

## Ashton Groundwater Protection Project

### Project Quick Facts

**2010 & 11 Financial Assistance**.....\$783,558

**Number of Contracts** .....44

**Acres Treated** .....16,155

**Project Location:** Eastern Idaho,  
Fremont County

**Resource concerns addressed:**  
Water and soil quality, plant health

**NRCS Program Used:**  
EQIP Cooperative Conservation Partnership  
Initiative

### Project Benefits

**Soil**

- Improved soil quality as soil pH is neutralized

**Water Quality**

- Less nitrogen leaching into ground water as plants are better able to use applied nutrients

**Plants**

- Less plant stress
- Improved crop yields

**People**

- Improved crop yields
- City water supply problems being addressed

In 1999 the Idaho Department of Environmental Quality found high nitrate concentrations in Ashton’s drinking water. Since then, numerous groups have worked together to find solutions to reduce nitrogen leaching from agricultural land to address the water quality problem. One very successful project was put together by the Yellowstone Soil Conservation District

In 2010, the District started the Ashton Groundwater Protection Project, drawing from information gained from years of work to correct groundwater problems. This partnership project helps producers locate low pH areas in their fields which are then treated with lime to increase the pH. Funding from the Natural Resources Conservation Service through the Cooperative Conservation Partnership Initiative helps pay for soil sampling and mapping as well as corrective lime applications.



Lime treated field is on right.

“Participation in the project is high because producers have been active partners in solving their community’s water quality problems. They have also have seen how addressing pH issues can benefit their crops,” said Ken Beckmann, NRCS District Conservationist in Fremont County.

Past field studies began to reveal that soil pH was not consistent across the county or even across fields. When the Yellowstone Soil Conservation District led efforts to put Best Management Practices into action to reduce nitrogen leaching they found that, even though producers put nutrient management practices into place, improvements to the nitrate levels were less than expected. But, soil tests done during this time exposed some interesting information: pH levels in some soils in the area were unexpectedly low! This was an eye-opener in eastern Idaho where high pH soils predominate.

Low soil pH hinders plant uptake of fertilizer. The fertilizer that can’t be used by plants year after year leaches down through the soil. Field tests around Ashton showed nitrogen percolating deep into the soil profile in areas with low soil pH.

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Farmer Tom Howell participates in the project.

Tom Howell of Howell Farms is a project participant. He observed, “Over the last 10 years I have seen increasing problems with my crops, especially in north slopes and wet low spots; then our soil testing showed that we had pH problems.

“Once they did the soil maps it was surprising to see the pattern of problem spots on my field.”

The field tests noted high variability of soil pH within a field, especially when soils came from glacial origins. Lime was used to adjust the pH; large amounts of lime were required, but crops were very responsive showing a 42% yield increase for limed areas.

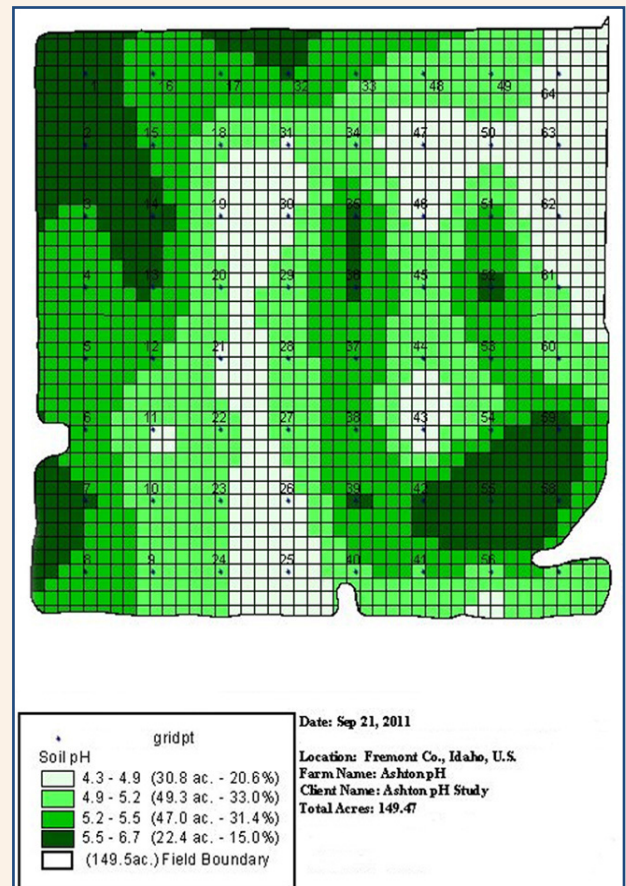
The Yellowstone SCD used all this information on the application for the Ashton Groundwater Protection Project submitted to NRCS for the Cooperative Conservation Partnership Initiative. They estimated there were 20,000 acres with low soil pH in the area and set a goal to treat 50% or 10,000 acres over three years. In only 2 years they exceeded their goals. In 2010, NRCS put in place contracts to treat 7,810 acres and in 2011 contracts for 8,345 acres were established. There is still one year left for additional contracts.

The project entails developing a grid of soil samples across fields using Global Positioning System (GPS) technology. Western Ag Research, one of the project’s partners, uses the soil sample grid to create a map of the field showing soil pH levels. The maps are used with computer-controlled equipment that tailors the lime application to the varying needs within a field; lime is applied precisely where it is needed.

“After the lime is applied you can really see the difference in the color of the barley plants,” Howell told us. “Looking at the pH is just as important as fertilizer because if the pH is off then the fertilizer doesn’t get utilized.”

The Ashton Groundwater Protection Project in Fremont County demonstrates the value of partnerships in addressing water quality concerns. “This project has been so successful because there is the right mix of partners. The producers, the Yellowstone Soil Conservation District, Western Ag Research, and NRCS are working together to remedy the nitrate issue,” said Beckmann. “The partners are the ones making it work and that is what the Cooperative Conservation Partnership Initiative is all about.”

Producers apply to and contract with NRCS to participate in the project. Payments for grid sampling, mapping and lime application are paid on a per acre basis. For more information, contact the NRCS field office in St. Anthony at 624-3341.



An example of a soil map. The lighter the color, the lower the pH.