

**WRITTEN STATEMENT OF NATHAN ANDERSON, BOARD MEMBER, PRACTICAL
FARMERS OF IOWA
BEFORE THE HOUSE COMMITTEE ON AGRICULTURE SUBCOMMITTEE ON
CONSERVATION AND FORESTRY
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Chairwoman Spanberger, Ranking Member LaMalfa, and Members of the Subcommittee, thank you for the opportunity to appear before you today to testify about the importance of soil health and its impact on resiliency of farming in the Midwest.

My name is Nathan Anderson. I, along with my wife Sarah and our young son, operate Bobolink Prairie Farms as part of a multi-generational family farm near Aurelia, in northwest Iowa. I started farming full-time after graduating from Iowa State University, and raise corn, soybeans, hay and cattle on a combined 1,000 acres of owned (400 acres) and rented (600 acres) ground. Our farm's mission is to honor God, our family, and our community by caring for the resources to which we have been entrusted, in doing so, building a resilient and enduring farm and family. This mission drives our long-term focus on both the owned and rented land we manage.

Today, it is my humbling privilege to be speaking on behalf of Practical Farmers of Iowa (PFI) and its 3,600 members. Since 1985, PFI has been working to equip farmers to build resilient farms and communities. The organization was created by a group of farmers who wanted to learn from each other. Farmers guide and lead PFI's programming; their top priority in its most recent member survey is soil health. PFI helps farmers learn about and improve soil health through farmer-to-farmer education at field days, workshops and webinars. It also helps farmers conduct on-farm research so they and others in the network can learn more about how practices impact their farms. More people are recognizing the value of farmer-to-farmer education and on-farm research, and Practical Farmers' membership levels are at an all-time high.

I have been a member of PFI since 2011, and currently serve on its board of directors. PFI's on-farm research and openness in sharing the resulting knowledge drove my interest in the organization. Thousands of farmers seeking to answer questions that make their operations better, and an excitement to share that information to help other farmers. Most recently I've served on the Welcoming Committee to welcome farmers brand new to PFI and to cover crops and offer trouble-shooting help and support as farmers get started improving the resiliency of their farms.

Our Farm's Focus on Soil Health Principles

I grew up always wanting to farm, and in high school managed and farmed 150 acres under dad's guidance. During my junior year at Iowa State University, when I was looking at grad school and employment options, my dad offered to make space to come back to farm, and I accepted, starting in 2010 with 600 acres of rented land. In 2011, Sarah and I were married, and we brought to the farm a different perspective on the farm management practices, along with different sets of skills and added labor to implement new practices. Then in 2012 we experienced a drought, followed by exceedingly heavy rainfall events in 2013 and 2014 that further informed our management practices. We saw that we needed soil that was more resilient to drought, flooding and heavy rainfall. The way to do that was to build the soil's capacity to both infiltrate and hold water and soil health practices were the way to do that. My experience and education gave me an understanding of the impact below the ground in order to manage the land above ground. Impacts such as rooting patterns, ground cover and tillage.

Basic soil health principles include: Protecting the soil surface with living plants or plant residue, minimizing soil disturbance, growing diverse plants, having living roots in the soil as long as possible, and integrating livestock.¹

Our farm's first practical application of these soil health principles came in our grazing system management. As beginning farmers on rented pasture with limited resources relative to more established landowning farmers, we had an opportunity of necessity to produce more at a lower cost on a limited footprint. We applied our available labor and management resources as well as basic soil health principles in the development of a management-intensive rotational grazing (MiG) system. Utilizing frequent movements of the cattle herd and short-duration grazing events to have a positive impact on soil health. In the first three years of our management-intensive grazing system, on what was rented pasture at the time, we saw an increase in plant diversity and a dramatic increase in pounds of beef weaned per acre - by 74%. MiG increased our carrying capacity and we weaned 6,371 more pounds of beef, which resulted in an increased economic impact of nearly \$12,000, or over \$300 per acre.

¹ https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1082147.pdf

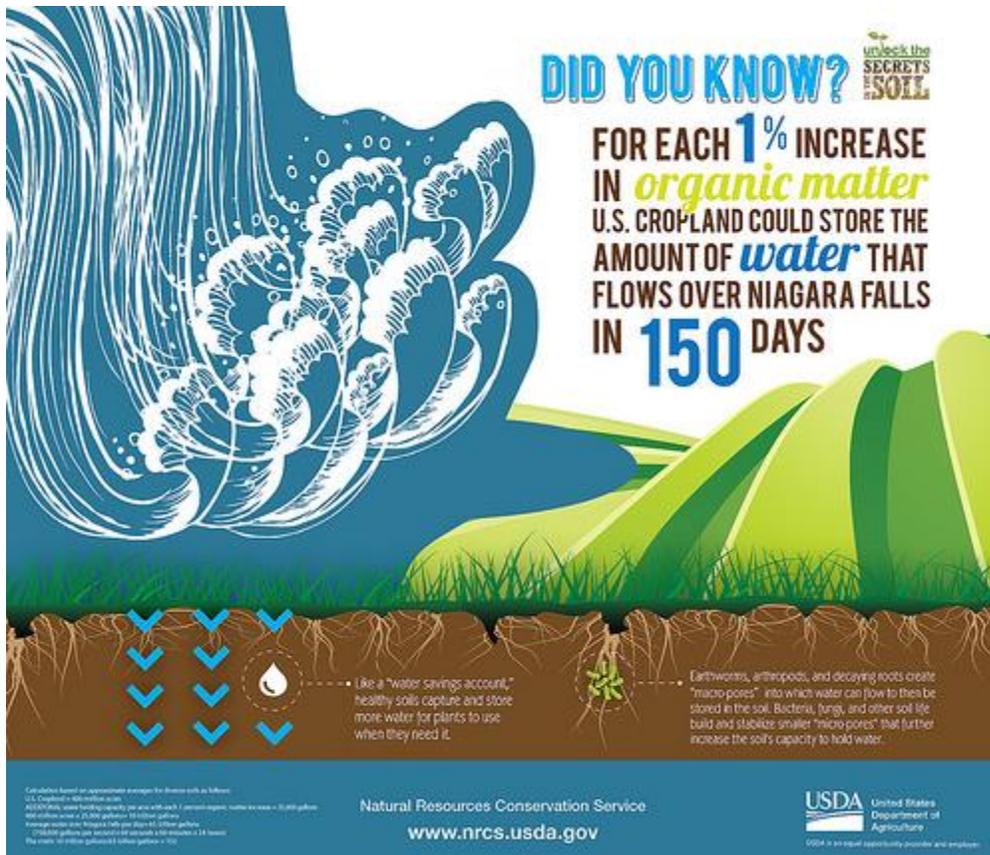
Table 5

Calf weaning weight and average daily gain (ADG) relative to acres grazed in 2010 and 2013						
Year	Total pasture size (ac)	Number of calves weaned	Average calf weaning weight (lb)	Average calf ADG (lb/d)	Total pounds weaned (lb)	Pounds weaned per grazed acre (lb/ac)
2010	30.6	12	567	2.26	6802	222
2013	34.1	24	549	1.96	13173	386
Average	32.4	18	558	2.11	9988	304

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We've had similar results in our row cropping system. On one rented field, through manure and compost nutrient application, diverse cover crops, and continuing testing and monitoring, we managed a 1.6% increase in organic matter over a 7-year period. This increase in organic matter has improved soil nutrient cycling, making more nutrients available without additions of fertilizer. This organic matter increases available water, soil structure and support for both plants and equipment. USDA-NRCS has shown through rainfall simulation that rainfall hitting a "naked" field not only erodes large amounts of soil but also most of the rain water never infiltrates. This results in thirsty crops during the late summer when rainfall is limited. Because of our increase in soil organic matter through changing our farming practices we are now able to hold more rainwater in the soil and better withstand extreme drought and flood. We've done this while reducing nitrogen application and herbicide passes (input costs), and while achieving increased yields of our primary corn and soybean crops.

² <https://practicalfarmers.org/wp-content/uploads/2018/12/13.L.Pasture-monitoring-Anderson.pdf>



Sharing information about row crop production and our livestock production separately is a disservice to the benefit of incorporating the two of them together on the same acres. Row crop production with a diverse cover crop that is then grazed by ruminants like cattle provided us the quickest return on our soil health investment. The recent USDA-SARE report, *Cover Crop Economics*, notes that “when cover crops are grazed, they can provide a profit in the first year of use if fencing and water are already available.”³

Many soil health practices take a long time to realize an economic return, but as cited above, grazing cover crops is a practice that immediately offsets the cost of feed; helping farmers net hundreds of dollars per acre. This is a win-win practice that boosts a farmer’s bottom line while building organic matter. In addition, *Cover Crops Economics* points out that receiving federal or state incentive payments while transitioning to cover crop use can make a major contribution to a quick economic return. In Iowa, we have a number of state programs, including the first in the

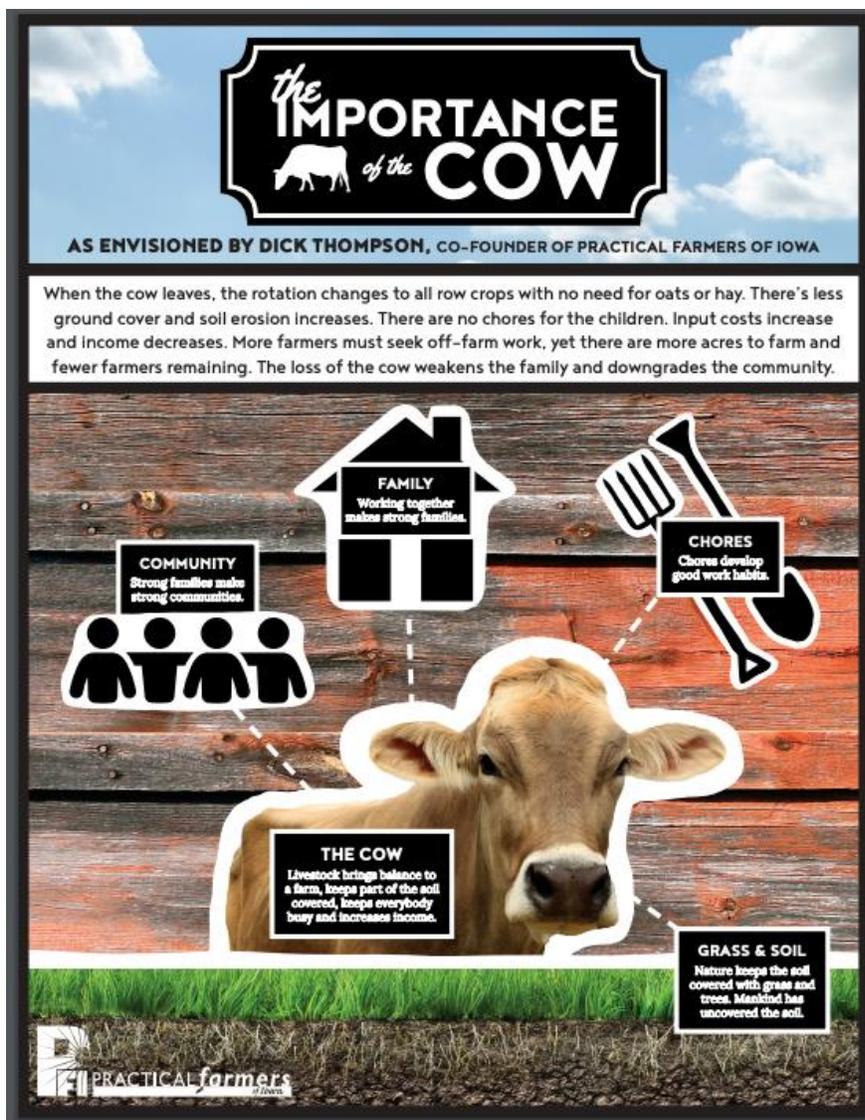
³ <https://www.sare.org/Newsroom/Press-Releases/When-Do-Cover-Crops-Pay-New-USDA-SARE-Report-Addresses-the-Question>

nation crop insurance discount demonstration project by the Iowa Department of Agriculture and Land Stewardship and USDA Risk Management Agency. We also have private cost share available from companies such as Unilever, who are partnering with PFI and investing in soil health practices such as cover crops.

Soil Health Practices Grow Rural Economies and Support Beginning Farmers

Soil health practices allow for growth of rural economies by “farming in the off-season.” Today a young couple wanting to return to a corn and soybean operation may have limited opportunity to build sweat equity and eventually start farming on their own. But soil health practices create an immense opportunity to build operations by farming in the off-season through the establishment of custom cover crop seeding businesses, custom grazing, haying or fencing businesses, and more. For the state of Iowa to properly address soil health improvements we will need to be seeding at least 11 million acres of corn and soybean ground with cover crops, or 60% every fall. To accomplish this, we will need more than 2,000 independent applicators. These custom operations can help the next generation of farmers wanting to put roots down in rural America to become entrepreneurs and revitalize our communities.

These ideas are what lead the founder of PFI, Dick Thompson, to create the organization in 1985. He saw the initial losses of diversity of crops and livestock and worried back then about how farmers could help reduce the loss of the rural population. Fast-forward more than 35 years and we are still working to improve opportunities for young people to have the opportunity to begin farming. The importance of farm diversity is one of the only ways I, as a young farmer, was able to return to my multi-generational farm and get started.



Land access is commonly surveyed as the most significant limiting factor for beginning and young farmers.⁴ With this in mind, our own early focus was to improve the productivity and profitability of the acres that we could access, some owned, most rented. Using data and information from PFI, NRCS, Iowa Learning Farms (ILF) and other sources, we began incorporating diverse cover crops, management-intensive grazing (MIG), no-till, manure and compost fertility sources, and continuing on-farm research and networking.

We have always farmed with the purpose of improving the soils of the land we work on, regardless of whether or not we own the land. I make an extra effort to explain to the landowner the practices I am doing and why I am doing it. Not all landowners may want certain species of

⁴ <https://newfarmers.usda.gov/access-land-and-capital>

cover crops on their land, or some may want their fields to look a certain way, so we make sure to have open communication with our landowners.

Soil health practices on our pasture were initiated with the help of EQIP cost-share funding through the NRCS. The knowledge provided through NRCS planners supported the changes that we made and continue to make.

Soil Health and Extreme Weather

As many of you are aware, this spring was challenging for many farmers across the country, especially in my home state of Iowa. 59 of our 99 counties were declared disaster areas after spring flooding. Even after the flooding subsided rain continued and made it very difficult to plant crops.

While we faced a few challenges, the health of our soil helped to mitigate some of the issues we faced. We were able to plant in fields sooner because the resiliency of our soil supported equipment with wetter than average conditions. Our soil structure minimized the negative impact of sidewall, or seed trench compaction. Improvements in soil health result in widely recognized benefits to surface and groundwater, both on and off farm.

Healthy soils' ability to slow water movement across the landscape is vital as extreme weather becomes more and more common.

My Dad and I, while often working together, have a “brains of the day” and “brawn of the day award.” This award serves to affirm the work of each other and sometimes lighten the pressure of working in close quarters with a parent daily. In 2013, after a few years of no-till and cover crops, we had a devastatingly heavy rainfall event. The water from a neighboring field was streaming off with enough force you could take a kayak across the field. Once that water entered our field, the force of the water slowed, the sediment it was carrying dropped out, and its impact was lessened. My Dad looked out the window through the pouring rain at the stream of water and said matter-of-factly, “That may be the brains of the year award”.

Soil Health Call to Action

Being a fourth-generation farmer in the United States has had its unique set of challenges for our family. My great-grandfather was a tenant farmer in a different area of the county, but he lost the farm in The Great Depression. Then, after arriving back from World War II, his son – my grandfather – worked his way back into a farm of his own. The next generation – my father and uncle – had to deal with some of the hardest times for agriculture in the United States due to the

farming crisis of the 1980s. And, while I have not had to deal with any trials quite like they have had, it is up to my generation to ensure that their legacy is carried on.

One of the ways in which we are doing so is through the adoption of new techniques to maintain and improve soil health. While there have been many barriers – such as labor shortages, which make continuing education and implementing practices difficult, and extreme weather conditions – I find that partnerships with government, support from private companies and continuous research and data make it easier to adopt these practices. However, this is not enough, and I believe there are a few areas where Congress can assist.

- 1) Because cover crops are proven as a sound agronomic practice, their management should not be segregated from fertilizer, crop protection, and seed selection choices under RMA-policy approval. I believe that RMA should treat cover crops as any other crop input and allow farmers and their agronomic advisors to make the relevant management decisions.
- 2) New and beginning farmers who are able to apply management skills to their chosen cropping system can do so through the CSP and EQIP programs, and be supported by training from the BFRD program. However, as I have mentioned, extreme weather is a major barrier we face in our industry. I believe flexibility is needed in these programs to manage a biological system that does not follow calendar dates. Along with this, federal programs, such as the ones listed above, should be easier to implement by landowners and tenants working in cooperation to benefit from these programs.
- 3) Our farm, in the practice of PFI farms, values partnerships with governmental and non-governmental organizations. In 2017, our farm hosted an NRCS soil health training event on our farm, where we had 40 staff participate rather than being in an office all day. PFI farmers continue to lead on-farm research on soil health topics, and it is important that the organizations we partner with can attend events and gain knowledge gleaned through on farm research by the farmers who conducted it. I believe Congress should provide more funding for opportunities like this.
- 4) Lastly, as I have previously mentioned, continued research and data are crucial to our industry. I strongly believe that Congress should appropriate additional funding toward programs like SARE, OREI, and Cover Crop Councils that conduct research on soil health.

Concluding Thoughts

I was once asked the question “10 years after you die, why will it matter that Nathan Anderson farmed that land? Who will know, and who will care?” I’m still considering that question and have formulated this response:

Each one of us who is fortunate enough to farm, own, or manage land leaves our own imprint on it. That imprint can be negative, neutral, or positive, and can last for generations. Just as we can see the soil-based evidence of manure applications, tillage, fence lines, and travel paths in our own fields that were made decades ago, farmers decades from now will see our imprint on the land. For the future of food security, rural communities, and family farms, that imprint must be positive and enduring. The broad application of basic soil health principles is capable of having the necessary impact.