

OREganic news

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NRCS

WORKING TOGETHER WITH PRIVATE LANDOWNERS TO
SUSTAIN THE (OREGON)-IC WAY OF LIFE.

USDA Natural Resources Conservation Service

The USDA Natural Resources Conservation Service (NRCS) supports sustainable farming and ranching practices. In an effort to assist private landowners working to grow organic, NRCS provides both technical and financial assistance through the Organic Initiative under the Environmental Quality Incentives Program (EQIP).

To learn more about what resources may be available to you and your farm, contact your local NRCS service center or find us online at:

www.or.nrcs.usda.gov/organic

Conservation Programs Improve Soil and Water on Organic Farm



John Deck operates the Deck Family Farm

Junction City, Ore.—Organic farming is a passion for John and Christine Deck. The 320-acre Deck Family Farm lies nestled in the rolling hills west of Junction City, Oregon. It includes stretches of tranquil creeks, green pastures with grazing livestock, and expanses of luscious woodlands.

“We are an integrated family farm and a grass-fed operation. We believe in feeding animals what they’re naturally inclined to eat,” John explained.

The USDA Natural Resources Conservation Service (NRCS), along with its partners, has helped the Decks improve soil and water quality on their property as they convert what was a conventional farm into a thriving organic business. Financial and technical assistance are made available through the Environmental Quality Incentives Program (EQIP), a Farm Bill program that provides assistance for agricultural producers interested in implementing conservation measures that protect natural resources and encourage sustainability. NRCS has also partnered with the Farm Service Agency (FSA) and the Oregon Department of Agriculture to implement the Conservation Reserve

What's Inside

2

• Deck Family Farm (cont.)

3

• Find Your Pathway to Soil Health
• Soil Health Nuggets

4

• Soil Health Nuggets (cont.)
• Chew on This!
• NRCS contact information

Enhancement Program (CREP) to restore riparian areas, protect water quality, and enhance fish and wildlife habitat.

Using funds through EQIP, the Decks began their conservation efforts by installing a fence along Owens Creek to keep livestock out of the water while also enhancing riparian areas. To ensure continued water access for livestock and wildlife, the Decks installed a large water storage tank and distribution system on the property. Water is pumped from the creek to a storage tank and then delivered by gravity flow to the watering troughs distributed throughout the property.

The Decks then began work on a similar, although more complex, project near Turnbow Creek, this time making use of the combined technical and financial assistance available through CREP. As before, the Decks implemented fencing to block livestock access to the waterway. They also planted a variety of native trees to shade the waterway and help keep the water cool for fish, stabilize the stream bank to prevent erosion, and provide shelter for wildlife.



NRCS funded water distribution tank



Livestock are fed a natural, organic based diet

Continuing their conservation efforts closer to home, the Decks added a concrete slab in the heavy-use area next to the livestock barn. Gutters and downspouts were installed to direct rain off the roof and into the drainage. The slab mitigates the development of muddy conditions in areas that see a lot of livestock traffic. A portion of the concrete slab will also serve as the foundation for a covered manure storage building, planned for the future. Once this is installed, they will have the option to make compost from the stored manure.

The Decks acknowledge that even with NRCS and partner assistance, the process of adapting their farm to organic practices takes patience.

As he looked out over a healthy, green pasture, John explained, "The grass gets addicted to nitrogen, and when you stop using it, the pastures look pretty bad for a couple of years." He found the most effective way to improve grass performance was to apply lime to balance the pH and add amendments such as composted chicken manure to improve the overall fertility of the soil.

"We are shooting for an ideal pH of six for the pastures," John said. He is progressively working individual pastures

up to that goal and planting new varieties of grass. He plants both red and white clover along with the grass to improve nitrogen fixation, a process where nitrogen in the atmosphere is converted into ammonia, making it available to the plants.

The Decks are also trying to increase the amount of forage that is available for their cattle by reducing their hay production and focusing instead on planting fields with an earlier season grass, such as annual ryegrass, while planting other fields with later-season forage, such as sorghum sudangrass. "We will try to get the fields used for forage for as much of the year as possible, and we will import hay if we have to," John said.

John and Christine have raised all five of their children on the Deck Family Farm, and they hope to pass on the legacy of conservation through the generations. "I hope some of these kids will stay on the farm," John said as he watched his youngest daughter happily swing her legs up to mount her pony and ride it down the hill, passing the pastures of contented pigs, chickens, and beef cattle grazing on the organic pastures.

Find Your Pathway to Soil Health

Soil is made up of air, water, decayed plant residue, organic matter from living and dead organisms, and minerals, such as sand, silt and clay. Increasing soil organic matter typically improves soil health since organic matter affects several critical soil functions. Healthy soils are also porous, which allows air and water to move freely through them.

It's not difficult to improve soil health. Consider these steps when adopting practices to improve soil health and sustainability:

1. Use plant diversity to increase soil diversity.
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.



Soil Health Nuggets

Little Known Facts about Soil Health

1. There are more soil microorganisms in a teaspoon of healthy soil than there are people on the earth!

Millions of species and billions of organisms—bacteria, algae, microscopic insects, earthworms, beetles, ants, mites, fungi and more—represent the greatest concentration of biomass anywhere on the planet! Microbes, which make up only one half of one percent of the total soil mass, are the yeasts, algae, protozoa, bacteria, nematodes, and fungi that process organic matter into rich, dark, stable humus in the soil.

2. The best soil on most farms is found in the fence row.

These undisturbed remnants of what soil properties were once like is no surprise to farmers who have dug into that soil. It's crumbly, dark, and loose, and it's a model of soil structure and organic matter for farmers who are trying to make their soil healthier.

3. Tillage (or plowing) destroys the soil's structure!

Tillage destroys "aggregation" or the soil's structure – the habitat soil microorganisms depend upon to ensure critical soil functions like nutrient cycling. Tillage also reduces organic matter content and increases erosion, which reduces the sustainability of our food production system.

4. Tilling the soil up does NOT allow more water to soak into it.

Don't believe it? Fill two containers with untilled and tilled soil and simulate rainfall on them. Watch the water stand on top of the tilled sample, but soak down through the untilled sample. Or, give them the slake test (placing clods



of untilled and tilled soils on wire mesh at the top of water filled jars). You'll find if you submerge tilled soil just below the surface it will soon collapse in a heap at the bottom of the jar, but untilled soil will still be intact for the most part even 24 hours later. Tilling soils causes pores to collapse and seal over, causing more rain to runoff than soak in.

5. Organic Matter is half gone!

The Morrow Plots on the campus of the University of Illinois indicate soil organic matter content in prairie grass borders was 5.5 to 6.5 percent in 1876. Less than half of that is left. That's the case with most prairie soils—oxidation of organic matter from tillage for row crops has reduced organic matter levels to between 2 - 3 percent today.

6. A farmer's favorite cocktail mix might not be what you think.

Innovative farmers are breathing new life into their soil by seeding a "cocktail mix" of 6-12 plants to get diversity above-ground, which creates much-needed diversity below the ground. Through that diversity, farmers are mimicking the soil-building and microbial-friendly conditions of the diverse native prairies.

7. If you want your soil to be healthy, you shouldn't see it very often.

That's because you want that soil to be covered all the time, preferably with living plants. Keeping the soil covered all the time makes perfect sense when you realize that healthy soils are full of life. The microorganisms living in the soil need food and cover to survive – just like other living creatures.

8. Roots of some plants can grow 3-feet deep in 60 days!

That's right, roots of daikon type radishes are a biological alternative to deep ripping to alleviate soil compaction. After radishes winter kill the channels created by the roots tend to remain open at the surface, improving infiltration, surface drainage and soil warming. The popular

cover crop also is an excellent nitrogen scavenger.

9. What did President Thomas Jefferson know that we don't?

More than 200 years ago, Thomas Jefferson, a farmer and conservationist, used vetch, turnips, peas, and clover as cover crops and in rotation. He used these crops on his Virginia plantation to build soil that he knew was being depleted with his tobacco cash crop.

10. Multiple "bennies" through multiple species.

The below-ground synergy created by crop rotations and multi-species cover crops can actually accelerate biological time by increasing organic matter, allowing crops to flourish in dry times while monocultures struggle. And as an added bonus, diverse cover crop mixtures work together to crowd out weeds, improve nutrient cycling and reduce plant diseases.

Chew on this!

Through the EQIP Organic Initiative, farmers and ranchers may apply for financial assistance and technical expertise to plan and install conservation measures, such as:

- Pollinator Plantings
- Cover Crops
- Hedgerows
- Drip Irrigation
- Nutrient Management
- Mulching
- Rotational Grazing
- Composting Facilities

Contact your local NRCS Service Center to learn more.

NRCS Field Office Contact Information

County	Field Office Phone	District Conservationist
Baker	(541) 523-7121	Parker Ussery
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Clatsop	(503) 867-1944	
Columbia	(503) 397-4555 x105	Don Mehlhoff
Coos	(541) 396-2841	Amy Wilson
Crook	(541) 923-4358 x112	Chris Mundy
Curry	(541) 396-2841	Amy Wilson
Deschutes	(541) 923-4358 x123	Tom Bennett
Douglas	(541) 673-6071	David Chain
Gilliam	(541) 384-2671 x114	Misty Bennett
Grant	(541) 575-0135 x109	Lorraine Vogt
Harney	(541) 573-6446 x107	Zola Ryan
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Jackson	(541) 776-4267	Erin Kurtz
Jefferson	(541) 923-4358 x123 *(541) 553-2009	Tom Bennett Sean Big Knife
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* Warm Springs Reservation Satellite Office

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United States Department of Agriculture
Natural Resources Conservation Service

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