

# Outcomes

The North Dakota Discovery Farms program is in a data collection and analysis phase. If the data call for change, producers will coordinate with natural resource managers to implement the most feasible management practices for their respective operations. Ultimately, the program will help decision makers strike a balance between profitable agricultural production and protection of natural resources.

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## Program Cooperators

**NDSU** NORTH DAKOTA  
STATE UNIVERSITY

 **NORTH DAKOTA**  
DEPARTMENT of HEALTH

 **USGS**  
*science for a changing world*

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Strengthening the  
relationship between  
profitable farm production  
and the environment

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# Background

North Dakota Discovery Farms are working farms and ranches whose owners partner with natural resource managers. Together, they evaluate the effectiveness of various practices at reducing environmental impacts while maintaining farm profitability. The concept originated in Wisconsin in response to concerns that environmental regulations were inconsistent with profitable agricultural production. Similar concerns exist in North Dakota. The Discovery Farms program provides real-life data that is necessary for making informed decisions regarding agriculture and the environment.



Pictured is an example of a Discovery Farms gaging station. Runoff water passes through the flume below the shed; samples are collected and bottled inside automatically for analysis by U.S. Geological Survey officials.

# Participants

## Amann Family Ranch

Kim and Denise Amann ranch with their son, Dusty, southeast of Dazey. They run about 200 cows and background their calves. One Discovery Farms gaging station monitors runoff near a crop field where the cows graze and are fed throughout the winter; another collects adjacent to the nearby Baldhill Creek. The first station enables researchers to study runoff behavior from grazed cropland. The second determines how much water and nutrients are absorbed naturally by pasture vegetation versus reaching the Baldhill, which drains into Lake Ashtabula and eventually the Sheyenne River.



Kim, Denise and Dusty Amann

## Bartholomay Brothers Family Farms

Kent and Sandy Bartholomay and Keith and Sandi Bartholomay, together with family, farm 4,500 acres of cropland near Sheldon. The Bartholomays allow Discovery Farms researchers to collect surface and tile drainage water at three gaging stations near one of their fields. Nitrogen and phosphorus levels in the samples are monitored to determine whether nutrient loss is an issue for the Maple River, which is just a half-mile south of the field.



Sandi and Keith Bartholomay, Kent and Sandy Bartholomay

## Johannes Farm and Feedlot



Patsy and Doyle Johannes

Doyle and Patsy Johannes farm and ranch near Underwood. The couple, with help from family, run 200 cows, background the calves and custom feed up to 300 more cows. A Discovery Farms gaging station collects water samples as runoff leaves the feedlot and flows to two more collection sites. During this half-mile trek, the runoff passes through grass and trees. The samples show how much nitrogen and phosphorus is leaving the feedlot and to what extent natural vegetation decreases these nutrients as runoff approaches the nearby Missouri River.

