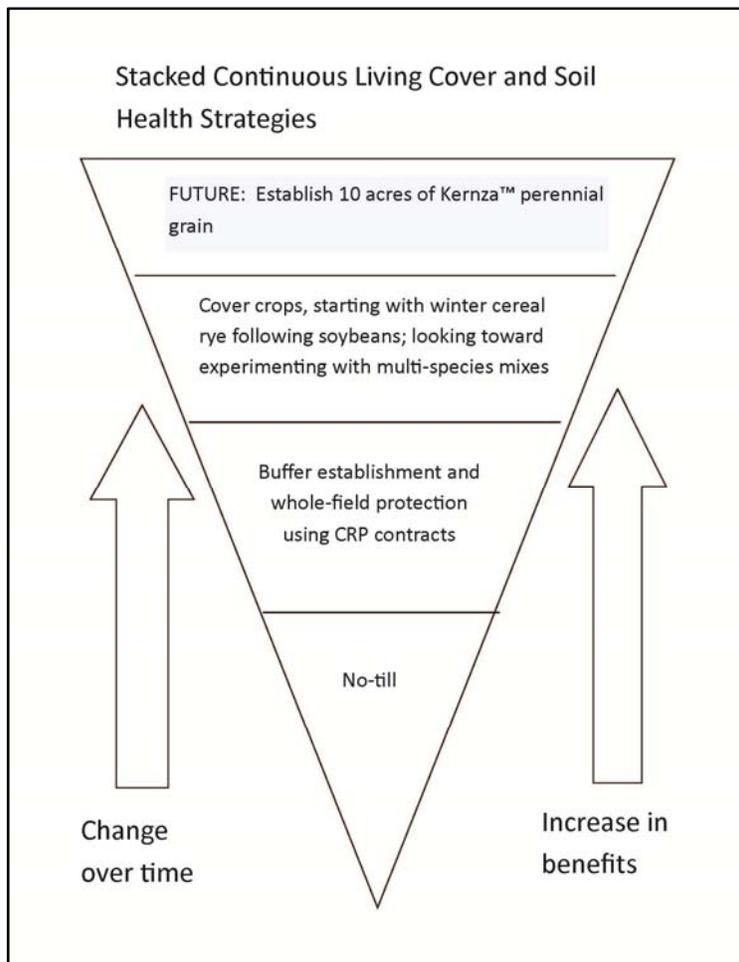


Brad, Sue, and Andrew Johnson



Summer 2015
Continuous Living Cover Series



The Johnson farm near Star Prairie, Wisconsin has been in the family since 1878. Brad and Sue began farming it in 1974, with Brad's parents. At the time it was a dairy farm and Brad's father had registered Holsteins. The cows were sold in 1997.

Andrew served in the Air Force Reserve. He was in civil engineering and gained experience in facility construction and facility maintenance, including HVAC and boiler licensing, and then worked in those trades after leaving the military. He currently lives on the home farm, and is the 4th generation to live there. Brad looks to Andrew to carry the farm forward and develop new directions for it. Andrew, for his part, says he wants to move the farm in a more sustainable

Stacking of multiple soil conservation and continuous living cover practices: the Johnsons started with reduced tillage, going fully to no-till in 1981. Then they withdrew some areas from cropping entirely, putting sensitive streambank areas into CRP. Now they are experimenting with cover cropping on their corn and soybean ground to protect soil and improve their efficiency of nitrogen use, and are looking towards Kernza™ perennial grain as a way to further protect sensitive soils and adapt to climate change.

direction and reduce purchased inputs. He is interested in taking an ecological approach, inspired by the work of The Land Institute in Salina, KS. He's especially intrigued by the possibility of growing multi-crop mixtures and having the different grains sorted out after harvest.

The total farming operation includes more than 800 acres. About 560 acres are tillable, split approximately evenly between corn and soybeans. Much of the remaining acreage is in CRP buffers and in perennial wildflowers and native grasses. The streambank buffers are quite wide; Brad estimates that the narrowest one is 100'. "We used to farm those acres," said Sue, "but it wasn't worth the agony."

They say that the CRP program has been hugely beneficial to their farm, but Andrew adds that he would continue to keep those areas permanently out of crops even if the CRP program ended. The whole family clearly shares a conservation ethic, and in fact were named State of Wisconsin Conservation Farmers of the Year in 1998. They take pride in the amount and diversity of wildlife that passes through their farm, and benefit from it financially through sale of hunting leases on their property.

No-till production of corn and soybeans has been their practice since 1981. Brad says it was a decision that came out of a desire stop picking rocks. They had tried reduced tillage and using a chisel plow, but constantly broke plow shovels on the limestone "square rocks" in their fields. No-till turned out to be the right answer. They can get into their fields earlier after

a rain event than their neighbors due to the surface residue; and Brad said he has never seen a sacrifice in yield from no-till planting of soybeans. Local farm educators have taken soil cores from their fields to use as the "healthy soil" example in comparative water infiltration demonstrations. They still have neighbors who moldboard plow. The three Johnsons slowly shake their heads over that thought, and point out a nearby steep field that they say should probably not be cropped at all, let alone moldboard plowed.

The Johnsons have no livestock on the farm at present. It is a topic of discussion. They recognize the value of livestock for enabling the addition of perennial forage to the crop rotation. Brad reminisces about the beauty of planting no-till corn into burned-down alfalfa.

The Johnson's farm lies close to Cedar Lake, an 1100-acre lake designated as an impaired water by the State of Wisconsin. The lake, which drains into the Apple River, a tributary of the St. Croix, has had a seemingly intractable phosphorus problem for decades. Brad notes that the local farmer-led council has been encouraging farmers to do a better job of keeping phosphorus out of the lake and river, and farmers have been responding. Brad and Sue's land has hosted an edge-of-field water quality monitor for the past three years. They are looking forward to seeing the results of that monitoring.

For more about the farmer-led councils in the St. Croix River watershed, see the "Cultivating Leadership" chapter.

Andrew is paying attention to the cover cropping experiences of other farmers, and is planning to try out some five- or six-species cover crop mixes. Most of the cover cropping in their area is done after harvest of the cash crop, but Andrew wants to try other options like planting cover crops into standing corn.

Andrew, though, is concerned about managing livestock and especially the water for them in the winter. Setting up and managing a rotational grazing system would add another layer of complexity. He doesn't foresee it happening on their farm within the next 10 years.

The Johnsons see change and adaptation as essential for the long-term future of their farm. They are looking to crops other than corn and soybeans as a possible future direction, and have recently been trying out a winter cereal rye cover crop following soybeans. Incentive payments from the local Land and Water Office helped them decide to do that experimenting, and Brad says those incentive payments are important to take the risk out of trying something new. Now that they have tried it and have seen the benefits, they will continue using cover crops without the incentive funding. They do have some fields with considerable slopes. The cover crop benefits they have seen include retaining moisture and holding the soil in place.

Brad suspects that cycling of N may be an important benefit of cover crops as well. He notes the erratic price and sometimes erratic supply of propane, and sees that as a symptom of over-reliance on imports and a harbinger of increased volatility of price and supply of other inputs. Legume covers would be a more stable source of N, and might help with effective timing of delivery of N to the corn crop as well. Brad calls N the most frustrating part of corn production due to the difficulty of timing applications to precisely feed the corn crop without either wasting N or failing to have sufficient N for the corn at critical times.

Climate change is another concern. The whole family has noted a change in rainfall patterns in the Midwest. They are looking to Kernza™ as a potential adaptation for their farm: with its deeper and year-round root system, it can help the soil hold moisture better. "We have to evolve along with our crops," says Brad.