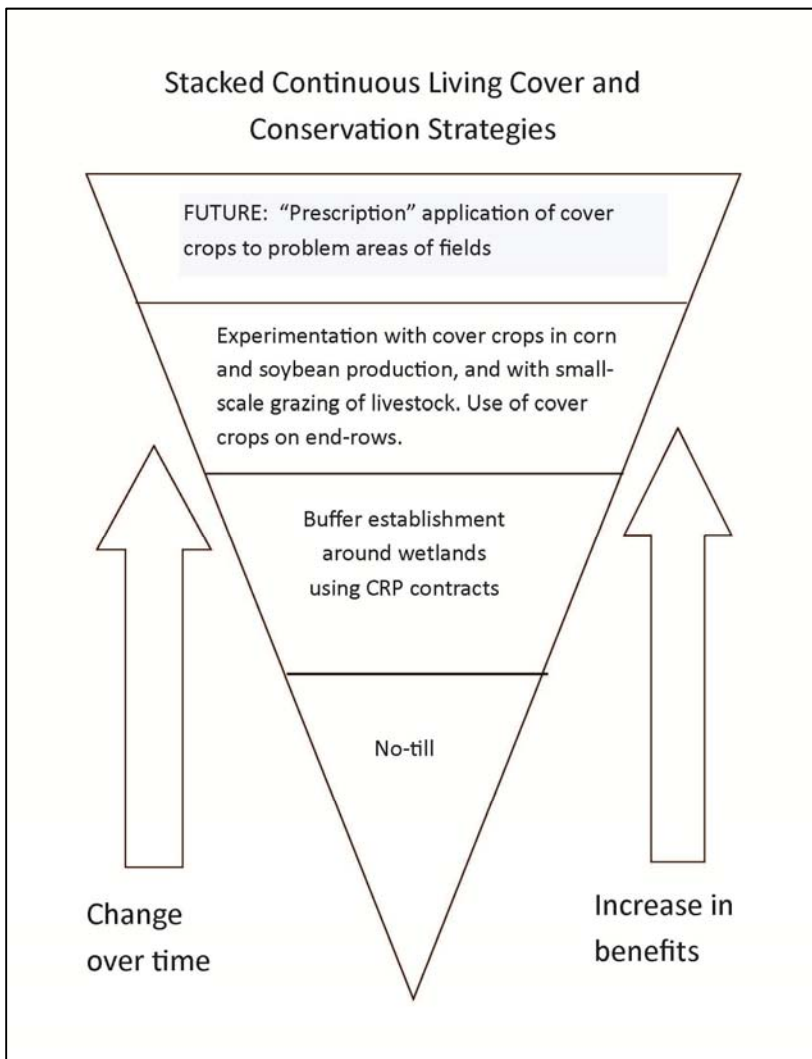


Tony Thompson and Sonya Buller



Summer 2015
Continuous Living Cover Series



Windom, MN; July 2014

Tony Thompson is quick to note the successes of what one hears variously termed the large-scale, industrial, conventional, or high-input model of agriculture. He gives the example of heavy early-summer rains of 2014, with one 17.7" rainfall event in Rock County, MN in June, noting that the large hog barns were properly sited – all on high enough ground that there weren't any pigs in the water, and the manure remained safely stored in lagoons so that the nutrients in it remained available as a resource. He has the highest respect for organic farmers and for

Stacking of multiple soil conservation and continuous living cover practices: No-till production was adopted in the 1980s. Wide buffers around wetlands and river headwaters were established with CRP contracts. Cover crop experimentation is ongoing, and Tony is interested in developing "prescription" treatments of cover crops for problem areas within fields.

those using pasture-based models of livestock production, but thinks it is important to recognize the challenges and limitations of those systems, and to acknowledge the things that large-scale agriculture gets right.

Tony is a conventional corn and soybean farmer, but yet he's an unconventional ecologist and amateur archeologist, hosting an "Acroecology Summit" at his farm every other August; and finding, collecting, and archiving evidence of the presence of earlier peoples on his property. He defies pigeon-holing. He's forthright about growing corn and beans for a global market that is always ready to buy. He is experimenting with organic production and is intrigued by the possibility of grain polycultures; but his land is flat, fertile, and really good at growing corn and beans – and for now at least, that's what he believes it should grow. He uses GPS and precision agriculture technology to gain the maximum yield from each square foot of his cropland.

Yet, Tony is utterly committed to conservation and wise use of water and soil resources. He explains the priorities laid down when his brother Mark joined the operation in the 1980s. At the time, there were egregious problems on their family farm. The high-tillage model of the 1960s and 70s had wreaked havoc on the soil. They experimented with organic agriculture and worked to understand concepts like economic thresholds for fertilizer and integrated pest management. The number one priority, though, was to reduce tillage; and that goal was most practically achieved with the integrated pest management practices that were available in a conventional ridge-till system.

Tony's priority list:

1. Reduce tillage
2. Close all open intakes in drainage
3. Enroll in CRP to buffer wetlands and streams
4. Cover cropping
5. Install bioreactors
6. Install controlled drainage
7. Strategic cover cropping

Keep the soil in place
and hold on to every
drop of water.

These priorities have evolved over time. Tony has had 30 years of praxis – observing and manipulating the interplay between theory and practice – in which to develop a keen understanding of the capabilities of his land.

Early on, Tony and his brother Mark switched to ridge tillage, and tried to understand the thresholds at which reduced tillage would make a difference in reducing sediment loading into surface waters. According to some on-farm research led by Mark Zumwinkle in the

Minnesota Department of Agriculture, there is a flex-point in tillage reduction where you see a dramatic reduction in soil loss.

The majority of Tony's cropped fields are tiled. He has tight control of the drainage outlets, and can hold water for gradual release. He greatly prefers that every drop of water that falls on his ground be transpired through a crop plant before it escapes his property: losing water out of the drainage system is not desirable. Bioreactors at various outlets filter nitrogen out of drainage water that does have to be let go.

The farm as he knew it growing up was more diversified and included the grazing of dairy and beef cattle as well as production of hogs and sheep. Livestock left the farm in the 1970s. That is something that Tony speaks of with a hint of regret; but it was a decision he made to focus on the corn and soybean crops that have been financially rewarding and that have allowed him the financial freedom to set aside 400 acres of grassland out of his total of 3200 acres. The remaining 2800 acres are nearly half in corn, half in soybean; with a small area in alfalfa. The grassland acres are managed for plant diversity and wildlife, primarily using fire and hand-weeding to maintain desirable plant species and eliminate non-natives. He takes pride in the fact that there is no Japanese honeysuckle, mulberry, or buckthorn on his property; it has all been removed by hand-weeding. Tony experimented in 2014 with allowing a tenant to graze sheep on part of the grassland, but was concerned about the impact on nesting birds. The sheep defoliated sumac bushes and exposed blackbird nests. The grazing was useful for cleaning out non-native understory brush under native oak trees, however.

Tony used the Conservation Reserve Program in what he considers an optimal fashion, to establish wide buffers around wetlands and to protect a portion of the headwaters of the south fork of the Watonwan River that originates on his property. These buffer areas are under contract and can't be hayed or grazed. He has contemplated the possibility of buying out the contract to allow sheep grazing, but isn't convinced that there is enough money in sheep to justify that.

Cover cropping is a practice that Tony continues to study and experiment with. He tried broadcasting rye and radish with a spinner into soybean, but didn't get good soil-seed contact and had poor germination. That was an expensive experiment. He needs to figure out a cheaper way to apply seed, but also isn't convinced that cover crops are the right answer for all of his crop production fields. He has fields with 0 to 2% slopes with no erosion, and can't justify the \$50/acre cost of cover cropping on the whole field when he is seeing no erosion issues. What does interest him is the possibility of spot-treating problem areas with a "prescription" cover crop; for example, a crop that would build organic matter on sandy areas. He envisions precision technology that would allow the tractor to turn

cover crop seeding on or off as it moves across the field during planting or harvest of the main crop. He does use cover cropping regularly on the end rows, where equipment turns. Those areas get scuffed up and abused.

Tony's farm is a frequent subject of articles and media reports, but he says that one important message that doesn't often come through about his operation is that he's mostly just following the lead of other farmers and of researchers. He says that he's not particularly innovative. What he *is*, is observant and attentive to recommendations and the conditions on his farm, and quick to adopt good practices. One example is his nitrogen fertilizer application method. He side-dresses all N in late May or June. This is the best-practice recommendation of University researchers, and 2014 was the perfect example of why: most fall-applied N was probably lost in the big rains in early June, because the crop was not growing fast enough yet then to use all of the N available from a fall application. He side-dresses with ammonia in the V6 stage of corn growth, when the plant is poised to grow rapidly and use that applied N.

Tony and Sonya recently welcomed a son, Reuben, to their family. The wealth of their soil and Tony's careful study and careful stewardship of the farm's resources are legacies that it's good to know will be passed on. Another part of that legacy is connectedness to the local community. Tony commented on the importance of "rolling the cob" – local vernacular for spending time chatting with neighboring farmers after some errand brought them to his place. He wants it known that his success is not his alone, but helped along by that connectedness with "... a supportive family, community, and professional colleagues -- Fairland Management Company, crop consultant Steve Sodeman and excellent employees!"