Precision Ag Pilot Program Shows Farmers What 'Trouble Spots' are Costing Them

By Angela Magstadt

Brayden Wagner of Englevale considers himself an average farmer. He still tills his fields, participates in a little CRP, and does his book work pretty much only in the winter after harvest and before planting. And, like any other farmer, one of his biggest concerns is how to manage his operation to maximize profits.

"Last April, Jordan Croatt, a field biologist for Pheasants Forever, approached me about an online program that allows farmers to put in their own input and harvest data to show the trouble spots on our farms, and whether or not they are profitable," Wagner says. "What he said was pretty powerful, and even though I was about to start planting, I decided to give the program a try."

Wagner says there are certain areas in his fields that he only gets planted every couple of years. After he put his data into the program, it showed him he is losing money on those areas – even when he does get them planted. "It showed me that it doesn't make sense to put seed, fertilizer, and time into those areas when I'm not making any money on them. There are just some areas Mother Nature won't allow you to farm. So, I'm going to look into other uses for that land that would allow me to make some money on those areas," he says.

Pheasants Forever (PF) worked with Wagner to determine whether this would be something that would be feasible to offer as a pilot program. The results were promising, so PF recently joined together with the Ransom County and Wild Rice soil conservation districts to launch

These photos demonstrate areas within fields that have input costs such as seed, chemical, and fertilizer, but ultimately do not turn a profit. The precision ag business planning process clearly demonstrates to producers, using their own data, what the "trouble spots" are costing them to farm. The program also allows them to develop side-by-side comparisons to show how farm profits can be improved by adopting a conservation practice on those acres. The adoption of conservation practices can not only help producers increase profitability, it can also improve water quality, soil health, and create wildlife habitat.

The top photo is a wetland that makes marginal cropland. The bottom photo is the same wetland one year later after the wetland acres, along with an upland buffer was enrolled in CRP.

the Precision Ag Pilot Program, which will include two farmers from Ransom County and two farmers from Sargent County. These farmers will use AgSolver's web-based program, Profit Zone Manager, to input their customized field data to generate profitability maps and reports to show where their trouble spots are, and if they are getting an adequate return on investment on each acre.

"If they have areas that are revenue negative and cropping them isn't benefitting them financially, we will give them ideas of other uses that will," says PF North Dakota State Coordinator Rachel Bush. Some of these alternatives include converting the land from cropland to hay, forage, or enrolling it in a conservation program, such as the Conservation Reserve Program (CRP). The online program will then give the farmers side-by-side comparisons of what the profit of these uses would be, as compared to continuing to farm these marginal acres. "We will work with them to input and review their data, but it's ultimately up to them what they want to do," Bush says.

The North Dakota Game and Fish Department has also made additional cost-share available for Best Management Practices for producers through the precision ag business planning process.

"This program is proof that conservation groups and farmers can work together to make the land more profitable," she continues. "Our goal is to improve water quality, soil health, and wildlife habitat, and with the help of a 319 Water Quality Grant from the North Dakota Department of Health, we will be able to do just that."

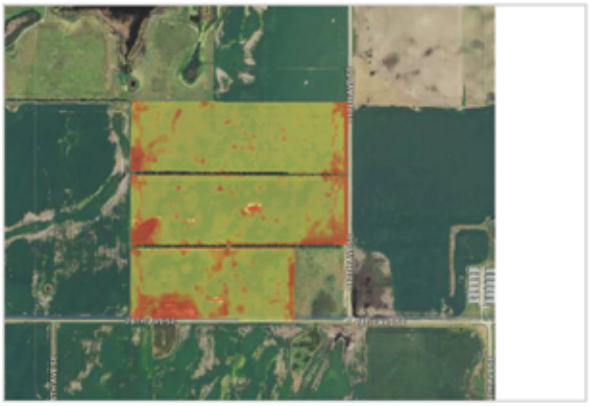
Croatt is already working with the two farmers who have signed up for the pilot. "Farmers are the original conservationists," he says. "This program is designed to show how much production agriculture and conservation can complement each other. We're not asking them to give up their land, we're just showing them that they can increase their profits by exploring other avenues on their trouble spots."

PF is currently working on enlisting the help of an agronomist to assist in the farming aspect of the pilot program. "We can offer expertise on the conservation side, and we want to offer the expertise of a farming expert to help farmers make every acre the best it can be," Croatt says.

Wagner has been impressed with the program thus far, and plans on delving even further into it over the winter, because he is confident it will help him increase his bottom line. "There are a lot of farmers that keep farming the tough areas, even though they're not making money on them," Wagner says. "They don't realize how much money they can make by changing the use of those areas. And we have the technology now that allows us to farm around them without it being an inconvenience. Why wouldn't we do it?"

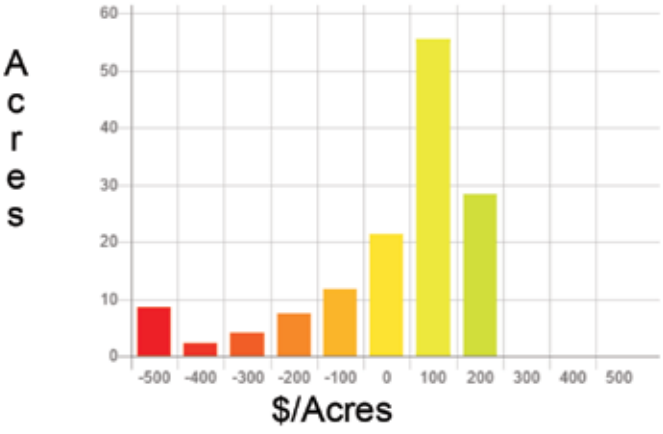
The North Dakota Natural Resources Trust is a funding partner for the pilot program, and according to Keith Trego, the Trust's executive director, has been a big supporter of the precision ag concept for some time, watching the successful precision ag partnership in Iowa for the last year or two. Trego says the Trust was also recently a funding partner with PF on an Outdoor Heritage Fund grant application for precision ag, and while that application was unsuccessful, the staff and board knew this was too valuable an ag/conservation partnership to go away. "In many ways, precision ag is the partnership model for the future," Trego says. "Its real strength is its practical implementation of the common theme of 'farm the best – alternatives on the rest' that resonates in so many ways."

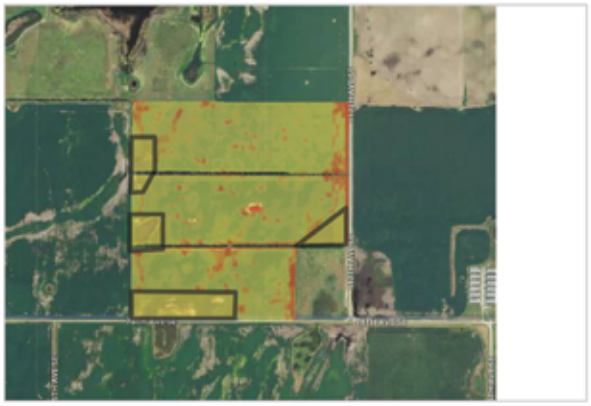
PF is currently looking for one more farmer from Ransom County and one more farmer from Sargent County to participate in the Precision Ag Pilot Program, which will end in 2018. The program is being offered at no cost to its participants. For more information, contact Jordan Croatt at 701-680-8713.



Scenario: Actual Production - 2014

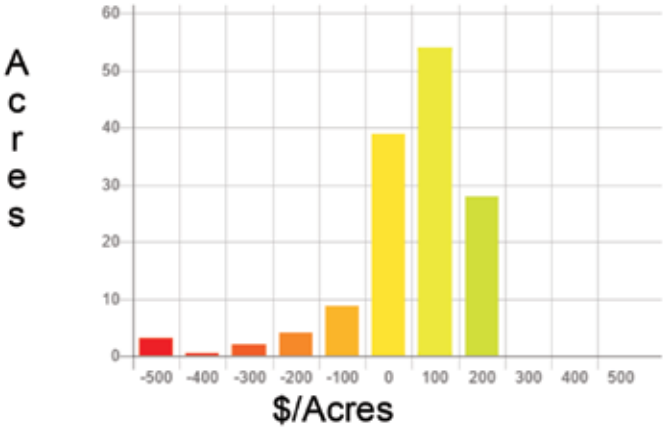
Parameter	Value
Field Acreage	139.9 ac
Average Yield	168.9 bu/ac
Profit	$8.33/acre
ROI	1.3 %
Production Efficiency	254.0 bu/$1000
Acreage Opportunity Ratio	31 %
Working Capital Opportunity	$28,704.66
Breakeven Commodity Price	$3.94
Total Field Expenses	$93,033.50
Total Field Revenue	$94,198.67
Total Field Profit	$1,165.17





Scenario: CRP 2016 Using 2014 Corn Data - 2014

Parameter	Value
Field Acreage	139.9 ac
Average Yield	180.9 bu/ac
Profit	$49.61/acre
ROI	8.5 %
Production Efficiency	309.5 bu/$1000
Acreage Opportunity Ratio	19 %
Working Capital Opportunity	$17,521.62
Breakeven Commodity Price	$3.23
Total Field Expenses	$81,800.92
Total Field Revenue	$88,741.39
Total Field Profit	$6,940.47



This sample scenario shows what AgSolver's online program used by the Precision Ag Pilot Program can do. The first scenario on this comparison is the basic profitability map using the actual production data from 2014. The second scenario also includes the actual production data from 2014. Taking it a step further, we projected what the return on investment would be if the producer enrolled the most unprofitable acres (the red acres on the map) into the Conservation Reserve Program. We are able to draw zones within the field (refer to the map) to represent the potential CRP acres and create a customized budget for each zone.