

1.0 PROJECT PROPOSAL SUMMARY SHEET

PROJECT NAME: Precision Ag Business Planning Support Project- Phase III

LEAD PROJECT SPONSOR: Pheasants Forever, Inc.

CONTACT PERSONS:

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STATE: North Dakota

WATERSHED(S): Upper James (HUC1016003) Western Wild Rice (HUC 09020105) Sheyenne River (HUC09020204 and 09020203), and Elm River (HUC 10160004)

PROJECT TYPE: Financial and Technical Assistance for Precision Ag Business Planning and Best Management Practices

WATERBODY TYPES: Lakes/Reservoirs, Rivers, Streams, Groundwater, Wetlands

NPS CATEGORY: Agricultural

PROJECT LOCATION: Boundaries of Barnes, Cass, Dickey, LaMoure, Ransom, Richland, Sargent, and Stutsman Counties and Upper James portion of Logan county (Appendix A)

SUMMARIZATION OF MAJOR GOALS:

The major goal of this support project is to apply precision ag and conservation solutions through the evaluation of precision ag data, cost of production and the economics of alternative options to improve on-farm water quality and downstream benefits while minimizing risks through the adoption of Best Management Practices. Precision Ag and conservation solutions allows growers to identify and validate revenue negative acres at a sub-field level by analyzing machine data (as planted, as applied and yield data) and personalized crop budgets. In many situations, identified revenue-negative acres are located in low, flood prone, riparian or saline areas and subject to increased rates of inputs, leaching and runoff. One product of this evaluation is the side-by-side comparison of revenue negative acres and an alternative land use, such as a Best Management Practice (BMP). By examining Return On Investment (ROI) and profitability the information gained through the use of precision ag and conservation solutions may trigger a management decision towards BMP adoption on marginal acres. Additionally, increased conservation stewardship can also occur on the 'green' acres through implementation of BMPs such as no-till, cover crops or more diversified cropping systems which can ultimately lead to improved water quality and soil health. Phase III will expand this planning tool and associated BMPs to a larger project area pictured in Appendix A, impacting a greater number of growers and providing benefits across impacted watersheds.

PROJECT DESCRIPTION:

Pheasants Forever in coordination with local partners will provide one-on-one precision ag and conservation solutions through the evaluation of precision data, production cost and the economics of alternative practices and will provide:

- 1) Local one-on-one technical assistance to the grower;
- 2) Identification, recommendation and implementation of BMPs that assist growers with improving environmental benefits and minimizing risk;
- 3) Hold short-term agreements with cooperating landowners;
- 4) Coordinate enrollment into other voluntary conservation options based on grower interest.

FY2025 319 FUNDS REQUESTED: \$250,000.00

FY2025 MATCH: \$184,669.00

OTHER FEDERAL FUNDS: \$0

TOTAL PROJECT COST: \$434,669.00

2.0 STATEMENT OF NEED

Pheasants Forever is currently in the last stages of delivering Phase II of the Precision Ag Business Planning Support project. Phase II of this project was restricted to the county boundaries of LaMoure, Dickey, Ransom and Sargent, and focused on providing support practices to the existing 319 watershed projects within that area. Successes to date include an on the ground Precision Ag & Conservation Specialist that works one-on-one with area growers review and analyze their precision data, identify and validate revenue-negative acres and develop alternative scenarios for those acres. A highlight of Best Management Practices delivered through funding provided by the North Dakota Game and Fish Department include; 258.0 acre of conservation cover, 370 acres of cover crops, 225.0 acres of forage and biomass planting. A total of 578 acres were enrolled in 10-year agreements designed to address resource concerns, increase profitability and provide wildlife habitat. A list of Phase I BMPs applied with other federal funds (NDGFD P-R Grant) can be found in Appendix D.

Despite the successes of Phase I, the 2018 Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads indicated that of the 4,824 miles of rivers and streams that were assessed, 1,107 miles (23%) were listed as not supporting aquatic life and an additional 2,206 miles (46%) were listed as fully supporting, but threatened for aquatic life use. As with past reports, siltation and sedimentation were listed as the primary causes for aquatic life impairment.

Recreational use was assessed on 7,926 miles of rivers and streams and the 2018 report indicated 3,279 (41.3%) were listed as not supporting recreation. While 3,231 miles (41%) were listed as fully supporting but threatened for recreational use. The primary causes of recreation use impairment in these water bodies was identified as pathogens, such as E.coli and fecal coliform bacteria, excessive nutrient loading which resulted in nuisance algal and plant growth.

Within the proposed project watershed sub-basins of the Upper James and Western Wild Rice, 827.34 miles of rivers and streams are listed as impaired. The Upper James and Western Wild

Rice sub-basins fall within the Prairie Pothole Region of North Dakota, an area dominated by small season closed basins, but an area that continues to see wetland losses (Dahl 2014). An average of 80% of the land within the sub-basins is in crop production, with the highest percent of land in crop production occurring in Richland County at 94%. To the west Logan County has only 55% of the land within the county in crop production. The primary crops grown in the area are soybeans and corn (USDA-NASS).

In order to reduce siltation, sedimentation, organic enrichment and excessive nutrient loading in our rivers and streams changes need to be made on the landscape. In North Dakota voluntary conservation efforts are the preferred option to addressing these water quality concerns. Voluntary efforts may fall into three categories 1) management practices, such as reduced tillage, application rates and cover crops 2) land use practices, such as land retirement or forage production and 3) edge-of-field practices, such as buffers or filter strips.

For example, Iowa's Nutrient Reduction Strategy highlights the use of rye cover crops as a management strategy that can reduce nitrogen and phosphorus losses by 31% and 29% respectively. Iowa's plan also indicated that land use changes, such as conversion to a perennial cover can reduce N and P by 85% and 59%, respectively, (<https://store.extension.iastate.edu/Product/13960>). The North Dakota Department of Environmental Quality's Nonpoint Source Pollution Management Plan has identified BMPs to address water quality concerns and there have been numerous success stories across the State, however we continue to have impaired waterbodies throughout North Dakota.

Ranjan and coauthors (2019) identified four themes that they classified as barriers to conservation practice adoption. Those themes included farm management, negative perceptions of a conservation practice, perceptions that adoption is a risk, and lastly land tenure. Precision Ag Business Planning- Phase II offers an innovative approach to address some of these barriers to conservation adoption by utilizing current precision ag technology and allowing operators to evaluate a variety of alternative uses for revenue-negative acres on their operation, helping to break down barriers, such as perceived risk. The Nonpoint Source Pollution Program is a voluntary program and as such faces the same uncontrollable participation constraints as other voluntary conservation programs. The context for developing this new precision ag business planning strategy is to acknowledge and work through barriers to implementing conservation. This innovative approach in the identification, spatial placement and economical evaluation of conservation BMPs is based on the reality that current baseline voluntary conservation efforts are insufficient to achieve desired targets for water quality, soil health and wildlife populations.

The eligible area includes the county boundaries of Stutsman, Barnes, Cass, LaMoure, Ransom, Richland, and Sargent county as well as the NE portion of Logan county that lies within the Upper James Watershed. The 303(d) listed waterbodies within the Upper James sub-basin include Beaver Creek, Buffalo Creek and Seven Mile Coulee. The 303(d) listed waterbodies within the Western Wild Rice sub-basin include Mooretown Pond, Wild Rice River, Antelope Creek, Elk Creek, Shortfoot and Crooked Creeks along with unnamed tributaries of the Wild Rice.

3.0 PROJECT DESCRIPTION

Pheasants Forever continually seeks and implements new and innovative ways to work with farmers and ranchers to demonstrate how conservation can improve their operation and quality of life. With the advancement of precision agriculture technology, we know through experience that this information can be harnessed to increase both Return On Investment (ROI) while also addressing resource concerns such as, water quality, soil erosion and loss of habitat. Pheasants Forever believes working collaboratively with private landowners through the delivery of voluntary conservation is the best way to accomplish this. Pheasants Forever also recognizes barriers to conservation adoption and through Phase II of our project will work toward addressing these barriers and adopting strategies to increase participation in voluntary conservation at a sub-basin level. Addressing these barriers to conservation adoption will allow us to work with producers across impaired watersheds, leading to examples of success and leveraging the power of trusted information networks and the value of peer-to-peer and co-learning (Pranay et al. 2019).

The main underpinning of our project is the integration of precision agriculture technology with business planning and environmental performance metrics to showcase how conservation can reduce risk and increase profitability. This is a paradigm shift since conservation programs and BMPs have historically been viewed by growers as sacrificing economic opportunities rather than augmenting. The key advancement is the development of technology capable of evaluating opportunities at a sub-field scale rather than the historic view of entire fields and by examining ROI rather than bushels per acre (Muth 2014).

With the sustained reduction in commodity prices, increased efforts on sustainability and focus on soil health operators are continuing to explore options for marginal acres. Pheasants Forever believes profitable agriculture and conservation of our water, soil and wildlife resources are all possible. The Precision Ag Business Planning Phase II project expands the opportunity to deploy precision ag and conservation solutions, examining Return On Investment, on their farm to identify and validate revenue negative acres by analyzing machine data (as planted, as applied, yield data) and personalized crop budgets. Retailers and consultants in the agribusiness sector offer numerous precision agriculture platforms based on machine data that display yield data as profits, but fail to recognize increasing yields does not necessarily equate to an increase in profits. An increasing number of precision ag platforms are offering the ability to examine profitability and Return On Investment at a sub-field level, allowing an operator to understand subfield variability and its effect on farm economics. The ability to examine variability at a subfield level, offer side-by-side comparisons, and options promoting the examination of alternative land uses on revenue-negative acres is why Pheasants Forever has chosen to utilize precision ag business planning as a tool to target conservation practice placement and increase adoption.

During the business performance review and planning steps, alternative land-use options including BMPs will be explored which may result in increased profits on those acres and a greater ROI over the entire field. This analysis clearly demonstrates to operators the financial impacts of farming the “trouble spots”. Using precision data in concert with crop budgets allows operators to better understand what parts of a field make them the most profit and which areas are costing them money to farm.

By utilizing the precision ag business planning process, identifying revenue-negative acres and reassigning those acres to a lower risk use this project has the potential to reduce nutrient and soil losses at the watershed level. Muth et al. (2012) measured environmental performance at a subfield level using USDA conservation planning metrics to examine the soil condition index as well as soil loss. Muth and others were then able to identify areas within a field, as sustainable, SCI decreasing, or soil loss increasing. Gitau (2008) utilized the Soil and Water Assessment Tool (SWAT) to evaluate BMP performance. What Gitau and others found was that by implementing BMPs through the USDA’s Conservation Reserve Enhancement Program (CREP), total phosphorus losses were reduced by 52%. Later work by Muth (2014) further examined the same fields by bringing profitability into the picture. For the field examined, Muth, concluded that by removing revenue-negative acres from production, nitrate leaching could be decreased by 30% and field average profits increased by over 60%.

Goals

Goal 1: Assist 30 cooperating producers within the project area to restore and protect water quality, soil health and wildlife habitat by directly impacting 2,200 marginal acres and transitioning to more profitable uses through conservation practice adoption that can reduce nutrient loss and increase profitability.

Objectives

Objective 1: Provide technical assistance to cooperating growers through one-on-one precision consultation.

Task 1 - Employ one full-time Precision Ag & Conservation Specialist to provide one-on-one precision business planning and technical assistance to cooperating grower and complete project tasks.

Product – One Precision Ag & Conservation Specialist (1 FTE)

Cost – \$300,914.00 for project lifespan. Includes salary/fringe, travel, meals, printing, office supplies, postage, telephone, internet, staff meetings/trainings, and other (computer, software).

Task 2- Employ one state coordinator to administer the project, track project success, complete reports, assist with completing project tasks, and manage staff.

Product- One State Coordinator (10% FTE)

Cost – \$36,255.00 for project lifespan Includes salary/fringe, travel, meals, printing, office supplies, postage, telephone, internet, staff meetings/trainings, and other (computer, software).

Objective 2: Improve water quality, soil health and wildlife habitat within the Upper James and Western Wild Rice sub-basins. Reduce impairments to water quality caused by siltation, sedimentation, organic enrichment and excessive nutrient loading. Practices that will be used to achieve this objective include forage and biomass plantings, range plantings, pollinator habitat, conservation cover, buffers, and cover crops.

Task 3 – Provide analysis of precision ag data (as applied, as planted, yield) and crop budgets and present alternatives options, such as BMPs.

Product – 10 consultations provided per year (30 Total)

Cost - \$3,000.00 Annual license fees for precision software platforms. Multiple platforms may be used, based on grower preferences. For Phase III of this project, the Climate Corporation has provided Pheasant Forever with in-kind login for Climate FieldView.

Task 4 – Provide financial assistance to cooperating growers to implement perennial cover or cover crop Best Management Practices with rates prescribed as indicated in Appendix B.

Product – Reduced soil erosion, reduced siltation and sedimentation into water bodies, reduced runoff, reduced inputs and increased soil health and wildlife habitat. Best Management Practices include five-year management agreements (See description in Appendix E), perennial cover, cover crops, pollinator habitat or saline soil management.

Cost - \$90,000.00 for project lifespan.

Costs includes Pheasants Forever Match, Landowner match and 319 costs. Estimated BMPs include 500 acres of perennial cover and 500 acres under the 5-year management agreement.

Objective 3: Collaborate with community leaders to develop/affirm conservation social norms and leverage trusted information seeking networks, stress the benefits of conservation adoption in terms of risk reduction, and reinforce positive conservation practice experiences through messaging and outreach.

Task 5 - Provide tours and trainings for resource professionals, agribusiness, commodity groups, Certified Crop Consultants, landowners and growers to share knowledge, discuss risk, reinforce positive practice experiences and allow growers to share their experiences.

Product – Host two producer focused workshops per year of the project to showcase the benefits of precision business planning, risk reduction and conservation practice adoption.

Cost – \$3,000.00 for project lifespan

Task 6 – Work with media outlets and partners to reinforce the benefits of conservation practice adoption, benefits to water quality and share success stories. Promote Program opportunities through direct marketing.

Product – One Earned media article per year, four articles per year in local newsletters and direct marketing.

Cost – \$1,500.00

Milestone Table See Appendix C for time line of project tasks.

4.0 COORDINATION PLAN

Lead Project Sponsor

Pheasants Forever is a 501c (3) non-profit conservation organization that is eligible to receive and manage federal funds. Pheasants Forever will be the lead organization for this project. Responsibilities include overall program and fiscal administration to implement all tasks. Pheasants Forever will be responsible for monitoring the progression of tasks and submitting annual and final project reports to EPA through the North Dakota Department of Environmental Quality. Pheasants Forever will lead coordination efforts between all interested parties. Pheasants Forever will hold all five-year management agreements, administer payments and monitor agreements for the contract length.

Cooperating Organizations

Section 319 Watershed Projects

Watershed project coordinators will assist with the promotion of this opportunity to producers within their watersheds. Watershed projects currently active within the proposed project area include Antelope Creek and Wild Rice River Corridor Project; Jamestown Reservoir Watershed, Sheyenne River Watershed (Ransom Co.), Spiritwood Lake Watershed Project, and Wild Rice PTMAApp Prioritization and Implementation Project.

North Dakota Game and Fish Department

The North Dakota Game and Fish Department may provide additional opportunities and financial support may be available through the NDGFD, if a participant is interested in allowing public access through the Department's Private Land Open To Sportsmen (PLOTS) program. The North Dakota Game and Fish Department will also spread awareness of this program through their print, web and social media channels and through directing mailing to current PLOTS cooperators.

Climate Cooperation

The Climate Corporation's mission is to help all the world's farmers sustainably increase their productivity with digital tools. To support Pheasants Forever's innovative approach to identifying cropland acres suited for conservation, through the use of precision ag technology, the Climate Corporation will pledge an in-kind contribution of \$1000/ year of match over the four-year project, by providing Pheasants Forever's Precision Ag & Conservation Specialist with an annual subscription to our precision platform Climate FieldView™.

Local Soil Conservation Districts

Soil Conservation Districts were critical in grower referrals during the 1st and 2nd phases of Pheasants Forever's precision ag and business planning project and can assist with continued identification and referral of interested producers. These organizations will be crucial in the promotion of the opportunity as well as sharing the results and success with local producers in their counties

USDA Natural Resource Conservation Service

The NRCS can provide technical assistance to interested producers to assist them with implementation of best management practices. When available NRCS can assist interested producers in applying for and enrolling in federal farm bill programs, such as EQIP or CSP.

Farm Service Agency

The FSA can assist interested producers with enrollment into the Conservation Reserve Program when and where applicable.

Local Pheasants Forever Chapters

Local chapters of Pheasants Forever can help support outreach events in their area as well as provide referrals of growers within their local community networks.

Local Support

The conservation community, ND Department of Environmental Quality, and Soil Conservation District personnel have all indicated a need for this new approach. Traditional methods of conservation delivery are not adequately addressing our soil, water and wildlife resource concerns. Precision Ag Business Planning brings profitability into the picture demonstrating that production agriculture and conservation are not only compatible but mutually beneficial. It has been stated numerous times that producers know their “trouble spots”, but very few realize in dollars and cents how much those “trouble spots” actually cost them in lost profits. Feedback from Phase I cooperating growers has all been positive.

Duplicate Efforts

A Precision Ag Business Planning Pilot was launched in Ransom and Sargent Counties in August 2016, participation was limited to two producers in each County. In October 2016 the pilot effort was expanded to include Dickey and LaMoure Counties as well as four additional producers. In 2017, we successfully launched our Precision Ag and Business Planning support project. This project was limited to LaMoure, Dickey, Sargent and Ransom Counties. Phase I of the PABP support project is set to wrap up December 31, 2020. Since we initiated Phase I of our project, NRCS has introduced a new Conservation Activity Plan (CAP 132) available through the Environmental Quality Incentives Program (EQIP), but to date there have been no contracts within North Dakota. The CAP132 is meant to engage private sector businesses in assisting participating farmers address soil resource concerns, such as rill, sheet and gully erosion, by developing a plan that outlines planned and adopted conservation practices while addressing potential economic consideration of conservation practice adoption.

5.0 EVALUATION AND MONITORING PLAN

The benefits of the applied practices will be tracked through ongoing water quality monitoring efforts within the active Section 319 watershed projects assisted by the Precision Ag Business Planning Project. The Project sponsor will track the location, type and amount of BMP applied within the revenue-negative acres identified through the project and reported annually. When feasible, the STEPL model will also be used to estimate the edge-of-field nitrogen, phosphorus and sediment load reductions resulting from the applied practices.

6.0 BUDGET

The budget is outlined in two tables. Table 1 outlines funding by year. Table 2 provides a more detailed line-item budget.

Table 1: Funding Sources				
	2025	2026	2027	Total
EPA SECTION 319 FUNDS				
1) FY 2024 Funds (TA/FA)	\$83,806	\$83,806	\$83,807	\$251,419
STATE/LOCAL MATCH				
1) Pheasants Forever (TA)	\$26,537	\$26,538	\$26,538	\$79,613
2) North Dakota Game and Fish Dept.	\$40,000	\$0	\$0	\$40,000
3) Landowners (FA)	\$10,000	\$10,000	\$10,000	\$30,000
4) Pheasants Forever c/s BMP' (FA)	\$5,000	\$5,000	\$5,000	\$15,000
5) Climate Corporation (TA)	\$1,000	\$1,000	\$1,000	\$3,000
Subtotals	\$82,537	\$42,538	\$42,538	\$167,613
TOTAL BUDGET				
	\$171,556	\$131,556	\$131,557	
OTHER FEDERAL FUNDS				
	\$0	\$0	\$0	\$0
TOTAL FEDERAL FUNDS	\$83,806	\$83,806	\$83,807	\$251,419
TOTAL PROJECT COST				\$419,032

- 1) **TA- Technical Assistance**
- 2) **FA- Financial Assistance**

Table:2 Detailed Budget (Section 319/Non-Federal)						
	2025	2026	2027	Total Costs	Cash and In-Kind Match	319 Funds
Objective 1: PERSONNEL/SUPPORT/ADMIN						
PACS Salary/Fringe (1 FTE)	\$71,500	\$73,645	\$75,854	\$220,999	\$88,400	\$132,600
SC Salary	\$10,100	\$10,400	\$10,700	\$31,200	\$12,480	\$18,720
Travel	\$9,400	\$9,600	\$9,800	\$28,800	\$11,520	\$17,280
Meals	\$850	\$900	\$950	\$2,700	\$1,080	\$1,620
Printing and Office Supplies	\$930	\$960	\$990	\$2,880	\$1,152	\$1,728
Postage	\$230	\$235	\$240	\$705	\$282	\$422
Telephone	\$1,146	\$1,146	\$1,146	\$3,438	\$1,375	\$2,063
Staff Meetings	\$1,100	\$1,100	\$1,100	\$3,300	\$1,320	\$1,980
Other (computer, software, printer)	\$1,600	\$345	\$345	\$2,290	\$916	\$1,374
Project Indirect (10.0% salary & benefits)	\$8,160	\$8,405	\$8,655	\$25,220	\$10,088	\$15,132
Subtotals	\$105,016	\$106,736	\$109,780	\$321,532	\$128,613	\$192,919
Objective 2: Financial & Technical Assistance						
Precision Ag Software (Climate FieldView)	\$1,000	\$1,000	\$1,000	\$3,000	\$3,000	\$0
BMP's-Perennial Cover (Appendix B)	\$5,000	\$5,000	\$5,000	\$15,000	\$15,000	\$0
5-year management agreements on perennial cover (Appendix B & E)	\$25,000	\$25,000	\$25,000	\$75,000	\$19,200	\$55,800
Subtotals	\$31,000	\$31,000	\$31,000	\$93,000	\$37,200	\$55,800
Objective 3: Information/Education						
Public Meetings/Workshops/Tours	\$1,000	\$1,000	\$1,000	\$3,000	\$1,200	\$1,800
Survey/Newsletters/Direct Mail	\$500	\$500	\$500	\$1,500	\$600	\$900
Subtotals	\$1,500	\$1,500	\$1,500	\$4,500	\$1,800	\$2,700
Total for all Objectives/Tasks						
Total 319/Non-federal Budget	\$137,516	\$139,236	\$142,280	\$419,032	\$167,613	\$251,419
					40%	60%
Section 319 Funds per Year	\$83,806	\$83,806	\$83,807	\$251,419		
Total Local Match per Year	\$55,871	\$55,871	\$55,871	\$167,613		
Non-Federal Match per Year	\$56,556	\$56,556	\$56,557	\$152,613		
Landowner BMP Match per Year	\$5,000	\$5,000	\$5,000	\$15,000		

7.0 PUBLIC INVOLVEMENT

Opportunity to participate in this project will be open to all growers within the project boundaries that are willing to work with the project sponsor to analyze precision data to identify acres of opportunity for conservation practice adoption and increased profitability. Program opportunity will be advertised through a variety of media outlets within the project area.

8.0 LITERATURE CITED

Dahl, T.E. 2014. Status and trends of prairie wetlands in the United States 1997 to 2009. U.S. Department of the Interior; Fish and Wildlife Service, Ecological Services, Washington, D.C. (67 pages).

Gitau, M.W., W.J. Gburek, and P.L. Bishop. 2008. Use of the SWAT model to quantify water quality effects of agricultural BMPs at the farm-scale level. *American Society of Agricultural and Biological Engineers* 51:1925-1936

Muth, D.J., D.S. McCorkle, J.B. Koch, and K.M. Bryden. 2012. Modeling sustainable agriculture residue removal at the subfield scale. *Agronomy Journal* 104:970-981

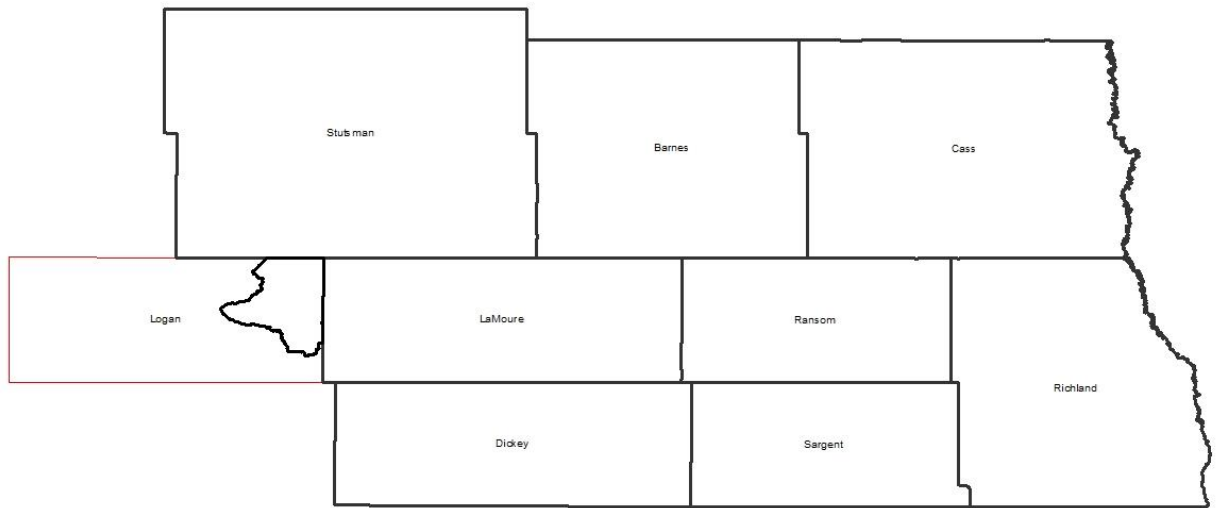
Muth, D. 2014. Profitability versus environmental performance: Are they competing? *Journal of Soil and Water Conservation* 69:203A-206A.

Pranay Ranjan, Sarah P. Church, Kristin Floress & Linda S. Prokopy (2019): Synthesizing Conservation Motivations and Barriers: What Have We Learned from Qualitative Studies of Farmers' Behaviors in the United States? *Society & Natural Resources*, DOI:10.1080/08941920.2019.1648710

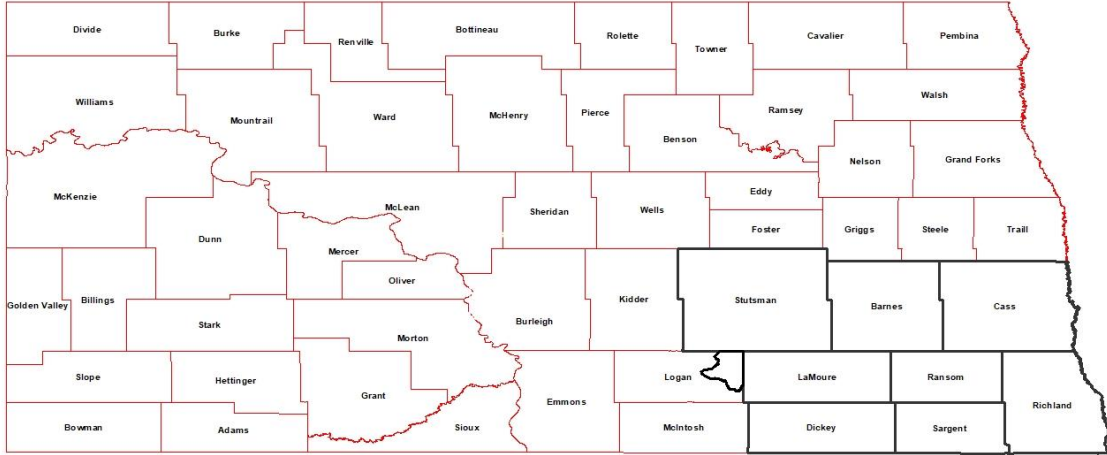
USDA-NASS. 2017 Census of Agriculture. Volume 1, Geographic Area Series. Part 34, North Dakota, State and County Data. [Washington, D.C.] : United States Department of Agriculture, National Agricultural Statistics Service, 2019.

Appendix A.

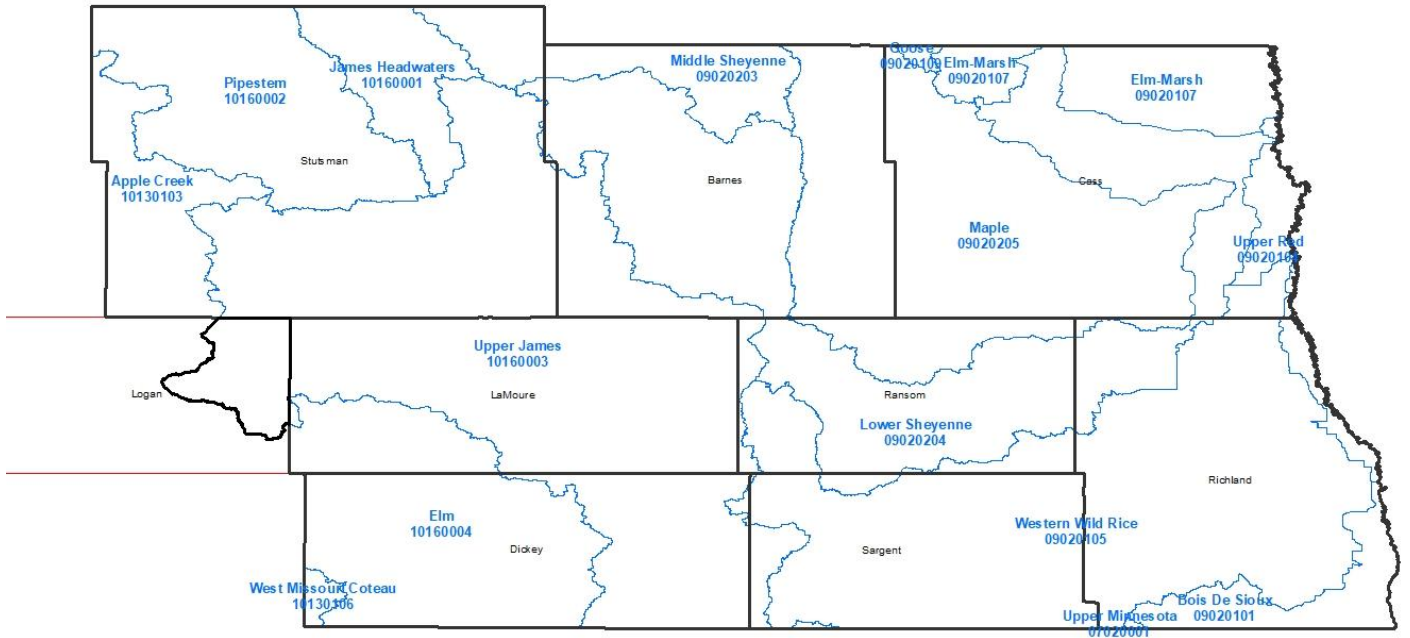
The Precision Ag and Business Planning Phase II project area highlighted in SE North Dakota located within Stutsman, Barnes, Cass, Richland, Ransom, Sargent, LaMoure, Dickey and Upper James portion of Logan Counties.



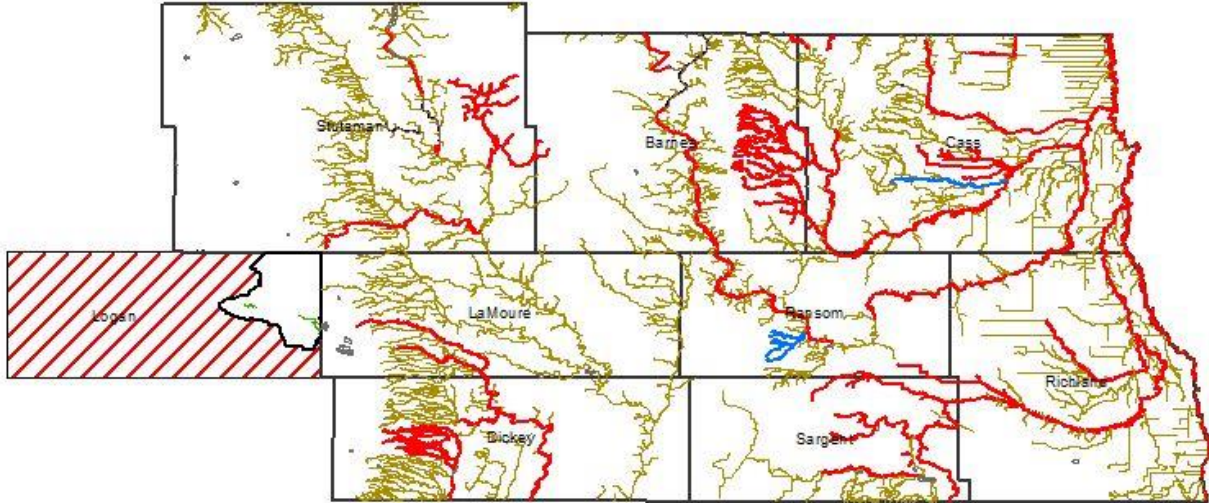
Project area situated within the state of ND:



Watersheds (8-digit HUC) located in the project area



Assessed waterbodies within project area. Red and blue streams are 303(d) listed as well as black-colored lakes.



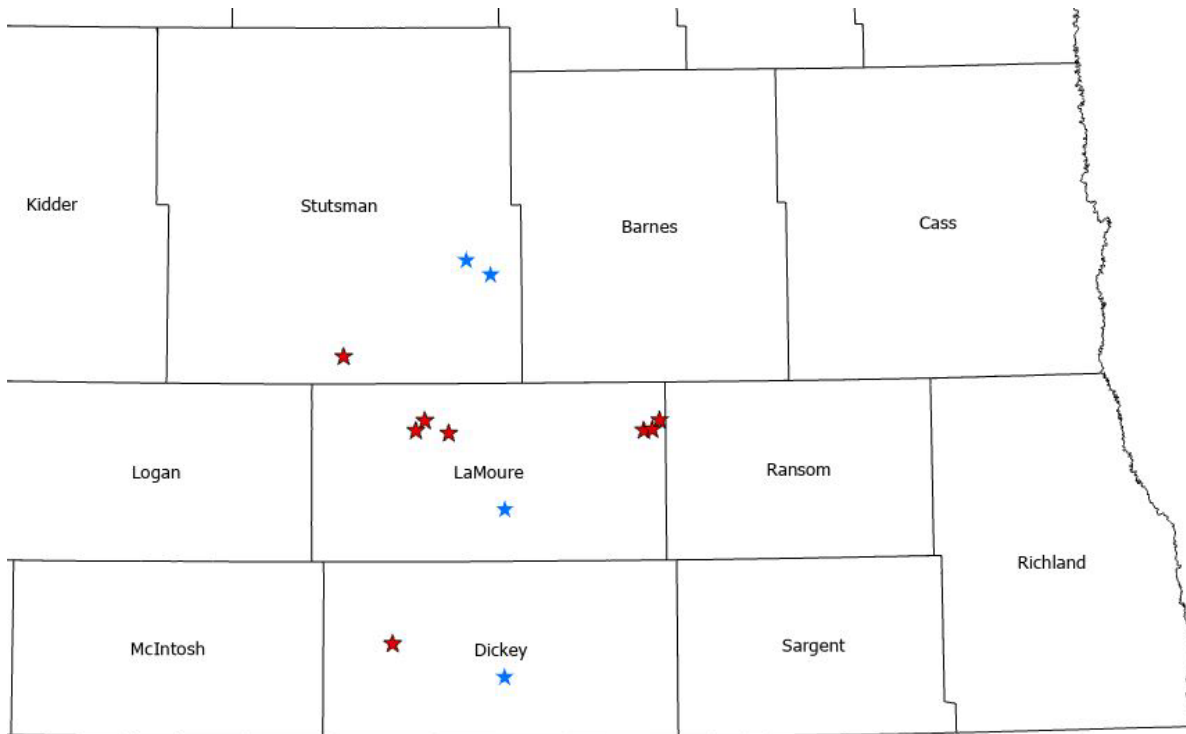
Legend CATEGORY

- 5 303(d) List Impaired Needing a TMDL
- 5A 303(d) List Impaired Alternative Restoration Plan
- 5 Lake; 303(d) List Impaired Needing a TMDL

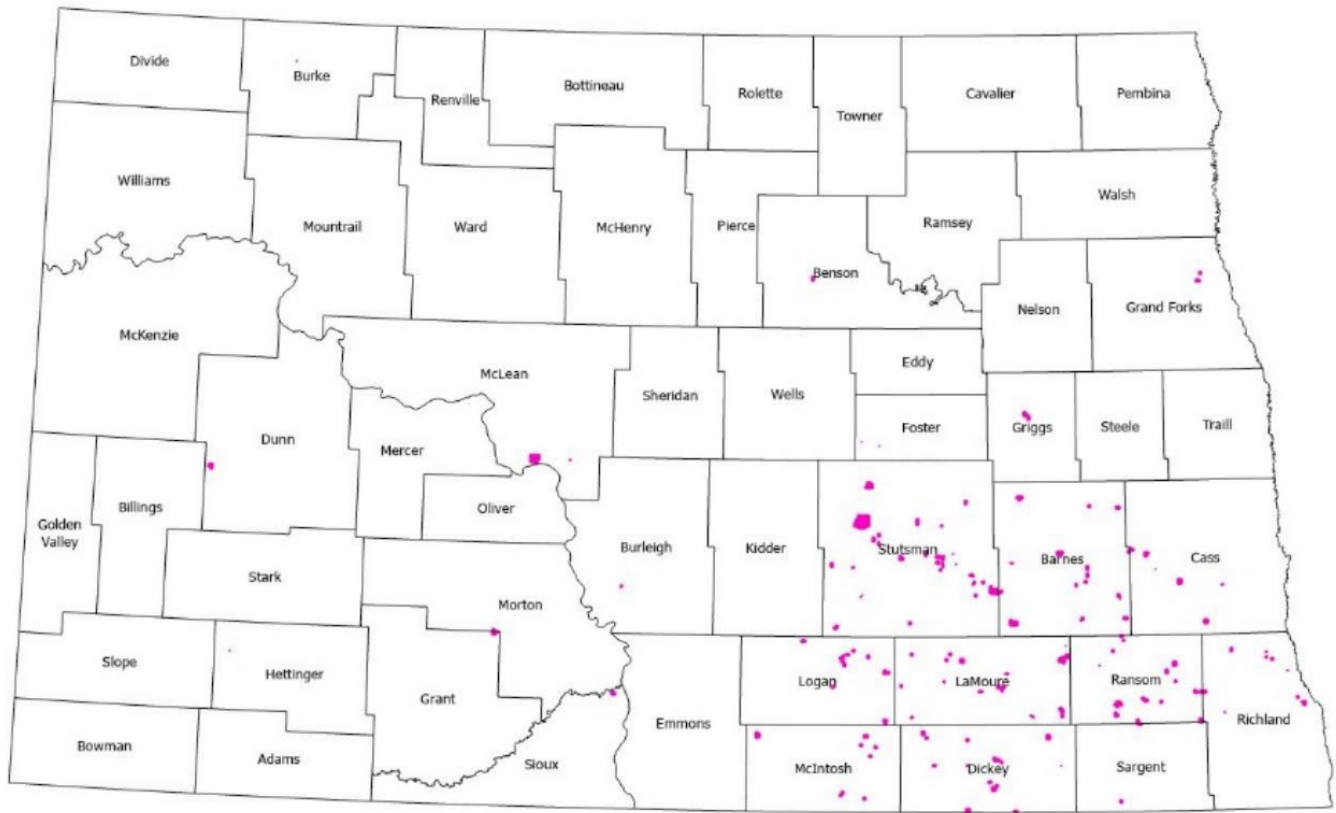
Crosshatched area in Logan county is not part of project area



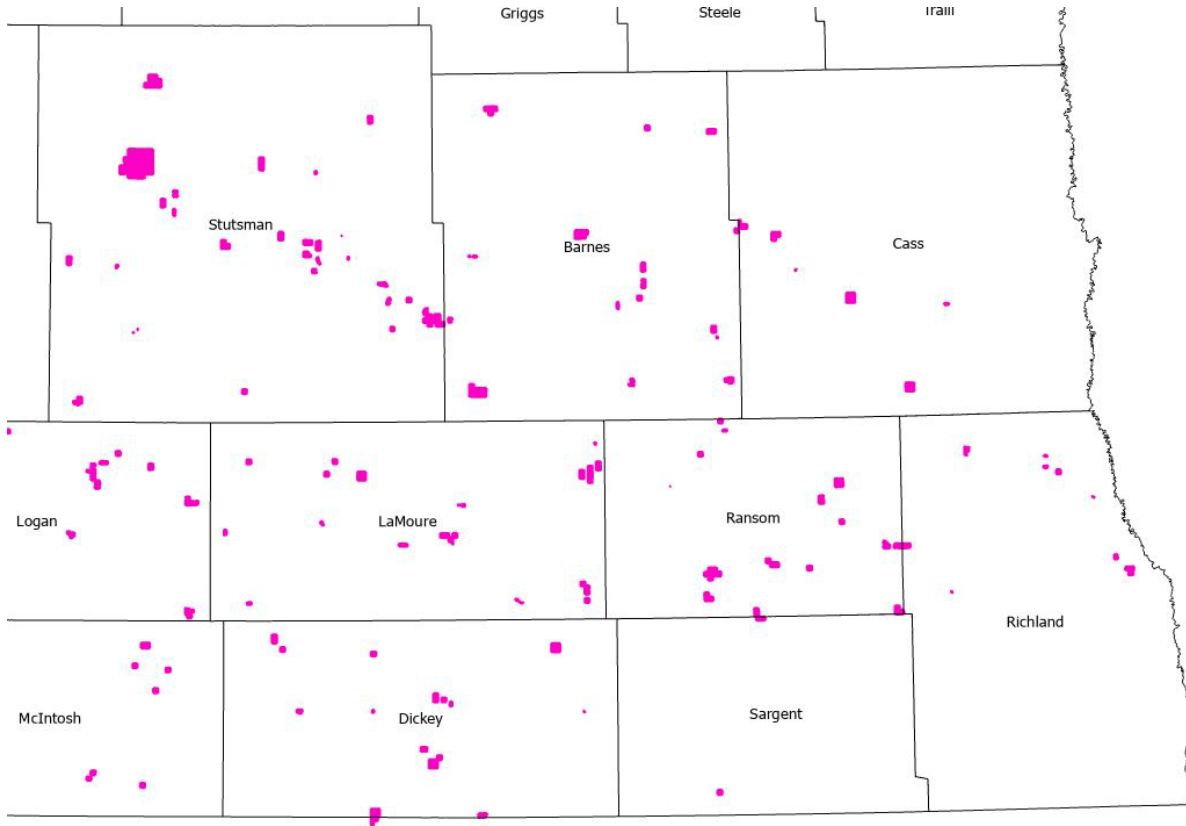
Map below showing completed Phase II practice locations indicated by a red star, and planned locations for new practices (planned for 2024) represented by blue-colored stars.



Map Below showing field locations consulted through PABP position on a statewide basis. Fields are magenta-colored.



Map below showing fields consulted through the PABP position in project proposal area.



Appendix B.

The cost will be based on the most current county rental rates published by the ND Dept of Trust Lands. Payment to the cooperator will be determined by taking 60% of the Average County rental rate column value for the county the practices are located in. The Trust Land rates can be accessed any time by going to the following website: <https://www.land.nd.gov/resources/north-dakota-county-rents-prices-annual-survey>

Appendix C.

Objective/Task	Output	Qty/Grant Period	Year 1	Year 2	Year 3
Objective 1					
Task 1 - Employ one full-time Precision Ag & Conservation Specialist to provide one-on-one precision business planning and technical assistance to cooperating grower and complete project tasks	1 FTE	1			
Task 2 - Employ one state coordinator to administer the project, track project success, complete reports, assist with completing project tasks, and manage staff	1 FTE (10%)	1			
Objective 2					
Task 3 - Provide analysis of precision ag data and crop budgets and present alternatives options, such as BMPs to participating growers.	Grower Contacts	400			
	Alternative Scenarios Presented to Cooperating Growers	150			
	Enterprise Enrollments	30			
Task 4 - Provide financial assistance to cooperating growers to implement BMPs	Estimated number of grower agreements for BMP Planning/Implementation	30			
Objective 3					
Task 5 - Provide tours and trainings for resource professionals, agribusiness, commodity groups, Certified Crop Consultants, landowners and growers to share knowledge, discuss risk, reinforce positive practice experiences and allow growers to share their experiences.	Producer Focused Workshops	6			
Task 6 - Work with media outlets and partners to reinforce the benefits of conservation practice adoption, benefits to water quality and share success stories.	Earned Media	3			
	Newsletter Articles	12			

Appendix D.

Best Management Practices applied as a result of Precision Ag Business Planning Support Project Phase I. Funding was provided by the North Dakota Game and Fish Department.

BMP	NO. of UNITS	NDGFD P-R COSTS	PRODUCER MATCH	TOTAL
Conservation Cover	258 ac	\$20,547.77	\$6,849.24	\$27,397.02
Cover Crop	370.84 ac	\$6,127.08	\$2,042.37	\$8,169.45
Fencing	1310 ln.ft.	\$884.25	\$294.75	\$1,179.00
Pasture & Hayland Planting	224.97 ac	\$15,612.17	\$5,204.06	\$20,816.22
Filter Strip	7.99 ac	\$573.72	\$191.24	\$764.96
Riparian Easement (On Cropland)	578.54 ac	\$419,255.92	\$139,751.97	\$559,007.89
TOTALS	1440.34 ac	\$436,000.91	\$154,333.64	\$617,334.54

Appendix E.

Five-year management agreements enrolled through the Precision Ag Business Planning Phase II project will be held and managed by Pheasants Forever, Inc. Draft agreement language is below.

For the purposes of this agreement the cooperator:

1. Guarantees ownership of the above-described land or control of the above-described land for the duration of the contract as granted by lease or agreement.
2. Shall maintain the habitat restored as described in Attachment A, for the life of the contract, as described above.
3. Shall not hay or graze for the first two years of the agreement, unless Pheasants Forever staff or designated individual determine the site established and haying or grazing would not be detrimental to the overall success. After year two the contracted acres may not be hayed or grazed in consecutive years. Haying and/or grazing shall not occur during the primary nesting and brood rearing season of upland game, April 15 – August 1.
4. Shall not harvest, hay or till cover crops. Grazing of cover crops after September 1st is permitted.
5. Shall provide Pheasants Forever with receipts required to complete the planned practices. Reimbursements will not be made without receipts.
6. Shall provide Pheasants Forever with a completed current IRS Form W-9, which is required to be on file with Pheasants Forever. 1099 forms are issued at the end of the year. The Name on the contract must match the name on the W-9 form for reimbursements.
7. Shall manage noxious weeds according to State Law.
8. Shall permit Pheasants Forever, Inc. or its representatives (with advance notice) access to the property necessary for establishment or practice installation purposes and to complete periodic project reviews.
9. Maintains all rights to control trespass and retains all responsibility for taxes, assessments, and damage claims.
10. Shall notify Pheasants Forever of any planned or pending changes in ownership. Change in ownership of the contracted area shall terminate this agreement.
11. Landowner acknowledges that reimbursements are grant funded and agrees that if at any time Pheasants Forever's underlying funding agreement is terminated or grant funds are denied, then the Landowner's payment may also be denied or this contract may also be automatically terminated.
12. Violation of contract requirements results in forfeiture of past and future payments. All contract payments received shall be reimbursed to Pheasants Forever, Inc.

Pheasants Forever, Inc. agrees:

1. To provide the contract holder with a seed mix adapted to site conditions, plan map and planting & establishment guidelines.
2. To reimburse cost, as demonstrated by submitted receipts, not to exceed the established practice rates.

3. To provide plan maps, attachments to the agreement, estimated cost-share, agreement acres and contract term length.
4. To monitor the practices applied for the life of the agreement.
5. To send reimbursement payments upon receipt of project completion documentation.

Either party may terminate this contract with 30 days written notification.

Modification to this contract must be made in writing and signed by both the Cooperator and Pheasants Forever Inc.