

A Case for Phased Conservation

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Wouldn't it be great if we could take every farm and fix all conservation concerns in one year? A landowner and operator would come to the table and address fertility, drainage and erosions and then make a plan to swiftly address all three immediately. When year two rolled around, we would see increased yields for the operator and increased value for the landowner.

Many variables make this unobtainable for a farm, and because of this, it could feel like a daunting task to even start.

Some landowners have concerns of improvement projects going over budget and/or not knowing the scope of needed work, feeling inadequate in the lingo to be on shared footing with contractors and/or their operator. The farm could be on an annual cash rent lease agreement where the operator does not feel secure enough to invest in improvements that would improve the farm over time. In this scenario, there is simply no incentive to think beyond the annual, one-year lease agreement. Or maybe the landowner-operator relationship has been long term and change on either side could be a difficult step. (Add current low corn/soybean prices to tighten margins and we've painted quite the dreary picture!)

The good news is that if we can solve the financial issues on a farm, there is almost always a positive environmental impact. With higher commodity prices in the past, we could have a more singular focus on maximizing yield and generate significant income. But in the last couple of years, we have needed to take a hard look at where inputs are not equating to commodity. Today's technology allows us to run modeling on an acre-scale to identify opportunities for more prescriptive management. And if we can identify the acres that are losing money, we often find those same acres have conservation issues.

The following farm is a good example of a phased approach to conservation. As we first dug into this farm, there were several items at play:

- Yields were consistently below the county average while the CSR2 ratings of the soils were average to above county average.
- Soil tests on the farm showed low pH and lime was needed to get the farm up to optimum levels.
- Several waterways needed to be reshaped to properly channel water off the farm.
- The farm is a corn-soybean rotation with conventional tillage.
- The operator did not have much cover crop experience and had management concerns when it came to incorporating timely terminating with spring planting.
- The landowner was on a fixed income and in the past had concerns about annual cash flow as improvement projects came up.

In the early stages with the landowner, we ran a soil loss report on the full 160-acre farm. The results showed that a concentrated amount of soil loss was happening on the southwest 40 acres of the farm. The results showed:

- In corn-soybean rotation with conventional tillage and no cover crops, the annual soil loss per acre was 4.4 ton/acre. The cumulative erosion cost (cumulative yield loss/acre + cumulative nutrient loss/acre = total yield and nutrient loss/acre) was \$18.78/acre.
- In corn-soybean rotation with fall tillage after corn and no tillage after soybeans, the annual soil loss per acre was 3.6 ton/acre. The cumulative erosion cost was \$15.64/acre.
- In corn-soybean rotation with fall tillage after corn and no tillage after soybeans plus cover crops after soybeans, the annual soil loss per acre was 2.0 ton/acre. The cumulative erosion cost was \$8.49/acre.

By eliminating tillage after soybeans and introducing a cover crop, we reduced our soil loss per acre by more than half as well as reduced the cumulative erosion cost by half. Having these numbers at our fingertips was a powerful tool when meeting with the operator to discuss next steps. As could be expected, these 40 acres aligned with lower yields on the annual yield maps, as well as lower organic matter/fertility levels on the recent soil test.

The landowner paid \$1,360 for soil testing and agreed to a \$3,000 budget to repair a few of the major waterways on the farm. Data files from the soil test were shared with the operator to allow him to variable rate apply fertilizer and lime to apply the product where it was truly needed versus a flat rate across the full farm.

In their updated farm lease, the operator was required to reduce tillage on the full farm. He had smaller equipment of his own and was able to address several of the smaller waterways that needed reshaping. All of the waterway work addressed surface water drainage for improved planting conditions in the spring. The operator agreed to try cover crops on the 40 acres identified as the poorest acres on the soil loss report and was able to secure cost share dollars to pay for half of the seed/aerial application. As he gets more comfortable with cover crops, there is discussion about expanding cover crops on the full farm in the future.



The above photo is from the east side of the farm showing the 40 acres used to experiment with cover crops in 2019.



Several waterways on the farm were reshaped this spring. The above photo shows a tractor in the lower left hand corner spraying of the rye cover crop.

Moving forward, the operator will share data on annual fertilizer and chemical applications as well as yield maps with the landowner. This annual reporting requirement will provide valuable insight into progress made on the farm and will be a catalyst for future discussion on farm improvement projects.

With an open dialogue, the landowner and operator were able to identify next steps in the fertility, drainage and erosion columns. There is certainly more to be improved upon in all three, but they began the work and will see the benefits as each year's momentum builds on the last.

There was a mutual understanding of profitability and neither party let perfect get in the way of better. A phased approach to conservation allows us to get work done on the landscape with limited resources and provides margin for experimenting.

To learn more about the tools used by Peoples Company Land Management to address and measure conservation, please visit www.PeoplesCompany.com or email LandManagement@PeoplesCompany.com.