



April 2020

# MOUNTAINS-TO-BAY GRAZING ALLIANCE

Working with farmers to implement and improve grazing management and reduce feed costs

## COVID-19 Resources for Farmers

prepared by Future Harvest CASA

We understand the usual ways of doing business have been upended, at least temporarily, due to COVID-19. We hope to help our community by amplifying opportunities this crisis presents and working to mitigate the challenges.

We encourage food producers and food distribution centers to read and implement the [Safety Protocols For Food Distribution & Purchases During COVID-19](#) created by Future Harvest, the Maryland Farmers Market Association, and the Historic Lewes Farmers Market. We have also created the document, [Communicating Your Farm's COVID-19 Practices to Customers](#) to help you clearly communicate your COVID-19 safety protocols to your customers. It contains guidelines on what and how to communicate to your customers, examples of website pages and messages farmers have sent out, and a template for emailing or posting your farm's COVID-19 response.

We're learning that there is nothing like a pandemic to drive home the importance of a robust, regional food system and the healthy, safe, local food such a system can dish up. Together with the Maryland Farmers Market Association, Metropolitan Washington Council of Governments, and Delmarva Grown, we've built the [Find a Farmer or](#)

[Market Directory Map](#) to help consumers connect with farmers and markets where they can stock up on safe, fresh food. [Fill out this form to get your farm on the map today.](#)

The National Young Farmers Coalition has put together a wonderful document outlining the features and prices of direct sales software systems for farmers. [View it here.](#)

Several organizations are offering relief funds for farmers. [American Farmland Trust's Farmer Relief Fund](#) will award farmers with cash grants of up to \$1,000 each. Eligible applicants include any small and mid-size direct-market producers. These are defined as producers with annual gross revenue of between \$10,000 and \$1 million from sales at farmers markets and/or direct sales to restaurants, caterers, schools, stores, or makers who use farm products as inputs.

[FACT Emergency Mini Grants for Livestock and Poultry Farmers](#) will award \$500 on a rolling basis until funding is depleted. Eligible applicants own or are employed by a farm that raises livestock (ruminants, swine) and/or poultry and express a commitment to raising their animals using humane management practices. Farmers can request mini-grants for materials, services, or equipment that would help them transition

to an online or alternative sales strategy (e.g. home delivery, on-farm sales), or for other projects that would help their farm business to maintain sales during this crisis.

Eligible farms and rural businesses can apply for loans up to \$3,000 in working capital and up to \$10,000 for equipment purchases at low interest rates with flexible terms from the [MARBIDCO Pandemic Adjustment Loan Fund Program](#). Loan repayments will be interest only for five months followed by payments for 12 to 36 months with a rate of 4.75%. Borrowers who make all their payments will receive a 10% grant back (of the original amount) at the end of the loan term. Application deadline is May 31.

Not every farm business produces food. Agritourism establishments are some of the hardest hit. You may be eligible for a [Small Business Administration Disaster Loan](#).

Future Harvest CASA and other groups are compiling additional resources for farmers and producers. Please visit [Future Harvest CASA's website](#) for up-to-date information.

Stay safe out there! Thank you for your work; our communities need healthy and nutritious food now more than ever!

# Taking Grazing Up a Level

by Austin Unruh, Crow and Berry Land Management

As I write, the whole world is wrapped up in a pandemic the likes of which few alive have seen. In a time when it can be hard to look away from the news, I find it helpful to step back and reflect, to take a look at the big picture, and clarify what my most meaningful work is.

While the recent stock market plummet from an all-time peak is particularly painful for many, human history overflows with stories of alternating boom and bust. Since the humble beginnings of agriculture, the cultivation of our food has led to feasts and famines as we've created a living from the sweat of our brow.

Feasts when rains were gentle and locusts far away, famines when the rains never came, or disease overtook a crop. Yet always, the cultivation of the land has caused degradation of our fields and soils. The plow, and more recently herbicides, have always invited our best soils to muddy up the nearest swimming-hole, while leaving denuded landscapes where neither bird nor butterfly could live.

If you read this newsletter, it's because you are part of the solution. You know how grazing, with its deep roots and perennial cover, is a powerful way to restore our land and water, while yielding the most wholesome foods for our families and customers in the process. You read this because you are working towards a healthier future.

As we all know, not all grazing is equal. There is a progression in how grazing is done.

The most simple form of grazing would be a single pasture where livestock are allowed permanent access. This already is better in many ways than the plow, since we have perennial cover, and it yields grass-fed meats of higher quality than those produced in the feedlot. Incomplete as we know single cell grazing is, we're moving in the right direction.

The level up from this is thoughtful adaptive grazing, whereby the grazier pays close attention to the needs of their forages and livestock, moving stock accordingly. This progression from single-cell grazing to adaptive grazing has been made much easier in the last decades by new developments, including portable fencing and good educators.

Upgrading from single-cell to adaptive grazing improves carrying capacity, lowers costs, and sequesters tons of carbon on farms throughout the world.

Now, a growing number of people are starting to envision the next progression of grazing. They see an opportunity to level-up the grazing game, literally. To take grazing practices to the next level, we'll make use of that neglected, open piece of solar-energy-converting real estate 10-100 feet above our heads: Trees.

Thoughtfully chosen, well-designed, high-yielding tree systems will lead that (r)evolution by providing shade, shelter, fodder, and nutrients to our farms, while the green grass grows all around.

Just as the last evolution of grazing brought about more vibrant ecosystems, this 3D-grazing evolution will fast-track regeneration, as we sequester tons of carbon, create niches for all manner of birds and butterflies, and deepen our topsoil, all while creating the conditions for healthier livestock, higher yields, and stronger bottom lines.

These are tall claims, I know, so I'll need to back them up. In the next several articles of this series, I'll unpack what thoughtful silvopasture looks like, and how it can fit into your grazing system. I'll aim to answer the big questions, like, "What can these trees do for me?" and "If it's so great, why don't we see it all around us right now?"

In the meantime, I trust that the regenerative grazing community will continue strong, pandemic or not, as each person pursues the hard but rewarding work of creating healthier, more resilient farms and communities.

(Make sure to check out future editions of the Mountains-to-Bay Grazing Alliance newsletter for Austin's next article in this series.)



AUSTIN UNRUH



# Social Distancing and Pastured Livestock

by Jacob Gilley, American Farmland Trust

During these turbulent times, one cannot go a single day without hearing the term social distancing. When visiting essential businesses like your local feed store, signs and instructions from the Centers for Disease Control (CDC) recommend maintaining six feet between others.

Though used in a slightly different context, perhaps our pastured livestock could use a bit more social distancing and space as we plan out our grazing this spring.

Here in Virginia, our spring has started off warm with adequate soil moisture, and pastures are off to the races converting solar energy into plant growth and ultimately forage for our livestock to consume.

However, as I drive the countryside, I cannot help but notice the differences between forage availability from one operation's pasture to the next. After making this observation, I then ask myself, "Why is this?"

I'm sure most of us have seen and read the research and publications from our local extension specialist discussing the benefits of not turning livestock onto pasture too soon in the spring as this can have a negative impact on the overall forage growth for the rest of the growing season.

The recommendations go something like this: Continue with harvested forage supplementation until pastures, other than the sacrifice pasture, have at least seven to eight inches of forage growth. Then, turn livestock out onto those lush pastures with speedy rotations so that livestock only consume the tops of the grass, which allows the forage to remain vegetative and continue with the solar conversion process.

Taking this into consideration, I would say there are three reasons why I could be seeing these drastic pasture observation differences. The first and most desired reason would be that I'm just catching a glimpse of an operation's sacrifice pasture and that they have several other lush and growing pastures out of sight in preparation for livestock turnout.

Another reason could be that the pasture has an imbalance in soil fertility and therefore the

grass isn't growing at comparative levels of a neighboring field.

The last and final reason that I'd like to highlight could be the need for further social distancing of livestock.

Could there be too many animals on too few acres that would benefit from having additional space? Though the reasons for livestock to distance are different from CDC recommendations, I'd dare say that many livestock operators could use the current rules as a reminder/model to not over-graze.

Hopefully, the number of animals grazing is known and, therefore, using some grazing math, an estimate of required pasture acreages can be determined to prevent overgrazing. In some cases, total acreage contained within a farm or fenced boundary may be known but possibly includes barnyards, woodlots, streams, and ponds. However, as graziers, we need to know and focus on the open land available to produce forage.

Another method of determining appropriate stocking rate could be by starting with known grazeable acres and culling or purchasing animals to balance the forage supply available.

In today's world of technology, producers have several free tools available to help with determining grazeable acreage along with tracking stocking rates and pasture rotations. Through "The Sustainable Grazing Project," coordinated by American Farmland Trust, livestock producers have been using two apps to help overcome some of these challenges and to ensure they're optimizing forage production and ultimately the profitability of their grazing operations.

A free app called [GPS Fields Area Measure](#) can be easily downloaded to a smart phone and used to determine distances and acreages of hay, crop, and pasture fields. Producers simply select manual measure within the map and click around to create a boundary on the satellite-generated map for a desired field.

This map will provide the acreage within the boundary and the map can be saved in the app to be referenced later. If a producer isn't comfortable with this method, the Global

Positioning System (GPS) feature can be used. To create a new map, the producer would click the GPS button in the app and then begin walking or riding around the border of the field. Once the producer and phone arrive back to the starting position, the map will be created. This app is user friendly even for those that don't consider themselves savvy with technology.

Lastly, the maps can be exported out of the app as a KML file type. These KML files can also be uploaded and used in the second app that "The Sustainable Grazing Project" is using, called Maia Grazing.

[Maia Grazing](#) is a valuable software that provides producers a tool to help ensure livestock have adequate grazeable acreage and can maintain an appropriate "social distance." Maia has both free (LITE) and paid (PRO) versions. Through our project, we have found the LITE version to be an excellent place for interested graziers to get their feet wet with improved mapping and grazing records.

As previously mentioned, producers can either upload KML files into Maia to create pastures or they can use a computer to create fields with just a few clicks. Once pastures are developed in the program, producers can create different herds and can track grazing records on several different types of livestock such as cattle, sheep, goats, and others.

This program not only provides a live inventory of where an operation's livestock are located, but it also provides excellent analytics such as estimated forage consumed, number of days a pasture has been grazed, and the number of days since it has been grazed—also known as rest. Producers can track field amendments, animal vaccination history, and feed supplements along with many other actions through features in Maia.

Knowledge is power and having this information is invaluable to producers throughout the country as we try to ensure we have adequate forage available for our livestock. Ensuring we have appropriate "social distancing" of our animals to prevent overgrazing and overfeeding of supplemental feeds should help us all be more sustainable during these challenging times!

# Management Tips to Harvest High-Quality Winter Forage

Article adapted from information provided by Tom Kilcer, certified crop adviser in Kinderhook, N.Y.

In most of our region, the warm temperatures have kickstarted the winter forage. This crop can give you the earliest and the highest quality forage for your livestock. Now is the time to add nitrogen and sulfur, which can save you on protein supplements by allowing you to harvest high-protein forage.

Yield potential was set last fall, depending on planting date and available nitrogen. These two factors generate the number of fall tillers that help set the yield potential for the following spring.

While planting date is the most important factor, there is still potential for economical yields so long as the stand came through winter.

**Provide sulfur for more protein.** Sulfur has long been an overlooked plant nutrient. Prior to the Clean Air Act, our sulfur came in our rain. Sulfur is critical for protein formation and should be included with any nitrogen application to winter forage. For example, adding extra nitrogen—115 pounds—without sulfur only provided 12% crude protein. Adding a lesser amount of nitrogen with sulfur provided 17% crude protein.

For a field that did not get manure last fall (a major on-farm sulfur source) an effective ratio is roughly one pound of sulfur for every 10 pounds of nitrogen. This is good for all cool-season grasses in addition to winter forage grains, such as triticale.

Sulfur is also critical for corn and especially sorghum, which can produce much higher protein in the forage.

**Increase nitrogen application.** Research has shown that even if you immediately incorporated manure the previous fall before planting, an application of spring nitrogen is still needed.

In one study, spring fertilizer application didn't increase the spring yield of triticale on manured ground but it did raise the crude protein from 9% to more than 19%, which can potentially save money on purchased protein.

Many farms apply between 75 and 100 pounds



of nitrogen an acre in spring. Even if you applied manure prior to planting in the fall, it is suggested increase this to 125 pounds an acre to boost forage protein and save on purchased protein. Remember, a three-ton dry matter yield at flag leaf stage will remove 192 pounds of nitrogen at 20% crude protein. What is not used by the winter forage will still be used by the following crop.

One caution, don't try this higher rate on rye. Rye has limited tillering and produces a tall but thinner stand. It is very prone to lodging when more than 50 pounds of nitrogen an acre are applied.

Triticale is only two-thirds the height of rye and is resistant to lodging. Several university trials have found that triticale yields 35% higher than rye because of the higher tiller density.

**Add an antivolatilization agent.** It is highly recommended to add an antivolatilization agent in the spring. This will inhibit the urease enzyme from splitting the urea into ammonia that could be lost. Trials have found that urea loss in fields treated with an antivolatilization agent was 63% less than in fields that were untreated. The antivolatilization compound increases the chance of full return on your fertilizer investment.

**Know when to harvest.** For those new to growing winter forage, it is ideal to harvest at the flag leaf stage (stage 9) for optimum quality. Stage 8 does not have higher quality than stage 9, and you can get a substantial yield drag from harvesting too soon.

If temperatures are warmer than normal, push to harvest the forage at the flag leaf stage. Conversely, if it is at stage 8 and there is a week of rain forecast, get it cut so you have quality forage.

## Attention Maryland Farmers: Federal Funding for Grazing Available

The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) announced last week that it will contribute more than \$770,000 from the Regional Conservation Partnership Program to a grazing-focused project in Maryland led by the Chesapeake Bay Foundation (CBF). NRCS funding and partner contributions, totaling more than \$1.5 million, will increase adoption of rotational grazing systems and complementary practices like livestock stream exclusion, off-stream watering, and forested buffers in Washington, Frederick, Carroll, Montgomery, and Baltimore counties. These counties are home to the highest concentration of dairy and livestock operations within Maryland.

This project is leveraging the National Fish and Wildlife Foundation (NFWF) grant to CBF focused on promoting grazing via the multi-state Mountains-to-Bay (M2B) Grazing Alliance.

Partners in the project include Future Harvest-Chesapeake Alliance for Sustainable Agriculture and the Maryland Department of Agriculture. In addition, through an existing partnership with CBF, WGL Energy and Sterling Planet are providing funding to implement practices that have dual benefits of reducing water pollution and greenhouse gases.

With this funding, we have a goal of converting at least 600 acres of cropland to pasture and rotational grazing, and planting 75 acres of riparian forested buffers. It is estimated that this will result in annual pollution reductions of roughly 10,000 pounds of nitrogen and more than 1,300 pounds of phosphorus, and reduce greenhouse gas emissions by roughly 500 metric tons annually. Stay tuned for information on sign-ups on the M2B web page ([www.m2balliance.org](http://www.m2balliance.org)) and in this newsletter.

For more information, you can contact Rob Schnabel ([rschnabel@cbf.org](mailto:rschnabel@cbf.org)) or Michael Heller ([mheller@cbf.org](mailto:mheller@cbf.org)).

# Virginia Farmers Counting on Sheep to Benefit Soil, Bottom Line

by Whitney Pipkin, *Chesapeake Bay Journal*

When Mike Sands moved to Rappahannock County, Virginia, to take over a family farm, he decided to raise the animals he knew best—sheep—despite their reputation for being a little difficult to manage.

A previous career in agricultural research with a specialty in small grazing animals had often taken him overseas, where raising lambs and goats for meat is more common. That experience taught Sands that he could turn a few dozen sheep into a budding business more quickly and with less upfront funding than he could by starting with cows, which he later added.

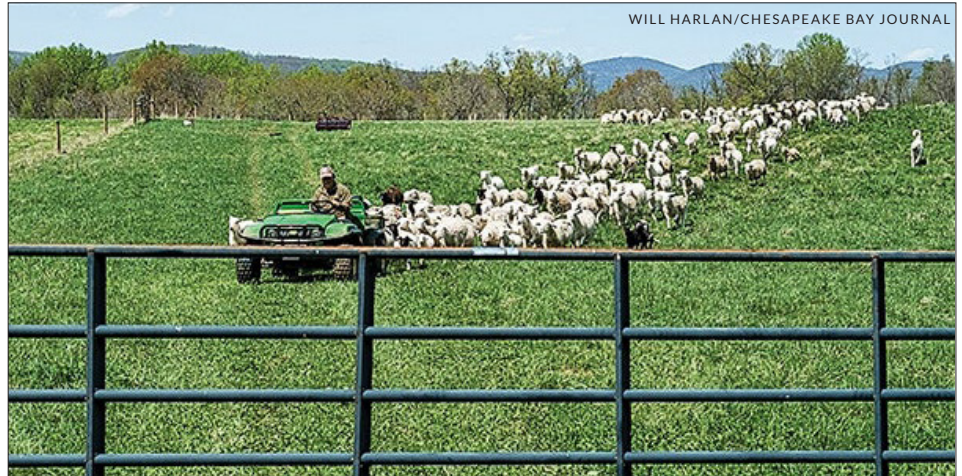
He's not the only one testing the multi-species waters.

Though cattle are still king among livestock operations in the United States, more farmers are adding smaller animals to the mix to make the most of their pastures. When grazed together or consecutively, sheep and cows tend to eat different parts of the grass and reduce the number of parasites that could infect the other species. If well managed, often through rotational grazing, they can also help farmers make more money off the same amount of land.

"The focus now is on land management," said Sands, who previously worked for a decade as managing director at the organic farming-focused Rodale Institute in Pennsylvania. "People used to be cattle people, sheep people, hog people. Now, you'll find people with more than one iron in the fire who say, 'I'm a grass farmer.'"

Michael Heller, manager of the Chesapeake Bay Foundation's Clagett Farm in Upper Marlboro, Maryland, said the emerging trend follows the growth of grazing operations in general in the Bay watershed. The more farmers embrace the use of animals to improve soil health and water quality, the more they're willing to try new approaches.

"There's greater interest in grazing than I've seen in the 35 years that I've been in the grazing community," Heller said. "This year, we'll probably have a dozen farm field days on grazing, whereas, five years ago, there were a couple."



Mike Sands leads his flock of sheep to a new pasture.

Heller said he added sheep to his cattle-grazing operation a few years ago because customers kept asking about grass-fed lamb.

"I resisted for a long time, because a lot of people who used to raise sheep got out of it and said, 'Oh, sheep are terrible. They do nothing but die,'" he said, noting the parasites that can plague flocks. "Sheep do take a little more work, but I've come to really enjoy them."

For beginning farmers, it can also cost far less to enter the field with sheep than with cattle. The smaller animals not only cost less but also have multiple births, making it possible to double the size of a flock in a couple of years. Sands said that allows new farmers who may be struggling with startup costs to get to a commercial scale more rapidly without a lot of debt.

Heller echoed the remarks of Sands and other farmers who manage grazers: Sheep and lambs, when added to a cattle or other livestock operation, can bring extra income into the farm without requiring additional acreage. Generally, they say, an operation can add one ewe for every cow without needing more land because of the complementary way in which the animals graze.

Cows tend to eat taller grasses while sheep prefer shorter forbs like the aptly nicknamed lamb's quarters. Together, they can take better advantage of the pasture while adding their own fertilizer to the soil to promote regrowth.

The technique also allows farmers to harness the soil and water quality benefits of keeping the land in perennial pasture. Because managed grazing also reduces the amount of sediment and nutrients washing into streams, the state-federal Chesapeake Bay Program recognizes it as a practice worth adopting.

Farmers say that grazing a mixture of animals together can also help curb the number of parasites impacting each species. If a cow eats a parasite that only impacts a sheep, the parasite will die in the process, and vice versa. Rotating the animals through fields at a regular clip can also help cut back the number of parasites that flourish overall.

Sands said multi-species grazing and faster rotations are better ways to manage parasites such as the Barber's pole worm, which can devastate a flock of sheep and has developed some resistance to medication.

Bill Bryan shared many of the same insights at a recent farming conference, reflecting on an experiment he conducted as a researcher at West Virginia University in the early 2000s. At the time, managing spring-born lambs organically—without the help of parasite medicines—was uncommon.

"Some of my sheep friends in West Virginia said that, in three years, they'd all be dead," Bryan said. "But, even with the animals on grass 365 days a year, our method was successful. They didn't die."

(story continues on next page)



(continued from previous page)

Bryan attributed his success to quick rotations that, during peak parasite times, moved sheep and lambs through the fields faster than the six-day period it took a parasite to fully form.

“Grazing management is such a glorious, everyday decision-making process that mostly deals with your head, with animals, and the soils,” he said. “There’s not much technology besides electric fencing.”

A farmer who’s used to managing other livestock would have to make adjustments to begin grazing sheep or goats. On the downside, the smaller animals require fencing with more strands, which can be more expensive.

But sheep and goats require less drinking water than cows, especially at the peak of summer. That means smaller operations can sometimes use buckets in lieu of expensive watering systems.

Also—and here’s the kicker for water quality—sheep don’t like to stand in water. They don’t even like to be near moving water, such as a stream running through the farm, operators say.

Unlike cows, which must be fenced away from streams to prevent them from cooling off and defecating directly into them, a stubborn sheep can hardly be forced across a water crossing, let alone be found standing in it.

“I don’t encourage my cows to stand in the streams either, but that’s a big behavioral difference,” said Heller, who installed stream fencing long before adding sheep to the operation.

As an illustration of sheep’s distaste for crossing water, farmers often mention Mike Peterson, who used to run a multi-species operation in Rappahannock County before moving to run a sustainable farm in New York.

Peterson sometimes grazed his animals as a “flerd”—a flock of sheep with a herd of cattle—in a rotation pattern that meant crossing the Rappahannock River where a permanent crossing had been built. The cows went right across; the sheep refused.

But, Sands said, most farmers raising sheep in pasture-based rotations are already concerned about protecting water quality as part of a more holistic approach.

“If you’re getting into livestock now, you’re in a different culture,” Sands said. “The whole

issue of keeping animals out of streams and fencing is not a cost issue, it’s a culture issue.”

Some research indicates that more farmers are considering sheep as lamb meat grows in popularity in the United States—especially around religious holidays in the spring.

The American Sheep Industry Association reported in 2019 that sheep inventory had seen a second consecutive year of expansion in the United States in 2016, the most recent year recorded by the National Agricultural Statistical Service. Of the growing regions, the mid-Atlantic region ranked second behind Texas for the highest rate of growth in sheep inventory at a 4% increase between 2014 and 2016.

For Sands, the main driver of his sheep and lamb production is local demand for the meat, which he sells directly to customers from a self-service retail site on the farm and at a local farmers market.

For those at the market who don’t think they like lamb, Sands sways them by cooking up lamb sliders for sale with Middle Eastern spices, feta cheese, and mint. “We’ve been developing the market,” Sands said. “Now, I’ve got more demand for lamb than I can satisfy.”

## Crabgrass for Damaged Pastures

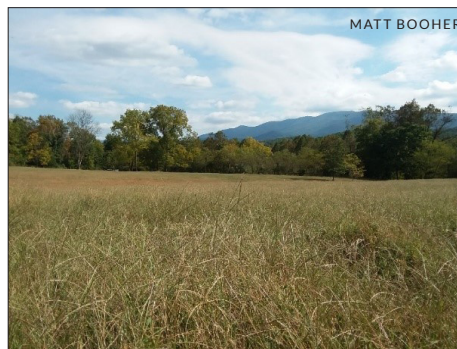
by Matt Booher, Virginia Cooperative Extension

The winter of 2018-19 in Virginia was the muddiest, sloppiest, wettest one that anyone could remember. Heading into spring, many livestock producers were looking for a forage they could broadcast into their damaged pastures, travel lanes, and feeding areas to provide some cover and compete with summer annual weeds.

In most people’s minds the wet winter pretty much guaranteed that we would have a whopping summer drought (they turned out to be right of course), and so they were also looking for a forage that would provide some summer grazing.

Could crabgrass provide a silver bullet solution? While many livestock graze on it where it grows wild, there is not widespread experience and use of forage crabgrass in many of the areas for which it is well-adapted.

A warm-season annual grass, crabgrass can grow quickly to shade out annual weeds in



Crabgrass being managed to go to seed.

addition to providing palatable and nutritious summer feed. It is heat tolerant, and regrows abundantly after grazing, if moderate moisture and fertility is available.

While wild populations of crabgrass possess all of these characteristics, limited but successful selections of naturalized crabgrass over the years have resulted in several improved varieties that offer greater yield and different maturity options.

We wanted to get a feel for how well an improved variety of crabgrass simply broadcast into damaged pastures would live up to its potential to provide feed, cover, and to smother weeds.

In spring of 2019 the Augusta County office of Virginia Cooperative Extension offered a crabgrass seed pool in an effort to gather information across a wide variety of environments and management. Two improved forage varieties were offered: ‘Quick-N-Big®’ and ‘Dal’s Big River®’—both from Dalrymple Farm in Thomas, Oklahoma.

Cattle and sheep producers from in and around Virginia’s Shenandoah Valley participated in the seed pool, resulting in a total of about 250 acres overseeded on 35 farms. At the end of the season they reported their experiences.

(story continues on next page)

(story continued from previous page)

The majority of farmers in the pool broadcast seed directly onto denuded pastures during the period from mid-April through May. About half of them used a pasture drag or other implement to incorporate the seed and smooth up the ground afterward.

The recommended seeding rate was five pounds of pure live seed per acre, and most participants said they stuck close to that. While a five-pound rate is a little heavier than what is typically recommended, most of the farmers had a goal of smothering out weeds, so a thicker cover was desirable.

We had enough rain in early summer that moisture should not have been a factor in establishment. By late-summer, many areas were under full drought conditions, which surely played a role in the final impression participants walked away with.

**What we learned:** There was a remarkably even split in those reporting good performance from their crabgrass and those who said it didn't do squat. Why the difference?

Crabgrass seed is not cheap, so its no surprise that people felt pretty strongly in one direction or the other. However, it may also be that in the world of annual forages it is usually either boom or bust. I've experienced this with field crops like millet or sudangrass, but

even more so when seeding into established pastures with annuals like Korean lespedeza or crabgrass.

One factor at play is establishment, and assuming there is usually enough rain to get germination, my first suspect in any establishment failure with small-seeded annuals is usually seeding depth.

Crabgrass has a very small seed that needs to remain at about 1/2-inch deep or less to establish successfully. I have a hunch that those farmers that harrowed aggressively after seeding probably buried a lot of their seed too deeply; those that just broadcast seed on the surface and let Mother Nature incorporate it probably got it just right.

Once seedlings establish, the main cause of failure with annuals seeded into pasture is often competition from an established sod or from early-germinating weed species that get a jump on whatever you've planted. From my conversations with farmers in the seed pool and my observations in the field, this seemed to be the top reason why some of the crabgrass seedings failed.

Prior to last year, I didn't have a full appreciation for just how resilient an established pasture sod can be.

As previously mentioned, denuded, muddy pastures were pugged and churned and later hardened like concrete—areas in which we were certain no plant could survive—but

many of those pastures bounced back with orchardgrass, fescue, and clover like nothing ever happened.

Of course there was some nuance, but the point is not to underestimate the competitiveness of your existing pasture. If you plan to give thin or damaged pastures a boost with annual forages, I would advise to make sure it is truly a sparse stand or bare area beyond just superficial appearances. Knowing the condition of pastures prior to extreme weather will be an important guide in planning for any repair strategies.

As for the seedings that worked, people reported that their crabgrass came up quickly, shaded out the pigweed and cocklebur that grew unchecked in other areas, and supplied invaluable forage during our summer drought.

I've been involved in seeding annual forages like crabgrass and annual lespedeza before, and its worth noting that the seed costs are usually somewhere around \$20-40 per acre, so it can be a relatively expensive feed insurance policy. But you can manage it to go to seed so it will volunteer in future years.

All things considered, crabgrass can be an effective and easy way to enhance your grazing system. But you have to pay attention to agronomy basics like seed placement and site selection—in other words crabgrass may be a silver bullet, but you still have to keep your eyes open and aim when you pull the trigger.



Crabgrass seeded around winter feeding areas can help smother summer annual weeds.



# Training the Next Generation, Sustaining the Bay

by Aaron de Long, PASA Farming

Agriculture is a major industry in Pennsylvania and dairy is a major industry in the state's agriculture. Even with the downturn in the dairy industry over the last several years, dairy remains the top agricultural sector in the state and has a significant footprint when it comes to the Chesapeake Bay.

As we all look upstream for solutions to the preservation of our collective resource, dairy farms, and how they look in years to come, will play an important role.

Skillfully-grazed lands can be a winning strategy for dairy farmers, lowering feed costs and providing access to value-added markets, among other attributes. They can also be a winning strategy for water quality, but grazing skillfully is not a simple task.

In an era when many dairy farmers are selling out or retiring, many agricultural markets are stressed, and farmland is disappearing, many new, would-be dairy farmers face a number of daunting challenges.

Learning to manage cows and a business, while often incurring significant debt, are just a couple of these challenges; learning to manage pasture in a skillful, regenerative manner is another altogether.

To the few who are brave enough to try and take on these multiple goals of feeding us all, while trying to preserve, protect, and enrich our natural resources, how can they be supported and given the skills they need to succeed? One answer might be through apprenticeship.

A centuries-old tradition in other cultures, apprenticeship in the United States is a relatively new phenomenon, and has been more common in trades such as plumbing and carpentry, as compared to farming.

In 2010, however, a group of dairy farmers in Wisconsin adapted the formal apprenticeship model to train aspiring dairy management positions on their mid-size organic dairies,



Journey Dairy Grazer, Joseph Moyer, displays his Journey Dairy Grazer certificate, after completing the Dairy Grazing Apprenticeship in 2019. Alongside Joseph is his father, Brian, who served as Joseph's mentor in the program.

creating a structured transfer of the core skills needed to effectively manage rotationally-grazed cows and earn a living in the process.

The model, called simply Dairy Grazing Apprenticeship, or 'DGA', was registered with the federal Department of Labor, and imported to Pennsylvania in 2016 by PASA, and has become a staple new farmer training program within the organization's work.

To date, fifteen apprentices have enrolled in the program, one has attained Journey Dairy Grazer status, and four remain active.

The rigorous training is a minimum of two years, and, in a challenging dairy economy, is not for the faint of heart. Apprentices engaged in the program have begun cheese-making enterprises, diversified into grazing other species alongside cows, have worked to develop silvopasture within their farm operations, and have, in some cases, even gone on to enter the corporate side of the

dairy industry, working for positive change.

Farming is a difficult enterprise, but is rewarding in a way that is completely unique to other pursuits. To those who have the calling, the best guide can only be one who has traveled the path before and can point out the pitfalls along the way. In the end, we all need food and water, and so we all need farmers who can care for both. Apprenticeship is one more tool in the box towards developing such professionals.

PASA is committed to continuing DGA into the future, across as wide an area as we are able to effectively administer. Experienced graziers and aspiring graziers alike are invited to [visit the PASA website](#) to learn more about the DGA program in the region and how to take part.

Interested parties can also contact the lead DGA coordinator for PASA in the region, Aaron de Long, by phone at (484) 680-3778 or email at [aaron@pasafarming.org](mailto:aaron@pasafarming.org).



# Grazing Conference Dives Deep into Soil

by Rick Hemphill, courtesy of Lancaster Farming

“From the agriculture aspect you are in the front lines and you are the professionals,” said Dr. Guy Jodarski, veterinarian for Organic Valley CROPP Cooperative, speaking to over 90 livestock producers at the Regional Grazing Conference on February 19 at the Washington County Agricultural Education Center.

“Ninety percent of the cows that I saw as a veterinarian were the result of feeding too much grain,” Jodarski said. “Nutrition for ruminants should consist of a high forage diet that is 80% or more forage with grain limited to not more than 1% of the animal’s body weight. We can make a lot of milk with half that much grain if you have the high-quality forage. If these are in the right proportion you have very little need of a veterinarian.”

There is no one perfect mix of pasture. Jodarski said that a diverse mix of stems, legumes, grasses, and forages is critical.

“In an organic system you can’t apply nitrogen so you have to grow it,” Jodarski said. “We look for the protein content of our forages and around 20% is a good number. However, protein is not protein. It is the nitrogen that we measure.”

He looks for protein, fiber, and energy in a forage test.

“The soil is the foundation of this,” Jodarski explained. “This idea that we can correct the soil is not a valid idea. We can improve the soil using biology, and although we have always stressed the chemical side, we are now looking at the biology of the soil. The soil is not an inert substance. It is a living breathing community. We need to do everything we can to build up that diversity and build up that life.”

Parasites should not be a problem with rotational grazing.

“It is not about the worm or the wormer, it is about how you manage the animals,” Jodarski said. “I prefer prevention rather than having to treat, and we need to rethink the way we have problems.”



Mark Kopecky, soil ecologist, discusses soil structure and biodiversity required in rotational grazing pastures at the February 2020 regional grazing conference.

He explained that genetic management of livestock is a good way to deal with parasites, suggesting getting rid of animals that consistently have worms.

Jodarski emphasized that farmers need to take care of their soil and land in order to have good operations.

“As farmers, you are taking care of the earth and you are doing the most important thing,” Jodarski said. “It is about going out on that land and really taking it in and feeling what you are doing. The earth will tell you if you are doing something wrong.”

While Jodarski focused on the veterinarian approach, Mark Kopecky, a soil ecologist, spoke about soil science.

“We are talking about the characteristics of the soil that allow it to produce vibrant and good quality feed and food for us,” Kopecky said. “It has to have adequate levels of fertility and allow plants to grow in a healthy way. In order to produce the quality and quantity of feed to maintain healthy animals, it has to have the biological components in it to function. Plants are where everything in the soil starts and without plants nothing else happens. In trying to get all of these physical, chemical, and biologicals to work together in the best ways possible boils down to lots and

lots of species of plants and we are going to rely on as many natural cycles as possible to get there.”

Kopecky said that the structure of soil responds to the management practices.

“We may not be able to affect the amount of sand and clay but we can modify the structure of the soil,” he said. “Pastures that mimic the structure of the native prairie is what we are looking for. The soil has the consistency of cottage cheese or homemade bread with these nice little clusters of bread with pores between them. This allows the plants to access moisture and the pore space, or macro pores, are the air exchange system of the soil.”

Oxygen is important for healthy soil, as well. “Soil structure is a biological process just as aggregates in the soil are a biological process,” Kopecky explained. “Plant roots do a wonderful job of rebuilding the soil and then other things can happen in the soil with bacteria and fungi which further help repair the soil. Almost all of the organic matter in the soil originates underground. All the diversity above ground is important but it is the roots that do most of the work.”

Each plant brings its own benefits to the soil. Each species has its own sugars, proteins, vitamins, and enzymes. Kopecky said that plants are designed to live in a community.

He explained that rotational grazing gets animals off the pasture before it is damaged.

“This is for a physical cushion to keep the soil from getting compacted and the residue shades the soil,” Kopecky said. “Shading the soil is very important to protect the organic activity in the top two inches of soil, which will affect how well the plants can access the available fertility although plants that are stressed produce better food than plants that are not stressed.”

This was the fourth Regional Grazing Conference and was sponsored by the Chesapeake Bay Foundation, Mountains-to-Bay Grazing Alliance, Future Harvest, and Organic Valley.

## UPCOMING EVENTS

### Webinar: Strategies for Managing Financial Risk during COVID-19

Thursday, April 23

12:00–1:30 p.m.

This webinar will help farmers identify, plan for, and manage additional financial challenges they may experience during the 2020 farming season. We will identify strategies for dealing with potential loss of revenue as a result of closed channels, cost implications of additional safety procedures, and planning for uncertainties. Presenter Tope Fajingbesi is a certified Public Accountant (CPA), co-owner of a small diversified vegetable farm in

Montgomery County, and a lecturer and advisor for agricultural business management at the Institute of Applied Agriculture at the University of Maryland College Park. Zoom link will be emailed to registered participants. [Register by clicking here.](#)

### Webinar: Grazing 101, Sustainable Pasture Management for Livestock

Learn how to sustainably manage beef cattle, sheep, and meat goats on pasture, as well as understand the variables concerning grazing systems, paddocks, fencing, and forage quality. In this self-paced course, you will use a combination of readings, videos, and handouts to learn the basics of raising

livestock on pasture. Registration is free through Thursday, April 30. [Sign up now at PennState Extension's website.](#)

### Pasture-finished Beef Educational Workshops

Tuesday, July 7, Wytheville, VA  
 Wednesday, July 8, Charlottesville, VA  
 Thursday, July 9, Winchester, VA  
 8:30 a.m.–3:00 p.m.

Specialists in management and economics of forage-finished beef production will cover a number of topics, including forage management, cattle selection, and marketing considerations. Register at [vaforages.org/events](http://vaforages.org/events). \$10 before June 29, \$20 after.

# Mountains-to-Bay Grazing Alliance



**Pennsylvania  
Grazing Lands  
Coalition**



**United States  
Department of  
Agriculture**

**Natural Resources Conservation Service**



**CHESAPEAKE BAY FOUNDATION**  
Saving a National Treasure



Funding for this newsletter is provided by the U.S. Environmental Protection Agency, Natural Resources Conservation Service, and PA Department of Environmental Protection through the National Fish and Wildlife Foundation's Innovative Nutrient and Sediment Reduction program.

This material in this newsletter is based on work supported by the U.S. Environmental Protection Agency (Assistance Agreement No. C896358101) and the National Fish and Wildlife Foundation's Chesapeake Bay Stewardship Fund, which promotes community-based efforts to develop conservation strategies to protect and restore the diverse natural resources of the Chesapeake Bay.

The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Government or the National Fish and Wildlife Foundation and its funding sources. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government, or the National Fish and Wildlife Foundation or its funding sources.

This material is based upon work supported by the Natural Resources Conservation Service, U.S. Department of Agriculture, under number NR183A750022C004. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture. USDA is an equal opportunity provider and employer.

**Mission Statement:** The Mountains-to-Bay Grazing Alliance networks organizations within the agricultural community to support and encourage wider adoption of rotational grazing and related conservation practices that benefit water quality, improve soil health, and boost farm economies.