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GROWING ORGANIC

NRCS ASSISTANCE FOR ORGANIC FARMERS

Natural Resources Conservation Service

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THE LEXICON OF SUSTAINABILITY


NRCS
Alabama

GROWING ORGANIC

NRCS ASSISTANCE FOR ORGANIC FARMERS

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THE LEXICON OF SUSTAINABILITY™

GROWING ORGANIC

NRCS ASSISTANCE FOR ORGANIC FARMERS

4 WHAT IS NRCS?

7 WHAT IS ORGANIC?

8 NRCS & TRANSITION TO ORGANIC

10 HEALTHY SOIL
cover crops | crop rotation | compost | no till | conservation tillage | soil organic matter

14 WEED & PEST MANAGEMENT
insectaries | beneficial insects | companion planting | mulch | cover crops

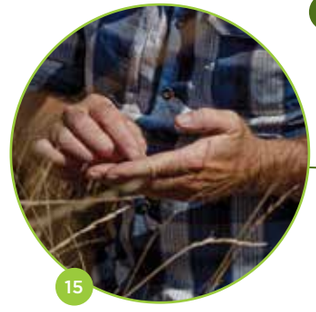
18 HABITAT
biodiversity | conservation corridor | hedgerows | buffer strips | fish and wildlife habitat management | bat and owl boxes

22 IRRIGATION
drip irrigation | irrigation water management | flowmeter | soil moisture sensor | water quality | water quantity

26 HIGH TUNNELS
season extension | climate control | drip irrigation | plant health and vigor | energy savings | local food

28 LIVESTOCK & PASTURE MANAGEMENT
diverse pasture plantings | moveable fences | watering | fencing | rotational grazing | nutrient management | pasture & grazing management

32 5 STEPS TO NRCS ASSISTANCE




COVER CROP
NUTRIENT MANAGEMENT PLAN
soil carbon sequestration
water engineer
pasture management
water conservation
HEDGEROW
insectary
NRCS
NATIVE PLANTS
WEED MANAGEMENT
pollinators
BIODIVERSITY
COMPOST
soil conservationist
USDA
NO TILL
district conservationist
habitat
bat box
ORGANIC
CROP ROTATION
DRIP IRRIGATION
healthy soil
RESOURCE CONSERVATION
conservation corridor
USDA NATIONAL ORGANIC PROGRAM (NOP)
IRRIGATION WATER MANAGEMENT PLAN
riparian buffer
prescribed grazing
EQIP
transition
INTEGRATED PEST MANAGEMENT
CONSERVATION PLAN
soil organic matter
IRRIGATION EFFICIENCY
buffer strip
HIGH TUNNEL
GREEN MANURE
rotational grazing
What is Organic?
MOVEABLE WATER SOURCE

What is NRCS?

Since 1932, the United States Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) has provided assistance to agricultural producers to conserve the soil, water, air, plants, and animals on their land.

Through offices in nearly every county across the U.S., NRCS provides technical and financial assistance to help agricultural producers — including certified organic and transitioning producers — plan and implement voluntary, science-based conservation practices.

NRCS experts, such as district conservationists, soil conservationists, engineers, biologists, botanists, and others, work together to help producers find and apply conservation solutions while ensuring their working lands remain productive. Staff often live and work in the counties that they serve, and thereby understand local issues and challenges.

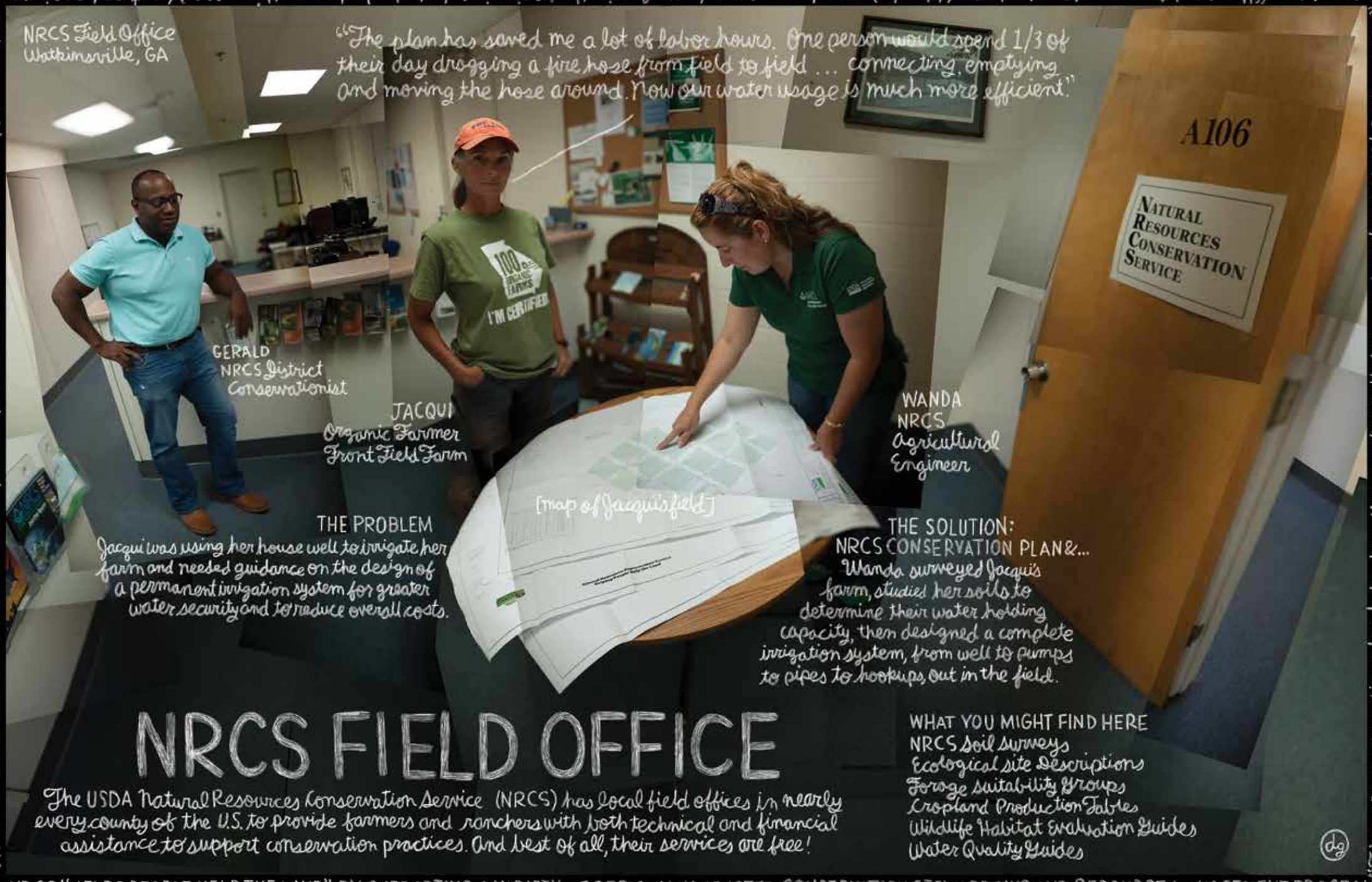
Organic agriculture and NRCS' goals are well aligned. Many of the USDA Organic regulations can be achieved using NRCS conservation practices, which reflect these shared goals.

"NRCS is a great resource for understanding some baseline things, like soil types and characteristics of a particular growing environment right up through supporting cover cropping, high tunnels and a whole range of technical assistance and financial support."

— **Jack Hedin**, Certified Organic Farmer
Featherstone Farms, Rushford, MN

"I look at what an agricultural producer is passionate about. Since a conservation plan is voluntary, it's important to get their feedback and buy-in on a plan that can protect resources and help them with their agricultural production. It's rewarding when agricultural producers are happy with changes they've been able to make with our practices."

— **Jennifer Walser**, NRCS District Conservationist
Sonoma County, CA



"The water conservation plan helped us figure out exactly how much water we need on our crops. Before we'd have enough water as many times a day as we need it, without wasting anything, so that we'd have enough water as many times a day as we need it, without wasting anything."

Jacqui said, "We went to overwater plants and workers seemed very slow in the beginning, but she had everything mapped out and engineered


"To us, organic farming is the only option. I want to leave a legacy of supporting my family by feeding a healthy community."
- Elizabeth
Minto Island Growers
Salem, OR
27 July 2016
[this land will transition to organic]
[conventional wheat]
[cover crop]
TRANSITION
A three-year process is required to transition land that was previously farmed conventionally to USDA Organic standards. GMOs, synthetic fertilizers and pesticides are eliminated.
Farmers may choose to have both organic and nonorganic fields, but buffer zones between organic and nonorganic fields are required.
For organic certification, farmers and ranchers must present the following to an independent USDA-accredited certifying agent:
- detailed description of operation to be certified
- history of substances applied to land during the previous three years
- the organic products grown, raised, or processed
- written Organic System Plan describing the practices and substances to be used
CHRIS
ELIZABETH
ORGANIC
A labeling term for food or other agricultural products that have been produced using cultural, biological, and mechanical practices that support the cycling of on-farm resources, promote ecological balance, and conserve biodiversity in accordance with the USDA Organic regulations. This means that organic operations must maintain or enhance soil and water quality, while also conserving wetlands, woodlands, and wildlife. Synthetic fertilizers, sewage sludge, irradiation, and genetic engineering may not be used. Only products that have been certified as meeting the USDA's requirements for organic production and handling may carry the USDA Organic Seal.
(buffer zone between organic and nonorganic fields will go here)
THE USDA'S NATURAL RESOURCES CONSERVATION SERVICE CAN HELP FARMERS DEVELOP CONSERVATION PLAN WITH PRACTICES THAT PROMOTE DIVERSITY AND BUILD SOIL HEALTH ... ORGANICALLY.
"Habitat management, encouraging hedgerows, and the single greatest benefit for us has been the irrigation infrastructure."
"The NRCS programs available for organic farmers are incredibly valuable to any operation," Elizabeth notes. "We've diversified immensely. Some of the practices we were already doing, such as cover cropping, but it incentivized us to do more."
A conservation activity plan can be used as part of the Organic Systems Plan required as part of the certification process.

What is Organic?

Organic farming is one of the fastest growing segments of agriculture.

To be "certified organic," producers must follow regulations outlined by the USDA National Organic Program (NOP). Managed by USDA's Agricultural Marketing Service, the NOP develops, implements and administers national organic production, handling, and labeling standards.

Organic agriculture is an ecologically based system that relies on preventative practices to deal with weeds, insects, and disease, using nontoxic methods for any problems that arise. Organic practices require the use of cultural, biological, and mechanical practices that support the cycling of on-farm resources, promote ecological balance, and preserve biodiversity. Organic producers avoid synthetic fertilizers and do not use sewage, sludge, irradiation, or genetic engineering on their operations.

Healthy soil is the foundation of organic farming. Early leaders of the organic farming movement emphasized that successful farming depends on the health of all natural resources on the farm and in its surroundings. Organic producers strive to develop farming systems that mimic nature and utilize natural processes.

More and more farmers and ranchers will be transitioning to organic to meet growing consumer demand, which currently outpaces U.S. growers' supply. NRCS looks forward to providing conservation assistance to today's and tomorrow's organic producers.

"We are very rooted in doing a type of farming that respects biodiversity and the health of the planet. The more we learn about natural systems and how we can work with them and enhance them in order to produce food, the more excited we are. You just feel really good to be part of a larger system."

— **Harriet Behar**, Certified Organic Farmer
Behar/Brin Farm, Gays Mills, WI

"I just have this love of nature, I guess, that really drives me. When I decided to get into agriculture myself, it wasn't like I switched from chemical production to organic; it was more an extension of the values I learned growing up."

— **Jim Riddle**, Certified Organic Farmer
Blue Fruit Farm, Winona, MN

Watch "Growing Organic: NRCS Assistance for Organic Farmers" at **www.nrcs.usda.gov/organic**

NRCS & Transition

To be considered organic and to use the USDA Organic seal, all operations with more than $5,000 in organic sales must be certified. Independent, third-party USDA-accredited organizations certify farms and ranches as organic. The application to become certified organic and use the USDA Organic seal includes:

1. Detailed description of the operation
2. History of substances applied over past three years
3. Organic products grown, raised or processed
4. Organic System Plan describing practices and substances used

It takes three years to transition land to an organic system that was previously farmed conventionally. Farmers may choose to have both organic and nonorganic fields, but must create buffer zones between them.

NRCS Technical Service Providers (TSP) can help producers develop a Conservation Activity Plan for Organic Transition (CAP 138). CAP 138 consists of three sections: Resource Inventory, Erosion Control Inventory, and Summary Record of Planned NRCS Conservation Practices. The Resource Inventory section may serve as a portion of the Organic System Plan, which is required for certification.

Farmers and ranchers should begin by working with NRCS to develop a conservation plan for their operation. Then, a TSP can develop a CAP 138 for transition and producers can apply for financial assistance to implement conservation practices or enhancements.

Additionally, farmers may apply for up to 75 percent — up to a maximum of $750 per year — reimbursement of organic certification costs.

"I would say to farmers thinking about transitioning to organic that you really have to be open to experimentation. There's no substitute for trying different methods on your farm under the exact conditions that exist where you're farming and to experiment. Be willing to be flexible and to adopt new methods and try things differently every single season."

— **Stephen Pedersen**, Certified Organic Farmer
High Ground Organics, Watsonville, CA

"The most important thing is to have conservation plans that help transition to organic. They can address concerns while also moving a farm toward the regulations and requirements of organic certification."

— **Randall Wordlaw**, NRCS District Conservationist
Wedowee, AL

CLIF SAYS, "MY FRIENDS THINK I'M CRAZY AND THEY SAY, 'YOU'VE JOINED THE LIKES OF THOSE TREE HUGGERS' AND THINGS LIKE THAT, BUT I SEE WHAT ORGANIC FARMING CAN DO."

Clif is a third generation farmer who grew up on farms using conventional practices since 1965. The Natural Resources Conservation Service (NRCS) has helped him transition from conventional agricultural production using chemical-intensive practices to certified-Organic operations that develop healthy soils using a variety of conservation practices that build soil organic matter.

Healthy Soil

NRCS can help farmers and ranchers with a number of conservation practices that build healthy soil. Diverse crop rotations, cover crops, nutrient management and conservation tillage are examples of practices that feed the soil, reduce erosion, improve soil structure, and enhance nutrient cycling and water retention.
NRCS follows four soil health principles:

1. Use plant diversity to increase diversity in the soil.
2. Manage soils more by disturbing them less.
3. Keep plants growing throughout the year to feed the soil.
4. Keep the soil covered as much as possible.

By rotating crops across their fields from season to season, organic farmers add biodiversity and increase resilience in their operations while increasing their soil's organic matter.

Instead of leaving land fallow after each harvest, organic farmers keep the ground covered with cover crops. Throughout the growing season, the cover crops act as a green manure, providing an additional source of nutrients that build soil organic matter and reduce the need to bring in additional inputs from off-farm sources.

If crops need additional nutrients, NRCS can help producers develop a nutrient management plan that incorporates organic plant, animal, and natural mineral-based fertilizers, most of which release nutrients gradually through the action of soil organisms.

Organic no-till systems, such as the roller-crimper, have also helped organic producers reduce the intensity of soil disturbance in annual crop rotations.

By using NRCS soil health principles and systems, farmers can sequester more carbon, increase water infiltration, and improve wildlife and pollinator habitat — all while harvesting better profits and often better yields.

"The soil is a biological engine. By growing cover crops and turning them back into the soil we're giving fuel to that engine so the microbes can give our plants what they need to be successful. We also end up increasing the amount of carbon within the soil as well."

— **Joe Reynolds**, Certified Organic Farmer
Gaia Gardens, Decatur, GA

"On organic farming systems, we offer assistance with nutrient management plans. These look at nutrients on the whole farm, including what is already available within the soil and what the plant needs to uptake. Then we look at what is being applied to see if there are any deficits or excess nutrients. NRCS has a staff of agronomists and nutrient management specialists and conservation planners that can help to provide the technical assistance needed to take the science one step further and understand what the data can tell us about working lands."

— **Jennifer Walser**, NRCS District Conservationist
Sonoma County, CA

Watch "Healthy Soil: NRCS Assistance for Organic Farmers" at **www.nrcs.usda.gov/organic**

Cassata Sonoma Vineyard
Glen Ellen, CA

THE SOIL CONSERVATIONIST

Possesses a practical knowledge of natural resources and environmental conservation methods and techniques. Provides farmers and ranchers with conservation planning assistance from initial evaluation through project completion and plan evaluation.

"We help producers see the whole picture by gathering good quantitative information and establishing a NUTRIENT BUDGET[1] that turns what they may be observing into actual numbers they can fine tune to shape their nutrient application and management decisions."

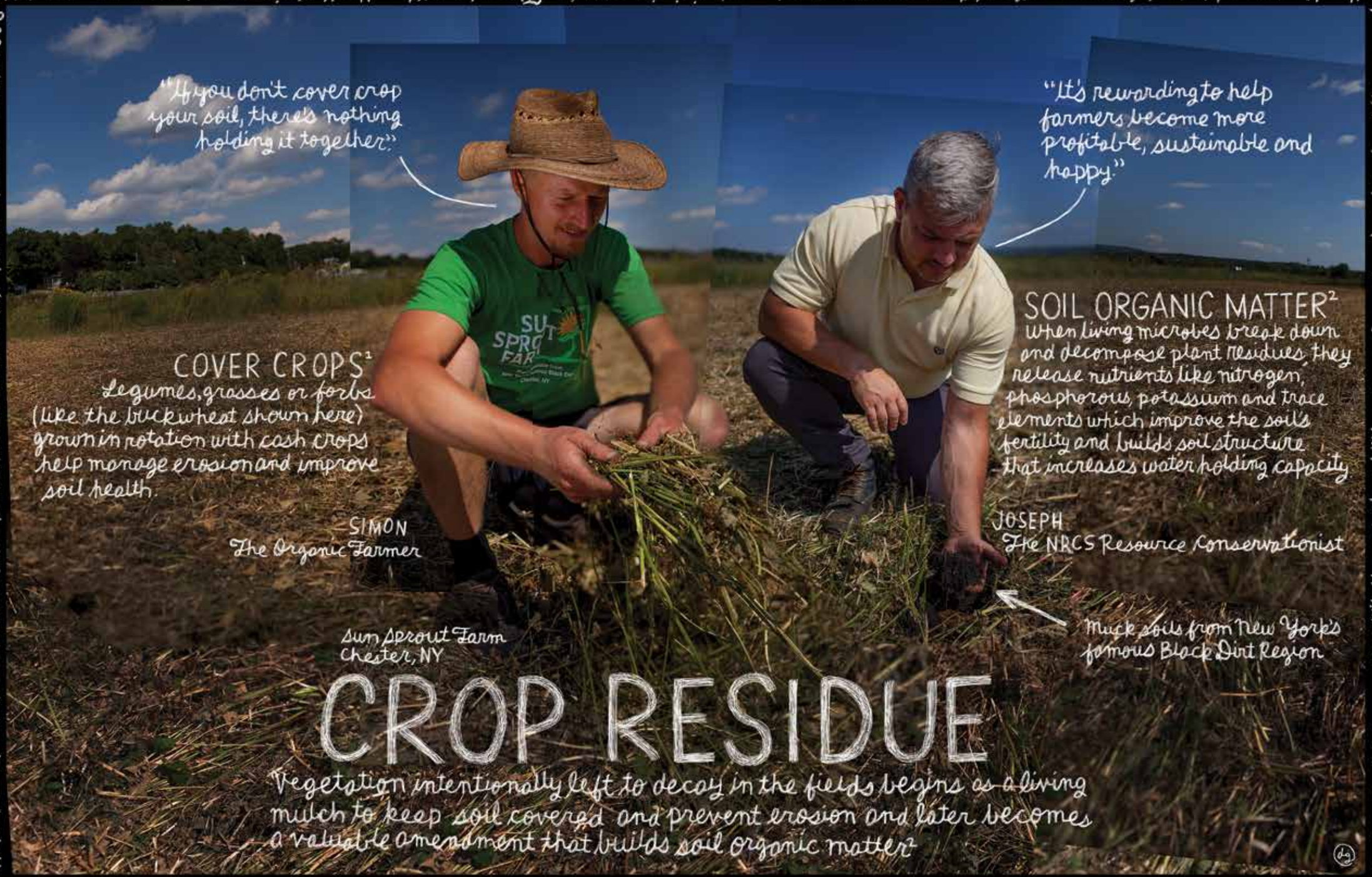
— Emma

THE USDA'S NATURAL RESOURCES CONSERVATION SERVICE CAN HELP PRODUCERS ACHIEVE GREATER YIELDS WHILE ALSO EFFECTIVELY STEWARDING THEIR NATURAL RESOURCES.

"Beginning with a soil analysis helps set a benchmark," Emma observes. "From there we check what's in the irrigation water, then look at the soil amendments a farm applies. Organic growers have fewer nutrient choices, but they still over or under apply what the crop may need. A nutrient budget can help maximize crop yield and quality, while minimizing the degraded water quality often associated with excess nitrogen and phosphorus applications."

Cover crops (using a mix of grasses, legumes and forbs) can provide benefits for both organic and conventionally managed systems. These include increased biological nitrogen fixation, minimization and reduction of soil compaction; decrease of particulates escaping into the atmosphere, and in some cases cover crops can even be used to provide livestock with a source of supplemental forage.

INSTEAD OF RELYING ON CHEMICALS, ORGANIC FARMERS CAN WORK WITH NRCS TO DEVELOP SYSTEMS THAT USE COVER CROPS TO BUILD HEALTHY SOILS.



HOW DO CERTIFIED ORGANIC FARMERS LIKE SIMON BUILD SOIL FERTILITY WITHOUT THE USE OF CHEMICAL FERTILIZERS? BY PLANTING COVER CROPS.

Cover crops increase soil fertility through the addition of organic matter, break pest and disease cycles, allow the ground to rest, increase soil moisture, suppress weeds, and minimize erosion. These benefits collectively increase farmers' profits.

NRCS helps farmers plan and plant their cover crops throughout the year as part of a planned rotation.

Weed & Pest Management

One of the greatest challenges organic farmers face is weed management. A single weed can produce more than 10 million seeds, and if they're not dealt with in time, they can present farmers with challenges for years to come. Instead of using chemical herbicides, organic farmers can work with NRCS to implement a variety of conservation practices that suppress weeds while building soil health.

Cover crops are one of the most effective tools for suppressing weeds, and they work in three ways.

1. When alive, they outcompete weeds for water, nutrients, and sunlight.
2. As mulch, they minimize weed growth by physically preventing the germination of weed seeds, cutting off access to light and warmer temperatures.
3. When certain legumes, cereals or brassica decompose, they produce natural herbicides that can suppress weed seed while sequestering carbon.

Rotating crops and timing planting dates to avoid weed germination windows are other effective weed suppression strategies.

NRCS can also help growers implement conservation tillage practices. Organic no-till uses tools like the roller crimper to kill cover crops while leaving their residue as a green mulch that feeds the soil and suppresses weeds. Farmers can use a variety of other mulches made from natural materials, paper or plastic. These are installed at the beginning of the growing season and trap soil moisture while preventing sunlight and weed growth.

Pest management on organic and transitioning farms requires a holistic approach. It relies primarily on preventing and avoiding pests with cultural and mechanical suppression. NRCS coordinates conservation plans with farmers' Integrated Pest Management plans to protect natural resources and benefit the ecosystem.

For example, organic farmers can plant insectaries to attract beneficial insects, like ladybugs, that biologically control pests. They can use companion planting to draw pests away from crops. Installing nesting sites such as bat and owl boxes can also help manage pests. Cover crops naturally break the cycle of soil-borne diseases, and some soil-dwelling insects, while increasing the soil's organic matter.

"We farm organically by dealing with erosion and insects and weed problems using non-synthetic measures. We also deal with intercropping and crop rotations. It's a big misconception that it's more difficult to farm organically than it is to farm using conventional methods."

— **Gene Thornton**, Farmer
Sneaky Crow Farm, Roanoke, AL

"At NRCS we always want to reduce tillage. Tillage destroys the structure of your soil. It burns up your organic matter. But if you're an organic producer, and you want to control weeds and don't spray, that's an issue.

How can we work on controlling weeds without tillage? Cover crops are perfect because now we're building soil health... and we're controlling weeds. We're addressing your problem and we're also meeting our goal!"

— **Cullen McGovern**, NRCS Soil Conservationist
Longmont, CO

Watch "Weed Management: NRCS Assistance for Organic Farmers" at **www.nrcs.usda.gov/organic**

THE NRCS CAN HELP ORGANIC FARMERS CREATE HABITATS FOR BENEFICIAL INSECTS AND ORGANISMS THAT INCREASE BIODIVERSITY WITHOUT USING PESTICIDES.

Factors to consider: 1) Where do crop pests come from and how are they attracted to a crop? 2) What are their most important native predators and parasites? 3) Are critical resources (pollen, nectar, alternate hosts/prey) available to the beneficial insect at the right time? 4) Which annuals and perennials compensate for critical gaps in the landscape.

MULCH

Any non-synthetic material, such as wood chips, leaves, or straw, or any allowed synthetic material such as newspaper or plastic, that serves to suppress weed growth, moderate soil temperature, or conserve soil moisture*. NRCS can help producers with a variety of mulches, including plastic mulch, green mulch and paper mulch.

* per the USDA's National Organic Program (NOP)

INSTEAD OF SYNTHETIC HERBICIDES, ORGANIC FARMERS RELY ON A VARIETY OF TOOLS TO SUPPRESS WEEDS, INCLUDING MULCH.

Plants growby using photosynthesis to convert sunlight into energy. This process requires specific light wavelengths, which differ from crop to crop. By reflecting light from the appropriately colored plastic mulch onto plant leaves, plant development can be greatly accelerated. Examples include red plastic mulch for tomatoes and metallic-silver for peppers and potatoes.

NRCS CAN PROVIDE ORGANIC FARMERS WITH A WEALTH OF TECHNICAL EXPERTISE, INCLUDING GUIDANCE ON HOW TO HELP TACKLE PESTS WITHOUT THE USE OF PESTICIDES.

The introduction of companion plants can disrupt the movement of pests from one plant to the next, and create the opportunity to grow additional levels of crops in the same space, which may increase overall yields.

Companion plants can also provide protective shelter, with taller plants giving shade to sun-sensitive shorter plants or serving as a windbreak. They can

Habitat

NRCS can help organic farmers work with nature instead of against it, building and conserving vital habitat for pollinators, beneficial insects, and wildlife.

Conservation plantings such as field borders, hedgerows, and riparian buffers can help protect water and soil resources and provide wildlife and pollinator habitat. These may also harbor natural enemies of pests and intercept pesticide and GMO pollen drift from neighboring non-organic farms.

Wildlife corridors and wildlife-friendly fences maintain connectivity for wide-ranging wildlife, such as deer and predators, and keep them away from crops. Structures like owl and bat boxes create places for beneficial wildlife that reduce pests.

NRCS can also provide assistance with biodiversity practices that include stream habitat restoration, tree and shrub establishment, wetland wildlife habitat management, prairie restoration, multispecies native perennials for biomass and wildlife habitat, riparian buffers, terrestrial and aquatic wildlife habitat, and prescribed grazing management.

NRCS not only helps to create wildlife habitat on a farm-by-farm basis, but the agency also targets at-risk species on a landscape scale. NRCS works with partners and landowners to conserve targeted species in specific areas, realizing that many farmers and ranchers working together can make a difference.

"Diversity is the rule of the game now. We've got diverse people, flowers, plants, animals, you name it. Biodiversity, in my case, would mean that we try to mimic Mother Nature."

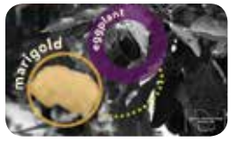
— **Gene Thornton**, Certified Organic Farmer
Sneaky Crow Farm, Roanoke, AL

"Farmers are dealing with nature all the time. If it's always a combative stance and you're just trying to fight off every pest or every rainstorm or every drought without using what nature has to offer, then you're missing out on half of what you could be using to be a good farmer."

— **Jeanne Byrne**, Certified Organic Farmer
High Ground Organics, Watsonville, CA

"The core is always going to be the conservation plan. We go out on the land and meet with the producer, identify any resource concerns, then find a program that helps accomplish the practices we see need to be done … everything from nutrient management to pest management, even putting in insectaries to help with the pollinators."

— **Glenn L. Riehle**, NRCS Resource Conservationist
Paso, WA



Watch "Habitat and Biodiversity: NRCS Assistance for Organic Farmers" at **www.nrcs.usda.gov/organic**

THE NRCS HELPS ORGANIC FARMERS WITH CONSERVATION PRACTICES THAT FOSTER CYCLING OF RESOURCES, PROMOTE ECOLOGICAL BALANCE AND PRESERVE BIODIVERSITY.

Organic systems seek to mimic nature by maintaining biodiversity on the farm and using methods that support the conservation of natural resources, working with NRCS, farmers can improve water quality and enhance soil health without emphasized adaptations through conservation management and land-use decisions that take into account that soil is a living organism with multiple beneficial functions.

HOW CAN FARMERS IN DROUGHT-STRICKEN AREAS MAINTAIN WATER SECURITY AND MEET THEIR IRRIGATION DEMANDS WHILE PROTECTING FISH AT THE SAME TIME?

Fifth Crow Farm works with NRCS specialists to craft a site-specific plan that pays careful consideration to fish and wildlife habitat and other ecological resources. The plan allows the farm to draw water during off-peak hours, then store it onsite for later use. "Butano Creek is far from restored," James says, "but they're making some progress on water extraction issues by working with willing partners."

CONSERVATION CORRIDOR

Provides a safe habitat for wildlife to move through open agricultural land and acts as a buffer to slow and capture any sediment or nutrient-rich runoff

farmlife

wildlife

STRAWBERRY FIELD (forever)

HARKINS SLOUGH
One of the few freshwater wetlands remaining in the area, sheltering nesting Osprey and bald eagles.

High Ground Organics
Watsonville, California
9 June 2016

NATIVE PERENNIALS
Pacific dogwood, cottonwoods, willows, and box elders provide many ecological benefits to the farm.

NATIVE WILD RYE

STEPHEN PEDERSEN
Organic farmer

JEANNE BYRNE
Organic farmer

buffer strip*

Slows runoff, reduces erosion and captures sediment and/or nutrients ensuring that waterways (like Harkins Slough) remain unpolluted.

(NATURAL RESOURCES CONSERVATION SERVICE)

INSTEAD OF PLANTING FENCE POST TO FENCE POST, NRCS HELPS FARMERS WITH CONSERVATION TOOLS THAT BUILD HEALTHY SOILS WHILE ALSO PROVIDING CRITICAL ENVIRONMENTAL BENEFITS.

"We're most proud of the progress we've made with this property in restoring the native habitat on the conservation easement area, the hedgerows, the riparian corridor, and the increased diversity in the plants and wildlife in the area," Jeanne says. "And we're also proud that we were able to make a living from being organic and farming in a way we think has a positive effect on the land."

Irrigation

NRCS can help organic farmers with irrigation water management strategies tailored to their farm's specific needs. Conservation practices can also protect water quality in the surrounding ecosystem.

Water quantity. Irrigation management plans combine conservation principles with efficiency, balancing the farm's water needs with those of nature. Tools like drip irrigation, which provides water precisely where and when it's needed, can achieve greater precision with flow meters and soil moisture sensors.

Farmers can also conserve water by increasing their soil's water holding capacity and using conservation tillage to keep the ground covered, reducing water loss through transpiration and evaporation.

A one percent increase in soil organic matter can help the soil retain an additional 20,000 gallons of water per acre that can be banked and become available when plants need it most. NRCS agricultural engineers can use satellite-tracking tools to conduct precise topographic surveys, then design complete site-specific irrigation systems, from wells to pumps to pipes to hookups out in the field, saving water by improving irrigation efficiency. In combinations, these practices add up and make a huge difference.

Water quality. Well-managed organic systems rely on slow-release forms of nutrients, which reduce the risk of nutrient runoff and leaching. These practices help maintain water quality, while enhanced soil structure, water infiltration, and better nutrient retention also protect water quality. NRCS-developed nutrient management plans, cover crops, and buffers keep soil and nutrients in place and filter runoff water.

"One of the most profound things NRCS has been able to help us with is the establishing of the well in the upper fields. Up until that point, we had to chuck water into massive containers and then feed it to the lines for drip irrigation, which took a lot of time out of the day. Getting that well installed was a massive improvement."

— **Mark Lui**, Certified Organic Farmer
Crystal Organic Farms, Newborn, GA

"We've used the NRCS program for intermediate water management, so we're actually tracking the soil moisture that's available to plants multiple times per week. Now, we're only watering when it's necessary. It's important not only for soil quality, but to benefit water quality and water conservation through efficient irrigation, and these benefits also come across in the quality of the produce grown here."

— **Ryan Power**, Certified Organic Farmer
New Family Farm, Sebastopol, CA

Watch "Irrigation and Water Management: NRCS Assistance for Organic Farmers" at **www.nrcs.usda.gov/organic**

THE AGRICULTURAL ENGINEER

Responsible for providing technical guidance and the overall planning, design, installation and maintenance of the agricultural engineering phases of conservation activities.

NRCS CAN HELP FARMERS SECURE QUALITY WATER SOURCES AND OPTIMIZE THEIR USE TO GROW A BETTER CROP WHILE MAINTAINING GOOD CONSERVATION PRACTICES.

"I map out an irrigation design that helps determine how much water the crops need and improves water use on their farm."

"I provide technical assistance on any natural resource concern that's out there," Wanda says. "I do designs for stream bank stabilization and waste storage facilities, but the bulk of my work right now is promoting irrigation technical assistance. At Brent Field Farm, I'll use the data I collect to

IRRIGATION WATER MANAGEMENT PLAN

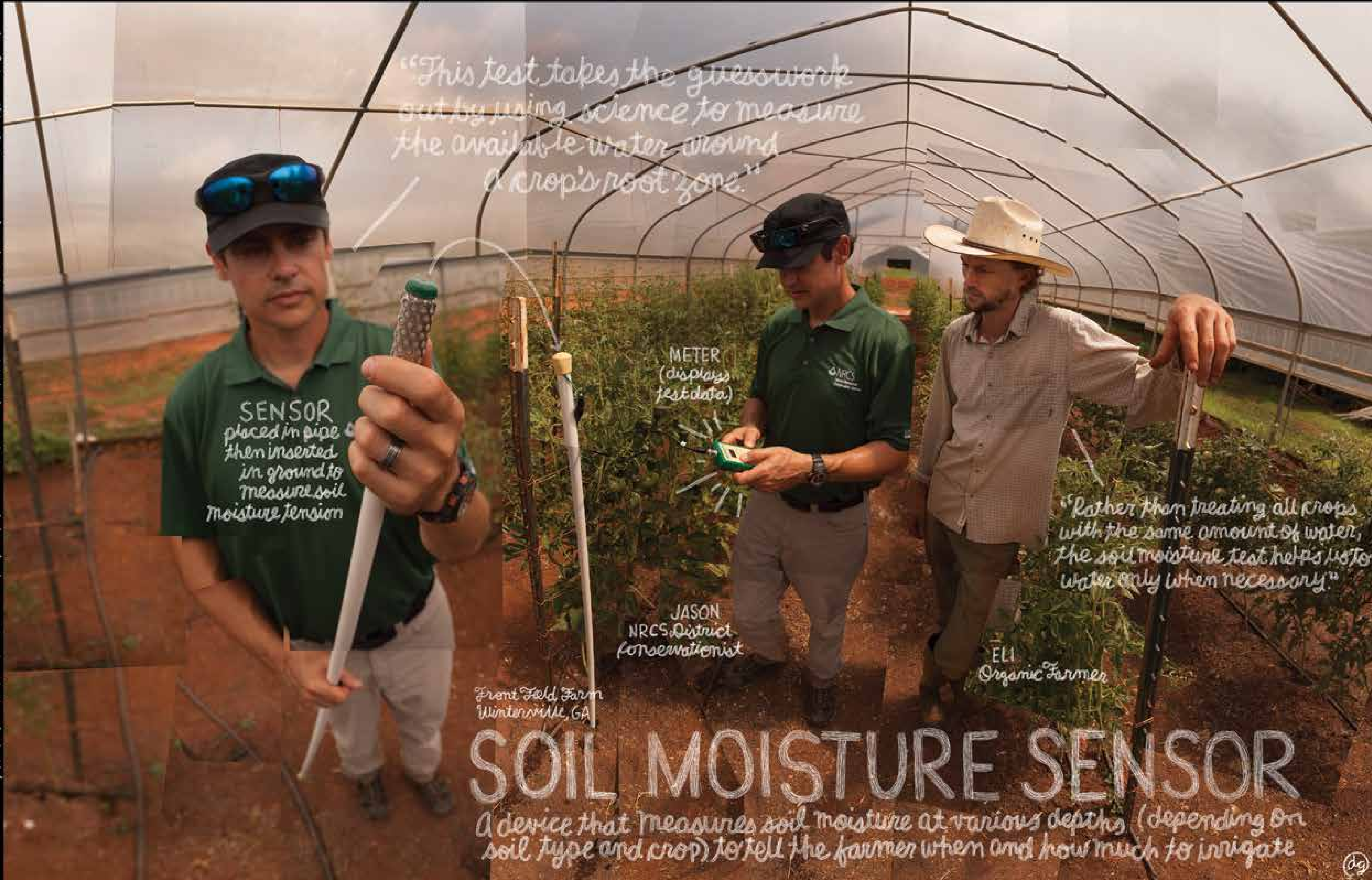
NRCS conservationists examine a farm's specific water needs, then define the optimal water volume, frequency and flow rate to achieve maximum irrigation efficiency. Other goals may include enhanced soil health, reduced energy consumption, minimized soil erosion, improved water quality and greater crop yields.

dg

NRCS CAN HELP FARMERS WITH THEIR IRRIGATION PLANS IN SEVERAL WAYS, INCLUDING COST SHARE SUPPORT AND TECHNICAL ASSISTANCE, WHICH ARE ESPECIALLY USEFUL FOR ORGANIC PRODUCERS.

"a comprehensive water strategy," Minto agrees. "The single greatest [NRCS] benefit for us has been the irrigation."

"Organic operations are very complex," Jarod observes. "They have different cropping systems that require different amounts of water at different times of the year. We've been able to help Minto financially and technically by making design and helping implement



The data from soil moisture tests provide many benefits. It ensures that plants receive the correct amount of water, becoming less stressed during growth. Soil fertility also improves, pathogens are controlled, and nutrient-leaching is reduced. Overall plant yield often increase as well. Dust control is critical for crops in high tunnels, which depend on precision irrigation instead of rainfall for proper growth.

NRCS CAN WORK WITH FARMERS TO DEVELOP IRRIGATION WATER MANAGEMENT PLANS THAT USE SENSING TOOLS TO CONSERVE WATER AND SAVE MONEY.

High Tunnels

Across the U.S., farmers are discovering the benefits of high tunnels. NRCS can help producers integrate high tunnels into their operations.

While they may look like greenhouses, high tunnels are actually quite different. Greenhouses are usually constructed of glass and metal, with plants grown in pots above the ground. High tunnels are polyethylene, plastic or fabric covered hoop structures that can be assembled for a fraction of the cost, with plants grown in raised beds or grown directly in the ground.

Because the growing conditions are controlled, plant health is optimized. High tunnels protect plants from severe weather and allow farmers to extend their growing seasons — growing earlier into the spring, later into the fall, and sometimes, year-round. And because high tunnels prevent direct rainfall from reaching plants, farmers can use precise tools like drip irrigation to efficiently deliver water and nutrients to plants. High tunnels also offer farmers a greater ability to control pests and can even protect plants from pollen and pesticide drift.

A number of soil health practices can be used in high tunnels, including cover crops and crop rotations, which also prevent erosion, suppress weeds, increase soil water content, and break pest cycles.

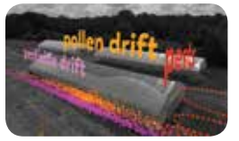
Perhaps the best thing about high tunnels is that they help farmers provide their communities with healthy local food for much of the year – food that requires less energy and transportation inputs and provides communities with greater food security.

"We have really cold, wet springs with a lot of rain. High tunnels allow people to get into the ground and start producing crops earlier. They can also help people extend the growing season later as we go into the rains in the fall."

— **Danny Perich**, Certified Organic Farmer
Full Plate Farm, Ridgefield, WA

"We got assistance from the NRCS to put in the high tunnel and it's completely changed the way we farm tomatoes. We are able to get 103 tomato plants in there and before, we would do maybe 40 to 50 plants. So it's double production for us. We're also able to grow things during the winter, which we've never been able to do before."

— **Stacey Givens**, Urban Farmer
Side Yard Farm, Portland, OR



Watch "Growing All Seasons: NRCS Assistance with High Tunnels" at **www.nrcs.usda.gov/organic**

THE NATURAL RESOURCES CONSERVATION SERVICE (NRCS) CAN HELP FARMERS UTILIZE THE MANY BENEFITS OF HIGH TUNNELS INCLUDING CONSERVATION PRACTICES SUCH AS DRIP IRRIGATION AND COVER CROPPING.

They can also 1) extend the growing season; 2) improve plant and soil quality; 3) reduce nutrient and pesticide transportation; 4) improve air quality through reduced transportation impacts; and 5) reduce energy use by providing consumers with a local source of fresh produce... 6) protects crops from harsh weather

Livestock & Pasture Management

Organic livestock producers provide living areas that encourage the health and natural behavior of their animals. They use only certified organic feed, provide year-round access to the outdoors and access to pasture for ruminants and don't use antibiotics or growth hormones.

NRCS can help organic livestock producers with practices such as pasture and grazing management, diverse pasture plantings, fencing, and walkways, watering facilities, and shelters for animals.

Pastures, regardless of organic status, can become overgrazed, which can harm animal health and damage natural resources. USDA organic standards require producers to maintain pasture in a state of good health through management strategies that promote good forage quality and quantity, weed control, infiltration of precipitation, and erosion control.

One key practice is rotational grazing. This approach separates open fields into a series of closed paddocks that regularly directs animals to fresh pasture. The size of these paddocks is determined by the number of animals, time of year, grazing duration, and quality of available forage. Proper fencing and adequate water supplies are features of these intensively managed grazing systems.

Fences can control erosion or impede animal access to sensitive areas like ponds, streams, wellheads or protected habitat, while gated paddocks can be opened and closed to provide cattle access to fresh pasture. Diverse pasture plantings on provide livestock with well-balanced, nutritious forage that keeps them healthy. Using season-specific plantings is also good for the entire ecosystem.

"With a comprehensive nutrient management plan, livestock producers can use a system of practices to manage livestock waste on the farm. In particular, soil health practices in the plan include Rotational Grazing, testing soils and placing nutrients as fertilizer as to minimize effects to sensitive areas such as adjoining streams, habitats, and buffers."

— **Joseph I. Heller**, NRCS District Conservationist
Rockland County, NY

"The reason we have cows is because of all the nutrients they create. In the right context they are such a great animal for rebuilding the soil. But we didn't want the manure just dumping into the water or all in one place, so our NRCS comprehensive nutrient management plan helped tell us where to store manure properly so it could become an asset rather than a pollutant."

— **Marty Lain**, Certified Organic Farmer
Kezialain Bicentennial Farm, Westtown, NY

Watch "Pasture Management: NRCS Assistance for Organic Farmers" at **www.nrcs.usda.gov/organic**

THE USDA'S NATURAL RESOURCES CONSERVATION SERVICE (NRCS) CAN HELP ORGANIC FARMERS BUILD HEALTHY SOILS TO SUPPORT HEALTHY COWS.

They can provide guidance on range and pasture management methods that enhance sustainable livestock production while preventing erosion, increasing infiltration, flocculating soil, building organic matter, and sequestering carbon from the atmosphere. In addition they improve plant productivity, vigor, resilience, and diversity, and enhance wildlife habitat. All are vital tools for conserving and restoring our natural resources.

CERTIFIED ORGANIC

A labeling term for food or other agricultural products produced using cultural, biological, and mechanical practices that support the cycling of on-farm resources, promote ecological balance, and conserve biodiversity in accordance with the USDA organic regulations

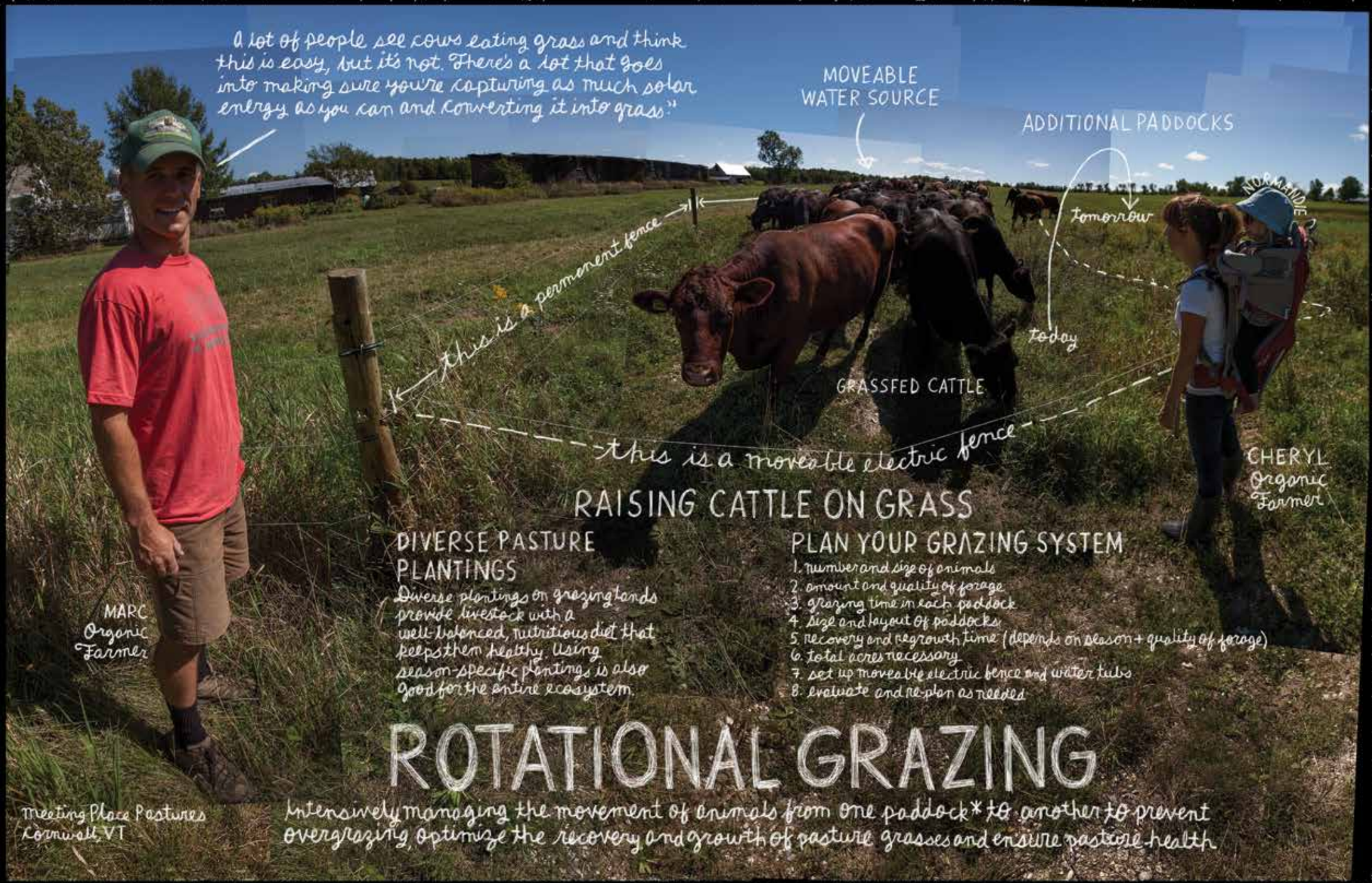
The USDA organic standard requires producers to provide all poultry with year-round access to the outdoors, sunlight, shade, shelter, fresh air, exercise areas, clean water, and adequate nutrition. Temporary confinement is allowed under certain circumstances, such as severe weather.

NRCS can help producers implement livestock watering facilities and pipelines, windbreak planting, silvopasture, and livestock shelter structures, composting facilities and waste management plans to meet USDA organic requirements and protect soil and water quality from animal waste.

"AS MORE CONSUMERS "GO ORGANIC", CAN ORGANIC POULTRY PRODUCERS KEEP UP WITH DEMAND? JESSE SAYS, YES! THE SECRET? FAMILY SCALE FARMS.

"A family scale farm - they know where their livelihood comes from," Jesse says. "There's a relationship there that's different than having a factory scale farm where you might have many employees tasking care of your animals. It's going to take a lot of family farms just like this to

what our country needs right now. We don't need farms going away. We need more farms coming into organic.



THE NRCS HELPS MARC AND CHERYL RAISE GRASSFED CATTLE USING CONSERVATION PRACTICES THAT REDUCE THEIR DEPENDENCE ON OFF-FARM INPUTS WHILE ENHANCING SOIL HEALTH.

"I would say rotational grazing is definitely a more economical way to raise cows, especially compared to 'continuously stocked pasture,' where animals are always there." Cheryl observes. "You'll have to put out three or four a day; that's a lot of money if you look at the cost of purchasing instead of producing feed."

Five Steps to NRCS Assistance

Here's what to expect:

1. PLANNING. NRCS technical assistance is free and voluntary. The first step is to visit your local field office and work with a conservationist on a conservation plan that meets the goals of your operation. Ask your conservationist if financial assistance is available to implement any the practices outlined in your conservation plan.

2. APPLICATION. NRCS can help you fill out the right forms for the application process. Applications for most programs are accepted on a continuous basis, but they're considered for funding in different ranking periods. Ask your local NRCS conservationist about the deadline for the ranking period to ensure you turn in your application in time. You can also apply for financial assistance and manage applications, contracts, and conservation plans online through the NRCS' Conservation Client Gateway.

3. ELIGIBILITY. To determine eligibility, you'll need an official tax ID (Social Security number or an employer ID). You'll also need a property deed or lease agreement to show you have control of the property. You'll also need a farm and tract number. If you don't have a farm and tract number, you can get one from USDA's Farm Service Agency (www.fsa.usda.gov). Typically, the local FSA office is located in the same building as the local NRCS office.

4. RANKING. The NRCS will take a look at the applications and rank them according to local resource concerns, the amount of conservation benefits the work will provide and the needs of applicants.

5. IMPLEMENTATION. If you're selected, your next step is to sign the contract. You'll then be provided standards and specifications for completing the practice or practices, and will have a specified amount of time to implement. Once the work is implemented and inspected, you'll be paid the rate of compensation for the work if it meets the NRCS standards and specifications.

For more information on how NRCS can help you, visit your local NRCS field office, or: **www.nrcs.usda.gov/organic**

For more information on the USDA National Organic Program, visit: **www.usda.gov/organic**


NRCS
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www.nrcs.usda.gov/organic