State Technical Committee

July 18, 2012
Minutes

Welcome: Denise Coleman, PA NRCS State Conservationist

NRCS is using success stories to put a face and practice with $35 million we are spending. The federal Emergency Watershed Protection program has $5.5 million dollars with $1.6 million dollars coming from the DEP and County sources to help us complete 150 streambank protection and stabilization projects. News releases are one way to put a face and practice on money spent.

Guest Speaker: Vincent Cotrone, Extension Urban Forester, Penn State University Vjc1@psu.edu

"The Role of Trees and Forests in Managing Stormwater" webinar

The Role of Trees & Forests in Healthy Watersheds – (handout attached)

"A Forested Watershed" can be viewed at www.pacommunityforests.com/webinar/index/htm

Vincent Cotrone reviewed some highlights of the webinar.

Changes in Chesapeake Bay Watershed continue to happen with land lost in development, impaired by urban storm water runoff, flash floods, and dry streams. Forests are losing ground. Not run off by forests change site surface but run off from urban developments, building parking lots, landscapes, and soil compaction increase surface runoff. Stormwater discharged to streams and the Chesapeake Bay will have to make changes because 75% of rainfall does not infiltrate the ground in urban areas.

"Forests are the most beneficial land use for protecting water quality due to their ability to capture, filter and retain water as absorb pollution from the air." Trees reduce stormwater that would otherwise carry pollutants to our streams.

"Interception by tree canopies of rainfall ranges from 10-40% for forest setting". Callery Pear tree interception of rainfall is good and research on canopy cover on Crabapple, Red Oak and Maple show as good interception species. Street trees intercept rain and reduce stormwater runoff. Vegetation "consumes" water about 40 inches of rain and 24 inches in forest setting back into evaporation. Less trees more into the streams.

Importance of Evapotranspiration is to capture rain, and Phytoremediation is pollution removal, plants remove contaminants from soil and water.

Engineered soils contain stone and clay loam soil to create rooting space along with load bearing for sidewalks or parking lot paving.

Streamside buffer is dependent on woody vegetation as buffers, and not grass because it doesn't work. Leaves are food source of woody vegetation. Buffer width the bigger the better without landscape mowing. Trees are a great buffer if not manicured.

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The Role of Trees & Forests in Healthy Watersheds

Managing Stormwater, Reducing Flooding, and Improving Water Quality

Pennsylvania contains almost 83,000 miles of rivers and streams, ranging from small trickles to large rivers. These waterways are important because they provide water for people, farms, and industries; provide habitat for many kinds of wildlife and fish; and also provide us with great places to fish, swim, and boat.

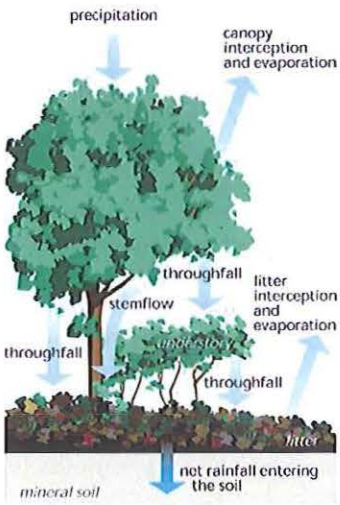
As our landscape changes, it begins to have an impact on stream health. What we do on or to the land affects both the quantity (volume) and quality (pollutant levels) of the water in our streams and lakes. The land area through which any water moves, or drains, to reach a stream is called a watershed.

As we begin to remove forest canopy and replace it with roads, parking lots, driveways, homes, patios, pools (impervious surfaces) and even grass, we immediately have impact on watersheds and receiving streams (or lakes). With the increased amount of impervious surfaces, water runs off the land, traveling on the surface towards the streams. As this 'storm water runoff' travels to the streams it collects pollutants and increases speed. The changes to the landscape, not only increase the volume of water that goes to the stream, it also shortens the amount of time it takes the water to get to the stream. These increased or peak flows cause water to move quickly to the streams. This leads to flooding, stream bank erosion, widening of streams, sediment deposited in streams, a loss of fish habitat, and decline in water quality. In Pennsylvania there are over 12,200 miles of polluted streams and over 3,000 miles of streams that are impaired by storm water runoff.

So how do we protect water quality and our streams as watersheds change?

Trees and forests play an incredible role in reducing storm water in several ways and removing or filtering pollutants that would otherwise wind up in our waterways.

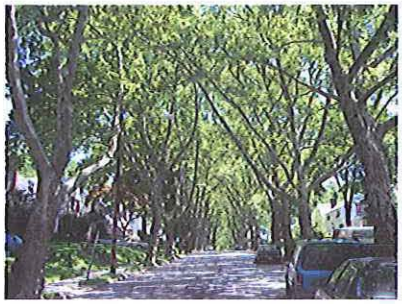
Canopy Interception and Infiltration



Forests filter and regulate the flow of water, in large part due to their leafy canopy that intercepts rainfall, slowing its fall to the ground and the forest floor, which acts like an enormous sponge, typically absorbing up to 18 inches of precipitation (depending on soil composition) before gradually releasing it to natural channels and recharging ground water. In a North Carolina Watershed study (Kays, 1980) the mean soil infiltration rate went from 12.4 in/hr to 4.4 in/hr when a site was converted from forest (duff layer on soils) to suburban turf. Other studies (Bharati et al. 2002) have found similar results when comparing hourly infiltration rates and soil bulk density of forested areas with crops and grazed pasture.

Average interception of rainfall by a forest canopy ranges from 10-40% depending on species, time of year, and precipitation rates per storm event. In urban and suburban settings a single deciduous tree can intercept from 500 to 760 gallons per year; and a mature evergreen can intercept more than 4,000 gallons per year. Even young, small trees help. In a recent Forest Service study a single small tree (callery pear) that was only 9 years old, was able to intercept 58 gallons of storm water from a ½ inch rain event (67% of the rain that fell within the canopy).

A study in the 1980's of Dayton, Ohio's existing tree canopy found that storm water runoff was reduced by 7% and could be increased to 12% through planting more trees. In a more recent UFORE Hydro study conducted by the USDA Forest Service of the Toby Creek Watershed (a suburban area of Wilkes-Barre), 54% tree canopy cover was able to reduce storm water runoff by 11%. One Forest Service Researcher has stated that planting large canopy trees over impervious surfaces, such as a parking lot or street has much greater impact on reducing storm water (up to 8 times greater) because it works to reduce peak flows in urban settings.



Trees Consume Stormwater

Trees and forests absorb and use tremendous amounts of water for growth, thereby consuming storm water. A single mature oak tree can consume (transpire) over 40,000 gallons of water in a year. In Pennsylvania forests, an average of 24 inches of the annual 40 inches of rainfall is taken up by trees through evapotranspiration (movement of water from the ground through the tree and leaves, evaporating back into the environment). That evapotranspiration also serves to cool and modify surrounding summer temperatures. If the forest is removed or harvested, evaporation drops to 14 inches and stream flow increases to receive 26 inches of the annual 40 inches of precipitation. So, just the removal of forests can have an impact on streams in the watershed.

Pollutant Removal and Phytoremediation

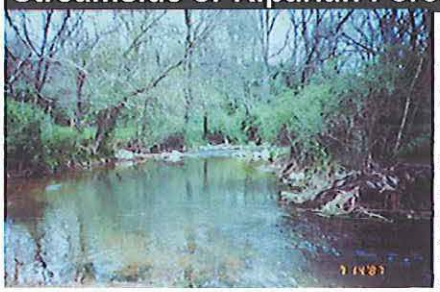
Plants, especially woody plants, are very good at removing nutrients (nitrates and phosphates) and contaminates (such as metals, pesticides, solvents, oils and hydrocarbons) from soil and water. These pollutants are either used for growth (nutrients) or are stored in wood. In one study, a single sugar maple growing roadside removed 60mg of cadmium, 140mg of chromium, 820mg of nickel, and 5200mg of lead in a single growing season (Coder, 1996). Studies in Maryland showed reductions of up to 88% of nitrate and 76% of phosphorus after agricultural runoff passed through a forest buffer.

In comparison, studies of residential lawns have shown overuse of chemical fertilizers (over 100 million tons applied to lawns annually) and synthetic pesticides (80 million pounds applied to lawns annually – 10 times the rate per acre used by farmers – Yale graduate study). Excess nutrients from lawns and agricultural fields is one of the largest sources of non-point pollutants that is impacting water quality in our streams, rivers, lakes and the Chesapeake Bay.

Parking lots, one of the fastest growing land uses, have become a major cause of water quality and stream degradation. Non-Point Source pollutants such as petroleum hydrocarbons, nitrates, and heavy metals (cadmium, copper, lead, and zinc) from brakes and rusting automobiles all wash into our water ways. Even a small rain storm (less than .5 inches) will cause 'first flush' – washing these pollutants into streams.

The runoff from one acre of paved parking generates the same amount of annual runoff as: 36 acres of forest; 20 acres of grassland; a 14 acre subdivision (2 acre lots); or a 10 acre subdivision (0.5 acre lots). One inch of rainfall on an acre of parking produces 27,000 gallons of stormwater. Large increases in stormwater volume reaching streams has caused major streambank erosion problems, down stream flooding, increased nutrient/sediment loads, and degraded aquatic habitat. The planting of trees in parking lots, especially in bio-retention areas where stormwater flows, can have a positive impact on water quality and work to reduce flooding and stream impairment.

Streamside or Riparian Forest Buffers

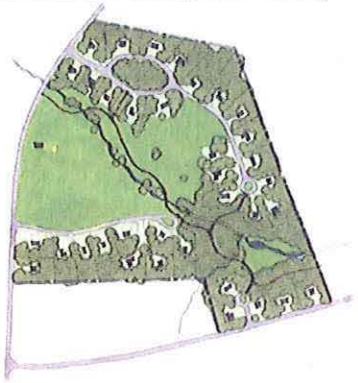


Planting and maintaining woody vegetation along streams provide a wealth of benefits and research at the Stroud Water Center and elsewhere have shown that stream health is dependent on the presence of woody vegetation along its banks. Riparian forest buffers filter sediment from streams during storm events; remove nitrogen and phosphorous leaching from adjacent land uses such as agriculture; provide stability to the bank (wood root systems); shade and modify stream temperatures, critical for habitat and pollution reduction; provide aquatic and wildlife habitat for many species; reduce stream velocity; and reduce down stream flooding. Buffer widths vary from 50 feet, providing some bank stability to 250 feet, providing flood mitigation and wildlife habitat. Planting new buffers has become a state priority over the last 10 years, but regulations to protect existing buffers from removal do not exist. Some municipalities have adopted ordinances to protect riparian forest buffers, and model ordinances do exist (Montgomery County Planning).

Increased impervious surfaces and un-managed storm water continue to erode stream banks and fill streams with sediment. Streambank stabilization projects are costing taxpayers almost $1million per mile and state and federal agencies can't afford or keep up with the increased number of streams needing restoration.

Trees and Forests: a New BMP for Stormwater Management in Pennsylvania

Up until recently, stormwater management strategies have been focused on detaining large volumes of water in basins that had little to no effect on removing the pollutants in the stormwater. In December 2006, DEP unveiled the new Stormwater Management- Best Management Practices (BMP) Manual that works to protect water quality and to put stormwater back into the ground where it fell. One of the ten principles for new stormwater management is "preserve and utilize natural systems (soil, vegetation, etc)".



Several of the Non-Structural BMPs include protecting/conserving existing forests and riparian areas, cluster or concentrate new construction to minimize site disturbance, use conservation subdivision design and low impact development techniques, minimize soil compaction and grading entire areas, re-vegetate and re-forest disturbed area using native species, and reduce impervious cover such as streets and parking lots.

Then there are Structural BMPs that are promoting infiltration of stormwater such as the development of rain gardens or bioretention areas where trees and vegetation play an active role consuming rain water and removing pollutants. Trees and vegetation are also being incorporated into newly designed or retrofitted stormwater basins to promote pollution and sediment removal. Other strategies include Green Roofs, rain barrels or cisterns, vegetated infiltration swales, constructed wetlands, and riparian buffer and floodplain restoration.

In older existing communities, increasing tree canopy cover along streets, in yards and in parking lots can have a positive impact on our watersheds. Planting large canopy trees (where growing space permits) provide the most benefit – 8 times that of small maturing trees, according to new USDA Forest Service research (Greg McPherson, Western Center for Urban Forest Research). A study in Oakland, California will be monitoring 1,800 newly planted trees for 40 years to determine if they will account for a 9 million gallon reduction in contaminated stormwater entering the San Francisco Bay.

The role of trees and forests in managing stormwater and protecting water quality is just beginning to be understood by some engineers, planners and community leaders. One of the most powerful statements that help support this came from the Chesapeake Bay Executive Council in 2006 and reads:

'Forests are the most beneficial land use for protecting water quality, due to their ability to capture, filter, and retain water, as well as air pollution from the air. Forests are also essential to the provision of clean drinking water to over 10 million residents of the watershed and provide valuable ecological services and economic benefits including carbon sequestration, flood control, wildlife habitat, and forest products'.

Watershed and Stormwater Resources

Center for Watershed Protection - www.cwp.org
(learn more about the impact of impervious surfaces and storm water on our streams and watersheds and access many downloadable publications).
Urban Watershed Forestry Manuals - http://www.cwp.org/forestry/index.htm
Storm water Managers Resource Center - http://www.stormwatercenter.net/
(view slideshow, fact sheets and much more)
USDA Forest Service Riparian Buffers - http://www.na.fs.fed.us/spfo/pubs/n_resource/buffer/cover.htm
Stroud Water Research Center - http://www.stroudcenter.org/
(visit the Leaf Pack Network for Teachers)
University Of Maryland Riparian Buffer - http://www.riparianbuffers.umd.edu/
Alliance for the Chesapeake Bay program - http://www.acb-online.org/pubs.cfm
Natural Stream Channel Design - http://www.nrcs.usda.gov/technical/stream_restoration/
Urban Stream Restoration - http://www.urbanstreamrestoration.com/index2.html
(a video tour of Ecological Restoration Techniques with Ann Riley)
DEP's Watershed TV – http://www.greentreks.org/watershedstv/index.asp
(miniclips on storm water and other issues)
Hubbard Brook Experimental Watershed - http://www.hubbardbrook.org/education/Introduction/Intro1.htm
Forest Service – Urban Forestry Research Center –http://www.fs.fed.us/psw/programs/cufr/research/water.shtml
Green Infrastructure Website - http://www.greeninfrastructure.net/
Maryland's Storm water Website - http://www.mde.state.md.us/Programs/WaterPrograms/SedimentandStormwater/home/index.asp
Nonpoint Education of Municipal Officials (NEMO) - http://nemo.uconn.edu/
Alliance for the Chesapeake Bay - http://www.acb-online.org/
Storm water Journal - http://www.stormh2o.com/sw.html
Low Impact Development Techniques - http://www.lowimpactdevelopment.org/

This publication was prepared by Vincent Cotrone, Urban Forester, Penn State School of Forest Resources

PENNSTATE
1855

Whenever trade names are used, it is with the understanding that no discrimination is intended and no endorsement is implied.

This publication is available in alternative media on request.

CRP and CREP - Chrystal Fetzer reported for FSA and NRCS

NRCS and FSA report 26,500.00 CRP acres expiring on September 30, 2012. Post card outreach for general re-enrollment 1000 and 282 for forested buffer. In total, 27% of the postcards were returned with 80% of the landowners indicating their desire for re-enrollment. Buffer years 2013, 2014, 2015 and 67 of 459 cards sent were returned with 70% interested in re-enrolling.

PA CRP and CREP enrolled 12000 contracts with 192,500 acres in CREP and 17,000 acres in Riparian Buffers in the Chesapeake Bay.

Amendments approved June that decreased acreage from Ohio CREP and increased acreage to Chesapeake CREP. Additional acreage for enrollment in the full suite of CREP practices in Chesapeake Bay is 19,746 acres.

A PSU grad student created a Buffer display for Ag Progress Days.

Topics from various agencies and partners interested in revamping and reactivating the PA CREP website are: PA landowners with streams; land owner interest in CREP; and landowners already enrolled in CREP. Discussion continues.

Q: How many acres were removed from OHIO CREP?

A: 25,000 acres

Q: Is there a survey as to why people drop out and decide not to re-enroll expiring CRP/CREP?

A: No survey, but reasons volunteered by contract holders include: high crop prices have lured them into farming or renting their land to a tenant farmer; development opportunities; and no longer want to tie the farm up for another 10 years due to their age.

EWP - Hosea Latshaw: (handouts of News Releases attached)

Brief update on Emergency Watershed Protection (EWP)

Federal and local entities are working together to give assistance to homes and properties damaged by Tropical Storm Lee and Hurricane Irene. Support from local sponsors was developed from Hurricane Irene EWP effort.

NRCS engineers have completed over 90% of project designs. Many projects are in the bidding phases and we are expecting it will be a very busy fall construction season.

Our program is limited in protecting or improving properties and businesses. Buildings over 50 feet away from the steams score very, very low. The EWP program can be used to repair erosion to the stream banks of the erosion creates hazards to the nearby buildings. Flooding damages to the buildings, caused by high water, is not covered by the EWP program. Damage to farmlands is not part of the project. Federal or state roads are not covered. Penn Dot has been very active in repairing damaged roads and bridges.

NRCS received the EWP funds in January 2012 and the DEP funds were provided to cover the sponsor's 25% local match on April 1st.

United States Department of Agriculture
Natural Resources Conservation Service

NRCS **NEWS RELEASE**

One Credit Union Place, Ste. 340, Harrisburg, PA 17110 * (717)237-2100 * www.pa.nrcs.usda.gov

Created: Wednesday May 23, 2012 by Courtney Beasley

NRCS Lends a Helping Hand to a Montour County Property

The stream bank in the back of Judy Brandt's property was severely eroded by flooding from Hurricane Irene last fall.

Through its emergency watershed protection program, NRCS and local partners stabilized the stream bank to prevent further erosion.

Tropical Storm Lee and Hurricane Irene damaged many properties in Montour County last fall. With the help of USDA Natural Resources Conservation Service's (NRCS) Emergency Watershed Protection (EWP) Program, over 150 projects in the Commonwealth will receive assistance to stabilize streams and repair imminent threats to life and property. One such project site is Judy Brandt's home near Catawissa, PA. Donald Murray NRCS' Bloomsburg project engineer states, "the erosion of the stream bank was so severe that the foundation of Brandt's house was exposed which placed it in imminent danger if another severe storm was to take place."

The EWP Program was passed by Congress to help protect individuals and properties endangered by natural disasters. In Pennsylvania, this program is being used to alleviate imminent hazards to life and property caused by an unexpected impairment of the watershed such as erosion and flooding following Tropical Storm Lee and Hurricane Irene.

The construction on Ms. Brandt's property began around April 23, 2012 and was completed on May 11, 2012. To stabilize the streambank and protect the home, local workers grouted the lower half of the stream bank with a sand/cement mixture and steel dowels in order to make the bank larger and add extra stability to keep it in place. They also installed riprap (rocks) to prevent further erosion.

With the construction cost being nearly $100,000, NRCS provided Brandt with 75 percent of the funding and the Department of Environmental Protection (DEP) contributed the remaining 25 percent of the funds. Local organizations, including Mayberry Township and Montour County, the project sponsor, also provided project assistance. With substantial help from these entities, Ms. Brandt and her downstream neighbors can breathe easier, knowing that her house and their properties are further protected in the event of another storm. NRCS takes pride in helping people help the land. To learn more about our services, contact your local USDA Service Center, or visit www.pa.nrcs.usda.gov.

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Helping People Help the Land

United States Department of Agriculture
Natural Resources Conservation Service

NRCS NEWS RELEASE

One Credit Union Place, Ste. 340, Harrisburg, PA 17110 * (717)237-2100 * www.pa.nrcs.usda.gov

NRCS Helps Over 150 Homes and Properties Damaged by Storms

By Courtney Beasley, NRCS Public Affairs Intern

Over 150 Pennsylvania homes and properties damaged by Tropical Storm Lee and Hurricane Irene are receiving assistance from USDA's Emergency Watershed Protection (EWP) program. Through EWP, the Natural Resources Conservation Service (NRCS) is working in conjunction with state and local entities to stabilize stream banks, remove debris, and reduce hazards that threaten life and property caused by erosion and flooding.

Landowner Angela Carl of Bradford County is one of the many individuals who were severely affected by both storms. In August and September 2011, severe flooding destroyed the stream bank on her property and damaged the foundation of her home, her porch, and septic system.

Working in conjunction with the Bradford County Conservation District (the local project sponsor), NRCS began work to stabilize the stream bank stabilization on February 25, 2012. The nearly $60,000 project was completed just two-and-a-half weeks later on March 9th. NRCS covered 75 percent of the cost using EWP funds and the Pennsylvania Department of Environmental Protection (DEP) contributed the remaining 25 percent. Ms. Carl's project not only protects her home but other homes downstream against future storms.

Under EWP, all property owners are required to have a project sponsor represent them. County Conservation Districts, Townships, and Counties are all eligible sponsors for the EWP projects.

NRCS takes pride in helping people help the land. To learn more about our services, contact your local USDA Service Center, or visit www.pa.nrcs.usda.gov.

Before: Angela Carl's home and its porch were damaged from Hurricane Irene and Tropical Storm Lee.

After: The protection of Ms. Carl's home and downstream properties were completed by installing the 290 foot riprap protecting it from future storms.

United States Department of Agriculture
Natural Resources Conservation Service

NRCS NEWS RELEASE

One Credit Union Place, Ste. 340, Harrisburg, PA 17110 * (717)237-2100 * www.pa.nrcs.usda.gov

By Courtney Beasley, NRCS Public Affairs Intern

Tropical Storm Lee and Hurricane Irene Destroy the History of Wyoming County

In August and September of 2011 Tropical Storm Lee and Hurricane Irene left many residents in Wyoming County of Northeastern Pennsylvania devastated. Heavy rains from both storms caused the Susquehanna River to exceed its flooding stage which forced a state of emergency to be declared. Lee and Irene severely damaged many historic homes, family businesses, and other properties which were all important to the landowners.

The aftermath of both storms resulted in flooding and erosion of Tom Daniels property.

The Emergency Watershed Protection (EWP) Program, administered by the United States Department of Agriculture, Natural Resources Conservation Service (NRCS), repairs streambanks and removes debris to protect homes and businesses damaged by storms. In Wyoming County, over 20 streambank projects are receiving EWP funds. Under EWP, NRCS grants aid for emergency work that displays an urgent threat to life or property and requires immediate action to be taken. NRCS may provide up to 75 percent of the construction cost of emergency measures. The remaining 25 percent comes from the Department of Environmental Protection (DEP) or local county funds provided by the Wyoming County Commissioners.

Tom Daniels, property owner in Tunkhannock, Pennsylvania, was left devastated once he realized how much his historic Bed & Breakfast building suffered through both powerful storms. Daniels hoped the construction of the stream bank would save the historic Bed & Breakfast property he and his family operated. Despite restoring the streambank, the structure experienced significant damage and was unable to be saved. However, to protect over 300 feet of the stream, riprap (rocks) and mulch were installed to stabilize the streambank.

With the help of NRCS's EWP program the stream bank was protected and restored with grouted rip-rap and mulch to prevent future erosion.

The severe erosion of the stream bank after both storms hit it.

Like Tom Daniels, Betty Ayers, Don Rogers, Bruce Rogers, and Herb Rogers also had properties along the stream that were severely damaged. To save these properties, riprap, and concrete blocks were installed. Each of these projects was completed within a month, thereby protecting homes and properties against future storms.

With the help of NRCS's EWP program the stream bank was protected and restored with concrete and rip-rap to prevent flooding and erosion.

For more information about NRCS and its Emergency Watershed Program, contact your local USDA Service Center, or visit us on the web at www.pa.nrcs.usda.gov.

United States Department of Agriculture
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NRCS NEWS RELEASE

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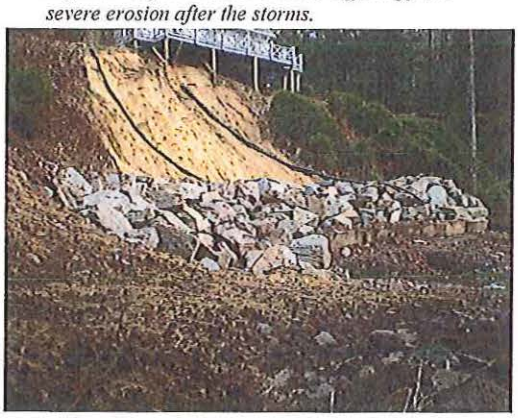
By Courtney Beasley, NRCS Public Affairs Intern

NRCS' Emergency Watershed Protection (EWP) Program to the Rescue

The Emergency Watershed Protection (EWP) Program was passed by Congress to help protect individuals and properties endangered by natural disasters. In Pennsylvania, this program is being used to alleviate immediate hazards to life and property following Tropical Storm Lee and Hurricane Irene. The EWP repairs streambanks and removes debris to protect homes and businesses damaged by storms. This program allows the Natural Resources Conservation Service (NRCS) to grant aid for emergency work that displays an urgent threat to life or property and requires action to be taken. NRCS may provide up to 75 percent of the construction cost of emergency measures. The remaining 25 percent comes from local county funds or the Department of Environmental Protection (DEP).

Before: Marjorie Parker's home suffering from severe erosion after the storms.



After: Through NRCS' Emergency Watershed Protection program 80 feet of rip-rap and concrete blocks were installed in order to protect the streambank.

After Tropical Storm Lee and Hurricane Irene hit Northeastern Pennsylvania in August and September of 2011, Marjorie Parker's Sullivan County home was placed in severe danger. Due to the severity of the streambanks erosion, action was taken under the EWP Program to repair the streambank. In order to protect and prepare the streambank from strong storms in the future, the construction workers placed 80 feet of R-8 riprap (rocks). They also placed a layer of precast concrete blocks which were pinned into the bedrock to add extra stability.

Due to the severity of the erosion, work was completed in a week. With the construction cost being nearly $20,000, NRCS provided Parker with 75 percent of the funding and DEP contributed the remaining 25 percent of the funds. Elkland Township was the local project sponsor.

For more information about NRCS and its Emergency Watershed Program, contact your local USDA Service Center, or visit us on the web at www.pa.nrcs.usda.gov.

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Helping People Help the Land

20 Conservation Programs Progress including new initiatives …Barry Frantz – (handout attached)

Funding 2012 peak year when considering EQIP, CBWI and AMA, WHIP

AMA - Agricultural Management Assistance - less Money is available trending downward.

- NRCS funded – 6 irrigation contracts totaling $168,000

EQIP - Environmental Quality Incentives Program - including some new National Initiatives

- Air Quality – manure management practices - 44 contracts
- Organics Initiative – 30 contracts
- On-Farm Energy Conservation - 11 contracts
- Seasonal High Tunnel - 67 contracts
- Water Quality Initiative - 7 contracts

State Initiative
Poultry Litter Incinerator - 1 contract and pursing another one in Lancaster County.

High tunnel is to extend the growing season and less chemical uses. Secretary Merrigan is an originator to marketing food and moving out to new customers and to conservation.

There is other funding for Conservation Activity Plans. This is to develop specialized recommendations for a farmer. It is technical information and is their choice if they chose to follow it or not. Conservation Activity Plans do not have a mandatory implementation requirement.

Q: Any programs to fund straight conservation plan?

A: No we don't have a conservation program funding option for development of RMS level conservations plans or compliance plans.

EQIP does have a funding option for CNMP plan development that includes land treatment and nutrient management components.

Q: What is the waiting time on conservation plan?

A: It can take up to a year for more complex projects. It is more of a process for farmer/landowner to make decision and prioritize according to their money.

Our conservation technical assistance funding has traditionally been used to write plans. But this fund source is shrinking and there is less money to write plans. Much of

our funding is coming through the farm bill, for conservation financial assistance programs, which can't be used to pay for writing of general conservation plans.

While we have the conservation funding available from farm bill, we are pushing for more practice implementation with funding for farmers provided in the farm bill.

A fund to pay for TSP services comes out of the NRCS Administrative/Technical Assistance budget, which is the same funding we need to pay for NRCS field staff.

Partnership will obligate with less people. No people to write general conservation plan. NRCS's first priority is to write conservation plans needed to develop farm bill contracts; conservation plans for other landowners and farmers come next. If and when the farm bill conservation program load lifts we may be able to get back to traditional conservation planning as we used to do. Conservation plans not directly related to implementation are important, but priority goes to landowners needing to implement conservation practices on the ground as part of a contract.

Q: On NRCS Farm Bill Contracts How much is done by NRCS and how much is done by others such as TSP's or partners?

A: For implementation and design 60% or 70% is done by NRCS. We have agreements with PACD, Conservation districts, and some other TSP agreements to do the remainder. We get a lot of assistance from PA Bureau of Forestry to help with EQIP Forestry, with CSP Forestry, and other forestland related work. For feed management, we have gotten a lot of help from Penn State and from other partners, get good implementation and we get a good product out.

Water Quality Initiative: 5% from EQIP allocation for Kishacoquillas Creek in Mifflin County, and 5% Maiden Creek Berks and Lehigh County.

Working Lands for Wildlife: uses WHIP funds to nationally target 7 areas for the threatened and endangered species or declining species. Bog Turtle and Golden Winged Warbler are two of the targeted species that have identified habitat areas in PA.

In 2012, NRCS is obligating $33 million in a year's time. 12000 practices to implement for the next three to four years with about 3 thousand a year.

Proposed new farm bill: Agricultural Reform, Food, and Jobs Act of 2012

Senate and House are close in funding. Both are proposing to reduce financial assistance, and to merge 23 Conservation Programs into 13.

Both the House and Senate versions call for CRP acreages going down.

CSP some reduction in maximum nationwide acreage payments about the same.

EQIP essential will not change the main details. If WHIP is merged into EQIP, areas that are not forestland and not part of an agricultural option may not make EQIP eligibility.

Regional conservation partnership program is a new program that consolidates some 2008 Farm Bill programs including AWEP, CCPI, CBWI and GLCP.

Q: As regional drafted divide into different competitives.

A: AMA under crop insurance senate bill doesn't mention eligible states.

Healthy Forest Reserve Program is likely to be continued in new budget.

Senate Funding of Energy

Website: http://agricuture.house.gov see what funding

FY2013 Project Program Option NRCSs and timelines.

2013 a fast track Farm Bill.

NRCS

2008 Farm Bill

Farm Bill Conservation Programs in Pennsylvania

July 18, 2012

NRCS

2008 Farm Bill

2008 Farm Bill Conservation Programs

- Agricultural Management Assistance - AMA
- Chesapeake Bay Watershed Initiative – CBWI
- Conservation Stewardship Program - CSP
- Environmental Quality Incentives Program – EQIP
- Wildlife Habitat Incentive Program - WHIP

PA EQIP/CBWI and AMA/WHIP 2007-2012

	2002 Farm Bill		2008 Farm Bill			
Program	2007	2008	2009	2010	2011	2012
EQIP	$10.8 M	$15.3 M	$13.0 M	$13.5 M	$13.5 M	$18.7 M
CBWI	$0	$0	$5.5 M	$9.7 M	$19.4 M	$15.1 M
EQIP/CBWI combined	$10.8 M	$15.3 M	$18.5 M	$23.2 M	$32.9 M	$33.8 M
AMA	0	$1.0 M	$1.0 M	$0.8 M	$0.7 M	$0.2 M
WHIP	$0.2 M	$0.9 M	$0.8 M	$0.8 M	$0.8 M	$1.1 M

3

NRCS

2008 Farm Bill

2012 Agricultural Management Assistance

- Irrigation
  - 6 contracts
  - $168,000

Fiscal Year 2012 EQIP Initiatives

National Initiatives

- Air Quality – 44 contracts
- Organic Initiative - 30 contracts
- On-Farm Energy Conservation - 11 contracts
- Seasonal High Tunnel - 67 contracts
- Water Quality Initiative – 7 contracts

State Initiatives

- Anaerobic Digester/Poultry Litter Incinerator – 1 contract

Conservation Activity Plans

- Agricultural Energy Management Plan
  - Headquarters - 8
  - Landscape
- Comprehensive Air Quality Management Plan
- Comprehensive Nutrient Management Plan - 100
- Conservation Plan Supporting Organic Transition - 5
- Drainage Water Management Plan
- Forest Management Plan - 85
- Integrated Pest Management Plan
- Irrigation Water Management Plan - 1
- Nutrient Management Plan (no livestock) - 4

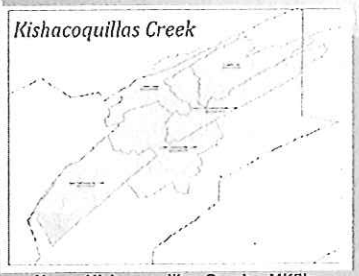
2012 Local Funding Pools

- Local Funding Pools used for:
  - Cropland/Riparian Area
  - Grazing Land
  - Livestock/Manure Management

Other Options in 2012

- Feed Management (CBWI and EQIP)
  - 7 contracts
- Forest Management Plan (EQIP)
  - 85 contracts
- Dam Removal / Stream Bank Protection (CBWI)
  - 8 contracts

Kishacoquillas Creek



Upper Kishacoquillas Creek – Mifflin County

On 303d list.

Does have a watershed plan.

Maiden Creek

Upper Malden and Saucony Creeks – Berks and Lehigh Counties

Upper Malden on 303d list.

Saucony Creek is not listed as impaired. Upstream from impaired Lower Malden Creek, and has significant ag.

Drain to Lake Ontelaunee, water supply for Reading.

2012 Wildlife Habitat Incentives Program

- Working Lands for Wildlife
  - Bog Turtle – 3 applications
  - Golden Winged Warbler – 76 applications

Bog Turtle

Bog Turtle Preliminary Focal Area Map

Golden-Winged Warbler

Golden Winged Warbler Priority/Focal Area

Conservation Stewardship Program - CSP

Rewards producers for current high levels of stewardship
Available for
- Agricultural Land (Cropland and Pasture)
- Non Industrial Private Forestland

12,769,000 acres nationwide may be enrolled each year
Five-year contracts
Average PA payments 2012:
- 96 contracts, 31,866 acres
- $8,600 per contract
- $26 per acre

2012 Farm Bill
Agricultural Reform, Food, and Jobs Act of 2012

Senate Bill – Conservation Title Provisions
House Bill – similar to Senate

17

2012 Farm Bill – Both Bills

- Reduces financial assistance
- Merges 23 Conservation Programs into 13

18

Conservation Reserve Program Acreage Limits

House	Senate
• FY 2012 - 32,000,000	• FY 2012 - 32,000,000
• FY2013 - 29,000,000	• FY2013 - 30,000,000
• FY 2014 - 26,000,000	• FY 2014 - 27,500,000
• FY 2015 - 26,000,000	• FY 2015 - 26,500,000
• FY 2016 - 25,500,000	• FY 2016 - 25,500,000
• FY 2017 - 25,000,000	• FY 2017 - 25,000,000

19

Conservation Reserve Program - Senate

- 1.5 million acres/year of grassland
- Emergency harvesting with no payment reduction
- Managed harvesting with at least 25% payment reduction
  - Haying
  - Grazing
  - Wind Turbines

20

Subtitle B - Conservation Stewardship Program

- At least 1 signup must be in first quarter of FY
- Up to 10,348,000 acres each fiscal year
- National
- average cost of $18 per acre
- Payment limit $200,000 for FY2013-2017

21

Subtitle C – Environmental Quality Incentives Program

2008 Farm Bill

- EQIP - Environmental Quality Incentives Program
- WHIP - Wildlife Habitat Incentive Program

2012 – House and Senate

- EQIP - Environmental Quality Incentives Program (5% for wildlife habitat)

22

2012 Farm Bill - Senate Version Environmental Quality Incentives Program

2008 Farm Bill

- EQIP - Environmental Quality Incentives Program
- WHIP - Wildlife Habitat Incentive Program

2012 – Senate Proposal

- EQIP - Environmental Quality Incentives Program (at least 5% for wildlife habitat)

23

Environmental Quality Incentives Program – Proposed Senate Funding

- $1,500,000,000 for fiscal year 2013;
- $1,600,000,000 for fiscal year 2014;
- $1,650,000,000 for each of fiscal years 2015 through 2017
- Compare: 2012 Authorized Funding
- EQIP $1,750,000
- WHIP $

24

NRCS 2008 Farm Bill

Subtitle D – Agricultural Conservation Easement Program

2008 Farm Bill

- FRPP - Farm and Ranchland Protection
- GRP - Grassland Reserve Program
- WRP - Wetland Reserve Program

2012 – House and Senate

- ACEP - Agricultural Conservation Easement Program

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NRCS 2008 Farm Bill

Agricultural Conservation Easement Program – Senate Proposal

- $450,000,000 for fiscal year 2013
- $475,000,000 for fiscal year 2014
- $500,000,000 for fiscal year 2015
- $525,000,000 for fiscal year 2016
- $250,000,000 for fiscal year 2017 ($266 M - House)
- Compare: 2012 Authorized Funding
- FRPP: $200,000,000
- GRP:
- WRP: 3,041,200 acres

26

NRCS 2008 Farm Bill

Subtitle E - Regional Conservation Partnership Program

2008 Farm Bill

- AWEP - Agricultural Water Enhancement Program
- CBWI Chesapeake Bay
- CCPI - Cooperative Conservation Partnership Initiative
- GLRP Great Lakes Restoration

2012 – House and Senate

- Regional Conservation Partnership Program

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NRCS 2008 Farm Bill

Regional Conservation Partnership Program

- Partners propose projects
- Agreements with partners for up to 5 years
- Partners provide technical and outreach assistance
- NRCS develops contracts with individual participants
- Up to $100 million/year from EQIP funds
- Additional 6 - 8% of CSP, EQIP and ACEP funds

28

NRCS 2008 Farm Bill

Agricultural Management Assistance - AMA

- Under Title XI Crop Insurance
- Continues as a separate program
- Multiple purposes:
- Crop Insurance Support (Risk Mgt Agency) 26%
- Organic Certification Support (Ag Marketing Service) 50%
- Conservation Practice Support (NRCS) 24%
- Up to $23,000,000/year

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NRCS 2008 Farm Bill

2008 Farm Bill -AMA Eligible States

- Connecticut
- Delaware
- Hawaii
- Maine
- Maryland
- Massachusetts
- Nevada
- New Hampshire
- New Jersey
- New York
- Pennsylvania
- Rhode Island
- Utah
- Vermont
- West Virginia
- Wyoming

30

NRCS 2008 Farm Bill

AMA Eligible States

- 2008 Farm Bill:
  - 16 States
- 2012 Farm Bill:
  - ?

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NRCS 2008 Farm Bill

Healthy Forest Reserve Program - HFRP

- Moved to Title VIII Forestry
- Continues as stand-alone program.
- Targeted at preserving forestland that provides habitat for Threatened & Endangered Species
- Existing PA project to preserve habitat for threatened Indiana Bat
- $9,750,000 per year

32

Other Farm Bill Sections: Title IX Energy

- Rural Energy for America Program REAP (RD)
  - Grants and Loans
  - $20 million/year
- Biomass Crop Assistance Program BCAP (FSA)
  - Subsidies for producers and processors
  - $20 million/year

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Ag Committee Web Information

- House Ag Committee http://agriculture.house.gov/
- Senate Ag Committee www.ag.senate.gov

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2013 Pennsylvania NRCS Proposal

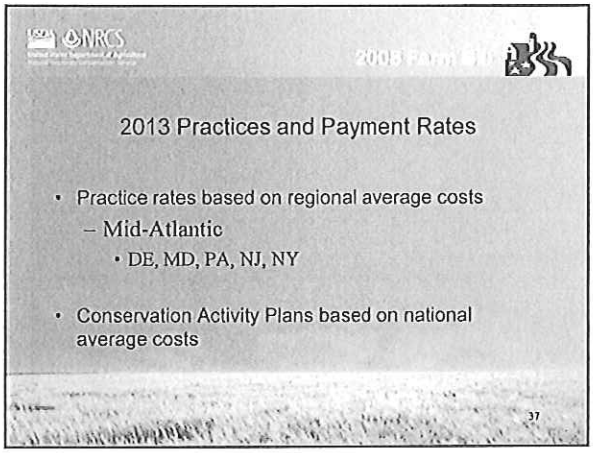
- National Signup Cycles - 3rd Friday of month
  - October 19 = First cycle date
- Anticipate same categories of funding pools as 2012
- Anticipate similar initiatives as 2012
- Contingency plans for a Chesapeake Bay RCPP
  - Else, rely on AMA, CSP and EQIP

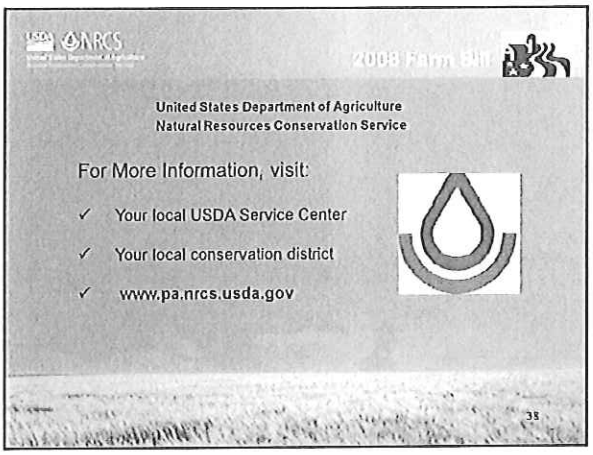
35

2013 Regional Conservation Partnership (tentative)

- RFP's for new RCPP announced (tentative) Oct 1
- Agreements finalized March 1 2013
- Begin implementation April 1 2013

36


NRCS
2013 Practices and Payment Rates
• Practice rates based on regional average costs
– Mid-Atlantic
• DE, MD, PA, NJ, NY
• Conservation Activity Plans based on national average costs
37


NRCS
United States Department of Agriculture
Natural Resources Conservation Service
For More Information, visit:
✓ Your local USDA Service Center
✓ Your local conservation district
✓ www.pa.nrcs.usda.gov
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Subcommittee Reports

Air Quality - no report

Bioenergy – Ryan Koch - (handout attached)

PBEA will host its inaugural conference and expo on October 2-3, 2012 in Harrisburg, PA

NRCS Bioenergy Subcommittee Report
July 18, 2012

Grass Energy Cooperative

The Grass Energy Cooperative has been working diligently to densify native warm season grasses from a 3-4 county area to provide to the Benton School District for use in their biomass heating system this winter. They submitted and were awarded the grass fuel contract to supply the Benton Area School District (Columbia County) with the required fuel for the 2012-2013 heating season. The group has had a successful few weeks densifying material for the school district. The members have over 140 tons of native grasses committed for the project, and are in the process of working with producers to acquire the remaining amounts needed. They are getting requests and interest for material supply and acquisition from both producers un associated with Farm Bill programs, and those that have acreage in program such as CREP, EQIP, and WHIP.

The Cooperative is having an Open-Barn this Saturday, July 21st in Wapwallopen, PA which will highlight their efforts towards densification and future projects. A flyer is attached for the event.

PA Biomass Energy Association

The PA Biomass Energy Association (PBEA) testified on "Biomass Energy" on June 18th before the Joint Legislative Air and Water Pollution Control Conservation Committee. The group explained biomass, biomass energy, thermal, combined heat and power projects, and biogas methane opportunities. They highlighted the environmental and economic benefits of using biomass and its ability to be produced locally within the state. All members of the state House of Representatives and Senate received the information provided by the PBEA.

PBEA will host its inaugural conference and expo on October 2-3, 2012 in Harrisburg, PA at the Holiday Inn, East. This conference is being organized to discuss the current and future use of biomass in Pennsylvania. Numerous field tours, technical presentations, panel discussions, and networking opportunities will be offered. Additional information can be found at: http://www.supportpabiomass.org/

Pennsylvania Fuels for Schools & Beyond

The Pennsylvania Fuels for Schools & Beyond Working Group had a reorganizational meeting on June 20th to discuss opportunities for the group to move forward and continue to provide services and educational opportunities to the public. Mike Palko, PA-DCNR Biomass Energy Specialist, will be the main contact for the group.

Ernst Biomass

Ernst Biomass continues to move forward on the construction and operation of their biomass processing facility focusing on having material ready for the 2012-2013 heating season. The material will include native grasses as a large component to the heating fuel. More information can be found at: http://www.ernstbiomass.com/

Respectfully Submitted,
Ryan D. Koch

Ryan D. Koch
District Conservationist, Montoursville Field Office

Feed Management – Dan Ludwig – (handouts attached)

Graphics showing the analysis of TMR-fed herds under contract to compare the actual vs. formulated levels of phosphorus in the ration and what has been presented to the cows. Graphics are summarizing lactating cows and dry cows and heifers combined. The graphs show the number of rations that are out of the expected range of difference. Many rations presented to the cows are lower in phosphorus than formulated, which is a good thing, only it wasn't planned. It happened by accident. Feed Management is about precision feeding as well.

The level of phosphorus in the ration directly related to levels of fecal phosphorus. The graphs show how the level of phosphorus in the ration compares to the phosphorus levels in the manure on a group basis. Most are in the expected range, but there are some outliers and several that could be sampling error.

Penn State Extension Dairy Team conducted a customer survey of all farms with Feed Management contracts. The received responses from 33 to 57 contracted farms. The slides summarize the discussion of the benchmark and 1st quarterly report and the changes that were being made to the feeding program.

The date will show what can be done in the future for reduction of phosphorus with feed management. The graphs will help farmers to understand that improvements can be made in how they mix and prepare their rations. This information should help in increase the number of farms signing up for Feed Management through NRCS and how it can help their operation.

Q: How can a grazer benefit from Feed Management if their diets are grass?

A: Most grasses supply provides enough phosphorus to meet the cow's need.

For beef cattle phosphorus reductions can be made through monitoring phosphorus levels in mineral supplements and byproduct feeds. This year forage quality is an issue because of the weather and flood damage from last year. With grain prices being high, it can be hard to make reduction because farms are looking for low cost feeds, which typically are high in phosphorus.

Some are reluctant to reduce phosphorus or actually increase phosphorus because of reproductive issues. There are research papers that show that increasing or over-supplementing phosphorus does not correct reproductive issues. For dairy cows, the phosphorus that is not used for mil production and maintenance is excreted in the manure. For those farms that made reductions in phosphorus, no fertility or reproduction issues were noted.

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

FEED MANAGEMENT

(Animal Units (AUs) Affected)

CODE 592

DEFINITION

Manipulating and controlling the quantity and quality of available nutrients, feedstuffs, or additives fed to livestock and poultry.

PURPOSE

- Improve feeding efficiency in a manner that facilitates and contributes to the conservation of natural resources.
- Reduce the quantity of nitrogen, phosphorus, and other nutrients excreted in the manure.
- Reduce the quantity and viability of pathogens in manure.
- Reduce odor, particulate matter, and greenhouse gas (GHG) emissions production from animal feeding operations.

CONDITIONS WHERE PRACTICE APPLIES

Livestock and poultry operations with a whole farm nutrient imbalance, with more nutrients imported to the farm than are exported and/or utilized by cropping programs.

Livestock and poultry operations that have a significant accumulation of nutrients in the soil.

Livestock and poultry operations that land apply manure and do not have a land base large enough to allow nutrients to be applied at rates recommended by soil test and utilized by crops in the rotation.

Livestock and poultry operations seeking to improve nutrient use efficiencies.

Livestock and poultry operations seeking to reduce manure pathogens.

Livestock and poultry operations seeking to reduce odors and or GHGs from their manure.

CRITERIA

General Criteria Applicable to All Purposes

Sufficient nutrients shall be supplied to maintain the health, growth, production, performance and reproduction of livestock and poultry.

The diets for specific species of animals shall be developed in accordance with recommendations from one of the following:

- The most current recommendations of the National Research Council (NRC).
- Recommendations of the land grant university.
- Peer-reviewed, science based standards developed by the professional nutritionists of livestock and poultry production companies, feed companies, and/or feed suppliers.

Laboratory analysis shall be done on the formulated diet, or on the feed ingredients used to formulate the diet, to determine its nutrient content.

Feed and manure analyses shall be conducted by laboratories whose tests are accepted by the Land Grant University, the State Department of Agriculture, or another appropriate body, in the state in which the feeding strategy will be implemented. Data from analyzed feed ingredients and/or appropriate historic feed analysis information for the operation will be used for adjustments of ration formulation.

Diets and feed management strategies shall be developed by professional animal scientists, independent professional nutritionists or other comparably qualified individuals. When required by state policy or regulation, animal nutritionists shall be certified

through a certification program recognized within the state.

Diets shall be formulated to provide the quantities and correct relative ratios of available nutrients required by the animal species to meet the goals for which the plan is being developed.

Adjustments to nutrient levels shall be provided to meet specific genetic potential, environmental demands, and/or requirements to insure health, well-being and productivity.

One or more of the following feed management practices and/or diet manipulation technologies shall be used to reduce N, P, other excreted nutrients, pathogens, odors, and/or GHGs, while maintaining the health, well-being and productivity of the animal.

- Formulating diets closer to animal requirements.
- Reducing protein and supplementing with amino acids (non-ruminants).
- Manipulating the crude protein and energy (carbohydrate and fat) content of the diet to enhance the availability of amino acids (ruminants).
- Using highly digestible feeds and forages, as appropriate, in the diet.
- Improving forage management to improve digestibility and maintain nutrient value.
- Using phytase or phytase combined with scientifically supported enzymes to improve phosphorous availability and reduce the supplemental phosphorus content of the diet (non-ruminants)
- Reducing the phosphorus content of the diet of ruminants when P is being overfed.
- Using selected scientifically supported enzymes or other products to enhance feed digestibility or feed use efficiency.
- Using scientifically supported and environmentally benign growth promotants and additives as allowed by law.
- Implementing phase feeding.
- Implementing split-sex feeding.
- Using other feed processing, management, or diet manipulation technologies that have demonstrated the ability to reduce manure nutrient content, pathogens, odors, or GHGs.
- When livestock are obtaining their diet by grazing pastures a well as mechanically harvested and processed feeds, pasture forages will be tested for nutrient content and accounted for in the feed ration and balance of nutrients. All feeds, including grazed pasture will be included in an analysis for meeting the livestock's nutritional requirements and avoiding excess nutrients being fed. Forage tests will meet the Land Grant University's acceptance and certification process.
- Modifying cropping strategies or providing alternative feed sources to provide nutrients that more closely match animal requirements
- Improving form or method of delivery of feed

CONSIDERATIONS

Feed management can improve net farm income by feeding nutrients more efficiently.

Consider nutrient requirements for production based upon stage of growth, intended purpose of the animal and the type of production (e.g., meat, milk, eggs) involved.

Use management practices described in the NRCS Nutrient Management (Feed Management) Technical Notes for the specific animal species[3].

Consider different feed ingredients (e.g. by-products) and their potential impacts on the nutrient content of excreted manure.

Consider maximizing home-grown feeds and forages to minimize the quantity of nutrients imported to the farm and its impacts on whole farm nutrient balances.

Consider the potential impact of feed management on the volume of manure excreted and on manure storage requirements.

Consider the impact of feed management practices and diet manipulation on manure odors, pathogens, GHGs, dust, animal health and well-being even if one or more of these are not included in the client's objectives.

Consider an integrated feed/forage program that optimizes agronomic practices and

nutrient utilization of the manure produced annually to maximize the recycling of nutrients on the farm.

Analyze freshly excreted manure to determine manure nutrient content and to estimate the impact of the feeding strategy.

PLANS AND SPECIFICATIONS

Plans and specifications for feed management shall be in keeping with the requirements of this standard. They shall describe the specific feed management practices and/or technologies that are planned for the operation..

The following components, when applicable, shall be included in the feed management plan:

- The type of technology, or technologies, cropping strategies, and/or feeding practices that will be used on the operation, and their intended outcome.
- Feed analyses and ration formulation information prior to and after implementation of feed management on the operation.
- Standard protocols for pre and post sampling, preservation and analysis of feed ingredients, manure, and/or water, as applicable, prior to sending for analysis.
- Evaluation of analysis reports to ensure adequate comparison and documentation of pre- and post-implementation of a feeding strategy.
- The measured nutrient content of the manure pre and post implementation of feed management on the operation as verified by fecal sampling and analysis.
- The estimated impact that feed management will have on manure nutrient content.
- Guidance for how often the feed management plan shall be reviewed and potentially revised.
- The quantities and sources of nitrogen and phosphorus that will be fed.
- Identification of the qualified feed management specialist who developed the plan.
- The estimated or measured impact on forage and feed inventory through altering cropping strategy or incorporating alternative feed sources.
- The estimated or measured economic impact after implementation of feed management on the operation.

OPERATION AND MAINTENANCE

The producer/client is responsible for the operation and maintenance of the feed management plan. Operation and maintenance activities address the following:

- Periodic plan review to determine if adjustments or modifications are needed.
- Routine feed analysis to document the rates at which nitrogen and phosphorus were actually fed. When actual rates fed differ from or exceed the planned rates, records will indicate the reasons for the differences.
- Maintain records to document plan implementation. As applicable, records include:
  - Feed analysis and ration formulation, including the record of ration formulation used prior to implementing the feeding strategy.
  - Records documenting the impact of the feeding strategy such as reductions in manure nutrient content, improvements in nutrient and/or feed intake efficiencies as verified by fecal sampling, MUN, and/or production/component reports.
  - Manure analysis that was completed before and after the feeding strategy was implemented to determine manure nutrient content.
  - Dates of review and person performing the review, and any recommendations that resulted from the review.

Records of plan implementation shall be maintained for five years, or for a period longer than five years if required by other Federal, state, or local ordinances, program, or contract requirements.

REFERENCES

National Academy of Sciences Animal Nutrition Reports. http://dels.nas.edu/Agriculture/Animal-Nutrition/Reports-Academies-Findings

USDA-NRCS, and USDA-ERS. 2000. Manure Nutrients Relative to the Capacity of Cropland and Pastureland to Assimilate Nutrients. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/dma/?&cid=nrcs143_014126

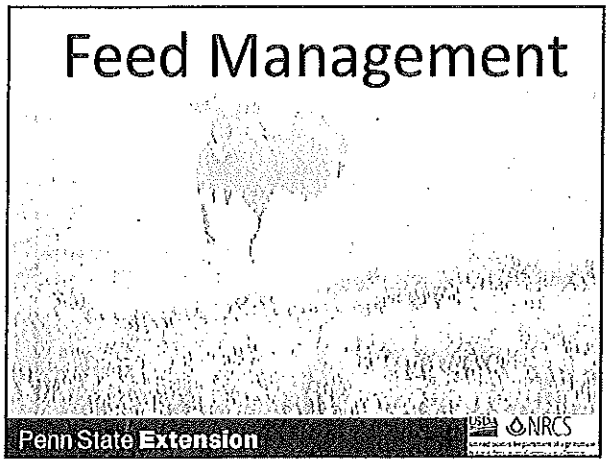
USDA-NRCS. 2003 Nutrient Management Technical Note #1 – Effects of Diet and Feeding Management on Nutrient Content of Manure

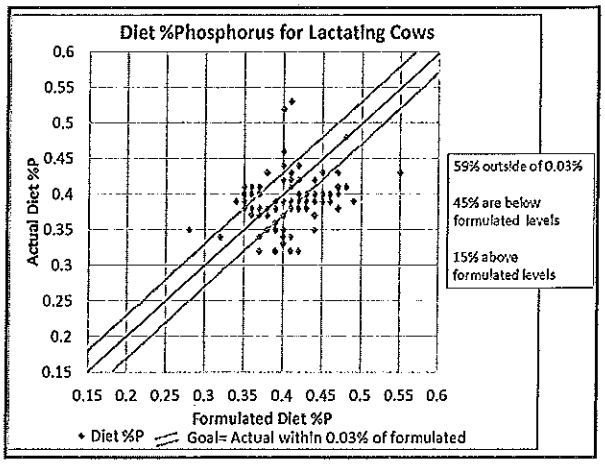
USDA-NRCS. 2003. Nutrient Management Technical Note # 4 – Feed and Animal Management for Poultry.

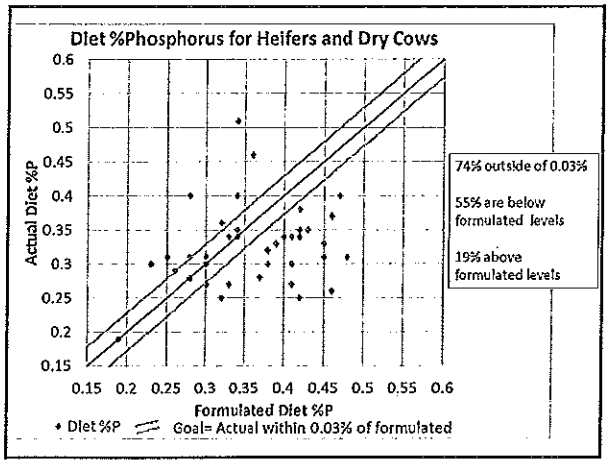
USDA-NRCS. 2003. Nutrient Management Technical Note #2 – Feed and Animal Management for Beef Cattle.

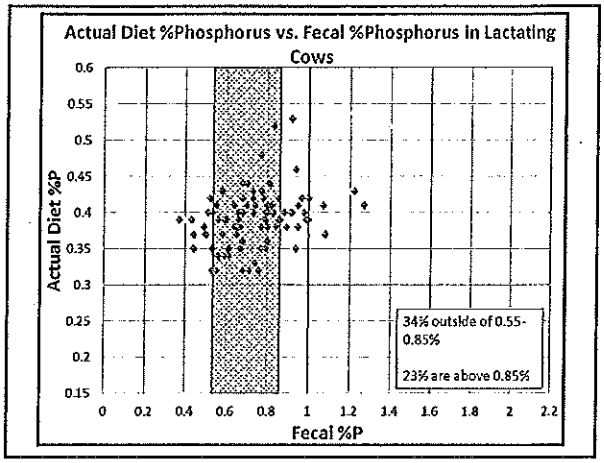
USDA-NRCS. 2003. Nutrient Management Technical Note #3 – Feed and Animal Management for Swine (Growing and Finishing)

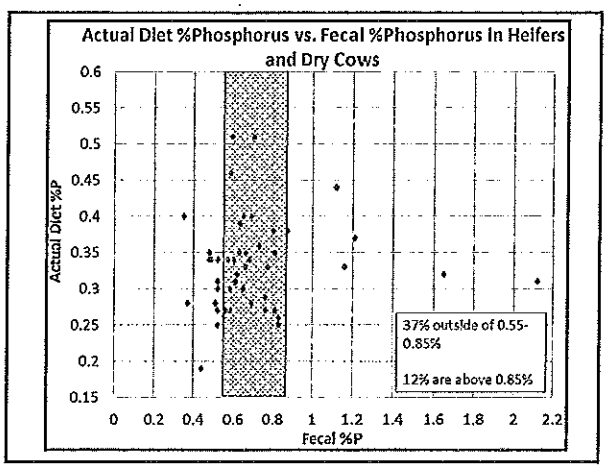
USDA-NRCS. 2003. Nutrient Management Technical Note #5 – Feed and Animal Management for Dairy Cattle


Feed Management
Penn State Extension
NRCS


Diet %Phosphorus for Lactating Cows
Actual Diet %P
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6
Formulated Diet %P
59% outside of 0.03%
45% are below formulated levels
15% above formulated levels
Diet %P
Goal= Actual within 0.03% of formulated


Diet %Phosphorus for Heifers and Dry Cows
Actual Diet %P
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6
Formulated Diet %P
74% outside of 0.03%
55% are below formulated levels
19% above formulated levels
Diet %P
Goal= Actual within 0.03% of formulated


Actual Diet %Phosphorus vs. Fecal %Phosphorus in Lactating Cows
Actual Diet %P
0.6
0.55
0.5
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0 0.2 0.4 0.6 0.8 1 1.2 1.4 1.6 1.8 2 2.2
Fecal %P
34% outside of 0.55-0.85%
23% are above 0.85%



Discussion after Benchmark Plan

Discussed changing feeds in order to maintain lower potassium levels in manure.
Lowering overall Protein and Phosphorus
How we were going to improve from this and use it as a basis.
Adjusting diet parameters to try to bring MUNs into line
Ways to reduce phosphorus: grouping strategy. Pasture management
Take manure sample quarterly, adjust rations, and monitor MUN's
We put all options on the table- ie available food types-concentration of feeds, possible avenues to use for targeted end nutrients.
Nitrogen and phosphorus levels in manure
Minor feed changes

Penn State **Extension** NRCS

Changes In Management Practices after Benchmark and 1st Quarterly Report

Take forage samples more often
Started using Rumensin
Lowered soluble protein
More hay to dry cows
We took away mineral lick blocks
Protein in diet
Started using heifer & dry cow ration
Calibrating Scale
Decreased Phosphorus in diet

Penn State **Extension** NRCS

Forestry - Andy Duncan – DCNR

Meeting in late August, one we are looking at another NRCS field staff and forestry staff to educate NRCS staff what practices look like. Primary role is to bring people together and increase cooperation. South Central and South PA have good forest practices, funding good and utilize plan and EQIP practices and animals plans.

Lastly spring had an inaugural direct seeding worker discuss future for direct seeding forests. Input success in getting a grant trails to do with funds for direct seeding.

National Wildlife - Mike Pruss, PA Game Commission

Mailing 3200, focal area private 20 forest landscape habitat on private land and positive response in 5 counties 18 more counties could do. Training in the field in additional counties for wildlife. Wildlife document is to plan and prioritize our efforts on non game animals on 10 years cycle in 2015. Comment our wildlife action plan a 1000 plus document. Contact for additional training breaking into small groups and getting input and modify document.

WRP Initiative – Barry Isaac, NRCS

Launch Massasauga rattlesnake initiative in 3 counties Mercer, Venango, and Butler.

Nutrient Management – Dean Collamer and Mark Goodson (handout attached)

Farmers, industry, agencies and Penn State subcommittee met on May25, 2012. Each member names the most important nutrient management and resource priorities as the basis for their being part of this subcommittee. The most repeated priority named was for the state nutrient management partnership and specifically NRCS in PA was the importance of maintaining consistency and compatibility between the 2013 revision of Nutrient Management (590) and existing CAFO and CAO regulation.

Mark Goodson described NRCS progress in revising the 590 standard and explained that it would be issued January 1, 2013. The discussion revealed that significant confusion exists among many stakeholders about nutrient management planning nomenclature and definitions because there are many state and NRCS products identified with similar names. Decision was made to develop a simplified “cheat sheet” explaining who needs what plan.

Nutrient Management Subcommittee meeting NRCS State Technical Committee

May 25, 2012 9 am

In attendance: Dean Collamer - chair, Mark Goodson - state agronomist, Johan Berger, Marel Raab, Kelly O'Neill, William Neilson, Jerry Martin, Lucinda Frey, Bill Angstadt, Jennifer Reed-Harry, Jedd Moncavage, Steve Taglang, Greg Hostetter, William Fink, Kristin Saake-Blunk, Dan Dostie, Denise Coleman

Attendance May 25 USDA meeting at 9:00 am	Notes
Name	
Johan Berger	
Marel Raub	
Kelly O'Neill	
William Neilson	
Jerry Martin	
Lucinda Frey	
Dean Collamer	Chair
Bill Angstadt	
Jennifer Reed-Harry	
Jedd Moncavage	
Steve Taglang	
Greg Hostetter	
William Fink	
Kristin Saake-Blunk	Via phone link
Dan Dostie	NRCS
Denise Coleman	NRCS
Mark Goodson	NRCS

Agenda notes:

Action items for next meeting (listed by Bill Angstadt):

1. Nitrogen Leaching Index
2. 590 Outreach and Education
3. Tools - June 1 NRCS releases WQ Index Nutrient and Sediment index - present at next meeting
4. Capacity to increase NM planning to meet standards
5. Vet 590 before release (offered by Denise) Oct 1st

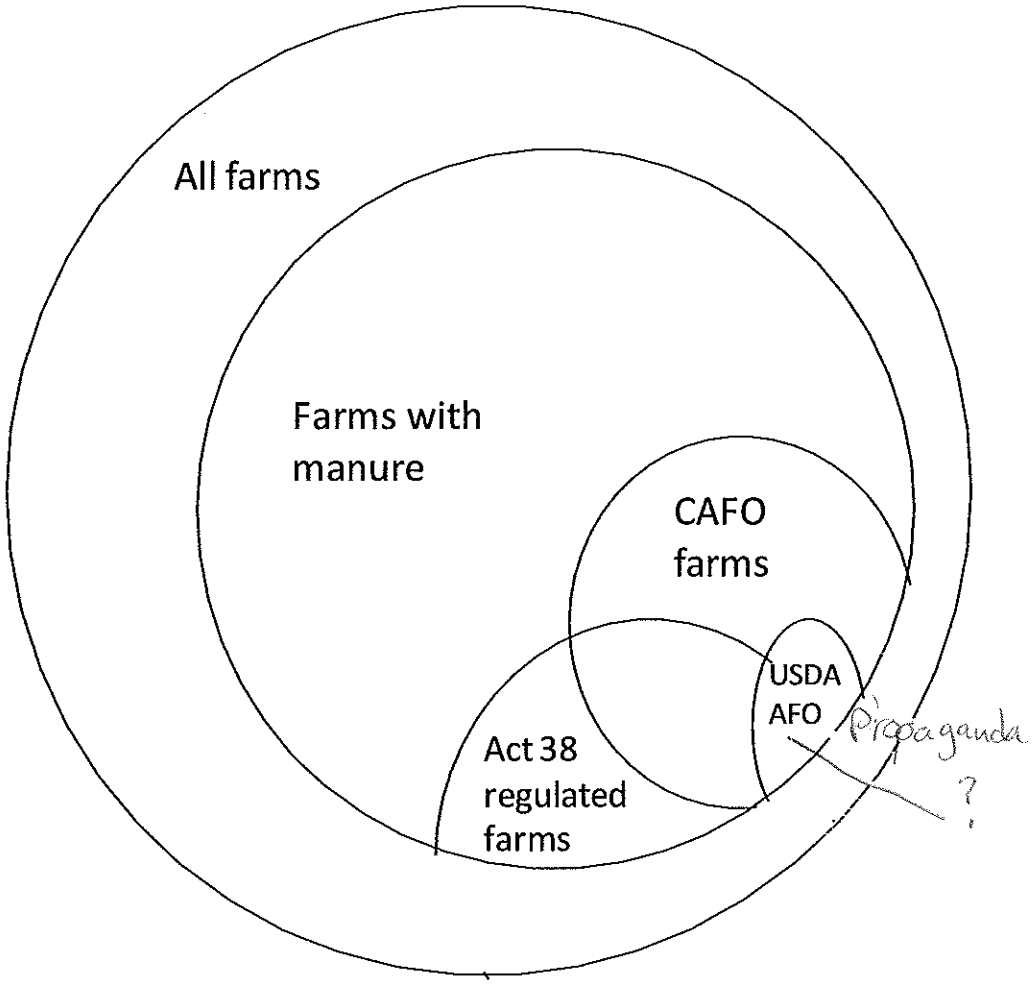
Upcoming State Technical Committee Meeting Dates with start time of 12:30 - July 18, 2012, October 25, 2012

Flipchart notes from introductory brainstorm session

- 590 / Act 38 dove tail compatibility - identified by most participants (> 8 people)
- Farm-friendly paperwork
- < N & P loads
- < TMDL loads
- Vision - where are we going
- Industry engagement
- Highlight good practices farmers are already doing
- Strategy for 4R
- Producer - Consultant - NRCS interaction
- N Leaching and 590
- Simpler plans for implementation and flexibility
- Whole farm conservation planning
- Education
- NM BMP - Recognition, promotion, 4R implementation
- CB TMDL - 590 interaction
- CAFO verification
- Bay model - value of our work recognition
- Beyond compliance conservation
- Correct information and tools to farmers for effective outreach
- Identify needs and fill gaps in what is being done (current nutrient mgt)
- Field level conservation professional training for on-the-ground workers

Farm Nutrient Management PA Regulatory Overview

All farms - Chapter 102 plans ~ 65,000
Farms with manure - Chapter 102 and Chapter 92 plans ~ 40,000
Act 38 farms - Chapter 102 & Pa certified Act 38 plans ~ 2,500
CAFO farms - Chapter 102 & Pa certified Act 38 plans & DEP permit ~ 360
USDA cooperators - AFO (animal feeding operations) written CNMP plan for TA or FA



Organic - James Travis (handout attached)

PA NRCS STC Organic Subcommittee
Minutes, June 22, 2012

Members present: Gwendolyn Crews, Charlie White Jeff Moyer, Lee Rinehart, Jim Travis, Tina Ellor. Conference via telephone.

Next State Technical Committee meetings, Harrisburg, PA: July 18 and Oct 5

Minutes

Gwendolyn commented on the process of developing payment schedules at the regional level. NRCS doesn't know how they will roll out for next year, so no program items to talk about as of now. She gave a Soil Quality Training Update, where NRCS is now calling it Soil Health, expressing a more holistic effort. There will be no functional changes in the field. She reported on a 2 day workshop on May 22, 23 in Clarion with Ray Archuleta for farmers and agency, and two more are scheduled for fall in SE and North PA, which will be sent out when finalized.

Gwendolyn covered the Xerces Society/NRCS agreement, dealing with native pollinators and observing and promoting endangered insects. The agreement with the NRCS western tech center will help place native pollinators on the radar at the national level. Last October the agreement provided funding for an east coast Xerxes full time position at the Cape May plant materials center, on outreach for native pollinators, and developing a job sheet and planting list. Specifically this will evaluate establishment methods for pollinator plantings especially with herbicides w/ native grasses, looking at alternate weed control methods.

Charlie White discussed soil health, organics, and NRCS pushing no till and herbicides. NRCS is perceived to be against tillage. This perception has created tension with the organic ag community. It is important to remember that while many organic operations use intensive tillage, they utilize a lot of practice for soil improvement.

Soil Health Discussion
What is the company line for no till on improving soil health?

NRCS supports no-till from a soil health standpoint, but also stresses the importance of cover crops, crop rotation, and reduced tillage, as necessary for soil health. We try to approach soil health from an overall system standpoint. However, there is definitely room to improve NRCS's understanding of complex crop rotations, especially when they pertain to specialty crops. There may be cases where NRCS employees default to no-till because it is a practice they are familiar with, but doesn't mean it is the only approach to a cropping system. Ultimately, NRCS approaches tillage systems based on customer/audience need, recognizing there are multiple tools to get the job done.

PSU studies show improvements under organic systems. Some of this research may be beneficial to present at a future STC meeting.

There are questions regarding the appropriateness of the RUSLE2 model for organic systems, with rotations and cover crops. There is a need for research in this area.

NRCS Knowledge Gaps

Common complaints received from producers are that NRCS doesn't know enough about complex crop rotations, specialty crops (Swill chard and kale) and diverse systems. Entering the complex operation into Rusle2 takes more time than entering a more simple rotation for corn and beans. NRCS planning process takes the same amount of time to do a dairy plan as a ½ acre diverse vegetable farm. NRCS is evaluated on an acre basis, so it looks like they get more work done on the dairy farm. ½ acre farm is more work for less acreage.

NRCS is unfamiliar with types of products organic producers use. However, NRCS does not make specific fertilizer or pesticide recommendations. It would be more helpful for NRCS to develop understanding of organic fertilizers to understand how they work compared to non-organic fertilizers.

There seems to be a need for NRCS training on materials, complex rotations, and cropping systems, over and above certification.

Organic Fruit Production

Jim Travis is clearing land for organic apples and peaches, doing nutrient analysis, looking at animal manure, but no one has info on manure for orchards. These are high density orchards up to 1000 plants per acre, and he has run into a nutrient road block. This is a new area for organic fruit growers.

NRCS looks to land grant universities for guidance info on new management practices like this. Also, the Committee can provide a review of practice standards, making sure NRCS is not overlooking any existing practices that could be applied.

Rodale's CIG Update – Composting

Rodale is actually working with two CIGs:

a. Federal – manure on no till, how to deal with it for cover crops
b. State – compost, lot of external forces on operation over biology of system, i.e. food waste delivered once a week, anaerobic, difficult to aerate and compost, work on recipe development; contamination of foreign material in food waste

Specialty Crop - David Biddinger (handout attached)

Field Day policy Penn State Research Lab pollinator's issues and highlight work done with pollinator issues, i.e. insecticides on bees and wild pollinators.

NRCS Specialty Crop Sub-committee Tele-conference

Meeting notes: June 18, 2012

In Attendance: Gwendolyn Crews, Bill Lamont, Andy Muzza, Eric Burkhart, Kathy Demchak, Ken Martin,

Agenda:

High Tunnel Irrigation

Bill and Ken requested a water catchment system for high tunnels. NRCS cannot pay for new irrigation through EQIP, system but can improve existing systems on acreage currently being irrigated. Gwendolyn has been working with engineering section to evaluate a water catchment system through the current Roof Runoff Structure (558) practice. This may allow rainwater to be captured for irrigation. To date, there has been no decision. If the Roof Runoff Structure (558) is approved for use with high tunnels, it is requested to be included in the FY 2013 payment schedule, dependant on the decision of the regional payment schedule committee.

Bill met in Philadelphia with three NRCS people to look at water catchment off of row houses into living filter and then used in high tunnels. Drexel has engineering interest in working on this. This existing system may serve as an option for use with high tunnels in the future.

Soil Quality Training Update

NRCS is looking at soil quality in more holistic way. The term soil health is now preferred to soil quality. NRCS is moving from focusing on physical soil properties to more biological aspects. NRCS is holding several 2-day workshops on soil quality. First one was held in May. Two more planned: first in October in SE PA, the other in November in NE PA.

Xerces Society/NRCS agreement

Xerces Society is working with NRCS through a joint agreement with Delaware, New Jersey, Maryland, and Pennsylvania to improve pollinator outreach and technical guidance. They are currently working on developing a woody pollinator planting list which will be reviewed by the subcommittee before being finalized. Another deliverable of this agreement is a field day once a year. Finally Xerces is working on improving guidance for the establishment of pollinator plantings (method, time of year, etc.).

Additional Items

Andy suggested regional meeting sessions or a survey to provide input into NRCS programs. A lot of growers still don't know about programs and how to become involved. Growers should have input into programs. Gwendolyn cautioned that she does not want any such sessions to become focused on complaints with no solutions. Constructive criticism is welcome but it should be constructive. Gwendolyn asked how we should proceed.

Andy is willing to organize a meeting or could bring it up on own with growers. Kathy suggested that

maybe hand-picked individuals might be better for having positive input rather than just complain. Try to pick people who represent different specialty crops and are willing to provide constructive input. Andy suggested that maybe inviting local NRCS people to grower meetings would be a good way to get the discussion going.

The questions was raised – is it possible to develop on out reach presentation/power point targeted at specialty crop producer's interests. A webinar may also be an option.

Close

Action item: Gwendolyn will draft a matrix or table that provides a set of practices that could be of interest according to the type of producer. Kathy suggested that this might also (or instead) include the issue to be addressed + the practice + producer.

GLCI – John Courtney

Grazing Land Conservation Initiative

Grazing and range land projects are funded through EQIP, and the purpose to promote grazing as an appropriate part of agriculture. PA is leading the country in equine through different NRCS programs and grants. Wish to develop NRCS standards for path and horse management.

A video is coming out later this year on the benefits of beef, dairy and equine. Richard McElhaney part of producers. Will be posted on National GLCI website.

The National Beef Winner is from Masonic Village, PA.

Benefits of well managed pastures and how grazing is effected by controlling grazing height level you mow in managing your grass.

AG Progress Days showcasing the GLCI.

Chief White is coming to Wayne County Fair to celebrate USDA 150 years old.

WRP – Hathaway Jones

Summary easement program is the FRPP 2013 State Plan.

Massasauga Rattlesnake Initiative for WRP – two applicants.

$1.8 million in new funds for bog turtle enrollments.

Wrapping up WRP

Funding restoration projects backlog of 40 projects.

GRP has two easements funded in 2012.

HRFP 3 appraisals those for landowners offer of enrollment.

FRPP 2 million dollars for agriculture easements

Update starting the 2013 dollar per acre rates easements.

Consolidate easement in to Ag EASEMENT and Wetland Easements hasn't passed through house. Activities have gone down from 2007 appraisals FRPP done until the same. No longer using Federal Acquisition Land use.

Closing - Denise Coleman

Conservation success showcase (handouts attached)

Meeting centered on compliance EPA and WHIP, voluntary conservation is how we got where we are today. Voluntary bringing in 12000 practices to improve their farm, environment, and CBWI.

Keep bringing home voluntary conservation that is a good thing.

WRP all the work threefold increase brought 250,000 for TA for WRP employing people. Bog Turtle, DCNR, EQIP bringing more attention. Momentum for specialty crop and of course strong grazing state is PA. We have to get capitalized do these 12000 practices and compliance plans not to lose site on talking to congressional folks this money brings other money.

October 25, 2012 next meeting

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

CONSERVATION Showcase

NRCS Repairs Gully known as the "Grand Canyon of Morgantown"

Kefeni Kejela

June 29, 2012

In Caernarvon Township, locals knew of "The Grand Canyon of Morgantown." The name was given to the 11' x 7' gully in a hayfield on the Kevin Beiler farm. The gully site is located on the outskirts of Morgantown, Pennsylvania, in Berks County.

According to Mr. Beiler, the gully didn't begin to form until a new gas station and car dealership were constructed in 2000. Since then, water runoff from parking lots has been a continuous issue for the Beiler farm. Water is directed onto the farm via a 12-inch pipe that passes under Twin Valley Road and drains directly into his hayfield. As a result, continuous erosion caused the deep gully to form in less than nine years. The Beiler Gully ranged from five to seven feet in depth, from nine to eleven feet in width, and was 280 feet long.

Mr. Beiler contacted the NRCS Leesport field office for assistance. NRCS staff worked closely with Caernarvon Township officials to use Best Management Practices (BMPs) to repair the gully since it was determined that it would eventually lead to the degradation of Twin Valley Road.

The Beiler farm is located in Conestoga Watershed, which is part of the Chesapeake Bay Watershed. During the assessment of the farm, NRCS staff also offered to help Beiler control and treat soil erosion from animal use on the farm. Beiler applied to and received financial assistance from NRCS' Chesapeake Bay Watershed Initiative (CBWI) Program.

Through CBWI, he was able to install animal walkways, stream crossings, and stream bank fencing. CBWI provides technical and financial assistance to agricultural producers so they can implement recommended conservation practices for minimizing nutrient and sediment losses. In turn, these practices restore, preserve, and protect local water quality and the Chesapeake Bay.

The NRCS staff from Leesport Field Office, as well as technicians and engineers from Lebanon Technical Center, worked tirelessly on this project, from completing an Inventory and Evaluation assessment through construction checks and final contact requirements.

The voluntary, incentives-based conservation approach is working; the farmer has made progress in reducing sediment and nutrient losses from farm fields through conservation practice installed through the CBWI program. At this time, the gully has been returned to an established and erosion free hay field.

Participation of Caernarvon Township in this process was greatly appreciated and is a demonstration of the cooperation and teamwork of different agencies, and makes a large difference when working

together for the common goal of minimizing resource concerns. Our most crucial partner is the landowner/decision maker who invests his time, energy, and money into applying conservation practices on his farm that benefit current and future generations.

Before: NRCS employee demonstrates the massive size of the gully that formed on Kevin Beiler's farm.

After: With NRCS assistance, the gully has been returned to an established and erosion-free hay field.

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

CONSERVATION Showcase

Creekland Farms

South Bend Township, Armstrong County

June 29, 2012

Andrew Kimmel of Creekland Farms has come from four generations of farming in South Bend Township, Armstrong County. Creekland Farms is a very successful grain operation that no-tills approximately 1,800 acres to corn and soybeans in Armstrong and Indiana counties.

Creekland Farms began their relationship with NRCS many years ago. Andrew, his father Chris, and his grandfather Willard all served, and Andrew continues to serve, on the Armstrong Conservation District Board. The Kimmel family have been stewards of the land for over 100 years, and Creekland Farms has been recognized by the Pennsylvania Department of Agriculture as a Century Farm.

The Kimmel's have also been recognized by organizations over the decades. Andrew, his father Chris, his grandfather Willard, and his great-grandfather, Howard have all been awarded the Master Farmer designation, Andrew in 2012, Chris in 1992, Willard in 1962, and Howard in 1940. Andrew, in 2007 was one of four farmers nationwide to be recognized as Outstanding Young Farmer by the Outstanding Farmers of America and the National Association of County Agricultural Agents. In 2012, Andrew earned the prestigious Master Farmer Award in the Mid-Atlantic Region.

Creekland Farms enrolled in the Environmental Quality Incentive Program in the late 90's. Through the program they installed Filter Strips, Grassed Waterways and began to implement No Till farming.

In 2007, Creekland Farms enrolled in the Conservation Reserve Enhancement Program, installing two CP-8A, or Grassed Waterway practices.

Creekland Farms enrolled over 900 acres in the Conservation Stewardship Program during the first sign up in 2010 and is a model farm utilizing many conservation measures. The operation reduces soil compaction and excessive fertilizer/ pesticide application by controlling their field traffic through GPS technology. They actively maintain contour strips, diversions, grassed waterways and wildlife habitat consisting of nearly all native vegetation on nearly every farm to help promote ground nesting bird and pollinator habitat. To improve upon their existing conservation practices Creekland Farms chose an Air Quality Enhancement Activity –the use of drift reducing nozzles, low pressures, lower boom height, and adjuvants to reduce pesticide drift.

While the farm utilizes GPS technology to reduce pesticide drift, the drift reducing technology enhancement expands upon this current practice and helps improve air quality and wildlife habitat. By converting to drift reducing nozzles at low pressures with decreased boom height the farm can more efficiently apply pesticide reducing overlap and drift. This enhancement allows better control on

field edges protecting valuable wildlife and pollinator habitat; it also improves application coverage which in turn, reduces follow up applications and plant resistance due to over application.

In addition to the benefits Creekland has implemented utilizing USDA NRCS programs; they have put into place multiple technological innovations. They consistently utilize GPS technology, they have installed a 5,000 gallon tank fed from a spring development as a water supply for the chemical sprayer, they built a fertilizer storage area that the roof rolls back for ease of dumping when the fertilizer is delivered, and then Kimmel's load the fertilizer onto their equipment from below.

These improvements coupled with the operations current conservation practices epitomes the programs intent and helps promote good conservation to surrounding farms and the general public while improving the economic well-being of the operation.

Grassed waterways and field borders well maintained.

Creekland Farms is a model of good conservation.

Innovative water system for chemical sprayer. 5000 gal tank fed from a spring development. Overflow goes to a water control structure.

Fertilizer storage. Top rolls back for easy filling. Loads out from below.