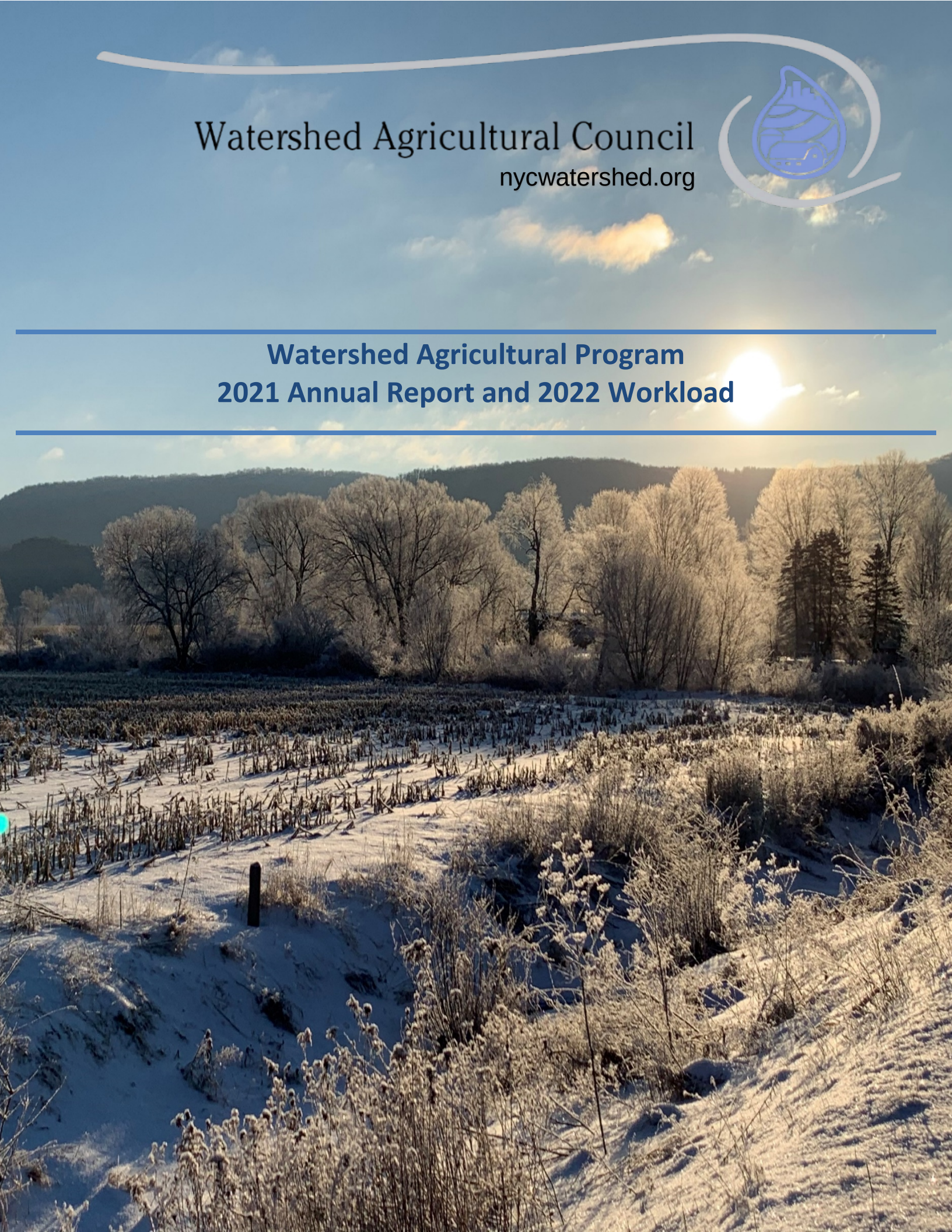
Watershed Agricultural Council

nycwatershed.org

Watershed Agricultural Program
2021 Annual Report and 2022 Workload



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Cover Photo: Heather Magnan

PRIMARY FUNDING SOURCES:

NYC Environmental Protection

USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

USDA Farm Service Agency

The Watershed Agricultural Program (WAP) 2021 – Positive changes come from challenging times

While the world-wide pandemic continued with a variety of challenges and obstacles this past year, the WAP staff and partners used a variety of methods to continue full operations while continuing to following health department guidelines. The new WAC Executive Director is Ryan Naatz and the WAC Chair is Wayland "Bud" Gladstone. This stability in leadership will help provide a positive direction for the organization. During 2021 the WAC operated on an austerity budget. Even with the challenges of the past two years the WAP has continued to meet our current contract deliverables that are highlighted throughout this annual report. In 2021, the WAP implemented 148 Best Management Practices (BMP) on farms at a total cost of $1.8 million. The goal for the WAP is to return to full implementation of structural BMPs as quickly as renewed cash flow will allow. The new fiscal year for the WAC begins on July 1st and we are developing an increased budget to fund the many projects that are ready to go through the bidding process.

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. 2021 was the sixth year of the PFM Program, the staff were actively planning and monitoring on a total of 56 farms and an additional 140 Benchmarks were completed with a record high 1488 total farm contacts. The newly initiated Beef PFM program currently includes 18 active farms. The Nutrient Management Credit (NMC) Program has 132 participants.

The WAP 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 264 Whole Farm Plans and 220 Nutrient Management Plans in the Catskill/Delaware Watershed. Funding provided by NYC DEP, the USDA and other sources helped the program realize goals. The WAP continues to partner with Cornell Cooperative Extension (CCE) to provide educational programs to area farmers. In 2021, 1699 farmers and farm advisors attended 48 educational programs with 49.4% of NYC West of Hudson Watershed farmers attending at least one event.

The WAP held an Ag tour on October 14, 2021 on location for the members of the Agricultural Program committee and partner agencies. This tour was an excellent opportunity to showcase the success that the WAP has had improving water quality. The WAP will continue to overcome the challenges that are presented and look for positive solutions.

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

Watershed Agricultural Program
2021 Planning Goals and Accomplishments

Catskill/Delaware Watershed		Croton Watershed	
Deliverable	Accomplished	Goal	Accomplished
Annual Status Reviews			
235	240	68	75
New Whole Farm Plans			
As identified	0	As identified	2

2021 Implementation Funding

BMP - Funding Sources	Catskill/Delaware	Croton Watershed	Total
Watershed Agricultural Program			
- Other BMPs	$ 1,338,565	$ -	$ 1,338,565
- WIRC	$ 15,659		$ 15,659
- CREP (WAP)	$ 40,978	$ -	$ 40,978
Total Watershed Agricultural Program Funding	**$ 1,395,202**	**$ -**	**$ 1,395,202**
Other Funding Sources			
- CP-30 (FSA)	$ -	$ -	$ -
- CREP (FSA)	$ 26,555	$ -	$ 26,555
- CREP (DCSWCD)	$ -		$ -
- DCSWCD	$ -	$ -	$ -
- RCPP	$ 6,886	$ -	$ 6,886
- Landowner	$ -	$ -	$ -
- AWEP	$ -	$ -	$ -
- NRCS	$ -	$ -	$ -
Total Other Funding Sources	**$ 33,441**	**$ -**	**$ 33,441**
Total Funding*	**$ 1,428,643**	**$ -**	**$ 1,428,643**
*** Includes In Progress Payments**			

2021 Implementation Accomplishments – Number of BMPs

Practice Code	Best Management Practices	Catskill/Delaware	Croton Watershed	Total
314	Brush Management - bush hogging	5	0	5
340	Cover Crop	6	0	6
382	Fence	7	0	7
391	Riparian Forest Buffer	15	0	15
500	Obstruction Removal	1	0	1
512	Forage & Biomass Planting	4	0	4
516	Livestock Pipeline	5	0	5
528	Prescribed Grazing	6	1	7
533	Pumping Plant	2	0	2
560	Access Road	3	0	3
561	Heavy Use Area Protection	3	0	3
574	Spring Development	3	0	3
575	Trails & Walkways	1	0	1
590	Nutrient Management Plan	30	6	36
612	Tree & Shrub Establishment	23	0	23
614	Watering Facility	8	0	8
620	Underground Outlet	1	0	1
634	Waste Transfer	3	0	3
634.01	Waste Transfer - milkhouse pumping station	2	0	2
634.03	Waste Transfer - manure out	1	0	1
635	Vegetated Treatment Area	1	0	1
642	Waterwell	1	0	1
883	Timber Fabrication	1	0	1
3010	Roofed Barnyards	3	0	3
3060.01	Manure Storage/Heavy Use Area - Covered - Concrete	1	0	1
3105	Group Calf Housing	1	0	1
3110	Calf Greenhouse - solar	2	0	2
3135	Automated Calf Feeder	1	0	1
3168	Custom Service (NMCP)	1	0	1
3230	Waste Transfer - manure	1	0	1
3410	Manure Spreader	1	0	1
3710.01	Feed Wagon	1	0	1
3720	Round Bale Feeder/Hay Saver Feeder	2	0	2
5002	Bridge Replacement	1	0	1
5004	Fence - Temporary; Semi-Permanent	1	0	1
Total		**148**	**7**	**155**

Included in the above are modifications, emergency repair, repair, and repair and replacement BMPs.

Total Completed/Certified BMP Value = $1,860,735.10 (as per FAME WAP Progress Report Data)

USDA Conservation Reserve Enhancement Program (CREP)

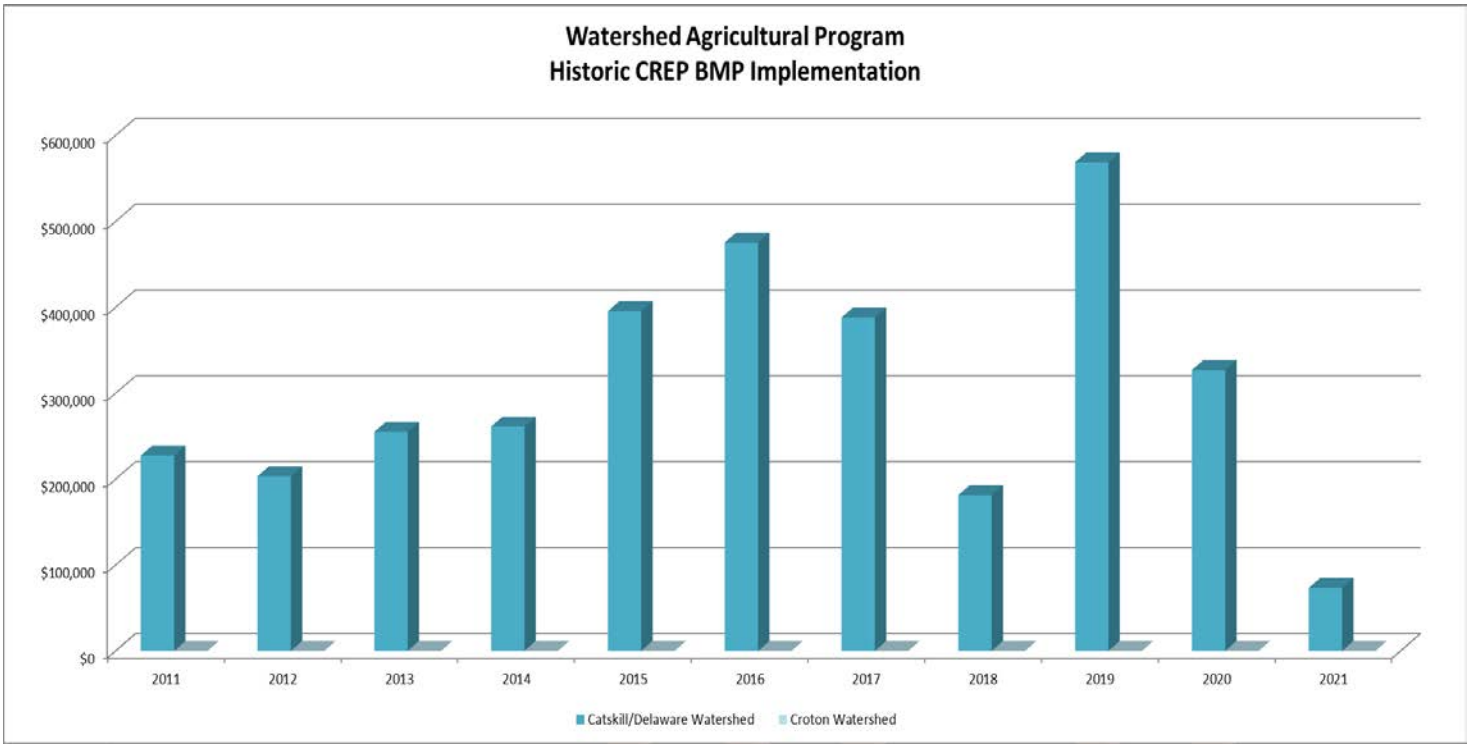
2021 Accomplishments

The USDA CREP Program within the Watershed Agricultural Program utilizes the talents found within the multi-agency team assigned to work in the NYC Watershed to promote, design and establish both Riparian Forest Buffers and Vegetative Buffers along watercourses. This year marked the 21st year of the NYC 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 2021, three riparian forest buffer renewal contracts enrolled an additional 15.74 acres and two new CREP Conservation Stream Buffer Initiative (CSBI) contracts brought in an additional 11.14 acres, bringing the total number of enrolled acres to 1,306.00. The NYC DEP also recommended that the CREP CSBI pilot program that implements riparian forest buffers on historic agricultural lands be extended through the year 2025.

2021 Total Implementation Expenditures

Total Rental Payments (USDA)	$259,062
Sign-Up Incentive Payment (SIP-FSA)	$1,114
Practice Incentive Payment (PIP-FSA)	$16,759
*BMP Cost (FSA)	$30,039
*BMP Cost (WAP)	$43,391

*Based on Federal Fiscal Year Numbers 10/01/20 – 9/30/21



Program	99-2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Catskill/Delaware Watershed	$ 6,163,550	$ 227,423	$ 203,211	$ 254,952	$ 261,197	$ 395,490	$ 475,423	$ 388,194	$ 181,405	$ 568,828	$ 326,909	$ 73,430	$ 9,520,012
Croton Watershed	$ 36,515	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 36,515

Nutrient Management Program 2021 Accomplishments

In 2021, the Nutrient Management Team completed 30 nutrient management plans. The team faced challenges in completing plans due to contract delays with Dairy One Labs during the soil sampling season. Plans could not be completed until new samples were analyzed.

Nutrient Management Plan Percent Current Analysis

	Farms Needing NMP 220	
	Number	% of Total
Current	201	91.4%
1 year out of date	15	6.8%
2 years out of date	1	0.5%
3 years out of date	2	0.9%
> 3 years out of date	1	0.5%
Needs NMP	0	0.0%
Total	220	100.0%

Photo: Heather Magnan

The NM Credit Program was offered to 132 participating farms. Seven farms did not submit records (no records kept, or had extenuating circumstances).

The 2020-2021 Credit year allowed for the addition of any eligible farm. Twelve nutrient management credit farms left the program due to not meeting eligibility requirements or the sale of their farm. Two new farms were selected from the prioritized general list of NM Credit eligible farms.

For the 2021-2022 Nutrient Management Credit Program year, we will continue to add eligible participants.

Precision Feed Management (PFM)

Calendar year 2021 was the sixth full year of implementation of the PFM through the Watershed Agricultural Program (WAP). At the close of 2021, there were 38 dairy farms actively participating in the PFM program. Two dairy farms ceased production during 2021, and one dairy farm who had not previously enrolled, came under new management and began to participate. The 'roll out' of the new Beef PFM program yielded the addition of 18 new participants, thus significantly enlarging the PFM program and bringing it very close to the contract allowable of 60 farms.

PFM program implementation includes: 1) routine dietary monitoring using NYS PFM benchmarking tools; 2) WAP Quality Management Assistance (QMA) planning and technical assistance to farmers and their feed industry advisors in discreet QMA events; and 3) feed management planning (FMP) using the NRCS 592 feed management standard. Benchmarking frequency standards were met for 88% of the Dairy PFM farms that were actively in business for 2021, while QMA planning was completed for 96% and feed management planning on 65% of participating farms. Planner engagement on the newly enrolled Beef PFM farms yielded 33% with at least one benchmark, and 72% with annual QMA plans completed.

PFM Program Engagement Statistics as of 12/31/2021

Table 1.

PFM Program 2021 Engagement Statistics, Beef and Dairy	2021
Total Farm PFM QMA Events	94
Total PFM Benchmarks completed to date	140
Total PFM QMA Annual Implementation Plans	54
Total Feed Management Plans completed for year	16
Total Feed Management Plans on farms	39
Total PFM Farm planner contacts	1488

PFM Program Nutrient Management Scope

The amount of phosphorus (P) and nitrogen (N) quantified in Table 2 represent an extremely large amount of P and N under management through Precision Feed Management:

Photo: Paul Cerosaletti

Table 2. PFM Program 2021 Dairy Nutrient Management Scope

Total number of lactating cows under feed monitoring	2,272
Phosphorus[1]	
Average pool of feed phosphorus managed/cow/day, grams	82
Total pool of feed phosphorus managed per year, program, kg.	66,377
Average pool of manure phosphorus excretions managed per cow/day, grams	58
Total pool of manure phosphorus excretions managed per year, program, kg.	47,307
Nitrogen[1]	
Average pool of feed nitrogen managed/cow/day, grams	474
Total pool of feed nitrogen managed per year, program, kg.	385,792
Average pool of manure nitrogen excretions managed per cow/day, grams	376
Total pool of manure nitrogen excretions managed per year, program, kg.	305,628

[1] Data summarized here represents monitoring of 2,229 cows on 37 herds for which monitoring was complete enough as of 12/31/2021 to justify inclusion in the data set.

Nutrient Management and Economic PFM Impact – Dairy Farms

Consistent with previous years and studies, in herds where we are able to affect P intake reductions, we are able to reduce manure P excretions 20-30%. The reduction achieved in 2021 (28 grams/cow/day; 35.9%) in herds targeted for and achieving a P reduction was ***the largest average annual manure P excretion per cow that the PFM program has achieved for this group since its incorporation within the WAP***. As a result of the decreases in manure excretions the net manure P excretion flux for the 2021 program year was -3,354 kg. This is the second largest reduction achieved by the PFM program to date, following the reduction reported for 2020 (-4,556 kg). Like phosphorus, the PFM program achieved its second largest-ever net manure nitrogen excretion reduction across all herds, totaling -20,983 kg per year, slightly less than the -23,022 reported in 2020.

Economic Impact

Likely due to poorer forage quality for hay crop forage produced in 2021, milk production decreased across all farms on average 2.7 lbs. per cow per day. Milk production is a strong driver of profitability, and with this sizable decrease in milk production, we saw declines in milk income over purchased feed costs (MIOPFC) in all P sufficiency levels, except those that have been persistently feeding P within benchmark guidelines, which is an increase in MIOPFC of +$0.18 per cow per day. This still suggests, as has previous year's data, that phosphorus management goals are not at odds with farm profitability goals.

Photo: Dale Dewing

Beef Cattle PFM Program Accomplishments.

The newly initiated Beef PFM program currently includes 18 active farms. The PFM team's implementation efforts included: Annual QMA plan development, forage inventory quantity and quality assessment, and the matching of feed inventories to animal needs. There was limited assessment of cattle bodyweights and rates of gain. In addition, there were several farms where the benchmarking of animal diets was successfully attempted.

Beef PFM Program Scope and Activities.

The size of the participating herds and the land resources of the farms are summarized in Table 3.

Table 3: Beef PFM Program 2021 Demographics, 18 Active Farms.

	Number
Brood Cows	1060
Growing Heifers and Steers	799
Calves	443
Breeding Stock	129
Total Animals Enrolled in Beef PFM	**2431**
Acres of cropland	3472
Acres of pasture	1340
Total Acres Farmed by Participating Farms	**4812**

The emphasis in this initial implementation year was on getting Annual QMA plans completed and getting started with data collection for potential benchmarking exercises. These activities largely centered on forage sampling and assessing feed inventories. Development of beef farm Feed Management Plans was deliberately staged for implementation in 2022 and successive years, in order to allow staff time for benchmark development and data gathering activities on these farms.

Beef Herd Nutrient Sufficiency Status – Preliminary Investigations:

The PFM team began data collection on participating beef herds in 2021 and constructed initial nutrient benchmarking on a limited number of herds. Already however, that analysis indicates that the brood cow diets in the NYC Watershed beef herd conducted by the PFM team confirms what beef cattle research suggests: that dietary nitrogen (N) and phosphorus (P) are utilized more efficiently by lactating cows than by dry cows in all instances. From the preliminary data analysis, it appears that the diets of the dry brood cattle consistently provide P at 150 to 250% of the animal's requirement, far in excess of any dairy cattle diet P level. The diets of the lactating cows were generally 30% lower, but exceeded their P requirement as well. The one herd where growing and finishing cattle diets were analyzed, suggests that there may be similar rates of overfeeding of both nitrogen and phosphorus in these cattle groups as well. In general, these data indicate a degree of phosphorus and nitrogen overfeeding. Beef PFM efforts in 2022 will seek to confirm these initial results and examine means of managing the overfeeding. It appears that development of watershed or farm specific custom mineral blends may be a viable strategy.

Ag Program Tour

WAC hosted many groups coming into the NYC watershed for farm tours as well as the Ag Program Farm Tour hosted on October 14. This year's downscaled tour had 38 invited guests attending three WAP participant farms plus an additional roadside stop to view three landowners established CREP connecting Riparian Buffer systems. Guests heard and observed real life water quality issues while seeing solutions from management and structural Best Management Practices (BMPs).

At the Webcrest Farm owned by Ed and Donna Weber, participants learned details of the history of the farm, Whole Farm Plan attributes, implemented BMPs to date as well and viewed the new calf housing structure that replaced a 24 year old first generation plastic covered solar calf house. Easement, Nutrient Management (NM) and PFM staff were on hand to answer questions about the Weber's involvement.

Photo: Heather Magnan

Next, the group visited the Black Willow Morgan Farm owned by Jeff Wilson starting with refreshments furnished by the farm. Guests viewed the newly constructed heavy use area protect (HUAP), covered feeding area and manure storage all planned and designed for the horses. The group heard WAP program updates from Larry Hulle and organizational updates from Ryan Naatz.

Our third stop, was the Burn Ayr Farm, owned and operated by Kevin and Kathleen Sullivan. They shared about the extensive purpose and function of riparian buffer systems and stream ecology. The WFP, existing BMPs, future planned BMPs, pending implementation and an in-depth look at NM Planning and implementation were discussed. An overview of the WAC Economic Viability Program and Pure Catskills branding campaign which the Sullivan's have been continual participants of, were discussed. Their road side farm stand was also open for viewing and enjoyment.

Photo: Brian LaTourette

We thank all that attended and hope to see you next year.

Farmer Education Program

The Watershed Agricultural Program Farmer Education efforts ended 2021 having hosted 48 events with over 1699 farmers and Farm Advisors attending. This included at least one person from 128 WAP participating farms (49% of active participating farms), and 18 non-participating watershed farms. Our Farmer Education events have a loyal participant base, with 41% of WAP participant farms that attended taking part in three or more events during the year, and 23% attending five or more events.

Photo: Dale Dewing

Our events this year were a combination of virtual classes, in person on-farm workshops and tours. Quality Management Assistance (QMA) also continued to be an important and effective way to assist participants with specific issues.

In-person or virtually, in large events, small groups or one on one interactions, we are pleased to be able to serve the participants of the Watershed Agricultural Program with relevant information and critical skill development.

Number of Events: 48
Number and percent of participating Watershed Farms attending at least one event*: 128 **49%**
Number of non-participating Watershed Farms attending at least one event: 18

Date	Event	Watershed Farmers	Other Farmers	Students	Agri-Service	Agency	Other	Total
Catskill Regional Agriculture Conference January 11-16, 2021	Dairy Track	9	12	0	9	31	4	65
	How to Choose the Best Cut Flower Varieties	6	61	0	1	20	6	94
	Matching Vegetable Breeds with Goals	4	26	0	0	17	1	48
	Improving Herd Genetics for Higher Quality Beef	8	17	0	0	11	0	36
	Building Relationships with Local Florists	5	46	0	1	15	2	69
	A Beginner's Guide to Growing Apples	6	33	0	0	31	1	71
	Grazing Tips and Tricks	10	26	0	0	13	0	49
	Take the Guesswork out of Product Pricing	8	22	0	1	18	3	52
	Look Over at the Pretty!	6	43	0	0	7	5	61
	High Tunnel Vegetable Rotations and Fertility	5	22	0	0	13	0	40
	Managing Growing Cattle during the Winter Feed Period	9	16	0	0	13	0	38
	Pasture Remediation and the Do's and Don'ts of High-Density Grazing	10	20	0	0	12	0	42
	Agriculture Energy Audits and Energy Efficiency Incentives	2	9	0	0	16	0	27
	Crop Planning for Market Bouquets	5	42	0	0	8	5	60
	Vegetable Weed Management Using IPM	2	25	0	0	17	0	44
	Beekeeping for Beginners	5	12	0	1	7	3	28
	Keys to Achieving Top Finish for Beef on Grass	6	16	0	0	11	0	33
	More Pasture and Fewer Inputs	9	0	0	0	6	18	33
1/21	Insights to the Cow/Calf Enterprise	4	7	0	0	4	0	15
2/11	Introduction to Stocker Cattle	3	0	0	0	2	0	5
2/18	Lunchtime Grazing Series - Week 1 - Types of Grazing Systems	11	17	0	0	3	0	31

Date	Event	Watershed Farmers	Other Farmers	Students	Agri-Service	Agency	Other	Total
2/25	Pesticide Certification Training	3	0	0	0	6	0	9
2/26	Selecting Machinery for your Small Farm	2	22	0	0	3	0	27
3/4	Lunchtime Grazing Series - Week - 2 Pasture Soil Management	7	14	0	0	3	0	24
3/18	Lunchtime Grazing Series - Week 3 - Plant Biology in the Grazing Context	8	8	0	0	3	0	19
3/26	Push the Pencil Retirement Planning (2 Part Series)	13	6	0	0	0	1	20
3/26	Flower Workshops (3 workshops)	7	37	0	0	0	0	44
3/30	Make Your Calving Season Work for You	9	16	0	0	6	0	31
3/31	Ag Monday Jan-Mar (3 events)	14	7	0	0	16	0	37
3/31	QMA Q1	28	0	0	0	0	0	28
4/1	Lunchtime Grazing Series - Week 4 - Ruminant Biology in the Grazing Context	11	10	0	0	2	0	23
4/6	Spring Cow/Calf Workshop - Preparations for the Breeding Season & How to Buy a Bull	8	14	0	0	7	0	29
4/7	Corn Herbicide Meting	10	8	0	4	8	0	30
4/8	NMCredit Workshop 1	37	0	0	0	4	0	41
4/8	NMCredit Workshop 2	76	0	0	0	1	0	77
4/9	NMCredit Workshop 3	34	0	0	0	1	0	35
4/15	Lunchtime Grazing Series - Week 5 - Management of Plant and Animal Together	11	10	0	0	4	0	25
4/29	Lunchtime Grazing Series - Week 6 - What the Final System Looks like	7	13	0	0	5	0	25
6/30	QMA Q2	27	0	0	0	0	0	27
7/16	Beef Tour - O'Mara Farm	4	8	2	0	4	0	18
9/7	Corn Dry Down Day	7	7	0	1	0	0	15
9/16	Corn Dry Down Day	17	6	0	3	0	0	26
9/30	QMA Q3	29	0	0	0	0	0	29
11/6	Pasture Walk - Orinoco Cattle Farm	13	9	0	0	2	0	24
12/8	Maximize the Value of the Dairy Calf	7	6	0	4	10	0	27
12/14	Dealing with Dystocia: Kidding & Lambing Emergencies & Newborn Care	4	57	0	0	3	0	64
12/15	Ag Monday Oct-Dec	16	6	0	0	12	0	34
12/31	QMA Q4	21	0	0	0	0	0	21
	Total Attendance (year to date)	**563**	**736**	**2**	**25**	**375**	**49**	**1750**
	# of Events	**48**						

Number and percent of participating Watershed Farms attending at least one event: * **128** **49.4%**

Number of non-participating Watershed Farms attending at least one event: **18**

Farmers	**1299**
Advisors	**400**
Total	**1699**

**Based on 259 active large and small farms WOH (ASR list Dec 2020)*

Economic Viability: Buying Local – A Way of Life

Enhancing the Profitability and Sustainability of Working Landscapes is at the core of the Watershed Agricultural Council's (WAC) mission, it is the balance of water quality with economic viability. True to this, the WAC's Economic Viability (EV) Program works to enhance the profitability and sustainability of all agricultural and forestry enterprises in the NYC Watershed and Greater Catskill Region through initiatives including our Pure Catskills buy local campaign.

This year we are proud to highlight JJF Farm's evolution and involvement in the Economic Viability Program. JJF Farm started as a dairy farm in 1964. The farm is owned by John and Beth Verhoeven and is located on Route 23C between the Hunter and Windham ski slopes. It is not only a pilot Watershed Agricultural Council (WAC) farm that has participated in multiple programs since the WAC's inception, but has also been a Pure Catskills member since the start.

In 2005, they decided to switch to beef choosing to raise Angus cattle. Seeing the potential for direct marketing, they started a farm store to sell products produced on the farm. Angus are known for their ease of calving, fast finishing, and marbling. Over the years, they have figured out just the right process to get beef that is high-quality and consistent.

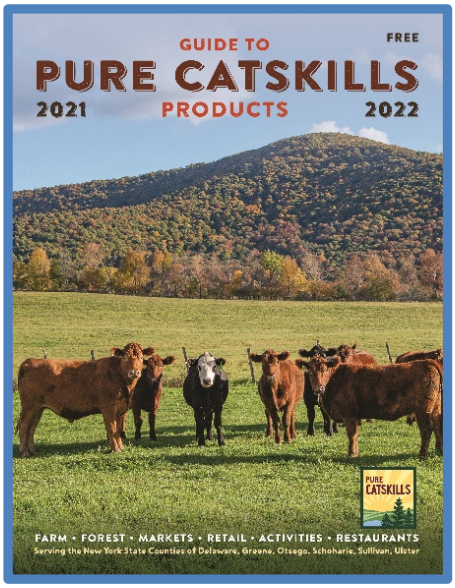
311 Pure Catskills Members

5+ Watershed Events

Photos: Joe Damone

The farm store opened in 2009, and grew slowly by adding cattle and acreage. Today, JJF Farm has over 200 head of cattle and they market everything through the store. Their beef is pasture-raised, grain-finished, hormone and antibiotic free. They have also added pork and chicken to their operation. Visitors can see the chickens out in the chicken tractor all summer long, grazing on grass and bugs. All of the meats are cryovac and frozen.

"We have certainly benefited from more business and we are constantly recommending other members for products we don't carry. People like to come and see the animals, especially the cows with calves. Our guard donkey Wilbur is also a big attraction and if you are lucky, you can get to hear him bray. Our hours are from 9 AM–5 PM, Thursday through Monday." —John & Beth Verhoeven



2021 Outreach Tours and Events

We are happy to report many events and farm tours occurred in 2021. The Watershed Agricultural Council (WAC) hosted an array of farm tours in the NYC Watershed and attended a handful of events.

The WAC hosted three tours in October. The Food, Water and Climate Farm Tour was held October 4th and we were a guest speaker at Lucky Dog Farm in Hamden, NY. This tour had 25 legislative members as guests. On October 14th, the WAC Agricultural Program hosted their annual program tour with 38 attendees. The group visited Webcrest Farm in Bovina, NY, Black Willow Morgans in Delhi, NY and Burn Ayr Farm in Delhi, NY. On October 18th, 20 graduate students from the Bard College of Environmental Policy visited Byebrook Farm, in Bloomville, NY where they learned about our programs as well as the farm's history.

Pure Catskills attended events in 2021 including the Delaware County Fair (in WAC's tent), Cauliflower Festival in Margaretville, NY and the Delhi Harvest Festival in Delhi, NY. Many events early in the season were cancelled due to Covid-19 restrictions, as were some of the larger fall events like Taste of the Catskills.

The Delaware County Fair was as large as ever with over 77,000 visitors throughout the week. The Delaware County Clean Sweep Event celebrated its 25th year. It was sold out again this year and there was a record number of participants overall. WAC pays for the disposal for all of the waste brought in by farms in the eight NYC Watershed counties to the event.

While many events did happen in 2021, we are looking forward to even more in 2022!

Photo: Heather Magnan

The Communications Department was able to continue its ***Boots in the Barnyard*** video series in 2021. Completed videos included: *Walterna Farm: Springdale Farm, Cover Crops in the NYC Watershed: Gladstone Farms: Clark Farms* and *Conservation Easements: Reserved Rights, Logging in the NYC Watershed*. Video continues to be one of WAC's most engaging platforms for public outreach and messaging. Videos are promoted through the WAC website, social media (Facebook, Instagram and Twitter) and through our enews.

Photo: Jess Vecchione

Each year farms are selected to be highlighted based on projects completed and relevant messaging based on staff recommendations. Participants as well as staff are interviewed discussing the various BMPs completed and planned as well as the conservation practices taking place on the farm.

Albano Farms will be the next video to be released in the *Boots in the Barnyard* series, and filming will begin at both Webcrest Farm as well as Black Willow Morgans in the Spring of 2022. A video featuring the projects done by WIRC Crew will also be filmed. In addition to the *Boots in the Barnyard* videos, four *We Are Pure Catskills* videos featuring Pure Catskills members will be filmed. Check out these videos and more: ***youtube.com/WatershedAgCouncil***

Photo: Heather Magnan

2021 Project

Webcrest Farm, Bovina, NY

The original calf housing BMP at Webcrest Farm was installed in 1997 with a 10 year lifespan. This structure was a non-engineered "Calf Greenhouse," utilizing a concept very similar to a greenhouse that would be used for growing produce. The original BMP, with diligent operation and maintenance by the farm, well exceeded the intended lifespan, but was identified for replacement in 2017 due to structural and component deterioration and updated standards.

The design of a new calf housing facility was completed by DC SWCD Technician David Andros and Watershed Agricultural Council (WAC) Engineer Pete Steenland – working with WAC Conservation Planner Dan Deysenroth and the Weber family to design the replacement BMP to meet current standards for water quality protection. Calf Housing BMP's have long been a priority water quality BMP for the WAP as part of a three barrier approach to minimize the multiplication and spread of pathogens that are present in young livestock. The three barriers include implementing bio security practices to reduce potential pathogen spread or exposure from sources outside the farm, minimize cross contamination among animals within the specific farm, and lastly, to restrict movement of manure laden pathogens to watercourses or drinking water supplies.

Providing a separate calf housing facility minimizes exposure of the calves to all other classes of livestock on the farm. A key factor in the function of this BMP is the ability to manage the calf manure separately from any produced on the farm. By facilitating a manure storage just for the calf manure, the manure is able to be composted, which kills off any existing pathogens, and then spread at a safe time and location, identified as low risk applications areas in the farms Nutrient Management Plan.

The new structure is sized for 12 individual pens for calves ages 0-3 months. This number of pens allows for the peak number of calves on the farm at one time, as well as accounting for a 30 day sanitation/fallow period between calves in the same pen location. An area for 3-6 month old calves is also part of the new structure, where up to 12 animals can be managed in grouped pens. Other features of the new structure include a 22' X 40' covered manure storage area to be used to properly manage the calf manure. A utility room is included in the structure with hot water heater and double bay sink to facilitate proper feeding management and sanitation of feeding equipment.
The project was put out to bid in the early summer of 2021 and was contracted to Loitsch Construction of Otego, NY. Construction began on August 8th and due to extended wait times for materials, was completed in January of 2022.

Before

After

Photos: Dave Andros

The Watershed Investigation Repair Crew (WIRC) 2021

The Watershed Investigation Repair Crew (WIRC) has completed another productive year of consultations, investigations, repairs, and assistance to WAC participants while still observing the current continued operations protocol. Tim Hebbard, WIRC Specialist along with Assistant Planner Alison Heaney and Engineering Specialist Ben Green, completed 56 BMP Repair / Modification Requests for Assistance that included:

17 on-site, no-cost repairs (parts off WIRC Truck) with landowner assistance; nine on-site consultations for technical support; 14 repair projects; three approved projects incomplete but encumbered; four projects requiring further engineering/procurement assistance and three repair requests referred to workload for WAC Procurement process. The WIRC Team also made four deliveries and/or provided transportation of WAC Loaner equipment i.e.; waste storage pumps with hoses; (one) repaired the gravel apron at the Hamden Office; and fulfilled one proposed waste storage "test pits" request.

2021 Participants' remarks:

- Rapid completion of repairs/assistance from initial reporting to implementation
- Expert and knowledgeable consultations given to participants
- Increased participant knowledge/understanding of BMP operation and maintenance agreements
- Increases participants' grasp of how the installed BMP functions on their property
- Information gathered from participants to improve BMP design and planning; animal and equipment movement
- Team operates safely and are observant of individual farm protocols
- Appreciate how WIRC staff works "one on one" with participants repairing and improving existing BMPs

Pepacton Farms
VTA-MH Filter Strip Priority Repair BMP#17aPR1
Engineer Cost Estimate = $5,172.49
WIRC Cost Invoice =$1,374.18

Crystal Valley Farm
Milkhouse Waste-Transfer Pumps Failure- Emergency Repair
Engineer Cost Estimate = $7,248.90
WIRC Cost Invoice =$3,607.74

Burns Family Trust
Spring Development-Solar Pump- Modification
Engineer Cost Estimate =$10,804.00
WIRC Cost Invoice =$3,315.75

East of Hudson – 2021 Overview

69 active farms
1 new program Farm with Whole Farm Plan
7,348 acres

The East of Hudson Watershed spans Dutchess, Putnam, Westchester and Fairfield Counties, the most densely populated areas of the New York City Watershed. Agriculture in these counties are under pressure from changes in land uses, development, urban expansion, rising land values and a loss of agricultural infrastructure. In this challenging environment, the Watershed Agricultural Council plays a critical role in providing technical assistance, implementing Best Management Practices and creating a support network for farms.

The East of Hudson Agricultural Program continues to evolve to provide crucial support for our farm partners protect drinking water quality, preserve working farms in the watershed and foster a strong stewardship ethic.

2021 Accomplishments

Annual Status Reviews
Goal: 68
Accomplished: 75
New Whole Farm Plans
Goal: As identified
Accomplished: 1

2021 Completed Implementation

NRCS/WAC Code	Implemented Best Management Practice	2021
590	Nutrient Management Plan	6
528	Prescribed Grazing Plan	1
	Total	**7**

Photo: Gibson Durnford

2022 Planning Goals

Annual Status Review: 68
New Whole Farm Plans: As Identified

2022 Projected Design and Implementation Workload

Photo: Gibson Durnford

EOH Agricultural Program
New BMPs: $620,000
Repair & Replacement: $148,000
Other Funding Source
Landowner: $63,500
Climate Resilient Farming Grant: $90,000
RCPP: $150,000

2022 Planned Implementation

NRCS/WAC Code	Implemented Best Management Practice	2022
561	Heavy Use Area Protection	5
516	Pipeline	1
614	Watering Facility	2
342	Critical Area Planting	2
580	Streambank Stabilization/Protection	1
638	Water and Sediment Control Basin	1
560	Access Road	4
4100	Waste Infiltration System	1
317	Composting Facility	1
635	Vegetated Treatment Area	2
587	Structure for Water Control	5
412	Lined Waterway or Outlet	2
558	Roof Runoff Structure - gutters	5
620	Underground Outlet	2
575	Animal Trails & Walkway	1
313	Waste Storage Facility	1
309	Agrichemical Handling Facility	1
512	Forage and Biomass	8
382	Fencing	3
528	Prescribed Grazing	1
590	Nutrient Management Plan	6
	Total	**55**

East of Hudson Nutrient Management Planning

A Nutrient Management Plan (NMP) determines where, when, and how much compost or manure can be spread on a farm with minimal risk of phosphorus and pathogens entering a water supply. WAC Planners work with program participants to create a plan based on the specific nutrient needs, landscape and infrastructure of each farm. Nutrient Management Plans are based on the USDA NRCS Conservation Practices and the New York Phosphorus Index.

Nutrient Management Plans begin with soil sampling and compost analysis which are collected by EOH staff every three years and provide the basis for a farm's NMP. The plan summarizes the nutrient balances for each farm field, and provide recommendations on soil amendments and fertilizer inputs. In addition to soil sampling results and compost analysis, an NMP also includes farm maps which outline land use, soil data, field fertility, slope, flow paths, and manure spreading load and timing allowances.

This year EOH implemented Nutrient Management Plans on six farms, Pine View, Stony Creek, Muscoot, Acadia, Big Elm, and Hemlock Hill. The NMP prepared by WAC at Muscoot Farm is a component of the NYS Climate Resilient Farming Grant received by the farm to improve the farm's resiliency and mitigate greenhouse gas emissions. Hemlock Hill's NMP is a component of the farm's NRCS Regional Conservation Partnership Program project that will be addressing nutrient concerns at the farm.

EOH Nutrient Management Plans are helping farms protect drinking water by preventing the loss of nutrients to surface and groundwater, build soil fertility, increase soil organic matter and carbon and improving the utilization of nutrients and production efficiency on farms.

Photos: Gibson Durnford

Hemlock Hill Farm

WAC's EOH program has partnered with USDA Natural Resources Conservation Service (NRCS) through the Regional Conservation Partnership Program (RCPP) to assist East of Hudson in addressing animal waste issues and nutrient concerns in the watershed.

The first RCPP project is underway at Hemlock Hill and includes a covered barnyard, heavy use area protection, a covered waste storage area, access roads, a grassed waterway, fencing and subsurface drainage. Hemlock Hill Farm specializes in beef, lamb, pork, goats and poultry and has an on-farm USDA slaughterhouse and farm store. Hemlock Hill has exceeded its Cost Guideline and the RCPP funding will be used as the farm's contribution to the project. This RCPP project will improve Hemlock Hill's daily operations and will protect water quality in the New Croton Reservoir.

EOH anticipates offering an additional round of applications for RCPP funding. Interested farms should contact the East of Hudson office.

<u>BMPs</u>
Heavy Use Area Protection
Waste Storage Facility
Waste Transfer
Waste Facility Cover
Grassed Waterway
Subsurface Drainage
Forage and Biomass Planting
Access Road

Photos: Gibson Durnford

Castle Hill Farm

The East of Hudson Program is pleased to welcome Castle Hill Farm as the newest member of the Watershed Agricultural Program. Castle Hill is a 43 acre world-class equestrian facility located in the town of Southeast in Putnam County. Castle Hill is owned by McLain Ward, a professional show jumping competitor and four-time Olympic medalist. The East of Hudson Program will work with the farm to implement 2 BMPs to improve manure storage on the farm and protect water quality in the Muscoot Basin.

BMPs

2 Waste Storage Facility
Vegetative Treatment Area

Photos: Susanne Sahler

2022 Planning Goals

Catskill/Delaware Watershed	Croton Watershed
Goal	Goal
Annual Status Reviews	
290	68
New Whole Farm Plans	
As identified	As identified

2022 Projected Workload

BMP - Funding Sources	Catskill/Delaware Large Farms	Croton Watershed
Watershed Agricultural Program		
- Backlog BMPs	$ 7,985,115	$ -
- Component BMPs	$ 708,116	$ -
- Other NEW BMPS	$ 653,340	$ 630,000
- Agronomic BMPS	$150,000	$ -
Total Watershed Agricultural Program Funding	$ 9,496,571	$ 630,000
Other Funding Sources		
- CREP (FSA)		$ -
- GRP		$ -
- AWEP		$ -
- DCSWCD		$ -
- EQIP		$ -
- Landowner		$ 63,500
- RCPP	$ -	$ 179,850
Total Other Funding Sources	$ -	$ 243,350
Total Projected Workload*	**$ 9,496,571**	**$ 873,350**
* Does not include unknown emergency repairs for Catskill/Delaware.		
* Does not include unknown cover crop and lime pilot BMPs.		

2022 Projected Workload – Number of BMPs

NRCS/WAC BMP Code	Best Management Practices	Catskill/Delaware Large Farms	Croton Watershed	Total
313	Waste Storage Facility	5	1	6
314	Brush Management	1	0	1
317	Composting Facility	3	1	4
340	Cover Crop	30	0	30
360	Waste Facility Closure	1	0	1
362	Diversion	4	0	4
367	Roof and Covers	3	0	3
382	Fencing	30	3	33
472	Access Control	8	0	8
512	Forage and Biomass Planting	4	8	12
516	Pipeline	5	1	6
528	Prescribed Grazing	10	1	11
558	Roof Runoff Management System	6	5	11
560	Access Road Improvement	20	4	24
561	Heavy Use Area Protection	23	5	28
574	Spring Development	7	0	7
575	Animal Trails and Walkway	12	1	13
578	Stream Crossing	3	0	3
587	Structure for water Control	4	5	9
590	Nutrient Management Plans	75	6	81
606	Subsurface Drain	1	0	1
612	Weed Control & Herbicide Spray	3	0	3
614	Watering Facility	9	2	11
620	Underground Outlet	8	2	10
629	Waste Treatment	2	0	2
634	Waste Transfer System	3	0	3
635	Wastewater Treatment Strip	3	0	3
642	Well	2	0	2
3010	Roofed Barnyard	7	0	7
3010.02	Roofed Barnyard - Concrete	3	0	3
3060	Manure Storage/Heavy Use Area Covered	5	0	5
3060.1	Manure Storage/Heavy Use Area Covered - Concrete	1	0	1
3110	Solar Calf House	1	0	1
3125	Calf Kennel	3	0	3
3410	Manure Spreader	3	0	3
3420	Loader	1	0	1
3499	Misc Manure Handlining Equip - Rubber Tire Scraper	1	0	1
342	Critical Area Planting		2	2
580	Streambank Stabilization/Protection		1	1
638	Water and Sediment Control Basin		1	1
4100	Waste Infiltration System		1	1
635	Vegetated Treatment Area		2	2
412	Lined Waterway or Outlet		2	2
309	Agrichemical Handling Facility		1	1
				0
Total		**310**	**55**	**365**

Included in the above are modifications, emergency repair, repair or repair and replacement BMPs.

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