









Cornell University Cooperative Extension of Delaware County





Watershed Agricultural Program 2017 AG TOUR Tuesday • May 2, 2017

ITINERARY

8:15 am	Meet at the Walton Office, 44 West St, Walton, NY 13856
8:45 am	Bus to leave WAP Office in Walton
8:50 am	Arrive at Mark MacGibbon Farm 25321 State Highway 10, Walton, NY 13856
10:10 am	Arrive at Springdale Farm 2533 Covert Hollow Rd, Hamden, NY 13782
11:20 am	Arrive at Moore/Aitkens Stream Restoration 36831 State Highway 10, Hamden, NY 13782
12:10 pm	Arrive at Hamden Inn for Lunch 35786 State Highway 10, Hamden, NY 13782
1:20 pm	Lucky Dog Farm Tour
2:30 pm	Arrive Solid Waste Management Center 32689 State Highway 10, Walton, NY 13856
4:25 pm	Arrive in Walton

MACGIBBON FARM Mark MacGibbon

The MacGibbon Farm is a 110 cow/ calf beef operation located in the town of Walton. The Whole Farm Plan was first developed in 2011. During development of the plan, the resource concerns were identified. The first resource concern was the animals having unlimited access to the surrounding surface waters. The second resource concern was the concentrated feeding areas and their proximity to surface waters. In 2014 exclusion fencing and a watering system were implemented.

In 2015 a covered feeding pad and in ground manure storage were implemented. As part of the beef operation, Mark accepts food wastes from the local Kraft factory. This caused an issue with odors when the storage was emptied on a hot and dry September day in 2016. While it was ideal conditions for water quality protection, the odors became an issue. To combat the odor issue, some strategies were developed with the producer. One of the strategies was to change the consistency of the wastes in the storage moving forward.

Near the end of 2016, an end wall was added to the covered feeding pad to reduce the wind blowing through the structure. This was done to encourage animals to stay on the pad instead of seeking shelter on the back side of the structure. The result would be to collect more manure in the storage and change the consistency of the wastes in the storage.



WATERSHED AGRICULTURAL PROGRAM

MACGIBBON FARM







SPRINGDALE FARM

Billy & Patsy Moody, Meghan & Joe Potter

Springdale Farm is owned and operated by Meghan Potter, and her parents Bill and Patsy Moody, with help from her husband Joe. Meghan is the 4th generation to own the farm, having purchased some of the land and original barn in 2010, as well as about one third of the cows. Bill and Patsy are in charge of the day to day operations, while Bill produces the feed for the 55 cow milking herd and 45 young stock on close to 300 acres of hay land and pasture. Meghan and Joe also purchased a herd of beef cows in 2016 to diversify the operation and better utilize some pasture areas of the farm.

The Moody family is very active in the agriculture community. Bill is an area delegate for Dairy Farmers of America (DFA). Meghan is employed full time off the farm doing dairy nutrition consulting work in the Northeast, and is a delegate for Genex. Meghan was awarded the 2016 American Jersey Cattle Association Young Breeder honor. She enjoys helping to improve the progress of the herd by working on all aspects of herd management, from semen selection and artificial insemination to vaccinations and calf health protocols. The farm utilizes Genomics Testing, which uses DNA mapping of heifers to predict future milk production amongst other traits. This allows them to make strategic decisions on AI Breeding or selection to market animals to other dairy herds. Genomic testing, along with genetic progress, as well as great improvements in calf health, allows the farm to sell 5-15 jersey heifers each year with the extra number of high quality animals they are raising.

The Moody's became active in the Watershed Agricultural Program (WAP) in the mid-1990's; at one point utilizing two farmsteads to milk separate herds of Jerseys and Holsteins. Today, the herd is mostly Jersey with a few Holsteins mixed in, and the operation is focused to the Covert Hollow farm. As members of the Ag Program, the Moody's are involved in many facets of conservation. A riparian buffer was established in 2000 through the Conservation Reserve Enhancement Program (CREP). This contract was re-enrolled in 2016, which allowed for failing infrastructure to be repaired, and BMP's to be installed to address new resource concerns. A new CREP buffer will be installed in 2017, excluding livestock from an additional watercourse on the property. The farm also participates in the Nutrient Management Credit Program, Precision Feed Management Program, and the Ag Plastic Recycling program through Cornell Cooperative Extension of Delaware County.

This farm is a great example of the need for Repair & Replacement of BMP's that were installed early in the WAP. The solar calf housing was installed in 1999 with a ten year lifespan. WAP is currently designing changes and updates to the facility, to ensure that it meets current standards and continues to protect water guality as it was originally intended. Another good example is the uncovered concrete dairy barnyard. This BMP was installed in 1998 with a ten year lifespan as well. The filter area designed to treat the runoff from this pad has failed and is extremely undersized to meet new NRCS Vegetated Treatment Area Standards, so a roof will be installed over the barnyard to exclude all clean water and eliminate the need for runoff filtration. Both of these Repair and Replacement BMP's were identified as resource concerns and approved in the Whole Farm Plan in 2013, yet still await implementation today. With recent BMP implementation of a new alternative watering system through the CREP re-enrollment, and subsequent involvement with the PFM program, the Moody's are re-focusing on rotational grazing. Bill and Meghan are working with Whole Farm Planner Gideon Frisbee and PFM planner Shy Parenteau to develop a Prescribed Grazing Plan that will not only meet objectives within their Feed Management Plan, but also prescribe better nutrient distribution across their grazing acres and increase forage quality and quantity, thus decreasing nutrient and soil runoff from pasture areas. PFM efforts with this farm to date have included developing low cost watering systems to help improve cattle performance on pasture, managing feeding sequence to improve production and maintain animal health, and improved hay crop production through harvest timing and intensive grass management, along with regular forage testing and benchmarking.

The Moody's have shown a strong commitment to and understanding of Conservation and water quality protection on their farm, and the WAP looks forward to continuing our successful relationship for many years to come.

SPRINGDALE FARM











STREAMBANK STABILIZATION Moore/Aitkens Farms

After years of planning, streambank stabilization of the West Branch Delaware River in Hamden, New York, was completed in 2016. The site is a major drainage area in the headwaters of the Delaware River system. In 1997 work was completed to aide streambank stabilization, including willow plantings and concrete slabs. After the flood of 2006, it was apparent that the stream banks had been eroded significantly and were in dire need of repair.

Funding was received from Natural Resource Conservation Service's Emergency Watershed Protection to design and build a project to control the erosion. The project was considered necessary to avoid the cost associated with mitigating the effect of the sediment introduced to the system. 6,500 yards of material has been lost in the last four years alone, including 2,000 pounds of Phosphorus, which is detrimental to water quality.

The proposal was to construct an armored bank with rip rap approximately 6 feet high and with a 3 feet deep toe along the eroding stream bank for approximately 450 feet. Upon completion a 100' riparian buffer was planted along the stream bank. New York City Department of Environmental Protection funded the project as a demonstration project through their contract with Delaware County Soil and Water Conservation District (DCSWCD).

The DCSWCD Stream Corridor Management Team worked closely with WAC Easement Stewardship Team throughout the process of this project as one of the properties involved also holds a WAC Conservation Easement. Easement stewardship often requires the WAC Stewardship Team to play the role of facilitator for the approval process for reserved rights.

Reserved rights are activities on eased properties that require advance approval from the Easement Committee. Reserved rights allow landowners to realize opportunities for aesthetics, recreation, living amenities and working lands economic initiatives. The most common reserved right requests on WAC eased lands include commercial timber harvesting, bluestone mining, and stream work.



WATERSHED AGRICULTURAL PROGRAM

STREAMBANK STABILIZATION







PRECISION FEED MANAGEMENT

in the NYC Watershed Agricultural Program

What We Do: Precision Feed Management (PFM) as implemented in the NYC Watershed is designed to engage farmers in a recurring process of planning, implementation and monitoring of the largest source of nutrients on the farm – feed nutrients. PFM provides farmers with regular staff support in a host of areas of feed and animal management including dietary formulation and delivery, animal health and reproductive management as well as homegrown crop production.

From the animal side, we help farmers and their feed nutritionists implement more tightly formulated diets that avoid overfeeding of nutrients and maximize use of homegrown nutrients. We also help them maintain healthy, comfortable and productive animals that convert feed nutrients into milk and meat more efficiently and increase exports of nutrients off the farm in milk and animal sales. From the crop production side, we help farmers produce a larger quantity of higher digestible homegrown feed nutrients, which sets the stage for importing fewer purchased feed nutrients and increasing milk production and milk nutrient exports.



We create a USDA NRCS approved feed management plan for each farm, which informs and is itself informed by an annual QMA Strategy, quarterly dietary monitoring (via PFM Benchmarking) and regular QMA assistance to the farms throughout the year by the PFM planners.

PFM Impacts by the Numbers:

In Year 1 of PFM implementation in the NYCWAP, PFM planners completed Feed Management Plans for 22 farms and 1,388 mature dairy cattle. The PFM planners conducted over 300 QMA events to assist farms in implementing PFM on their farms, and 90 PFM Benchmarks events were completed in monitoring lactating cow diets. The total amount of feed phosphorus nitrogen placed under PFM management in these Year 1 farms was 88,236 lbs, and 599,779 lbs respectively. Even with dietary management just beginning to be implemented on farms, manure P excretions were reduced 2,233 lbs across Year 1 farms The PFM Success Stories:

A story, and a picture, makes the PFM impact come alive. The following PFM impact success stories paint a picture of the diversity and breadth of the engagement of PFM farms in Year 1. PFM is a win-win for farmers and water quality. We look forward to even more successes in Year 2!

QMA= Quality Management

Assistance: This is a process unique to the NYCWAP and mechanism for us to help farms implement management BMPs real time.







QMA Impact Report Farm Springdale Farm – The Moodys Planner Shy Parenteau QMA Code: PFM Date 6/2/2016

Results / Impact

Goal: More efficient grazing

On 6/1/2016 we (PFM) purchased two 275 gallon water tanks for the Moody's to use as a water wagon. Bill Moody provided the wagon/trailer that these tanks are transported on, as well as the troughs that will be moved around the pasture with the wagon. The Moody's whole farm planner, Gideon Frisbee, assisted in designing and setting up the water wagon.

Having water accessibility over the entirety of the pasture fields will allow The Moodys to better graze their cows. Before, cows were not using the pasture on the opposite side of the stationary water trough at the bottom corner of the field. There was a large portion of the pasture not being utilized because of the distance from the stationary trough.

With the water wagon there will be water access from all parts of the pasture, Bill will be able to build more paddocks and rotate his cows more often. He will be able to use 100% of the field, instead of just the 25% that they were using before.



After months of using the water wagon, *Bill told us that it was "the only thing that saved us from seeing a drop in milk on the hot days.*" Maintaining milk production (maintain nutrient exports), based on high quality pasture allowed the farm to continue a high forage diet, preventing an increase in nutrient imports.







OMA Impact Report Springdale - Bill & Meghan Moody Potter Farm **Planner** Shy Parenteau QMA Code: PFM Date 3/25/2016 - ongoing **Results / Impact** (briefly describe the progress toward QMA goals as well as any increased production or profitability, improved efficiency, improved effectiveness of BMP, etc.) Goal: Improved Milk Fat (Meghan and Bill both expressed that they want to increase their milk fat percentage.) When we first started PFM on their farm they were feeding in this sequence: 5:30 am – Push up leftovers, feed pellet grain 8 am – push in leftovers, feed corn meal 9-11 am - turn cows out and remove refusals 11 am - feed corn silage and let cows back in 1 pm – feed pellet grain 4:30 pm – feed pellet grain 6-7 pm – feed baleage 8 pm – feed corn meal We proposed that they feed: 5:30 am – hay or baleage 8 am - corn meal and pellet grain 9-11 am - turn cows out 11 am – baleage and corn silage 1 pm – corn meal and pellet grain 4:30 pm - baleage and corn silage 8 pm? - corn meal and pellet grain

Feeding in our proposed sequence should create a sufficient rumen mat and reduce effects of slug feeding of grain. We are also investigating a new grain cart that will allow them to feed the corn meal and pellet together more times a day. This is an on-going, no-cost strategy to improve rumen function, increase feed efficiency. Increased milk fat production will result in more nutrients being exported from the farm, and higher milk income.







QMA Impact Report Farm Albano Farms Inc. Planner Paul Cerosaletti QMA Code: PFM Date Jan 2017

Results / Impact

(briefly describe the progress toward QMA goals as well as any increased production or profitability, improved efficiency, improved effectiveness of BMP, etc.)

Improved Udder Health:

Frank and Mark Albano in concert with their PFM Planner Paul Cerosaletti and feed nutritionists, identified improved udder health as a top priority for their lactating herd in their 2016 QMA plan and NRCS Feed Management Plan. The major motivation to do this was to improve the efficiency of conversion of feed nutrients to milk sold and increase amount of milk sales, and in doing so increase the export of milk nutrient exports from the farm.

Over the course of 2016 an intensive program of testing, analysis, and implementation of management protocols was under taken as a result of the PFM program initiative. This effort resulted in a reduction in herd average somatic cell count (a measure of udder health; lower is better) of 185,000 cells per ml. Based on extensive udder health research this improvement in udder health corresponds to 1.3 lbs more milk sold per cow per day. This increase in milk production is worth at least \$11,991 annual to this farm at current milk prices, and results in 154 lbs and 28 lbs more milk Nitrogen and Phosphorus exports annually for this farm. Continued improvements in udder health continues as a 2017 PFM goal for this farm.









QMA Impact Report			
Farm	Mushkoday Farm, LLC		
Planner	April Wright Lucas	QMA Code: PFM	
Date	February 7, 2017		

Results / Impact

"In 2015 our corn silage crop harvest yielded between 15½ to 16 tons per acre. This last year after everything was bagged we figured that our yield was somewhere between 19½ to 20 tons per acre with no weeds, very little grass pressure in the corn. "...Larry Burgin, Mushkoday Farm, LLC



From Left: Larry Burgin, Jacob Burgin, John Burgin, and Dan Gehl, NYC Watershed, Nutrient Management Planner.

The PFM Quality Management Assistance project on the Mushkoday Farm helped the owners to make improvements in their no-till corn crop production for the year 2016. They attended Cornell Cooperative Extension crop meetings and met with another successful corn grower who reviewed what the cropping practices were and shared his experiences with the Burgin's. Dan Gale with the nutrient management team for the NYC WAP and Paul Cerosaletti, Senior Resource Educator with CCE Delaware County provided consultations during the planting and harvest seasons. The Burgin's took action to address opportunities to improve plant population and weed control. Dan and Paul provided scouting during growing season and maturity checks to target correct harvest timing.

The corn looked great.

The increased corn silage inventory will allow the farm to increase forage in the ration, decrease purchased grains (decreasing nutrient imports) and potentially support high milk production (increasing nutrient export) for 2017.





Watershed Agricultural Council



QMA Impact Report		
Farm	DelRose – Windy Acres – The Hanselmans	
Planner	Paul Cerosaletti	QMA Code: PFM
Date	Jan 2017	

Results / Impact

(briefly describe the progress toward QMA goals as well as any increased production or profitability, improved efficiency, improved effectiveness of BMP, etc.)

Demonstrating and Adopting Reduced Tillage Technology:

The Hanselmans have traditionally utilized a full suite of conventional tillage in their production of corn for silage and grain. This practice (which includes moldboard plowing primary tillage in addition to one or more passes of secondary tillage such as disking and/or spring tooth harrow), results in greater degradation of soil organic matter, reduced soil health and resiliency, increased soil erosion as well as being more time and fuel consumptive. The Hanselmans have been interested in adopting reduced tillage and no tillage methods, but have been hesitant to move away from conventional tillage, which has allowed them to historically achieve consistently excellent crop yields. Through the PFM education and demonstration outreach we were able to partner with a local ag machinery dealer, Whites Farm Supply, to try a strip tillage tool, which only tills narrow strip into which corn can planted, effectively reducing tillage by 67%, and reducing the number of tillage passes from three to one. This reduced time in the field, freeing up more time to prepare for timely forage harvest. The Hanselmans found corn yields to be comparable to conventional tillage. This hands-on demonstration experience has given them confidence in strip tillage to willingness to use this reduced tillage method in the future.









QMA Impact Report Farm The Merrill Farm Planner Shy Parenteau QMA Code: PFM Date 5/20/2016 Code: PFM Results / Impact (briefly describe the progress toward QMA goals as well as any increased production or profitability, improved efficiency, improved efficiency, improved efficiency, improved efficiency, improved efficiency of 2016. Scott said that they've been interested in applying Nitrogen to their grass fields, but weren't sure if the improved crop

was going to be worth the initial cost. We bought Urea to be applied at 75 pounds per acre, over about 20 acres of pasture. We saw an increase of yield from 1.2 tons/acre to 1.7 tons/acre. So, the Merrills harvested a half a ton more of this haycrop than they normally would've gotten.

Increasing the yield and quality of homegrown forage on the farm reduces the need to purchase feed. It also increases milk production, and therefore the amount of nutrients exported from the farm.











QMA Impact Report Farm Eternal Flame Farm Planner Paul Cerosaletti QMA Code: PFM Date Jan 2017

Results / Impact

(briefly describe the progress toward QMA goals as well as any increased production or profitability, improved efficiency, improved effectiveness of BMP, etc.)

Forage Quality Improvements:

The PFM and NM Planning staff has been working with Lenny and Angie Pieper to implement crop rotations on ground that has previously been in continuous corn for silage. The purpose of this was to improve soil health and long term productivity as well as widen the harvest window for high quality forage. The program staff has also been working with the Piepers to produce high quality silage from double cropped winter rye cover crop. In addition to providing high quality forage, the winter rye improves soil health and reduced loss of nutrients and soil. Improving forage yield and quality allow more feed nutrients to be grown on the farm and thereby reducing the amount that need to be imported as purchased feed.

As a result of dramatically improved forage quality, the Piepers were able to reduce their purchased grain imports by over 4 lbs per cow per day, a 30% reduction in feed purchases, while essentially maintaining milk production. Milk income over purchased feed costs, a key measure associated with farm profitability, increased \$1.08 per cow per day, a 15% increase.



LUCKY DOG FARM

Richard Giles & Holly White

Lucky Dog Farm, located in Hamden NY is a 160 acre Certified Organic farm owned and operated by Richard Giles and Holley White. The farm produces high quality food crops that include lettuce, kale, Swiss chard, broccoli, potatoes, carrots, tomatoes, onions, blueberries, asparagus and small grains. Produce is sold locally in their farm store and at farmers' markets as well as in the city, both wholesale and retail at the Green Markets.

Richard started the farm in 2000 and became a WAP participant that same year. They have been a Pure Catskills participant since the program began in 2004, and Richard was involved in its inception. Richard then began the Lucky Dog Local Food Hub as an aggregate for local producers to sell their products to NYC restaurants and markets. The Hub transports produce, meat, valueadded dairy and much more from the Catskills to NYC twice a week.

In 2005, the Giles' enrolled the farm in a WAC Conservation Easement to ensure that the land will remain in agriculture for generations to come. Lucky Dog Farm has also participated in USDA programs including CREP and CSP as well as cost share programs for high tunnel greenhouses and a buried irrigation system. Richard is currently a WAC board member and serves as the chair of the Economic Viability committee.





LUCKY DOG FARM









SOLID WASTE MANAGEMENT CENTER

DELAWARE COUNTY SOLID WASTE MANAGEMENT CENTER

The small town of Walton, N.Y. calls itself the "scarecrow capital of the world," but the local MRF operator has not been spooked by single-stream collection or the evolving ton.

Similar to other communities, the recycling program in Walton and surrounding Delaware County has seen a drop in fiber products and a significant shift in the quantity and quality of plastics. Those realities sparked a recent change in processing strategies.





Delaware County Solid Waste Management Center

Location: Walton, N.Y.

Start-up date: November 2014

Number of processing lines: Two

Throughput: 5,000 tons expected in 2016

Residue rate: Less than 2 percent

"When we had the opportunity to develop our new MRF we tried to recognize the changing nature of waste, recyclables and material handling. Single-stream [collection], for all its shortcomings, is here to stay," said Susan McIntyre, solid waste director at the Delaware County Department of Public Works Solid Waste Division. "By combining automation, where practical, with energy-efficient design, we were able to more than double the number of products we can recover for recycling while keeping labor and operating costs flat."

Delaware County's 27,000-square-foot MRF opened in fall 2014, replacing an older MRF that was formerly at the site. Situated near Walton, population 5,500, the MRF is adjacent to Delaware County's composting facility and landfill.

The MRF receives curbside and commercial recyclable materials from throughout Delaware County, which is one of the least densely populated counties in the state, at about 33 people per square mile. About three-quarters of the material arrives via private haulers, with the rest being self-hauled materials.



SOLID WASTE MANAGEMENT CENTER

The facility is designed to sort materials from both single-stream and dualstream collection.

Set up to sort 8 tons per hour but capable of 16 tons per hour, the Delaware County MRF was engineered by Clark Davis Engineering & Surveying of New Lebanon, N.Y. and includes equipment from Plessisville, Quebec-based Machinex and a baler from Excel Manufacturing of St. Charles, Minn. The facility is owned and operated by the county.

The system includes a bulk live floor in-feed drum, a pre-sort conveyor,



an OCC screen, a glass breaker, a ballistic separator, a magnetic separator and an eddy current separator. The facility's biggest challenge is dealing with "out and out garbage being intermixed with loads of recyclables," McIntyre said.

Loads from institutional sources can be particularly difficult in this regard.

Still, the new facility has resulted in far less residue going to the landfill, said Tony Vespro, solid waste crew supervisor at the facility. And it was also built to enhance work conditions. It includes clerestory windows to allow for ample natural light, and it has climate-controlled mezzanines where sorting staff work.

Near the MRF is the county's advanced composting system, into which is fed all of the collected trash, minus large and clearly noncompostable items. It's the only composting system in the state processing compost from full bags of household garbage. "By combining automation, where practical, with energy-efficient design, we were able to more than double the number of products we can recover for recycling while keeping labor and operating costs flat."

"Delaware County has extended the life of the landfill by many, many years," said Sally Rowland, environmental engineer at

the New York Department of Environmental Conservation, in a video documenting the history of Delaware County's waste management program. "We really consider it a model for the state – even the country – of how it can be done properly."

The Delaware County MRF employs 15 people, including maintenance workers, equipment operators and sorters, on one shift. The sorters are part time and remaining staff are full time. Workers are employed largely through an agreement with ARC of Delaware County, which provides employment for adults with developmental disabilities.





Thank you for joining us on our 2017 Ag Tour!