

The path back to the future



support local and regional schools, colleges, farmers, and gardeners.

Out of this process grew a mission revolving around education, research, conservation, and support of the local food system that capitalized on our strengths and organizational history, and also helped build the capacity of local and regional institutions.

Meanwhile, the landscape itself has been shifting under our feet. A spate of books about soil, ecosystem regeneration, rewilding, and water continues to proliferate while the news about climate and species extinction continues to worsen. The two paths before us—one toward regeneration, and one toward degeneration—become increasingly clearer.

The path toward regeneration is being sown by hundreds of farmers, researchers and activists emboldened and enabled by new understandings of the power of intact ecosystems to mitigate and adapt to climate change. Soil carbon sequestration has become an integral part of climate agreements and carbon drawdown conversations.

The path toward degeneration also continues to accelerate, with the United Nations reporting that we have fewer than 60 years of business-as-usual farming left, the collapse of insect and bird populations, dead zones in lakes and rivers, a steep rise in degenerative diseases, climate catastrophe, and weather anomalies.

No matter what path we

Samuel Thayer, an internationally recognized authority on wild edible plants, led a workshop on Agraria in 2018.

by SUSAN JENNINGS

his spring marks the second anniversary of our purchase of Agraria at auction in 2017. Since the acquisition was an unexpected leap for us, the 24 months since then have been marked by internal and external exploration into the possibilities of our 128-acre farm. They've also been set against a rapidly-changing public understanding of climate catastrophe, ecosystem degradation, and the narrowing of the timeframe we have left to respond to both.

Our purchase of Agraria was spurred by our interest in soil regeneration and our understanding that carbon sequestration in soil is one of the most hopeful climate strategies available to us. Regenerative land use practices not only remove carbon from the atmosphere, they also restore and build soil health in the process.

Our first inquiries into Agraria's mission focused on how we could support regional and national research and education around soil regeneration. We visited places like Joel Salatin's Polyface Farm in Virginia, the Land Institute in Kansas, and carbon farmer David Brandt's farm in Carroll, Ohio. We consulted with local farmers and developed partnerships with organizations like the Ohio Ecological Food and Farm Association and with area institutions, including Central State, Wright State, Ohio State, and Ohio University, Antioch College, University of Dayton and Wittenberg University. Dozens of focus groups, dinners, and meetings helped us understand how we might

Voices of AGRARIA

Agraria is a new branch within the longtime organization, Arthur Morgan Institute for Community Solutions. The latter has a long track record of understanding and enhancing small communities. I feel Agraria, with an amazing volunteer interaction, will be reaching out to small and larger communities to act as an educational resource to demonstrate better ways to protect and enhance our soils.

—Julia Cady

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take, the future is here and now.

Arthur Morgan Legacy

By the time Arthur Morgan founded Community Service (the forerunner to Community Solutions) in 1940, he had already engineered the Miami Conservancy District's flood control system, transformed Antioch College, served as the first chair of the Tennessee Valley Authority, informed Gandhi's rural education initiative, written several books, and founded an alternative currency. Yet he saw Community Service as his culminating legacy because he increasingly believed that the small community was the basis of culture and democracy. Though urbanization and globalization were in their infancy, he was remarkably prescient about what they might mean for human agency and community.

Over its 79 years, the organization has explored through conferences and writings, films and our online presence, the power and possibility of community. Morgan was a founder of the Community Land Trust movement, and his heirs were co-founders of North Carolina's Celo Community, Ohio's Raven Rocks community, and Yellow Springs Vale Community.

Community Solutions has also advocated for the environment and sustainable agriculture through films produced by Pat Murphy and Faith Morgan about Passive House building and about Cuba's transition to organic agriculture—*The Power of Community: How Cuba Sur*- *vived Peak Oil.* Pat and Faith also envisioned an Agraria housing collaborative with energy efficient homes.

More recently, our organizational work plan has focused on re-localization, based on the understanding that global planetary and human health depends on the health of interconnected local communities.

Agraria provides a platform for practice and inquiry into these areas, particularly the regeneration of soils and our local food system.

The case for soil

Depleted soils are at the nexus of many of humanity's most pressing issues, including climate change, weather anomalies, hunger, degenerative diseases, algal blooms, ocean acidification, and dwindling biodiversity above and below ground. Historians link many civilizational declines to soil degradation.

Much of this depletion is related to a lack of soil carbon. Since 1930, 50-70 percent of soil carbon has been released into the atmosphere through deforestation and farming practices that disturb soil or leave it bare for several months a year. Here in Ohio, uncovered farmland loses an average of 5.6 tons of soil per year. Much of this soil and

> Voices of AGRARIA

inspired people.

Agraria has a mission to connect people to the

land, to explore a more gentle and sustainable

way of living with Mother Earth. I feel fortunate

to have the opportunity to be a part of the farm's

evolution and to share the journey with so many



AMY HARPER

absorption capacity through depleted carbon.

Even practices seen as benign like the use of synthetic fertilizers can harm soils. Plants fed with fertilizers don't need to engage in the complex exchange that happens between roots and soil in a healthy system. Likewise, the use of pesticides and herbicides destroys life both above and below ground.

Healthy soils are the most biodiverse ecosystem on the planet and are the base of all the above-ground ecosystems we interact with. Practices

-Bob Huston

nutrient run-off ends up in

our rivers and lakes, where it

creates algal blooms and dead

zones. The flood-created lakes

ing in thousands of midwest

acres are a snapshot of what

happens when soils lose their

that are preventing plant-

The Agrarian experiment— Model for a more just economy



Participants in a 2018 Land Assessment Workshop on Agraria. The workshop was sponsored by the Ohio Ecological Food and Farm Association.

By NANCY LEE WOOD

X Thy is Agraria more than a farm? I've been thinking about Agraria and why it is so important ... especially now. Numerous observers have come to recognize that continuous, unlimited economic growth is an illusion and that we are at the beginning stage of a long and permanent economic contraction given the reality of finite resource depletions coupled with the challenges of climate change, global warming, and species extinctions. The reality is that we must relocalize much, if not most, of our way of living. This has far reaching implications for future day-to-day economic activity, especially in the ways we will feed ourselves.

From a sociological perspective, the economy is the absolute core of any society. Every society, regardless of its size or moment in history, has an "economic system," a pattern of activities focused on production, distribution, and consumption of goods and services that structure the fundamental workings of a society, and in so doing, permeate the entire social system.

What, then, is at the center of every society's economy? Nature, and most immediate, the need to access food (and water) from nature. Every society, no matter how big or small, simple or complex, has had to adopt a strategy to feed its population. No society has ever been able to continue without this task being front and center, simply because humans must eat, quite regularly, in order to continue living.

Simply put, the predominant means through which a society accesses food, in essence, creates the economy. The ethos of that economy becomes embedded in the rest of the social system, thus, shaping people's thoughts, values, attitudes, ideologies,

Agraria beckons us to create a different way of "doing economy"

and behaviors.

Today's dominant food system is characterized by agribusiness - globalized, corporate, industrialized, capital intensive agriculture — which functions, first and foremost, to maximize profits. From how food is grown, through the ways in which it is processed and transported, to the shelf space in supermarkets, to who gets to eat with dignity, this entire fossil-fueled system is driven by the ultimate goal of maximizing profits. If you have money to feed yourself, you can eat; if you don't, you can go through the difficulties, and often the indignities, of handouts from elsewhere (See the film *A Place at the Table*) or, as in some of the poorest areas of the world, scavenge for food in dumpsters and local refuse sites.

Thus, it is not surprising that the economic ethos of maximizing profit, at any cost to the environment and to human health, permeates every area of our society including its polity, social psychology, and societal relations. The demands of perpetual growth exercised by large scale corporate capitalism — with its incessant concentration of wealth in fewer and fewer hands, with its mega-waste and throwaway mentality, including human lives, with its flagrant disregard for environmental abuse and destruction - is ecologically destabilizing, unsustainable, and fundamentally undemocratic.

Agraria, in my mind, is more than "a farm." It is an experiment. It is an effort to reimagine and to actualize an ecologically-sound, democratically-driven, communitybased way of creating a vibrant, inclusive, equitable, and socially rich way of living, one that is economically just while connected to and within the boundaries of nature.

Agraria beckons us to

Healing the land, healing ourselves

by **MEGAN BACHMAN**

"We learn that we are loved, not through rational study of universal truths, but through particular, partial relationships of love, care and reciprocity which we experience at significant moments in our lives. And just as we cannot love humanity in general without first experiencing the love of particular persons, and returning that love, so we cannot love nature as a whole, in abstraction from particular places or communities of species which we inhabit." — Michael Northcott

ne million plant and animal species are headed for extinction unless humanity transforms its relationship to nature, a landmark U.N. study concluded in May 2019. The statistic is stunning: 1,000,000 species wiped out, some within decades, if we maintain the status quo.

A few days later, the articles covering the study faded away and the decline of nature continued apace. But not everywhere. For places modeling radically regenerative ways of living with the land, such reports are not signals of doom — they become fodder for the fires of conviction that guide those working there.

Agraria is one such place. I can't think of a better North Star at this time of Earth's history than regeneration. In the simplest terms, regeneration promotes life, while our economic system of extractive, exploitative capitalism and our political priorities of weaponsbuilding and war-making promote the exact opposite.

While the emotional im-



Agraria farmer Bob Moore experimented with growing emmer wheat, a heritage grain, last year.

pact of each successive scientific report can be debilitating, we cannot let an existential fear — rational though it may be — keep us from advancing a future that could support future generations of plants, animals and people.

Contrasted with climate change's long timescales and colossal potentialities

<u>Voices of</u> AGRARIA ence of those inhabiting our small world. After all, our relationships with family, community and land have to be regularly tended. Doing so in the most life-affirming way is sometimes all we can do. It reminds me of the Zen saying, "Before enlightenment, chop wood, carry water.

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Without initiatives like Agraria that focus on soil regeneration and best farming practices, our hope for the future is grim. But a growing groundswell supports a basic desire to turn Big Ag back to an agri-culture where Agraria will be an early voice in research and education to do just that.

— Macy & Roger Reynolds

After enlightenment, chop wood, carry water." Substitute enlightenment for "awareness of environmental catastrophe" and it still applies.

Will that be enough? The U.N. report notes that only "transformative change" will prevent ecological collapse, requiring, "a fundamental, system-wide reorganization" of technology, economy and society and its "paradigms, goals and values." The report is also surprisingly hopeful, stating, "Opposition from vested interests can be overcome for the public good."

I cannot know for sure the impact of our hyperlocal efforts. I'd like to believe in the principle of holography, which literally translates to "writes the whole." Adrienne Maree Brown describes the concept this way: "What we practice at the small scale sets the pattern for the whole system."

Brown's discussion of healing is also relevant to Agraria. "It is healing behavior," she writes, "to look at something so broken and see the possibility and wholeness in it." A few months after Community Solutions purchased Agraria, I took walked through its desolate fields already coming back to life and realized that healing the land was more like healing ourselves. After all, the land would heal itself if we got out of the way. Hastening its recovery on a human timescale is an act of love, for those creatures it will nurture and for ourselves.

The writer is a former outreach director for Community Solutions and editor of the Yellow Springs News.

Agraria's educational mission— **Connecting people to the soil**



AMY HARPER

Mills Lawn students Asha Johnson-Drees, Cooper Folck and Alex Lewis studied macroinvertebrates during a recent field day at Agraria.

By DAVID DIAMOND

s a Center for Regenerative Practice, Agraria's mission is to educate people of all ages about the pressing need for regenerative practices that build and protect soil health, strengthen our regional food system, and help mitigate climate change. We support the growing movement of citizen science through placebased, experiential environmental education.

For the last two years, Peg Morgan and her Mills Lawn School third-graders have visited Agraria to study soil health, using insect counts and decomposition rates as measurements. "Soil is a great project-based learning experience," she says. "All the spheres of learning meet on the soil ... and in addition to

that, you've got the different sciences. We get in there and get dirty and learn all about it."

Our Soils for Life project, funded by a grant from the Ohio Environmental Education Fund, will bring teachers from around the greater Dayton area to Agraria this June to learn about plant and soil science, regenerative practices, and project-based learning and to develop

lesson plans that include classroom activities as well as field trips to Agraria.

With the help of experienced educators and mentors, students have the opportunity to participate in each step of the scientific process: creating a hypothesis, designing an experiment, performing hands-on research, analyzing data, and communicating findings to their peers and the

larger community.

Agraria is a platform for older learners as well. We offer workshops for adults, opportunities for internships, and serve as a site for selfdesigned student research projects.

Following are some of the highlights from the last year:

- More than 120 pre-K-12 students from Yellow Springs Schools took part in experiential learning at Agraria.
- We installed eight bluebird boxes and joined Xarifa Farm as hosts for the Bluebird Monitoring Project cofounded by Kate Anderson, Bethany Gray, and Tecumseh Land Trust. McKinney School seventh graders visited in April and May to monitor nesting activity in the boxes.
- We partnered with Springfield City School District on a USDA-funded Farm to School program focused on integrating local foods into the schools and the community.
- More than 300 people participated in workshops on fermentation, permaculture, seed saving, wildcrafting,

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<u>Voices of</u> AGRARIA

Most people just ignore soil, but there's a lot more to soil than what people think of it. Just about everything alive on earth is connected to soil. Take cows, for example. They eat grass, and grass grows on soil. Without cows, we would have to drink goat milk. Soil also helps build up our defenses against diseases and imparts our sense of the sacred. We should be careful to be stewards of soil instead of harming it!



ILLUSTRATION FROM ARCHITECTURAL RENDERING BY BOB HUSTON

Agraria's vision includes construction of a 3,000-sq. ft. educational center that will enable the orgnaization to expand its yearround educational programming and serve as a field site for area institutions. The design, created by architect Mary Rogero, and initial site preparation, were funded by a grant from the Dayton Foundation.

Learning from the land

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herbalism, soil health, land assessment, and carbon sequestration.

This year we've expanded our educational calendar to include stream studies, a conference in partnership with Miami Valley Fibershed, summer camps, and trainings in hoophouse building and keyline irrigation. We are also planning a conference on the linkages between soil health, nutrition, local foods, and plantbased medicine. Pathways to Regeneration: Soil, Food, and Plant Medicine will run November 1-3 and include hands-on workshops, presentations, and a tour of our neighbor, Cresco.

Through our educational progarmming we aim to inspire a new generation of farmers, soil scientists, and homeowners committed to regenerative practices.

David Diamond is media and eductation coordinator at Community Solutions.

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Agraria serves as a field site for area colleges and universities. TOP FROM LEFT: Antioch professor Kim Landsbergen visited Agraria with Daniel Cox, Lanique Dawson, and Steph Harman. BELOW: Students in a permaculture design course last year learned how to install a water management system on Agraria.



Voices of AGRARIA

It has been amazing to work with Agraria on a wide variety of projects from water quality to bluebirds! I feel so fortunate to have such an amazing environmental education opportunity right in Yellow Springs Schools' backyard!

> —Becca Eastman, 7th grade teacher, McKinney Middle School

Bringing trees back to the land

By AMY HARPER

I rowing along one of **J** the tributaries of Jacoby Creek on Agraria is a celtis occidentalis magnifica, otherwise known as a common hackberry tree. Though it appears at first glance be a single tree of massive girth, upon further inspection it reveals itself to be three trees that have grown together, weaving their way as one to the sky. Together, their combined trunks near the base measure 60 inches in diameter. Exposed by erosion, their roots grip the bank, like the giant toes of some prehistoric creature.

Those are just the roots you see. Underground, out of sight, the tree's roots extend out and connect with other trees and plants via a vast fungal network that has been described as the "earth's natural internet." The fungi provide plants with water and nutrients in exchange for carbohydrates. And through tiny threads called mycelium, the fungi connect the roots of different plants in an area, and even different species. This "wood wide web," as it has been called, allows trees and plants to talk to one another, help each other out, warn of insect predators and other threats, and share nutrients. It gives a whole new meaning to the word community.

In 1817, when Michael Bruner and his wife Elizabeth bought land on what is now Agraria from his parents, Elias and Catherine, trees played a notable role in the landscape. The survey of their parcel began at a stake in the northwest corner, next



AMY HARPER

A giant-toed celtis occidentalist growing along a Jacoby Creek tributary. The tree is native to this region of Ohio.

to a "white Oak 10 inches diameter." The property line bore south to an "Elm 16 inches diameter," then snaked its way to a stately "white Oak 20 inches diam.," continued to a little "dogwood 4 inches diam.," jogged along to another "white Oak 20 inches diam.," and a "hickory 10 inches diam.," before heading "back eastward to the beginning..."

Every time the land

Voices of AGRARIA

The Nature Conservancy in Ohio is very excited to be partnering with Community Solutions on the Agraria stream and wetland restoration project. This will help enhance and protect the water quality and wildlife habitat of Jacoby Creek, which is an important tributary to the Little Miami River, a national and state scenic river. It will also serve as a sustainable land use model for farmers ... and will be part of building a world where people and nature thrive.

> —Devin Schenk, Jacoby Restoration Project Lead, TNC

changed ownership over the next 80-some years the surveys included trees as markers along the property line: "Jacob's white oak," a black oak near the corner of John Loe's property, a 20-inch hickory near the corner of George Taylor and Thomas Coe's property ...

Surveys today make no mention of trees, but if they did, they'd find few, if any, on Agraria of the kind local nurseryman W.W. Carr once called "the perfect monarchs of the forest:" the sycamores, oaks, walnuts and basswood. They gave way over the years to generations of farmers and their fields of wheat, rye, hay, flax, oats, Irish potatoes, corn and soy along with their cattle, sheep, swine, and horses.

This progression from forest to field began when the first European settlers arrived in Ohio, near the beginning of the 19th century. Forests covered almost 95 percent of the state then, and it was said that a squirrel could go from the Ohio River to Lake Erie and never touch the ground.

Over the next 100 years the trees came down in the "grandaddy of all forests" to let in the sunlight and make way for field, farm, and town. The humus-rich forest soil was perfect for the agricultural production that paved the way for Ohio's reputation as the "breadbasket" of the nation. By the early 1900s, forests covered only 10 percent of Ohio. Today forest land accounts for about 30 percent of the Ohio's total area, most

The Nature Conservancy to restore Jacoby Creek



The outlined area encompasses The Nature Conservancy Jacoby Creek stream and wetland restoration project on Agraria.

A year from now, the Jacoby Creek corridor will look, and feel, completely different. A stream and wetland restoration project being carried out in partnership with The Nature Conservancy (TNC), and the Tecumseh Land Trust will remove the dense thickets of invasive honeysuckle that now line the banks and bring native trees and plants back to heal the soil, restore life to the stream, and improve the surrounding habitat for wildlife and beneficial insects.

The TNC mitigation plan calls for restoring meanders to the creek, which has been straightened over the years, rehabilitating and re-establishing wetlands, and replanting the riparian buffer areas with native trees and plants.

The project will restore wetland and streamside habitat on almost 60 acres of Agraria. This includes more than 20 acres of the outer buffer strips along the stream and wetlands, which Agraria will be able to use for research and for demonstrating regenerative practices, such as permaculture. TNC is collaborating with Agraria on selection of native plantings for these areas.

This is the first time TNC has collaborated with a landowner on a project that explores the intersection of mitigation and farming, providing a unique opportunity to serve as a national model for the TNC restoration projects.

The restored area along with 20 acres of adjoining farmland will be protected by a permanent conservation easement and will be monitored for invasive control for 10 years.

Invasive removal is expected to begin this year; remeandering and replanting will take place next year.



A partnership for conservation

By KRISTA MAGAW

A graria is at the heart of the Jacoby Creek Partnership! When the Arnovitz farm just west of Yellow Springs went up for auction in 2017, the Arthur Morgan Institute for Community Solutions (AMICS) was ready to do something — something big — about soil regeneration.

In the tradition of the 1999 Whitehall Farm auction, Community Solutions, Tecumseh Land Trust (TLT), the Village of Yellow Springs, and conservation activists in town and beyond acted quickly and raised the funds needed, in pledges, cash, and loans, to help Community Solutions purchase and preserve 128 acres of this critical piece of farmland, which lies within the Jacoby Creek watershed. Preserving it had long been a goal of TLT, the village, and area conservationists.

AMICS and a local couple bought 77 percent of the Arnovitz property with farming and education about soil health in mind. An adjacent landowner bought a five-acre lot to make sure it was not developed, a current tenant bought 13 acres to maintain his single residence, and a purchaser of 20 acres indicated some interest in doing conservation restoration on the property, where he intended to live.

AMICS was the only

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Reforesting Agraria

A pilot project funded by the Dayton Foundation and the Vectren Foundation will help restore life to depleted soil-and native trees and plants to a part of the farm now inhabited, and choked, by a dense "forest" of honeysuckle. Bob Moore, an arborist and one of the farmers who is transitioning the land he rents from Agraria to organic, is leading the reforestation project. Assisting him with the transformation is organic farmer Jason Ward, who also farms land on Agraria.

The area targeted for reforestation is a roughly five-acre parcel that was once farmed but left fallow and has filled in with mostly amur honeysuckle, a non-native invasive species that has plagued many a landowner in southwestern Ohio. There are few trees, and many are dead ash trees that fell victim to the emerald ash borer. The soil in this honeysuckle "forest" is degraded and barren.

The reforestation project is an opportunity to demonstrate how degraded soil can be regenerated with native plantings and transformed into a healthy, productive landscape that bridges the gap between the built environment and the natural landscape, between the residential ornamental landscapes that dominate most of suburbia and a landscape that is in harmony with nature.



Vision for Agraria: a visual re



epresentation by Bob Huston

Bringing the trees back to Agraria

Continued from page 8

of it privately owned. And it is increasingly under pressure from development, according to the U.S. Department of Agriculture.

The possibility of development loomed like the sword of Damocles over Agraria for decades. It wasn't the loss of forest land that worried local conservationists but rather the loss of farmland on the western edge of Yellow Springs as well as the impact of development on Jacoby Creek and the Little Miami watershed.

The purchase of Agraria in 2017 by Community Solutions has removed that threat. And replaced it with the promise of regeneration, for the soil and the ecosystem dependent on the soil, for Jacoby Creek — and for the trees.

The vision for Agraria is that of a reforested landscape graced by native trees working in companionship and community with pasture, crops, and grazing animals: white oaks, burr oaks, sycamores, cottonwoods, beeches, Yello-



A partnership with The Nature Conservany will restore native trees and plants to the Jacoby Creek corridor and surrounding wetlands.



Agraria's partner farmers Jason Ward, left, and Bob Moore cleared honeysuckle and dead ash trees for a reforestation project funded by the Vectren Foundation and Dayton Foundation.

woods, sugar maples, willows, shagbark hickorys, northern pecans, American hazelnuts, chestnuts, spruces, redbuds, tulip trees, wild plums, persimmons, paw paws, red mulberrys, serviceberrys ... and more.

It's a beautiful vision and a necessary one. Charles Eisenstein, in his book *Climate: A New Story*, calls forests one of the Earth's "vital organs," necessary for regulating both the carbon and water cycles that are essential to life on earth. Deforestation on a global scale has put this vital organ at risk.

Trees are rain factories. They recycle moisture from the oceans, carrying it inland, on winds generated by the trees themselves. They absorb moisture and release it back into the atmosphere through transpiration, and convert humidity to rain. Their moisture holding capability helps cool the climate. And they are also the champions when it comes to drawing down and sequestering atmospheric carbon. In the fight against climate change they'd win the MVP award.

"On carbon grounds alone, forest conservation and reforestation should be much higher priorities than they are today," says Eisenstein. "Through the lens of water," forests are even more important, he says. "We have to start protecting forests as if they were sacred (they are), and restoring damaged forests as if our lives depended on it (they do)."

As a Center for Regenerative Practice, Agraria recognizes the vital importance of trees to a healthy ecosystem and as a key strategy for mitigating, and even reversing, climate change. The TNC restoration and the reforestation projects (see articles on page 9), along with a silvopasture project being developed, will allow Agraria to serve as a demonstration site for agroforestry, a regenerative practice that combines agriculture and forestry to provide another source of income for farmers and ranchers while also building soil and ecosystem health.

The trees that grow up on Agraria over the next many decades will do their part to help cool, and adapt to, our warming planet. And they'll do much more. They will help restore soil and water health on Agraria and create new habitat for wildlife and beneficial insects. They'll provide shade in the summer and protection from the cold winter wind. They'll produce food and medicine. They will invite us to walk among them, to listen to the wind whispering through their leaves, to sit in silence beneath their green canopy. And they will feed the spirit and the soul with their beauty and bounty.

Trees live in slow time. It'll take years for this sylvan vision to fully manifest, just as it took time for those three celtis occidentalis to weave their trunks together into one majestic tree. I stand in awe before this magnificent being - and I feel the power of connection. Three hackberrys, coming together, holding each other close, joining as one in support of the whole. The trees and plants, the natural world in all its diversity and all its interconnectedness, has much to teach us about how to live in community. And how we might partner to heal the earth.

Amy Harper is assistant director of Community Solutions.

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The path back to the future

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that build carbon in soil add structure and biological health. They increase fertility and the nutrient density of food. And they create a sponge that holds water and cools the air above ground.

Rebuilding healthy soils is a leverage point for change in food systems, water systems, climate systems, and human and planetary health.

Path back to the future

Before Europeans came to the Americas, the indigenous peoples farmed the land sustainably for thousands of years, building rich topsoil in the process. In southwestern Ohio, corn, beans, sunflowers and squash were among the crops planted in polycultural plots.

The first deed for the land that Agraria now encompasses was signed in 1811 by James Monroe and James Madison. Sixty years later, the county agricultural census shows that the farm and neighboring acreage had both 'improved' and woodland acres that housed horses. cows, sheep, and swine and produced wheat, rye, Indian corn, barley, potatoes, hay, cloverseed, flax and flax seed. Other outputs included honey, milk and butter.

When we bought Agraria, the land had been farmed in a corn/soy rotation for decades. Over half of Ohio's 14 million acres of farmland are planted with corn and soy, which are primarily turned into livestock feed or biofuels, or exported. Though agriculture is Ohio's number one indus-



Jacoby Creek in winter. Agraria is a stopover point or home to more than 100 species of birds.

try, only 8 percent of the food consumed in our region is grown locally.

In early tests, we found that our soil was compacted, and that organic matter averaged around 2.5 percent. There were very few signs of life—no nematodes and few worms, for example. Bacterial levels were extremely high, while beneficial fungi levels were extremely low.

Our goals for Agraria are to explore a transition to a polydiverse landscape that builds soil, creates diverse outputs, and provides habitat for birds and insects. We hope to model regenerative, soil-building practices including no-till organic, cover cropping, pollinator plantings, rotational grazing, forest farming, agroforestry, composting and other soil amendments, and permaculture plantings.

Our fields will be encased

by a re-meandered Jacoby Creek and a rejuvenated riparian zone. The Nature Conservancy will begin this work this summer. Sixty acres, including several new wetland areas, will be under conservation with TNC, and a further twenty with Tecumseh Land Trust

Both the farming and riparian demonstration sites

are being used as educational and research opportunities for local schools and universities. Soil and water health, the use of mycorrhizal inoculants to spur growth, biochar and compost, and invasive removal are being explored, along with surveys of bird, insect, and macroinvertebrate populations.

We are also supporting the local food system through rentals to organic farmers and educational opportunities for farmers and gardeners, and by engaging in foodshed research with local and regional partners.

The projects proliferating on Agraria, and detailed in this journal, are made possible by the deep collaborations we have formed with local, regional, and national partners. We hope that reading about them will inspire you to join us in the movement back to a healthier planet for our children and our fellow inhabitants.

Susan Jennings is executive director of Community Solutions.

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Voices of AGRARIA

The promise of Agraria as a regional center for restorative agriculture is genuinely remarkable. A community-conceived and sustained model like this is a unique resource, turning all area residents into benefactors. A modern day embodiment of Morgan's passion for community—how fortunate we are to have such a place as part of the Miami Valley!

> —Dr. Marcus Nagle, assistant professor of horticulture, agricultural research and development program, Central State University

The terms of regeneration



A hummingbird moth dines on bergamot, one of the native pollinator plants in Agraria's garden.

- *Agroecosystems* are ecological systems managed and largely shaped by humans to produce food, feed, or fiber.
- *Agroforestry* is a land use system that intentionally integrates trees and shrubs into crop and animal farming systems. There are five recognized agroforestry practices:

Silvopasture combines trees with livestock and their forages on one piece of land.

Alley cropping involves planting crops between rows of trees to provide income while the trees mature.

Forest farming, also called multistory cropping, involves crops that are grown under a managed forest canopy.

Windbreaks shelter crops, animals, buildings, and soil from wind, snow, dust, and odors. They can also support wildlife and provide another source of income.

Riparian forest buffers are natural or re-established areas along rivers and streams made up of trees, shrubs, and grasses. They can help filter runoff, stabilize banks, support wildlife, and provide another source of income.

- *Biochar* is a charcoal-like soil amendment that is made by burning agricultural and forestry wastes in a controlled process called pyrolysis.
- *Carbon sequestration* is the process of capturing and storing carbon dioxide from the atmosphere. Carbon farming uses plants to trap the CO² and store it in the soil through practices such as cover cropping, no-till, and incorporating organic matter in the soil. It is seen as one of the best tools for mitigating climate change.

- *Cover crops* help suppress weeds, conserve soil, protect water quality and control pests and diseases.
- Managed intensive rotational grazing is a system in which herds and/or flocks are regularly and systematically moved to fresh rested areas. Studies show that intensively managed herds build soils.
- Mycorrhizal fungi connect with plant roots through thread-like fungal tubes called hyphae, creating a mutually beneficial, symbiotic relationship between fungi and plant. The plants provide carbon-rich sugar produced through photosynthesis to the fungi, and fungi, in turn, transfer nutrients from the soil to the plants. The hyphae weave their way through the soil, creating a vast underground fungal network that connects plants with each other and builds a moisture holding soil sponge.
- *Permaculture* is an approach to designing landscapes and perennial agricultural systems that mimic the diversity, stability, and resilience of natural ecosystems, regenerating soil health and

<u>Voices of</u> AGRARIA

grateful to have been part of it.

biodiversity while providing for food, energy, shelter, and other human needs.

- **Regenerative agriculture** is a system of practices that restores and enriches soil health, improves water quality, and builds healthy ecosystems above and below the ground. They increase biodiversity and pollinator habitat and resilience to drought and pests. They improve productivity and produce nutrient rich food. They also capture and store atmospheric carbon in the soil.
- **Relocalization** is a strategy to build resilient societies through local production of food, energy and goods, and the local development of currency, governance and culture.
- The *soil food web* is made up of organisms that spend all or part of their life in the soi, such as bacteria, fungi, nematodes, earthworms, and small vertebrates. They break down organic matter, sequester nutrients, fix atmospheric nitrogen, making it available to plants, enhance soil aggregation and porosity, prey on crop pests and are food for above-ground animals.

Agraria is what I was waiting to believe in. Agraria

was a cooperative effort to save a local watershed

and envision something truly regenerative and

community, Agraria creates abundance. I am so

resilient. Through restoration, education, and

Agraria: model for a just ecomomy

Continued from page 4

create a different way of "doing economy" — a way in which a solid, local community is built that is rooted in pride of geographic place, that embraces human diversity, practices inclusion and democracy, and grounds itself in a fundamental respect for and cooperation with nature.

It is a beginning, an exploration, in the necessary transformation through which all of humankind must evolve if we are to make peace with the planet, and with each other and, ultimately, survive as a species on this planet.

Does this mean there won't be conflicts? No. Does this mean there won't be setbacks? No. Does this mean there won't be disappointments? No. Does this mean that all will go easily? No.

What it does mean is that we have a rare opportunity to face the multiple challenges ahead with intelligence, grace, inclusivity, compassion, understanding ... and do I dare say, Love. We have the chance to create and model a different way of being with each other and with the planet, and in a way that is far richer and more satisfying than the cubbyholed, demoralized, unjust, destructive, bottom-line, globalized system we find ourselves in today.

What does Agraria mean to you? Let's talk about it.

Nancy Lee Wood is a board member of Community Solutions.

TLT, Agraria conservation partners

Continued from page 9

buyer that committed to putting a permanent conservation easement on part of its property — 80 acres of key riparian corridor and adjacent prime farmland. Its partnership with The Nature Conservancy on a stream and wetland mitigation project will help defray the cost of purchasing Agraria.

TLT saw the opportunity to build the outpouring of interest in preserving Agraria into a bigger conservation effort — to improve soil and water quality in the Jacoby and its twin sub watersheds of

> <u>Voices of</u> AGRARIA

the Little Miami and Yellow Springs Creek. The land trust pursued and won a federal "Regional Conservation Partnership Program" award, that will aid AMICS' efforts and promote similar efforts among its neighbors. State, federal, and local partners in the \$3.2-million Jacoby Partnership have committed expertise and funds for stream and habitat restoration, soil improvement, best practices for water quality, and diversification of farming practices, including conversion to organic.

Landowners and farmers in the 26,000-acre Jacoby Partnership area are eligible

for consultation on best practices, as well as funding to implement these practices and to protect their land with permanent conservation easements. TLT, AMICS, and other partners are offering a series of workshops on soils, best conservation and organic practices, and site visits throughout the five-year project. With its commitment to education and regenerative practices, Agraria is an ideal demonstration site for the entire Partnership!

Krista Magaw is executive director of the Tecumseh Land Trust.

Community Solutions has been a tremendously supportive Miller co-op partner, providing scaffolding, growth and real leadership opportunities for co-op students, several of whom continue on part time throughout their time at Antioch. We are grateful for our partnership and look forward to future collaboration.

-Beth Bridgeman, assistant professor of cooperative education, Antioch College

Calendar of Events

May 19 | 4–6 p.m. Nature Connect Open House & Potluck

May 25 | 1–5 p.m. Wild Edibles Workshop with Janet Lasley, President, Dayton Area Wild Ones

June 2 | 1–3 p.m. Key Line Training with Lisa Helm of Dayton Urban Grown

June 4 & 5 Teacher Training: Soils for Life, sponsored by the Ohio EPA

July 14 | 2–4 p.m. Annual meeting. with presentations, tours, and workshops

July 22-26 | 9 a.m.–1 p.m. Nature Connect Preschool Creek Camp, 3–5 years old

August 5–9 | 9 a.m.–2 p.m. Nature Connect Farm & Stream Camp, 6-12 years old

August 10 | 6–9 p.m. Agraria Celebration Dinner

September 15 | 9 a.m.–5 p.m. Hoophouse training with Lisa Helm of Dayton Urban Grown

October 5, 10 a.m. | 4 p.m. Miami Valley Fibershed Day

November 1–3

Annual conference, Pathways to Regeneration: Soil, Food, and Plant Medicine

For more information,

call 937.767.2161 or visit www.communitysolution. org/calendar-1

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People of Agraria: Who we are

Bob Moore

Excerpted from an article in the Yellow Springs News.

A gulp of barn swallows dove in between rows of buckwheat and bloody butcher corn on a 90-degree afternoon last summer at Agraria. On an adjacent field, a heat mirage shimmered as young soybeans poked up through the dry soil.

To local horticulturalist and aspiring farmer Bob Moore, Agraria is a place of both opportunity and uncertainty.

On 38 acres of rolling farmland he leases from Community Solutions, Moore experimented with varieties of grain that could transform the local food economy — if they can thrive.

Gesturing toward the surrounding fields of conventionally-grown corn and soy, Moore observed the reality of agriculture today and posed the question he hopes to answer at Agraria.

"We don't eat what's grown here. All of the grain on all of this farmland is shipping away from us," he said. "But is there a way we could value-add grain and then get the local farmers to grow that grain?" Moore asked.

Toward that end, Moore experimented with grains like emmer, a wheat that dates from Ancient Rome, along with hull-less oats, upland rice and red corn.

"I'm prototyping," he said. Moore was one of five farmers who leased land at Agraria in 2018.

The way Community Solutions' Executive Director Su-



AMY HARPER

san Jennings sees it, Agraria has opened up collaboration opportunities in the areas of agriculture, education and research. But instead of competing with existing practitioners, Community Solutions wants to support them.

"The most important thing we can do is to support those who are already doing it — the farmers, the researchers, the educators," Jennings said. "We don't need to re-create what people are already doing."

Wiping sweat from his brow while weeding last year, Moore reflected on a season that had so far proved to be a hard lesson in farming's realities.

"There's a lot of idealism that gets stripped away in this heat," he said. "The barriers are incredible."

For example, the land, which for decades was in a typical corn and soy rotation, was "worked pretty hard," in Moore's words — the soil was heavily depleted. He had to bring two semi-truck loads of compost for a small trial of grains and vegetables.

Moore expressed his gratitude to Community Solutions for the opportunity to try out new possibilities as he angles to find his niche in the local food economy. After growing up on a family farm on Clifton Road, Moore went on to get his degree in horticulture at Ohio State before going into the nursery and landscaping professions.

Though hesitant to call himself a famer, he hopes to someday be one. Despite its challenges, Moore finds farming rewarding. It's an act of creation.

"It's building something out of nothing," he said. — Megan Bachman

Jason Ward



Stephanie, Jaxson and Jason Ward.

Picture an eight-year-old boy with a dream of one day owning a fully functioning 400-acre farm, a combine bigger than his house, animals to tend to, and a loving family to provide for. It's every farm kid's dream. And Jason Ward has made it a reality.

A life-time resident of Clark County, Jason was a member of 4-H and the FFA chapter of Tecumseh High School and won multiple national and international awards for showing steers, heifers and bulls. He also participated in scouting, ending his high school career as an Eagle Scout.

In addition to 4-H, scouting, and FFA activities, Jason worked as a farmhand for the late Bob Rhodus. He learned everything from agronomy and animal husbandry to welding and equipment repair and helped Bob and his wife bale hay and grow corn, soybeans and wheat.

After earning an honors degree in environmental science and agronomy from Ohio State University, Jason devoted his time and energy to not only his personal construction business and trucking company but to the Clark County 4-H and FFA programs. He took over Valley Livestock 4-H Club and served as the president of the Clark County Dairy Committee.

Jason's experience as a farmhand on his mentor's farm, taught him how to take the reins and farm his own land, starting with an eightacre farm and a borrowed, overhauled 1962 Ford tractor. After the first year of farming, Jason's farm had more than doubled in size and by 2017 he was farming around 40 acres. That's when his wife, Stephanie, was diagnosed with Celiac Disease.

As the family learned more about the disease and the possible cause of many diseases, Jason decided it was time to make a change and

People of Agraria

• Continued from page 16 farm ground the way it used to be, and should be, farmed: organically. In just two years his acreage has gone from 40 to almost 400 acres. He farms 23 acres on Agraria, and is growing soy, sassafras, and cover crops this year. He is interested in intensively managed grazing, and is hoping to introduce that regenerative practice on Agraria with a small herd of mixed farm animals.

For his family's safety and many around the world, Jason's vision is bigger than 400 acres. The eight-year-old boy's dream has become not only a reality but also a mission for the future. A mission to give back to the land. It is time, believes Jason, to bring the soil back to its fullest potential and produce organic crops to ensure the best future for people and the planet.

— Stephanie Ward

Voices of AGRARIA



Helping dig a trench for an electrical line to Agraria's 100-year old bank barn last year were, clockwise from left, Gabby Loomis-Amrhein, Jude Rose, Thomas Amrhein, and Julia Navaro.

I have enjoyed learning and connecting this past year with not only all the many farmers who have willingly shared their ideas and their time and energy with me, but also with the Agraria staff who have helped me to personally develop through the same selfless connection and excitement. I started out with one project of growing heritage grains last winter, which didn't go according to that simple plan. What happened, though, was a process of beginning to look at managing biological systems, working with people with different viewpoints and management styles to develop a larger perspective. That perspective seems to be key to understanding this intersection of agriculture, conservation, and community.

—Bob Moore, farmer on Agraria

[T]he opportunities provided by AMICS are not only at the essential front edge of urban ag issues, but are critical pieces in the puzzle that regional urban food efforts present to us at this juncture of the local food movement.

> —Sherry Chen, Executive Director, Springfield Ohio Urban Plantfolk (S.O.U.P.)

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Lend a hand on volunteer workdays, every Friday, 1–5 p.m.

For more information, call Gabby Loomis-Amhrein, 937.767.2161, or email gabbyloomisamrhein@ gmail.com. **COMMUNITY SOLUTIONS LAUNCHED** a \$2 million capital campaign in August 2018 to raise funds for Agraria. Funds raised through the Putting Down Roots campaign will be used to upgrade our 100-year old bank barn, install a bike and walking path from Yellow Springs High School to Agraria, construct a Center for Education, and support the Annual Fund for general operating expenses. For more information, visit https://www.communitysolution.org/agraria. Agraria also offers these sponsorship opportunities:

Garden Guardian

Have a garden, plot, tree, or special plant friend named after you or someone else! This opportunity helps the landscape of Agraria be a more nurturing and comfortable home and place of rest for native plants, herbal medicine providers, pollinators, birds, and more through small-scale, sustainable farm and garden practices. Support will be allocated for plantings and tending to their health and well-being.

Support Levels • \$20-\$1,000

Tool Shed Trustee

Investing in good tools is the best way to get a job done well. At Agraria we have much work to do, including invasive species removal, encouraging and replanting native species, maintaining historic and new infrastructure, and education initiatives and research, all while tending the land with care and dignity. For all of this we need a lot of tools, from hammers, saws, gloves, and trowels, to tractors and trucks. Support will be allocated for the purchase and sound maintenance of much needed farm tools and equipment.

Support Levels • \$20-\$50,000

Barn Builder

For more than 100 years, a 7,000 sq. ft. bank barn has stood on the grounds of what is now Agraria. It needs restorative care to continue holding space for our changing relationship with the land and each other. Support will be allocated for materials and labor for barn restoration. Support Levels • \$50-\$500,000

Forest Familiar

We are proud to tend the home of native species such as the Yellow-billed Cuckoo, the Little Brown Bat, the Putty Root Orchid, nesting Bluebirds, and Bottle-brush Grass. In order to continue listening well to the needs of our interspecies neighbors, we need to mindfully manage the things that threaten them. Support will be allocated for research, observation, and management of native species at Agraria. Support Levels • \$20-\$25,000

Voices of Agraria



Agraria Radish Field 5 November 20, 2017





DENNIE EAGLESON, a local photographer and homesteader, has been creating a quarterly documentation of the land at Agraria, beginning in April of 2017. Her documentation includes making pictures of the farm fields, streams, woods, and pathways of the farm. In addition, she has been taking soil samples from each field that include a selected part of vegetation (crop sample, native plant), and is photographing them against a white background under studio lights. The earliest samples were hard-packed clumps of clay with no evidence of living organisms. The archive over time demonstrates the way the soil is coming alive as a result of organic and regenerative practices. The intention is that these images will be mounted

in the barn in an everexpanding grid documenting the evolution of the land and health of the soil.



Agraria April 21, 2017 Field 4 Sample 3A

