ANNUAL REPORT 2025

ecdysis

BLUE DASHER FARM

ecdysis

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WHO ARE WE & WHAT DO WE DO?

ecdysis

Ecdysis Foundation is all about grower-focused research to transform agriculture with regenerative principles. Agricultural science is typically conducted and communicated to other scientists, rather than the farming community. At Ecdysis, we flip those priorities. Ecdysis has a strong emphasis on farmer-, rancher-, and beekeeper-driven research questions, and empowers growers by involving them in the actual research projects themselves. Funded by grants and donations, all of our research is provided back to farmers at no cost, with no strings attached. We host field days around the country to help others understand our findings, connect growers with each other, and make friends along the way.

To make this mission a reality, we started the largest agricultural research project North America has ever seen, the 1000 Farms Initiative. Throughout this year's review you'll find out where we've been, what we've accomplished with the 1000 Farms Initiative so far, and hear some of our staff's favorite stories from the front lines of this history-making project!

BLUE DASHER FARM

Blue Dasher is the regenerative farm where Ecdysis' headquarters is located. We believe that if we're going to be researchers for farmers and ranchers, we better be farmers and ranchers ourselves. On any given day, staff can be found moving sheep, mucking barns, starting seeds, or checking on bees. Blue Dasher roots us and gives us a place to connect with the communities and people around us. It allows us to connect with many of the obstacles that farmers face. Bettering our food system and engaging our communities go hand-in-hand, and we want to be a part of that.

For more information on what the farm has been up to this year, check out Farm Manager Christina's reflection on page 20.

DR. JONATHAN LUNDGREN

Founder, Ecdysis Foundation
Entomologist/Agroecologist/Beekeeper/Rancher

"Whatever made us think that we could commoditize something as sacred as food?"

Everything in Alaska is bigger than one's senses can comprehend. In June, Christina and I took a few days and headed to Seward, Alaska (it was my 50th state, visited by the age of 50). A large ice sheet dwells there high in the mountains overlooking the ocean, and one of its tendrils is the Exit Glacier. Like a reaching hand that has been burned, the glacier is recoiling into the mountain tops.

As we stood in the desolation of the damaged glacier, a 20-something park ranger in full garb welcomed Christina and I to the park. He was indigenous and had grown up amidst this humbling land. He began to happily recite facts of the glacier, how it formed and how it is receding. Staring up at the jagged blue-grey entity above us, I asked him a question that made him pause.

"How does it *feel* to watch this glacier disappear before your eyes?"

He looked at the glacier high up the mountain, and collected his breath. "It feels like I am watching my brother fade away."

The details that he presented to the tourists stumbling about the rubble left by the glacier weren't what was in this young man's heart.

The problems that we are facing as a society and a planet are often distilled into a list of facts. These numbers may drive policy and investment, but they do not drive behavior nor innovation.

Entering the 5th year of the 1000 Farms Initiative, we have felt the problems that we are facing first hand. I know what it feels like to drive through a state whose soil has been turned to sand, laden with so much chemical that new life struggles to take hold. I have felt the sun-scorched seas of the continent that are amidst collapse because they mined their land and water dry. I have met so many farmers who turned to experts and salesmen to help them, and now whose hope is wavering.

Our team was in North Carolina visiting with a farmer who was ex-military. We had watched this meticulously managed, regenerative fruit farm mature over the past two years. I listened to him excitedly tell me about the soil tests he was running, and I heard his questions about what he should measure next. Through mouthfuls of delicious blueberries, I asked him a question that made him pause.

"What does it *feel* like to sell your berries at the market?"

He was used to communicating the practical details that we are told make a regenerative farm, and it took him a moment to articulate "It feels so good to be able to share this food with the families around me. And to be able to tell them that it is safe for their kids. There aren't poisons in it."

In his heart was the true definition of regenerative agriculture.

Regenerative agriculture is changing. After 1700 farms and 4 years, it is clear that regenerative agriculture is about outcomes, and there are many ways of attaining those when you heal an ecosystem.

The farms that are maximizing regenerative outcomes (greenhouse gas reductions, water cycling, nutrition, and social and physical wellness of farmers/communities, etc.) are doing it by growing life on their farms. Promoting life on farms means smaller production units (e.g., paddocks, fields, etc.), integrating biology with various architecture and seasons, making perenniality and farm-adapted (and indigenous) varieties and breeds, abandoning synthetic inputs, and growing food for local and regional markets. And often women are a central driver behind what is grown.

Regenerative agriculture attains efficiency, yield and profit. This is especially clear when you consider social wellness, nutritional quality and non-economic currencies in this equation, which are poorly accounted for in industrial models of agriculture.

Ecdysis Foundation is taking the 1000 Farms Initiative to a global stage, testing our perceptions of regenerative agriculture under more extreme climatic conditions. This brought Christina and I to Ireland, where self-organized farmers are monitoring how regenerative practices affect their farms. After the meetings, we drove along the Dingle Peninsula that juts into the Atlantic Ocean. Ancient stone walls covered in vines and brambles divide the mountainous countryside into small paddocks.

Top: Rock walls of livestock paddocks roll along Irish farmland. Bottom: Jon stands at the base of a receeding glacier in Alaska.

As the daylight waned, we stopped the tiny car, and meandered up a short path to watch the sunset over the water. Here was a structural foundation made of loose stones that was laid 5,000 years ago. White shafts of light pierced through a cold, cloudy sky. Sheep were grazing in a beautiful pasture in front of us, probably since humans had arrived. Let that sink in...while many fertile U.S. pastures have been destroyed in 100-200 years, shepherds here have grazed the same pasture for 5,000 years.

In that moment I had to ask myself "How does it feel to be here?"

Every day I see the glacier. I list my frustrations about the greedy corruption of regenerative agriculture by charlatans and industry. I see how much work we have left to do.

But in my heart I know that regular people are capable of extraordinary things. The solution starts with sharing fresh berries with people we care about. Seeing that gives me great hope.

DR. RYAN SCHMID
Research Scientist/Agroecologist

Children can teach some of the best lessons in life. Despite both of my kids being under the age of two, they have already made me a much better person. Teaching me patience, the importance of play, service to others, joy, and humility. But this past year, they taught me something that feels especially relevant to where Ecdysis stands today – how to welcome new situations and transitions with enthusiasm, not fear.

Since my youngest daughter was born in July, she has lived in three different houses as our family made the journey into our new home in Iowa. What felt like constant upheaval to me seemed like a fun adventure to my kids. They weren't bothered by shifting rooms, routines, or landscapes. Their natural curiosity carried them forward; new rooms to explore, new hiding spots, different grandparents and friends to play with. Each change brought its own new delights.

Watching them, it struck me that they aren't just enduring these transitions; they are built by them. Every shift adds texture and resilience to who they are becoming. Their entire lives so far have been transition – continual, dynamic, unfolding. And the truth is, that's not unique to childhood. It's the human condition. When growth stops, when nothing changes, that's when something is wrong.

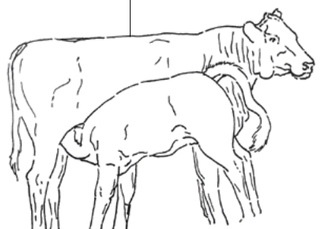
But somewhere in adulthood, many of us forget this. I certainly do. I catch myself trying to reach a point that feels stable, predictable, neatly resolved, a chapter closed. Yet life rarely reaches that level of tidy certainty. And chasing it often means clinging to what was instead of stepping into what could be. Stability might feel safe, but it's rarely where learning, creativity, or impact come alive.

The new lab space being transported along an Iowa roadway.

The same is true for Ecdysis, and for my role within it. As I transition into remote work and begin laying the foundations for my own lab, and as Ecdysis begins new phases of research, partnerships, and vision, I'm reminded that uncertainty isn't a threat, it's a gift. Transitions force us to ask better questions. They make us examine why we do things the way we do. They create space for reinvention. Not as a rejection of the past, but as an evolution of it.

So as Ecdysis continues its evolution, and as I navigate my own shifting landscape, I'm choosing to move forward with the same sense of play, curiosity, and resilience that my children model so effortlessly. Instead of waiting for the moment when everything "settles," I'm learning to appreciate the motion itself. The chaos, the friction, the possibility.

This year has shown me that a life, and an organization, defined by transitions is not a sign of instability. It's a sign of vitality, of purpose refusing to stagnate. With that in mind, I'm not just accepting the transitions ahead, I'm looking forward to what is to come.

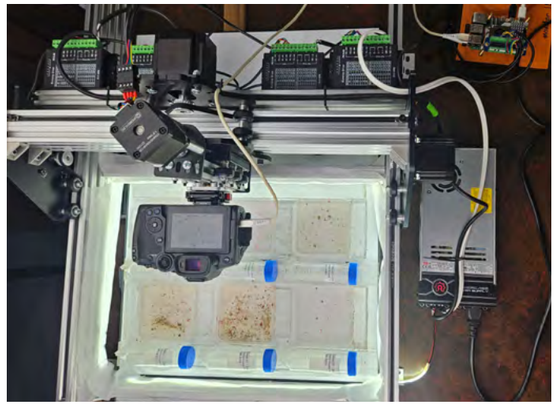


DR. KELTON WELCH
Research Entomologist & Collections Manager

What a year 2025 has been for the entomology lab at Ecdysis! Our software team has expanded, we've built some new tools and started some new techniques, we've published some groundbreaking entomological science, and our name is out there.

I always begin by sharing some big numbers. But this time, these numbers kind of represent the end of an era. We took 167,000 new photos this year, and that only took us through June. These numbers are lower than last year, because of some big changes. We took a total of 670,000 photographs across the last four years. Starting in 2025, we're moving to a different method to process these samples faster.

Basically, I built a robot! It's a CNC machine with a camera mounted on it. We named it Shimsy, because the build plans called for a ridiculous number of shims. With this new system, we can take big "scans" of an entire dish full of insects, photographing hundreds of specimens all at once. This should make it easier for us to get insect biodiversity data faster than before, without requiring the whole team to sit at microscopes all day.



An overhead view of "Shimsy" at work.

data like this before. Entomologists have kind of resigned ourselves to the idea that we can't measure insect biodiversity without a lot of elbow grease, a lot of expertise and a lot of expensive equipment. That basically means we can't have an efficient and straightforward test for insect biodiversity, like we have for soil health and soil microbes. But at Ecdysis, we think we can do it. Our testing so far shows that BugBox's data is good and reliable. Now it's time to really focus on making it meaningful for the growers.

That's why we're doing this, after all. I believe that the insects can tell us a lot about the health of our fields, our communities and our world. They have important roles to play, and the entomology needs to have a voice in the conversation regarding regenerative agriculture, sustainability and the environment. And we're just scratching the surface of what we can do for farmers and for science with our technology and our data.

I've never felt like what I'm doing matters as much as right now. I'm glad I can be a part of this work, and that we're still pushing the limits of biological science to promote regenerative agriculture and support the community we've built in this space. I'm really looking forward to the future!

DR. KC JENSEN

Research Scientist, Avian Biologist

BIRDS AND REGENERATIVE AGRICULTURAL LANDSCAPES

To say that 2025 was a busy and productive year for bird surveys as part of Ecdysis's *1000 Farm Initiative* would be an understatement! We started our data sampling year in February in the almond orchards of central California and ended our sampling efforts in Arizona in mid-November exploring rangeland and mixed vegetable systems. On every trip I had to remind myself of how fortunate we are to survey birds inhabiting such a wide variety of production systems (from almonds and apples to peanuts, blueberries and soybeans) across the breadth and depth of the United States. I'm quite sure that there is no historical equivalent of exploring bird communities in as many different agricultural systems.

What we know from our efforts is that as farmers and ranchers transition from conventional production practices and begin incorporating regenerative practices in to their operations we see the bird communities respond in measurably positive ways. As plant and insect diversity increase as farmers and ranchers implement regenerative practices the bird community responds and is a mirror of the increased diversity of life in all parts of these ag systems. One of the largest responses we see is the increase in sheer numbers of birds.

Scissortail Flycatcher, photo by KC Jensen

Regenerative agricultural habitats can support more birds because there is more food (insects) and greater structural diversity (plants) to support the bird communities. This usually also creates conditions that can support greater species diversity depending upon the system. Birds are also an excellent group of organisms to study in these systems because they can rapidly reflect changes in environmental quality. In short, they can fly which allows them to move in to newly available habitats easily as the amount and quality of food and cover increase as the use of tillage and pesticides decrease as regenerative practices increase!

Eastern bluebird, photo by KC Jensen

During the 2025 field season I visited 15 different states on 11 sampling trips. I walked approximately 1-mile transects in approximately 220 different fields and met more than 200 farmers and ranchers. I'm so grateful to them for allowing us a glimpse into their operations that represent such a broad view of food production systems and land management practices across the United States. The kindness and generosity to our crews, and the genuine interest in learning new ways of doing things is heartening and inspiring. At 70 years old my batteries don't hold a charge for as long as they once did. But I feel a resurgence of energy every time I set foot in these orchards and fields. Not only do I get to witness bird use in agricultural systems, but I get to reconnect with wonderful people that have become treasured friends and also get to make new personal connections with folks from coast to coast. Life is good!

KRISTIANNA GEHANT SIDDENS

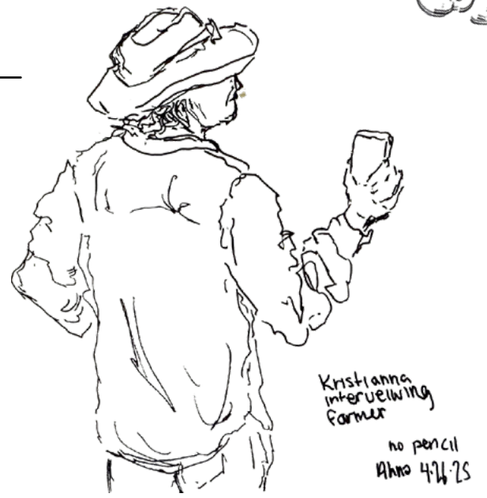
Lab Manager

A YEAR OF CHANGE

The year 2025 has been a one of transition both for me personally, and for Ecdysis. In addition to my role as the lab manager here, I'm also an organic, regenerative farmer raising garlic and grassfinished lamb. After over 20 years of growing garlic we decided to halve our production, in large part due to my additional hours spent working in the lab and traveling around the country sampling farms with our dedicated staff. It was not an easy choice given our loyal customer base and so many years spent increasing production, but I find the big picture work we do here as rewarding as it is critical.

Now at the end of my second year at Ecdysis, I have visited farmers and ranchers in Illinois, California (twice), Colorado, Florida, Tennessee, and New Mexico. For me, this is a lot of travel, but it's small compared to that of my colleagues, some of whom travel to as many as nine states a year! Through these sampling trips, our team has gathered an incredible amount of data- numbers populating data sheets, informing research papers, and filling graphs on our grower reports- that tell part of the story of our nation's food system. And though we've sampled farms in 34 states and two Canadian provinces, we've only just begun to understand how management practices influence the health of farm ecosystems and to help farmers use that information to achieve greater biodiversity, soil health, and profitability.

One of the highlights for me this year was my visit with an enthusiastic group of farmers and ranchers in Taos, New Mexico, one of our first two cohorts for Project Avalanche. Shifting the dominant agricultural paradigm requires reaching as many farms as possible across environments, cropping systems, and communities. To do this, Ecdysis is partnering with growers in a new way. With Project Avalanche, we're training farmers and ranchers to be scientists and giving them all the equipment they need to monitor progress on their own farms.



Throughout our time visiting farms in Taos county, we could feel the excitement farmers felt about the potential to learn from the results of the sampling. Many are already farming regeneratively and hope the measurable results will verify the benefits of their management choices. Others are at the beginning of a shift in practice- perhaps increasing stocking density, or starting to rotate their animals- and curious about how their ecosystem will change. Still others hope to solve a field-level puzzle such as poor grass growth, or lack of plant diversity by pairing sampling results with management changes over time.

I'm excited to return this winter to facilitate discussions about the results, regional trends, and next steps. Our hope is that growers will share their experiences, compare results, and learn from each other to make newly informed management decisions for the coming year. Every farm we visit is unique, each family has a story to tell, and the folks in Taos were no different. By teaching them to connect with their operations in new ways, we can empower farmers in their own transitions. In doing so over and over, we hope to push the pebbles down the hill and ultimately create an Avalanche of change!

TOMMY FENSTER

Pursuing PhD, Regenerative Cropping

In 2024, we wrapped up field work for my project investigating how grazing interacts with other management practices to impact soil health, biodiversity, yield and fruit quality, and input use. With the transition away from active fieldwork in 2025, this provided me with the opportunity to focus on finishing lab work, writing up results, and carrying out outreach associated with our findings and project collaborations. In 2025, I served as the lead author for a book chapter, Integrated crop–livestock systems: enhancing ecosystem services and productive potential, for the textbook The Science and Practice of Agroecology: Pathways to Sustainable Food Systems. Writing this chapter was a great opportunity to collaborate with other researchers (including Jon!) while also diving deep into the extensive body of work on re-coupling crop–livestock systems—and the work that still needs to be done.

On the outreach front, I had the opportunity to present our research at three grower field days, on the Beyond Organic Wine Podcast , and at the Crop, Agronomic, Environmental, and Soil Sciences Societies Conference. Most rewardingly, we completed the Grazing in Vineyards Best Management Practices Guide. This guide was a collaboration between Ecdysis, the UC Davis Gaudin Agroecology Lab, Community Alliance with Family Farmers, the Napa RCD, extension specialists, and—most importantly—multiple vineyards and grazing operations. The guide was based on both our previous research and extensive in-person interviews with growers, providing farmers with a practical framework for integrating sheep and moving toward more regenerative management.

In addition to these activities, 2025 also provided me with the opportunity to farm a vineyard for the first time. While I had spent the previous three years working in vineyards across California and making wine, I had not previously had the chance to farm a site myself. In 2025, I joined my friend Graham Shelton to farm a 100-year-old Zinfandel vineyard in Sonoma for his label, Slow Dance Wines. This vineyard is dry-farmed, cover cropped, and managed using a no-till approach. We also utilize minimal inputs, and I developed a site-specific computer program using the UC Davis powdery mildew risk index to help guide spray decisions. Over the course of the season, our only inputs were three oil sprays for mildew and the broadcasting of cover crops. I look forward to farming and making wine with Graham from this site for years to come!

Tommy and the team from Slow Dance Wines' vineyard in Sonoma.

DAN PECENKA

Research Scientist, Croplands Specialist

As another year comes to an end, a major chapter in my agriculture journey concludes. In December I defended my Master's Thesis. By the time you're reading this the loose ends will be tied up and I will officially have my Master's degree. This chapter is an accumulation of 3 years of work, 9 different sampling teams, thousands of miles, and countless hours of hard work from my coworkers. It is surreal to see all of this work be condensed to a few hundred pages and a 40-minute presentation. My research was based on the use of regenerative practices in wheat operations and how such practices impacted the arthropods found in the soil and in the field's vegetation. My favorite finding from my research was the confirmation that when growers forgo the use of pesticides, the arthropod community booms. Regardless if the pesticides were or were not targeting insects (herbicides and Fungicides). I hope this will help Ecdysis teach growers that pesticides are not the solution because they harm the ecosystem as a whole.

When I first started at Ecdysis back in 2020, I never put much thought into what the results of my physical collection of data would be. In other words, my attention was occupied on the physical labor of swinging a 10lb hammer in 90-degree heat. I wasn't worried about how the collected data would be applied and used in a presentation. Looking back, I realize what a simple time it was being a seasonal technician. I was a simple machine with a simple goal of data collection. I understood I was a small part of a bigger system. But it wasn't until I started my own research that I realized how important every part, every soil core, every bug sample was to the entirety of the system. I now look at everything we do through a new lens. Now I understand that the data we collect tells a story of the farms we visit. Now I know how much I appreciate being part of that story – whether it be as a technician or as a scientist working on his Master's Thesis.

This year's field season was another success. I led one trip in Washington revolving around grain production and another trip in Nebraska/Kansas. The Midwest trip was based on visiting farmers who used crop fields as grazing pastures. For both of the trips I had the best partner a leader could have asked for. My right-hand man was Lynnette Miller, the regenerative agriculture extraordinaire. Many know Lynette by her voice as she is the one who calls farmers at the end of the year to collect management surveys. On the second trip Lynnette took the lead in communicating with the farmers. Our trip was more productive with her a part of the team because she knew many of the farmers prior to our visits. Man, did those farmers love and respect her. This natural trust the farmers had with her opened the door to personal conversations and deeper connections. This in turn allowed us to talk about regenerative ag holistically. Having Lynnette take the lead allowed me to see the operations from a different perspective. I hope she knows how much she is appreciated. With that I will leave you with one last thing. If you see Lynnette at your next regenerative agriculture event, please buy that lady a shot of tequila (Don Julio preferably).

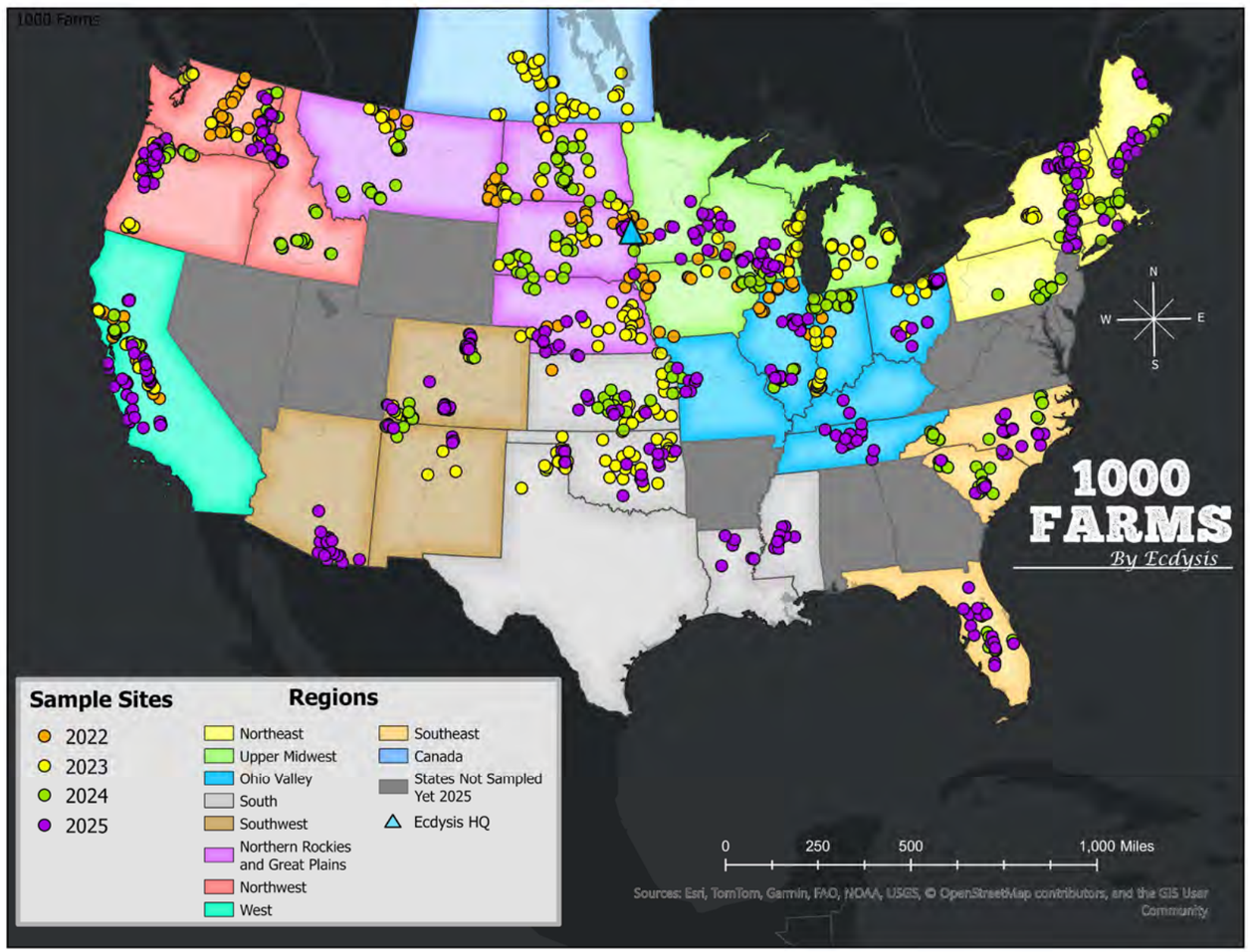
1000 FARMS
by Ecdysis

"The most ambitious agroecology research ever conducted..."

THE 5TH YEAR!

CALL-OUT 2025 STATS!

- **425 FARMS sampled in 2025 (totalling over 1,700 farms in 4 seasons)**
- **34 states, 2 Canadian Provinces (total for 4 seasons)**
- **80+ distinct geographic clusters around North America**
- **35+ crops and 10+ livestock systems sampled**
- **17 research papers submitted in last 12 months with many more in queue**
- ***Project Avalanche* piloted in 2 farm clusters**



The 1000 Farms Initiative has evolved from simply documenting the current food system situation to using our science to help support the evolution of a new food system capable of exacting rapid and measurable change.

It is predicting the potential for regenerative food systems to mitigate risk to our health, environment, economy and national security.

We call this phase *Project Ignite* and it officially launches in 2026.

IGNITE!
by Ecdysis

Project:
AVALANCHE
by Ecdysis

PROJECT AVALANCHE BEGINS!

Community development that can support identity change within individual farmers and other aspects of our food community was identified as a critical element of changing our food system at scale. The scientific backbone of *1000 Farms Initiative* provides a unifying framework that can support farmer change: we have developed meaningful relationships with thousands of farmers that span a range of regenerative production intensities in 80+ distinct geographic clusters around North America. These farmer groups are the catalysts for changing their communities and the countries' agroecosystem from the ground up.

We piloted a community-led science project called *Project Avalanche* to expand the reach of our efforts and support farmers to measure their own farms. Using *1000 Farms* methods (now ground-truthed for most production systems and ecoregions across the country), coordinated farmers in Taos, NM and Middlefield, OH were provided with toolkits to measure their operations. Ecdysis staff developed written, video, and curricula, and helped to train these farmers in scientific measurement. During this pilot phase, our staff also measured each participatory farm to identify and quantify the hurdles to collecting and interpreting farmer-generated data. We are poised to expand the supportive infrastructure and reach of *Project Avalanche* in 2026.

Community -led events like this field day are the cornerstone of Project Avalanche.

CUTTING-EDGE BIODIVERSITY TECH

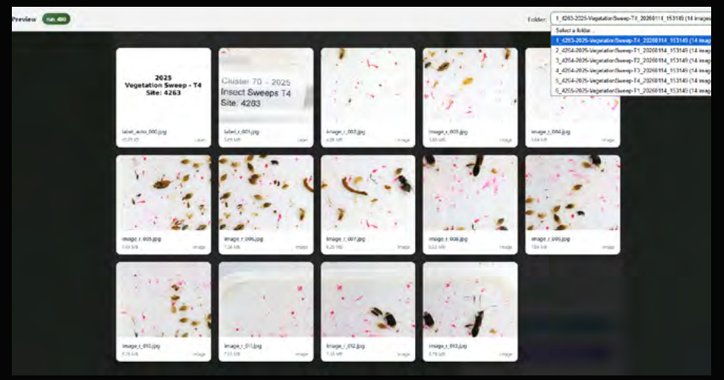
- ***BugBox***
  Our AI-assisted insect identification software continues to increase accuracy and expand training while improving efficiency of sample processing.

- ***Syrinx***
  Our ecoacoustics software is under development to help process our existing database of 1200+ 1-hr sound files. An effective program for extracting biological sounds from environmental sound files has been created, and an AI model was adapted for identifying and annotating the bird songs from the files.

- **Microbial eDNA**
  We have created a software that accepts Fastq files of eDNA, and outputs identification of soil-based taxa and a confidence level in the taxonomic determination (10,000+ taxa identified to date). The next step will be to combine the microbial community data with the greater *1000 Farms* ecosystem data to generate pertinent indices of regenerative outcomes. And finally, we will generate a user interface that growers can input soil microbial eDNA data, that will interpret the bioinformatics and contextualize the results for free.

- **Data Commons**
  Provide protected, open access to our unique, historic dataset to support other stakeholders in regenerative agriculture.

- **Workstream Automation**
  Creating an automated grower portal to support *1000 Farms/Project Avalanche* with vision of globalization.



Left: Screenshot of Bugbox identification software.
Right: Lab techs at work at Ecdysis.

METAMORPHOSIS!

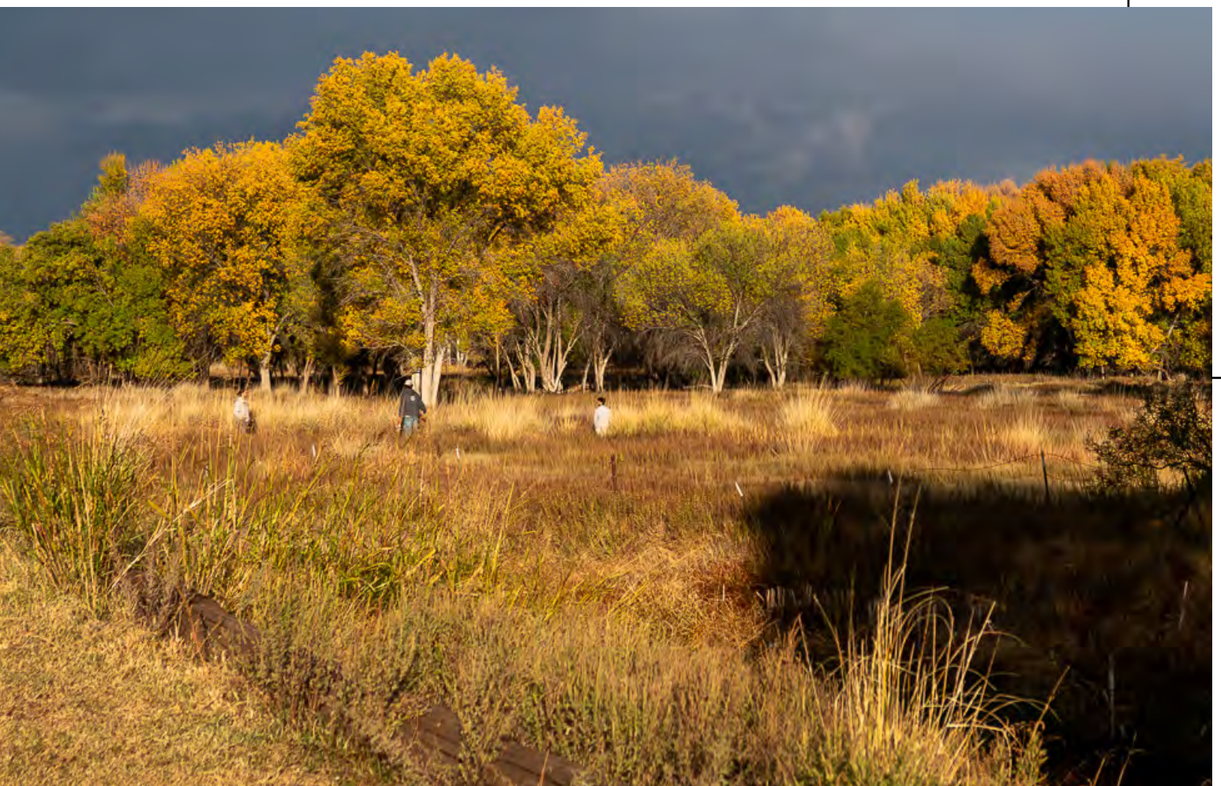
ECDYSIS means CHANGE

Literally, the name of Ecdysis Foundation has its roots in biology. The term "ecdysis" describes the process of insects shedding their outer skin to allow for growth and development, or to replace and regrow damaged parts. Our mission for agriculture has adopted a similar process: we are shedding old models of agriculture in pursuit of a regenerative future.

In 2025, Ecdysis has witnessed prime examples of how the regenerative agriculture movement is leading a paradigm shift in food production, soil health, and community resilience at a personal and grass roots level.

Above: Regenerative practices can help scenes like this to be less common. Bottom l: Chickens in rotational system with moveable food systems. Bottom r: Free-range pigs roam among a sampling team

Top: Cattle graze bottom covers in a livestock-integrated pasture. Below: Riparian buffer systems offer natural and efficient water management. Opposite: Less machines means more human feet and more abundant life on the ground.



CHRISTINA LIND

Blue Dasher Farm Manager &
Communications Specialist

METAMORPHOSIS

The farm is an ever-changing, ever-evolving creature. Every time I think I know what to expect, it throws a curve ball to keep me on my toes. I have seen how a farm can transform. It can transform from crops to rangeland, evolve alongside its many changing parts, and it can grow beyond producing food or commodities. It can become a space of life and connection to the natural world, to ourselves, and to our community. And sometimes it has to dissolve into a mass of goo before restructuring around its new purpose and form.

I've been through my own metamorphosis. I came from working in a botanical garden where my main job was bringing people joy in flowers, and my focus was horticultural implementation and education. We would plant and teach about flowers, trees, and all things plants …. but truly, it was the joy of the garden that kept me going and motivated me every day. My favorite thing was providing tours and showing everyone all the plants and flowers (and during the winter, the Christmas lights) that brought ME joy. Things that made me feel excited, in awe, at peace, or simply … happy. I loved sharing those things, and I was pretty good at it. Each corner you turned held several new "favorite" plants. I could feel that others shared that same joy. I am convinced that the beauty and intricacy of the natural world appeals to something in our human nature, and my desire to spread joy through love of plants felt like a pretty easy task.

Then I came to the farm. Suddenly, my job became keeping animals alive and happy (which felt much more stressful than keeping plants alive and happy), and involved a lot more … biological materials. And while I like to look at our mission as supporting a different style of agriculture, it inherently meant opposition to an entrenched industry of agriculture that exploits and hurts the farmers, the food quality,

The fully operational Blue Dasher Farm cart is open for business!

the land, the water, the ecosystem of all the little living beings around it, and the nearby communities. It became so much more …. serious. The stakes were higher, the work was harder, and the stress of the job exploded. I cried when I lost the first lamb. I felt judged, particularly when any flaws of our system showed (ahem, sheep breaking fence). I've wanted to pull my hair out countless times. But over time I have come to learn that no system is perfect; that every system has its flaws.

Now, I embrace and prefer our beautiful imperfection over the fragile appearance of perfection, knowing what I actually see is a false sense of control slowly slipping down a slope. Now, I better understand the complexity and lack of control one has in life, and I've gained a new appreciation for the good things. I appreciate the wins, and for what each living being provides or tells me about my farm. I know the farm, intimately. I often say it is a part of me, and I am a part of it. And now, the flowers without the animals feel… lonely. Incomplete. I've grown a thicker skin to loss, to failure, to criticism. I have learned to own and forgive myself for the mistakes I've made. These challenges have not only made me a better farmer, but a better person. I am more connected to my own instincts and more confident with my own opinion, even when it's not popular in the room. I feel mission driven, and that my work matters and is helping pave the way for a better future. As they say, you must experience hardship to see true joy, and a farm will certainly do that.

Blue Dasher's transformation never fully ends, but we are finding our identity. We provide food and products, demonstrate regenerative practices, serve as experiential learning for those studying our food system, and share our journey with education. However, we've found that there's even more to our mission. It's also about connection. While we don't fully understand yet all the ways that we are bound to the natural world, we know that we are. At Blue Dasher Farm, we also want to be a catalyst for experiences that help the natural world and our community connect to each other. We want to show the how the abundance of life on a farm and natural spaces can provide healing and bring the community together. As we approach the 10th anniversary of Blue Dasher Farm this year, I hope we can provide activities that will propel the farm into a place of connection for family, friends, and community.

Above: Sunset over a new flowerbed. Below: Bees from the newly expanded hives and Christina with flower seedlings.

2026 FARM STATS

BEES
- Doubled size of apiary
- Moved apiary to more protected location on the prairie
- 2 honey harvests (spring and fall)
- 410 lbs fall, 480 lbs spring
- Queen grafting
- Another challenging season of beekeeping with historic hive losses around the country, including our own
- Hives enter the winter heavy with their own honey and wrapped in quilted blankets and an extra insulation layer of sheep's wool
- All hives monitored, with half showing very low mite counts, many of them 0
- Fed mustard in the honey as an experimental, natural mite treatment
- Fed bananas as an additional food boost recommended by other local beekeepers that have found success as a natural food supplement
- Optimized homemade tools: ie new bottling bucket of Allison's design and new solar wax melter to utilize all of the products of the hive and add beeswax products to our offerings

POULTRY
- Eggs are one of our best sellers at the Farmer's Market, as well as among our close community
- Predator pressure on our broiler chickens and turkeys resulted in limited poultry meat production
- Addition of runner ducks and 4 new goslings, 2 of which sold
- Up to 9 peafowl!

SHEEP
- 62 Lambs
- Added two female Icelandic ewes for wool and breed diversity on our landscape

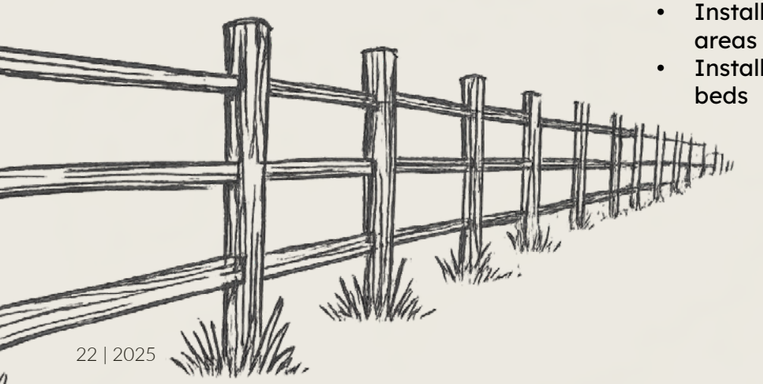
ALPACAS
- 2 healthy crias born of our mama alpacas

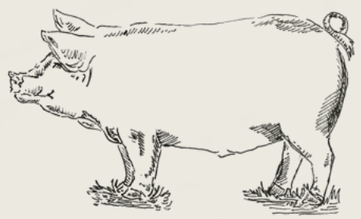
PIGS
- For the first year we had two litters of KuneKune piglets

EQUINE
- Staff-led farrier process with our ponies
- School and home-school visits

PLANTS
- Increased our flower garden beds by nearly 2x
- Began drying flowers for dried arrangements
- Arranged florals for our first wedding!
- Planted hundreds of spring bulbs for 2026

FENCING & INFRASTRUCTURE
- New permanent perimeter fencing installed for cross fencing our east pasture
- New perimeter fencing around orchard for grazing of pigs and alpacas
- Installed water lines to 3 main pasture areas
- Installed drip irrigation in southern flower beds





RESEARCH HIGHLIGHT

Pesticides Beyond the Field

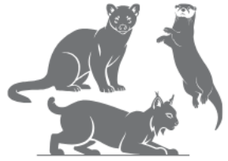
We started with research focused on the effects of pesticides on honey bees and insects, then the story expanded. Recent research shows **neonicotinoids (or "neonics") insecticides** move far beyond fields, accumulating in various **wildlife.**

Deer

White-tailed deer fed neonics were smaller, slower, had disrupted hormone levels, reduced survival, jaw deformities, and higher mortality.

SURPRISING FIND!
Hunter harvested deer had ***3x higher neonic levels in their spleens*** *than deer fed neonics directly under controlled conditions.*

Predator Species



13-35% of the predator species (bobcats, fishers & river otters) were positive for contamination of neonics. This begs the question...
How are apex predators being exposed to plant incorporated insecticide??

Pheasants

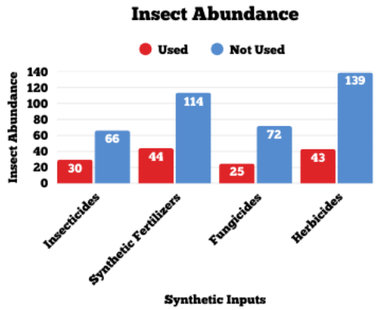
UPCOMING PAPER SNEAK PEEK!
Eating 5 clothianidin treated seeds per day for 14 days kills 50 percent of the pheasant population ***by reducing reproductive success and survival of their chicks***

Bottom Line: Neonicotinoids don't stay put!

These insecticides are affecting food webs in ways we never realized. Regenerative agriculture relies on biodiversity instead of chemistry to manage pests.

Surprising Find from our Wheat Research

Fertilizers and herbicides are going beyond their designated purposes. They are affecting more than the target species: they kill insects.



** Find above referenced scientific papers and watch for new releases here: https://www.ecdysis.bio/published-papers*

MASTERS OF THEIR UNIVERSE

(MASTERS STUDENTS, THAT IS)

DAN PECENKA

SCHOOL: South Dakota State University
PROGRAM: Plant Science
RESEARCH FOCUS: Insect population and perennial wheat

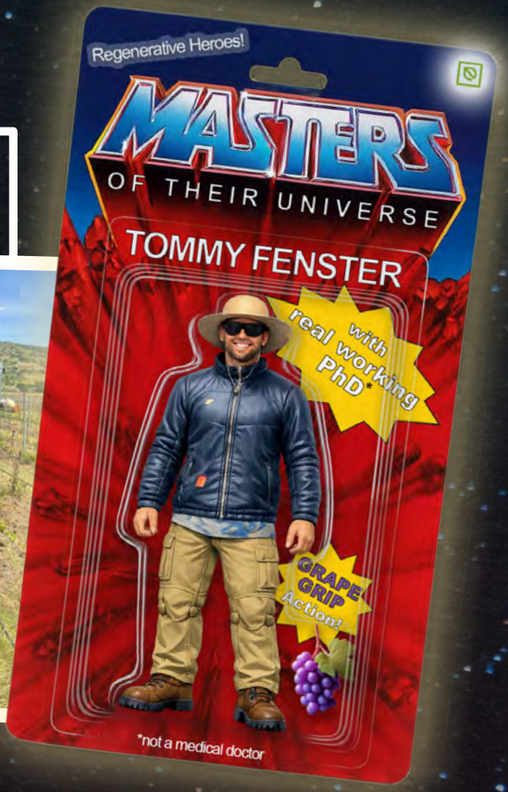
DAN successfully defended his *MASTER'S thesis* in 2025!

BY THE POWER OF 30 GRADUATE CREDITS- I HAVE THE PAPERS!!!

TOMMY FENSTER

SCHOOL:
University of California at Davis
PROGRAM:
Horticulture and Agronomy
RESEARCH FOCUS:
Livestock integration into commercial vineyards

TOMMY is actually a *PhD candidate*, but a *MASTER* nonetheless!



CASSANDRA KOEL

SCHOOL: South Dakota State University
PROGRAM: Natural Resource Management
RESEARCH FOCUS: Conversion of cropland into rangeland

CASS began her journey to become a *MASTER* in the Spring of 2026!

PUBLICATIONS & PRESENTATIONS

SCIENTIFIC PAPERS

- Prairie, A., S. Rozensweig, J. G. Lundgren, M. M. Bredeson, K. D. Welch, D. Kane, M. F. Cotrufo. 2026. Integrating regenerative agriculture: effects on soil arthropod biodiversity and soil organic matter dynamics. Soil and Tillage Research 256: 106896. https://doi.org/10.1016/j.still.2025.106896
- Quinn, J. E., B. DelaCourt, M. McGraw, R. Thompson, S. T. Rosenzweig, J. G. Lundgren, J. E. Eckberg. 2026. Is regenerative agriculture for the birds? Outcomes are practice and species specific. Agriculture, Ecosystems, and Environment 397: 110087.
- Welch, K. D., M. E. Wilson, and J. G. Lundgren. 2026. Evaluation of BugBox, a platform for AI-assisted bioinventories of arthropods. Journal of Animal Ecology 95(1): 192-203 https://doi.org/10.1111/1365-2656.70178
- Busenitz, K., J. G. Lundgren. 2025. No effects of probiotics on Apis mellifera health metrics. Journal of Economic Entomology 118(5): 2664-2667 https://doi.org/10.1093/jee/toaf210
- Busenitz, K., R. B. Schmid, and J. G. Lundgren. 2025. Regenerative rangeland management increases honey bee health and productivity. Frontiers in Sustainable Food Systems 9: 1555238. https://doi.org/10.3389/fsufs.2025.1555238
- Flynn, M. T., O. Guerrero-Medina, I. F. McDonald, J. T. Anika, E. C. Ware, K. T. Paw U, A. C. M. Gaudin, T. L. D. Fenster, J. G. Lundgren, T. Harter, S. Solis Sandoval, K. Suvočarev. 2025. Regenerative management in almond orchards does not increase evapotranspiration – a case study. California Agriculture, April. https://doi.org/10.3733/001c.133243
- Schmid, R. B., K. D. Welch, J. G. Lundgren. 2025. Regenerative grazing effects on dung arthropod communities and ecosystem services. Frontiers in Sustainable Resource Management 4: 1523963 https://doi.org/10.3389/fsrma.2025.1523963.
- Bredeson, M. M., A. Michels, K. D. Welch, J. O. Eckberg, S. T. Rosenzweig, J. G. Lundgren. 2025. Invertebrate community structure in dominant agroecosystems of Saskatchewan, Manitoba, and North Dakota. Annals of the Entomological Society of America, in press.
- Michel, E. S., W. F. Jensen, C. A. Bahnson, S. A. Tucker, S. Cortney, J. A. Jenks, J. Zysckowski, J. G. Lundgren. 2026. Widespread exposure to neonicotinoid insecticide in bobcats (Lynx rufus), fishers (Pekania pennanti) and river otters (Lontra canadensis) in North Dakota, USA. Ecotoxicology, in press.
- *7 more submitted for 2026 (at time of this publication)*

PRESENTATIONS & HOSTED EVENTS

- Grower meetings (27)
- Scientific meetings (8)
- Field days (12)
- Book features (2)
- Film features (1)
- Classroom lectures (6)
- Farmer coffee club (1)

IN THE MEDIA: WEB, RADIO, PODCAST, & FILM

- Podcasts (13)
- Radio (1)
- Newspaper (1)

THANK YOU TO OUR SUPPORTERS

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LOCAL, STATE, OR FEDERAL GOVERNMENT

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BUSINESSES/ORGANIZATIONS

Dakota Insurance, The Rohl Agency
DNB National Bank
Nebraska Soil Health Coalition
Open A Ranch
Regen Ag Lab
SD Beekeepers Association

INDIVIDUALS

Amy Price Neff
Andrew McCue
Brian Hicks
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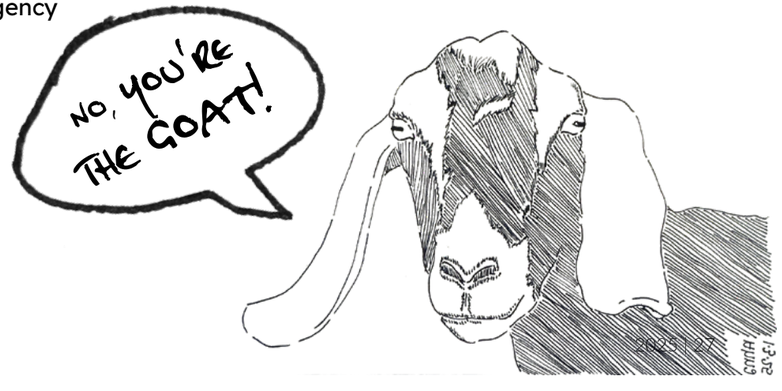

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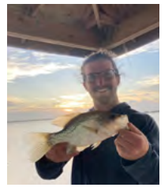

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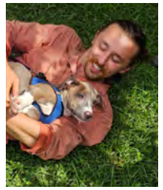

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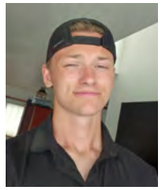

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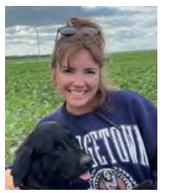

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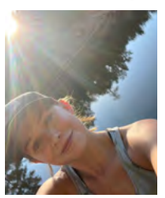

McKenzie Wilson

Mikayla Wilson

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