been delegated by the State Conservation Commission to oversee implementation of the NMA regulations in the county by monitoring compliance and providing education and technical assistance in nutrient management planning and manure handling. 🌿🌿

Summary of 2020 Act 38 Activities

60 Nutrient Management-related activities

6 Act 38 Plans Approved

32 Plan assists

3 Act 38 Plans Amended

41 Technical Assists

15 Complaints Investigated



FARM AND SOIL HEALTH DEMONSTRATION PLOTS

IN 2013, THE CONSERVATION DISTRICT ESTABLISHED CONSERVATION PLOTS IN A FALLOW FIELD NEXT TO THE OFFICE. THE TOTAL SIZE OF THE PLOTS EQUAL ABOUT AN ACRE. THESE PLOTS ARE AN EDUCATIONAL TOOL THAT THE DISTRICT USES TO:

1. DISCUSS THE IMPORTANCE OF SOIL HEALTH
2. EDUCATE THE GENERAL PUBLIC ON AGRICULTURAL CROPS AND THE PURPOSE OF COVER CROPS.
3. SHOWCASE NO-TILL DRILL PLOTS TO MIMIC WHAT FARMERS COULD EXPECT TO SEE IN THEIR OWN FIELDS.
4. PROMOTE THE IMPORTANCE OF POLLINATORS.

IN 2020, DISTRICT STAFF FOCUSED ON MULTISPECIES COVER CROPS AND POLLINATORS. ONE OF THE DEMONSTRATION PLOTS WAS SEWN WITH A POLLINATOR COVER CROP SEED MIX COMPRISED OF FIELD PEAS, RED CLOVER, CRIMSON CLOVER, HAIRY VETCH, BUCKWHEAT, RAPESEED, AND OATS. ANOTHER PLOT FEATURED A MULTISPECIES COVER CROP OF MUSTARD, DAIKON RADISH, TURNIP AND SORGHUM-SUDANGRASS. FINALLY, ONE FIELD WHICH BECAME A POLLINATOR HAVEN WAS PLANTED ENTIRELY WITH SUNFLOWERS.



FREE SOIL TEST KITS

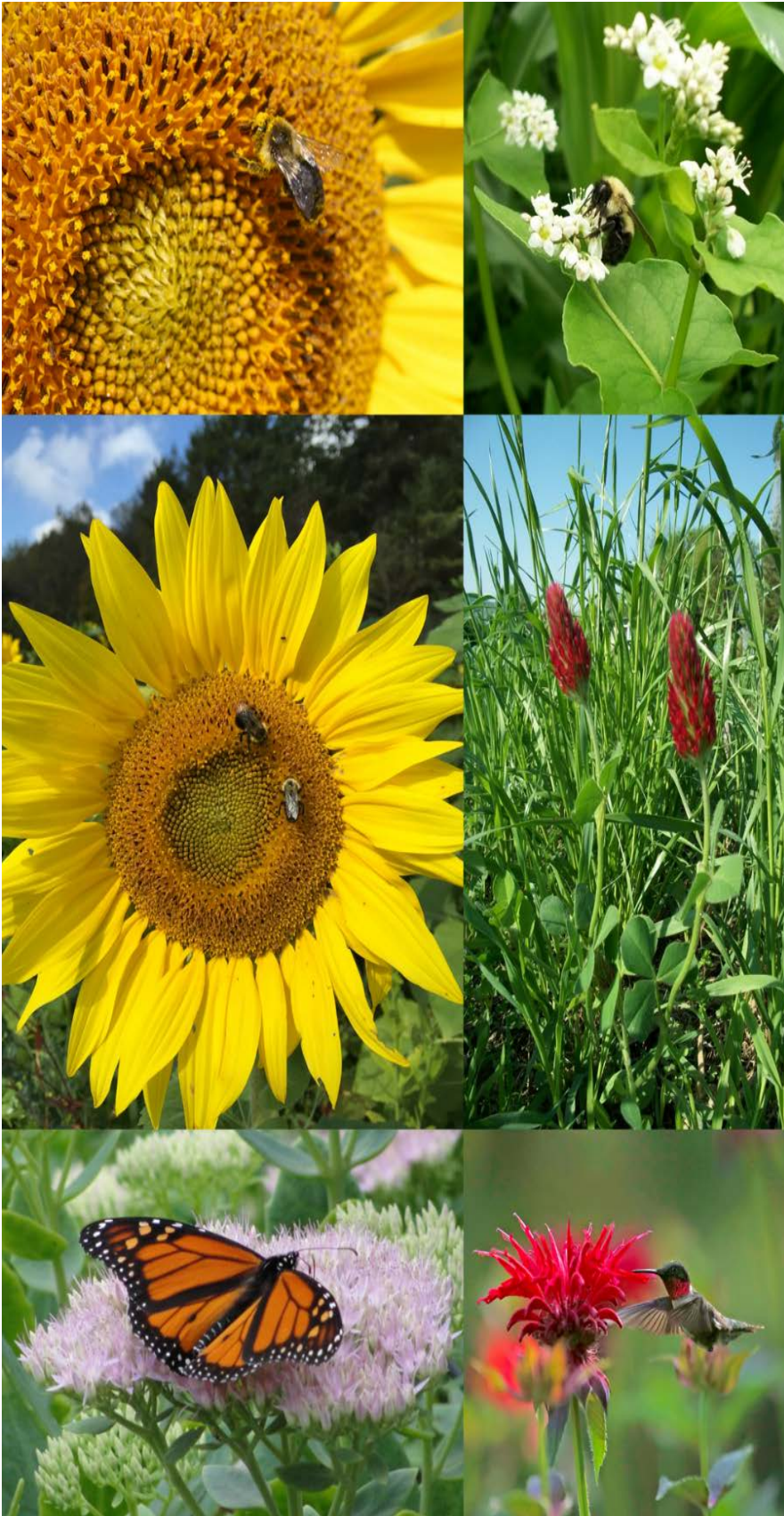
In 2020, forty-seven Clinton County residents made use of 111 free soil test kits to test 1,241 acres. Soil testing is a tool used to determine the fertility of soil, as well as the optimum lime and fertilizer requirements for crops. Getting a soil test takes the guesswork out of creating a healthy soil environment for crops or lawns. Soil testing ensures that you won't spend money on fertilizers that aren't necessary or over-fertilize. Free, prepaid soil test kits are currently available at the Clinton County Conservation District Office.

Your only cost is the postage. The test kit consists of a submission form, instructions on how to take a soil sample, a soil sample bag and return envelope for mailing your sample to Penn State Agricultural Analytical Services Lab. The final report includes the chemical analysis of the soil along with lime and fertilizer recommendations for the crop specified.

Each kit is easily capable of testing 10-20 acres. There is a limit of 6 kits per person and you must be a Clinton County resident and be testing property within the County. As a rule, most soils only require testing every 3 to 4 years. Stop by and get your free soil test kit today.



Planting a multispecies cover crop can help fulfill multiple goals that farmers often want the cover crop to achieve. Grass cover crops, such as cereal rye, are most suited to prevent erosion and nutrient loss. Legumes, such as hairy vetch, can supply Nitrogen to a subsequent crop. Brassicas, which include turnips, radish, and mustards, are fast-growing, scavenge nitrogen and can be grazed. The daikon radish is nature's rototiller. It breaks through hard, compacted soil layers and opens up channels for water and roots to penetrate. Softening soils is not the only reason to use daikon as a cover between fall and spring crops. Its deep roots recycle last year's nitrogen, catching it before it drains out over the winter. When planting a cover crop to protect or feed our soils, we often focus on the cover to protect the bare ground from erosion and add nutrients when we till them back into the soil. But the real action of soil-building success takes place below ground. For soil health, it's the cover crop roots that make radical change.



PROVIDING HABITAT FOR POLLINATORS

In 2020, the District planted 1/8 acre of sunflowers and 1/8 acre of a mixed cover crop (vetch, clover, buckwheat, sunflower, and canola) that specifically provides resources for pollinators.

Birds, bats, butterflies, moths, flies, beetles, wasps, small mammals, and most importantly, bees are pollinators. They visit flowers to drink nectar or feed off of pollen and transport pollen grains as they move from spot to spot.

Pollination services are essential for the production of the majority of our fruit, vegetable and nut crops including apples, tomatoes, and pumpkins. In fact, a third of the food we eat every day can be attributed directly to pollinators.

If we want to talk dollars and cents, pollinators add 217 billion dollars to the global economy, and honey bees alone are responsible for between 1.2 and 5.4 billion dollars in agricultural productivity in the United States.

Pollinator populations are in decline and this decline is attributed most severely to a loss in feeding and nesting habitats. Pollution, the misuse of chemicals, disease, and changes in climatic patterns are all contributing to shrinking and shifting pollinator populations.

Beyond providing resources for pollinator benefit, planting a diverse cover crop mixture that includes other cover crop species (e.g., legumes or grasses) as well as flowering species can provide maximum potential benefit for soil health, crop productivity and pollinator conservation.

“The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and esthetic values of the environment. Pennsylvania’s public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.”

Article 1, Section 27 of the Pennsylvania Constitution—The Environmental Rights Amendment (May 18, 1971).

Agricultural Preservation Program

Pennsylvania leads the nation in the number of farms and acres permanently preserved for agricultural production. The program guarantees a future food supply and contributes to a healthier economy. It also assures a way of life Pennsylvanian's cherish will continue for generations to come. The program is a partnership between all levels of government and non-profit organizations - with a common goal of saving prime farmland.

Clinton County's Program, similar to other county programs, pays farmland owners for conservation easements to be placed on valuable farmland. The easement purchases the development rights of the land, thus preserving the farmland forever. Payments in Clinton County have ranged from \$1,000 per acre to \$2,000 per acre, depending on quality, size, and location. A major portion of the funding for this program comes from the state's tobacco tax. The Clinton County Commissioners also appropriate a significant amount for easement purchases. Since its creation in 1996, there have been easements placed on 29 farms.

The County Agricultural Preservation Board will be accepting applications for new farms wishing to enter the program until March 31, 2021. The next round of applications will be eligible for April 1, 2021 – March 31, 2023. Applications submitted previously can be resubmitted to be reconsidered for the next round, if landowners who have previously applied so choose. There is a \$50 non-refundable fee to apply.

The Agriculture Preservation Board consists of 7 Board members: Chairman Dan Chappell, Vice-Chair Steve Bason, and Directors Mae Johnson, Chuck Bechdel, Wade Vonada, Jim Harbach, and Tim Owens. If you have questions, or need an application form or additional information, please contact any Director or call Scott Koser, Clinton County's Program Administrator, 570-726-3798.



Photo Caption: Pictured above is a historic barn located on Clinton County's most recent easement purchase on a scenic farm located in the Cedar Run watershed.

GET INVOLVED WITH CONSERVATION – ASSOCIATE DIRECTORS WANTED

The Clinton County Conservation District Board of Directors includes Associate Directors, non-voting members, who provide valuable input towards the District's Annual Goals and Objectives and Strategic Plan. There is no limit to the number of Associate Directors who can serve on the Board. Associate Directors are asked to participate in at least six board meetings and one district-sponsored event per year. Meetings are normally held at the District Office in Mill Hall and typically on the third Thursday of the month. At this time, due to COVID-19, the meetings are being held virtually via Zoom. Associate Directors are welcome and encouraged to help with educational programs, and other District work such as tree plantings and litter clean up. More diversity and perspectives from our Board of Directors means better decisions for future work. Citizens with an interest in the environment and responsible management of Clinton County's natural resources are invited attend a Board meeting or to submit an application. Please contact District Manager, Wade Jodun for an application and copy of the Associate Director policy.

“The time has come to inquire seriously what will happen when our forests are gone, when the coal, the iron, the oil, and the gas are exhausted, when the soils shall have been still further impoverished and washed into the streams, polluting the rivers, denuding the fields, and obstructing navigation.”

- President Theodore Roosevelt

“Conservation is a cause that has no end. There is no point at which we will say our work is finished.”

- Rachel Carson

NOMINATING ORGANIZATIONS

Nominating Organizations have a unique role in shaping the future of Conservation District. These organizations, which must be approved by the State Conservation Commission, are permitted by law to submit nominations of individuals to the County Commissioners for appointment to the District Board. By providing such nominations, these groups help define membership on a Board that makes critical decisions about how we manage the District.

The District is grateful to our Nominating Organizations for their participation and support.

- American Association of University Women
- Clinton-Centre FSA Committee
- Penn State Extension
- Boroughs' Association
- Farm Bureau
- Sugar Valley Watershed Association
- Solid Waste Authority
- Townships Association

Contact the District to learn how to be considered for approval as Nominating Organization.

Clinton County Secures Funding for Clean Water Planning – Hires Planner

A joint \$100,000 grant has been awarded to Clinton, Clearfield and Cambria counties to create Countywide Action Plans as part of Pennsylvania's Phase 3 Water Implementation Plan to reduce nitrogen, phosphorous and sediment levels in the Chesapeake Bay. Clinton County will administer the 3-county grant and receive \$37,500.

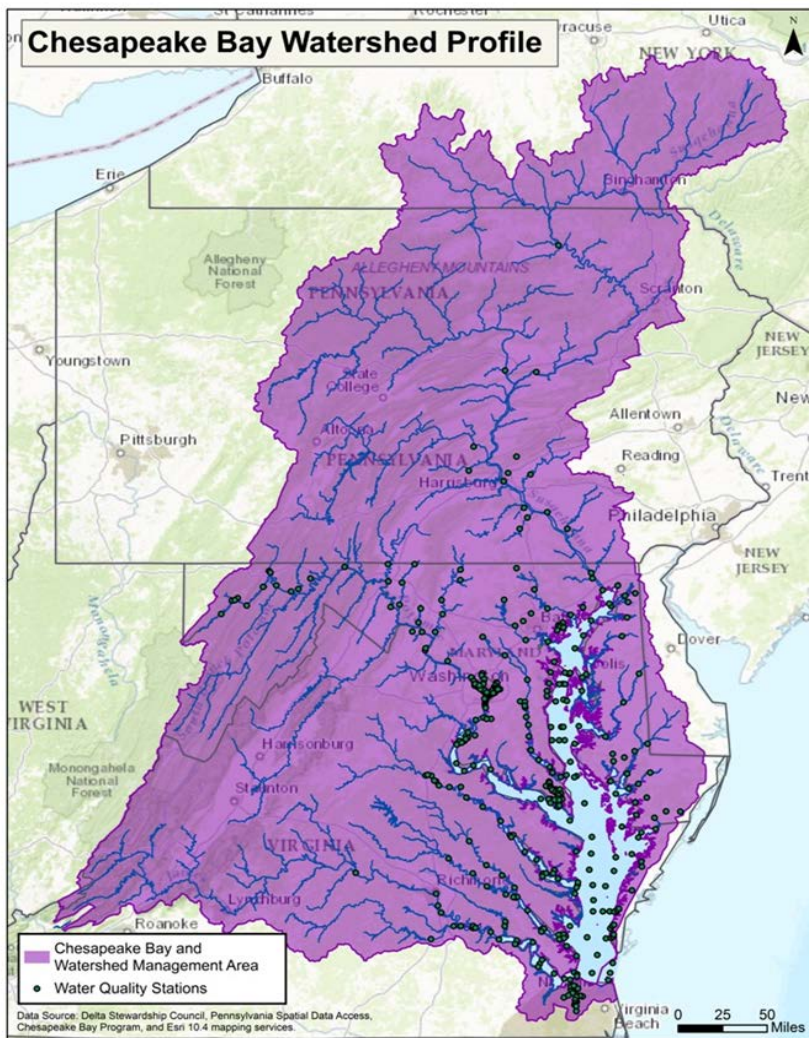
In 2019, Pennsylvania and neighboring states (Delaware, the District of Columbia, Maryland, New York, Virginia, and West Virginia) began the third phase of their work to clean up the Chesapeake Bay. As part of this effort, the U. S.

Environmental Protection Agency has assigned specific pollution reduction goals to Pennsylvania which must be reached by 2025. Pennsylvania's targets include reducing nitrogen in the watershed by 34 million pounds per year, phosphorous by 700,000 pounds per year, and sediment by 531 million pounds per year. This effort, formally known as the Phase 3 Watershed Implementation Plan, spells out how the state government will work in partnership with local governments, the private sector and citizens to meet Pennsylvania's goals. Each county also has its own goals and must develop its own Countywide Action Plan showing how they'll reduce their share of the pollution.

Denny Puko of Pittsburgh was hired to serve as consultant and plan writer for Clinton County. In addition to Mr. Puko, the County Planning Office and the **County Conservation District** will take lead roles in the plan's development.

While the planning process has not yet formally begun, it is anticipated that projects that stabilize eroding stream banks and projects that reduce nutrient runoff from farming operations are likely play a large part in the planning effort. Plan development will include engaging a diverse array of stakeholders including local businesses, landowners, farmers, municipalities, and other conservation agencies such as the Pennsylvania Fish and Boat Commission.

Anyone wishing to participate in the planning process or wishing to submit a possible project should contact the County Planning Office or County Conservation District.



the road less traveled

Dirt Gravel and Low Volume Roads Spotlight



The District's Board of Directors formally approved a recommendation by the Dirt Gravel and Low Volume Roads Quality Assurance Board that the District purchase a Buffalo Turbine Cyclone Squared Debris Blower with funds received through Pennsylvania's Dirt & Gravel and Low Volume Road Maintenance Program.

This blower will be available for rent in the Spring of 2021 to interested municipalities and conservation partners within Clinton County.

The purpose of this rental program is to encourage municipalities to blow leaves and debris from roadside ditches, rather than scraping ditches with a grader blade, which can expose bare soil and cause ditch erosion and discharge road material to local streams.

The blower will be available on a first-call, first-served basis. The cost to rent the blower is \$20 per day for Environmentally Sensitive Maintenance (ESM) -certified municipalities and \$30 per day for municipalities which are non-ESM certified. Contact us for availability and scheduling at 570-726-3798.



Clinton County Dirt, Gravel and Low Volume Roads Project – Greene Township, Harbaugh Road.

This project was aimed at replacing an undersized, failing culvert that did not provide passage for aquatic life. The existing culvert caused erosion at the outlet, had sediment deposits, and was a barrier for fish migration in a High Quality Class A trout fishery. The culvert inlet was less than half of the width of the stream and was collapsing. An aluminum arch structure with a full plate bottom was constructed at bank-full width in order to restore the stream corridor. The new structure does not decrease the width of the stream and accommodates flood flow.

Limbs to Live Stakes

Early European settlers making their way into Pennsylvania described the landscape along the Susquehanna River as extremely dense and full of vegetation. They observed woodlands so thick that sunlight could not penetrate through to the ground. By the mid to late 1800's though, much of the forested land in the state was cleared for housing, fuel, farming, mining, and timber sale. The forests that once provided our watersheds with overhead cover, leaf litter for aquatic insects, protection from the warming of the sun, and a physical barrier and filter of toxic substances were suddenly gone. Today we know that forests serve many benefits to the streams that run through them, yet many watersheds suffer from problems with erosion and sedimentation, excess nutrients, bacteria, and algal blooms associated with the lack of riparian area and surrounding land use.

Forested riparian buffers are one of the simplest yet most important Best Management Practices (BMP's) for watershed restoration. The riparian area is defined as the adjacent land situated along a stream or river. This area, when forested or planted with native vegetation (grasses, shrubs, and trees), acts as a line of defense by filtering out any sediments and excess nutrients carried by upland runoff toward the stream. The roots of the trees and shrubs help to anchor sediment in its place, preventing erosion and excess sand, dirt, and silt from making its way into the aquatic system. The overhanging trees and branches serve as the roof to the stream, keeping it cooler during the summer months. Coldwater species such as our state fish, the Brook Trout, need water temperatures below 68 degrees F to function normally and stay alive. Canopy cover is invaluable to waterways that support native trout. The leaves from those trees that fall in autumn provide organic matter that feeds the aquatic insect life. Without this riparian buffer, a stream or river is vulnerable to all of these problems.

The good news is that Conservation Districts and other environmental organizations are always working hard to improve our watersheds. The Clinton County Conservation District is continually looking for projects that help to establish riparian areas along streams. In the past few years, we have helped to develop over seven acres of riparian buffer along sections of streams that were bare. Establishing a riparian buffer with trees, shrubs, and native grasses is typically quite easy when volunteers are active. The tough part comes after planting, when routine maintenance is often required to ensure the trees and shrubs continue to grow. Landowners are most often responsible for this maintenance after a planting. This is-

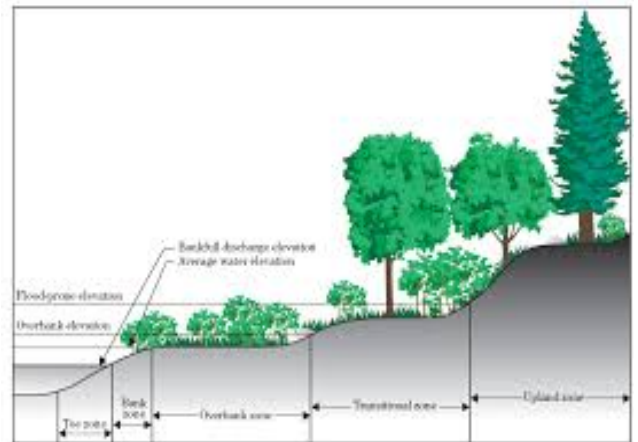
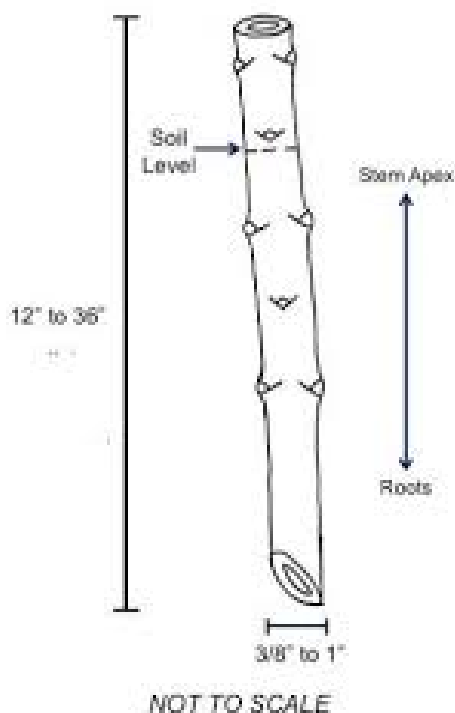




Figure 1. Guidelines for live stake sizing and planting. Place the majority of the stake in the soil to optimize production of roots instead of shoots.



-not only a tough job, but can also be quite time consuming. Maintenance includes mowing paths between trees to keep weeds from overtaking them, controlling invasive species, checking tree tubes, and controlling pests.

Establishing riparian area can be as simple or complex as the designer makes it in most cases. Some sites require a load of time and effort to ensure a riparian buffer is established correctly, but most of the time, any amount of native planting will do at least some good to the watershed. Live stakes are a way for anybody to help establish trees and shrubs along a waterway, with little to no cost and virtually no long-term maintenance.

A live stake is a cutting of a hardwood that is able to take hold and root itself back into the ground to establish an entire new tree. This method seems hard to believe, but on certain tree and shrub species, it works very well. Without diving too deep into the biology of how this works, it is known that the meristematic tissue in plants is responsible for outward, upward, and root growth. When these stems are cut away, there meristematic growth can be directed toward rooting rather than only outward and upward growth as sections of the main tree/shrub. Species that work particularly well for this type of planting include willows, alders, dogwoods, spicebush, sycamore, elderberry, and buttonbush. It just so happens that many of these plants grow well in riparian zones and thrive in moistened soils which are common adjacent to rivers and streams. Survival rates from multiple studies are typically between 30 and 90 percent, which are great odds when you think about how many can be distributed in a short amount of time, with no maintenance down the road.

Live stake cutting should be done in the winter months before budding occurs. Cuttings should be specimens $\frac{1}{2}$ to $1\frac{1}{2}$ inches in diameter, and around 2.5 to 3 feet long. It is important to note that you should only be taking cuttings from areas that already have a well-established riparian buffer. Additionally, it is imperative that you know what species of tree/shrub you are cutting. Some invasive species establish very well as live stakes and will be problematic when dispersed to other watersheds. The bottom of the stakes (lowest part to the ground when you are cutting), should be cut at angles so that they are more easily shoved into the ground when ready to plant. The tops should be cut straight in case a mallet is needed to drive them into the ground. Once you have obtained your stakes, be sure to store them in a cool, damp place to ensure they do not dry out. Rice hulls soaked in water are perfect for wrapping around the bottom of the stakes to keep them moist.

When it is time to do the planting, push the stakes into the ground as far as you can up until about $\frac{1}{2}$ of the stake is driven in. Space stakes out in a gridded pattern where possible in about 2-3 foot increments in the areas that you want to establish a good buffer. When in doubt, give the Clinton County Conservation District a call and we will be happy to help. In fact, if you are looking to establish a riparian buffer, we would be happy to assist you in any way that we can. Funding for live stakes, trees, and invasive species removal may be available. Give us a call at (570) 726-3798.

EDUCATIONAL BOOKLETS

The Clinton County Conservation District was able to distribute over 2,800 environmental education booklets to elementary age students throughout the county in 2020!



2020 Poster Contest

The Clinton County Conservation District would like to once again congratulate all poster contest applicants who submitted in 2020. The theme of the 2020 contest was "Where Would We BEE Without Pollinators".



Pictured above is Natalie Brown, the PACD Poster Contest State Champion for the 9-12 grade level. Congratulations Natalie on an excellent piece of artwork that captured the need for pollinators in our everyday lives.

The Conservation District is now accepting submissions for the 2021 poster contest through April 23rd. The theme of the contest this year is "Healthy Forests= Healthy Communities". Please contact the Conservation District for more information and to obtain the poster contest rules.



COUNTY ENVIROTHON

The annual Envirothon Study Day took place in early March at LHU, where Envirothon teams received hands-on training from resource professionals in



KEYSTONE CARES 2020 SUMMER EVENT

The Clinton County Conservation District provided a webinar for county students on macroinvertebrates for the Summer 2020 Keystone Cares Event Program.



PROJECT WET

Project WET is a curriculum that teaches the importance of water as a resource. The District held a virtual educator training for pre-service teachers studying at LHU in the October 2020.



2020 Scholarship awardees were Haili Frank and Desmyn Moore. Haili is a recent graduate of the Sugar Valley Rural Charter School and is attending Delaware Valley University to study animal/livestock management. Desmyn is a recent graduate of Central Mountain and is attending Penn State University to study veterinary and biomedical science.

RICH RAMM SCHOLARSHIP

CONSERVATION WORD SEARCH

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CHESAPEAKE BAY

CONSERVATION

STORMWATER

COVER CROPS

NUTRIENTS

WATERSHED

BUTTERFLY

POLLINATE

SEDIMENT

EROSION

FARMING

STREAM

NO TILL

SOIL

HABITAT

BEES



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