Watershed Agricultural Council

Watershed Agricultural Program

2017 Annual Report and 2018 Workload

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Cover Photos: Drew Harty
Cover Design: Jackie VanLoan
Report Photos: WAP Staff

PRIMARY FUNDING SOURCES

NYC Environmental Protection

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

USDA Farm Service Agency

Major Changes will Enhance Water Quality and Economic Viability

The Filtration Avoidance Determination (FAD) was renewed at the end of 2017 for another 10 years. The NYS Department of Health, NYS Department of Environmental Conservation and U.S. Environmental Protection Agency known as the regulators of the FAD reached out to the Watershed Agricultural Council for recommendations on changes to Agriculture, Forestry, Conservation Easement and Economic Viability deliverables and metrics based on improving water quality. A significant change in the renewed FAD is the inclusion of a Best Management Practice (BMP) metric that will target BMPs on our backlog list waiting to be implemented. Based on this metric WAC has entered into a six year contract with the New York City Department of Environmental Protection (DEP), which begins in January 2019, to accelerate the implementation of BMPs with over $4 million in annual funding.

The Watershed Agricultural Program (WAP) had another great year of implementing BMPs that addressed multiple resource concerns on participant farms. The conservation planners continued their focus on the USDA Conservation Reserve Enhancement Program (CREP) BMPs based on the 12 re-enrollment and 6 new contracts developed in 2017. The 18 Riparian Forest Buffer contracts enrolled an additional 165 acres to bring the total number of enrolled acres to over 1800 acres. The West of Hudson program had a total of 49 projects certified complete comprised of 177 structural BMPs totaling over $2 million.

The Precision Feed Management (PFM) program is a science based program that develops feed management plans to deal with the large quantity of feed nutrients managed annually on participant farms. 2017 was the second year of the PFM Program, the staff have completed a total of 31 Feed Management Plans and an additional 110 Benchmarks. Staff will continue the ranking and selection of additional farms up to 60 PFM plans which is the maximum level for the program. The Nutrient Management Credit Program currently has 127 participants. Through the support of DEP funding this program will allow all those that meet the eligibility criteria to participate.

WAC partners with local county Soil and Water Conservation Districts (SWCD), and the USDA Natural Resources Conservation Service (NRCS) provides technical design and implementation of water quality BMPs. Farm participants actively followed 290 Whole Farm Plans and 243 Nutrient Management Plans in the Catskill/Delaware Watersheds. Funding provided by DEP, the USDA and other sources helped the program realize its goals. The WAP continues to partner with Cornell Cooperative Extension (CCE) to provide educational programs to area farmers. In 2017, 841 farmers and farm advisors attended 37 educational programs.

The Watershed Agricultural Council (WAC) is in the planning stages of a new office facility on Route 10, Hamden to allow consolidation of all West-of-Hudson staff. WAC Executive Director, Craig Cashman, comments “We want to grow and maintain agriculture and forest businesses for the next generations as they have been the lifeblood of this region. Having one service center where we can accommodate the needs of farmers and forest owners is one of our top priorities.”

Larry Hulle, Watershed Agricultural Council
Larry Underwood, Delaware County Soil & Water Conservation District
Dale Dewing, Delaware County Cornell Cooperative Extension
Dennis DeWeese, USDA Natural Resources Conservation Service

Watershed Agricultural Program

2017 Planning Goals and Accomplishments

Catskill/Delaware Large Farms		Catskill/Delaware Small Farms		Croton Watershed	
Goal	Accomplishment	Goal	Accomplishment	Goal	Accomplishment

Annual Status Reviews					
193	214	96	106	68	73

New Whole Farm Plans					
as identified	0	as identified	0	as identified	1

Croton Falls Reservoir
Photo by: NYC DEP

2017 Implementation Accomplishments – Funding

BMP - Funding Sources	Catskill/Delaware Large Farms	Catskill/Delaware Small Farms	Croton Watershed	Total
Watershed Agricultural Program				
- Non-CREP BMPs	$ 903,232	$ 621,400	$ 523,522	$ 2,048,154
- CP-30 (WAP)		$ 11,176		
- CREP (WAP)	$ 259,635	$ 29,752	$ -	$ 289,387
Total Watershed Agricultural Program Funding	**$ 1,162,867**	**$ 662,328**	**$ 523,522**	**$ 2,348,717**
Other Funding Sources				
- CP-30 (FSA)		$ 1,390	$ -	$ 1,390
- CREP (FSA)	$ 197,314	$ 24,383	$ -	$ 221,697
- DCSWCD	$ -	$ -	$ -	$ -
- EQIP	$ -	$ -	$ -	$ -
- Landowner	$ -	$ -	$ 3,722	$ 3,722
- AWEP	$ -	$ -	$ -	$ -
- NRCS	$ -	$ -	$ -	$ -
Total Other Funding Sources	**$ 197,314**	**$ 25,773**	**$ 3,722**	**$ 226,809**
Total Funding*	**$ 1,360,181**	**$ 688,101**	**$ 527,244**	**$ 2,575,526**
*** Includes In Progress Payments**				

2017 Implementation Accomplishments – Number of BMPs

NRCS/WAC BMP Code	Best Management Practices	Catskill/Delaware Large Farms	Catskill/Delaware Small Farms	Croton Watershed	Total
313	Waste Storage Facility	1		2	3
340	Cover Crop			2	2
342	Critical Area Planting			1	1
362	Diversion *	2		2	4
367	Roofs and Covers	1			1
378	Pond	1			1
382	Fencing *	38	12	3	53
391	Riparian Forest Buffer	7			7
393	Filter Strip	1			1
412	Grassed Waterway		1	5	6
468	Lined Waterway			1	1
500	Obstruction Removal	3			3
512	Forage and Biomass Planting			1	1
512	Forage and Biomass Planting - Lime	1		1	2
516	Pipeline	10	1		11
528	Prescribed Grazing			1	1
533	Pumping Plant	3			3
558	Roof Runoff Management System*	2		3	5
560	Access Road Improvement	5		4	9
561	Heavy Use Area Protection *	6	1	1	8
574	Spring Development *	25	1		26
575	Animal Trails and Walkway *	15	4		19
578	Stream Crossing*	10		2	12
580	Streambank Protection				0
587	Structure for Water Control*	1		4	5
590	Nutrient Management Plan	38	25	6	69
612	Tree & Shrub Planting	9			9
612	Weed Control & Herbicide Spray	7			7
614	Watering Facility*	16	3		19
620	Underground Outlet			4	4
634	Waste Transfer System*	1			1
635	Vegetated Treatment Area			2	2
642	Well		1		1
659	Wetland Emhancement (CP-30) Pothole		1		1
3010	Roofed Barnyard*		3		3
3020	Portable Run-in Shed			1	1
3050	Waste Storage Facility*	1			1
3100	Calf Housing structure *	1			1
3110	Calf Greenhouse*	1			1
3178	Manure Transportation Credit	1			1
3310	AG Fuel Storage			1	1
3420	Bucket Loader*	1			1
3730	Solar Pump*	1			1
4100	Wash Water Infiltration			2	2
5001	Utility Pole	1			1
5004	Fencing - Temporary	3	2		5
Total		**213**	**55**	**49**	**317**
	* Contains a modification, emergency repair, repair or repair and replacement BMP.				

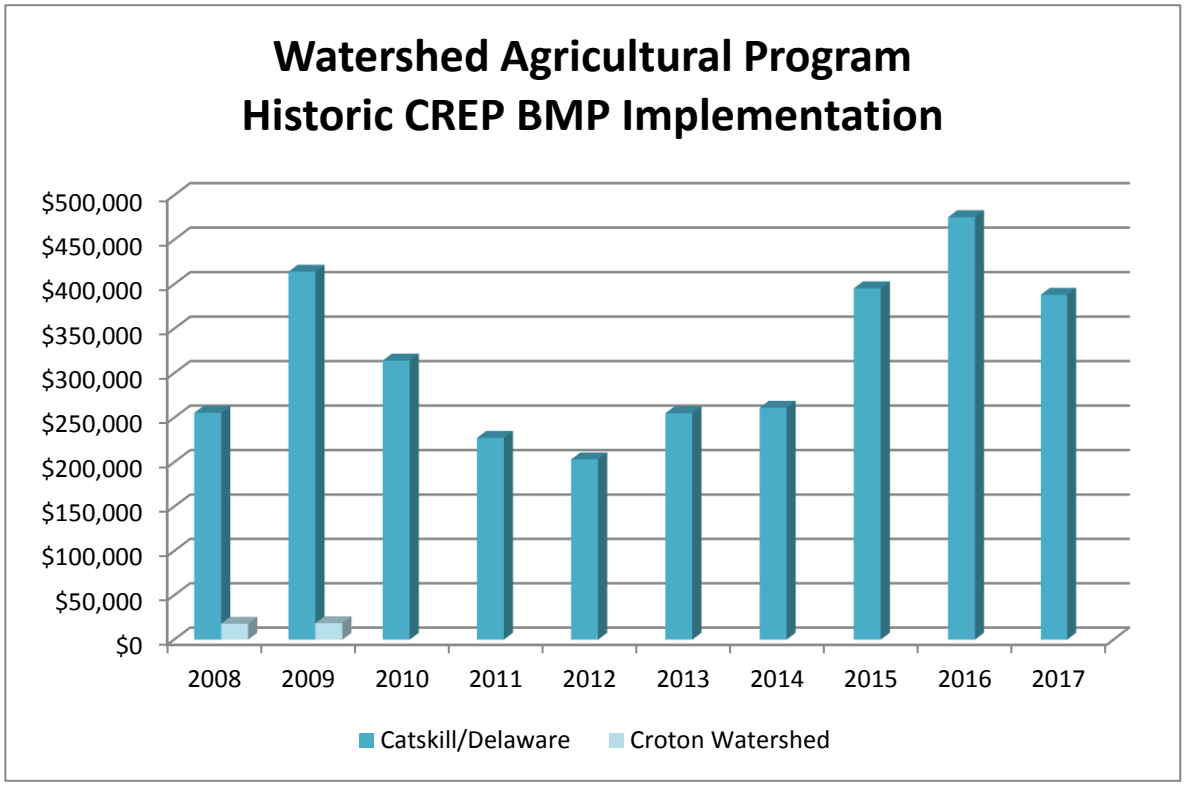
USDA Conservation Reserve Enhancement Program (CREP) 2017 Accomplishments

The USDA CREP Program within the NYC Watershed Agricultural Program utilizes the talents found within the multi-agency team assigned to work in the Watershed to promote, design and establish both Riparian Forest Buffers and Vegetative Buffers along watercourses. This year marked the 17th full year of the New York City Watershed Conservation Reserve Enhancement Program (CREP) Memorandum of Agreement between New York City, New York State and the United States Department of Agriculture (USDA). In 2017, 18 Riparian Forest Buffer contracts (6 new and 12 renewals) enrolled an additional 165 acres, bringing the total number of enrolled acres to 1,838.

2017 Total Implementation Expenditures

Total Rental Payments (USDA)	$195,540
Sign-Up Incentive Payment (SIP-FSA)	$ 3,819
Practice Incentive Payment (PIP-FSA)	$133,108
*BMP Cost (FSA)	$277,240
*BMP Cost (WAP)	$388,194

*Based on Federal Fiscal Year Numbers 10/1/16 – 9/31/17



Program	99-2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Catskill/Delaware	$5,179,465	$255,588	$414,167	$314,330	$227,423	$203,211	$254,952	$261,197	$395,490	$475,423	$388,194	$8,369,440
Croton Watershed		$ 17,968	$ 18,547	$0	$0	$0	$0	$0	$0	$0	$0	$ 36,515

Nutrient Management Program 2017 Accomplishments

In 2017, the Nutrient Management Team completed 63 Nutrient Management Plans that consisted of 38 large farms and 25 small farms.

Nutrient Management Plan Percent Analysis

	Large Farms 162		Small Farms 81		Combined 243	
	Number	% of Total	Number	% of Total	Number	% of Total
Current	145	89.5%	77	95.1%	222	91.4%
1 year out of date	14	8.6%	3	4%	17	7%
2 years out of date	2	1%	1	1%	3	1.2%
3 years out of date	0	0%	0	0%	0	0%
>3 years out of date	0	0%	0	0%	0	0%
Needs NMP	0	0%	0	0%	0	0%
Total	161	99%	81	100%	242	99.6%

Nutrient Management Credit (NM Credit)

The NM Credit Program was offered to 127 participating farms. Seven farms did not submit records (no animals, no records kept, or no longer a WAP participant).

The 2017 Credit year allowed for the addition of up to 135 eligible farms. Three nutrient management credit farms left the program due to no animals or sale of the farm. Thirteen new farms were selected from the prioritized general list of NM Credit eligible farms.

For the 2018 Nutrient Management Credit Program year, we will continue to increase participants up to 135 farms.

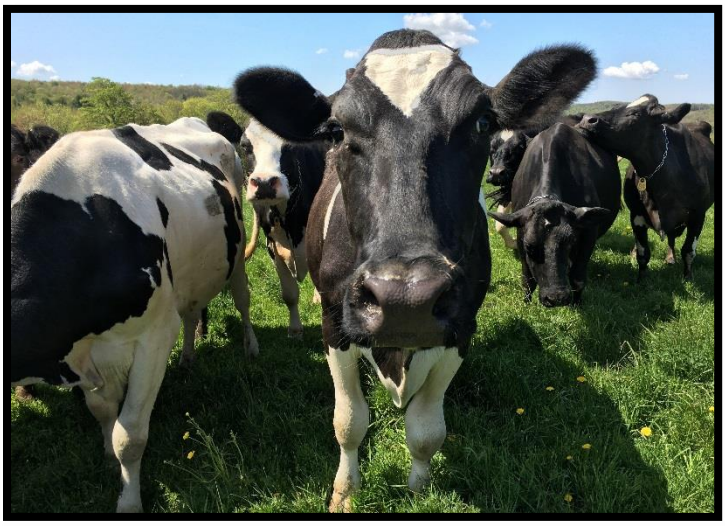


Photo by: Shy Parenteau

Precision Feed Management

2017 represented the second year full year of implementation of the Precision Feed Management (PFM) through the NYC Watershed Agricultural Program. Presently, 46 farms are participating in the PFM Program, including two beef farms.

2017 included initiation of a second wave of PFM on farms prioritized at the outset of the PFM program for PFM implementation. This implementation included initiation of feed management planning using the NRCS 592 feed management standard and WAP Quality Management Assistance (QMA) processes, as well as routine dietary monitoring using NYS PFM Benchmarking tools and technical assistance to farmers and their feed industry advisors in discreet QMA events. The PFM team efforts in Year 2 also included QMA planning and technical assistance as well as PFM Benchmarking for all Year 1 farms. PFM planning and monitoring on the next phase of farms that are enrolled will begin in 2018.

The PFM program continued its tradition of innovation, by entering into an agreement with AgModels LLC to develop the NYS Benchmarking tools into an integrated web-based database, which will allow aggregation of PFM data, monitoring, and reporting into a single program interface. The first phases of this software development will be implemented in 2018.

The PFM program continues to have a high level of farmer engagement, working with farms throughout the year to address management challenges and conduct monitoring.

PFM Program 2017 Engagement Statistics as of 12/31/2017

	2017	2016-2017
Total Farm PFM QMA Events	373	-
Total PFM Benchmarks completed	110	200
Total PFM QMA Annual Implementation Plans	33	57
Total Feed Management Plans completed	10	31
Total PFM Farm Planner contacts	869	(not tracked in 2016

The PFM program has brought an extremely large source of nutrients on the participating farms under scrutiny and management. These nutrient pools are detailed in the table below.

PFM Program 2017 Nutrient Management Scope

Total number of lactating cows under feed nutrient monitoring	2,171
Phosphorus	
Total pool of feed phosphorus managed per year, program, kgs	54,985
Total pool of manure phosphorus excretions managed per year, program, kgs	37,761
Nitrogen	
Total pool of feed nitrogen managed per year, program, kgs.	360,386
Total pool of manure nitrogen excretions managed per year, program, kgs.	263,003

The PFM Program actively engaged a subset of farms in reducing dietary phosphorus. Across all farms within the active management group, this management resulted in a 23% reduction in manure phosphorus excretions, amounting to 5.5 kgs per cow per year. Manure nitrogen was reduced 10.2 kgs per cow per year for this group of farms. Across the herds in this active management group, this amounts to a total reduction in manure phosphorus exertions in the Watershed of 2,466 kgs and manure nitrogen excretions of 4,573 kgs in 2017. On average these farm experienced a net economic benefit (measured as milk income over purchased feed cost) of $168 per cow per year, or $75,315 in total across all herds in this management group.

PFM Program 2017 Nutrient Management Impact

Impact Metric	Scenario 2: Herds that came w/in P Guideline from start of year to end.	Scenario 5: All Herds with P Intake Reductions Implemented within the year;		
Program demographics				
% of herds	17%	27.6%		
% of cows	11.5%	24.7%		
Phosphorus				
% of Benchmarks over Guideline	50%	42%	**kg/c/yr**	**% Reduction**
Change in manure P excretion Beginning to End, g/c/d	-8	-15	5.5	23%
Nitrogen				
% of Benchmarks over Guideline	19%	31%	**kg/c/yr**	**% Reduction**
Change in manure N excretion beginning to end, g/c/d	20	-28	10.2	7%
Forage and Grain Feeding				
Change in % Forage Feeding level, beginning to end	-0.68	1.4	**lbs/cow/yr**	
Change in grain feeding level, beginning to end, lbs/c/d	0.10	-1.5	548	
Economic Impact			**$/cow/yr**	
Change in Milk Income over purchased feed cost, beginning to end, $/c/d	$.58	$0.46	$168	

Photo by: Dan Vredenburgh

Farmer Education Program

In 2017, The Watershed Agricultural Program Farmer Education efforts reached 841 farmers and farm advisors with 37 education events through our contract with Cornell Cooperative Extension of Delaware County. These events include large conferences, like the Catskill Regional Agriculture Conference, small hands-on on-farm training, farm tours and traditional classroom workshops. The program uses the strength of our experienced staff to leverage local and statewide resources to address the critical needs of the region's farmers and their advisors.

Date	Event	Watershed Farmers	Other Farmers	Students	Agri-Service	Agency	Other	Total
1/12	Catskill Regional Ag Conference	47	43	0	9	45	0	144
1/26	Agriculture Production in Kyrgyzstan	7	3	0	0	2	0	12
1/31	Pesticide Applicator Certification Training	12	4	0	0	6	0	22
2/8	Understanding & Using DHI Records (2 days)	11	8	1	5	4	0	29
2/23	Sullivan County Young Dairy Farmers Heifer Discussion	0	6	0	0	1	0	7
2/23	Manure Manager's Forum	0	0	0	0	11	0	11
2/25	2017 Meat Goat Workshop	12	23	0	0	3	0	38
3/1	Winter Crop School	10	11	0	3	11	0	35
3/2	Beef Cattle Feeding Options Meeting	5	19	0	0	0	0	24
3/2	Nutrient Management Credit Training	13	0	0	0	10	0	23
3/5	FAMACHA Training	1	17	0	0	0	0	18
3/21	Crop Sprayer School	8	8	0	0	10	0	26
3/24	Farm Succession Planning (2 days)	12	2	0	1	1	1	17
3/25	Necropsy Workshop	11	3	8	0	0	0	22
3/27	Writing Farm Protocols and SOPs Workshop	5	3	0	4	5	1	18
3/30	Developing Your Crop Plan	2	0	0	0	6	0	8
4/7	Wickham Open House	18	8	9	6	16	9	66
4/10	2017 Cow/Calf Workshop	19	9	0	2	6	0	36
4/29	Ruminant Parasite and FAMACHA Training	4	4	38	1	0	0	47
5/6	Pasture Walk at Marsiglio Farm	10	3	0	0	0	0	13
5/10	Dairy Pasture Walk - Byebrook Farms	15	2	0	0	8	0	25
7/19	Steiners Meat Plant Tour	4	3	0	0	1	1	9
9/11	Organic Dairy Discussion Group	5	2	0	0	0	0	7
9/11	Sherbrook Farm Dairy Pasture Walk	9	4	0	0	5	3	21
9/16	Pinecroft Farm Pasture Walk - Extending the Season with Annuals	6	2	0	0	0	0	8
9/21	Managing Sheep Pastures	1	10	0	0	0	0	11
9/25	Corn Dry Down Day - Franklin	18	12	0	2	0	0	32
9/30	Beef Stocker Short Course - September 2017 Workshop	4	1	0	0	0	0	5
10/4	Corn Dry Down Day - Bloomville	11	1	0	1	0	0	13
10/4	Beef Quality Assurance Training	18	2	0	2	1	0	23

Date	Event	Watershed Farmers	Other Farmers	Students	Agri-Service	Agency	Other	Total
10/20	Farm Demonstration Day	20	14	0	8	9	0	51
10/28	Beef Stocker Short Course (Business Planning and Health) - October 2017 Workshop	2	3	0	0	0	0	5
11/9	Grown and Certified Grant Program Workshop	9	2	0	0	4	2	17
11/11	Beef Stocker Short Course (Grazing Mgmt & Dry Matter Intake/Work on Business Plans)	3	2	0	0	0	0	5
11/18	Sheep & Goat - Cheese making Demo & Annual Planning Potluck	10	2	0	0	0	0	12
12/16	Beef Stocker Short Course (Risk Reduction and Stocker Producer Panel)	1	3	0	0	0	0	4
2017	Quality Management Assistance Projects	50						50
Total Attendance (year to date)		393	239	56	44	165	17	914
Number of Events		37						
Number and percent of participating Watershed Farms attending at least one event:							83	**30%**
Number of non-participating Watershed Farms attending at least one event:								32

Farmers	632
Advisors	209
Total	**841**

Photos by: Dale Dewing

Highlighting our Local Producers

This year, the Economic Viability Program and Pure Catskills is proud to say we are continuing to highlight not just the pristine working environment of the Watershed, but also showcasing the Catskill region as a prospering Foodshed. We achieved this by attending/sponsoring over 15 events, sharing information on our Pure Catskills social media platforms, financially supporting the Lucky Dog Local Food Hub, cultivating partnerships with other like-minded organizations, and promoting our Pure Catskills members and Ag Participants daily.

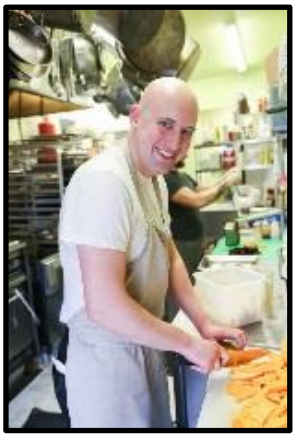
The Watershed Agricultural Council (WAC) developed Pure Catskills, a regional buy local campaign, to improve the economic viability of the local community, build up our Foodshed, sustain working landscapes and preserve water quality in the NYC Watershed region because it all runs hand-in-hand. The mission is simple, buy from local farmers, foresters and businesses to support the local economy which preserves the rural Catskills way of life.

Showcasing the unique partnerships within our Foodshed between the farmers, growers and producers in the Catskills, and the chefs who use their products was a major focus of our branding efforts. The 72 pages of the *2017-2018 Guide to Pure Catskills Products* show how deeply rooted the local food movement is in this region. It is a part of our livelihood, our everyday routine, and to put it simply—it's our lifestyle.

With each passing year we are proud to be a part of a flourishing buy local movement. As 2017 comes to a close, we are excited to see what is in store for next year!

"We have been proud member of Pure Catskills for many years– and often use their directory as our go-to site for finding new ingredient sources for our menu."

—Peekamoose Restaurant & Tap room



"Being a member of Pure Catskills has given us the needed connections to meet our standard of quality and support other resident entrepreneurs. "

—Pickled Owl

"It's so helpful for us to have resources like Pure Catskills to promote the area, creating unity. We were drawn to the Catskill region due to its clean air and water, protected by the passion of our local community. We buy from many farms, and are proud to have our own chickens for eggs and a large garden for much of our produce."

—Rolling River Café, Gallery & Inn

Photos by: Thompson Photography Group

2017 Highlights - Economic Viability/Pure Catskills

Pure Catskills Members	290
2017-2018 Guide to Pure Catskills Products Printed/Distributed	50,000
Events Sponsored/Attended	15+

2017 Watershed Agricultural Program – Ag Tour

On May 3, 2017, the Watershed Agricultural Program (WAP) held our annual Ag Tour to visit voluntary participants and view Best Management Practices (BMPs) recently implemented. 73 attendees from the WAC Council of Directors, Agricultural Program Committee Members, staff from the NYC Department of Environmental Protection, Environmental Protection Agency, Department of Health, United States Department of Agriculture, Cornell Cooperative Extension, Soil & Water Conservation District, Natural Resource Conservation Service, Farm Service Agency, and select WAP staff and participants attended the tour.

This year we visited four farms; the Mark MacGibbon Farm (beef operation), Springdale Farm (Meghan Moody-Potter, traditional grazing tie stall), The Moore/Aitkens Stream Restoration, Lucky Dog Farm (Richard Giles and Holley White, organic vegetable farm and regional food hub), a lunch stop at the Hamden Inn catered by the Lucky Dog Café and a special visit to round out the day at the Delaware County Solid Waste Management Center's Composting and New Material Recycling Facility.

Photos by: Heather Magnan

Town of Stamford, Delaware County

Waste Storage Facility and Access Road

Since 2008 the Deysenroth family has had to pile manure in the winter during inclement weather and in the summer before meadows were cut for first cutting. Unfortunately, the manure was piled in a hydrologically sensitive area. A new waste storage facility was completed at Byebrook Farm in Bloomville this past year. The facility is sized for 120 days of storage and is 110' long by 50' wide; covered; in-ground concrete storage with a ramp. A new feature for this facility is the Arched Pre-Engineered Lam-Ply Trusses. This gives the building a low profile, while still allowing a full 14' high equipment access. The building also has roof and walls fully sheathed in steel. The facility was completed in November 2017. The new storage will allow the Deysenroths to topdress manure on meadows following hay cuttings when nutrients will be taken up by the forage.

Manure Pile Area

Photo by: Dan Flaherty

Covered Manure Storage

Photo by: Tim Hebberd

Town of Roxbury, Delaware County
Manure Storage - Covered Heavy Use Area Protection (HUAP)

At the Householder farm in Grand Gorge, NY, a Heavy Use Area Protection (HUAP) and manure stacking area were constructed in 2003 as a way to provide storage capacity to hold manure until optimum conditions for spreading. Since then, access to the stacking area has proved difficult due to extremely wet conditions and has resulted in manure accumulating with runoff reaching the adjacent Bear Kill stream.

A new covered feeding area, approximately (40' X 60') with an attached manure storage (20' X 60'), was recently constructed. The covered structure allows the feeding area to be dry with no runoff. The manure and feed waste can be scraped into the adjacent manure storage and stored until favorable weather conditions permit manure spreading.

Feeding Area Before

Covered Feeding Area After

Photos by: Dan Flaherty

Town of Conesville, Schoharie County
Heavy Use Area Protections, Repair & Replacement

Two barnyard (Heavy Use Area Protection (HUAPs)) projects were completed at the Haskin Farm in West Conesville this past fall. Both barnyards were actually repair and replacements of previous WAP installations completed in 1998 when the farm was a dairy.

Repairs to the existing concrete HUAP included replacing and improving the board fence and replacing a failed water trough. The old gravel barnyard was replaced with concrete with a dedicated waterer. These barnyards will be used to contain and feed two groups of beef animals when the barn is being cleaned. Additional work associated with this project included: upgrading the vegetative treatment area (VTA), installing new and replacing old water control measures (drip trenches and gutters), repairing an existing diversion and animal trail, installing fence, and repairing a water control structure on and access road.

Prior to the upgrades, the concrete barnyard was being used. However, the waterer was not operating so a make-shift waterer was used which overflowed into the barnyard. Additionally, temporary stacking of manure from cleaning the pad was difficult because there was no solid wall to stack against. The gravel barnyard was not useable due to its slope and the fact that it became wet, muddy, and icy in the winter. Since there were multiple groups of animals, some were fed off the barnyard on a regular basis, compromising water quality. The new project will allow all animals to be fed away from water courses on concrete where their manure can be collected and utilized. Seven BMPs were installed on this project and will protect water quality for many years to come.

Diversion and Animal Trail

Photos by: Dan Vredenburgh and Dave Adams

Town of Conesville, Schoharie County
Covered Winter Feeding Area with Manure Storage

Participants since 1997, the Buel Farm operates between the narrow confines of the Bear Kill stream and County Route 18 in Conesville. A steadily growing beef herd traversed regularly along and across the stream to get to an undersized, older winter WAP heavy use area. The Watershed Agricultural Program prioritized the necessity of a new covered winter feeding area that would address a growing water quality issue, while accommodating both a larger beef operation and current management style of the participants.

Steeped in dairy herd management experience, Ray Buel prefers a more personal, hands-on method while tending to his beef herd close to home. To preserve consistency of this operation, and still meet current NRCS compliance standards, a new feeding area couldn't just be put anywhere. A few preliminary design meetings between Ray, his son Tom, and planners ensured current farm operations. Future water quality expectations were understood and worked into placement/layout specifications, along with careful consideration of flood plain data and history. Animal behavior expert Rich Toebe made recommendations regarding herd health in a new confined feeding area.

During the later months of 2017 a new 122' by 52' Covered Feeding Area and Manure Storage was raised over the previous heavy use gravel pad, providing confined winter feeding, water and bedding for the Buels' beef herd of 66.

Oriented with its back to prevailing winds, the structure contains slightly sloped pad sections allowing liquids to drain out of the bedded pack and feeding areas, collect in the center and drain into a sloped manure pit at one end of the structure. This pit provides temporary storage of stacked manure and bedding waste.

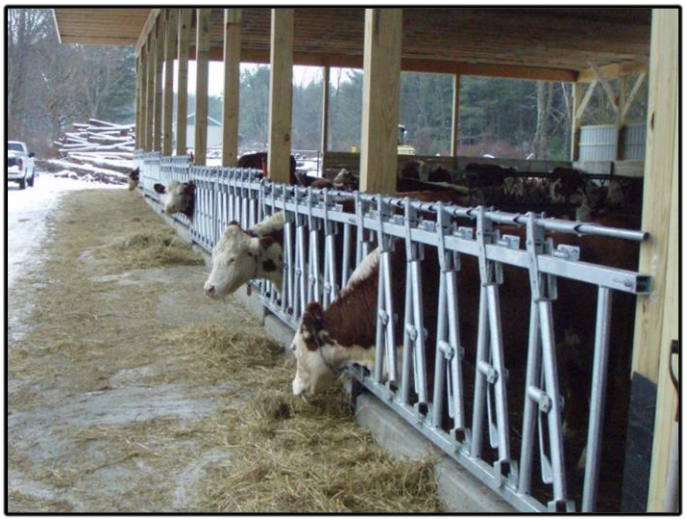


Photo by: Rick Hochuli

Photo by: Ben Hendee

A series of gates separates this area from the livestock, allowing for stacking and cleaning during winter occupation. Owner supplied headlocks, installed along a front feed lane, allow for supplemental feeding and inspection.

East of Hudson – Hardscrabble Farms

Hardscrabble Farms is a wholesale nursery located on 65 acres in North Salem, NY. The nursery has been family owned and operated for forty years and is one of the leading horticultural operations in New York State.

BMPs were needed to control surface water, reduce erosion and protect a nearby wetland and stream. The majority of BMPs at Hardscrabble were designed to control water flow on a steeply-sloped access road used by heavy machinery and prone to erosion due to continual watering of plant stock. The EOH team designed and installed catch basins, culverts and roadside channels to effectively capture and divert water from the upgraded access road reducing erosion and controlling the flow of runoff. A new fuel storage facility was also designed and implemented at Hardscrabble to provide secondary containment in the event of an accidental discharge.

The new BMPs and upgraded access road will improve the nursery's daily operations and protect water quality in the surrounding wetlands, streams and the Muscoot Reservoir.

Access Road Before

Access Road After

Fuel Storage Facility

Photos by: Andy Cheung

East of Hudson – 3 Phase Equestrian Center

3 Phase Equestrian Center is a 47 acre horse farm located in Brewster, NY. The farm boards 65 horses and offers riding instruction, horse training, sales and leasing opportunities to the Westchester and Putnam riding community.

During rain events, surface runoff from existing roadways, barns and the indoor riding arena was flowing into paddocks, causing soil erosion and transporting animal waste into a downslope stream. The design and construction of drainage control features allowed for surface water to be safely conveyed to an outlet point and prevented large volumes of water from entering paddock areas. Water from an existing indoor wash stall was also captured and redirected into a catch basin for sediment settling and then to infiltration chambers allowing greywater to be treated underground.

The implemented BMPs at 3 Phase Equestrian Center have effectively reduced erosion and prevented nutrient transport from the farm's waterways to the East Branch Reservoir.

Photos by: Andy Cheung

2018 Planning Goals

Catskill/Delaware Large Farms	Catskill/Delaware Small Farms	Croton Watershed
Goal	Goal	Goal

Annual Status Reviews		
193	96	68

New Whole Farm Plans		
as identified	as identified	as identified

2018 Projected Design & Implementation Workload

BMP - Funding Sources	Catskill/Delaware Large Farms	Catskill/Delaware Small Farms	Croton Watershed	Total
Watershed Agricultural Program				
- Non-CREP BMPs*	$ 678,260	$ 2,100	$ 350,000	$ 1,030,360
- CREP (WAP)	$ 279,390	$ 104,020		$ 383,410
- GRP	$ 43,300	$ -		$ 43,300
- WAP Stream Buffers	$ 148,350	$ 128,550		$ 276,900
- Repair, Repair & Replacement & Modifications	$ 727,356	$ 50,800		$ 778,156
- Agonomic BMPs	$ 22,500	$ 4,100		$ 26,600
- RCPP	$ 733,050			$ 733,050
Total Watershed Agricultural Program Funding	$ 2,632,206	$ 289,570	$ 350,000	$ 3,271,776
Other Funding Sources				
- CREP (FSA)	$ 142,700	$ 75,441		$ 218,141
- GRP	$ 24,600			$ 24,600
- AWEP				$ -
- DCSWCD				$ -
- EQIP				$ -
- Landowner			$ 58,000	$ 58,000
- RCPP	$ 825,000			$ 825,000
Total Other Funding Sources	$ 992,300	$ 75,441	$ 58,000	$ 1,125,741
Total Projected Workload**	**$ 3,624,506**	**$ 365,011**	**$ 408,000**	**$ 4,397,517**
* Includes CREP companion BMPs for Catskill/Delaware Large and Small Farms.				
** Does not included $100,000 for emergency repairs for Catskill/Delaware Large and Small Farms.				

2018 Projected Design & Implementation Workload – Number of BMPs

NRCS/WAC BMP Code	Best Management Practices	Catskill/Delaware Large Farms	Catskill/Delaware Small Farms	Croton Watershed	Total
313	Waste Storage Facility *	4		2	6
314	Brush Management	1			1
317	Compost Facility			1	1
332	Contour Buffer Strip	1		1	2
340	Cover Crop	3			3
362	Diversion*	3	1		4
367	Roof - Existing HUAP*	1			1
382	Fencing*	28	10	1	39
391	Riparian Forest Buffer	67	9		76
393	Filter Strip	1			1
412	Grassed Waterway	2			2
468	Lined Waterway*	1			1
490	Natural Regeneration	2	3		5
500	Obstruction Removal	3	1		4
512	Pasture & Hayland Planting	4		1	5
516	Pipeline	6		2	8
528	Prescribed Grazing	4	2		6
533	Pumping Plant	1			1
558	Roof Runoff Management System*	3		3	6
560	Access Road Improvement*	5		1	6
561	Heavy Use Area Protection*	4	1	6	11
574	Spring Development*	12	6		18
575	Animal Trails and Walkway*	14	1		15
578	Stream Crossing	12	6	1	19
580	Streambank Stabilization		1		1
587	Structure for Water Control		1	4	5
590	Nutrient Management Plan	55	26	1	82
606	Subsurface Drainage	1			1
612	Tree & Shrub Planting	4	8		12
612	Weed Control & Herbicide Spray	7	1		8
614	Watering Facility*	11	1	2	14
620	Underground Outlet	2		2	4
634	Waste Transfer System*	3			3
635	Wastewater Treatment Strip*	1		4	5
638	Water and Sediment Control Basin			1	1
642	Well	2			2
3010	Roofed Barnyard*	7			7
3050	Manure Storage - Covered - Gravel	1			1
3110	Solar Calf Housing*	1			1
3230	Agitation Pump	1			1
3310	Above Ground Fuel Storage Facility			1	1
3410	Box Manure Spreader	1			1
3420	Loader	1			1
3430	Manure Truck	1			1
3700	Headlocks	1			1
3840	Rotational Feeding Area	1			1
4100	Washwater Infilitration System			1	1
5004	Fencing - Semi-Permanent	6	1		7
Total		**289**	**79**	**35**	**403**
	* Contains a modification, emergency repair, repair or repair and replacement BMP.				

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