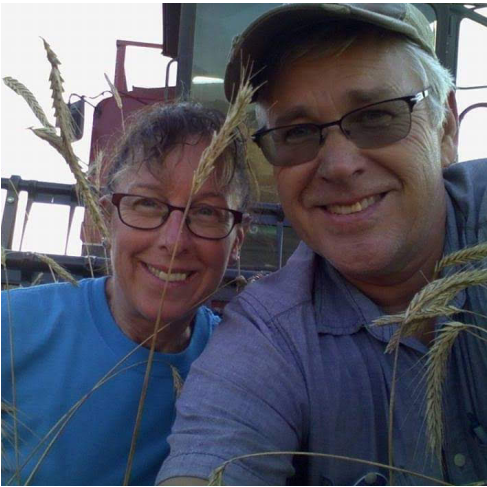


## Bent Gate Farms

Stanton, Iowa

**Continuous Living Cover (CLC) includes agroforestry; perennial grains, forage, and biomass; and cover crops and winter annuals. CLC keeps living cover on the landscape and roots in the ground year-round, providing both economic and environmental benefits. This series highlights farmers using dynamic CLC strategies and the research behind their practices.**



**Mark and Melanie Peterson purchased their farm in 2003 with a vision to leave it better than they found it. Cover cropping and animal integration helped them boost soil organic matter, water holding capacity, and corn yields on their 500 acres, where they grow conventional corn, soybeans, wheat, oats, and rye, and a rotation of single- and multi-species cover crops.**

When Mark and Melanie bought their farm, most of the land was in good shape, but one piece had “the lowest fertility level our agronomist had seen in any piece of ground,” Mark recalls, with a corn suitability rating in the 40s. They realized drastic change was needed.

Interested in organic farming, Mark went to a presentation by Practical Farmers of Iowa. While he didn’t go organic, PFI was instrumental in his adoption of cover crops.

Adding small grains to the rotation was key: they are harvested in July, much earlier than corn and soybeans, allowing for the longer growing season that a multi-species cover crop needed.

Mark intended to no-till a crop into the cover crop the next spring, but it grew so well that they decided to bring in a neighbor’s cattle. Now, they graze all of the multi-species cover crop, with manure providing valuable fertility. Mark and Melanie planted no-till corn the next spring, followed by no-till soybeans, and corn again the following year.

### Benefits and Opportunities

The second corn crop came in at slightly over 200 bushels per acre. “I was gobsmacked, to say the least,” says Mark. “It was unbelievable.”

In less than 10 years, they saw over a 1% increase in organic matter, representing 20 pounds of nitrogen and an extra inch of water-holding capacity. “That’s a benefit in two ways,” Mark notes. “When we have one of these almost-annual ‘hundred-year floods,’ the ground will absorb an extra inch,” and when it gets dry, “that’s an extra inch of water you’re holding onto.”



“It does take some commitment,” Mark explains. “The multi-species cover crop rotation is not a year that you’re going to make a lot of money.” Local partnerships make it possible.

“We’ve got a market for wheat 50 miles away; I can market my oats right out of the field to cattle producers; and we sell the rye as cover crop seed,” he says.

Working with their cattle producer neighbor also provided some grazing income and help with fences, and Mark and Melanie continue to get inspiration and information from fellow farmers through PFI.

## Conservation that Pays

Though there are complexities with a multi-species, animal integrated system, these practices build resilience. Extra organic matter helps protect against too much or too little water, and cover crops cool the soil in hot weather. The diverse rotation also helps protect against price fluctuations; cereal rye cuts down on weed pressure without the cost of herbicides, and soybeans add nitrogen. Mark notes,

**“Anything a person can do to cut down on costs, whether adding fertility or being able to cut down on weed control, you can make yourself more financially resilient too.”**

## Practitioner Resources

- [Information on cover crops](#), [Grazing Cover Crops](#) and [Managing Cover Crops Profitably](#) from SARE
- Penn State Extension on [Grazing Cover Crops](#)
- [The Small Grains Field Guide](#) and [Growing Small Grains](#) from UMN Extension
- Livestock integration resources from [California State University](#), the [Rodale Institute](#), [SARE](#), [ATTRA Sustainable Ag](#), and [Washington State University](#).

This story is based on information from an interview originally conducted by Siena Chrisman as a part of the GLBW CLC Farmer Series.

## Science Supporting the Practices

Cover crops increase organic matter slowly but steadily over time ([Poeplau and Don 2015](#)).

An analysis of 28 studies also found that non-leguminous cover crops can halve nitrate leaching compared to no cover crop ([Thapa et al. 2018](#)).

Properly managed winter cover crops (WCCs) don't reduce subsequent corn yields. A review of 65 studies found that grass had no yield impact and legumes boosted yields up to 30% in low-input and no-till systems. Mixed WCCs increased corn yields by 30% when terminated 0-6 days before corn planting ([Marcillo and Miguez 2017](#)).

An analysis of 53 studies showed that cover crops, especially grasses and fall-seeded crops, help prevent weed pressure ([Osipitan et al. 2019](#)).

Crop-livestock integration can improve nutrient cycling, reduce the need for fertilizers and machinery, optimize local systems of manure and biomass exchange, and potentially increase profit margins ([Martin et al. 2016](#)).



*Photos courtesy of Bent Gate Farms*

Green Lands Blue Waters is a vision for productive, profitable agriculture in the Upper Midwest based on the straightforward concept of getting as much value as possible from farmlands by growing crops that keep the soil covered year-round—what we call farming with Continuous Living Cover. The values from the crops we promote can be measured in yields and farm profits; but also as reduced risk, improved outlook for long-term productivity from the soil, more jobs, more wildlife, cleaner water and resiliency in the face of a changing climate.