

Yellowstone Regional Ag Sustainability RCPP

Project Summary

Regional Conservation Partnership Program

The Regional Conservation Partnership Program (RCPP) promotes coordination of NRCS conservation activities with partners that offer value-added contributions to expand our collective ability to address on-farm, watershed, and regional natural resource concerns. Through RCPP, NRCS seeks to co-invest with partners to implement projects that demonstrate innovative solutions to conservation challenges and provide measurable improvements and outcomes tied to the resource concerns they seek to address.

Yellowstone Regional Ag Sustainability RCPP

The Yellowstone Region Agricultural Sustainability Project, led by Molson Coors, brought together multiple private and public agricultural partners in Big Horn, Carbon, and Yellowstone counties. The goal was to combine resources across organizations to help malt barley and sugar beet growers put irrigation systems in place to facilitate a combination of water and soil conservation practices including cover crops, reduced tillage, nutrient management, and irrigation water management. Through this project, assistance helped to mitigate the risk to producers of transitioning to practices that improve natural resources while also increasing economic viability and agricultural sustainability.

Partners

- Beartooth Resource Conservation & Development Area
- Big Horn Conservation District
- Carbon Conservation District
- Molson Coors
- Montana Bureau of Mines & Geology
- Western Sugar
- Yellowstone Conservation District

NRCS and Partner Contributions

- \$1,886,863 in NRCS cost share including funds from Bozeman Area irrigation fund pool
- \$30,000 in partner contributions in technical and financial assistance

Economic Impact

Per NRCS economic data, the investment in the Yellowstone Region Ag Sustainability Project created just over \$2 million in additional economic outputs in the 3-county area.



Shawn Kuzara, Montana Bureau of Mines and Geology, presents a poster made by graduate student Taylor Bienvenue displaying the work done on site in June 2019.

Conservation Benefits

NRCS planning models show a 15-20% increase in irrigation efficiency for pivot irrigation over flood irrigation. Planning models also calculate the average tons of soil loss per acre in Yellowstone County alone would improve from an average of 6.2 tons/acre to .43 tons/acre with the implementation of planned conservation practices.



Bill Michael, Farmer, Yellowstone County

"At first it was hard to believe that we were using the same amount of water in the pivot to water 100 acres at $\frac{3}{4}$ inch that we had been using to irrigate 27 acres with gated pipe. Doing water management with flow meters before the pivot and now, after the pivot is in, we're just amazed at the difference – the efficiency. The crop under the pivot planted with no-till is just as good as in other fields. The pivot really suits doing what we want management-wise, trying to keep the soil on the place and saving money."



NRCS gave us advice and helped with funding on the cover crops. The whole idea is not only to help producers acquire technology, but to educate and provide experience with guidance along the way. We keep learning. Ideas don't always work. But it's the only way to make progress."

Cover crop: 669 acres

A mix of cool and warm season grasses, legumes, brassicas and other grazable species.

- Reduce erosion from wind and water and transport of sediment
- Maintain or increase soil health and organic matter content in the soil
- Improve infiltration, soil structure, and soil water storage
- Increase soil biological activity, food and cover for wildlife
- Supplemental forage for livestock and increase space and connectivity for wildlife

Reduced Tillage: 1,023 acres

- Fewer field operations and less tillage reduce the potential for soil compaction
- Increase in soil carbon
- Decrease runoff and erosion reduces nutrients, pesticides, salts, pathogens and sediment to surface waters

Nutrient Management: 1,399 acres

- Minimize agricultural non-point source pollution of surface and groundwater resources
- Utilize manure or organic by-products as a plant nutrient source
- Optimize the storage of soil carbon
- Reduce energy costs of commercial fertilizer

Sprinkler System: 724 acres

- Properly applied sprinkler irrigation can reduce seeps, runoff, flooding, ponding and subsurface flows
- Uniform water application reduces the potential for deep percolation of agricultural chemicals into groundwater
- Water savings may be available for instream water use
- Facilitate more diverse crop production opportunities

Chad Kuntz, Farmer, Yellowstone County

"We're on the end of the ditch here and water can be short. With the flood irrigation, it took a lot of labor and there could be a lot of erosion. In the end, with the pivot, we save a lot of water. One head will service this field now, whereas we used 4 heads before the pivot.

It's in our best interest to conserve the land, water, and resources. Over fertilization costs money. Water is our livelihood. We've seen a positive difference in a lot of yield with these changes [using conservation practices].

Years ago, we plowed, disced, and harrowed every field. We haven't pulled the plow out in years. Reduced tillage helps with erosion, particularly where there's wind and lighter soil. This year, there's been a lot of wind and we never had the beets blow out, didn't have to replant."



Chad and Holly Kuntz, center, with their children and Chad's father, Cody Kuntz. The family are all involved in the operation.

Michael Killen, Agronomist, Molson Coors

"Molson Coors has a goal of reduced water usage in our supply chain. We've been working on this goal for 5 years. We're making progress with the help of our growers in converting pivots and being more efficient.



NRCS was a great help in getting the program off the ground. They brought EQIP funding to these counties and they're a great help in working with the growers. The growers have really stepped up and invested their own money when commodities aren't that good price-wise. Growers go above and beyond getting these projects in."

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MT-2021 • January 2021