# SUSTANABLE FARMADE MARKED FOR THE SUSTAINABLE FOLME 7 ISUE 2

# A BUG'S LIFE DISCOVER THE BIODIVERSITY ON YOUR FARM

PLUS COCCIDIOSIS REGENERATIVE 101 SUPPLY CHAIN CERTIFICATION



# **GET IN TOUCH**



We have come out of yet another hot summer in the northern hemisphere. With wildfires, continued drought, and durations of intense heat, the last season posed relentless challenges to farmers and ranchers across the

North American continent and Europe. On top of this, many businesses are facing problems due to inflation, supply chain delays, labor shortages, processing plant back-ups and more.

If extreme weather impacts you, get in touch. If you are facing processing plant delays and have alternate plants you want to work with, let us know. We want to help however we can, and that often starts with a simple conversation to see what your immediate needs are.

I am reminded daily of the resilience, fortitude, and strength of the farmers we serve.. When challenges present themselves, farmers and ranchers adapt. You may remember a blog, "Farming in the Shadow of Coronavirus", that we posted during the beginning of the COVID-19 pandemic. This blog is on the AGW website and although it was written almost two years ago, its lessons in planning and looking objectively at your own unique situation are more relevant than ever. Of course, it's easier said than done, and we must be realistic, balancing optimism and pragmatism going forward.

Certified Regenerative by AGW continues to pique the interest of producers and businesses from around the globe. With my marketing hat on, I know some of you might feel like it's yet another food trend to chase. But we're not just jumping on the 'regenerative bandwagon.' We've been working hard to develop this unique program since early 2017 to give farmers, ranchers and food businesses a real edge in the marketplace, as well as providing a practical management tool that monitors and measures real change on the ground. Get in touch if you'd like to learn more. (See pages 8-11.)

As we approach the end of 2022, look out for our end of year campaign, along with results from our 2022 Producer Survey. Whether or not you took the survey, you can always let us know how we're doing, what you need, and how we can do things better. We read every response and consider all suggested changes to our services and programming.

Lastly and most importantly, I hope you get to spend time with loved ones during the holiday season.

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# **SUPPLY CHAIN** CERTIFICATION



AGW's newest certification offering for processors and distributors

A new certification is available to distributors and further processors of AGW-certified products, providing independent assurance of supply chain integrity and transparency-and adding value and beneficial services to businesses.

"Given the number of high-profile instances of logo misuse and the general increase in 'greenwashing' in the sustainable products market space, we're excited to launch this new AGW certification for distributors and processors," says Caitlin Aguilar, AGW's Director of Quality. "This new certification will assure your customers that your business is applying the highest sourcing standardsindependently audited by a third party-and will demonstrate your commitment to transparency and integrity across your supply chain."

With a reputation as the home for the most meaningful and trusted food labels, AGW

### IN THE NEWS....

## **GREEN OPPORTUNITIES**

A Greener World is growing its team and is seeking multiple individuals to conduct audits on behalf of AGW's certification programs.

AGW is a globally impactful nonprofit that identifies, audits, certifies and promotes practical, sustainable farming systems by supporting farmers and ranchers and informing consumers.

For more information on career opportunities, visit agreenerworld.org/about/careers

### **ANTIBIOTICS ON NBC**

AGW's Emily Moose was interviewed by NBC's Noticias Telemundo Investiga for a news report on the use of antibiotics in the meat industry.

Moose discussed the misuse of antibiotics in industrial systems and the rise of antibiotic resistant disease in humans. Filming for the feature also took place at AGW-certified Chapel Hill Creamery in Chapel Hill, NC, and Weaver Street Market in Carrboro, NC, a retail outlet that sources AGW-certified products.

### **GRASSFED GROWTH**

New research suggests the grassfed beef market projects positive and steady growth in demand for grassfed beef.

According to a new report by global market analysts, Fairfield Market Research, the trajectory of the global grassfed beef market will continue to increase by almost 5% year-on-year, exceeding \$13.3 billion in revenue by 2025, driven primarily by concerns about antibiotic use in industrial systems and demand from the hospitality sector.

## **REGENERATIVE CHIPS**

by AGW corn.

certifications offer unparalleled value as a mark of verified sustainability practices. Along with a market-leading certification, food distributors and further processors can take advantage of the marketing, PR, labeling, and technical services offered as part of AGW's certification.

AGW defines a Distributor as "a facility that does not produce products but sells or distributes certified AGW product(s)." A Further Processor is defined as "a facility that processes, packages or labels a product that contains ingredient(s) currently certified by AGW or eligible for AGW certification."

AGW Standards for Distributors and Processors are available online for review. For more information about the certification and audit process and associated fees, get in touch at 1-800-373-8806 and info@agreenerworld.org.

Zack's Mighty is now producing the world's first tortilla chips made with Certified Regenerative

"We're proud to certify Zack's Mighty corn supply partner farms for their regenerative stewardship, says Katie Amos, AGW's Communications and Outreach Manager. "The trusted Certified Regenerative by AGW label will offer their customers assurance of regenerative farming practices and true transparency."

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# **IN THE NEWS...**



### CONSUMER IGNORANCE OVER LABELING

Consumers are hungry for reliable information about sustainability-but there is still a great deal of confusion about label claims.

This year's Food and Health Survey by the International Food Information Council (as reported by Food Business News), reveals "a sharp uptick in prioritization of environmental sustainability." According to the report 39% of American consumers said they regularly buy products labeled as 'natural'; 'clean ingredients' (27%), 'raised without antibiotics' (25%), 'no added hormones or steroids' (25%), and 'organic' (25%). Respondents also sought out non-GMO (23%), plant-based (15%), fair wage or fair trade (14%), and small carbon footprint/carbon neutral (13%)

and bioengineered/containing bioengineered ingredients at 7%.

"While this year's survey highlights a welcome increase in consumer concern about the impact of food choices, the fact that the majority still seek out the 'natural' label claim—which means absolutely nothing in terms of animal welfare or the environment-reveals there is still significant public confusion about label claims," says Katie Amos, AGW's Communications and Outreach Manager. "Trusted certifications and food labels will play an increasingly important role in consumer purchasing decisions."

Visit foodinsight.org

#### **STATE OF MIND**

**Two Certified** Animal Welfare Approved by AGW products came tops at this year's Mindful Awards. Hart Dairy won Milk Product of the Year, while AGN Roots won Protein Product of the Year for their whey protein powder.

The Mindful Awards recognize companies and products that "mindfully make waves in the everexpanding world of consumerpackaged goods." AGW is thrilled to work with such amazing companies, making products good for people, animals, and the environment.

Find out more at mindfulawards.com



### **TOP OF THE HILL**

Jen Hunter and Andrew Wear of AGW-certified Fernhill Farm in Somerset, UK, have won Sheep Farmer of the Year at the coveted Farmer's Weekly's Awards.

Andrew and Jen have created a sustainable farming enterprise with several income streams. An applicant for Certified Regenerative by AGW, the farm follows regenerative practices and does not use herbicides, fungicides or fertilizers. The Certified Animal Welfare Approved by AGW sheep enterprise consists of 750 breeding ewes and another 500 ewes in a share-farming agreement.

Fernhill's flock of lightweight Romney cross Shetland ewes are bred to thrive on the Mendip Hills as part of a grass-based rotational system with minimal input. Ewes are all rotationally grazed and are typically moved every three days, which allows the ground to recover.

"If you have the correct form of grazing, soil health will improve, grassland species will develop and you have greater diversity," says Andrew. Their approach, which helps lock moisture in the soil, paid dividends during last summer's drought: "We were regularly asked how come we had so much grass on our land!" High-quality wool is sold at a significant premium,

### **GOUDA NEWS**



Certified Animal Welfare Approved by AGW cheeses brought home a combined nine awards at the 39th annual American Cheese Society annual conference in Portland, OR.

Green Dirt Farm in Weston, MO won first place for Dirt Lover (open category); first place for Prairie Tomme (sheep's milk cheese aged over 60 days); second place for Fresh Plain (fresh rindless sheep's milk cheese aged 0 to 30 days); third place for Nettle Fresh (sheep cheese with flavor added

-100% sheep's milk). Harmony Fields in Bow, WA won second place for Fleecemaker [pictured left] (feta made from sheep, mixed, or other milks). Prairie Fruits Farm and Creamery in Champaign, IL brought home first place for Chevre Frais (fresh rindless goat's milk cheese aged O-30 Days) and another first place for Fleur de la Prairie (farmstead category aged less than 60 days-all milks).

Congratulations all!

### SOIL CARBON UPDATE



Scientists have applied a new research paradigm to estimate the potentials of soil organic carbon sequestration of different global grasslands.

Published in Science (Aug 2022), researchers from the Chinese Academy of Sciences and Colorado State University reviewed existing research on soil carbon sequestration in grasslands by applying the new paradigm of soil organic matter formation and persistence to estimate the potentials of soil organic carbon sequestration of global grasslands.

with fleeces achieving an average of £2/kg for standard wool and up to £20/kg for best quality wool, and Jen is actively working to develop the market for wool and natural textiles.

"What impressed me about Andrew and Jen was their passion for all elements of their business and the health of their farm," says independent judge, Liz Genever. "Plus, they were keen to share their knowledge with a range of people from farmers, consumers, trainee shearers to festival-goers."

#### **POSITIVE WELFARE**

AGW has been nominated to sit on the Management Committee for the European Cooperation in Science and Technology's cutting-edge LIFTING FARM ANIMAL LIVES (LIFT) initiative.

"LIFT focuses on updating traditional approaches to animal welfare by defining 'positive' animal welfare and the appropriate assessments and indicators at the farm level," says Wayne Copp, AGW's **Executive Director** Europe. "It's an honor to share AGW's experience of implementing standards and monitoring positive welfare outcomes at this high level."

The researchers found, for example, that 80% of European grasslands are below saturation of carbon storage, indicating unmet potential in carbon sequestration.

While continuous livestock grazing reduces plant cover, diversity and productivity, they found that improved grassland management can restore plant and microbial biodiversity, "leading to substantial carbon removal from the atmosphere thus contributing to climate change mitigation."

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Available FREE OF CHARGE to farmers, ranchers and food businesses in the AGW certification family.

For full details visit agreenerworld.org/farmer-services/labeling-support or call 800-373-8806



## Your donation creates an environmental legacy

A Greener World is a nonprofit whose work is made possible by donations from people like you. Because we are not dependent on certification fees, we can remain impartial in our auditing, resulting in unrivaled integrity and trust. Your donations help us stay independent. Will you partner with us to build a greener world by giving today?

Find out more at agreenerworld.org/donate

© Opinion RISING COSTS

Consumers need to understand the many challenges farmers now face, says Emily Baron Cadloff Fueling up a tractor is getting a lot more expensive. But the cost of fuel is about so much more than just topping off the tanks for tractors and machinery. It has ripple effects to every corner of the farm—and even farm-adjacent businesses.

Across the country, the average cost for diesel fuel, on which most farm equipment runs, is about \$5.70 per gallon. On the coasts, it's averaging \$6 a gallon, with prices a little lower through the Midwest. That means that farmers have had to adjust aspects of their business to compensate.

While farmers are shifting their routines, so are consumers. The average cost of gasoline across the US is around \$5 per gallon, and even more in certain states such as California, which is already affecting how much people spend on other goods. A recent study from the National Bureau of Economic Research found that shoppers typically have categories set up for how they spend their money: gas, groceries, household expenses and the like. When gas prices rise, consumers tend to overreact by downgrading to a lower grade of gasoline, halting unnecessary travel, and putting off purchases in other categories.

In June, President Joe Biden called for a suspension of the federal gas tax, collected by the federal government to pay for projects such as highways and transportation. Suspending the tax would save Americans 18 cents per gallon on



gasoline and 24 cents per gallon on diesel. Biden proposed suspending the tax for three months; what the White House is calling a "gas tax holiday." The proposal has been submitted to Congress but experts don't expect it to gain much traction.

One economist says summer might actually be the best time to top up fuel orders. In a release, Gregg Ibendahl of Kansas State University highlighted that fuel costs show some seasonality in their pricing, typically dropping in the winter and summer. Although those dips may be less pronounced this year, Ibendahl still recommends buying now.

With inflation's very direct impact on farm operations (including rising costs for fuel, processing, packing supplies, and just about everything else), many farmers are increasing product prices to help account for some of the added costs. Regardless of price increases or not, it's important for farms to clearly communicate the challenges they face with their customers, to increase understanding of the many factors that go in to producing the food we eat. Sustainable farming must also be economically viable, and shoppers that value these farming practices, and have the means, must use their food dollars to support.

Emily Baron Cadloff is a reporter with Modern Farmer, where a version of this article was previously published. Katie Amos introduces the new Certified Regenerative by AGW program —and how to apply Unless you've been hiding under a rock, you cannot have missed the growing coverage of 'regenerative farming' or 'regenerative agriculture' in the media. While not a new concept (after all, humans have been using 'regenerative' practices for thousands of years), 'regenerative' is the latest farming buzzword.

Here at A Greener World, we'd go so far as to say that the collection of practices described as regenerative could have huge potential to put the brakes on—and even reverse—many of the negative impacts of intensive agriculture. So, what exactly is regenerative?

#### What is regenerative?

The term 'regenerative agriculture' is generally used to refer to a range of sustainable stewardship practices, many of which have been used by indigenous and traditional agricultural communities for thousands of years, However, rising interest has led to wide and growing variation in how 'regenerative' is defined and practiced.

As commitments to adopt regenerative practices increase, so does the risk of misusing the claim to imply sustainability without delivering it also referred to as 'greenwashing.' Indeed, a number of regenerative programs and initiatives have sprung up across the world. Some highly considered and commendable; others vague and highly questionable. We're also now seeing 'regenerative' used across social media and the farming press, while a growing number of food manufacturers and retailers are co-opting the word.

If regenerative farming is ever to achieve its true potential—and to prevent regenerative from becoming yet another meaningless industry claim —we believe we must legally define, validate and certify that farming systems using the regenerative claim truly are regenerative. We must also ensure that any farm making a regenerative claim is progressing towards building healthy, biologically diverse soils that produce healthy food while enhancing the environment and the farmer's livelihood. Finally, regenerative certification programs must be accessible to farms and holdings of all sizes and shapes and backgrounds or we risk regenerative becoming another 'elite club' for a handful of farms producing artisan food for a well-off minority.

It's for these reasons that we launched the new Certified Regenerative by AGW label this summer. Certified Regenerative by AGW isn't something that we have hastily pulled off the shelf to jump on the 'regenerative bandwagon.' It is the culmination of more than four years of work across four continents to develop effective, appropriate and workable standards for all manner of farm operations.

#### **Certified Regenerative by AGW**

Certified Regenerative by AGW is unique in that it is the *only* third-party certification system that truly measures change by meeting producers where they are and partnering on a journey of measurable regeneration.

Certified Regenerative by AGW is the only regenerative agriculture program that audits in conjunction with a Regenerative Plan, ensuring site-specific, measurable progress. The program also stands alone in measuring change through soil, water and air, while also requiring regenerative practices in biodiversity, buildings, animal health and welfare, and assurances of key principles of social responsibility.

Unlike other labels, Certified Regenerative by

AGW is not a set of prescriptions or outcomes. It is a tool for measuring and managing the process of regeneration with continual improvement expectations until a state of ecological equilibrium is reached. Using data and observations gathered over years of certification, producers will be able to confidently quantify the positive impacts of their farming methods through reduced fossil fuel use, increased biodiversity, improved soil health and a range of other metrics.

We recognize the constant struggle to meet the ever-changing demands of a market that is disconnected from agriculture. One of AGW's goals in developing this program was to address sustainability in such a holistic context that farmers would effectively be ready for any new food fashion or sustainable buzzword—in other words, trend-proof.

If you're a farmer or rancher reading this magazine, the likelihood is that you're already using at least some regenerative practices. The Certified Regenerative by AGW logo is a way to show your customers that how you farm benefits the local ecosystem and community, their health and nutrition, animal welfare, and the planet.

We know farms and businesses pursue regenerative certification for a wide range of reasons. Some are proactively trying to meet the rapidly expanding market for products with proven environmental and social benefits. Some want to formalize a strategy to reach core business goals they may have had for years, but just need accountability in measuring, monitoring, and achieving them. Others may simply be responding to pressure from buyers or other stakeholders. Whatever the reason, AGW is glad to be a partner on each farm's regenerative journey.

The word regenerative is increasingly used across social media and the farming press, while a growing number of food businesses are coopting it

# **REGENERATIVE 101**

#### Does regenerative have to be organic?

Certified Regenerative does not require organic certification, but it can be highly complementary. This means a more diverse set of farmers and landholders can participate in the regenerative journey.

While AGW embraces the spirit of organic farming (and is substantially aligned with many European Union organic standards), the complete ban on antibiotic use is a fundamental flaw in the USDA Organic standard—one which results in increased animal suffering. AGW believes in using antibiotics as they were intended: rarely, only when necessary, and within a system designed to promote health.

While people often assume organic principles are 'regenerative,' organic standards do not actually require benchmarking of things like soil health, water or air quality, wildlife species/habitats, social fairness, nor measurement over time to ascertain any improvements. This is not a criticism of the organic movement, which has pioneered environmentally sensitive farm management and helped to raise public awareness. It's simply that these key aspects are not benchmarked or measured under organic certification.

Unlike organic certification, there is no multi-year transition period. Instead, Certified Regenerative is the transition period. As part of a rigorous initial audit confirming compliance with the baseline standards,, the farm history and risks are reviewed. If there is a risk of pesticide or other chemical residues, the farm may have to enact a plan of remediation before products can reach the market. Certified Regenerative by AGW can be complementary to an organic certificate or a highvalue sustainability certification in its own right.

# **APPLYING FOR CERTIFICATION**

#### **Before you apply**

From the very outset, it is important to read and review the Certified Regenerative by AGW standards, available on our website, to see what's involved (if you have any questions, we'll be glad to assist).

Once you're confident about the program requirements, you can complete your application online (or get in touch if you need a hard copy mailed to you). On receipt of your completed application (and the application fee), we'll get in touch to arrange to talk through the process and make sure you have all the information needed to write your Regenerative Plan.

#### Writing and submitting your **Regenerative Plan**

Your individual Regenerative Plan is central to the Certified Regenerative by AGW program. Your plan should reflect your farm objectives and set out how you intend to achieve an appropriate balance between social, economic, and environmental objectives. We will use your plan to assess compliance with the Certified Regenerative standard and progress toward your individual goals over time.

While we recognize the competency of many farmers to write their own Regenerative Plans, you may also benefit from the services of qualified experts to help you develop and write your plan (or for specific areas that you don't feel comfortable with). For example, you might want to bring in an expert to do a bird count or for soil health advice. A qualified expert can be an organization or professional individual recognized as a specialist in their field. It can also be a keeper of traditional ecological knowledge (TEK). See annex A of the standards for more information on requirements for qualified experts, as well as the Regenerative Plan template, for guidance.

#### Plan review and initial audit

Once you've submitted your Regenerative Plan, and paid the applicable plan review fee, AGW's expert review panel will review your plan. The review panel will either recommend your farm for audit or request additional information to complete the plan. For example, if you're already certified organic, the panel may request your Organic System Plan; or it may request additional information on your plans to increase biodiversity. Using our Regenerative Plan template will help to keep this process as efficient as possible. Again, we are always here to offer advice if you need it.

Once your plan is recommended for audit and you have paid your audit fees, your auditor

will contact you to schedule an in-person visit. The audit generally takes a day to complete and consists of visiting the holding, reviewing your plans in practice, and checking any applicable records.

#### Audit review and certification

After the audit, your auditor will submit a report and either recommend for certification or provide a list of corrective actions which must be completed before you are certified. If the latter, you will need to provide a Corrective Action Plan (or CAP, as in other AGW certifications) to address the issues raised. This might include plans to reduce tillage or fossil fuel use; or you may need to clarify how you will achieve Animal Welfare Approved certification for your livestock species. Once all CAPs are resolved, your farm can be certified.

#### Once you're certified

We pride ourselves on helping producers make the most of their market-leading certifications and our marketing team is ready to support your efforts. Being Certified Regenerative by AGW comes with a range of benefits and services:

AGW's marketing team works to support farmers in accessing markets, branding, and adding value to their product with the Certified Regenerative by AGW logo.

Listing on AGW's popular online directory, frequented by thousands of consumers seeking sustainable, high-welfare meat, dairy, eggs, grains and produce.

► AGW's expert technical staff, available to support environmentally sustainable, practical and profitable regenerative and pasture-based production.

#### **Maintaining certification**

Certified Regenerative by AGW farms are audited on a regular cycle, with spot audits conducted as required. This allows us to see each farm in a range of seasons and conditions, over time providing a whole year view of operations and management.

Between farm audits, it is important to ensure that you are adhering to your Regenerative Plan, updating it as required. Please note: any plan updates that require additional review by AGW may incur a review fee.

As always, if you have any questions about maintaining your certification-no matter how small-please get in touch. It's always easier to plan for compliance than to address a noncompliance after the fact! We are here to support your regenerative journey in any way we can.

#### **KEY STEPS**

Read the standards: Ensure

you are fully aware of what's involved and all requirements.

Submit your application: Include commitment to the AGW Community Agreement on Equity and Respect. Eligibility check: We will undertake an initial screening to ensure eligibility.

Submit your Regenerative Plan Use our template for guidance. Seek the help of qualified experts, if necessary. Regenerative

Plan review: Carried out by AGW's review panel.

Farm audit: Completed by a fully trained AGW auditor

Audit review: We'll advise if any non-compliances need to be addressed.

Approval and certification: Final audit review and approval by AGW. Your certificate is issued.

Katie Amos is AGW's Communications and Outreach Manager



Naomi Oakley and Mark Owen of Challacombe Farm in Devon, UK, were the first farm to be Certified Regenerative by A Greener World

"We are tenants on a 185 hectare Duchy of Cornwall farm on Dartmoor in southwest England, raising 40 Welsh Black/North Devon cattle and just under 200 Shetland/Icelandic sheep. We have been in agri-environment schemes for around 25 years and most of our farm is unimproved grassland and moorland, with the majority designated as Site of Special Scientific Interest (SSSI) or County Wildlife Site for Wildlife. We also have significant areas listed as Scheduled Ancient Monument for its extensive archaeology (and farming) stretching back 3,500 years. So it's fair to say that our livestock

management primarily focuses on conserving and enhancing wildlife, heritage and landscape and providing a recreational resource over meat production. The primary role of our livestock therefore is to maintain diverse habitats and ensure archaeology is not obscured by scrub (mainly gorse). Nevertheless, we also want our stock to have as rich a life as possible while also producing high-quality meat for local sales.

We've been involved with A Greener World for a few years now, initially because we were impressed with the Certified Animal Welfare Approved by AGW accreditation. It has a much wider remit than other programs in the UK and includes factors such as ensuring livestock can behave naturally and managing for positive health, as well as good environmental management. So, when AGW



**CERTIFIED** REGENERATIVE BY AGW

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announced they were developing the Certified Regenerative by AGW standards, we volunteered to be one of 50 farms worldwide to act as guinea pigs in trialing the new program.

Over recent years, regenerative has become a bit of a buzzword in farming. We felt it was important to have our own claims backed up by an independent audit process. During the pilot trials of the Certified Regenerative by AGW standards, it was clear the procedures were robust, covering the sustainability of the entire farm, measuring benefits for soil, water, air, biodiversity, infrastructure, animal welfare and social responsibility.

Yes, the regenerative certification pilot process took quite a while and involved some commitment on our part. But we found the external, independent assessment really helped us to think about and define our plans to farm in harmony with nature, and to properly measure and monitor our goals over time. Now we have all the maps and plans in place, it will be much more straightforward when the audit comes around again. We were delighted to eventually hear that we were the first farm in the world to be Certified Regenerative by AGW.

We want to be an exemplar farm, providing as wide a range of public goods as possible, and to demonstrate to other farmers how this can be a financially sustainable model. Certified Regenerative by AGW will help us achieve this goal."

#### For further information or to apply, email **info@agreenerworld.org**



# NATURE **BY NUMBERS**

Kerry Hughes offers a guide to biodiversity assessment, monitoring and testing

Measuring and managing soil health is central to all regenerative agriculture approaches. However, the new Certified Regenerative by AGW program takes things one step further by including biodiversity assessment and monitoring.

#### Why biodiversity?

Biodiversity is an essential indicator of a successful regenerative farming system, where wildlife habitats are integral parts of the holding. These include areas such as banks, hedges, ponds, species-rich pastures, wetland areas and shrubland.

While testing and monitoring your soils is a worthwhile and recommended practice for the sustainable and positive management of this most precious resource, measuring and monitoring biodiversity is an equally useful and fascinating indicator.

Measuring and monitoring biodiversity will allow you to generate data to establish what flora and fauna and habitats are present on the farm and ensure management practices are enhancing the wider environment through continual improvement of healthy, thriving ecosystems over time.

By monitoring biodiversity on the farm, farmers can highlight the importance of farmland habitats for wildlife to the public and other organizations, which is likely to become increasingly important. Focusing on increasing farmland biodiversity can also make for a more resilient farm ecosystem and declining species populations, particularly with the growing impacts of climate change.

#### **Farmland habitats**

The Certified Regenerative by AGW approach looks to ensure that every farm has a detailed biodiversity plan to ensure a diverse and vibrant wildlife population on the holding. Obviously, how this is achieved will be unique from farm to farm and dependent on local circumstances and priorities.

Habitats can often be integrated with the farming system itself. For example, diverse grasslands can provide habitat and food for a huge variety of invertebrates, birds, and mammals, as well as grazing and forage for livestock. But in other cases, farmland features might exist purely

or primarily for the habitats they provide, as with field edges, hedgerows, ponds or woodlands that have lost their direct agricultural or economic value but continue to provide crucial habitat, which in turn serves the farm.

#### Measuring biodiversity

As the old saying goes, "you cannot manage what is not measured." But it is important to choose the right metrics and methods for measuring biodiversity so that the impact of management can be measured over time-and steered in the direction in which changes are desired.

Common metrics that can be measured with biodiversity monitoring include plant, insect, bird, reptile, or mammal species present on the farm, if they are they increasing in number, and if there are any rare or protected species. Similarly, you can measure and monitor habitats like woodland, riparian areas, and other specialist habitats like wetlands.

#### What are your goals?

Every individual farm will have a unique range of landscapes, habitats, and flora and fauna. As a result, every individual farm will have unique regenerative biodiversity goals.

Before you attempt to identify your farm's biodiversity goals-and the best measurement strategies and appropriate milestones for achieving them-it is important to establish reference conditions for your local landscape. In other words, what did your farm look like before modern farm management?

As well as knowing what the local environment looked like before management affected it, it is useful to know what prior management practices occurred, what crops were grown, livestock, and any wildlife that used to be present.

To do this, it will probably be necessary to do some historical research and/or seek expert advice. Historical photos of your land or nearby areas may help you to reconstruct reference conditions. Elderly residents from the area (or neighbors with long family farming history in the area) can also be a helpful resource to gather this knowledge.

#### Ask an expert

If you are new to regenerative agriculture, it may be useful to consult with a local qualified expert or a local keeper of traditional ecological knowledge (TEK) with an understanding of local/ regional biodiversity to help determine your landscape goals, as well as to identify species present, and what management techniques, monitoring methods, and milestones are most appropriate. While some farmers may monitor biodiversity on their farms, a qualified expert can suggest techniques that are easier, faster, more accurate, and/or more helpful to informing your plans and management decisions. It may well be necessary to seek individuals with different expertise. Specialist volunteers, such as students or wildlife experts, might be willing to survey the land at minimal cost.

#### **Establishing a baseline**

While it is important to choose the correct methods for monitoring biodiversity, it is also important to establish a baseline. This is the starting point that you will compare to all future assessments and will give you a clear indication if your management practices are successful.

#### Monitoring plant species

A transect is a scientific method to count and record objects of study in a selected area over time. Transects are particularly useful for observing and monitoring plant species.

Depending on how many types of soil, ecosystems or management uses there are on your holding, you choose the number and placement of transects to be representative to your land. (A Qualified Expert can help you to identify appropriate areas for transects and what to measure or monitor over time.)

There are a few different ways to do a transect, but the most common types are line or square transects.

A line transect establishes a linear path across a site of interest, with a number of fixed markers that can be found every year (either by sight, GPS or metal detector) to identify specific locations for regular, repeat observations around the points on the line.

A square transect is either a fixed square area where measurements are taken every year or it can be done more randomly, where a square marker (eg. a metal wire shaped into a 3ft square) is thrown randomly behind oneself while standing at a specific fixed location that can be found every year. Observations are made within that square wherever it lands.

It is important to collect data on a similar date as previous measurements—certainly in the same season. While photographic records of the transect



Fixed markers that can be found every year will help to identify specific locations for regular, repeat observations

Monitoring

biodiversity

importance

of farmland

habitats

for wildlife

highlights

the

#### WHAT IS A BIODIVERSITY PLAN?

A biodiversity plan should set out a clear vision for the farm, taking into account the various habitats, with specific and quantifiable objectives and clear actions with a timeframe for delivery.

The plan should ensure that threatened, endangered or protected species of flora or fauna and their habitats are protected.

The plan should address the management of existing features and identify opportunities for the creation of new biodiverse features.

The plan should describe effective monitoring strategies to demonstrate biodiversity improvement, with the type of monitoring activities, the frequency of recording, and how this will show improvement.

**Example 1**: An arable farm might identify the need to minimize the impact of wildlife by improving wildlife habitats in specific fields on the farm. With advice from a qualified expert, the farmer decides to create new hedges through the center of fields, setting a goal to complete the task one year. Once established, they will undertake a wildlife and bird count once a year in the spring to monitor species present. This can all be recorded in their biodiversity plan, with successes measured and monitored over time.

**Example 2**: A farmer has a good range of woodland tree species of around three acres, with oak, beech, hazel, ash, and maples present. But to increase wildlife, they are advised to install 10 owl and bat boxes on established trees within one year, and plant a further two acres of new woodland across the farm within two years. They will measure success with regular annual bird and bat counts. These observations can be written down in the biodiversity plan and monitored in the future.



contents are not necessary, they can make a useful addition to the collection and comparison of data over the years.

#### **Wildlife counts**

As ecosystem biodiversity increases, it is natural that larger wildlife frequency, type and sightings will also increase. For this reason, wildlife counts can be a useful and exciting indicator that regenerative management is headed in the right direction.

Like the transect method for plant species, it is important to perform the monitoring count at the same places and times of the year. It is also important to note any new wildlife you notice at any time of the year and at any location in your Regenerative Plan.

One of the most common types of wildlife counts performed on holdings are bird and insect counts, as both are essential indicators of a successful regenerative farming system.

▶ **Bird counts**: Here are some general guidelines to help you carry out a bird count as part of your biodiversity plan.

First, select a window of time that you can commit to every year. (Think of the local migration season or just springtime. A qualified expert can offer advice.) On one day, select one spot on the farm to sit at for 30–60 mins to do your count. Bring a pair of binoculars, a note pad and a pencil and, (ideally) one or two good bird guides that cover species in your area. If possible, ask an amateur birdwatching enthusiast to join you for the first few trips. In your 30–60 minute window, record the bird species you spotted and the approximate number.

TIP: If you can't identify a bird, note as much detail as possible, including the activities of the bird, such as if it was feeding on the ground or hovering over the field. Numerous books or birdwatching apps can help with identification.
Insect counts: A simple way to do biodiversity sampling for insects is called a or Flower-Insect Timed count (or FIT count). A FIT count is a timed count of the number of insects that visit a selected area of flowers (usually 50 x 50cm). A FIT Count should be performed every year at the same approximate location. You may perform more than one FIT count in a day or short period of time but be sure to replicate your methods from year to year at the same location.

#### Mapping for management

Once you have determined the type of monitoring you intend to carry out (and where), it is important to mark your plans on a site map or maps.

Having detailed maps at the beginning of your regenerative planning phase is important for establishing a baseline and monitoring your Measuring flora and fauna can quickly become a fascinating and hugely rewarding endeavor



A square transect is used to count and record objects of study, such as plant species in a selected area progress. Maps will not only help you to stay organized and focused on achieving your goals, but they are essential to enable others—including your visiting AGW auditor—to understand your vision and plans, and measure and monitor your success.

When it comes to farm biodiversity, the AGW standards require farmers to maintain maps that identify and describe the following information as a minimum:

- Boundaries
- High-risk areas
- Streams or watercourses
- Wooded areas
- Fields (and field uses)
- Protected sites
- Areas of special biodiversity for any wildharvested plant or fungi species
- Testing sites (areas and sites of assessment or measurement)

As it is easy to overload a single map with all this information, it's easier to keep several individual maps to incorporate aspects of the above list, as required.

#### **Photographic records**

Photographic records can greatly enhance any Regenerative Plan, documenting past and baseline conditions, as well as providing a visual and relatable account of the changing landscape conditions.

Choosing a fixed point from which to take a yearly photo of specific fields or wild areas will help show changes over time. Once a permanent point is selected, mark it with a short stake, for example, and/or record the GPS coordinates for each photo point for easier finding.

Although far from essential, modern drones offer the potential to take detailed, GPS-located arial images of specific areas at a set height at any time of the year, while image analysis software can even identify different vegetation types.

#### Huge benefits

It may seem daunting to take on scheduled biodiversity monitoring—and even more daunting to imagine that one's chosen management plan will be scrutinized over time. However, with appropriate guidance and careful planning, the measuring and monitoring of flora and fauna on your farms can quickly become a fascinating and hugely rewarding endeavor—and a powerful marketing message for your business.

Kerry Hughes is an ethnobotanist, herbalist and author. She is president of Ethnopharm, LLC and serves as an advisor to AGW.

# **SILENT KILLER**

CAE (Caprine Arthritis and Encephalitis) virus can have a devastating impact on the goats it affects—and your bottom line—warns Jen Gravley Burton

Some livestock diseases enter through an insect bite. Others are tracked on a borrowed trailer or dirty boots. A few reside in contaminated soil or water. While the virus that causes Caprine Arthritis and Encephalitis (or CAE) in goats is sometimes found in the environment, semen, or other locations, infection typically comes from one of two sources: contaminated milk or close contact with infected animals.

CAE is one of several small ruminant lentiviruses, a diverse family that infects goats, sheep, or wild ruminants. Although people can develop antibodies to CAE, the virus is not found to cause disease in humans.

It doesn't cause much trouble in faraway subsistence herds, either. CAE is primarily a disease of 'high-income economies.' Much research has been done to determine if susceptibility varies with breed, location, or management, but the results suggest rates of infection simply reflect rates of exposure to infected goats and milk. CAE is common wherever dairy operations are called operations.

#### A silent disease

For dairy herds in particular, it often pays to buy and sell goats, pool milk, bank colostrum, and concentrate animals near feeders. While these practices can reduce costs and improve kid health, if CAE is present, they also perpetuate an incurable disease that cripples your animals and your operation. There is no vaccine for CAE, and no treatment other than supportive care. The virus can be removed from a herd only by diligent separation and eventual culling of all infected animals.

How is such a ruthless disease allowed to persist? More than 65% of goats in 'high-income economies' are infected, but most show no signs. They simply aren't as productive as they could be. We keep this virus circulating when we trade infected goats or feed kids CAE-positive milk.

#### **Clinical symptoms**

Despite their variability, small ruminant lentiviruses do not appear to discriminate. CAE affects males and females, and goats can be infected at any age. While genetic predisposition



In adults, CAE most frequently shows up as arthritis



The first sign may be swelling in the hind or forelimbs



CAE arthritis will inevitably recur and worsen over time

may be possible, the major risk factor for a farm is bringing in new animals, and the major risk factors within a herd is use of pooled colostrum or milk and contaminated needles. Direct spread through fecal matter and respiratory droplets is a consideration for any farm trying to eliminate the disease.

Though clinical presentations differ, the main storyline remains consistent: the CAE virus moves in, and your well-bred, well-nourished animal produces a good strong immune response. White blood cells suppress but can't completely defeat the virus, so the immune system sends more ... and more ... and more.

Clinical disease results because immune cells accumulate and cause collateral damage in joints, brain, lungs, or udders. Kids are not typically infected at birth, but many become infected while young by consuming CAE virus in colostrum or milk. When the disease shows up at 2–12 months of age, it's typically due to immune cells damaging areas of the brain and spinal cord, leading to encephalomyelitis. This neurological damage causes incoordination that progresses to paralysis. Hindlimbs are usually affected first. Unusual head positioning, blindness, and seizures are also common.

In adults, CAE most frequently shows up as arthritis. As white blood cells build up in joints, the first sign may be swelling. Over time the immune response damages tissues, leading to stiffness, pain, and lameness. Though transient improvements may occur, CAE arthritis will recur and worsen over time. Mild swelling progresses to lameness, which can become so painful that the animal is reluctant to walk or even stand normally.

CAE virus can also cause coughing or difficulty breathing. An infected goat may develop a swollen or hard udder, with decreased milk production. Energy and nutrients are routed away from production and maintenance, to an immunological standoff. Infected animals may have trouble maintaining a healthy weight as they age, and the quality of the hair coat may worsen over time. CAE sometimes manifests as chronic wasting despite normal appetite, with or without other signs of the disease.

For every five goats infected, four never develop



CAE virus can fester in your herd for months or years before disease symptoms emerge



Separate kids from CAE-positive does at birth and heat-treat colostrum and feed pasteurized milk

symptoms. They simply carry and transmit the virus, keeping it active in your herd, the colostrum in your freezer, and the milk in your bottles.

#### Take action

As there is no vaccine for CAE, and no effective treatment, how can you protect your herd?

Exclude: A closed herd is the best barrier against bringing in CAE virus. If you do buy in goats, talk with your veterinarian to establish pre-purchase testing protocols. Many goats are infected while young, but older animals are more likely to have been exposed. Note: pregnant does and goats that were recently infected may test negative. Detect: Thanks to silent carriers and long incubation, CAE virus can fester in your herd for months or years after you introduce an infected animal and before disease signs emerge. Monitor heath status by checking your animals regularly and thoroughly (see 'Health and Safety' in Sustainable Farming Summer 2022). If you have reason to suspect CAE, test. Newly infected goats can test negative, so work with your veterinarian to create a plan that will provide meaningful

information.

**Control**: Treatment for CAE is supportive, not curative. Provide ample bedding for arthritic goats, and trim feet regularly. Manage pain with medication as needed and be prepared to euthanize, when appropriate.

CAE is common in commercial dairy goats but it doesn't have to be. Entire nations have eliminated this virus. Given the devastating impact CAE has on the animals it affects-and on your bottom line-it is worth the strict control measures, the cull commitment needed to eliminate it from your herd, and the diligent pre-purchase screening to keep it out.

If you bring goats into your operation, work with your veterinarian to establish testing protocols that can keep your farm free of CAE.

Jennifer Gravley Burton DVM is a veterinarian and educator with a special interest in the intersection of food animal medicine and public health

#### Work with your vet

#### CONTROLLING **CAE AT THE NEW** HERD LEVEL

Prevent new infections and maintain a longterm plan to cull all positive animals.

1. Separate kids from CAE-positive does at birth. 2. Heat-treat colostrum, and feed pasteurized milk. **3**. Test regularly and maintain strict separation between positive and negative animals. 4. Disinfect equipment and change your boots before moving between groups. 5. Cull CAE-positive animals.

# © Certification news **A POTENT PARASITE**

#### **The Coccidiossis lifecycle**

Animal inaests infective parasites

> Ground and pasture is contaminated

always provide balanced rations with proper vitamin and mineral supplementation (where needed), appropriate to age. Avoid dramatically altering the ration of weanlings for the two weeks preceding or following weaning, and ensure dietary changes are made slowly.

Older animals (including older lambs, kids, and calves) can serve as reservoirs of coccidiosis infection, so another good preventative measure is to avoid mixing batches of young animals with batches of older animals. And, just like worm prevention, it is important to avoid following older animals with youngstock in grazing rotations where there is a known risk.

Stress is another major contributing factor to coccidiosis outbreaks and can lead to a significant increase in the shedding of oocysts by adult animals and susceptibility in youngstock. Minimize handling of sheep, goats, and cattle and ensure all management is carried out calmly and gently. It is particularly important to minimize stress at weaning. Females should be weaned from their offspring, not vice versa. Ensure lambs, kids, and calves remain in familiar surroundings and in the same groupings, wherever possible. Fence line contact may reduce stress at weaning. Finally, when transporting lambs, kids, and calves, always make sure they do not go without feed or water for very long.

#### **Treatments and control**

Once a diagnosis has been made, it is important to initiate immediate treatment with a coccidiostat (ionophore) to minimize the extent of permanent damage and the risk of death. All animals sharing the same space should be treated.

It is important to note that medications used to prevent coccidiosis are not the same as those used to treat clinical disease. In addition, anthelmintics

Coccidiosis can pose a serious threat to calves, lambs and kids, warns Frank Morison

Coccidiosis affects nearly all farmed species and can be particularly devastating for young animals. The disease is caused by a parasitic protozoan, which is ingested when animals graze or are exposed to infected fecal matter. Infected animals pass thousands of oocysts (protective capsules containing the next life cycle of the parasite) in their manure and so the life cycle continues. Oocysts are present in the soil on many farms and can remain infective for up to two years under moderate temperatures and moist conditions.

If animals ingest large numbers of oocysts before they have immunity—or when they are under stress-their immune systems can rapidly become overwhelmed. The parasite destroys the lining of the intestines, as well as attacking the liver and other internal organs.

#### **Symptoms**

Typical acute symptoms include sudden diarrhea, loss of condition, loss of appetite and sometimes death. However, by the time these clinical signs are observed, much of the damage will have already been done. Lambs, kids, and calves that survive clinical infection often never fully recover because the destruction of the gut lining will have reduced their ability to digest feed.

It is also worth noting that even where clinical symptoms are not obvious, sub-clinical cases will frequently result in poor performance and lower natural immunity.

One of the goals of the A Greener World program is to encourage livestock farming systems that prevent disease risks and other issues, rather than relying on medications or antibiotics to mask or control them. AGW-certified farms should therefore seek to adopt 'best practice' management techniques to not only help prevent outbreaks of coccidiosis, but minimize the effects of sub-clinical coccidiosis by encouraging natural immunity in your herd or flock.

#### **Management techniques**

Coccidiosis is frequently an issue in intensive production systems where sheep, goats and cattle are housed in barns and dry lots, where fecal material is more concentrated than if livestock are kept on pasture. However, some pasture-rearing situations can mimic confinement, particularly during housing periods and when raising youngstock. Indeed, we find coccidiosis can be a serious issue for some AGW-certified dairies (especially goats), where young are often reared in high-traffic and high-use areas, experience stress at weaning, or are exposed to significant amounts of the parasite in early grazing rotations.

Coccidiosis management should therefore primarily seek to reduce the fecal-to-oral transmission of the pathogen and good sanitation and hygiene when rearing youngstock is essential to achieve this.

Maternity areas should be kept clean and dry. Lambing and kidding jugs should be washed (and ideally disinfected) between use. Maternity pens should not be overcrowded and kept dry and wellbedded. Avoid feeding on the floor of a pen: feeders should be elevated or located on the outside of the pen. Likewise, water receptacles should be kept clean and free from fecal matter.

Colostrum is essential for providing immunity to many diseases during the first weeks of the neonate's life, and an adequate intake of colostrum will help lambs, kids, and calves cope with coccidial infection. Washing and drying the female's udder before colostrum consumption may also further help to limit infection.

Good nutrition is essential to maintaining high levels of immunity in the flock or herd. You should

Parasites further develop and damage ... intestinal lining

1000s more parasites distributed

Parasites become infective

(dewormers) used to treat intestinal worms and fluke will not kill coccidia protozoa or oocysts. While treatment with ionophores is usually not an issue from a program standpoint, the routine use of ionophores to control coccidiosis is where issues often arise. Most conventional control measures involve the routine delivery of a coccidiostat through feed or water. However, the AGW program classifies the use of ionophores in the same manner as anthelmintic drugs used to prevent parasitic worms or other internal parasites. In order to use coccidiostats (ionophores) as a control, farms in the Animal Welfare Approved program must meet the following criteria to comply with standards 3.1.2 and 3.1.3:

1. Your farm has a verified issue with coccidiosis and is using coccidiostats (ionophores) based on advice of a veterinarian to control the issue. 2. You are implementing best management practices to help control the issue. 3. You are not using coccidiostats (ionophores) on a continuous basis and are targeting use to provide the best long-term control.

4. The length of coccidiostat use per control treatment does not exceed 90 days per animal unless justified by a veterinarian and it can be demonstrated that other management protocols have not worked. If use exceeds 90 days, you must seek a derogation.

If coccidiosis is an issue on your farm, talk to your veterinarian about appropriate management strategies for prevention, control and treatment, and ensure you include details of your strategies in your health plan.

Frank Morison is Lead Auditor with A Greener World

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Blake Gerard (above left, with some of the farm's crew) is a fourth-generation farmer in Alexander County, IL, growing rice and soybeans. The family focuses on producing a low-glycemic rice, sold and marketed under the Cahokia Rice brand.

#### How did you get into farming?

I'm the fourth generation farming here at Gerard Farms and have farmed right next to the Mississippi River since I was 20 years old. During the first nine years, I experienced four major flooding events where I produced littleif any-crop. At that point, I decided I must find a crop that can grow in the water-or find another occupation! I am now in my 24th year growing rice and currently grow 1,500 acres of long grain rice, plus 1,500 acres of soybeans. We recently launched a brand, Cahokia Rice, a variety that is high in protein and has a low-glycemic score, and we're working on building this into our primary business.

#### Describe a typical day

I go cycling first thing in the morning, before the office for paperwork and emails. I'll speak to employees about the day's work and then jump in the truck to begin checking and tending to rice water, scouting crops, employee duties, and answering questions as needed. Special projects make up most weeks, like making grade corrections on rice fields that are fallow. We use land grading equipment to make fields perfectly flat or zero grade, which allows very efficient use of water. I try to be home by 6-7pm for family fun to wrap up the day.

#### Sustainable farming: why does it matter?

If I'm not implementing sustainable practices, the farm is effectively going backwards. It's my goal to improve this farm each day and leave it better for the next generation.

#### Who are your customers?

Online and retail grocery, along with a growing list of food service clients who are concerned about food quality and the environment.

#### Why choose Certified Non-GMO by AGW?

People want to know more about what they're eating, where it originates, and that it is safe. Our Certified Non-GMO by AGW rice assures our customers that these concerns are satisfied.

#### What are your business plans for the future?

To continue to increase sales of Cahokia Rice, providing a healthier rice to the American consumer.

#### What is the biggest threat to the sustainable farming movement?

I don't see sustainable farming as a 'movement.' We've used these practices for at least four generations here at Gerard Farm-they're not going away.

What do you love most about what you do? Working outdoors, interacting with nature.

What keeps you awake at night? The dog.

Right: The next generation of Gerards helps out

#### **AT A GLANCE**

Farm: Gerard Farms **Certification date:** June 2021 **Size**: 3,000 acres Soil type: Darwin clay Altitude: 342 feet **Annual rainfall** 48 inches Enterprises: Certified Non-GMO by AGW long-grain rice (and soybeans)

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