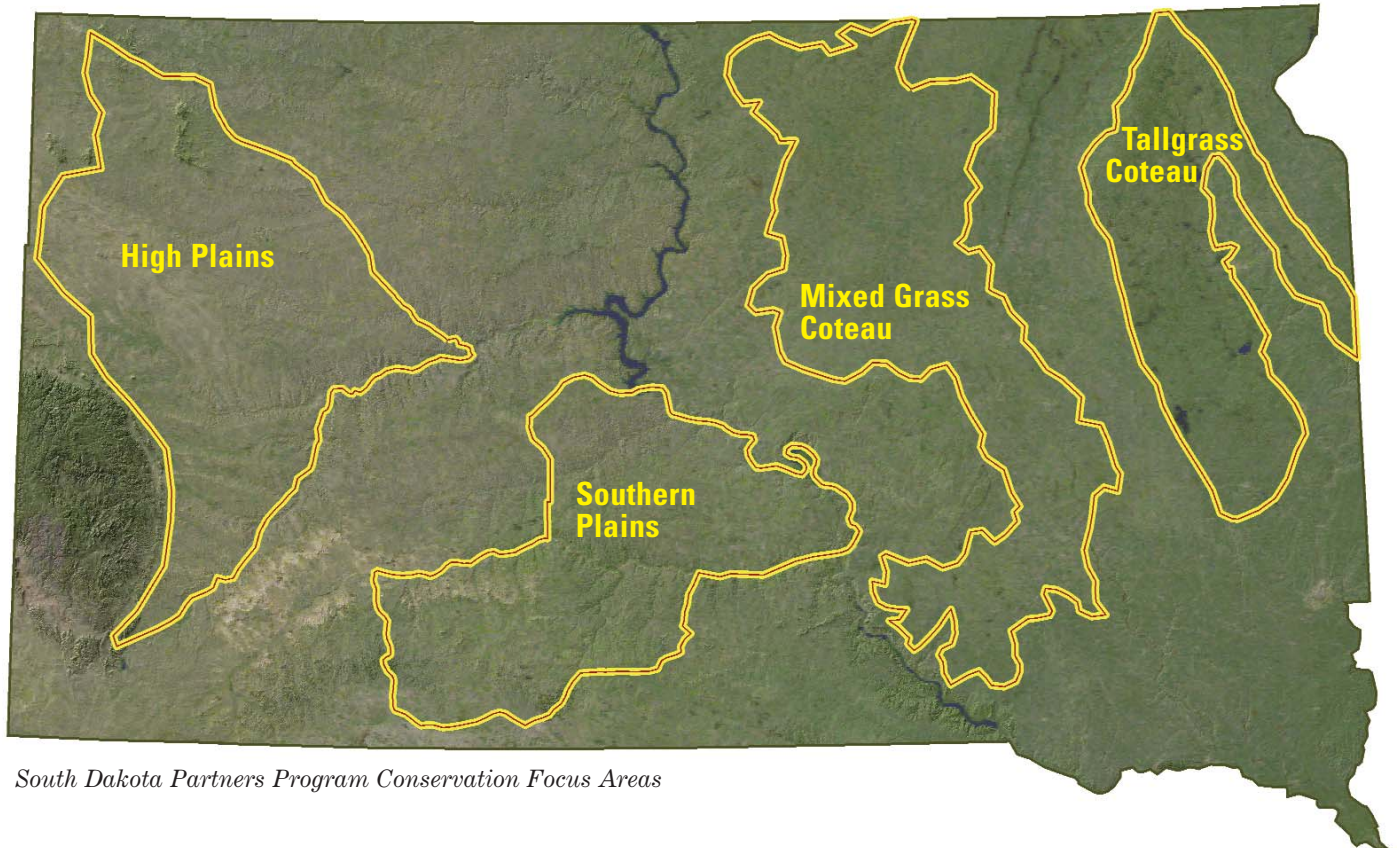
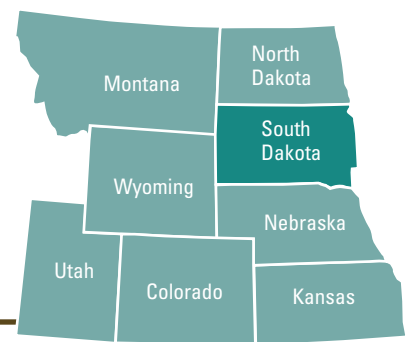


South Dakota



South Dakota Partners Program Conservation Focus Areas

Introduction

Focus Area Selection

South Dakota's landscape is largely defined by rolling grasslands interspersed with a wide variety of wetland and riparian features. The primary philosophy of the South Dakota Partners Program is to maintain and restore this unique mix of habitats by providing conservation solutions that work for both landscapes and private landowners. South Dakota's Partners Program focus areas are a composite result of this philosophy and ongoing conservation work with over four thousand individual landowners. In most cases, the

technical demarcation of focus area boundaries formalized and fine tuned broader Partners Program conservation initiatives that have been ongoing for over 15 years. A variety of long term data sets and GIS layers were utilized to further refine the four focus areas. Primary data sources included the National Wetlands Inventory, various GIS land coverage products, South Dakota Agricultural Statistics Service information, South Dakota Comprehensive Wildlife Conservation Plan (South Dakota Department of Game, Fish and Parks 2005), and waterfowl breeding pair distribution maps developed by the Service's

Mountain-Prairie Region Habitat and Population Evaluation Team (HAPET) office.

Partner Coordination

The Partners Program has a long history of collaborating with a wide variety of funding partners to develop conservation actions for priority habitats. Most notable among these efforts is the development of multi-partner grant initiatives funded via the North American Wetlands Conservation Act (NAWCA). Since 1991, the Partners Program has served as a catalyst to bring together dozens of funding partners and millions of

dollars to work in biologically based NAWCA project areas. As such, South Dakota NAWCA project areas provided a primary basis for determining the locations of Partners Program focus areas. Most recently, further consultation occurred with key partners to formalize these areas as Partners Program focus areas. Primary partners involved with this process include the South Dakota Department of Game, Fish and Parks; South Dakota Association of Conservation Districts; North Central Resource Conservation and Development Association; and Pheasants Forever.

Further input on general Partners Program direction and future activities was solicited from key partners in a comprehensive 2004 stakeholder survey. The Partners Program works closely with other National Wildlife Refuge System divisions to implement conservation actions that complement Service lands. As part of the 2004 Partners Program stakeholder survey, comments and guidance were actively solicited from Service Realty, Wetland Management District, and National Wildlife Refuge staff.



South Dakota

Tallgrass Coteau Focus Area

The South Dakota Tallgrass Coteau Conservation Focus Area is characterized by high wetland densities, diverse bird communities and some of the largest remaining tracts of northern tallgrass prairie in the nation (U.S. Fish and Wildlife Service 2000a). In addition to its nationally recognized importance for breeding waterfowl,

“I am proud of my parents, grandparents, and great-grandmother for what they endured to keep our place together and raise their families here – all the while caring for this land as they cared for the family. I believe that these acres of rolling prairie with numerous wetlands and native wildlife are a part of us and we have become a permanent part of it.”

“We hope we’re doing some good things on the land, and we’re helping our livelihood by improving our carrying capacity and gain from our cattle.”

– Neil Bien,
South Dakota Rancher, Marshall County

Neil has had 17 different on-the-ground habitat restoration projects completed on his land, in partnership with the Partners Program.

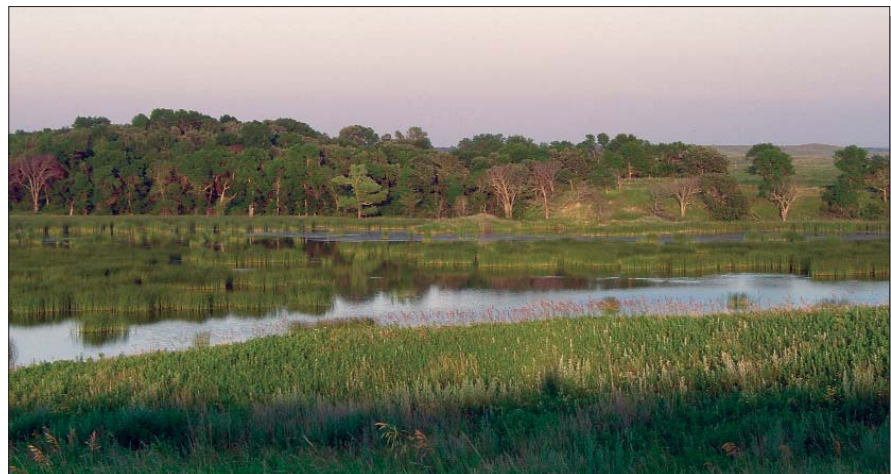
this area hosts hundreds of species of plants, butterflies, reptiles, amphibians, and mammals. The focus area is within the core of, and is considered one of the most ecologically unique portions of, the Prairie Pothole Joint Venture.

In an effort to save the grassland character of the region, the Partners Program has joined a diverse cadre of partners to foster a sustainable grassland economy, based primarily on family livestock ranching. The Partners Program has developed an integrated system of habitat conservation programs designed to simultaneously benefit the grazing lands needed by ranchers and the vital wetland and grassland landscapes needed by a wide variety of federal trust species.

Specific Partners Program habitat actions include restoring grasslands and wetlands, implementing beneficial grazing systems, establishing wetlands, and prescribing voluntary conservation easements.

Priority Species

- Mallard
- Northern pintail
- Virginia rail
- American avocet
- Black tern
- Grasshopper sparrow
- LeConte’s sparrow
- Chestnut-collared longspur
- Bobolink
- Western meadowlark
- Topeka shiner
(Endangered)



Wetland restoration projects benefit migratory bird focal species such as mallard, northern pintail, and black tern.

South Dakota Tallgrass Coteau Focus Area Five-year Targets

Habitat

- Grassland Restoration: 2,500 acres
- Grassland Enhancement: 22,500 acres
- Wetland Restoration: 525 acres
- Wetland Establishment: 125 acres

Implementation strategy for habitat objectives: Grassland objectives will be met by expanding the number of projects completed with livestock producers, primarily cattle ranchers. Wetland objectives will be primarily addressed by restoring wetlands in partnership with landowners who own and manage land for non-agricultural purposes.

Partnerships

- Number of new landowner partners: 200
- Amount of technical assistance: 150 staff days
- Percentage of leveraging: 70% or more of non-Partners Program sources

Implementation strategy for partnership objectives: New partners will primarily be landowners who value grassland and wetland habitats. Along with financial assistance, the Partners Program also provides a significant amount of technical assistance for habitat projects. A primary emphasis will be placed on assisting ranchers with developing grazing management plans for their livestock operations. The Partners Program will continue to secure a high proportion of non-Partners Program funding sources for habitat projects. This will be accomplished through a combination of grant writing, non-federal partner contributions, and consideration of landowner financial and in-kind involvement in habitat projects.

Primary Partners

Sisseton-Wahpeton Sioux Tribe; South Dakota Department of Game, Fish and Parks; South Dakota Association of Conservation Districts; Ducks Unlimited; Delta Waterfowl; Pheasants Forever; East Dakota Water Development District; South Dakota Izaak Walton League; and hundreds of private landowners.

Related Plans

- North American Waterfowl Management Plan
- National Partners in Flight Plan (Rich et al. 2004, Pashley et al. 2000)
- Northern plains/pothole portion of the U.S. Shorebird Conservation Plan (Skagen and Thompson 2001)
- North American Waterbird Conservation Plan (Beyersbergen, Niemuth, and Norton 2004; Kushlan et al. 2002).

All of these conservation efforts endorse landscape-scale habitat work as an effective vehicle for bird conservation. The Partners Program strives to meet this goal by protecting, restoring, and enhancing some of the largest remaining grassland/wetland complexes in the nation.



BEFORE.



AFTER. A proud landowner and his wetland restoration project. USFWS Photo.



Mixed Grass Coteau Focus Area

The biological core of the South Dakota Mixed Grass Coteau Conservation Focus Area is a contiguous tract of over 2,000 square miles of relatively unfragmented grassland-wetland habitat that can host over 100 breeding duck pairs per square mile. This is the largest tract of such high quality habitat in the nation, and has been identified as a critically important waterfowl breeding region (Prairie Pothole Joint Venture 2005). Preserving this unfragmented landscape as a viable “recruitment source” for all suites of prairie nesting birds has been identified as an urgent priority for the Service, Delta Waterfowl, and Ducks Unlimited. While many of the habitat actions in this focus area are designed to conserve waterfowl breeding habitat, they also have direct benefits to a wide spectrum of ground-nesting birds. These mutual benefits are especially vital to grassland-nesting passerines which are considered to be one of the most imperiled bird guilds in North America (Peterjohn and Sauer 1999).

Priority Species

- Blue-winged teal
- Northern pintail
- Northern harrier
- Ferruginous hawk
- Marbled godwit
- Wilson’s phalarope
- Sedge wren
- Savannah sparrow
- Dickcissel
- Bobolink

Along with its biological significance, this region is widely recognized as the national focal point for the growing debate regarding ongoing loss of native prairie. Thousands of acres of native prairie are annually converted to cropland in the focus area. The conversion of native prairie grasslands to cropland has recently drawn a wide degree of interest from academia (Conner et al. 2001), ecologists (Ogg 2006), policy analysts (U.S. Government Accountability Office 2003), and wildlife conservationists (Higgins et al. 2002). The Partners Program actively works with all interests in the focus area to promote sustainable land uses that benefit both landowners and landscapes. The primary goal of the Partners

Program in the focus area is to maintain and restore landscape characteristics associated with high bird recruitment in the face of a rapidly changing agricultural economy.

It is widely supported that the most viable technique for conserving the unique habitats of this region is to forge new and accelerated partnerships with the local ranching community (Higgins et al. 2002). Partners Program actions intended to benefit both ranchers and wildlife include restoring grassland and wetlands, implementing beneficial grazing systems, establishing wetlands, and prescribing voluntary conservation easements.



Native prairie restoration benefits grassland birds as well as waterfowl species that use uplands for nesting. USFWS Photo.

Mixed Grass Coteau Focus Area Five-year Targets

Habitat

- Grassland Restoration: 3,300 acres
- Grassland Enhancement: 35,000 acres
- Wetland Restoration: 450 acres
- Wetland Establishment: 250 acres

Implementation strategy for habitat objectives: Grassland objectives will be met by expanding the number of grazing management projects completed with livestock producers, primarily cattle ranchers. Wetland objectives will be primarily addressed by restoring wetlands in partnership with landowners who own and manage land for livestock ranching.

Partnerships

- Number of new landowner partners: 250
- Amount of technical assistance: 150 staff days
- Percentage of leveraging: 70% or more of non-Partners Program sources

Implementation strategy for partnership objectives: New partners will primarily be landowners who value grassland habitats for livestock grazing. Along with financial assistance, a significant amount of technical assistance will also be provided for habitat projects. A primary emphasis will be placed on assisting ranchers with developing grazing management plans for their operations. The Partners Program will continue to secure a high proportion of non-Partners Program funding sources for habitat projects. This will be accomplished through a combination of grant writing, non-federal partner contributions, and consideration of landowner financial and in-kind involvement in habitat projects.

Primary Partners

Primary partners in these efforts include South Dakota Department of Game, Fish and Parks; South Dakota Association of Conservation Districts; Ducks Unlimited; Pheasants Forever; Delta Waterfowl; South Dakota Izaak Walton League; North Central Resource Conservation and Development Association; and hundreds of private landowners.

Related Plans

Partners Program habitat actions proposed for this unique region are closely aligned with the goals of the North American Waterfowl Management Plan (North American Waterfowl Management Plan Committee 2004), appropriate regional sections of the National Partners in Flight Plan (Rich et al. 2004; Pashely et al. 2000), northern plains/pothole portion of the U.S. Shorebird Conservation Plan (Skagen and Thompson 2001), and North American Waterbird Conservation Plan (Beyersbergen, Niemuth, and Norton 2004; Kushlan et al. 2002).

All of these conservation efforts endorse strategically targeted, landscape-scale habitat work as an effective vehicle for conservation, especially for birds. For example, the 2004 northern prairie and parkland portion of the North American Waterbird Conservation Plan notes that two priority habitat needs are to (1) “prevent wetland loss through legal protection, acquisition, and conservation easements,” and (2) “prevent upland loss through legal protection, agricultural program incentives, acquisition and conservation easements.” Likewise, the 2000 northern mixed-grass prairie portion of the national Partners in Flight Plan (Pashely et al. 2000) notes that “Maintenance of large un-fragmented grassland ecosystems is the conservation objective for the coteau areas where agriculture is not dominant.” The Partners Program strives to further this philosophy primarily by partnering with family ranchers.



Southern Plains Focus Area

The South Dakota Southern Plains Conservation Focus Area is characterized by large native grassland tracts and the highest natural wetland densities in western South Dakota (Rieger et al. 2006). Partners Program efforts within this focus area are largely based upon the conservation goals of the North American Waterfowl Management Plan 2004, National Partners in Flight Plan (Rich et al. 2004; Pashley et al. 2000), Northern Great Plains Joint Venture Concept Plan 2001, and Northern Great



Healthy wetlands and grasslands combine to provide optimum conditions for nesting waterfowl. USFWS Photo.

Plains Joint Venture Implementation Plan (Pool and Austin 2006). All of these plans endorse landscape-scale habitat work as an effective vehicle for conservation, particularly for migratory birds.

Priority Species

- American wigeon
- Northern pintail
- Ferruginous hawk
- Virginia rail
- Wilson's phalarope
- Long-billed curlew
- Short-eared owl
- Lark sparrow
- Savannah sparrow
- Chestnut-collared longspur
- Lark bunting



Wetland establishment projects benefit wildlife, while also providing a source of water for livestock – a win-win for both wildlife and ranchers. USFWS Photo.

Working with ranchers to maintain and restore grasslands is widely recognized as the most effective way to conserve habitat for federal trust species in this region. The 2001 concept plan for the Northern Great Plains Joint Venture notes that, “Preservation of a ranching lifestyle is considered critical to maintaining prairie ecosystems because of the dependence on grass and other natural features.”

Likewise, the Partners in Flight conservation plan (Pashley et al. 2000) for this portion of South Dakota notes that, “Maintenance of a ranching economy here is compatible with the needs of grassland birds and should be the highest conservation priority.” The Partners Program supports this philosophy by providing a wide variety of conservation options to assist ranchers in meeting their

grassland stewardship goals. Specific conservation practices delivered by the Partners Program include rotational grazing systems, native grassland restoration, and wetland establishment. Ground-nesting songbirds, shorebirds, and waterfowl receive particularly high benefits from Partners Program grassland conservation efforts.



Ruddy ducks and other waterfowl species enjoy this new wetland restoration project. USFWS Photo.

Southern Plains Focus Area Five-year Targets

Habitat

- Wetland Establishment: 150 acres
- Grassland Restoration: 300 acres
- Grassland Enhancement: 20,000 acres

Implementation strategy for habitat objectives: Wetland objectives will be primarily addressed by establishing multiple-purpose wetlands that provide trust species benefits and provide ranchers with additional options for livestock water and grazing management. Grassland objectives will be met by expanding the number of grazing management projects completed with livestock producers, primarily cattle ranchers.

Partnerships

- Number of new landowner partners: 100
- Amount of technical assistance: 75 staff days
- Percentage of leveraging: 60% or more of non-Partners Program sources

Implementation strategy for partnership objectives: New partners will primarily be landowners who value grassland habitats for livestock grazing. Along with financial assistance, the Partners Program also provides a significant amount of technical assistance for habitat projects. A primary emphasis will be placed on assisting ranchers with developing grazing management plans for their operations. The Partners Program will continue to secure a high proportion of non-Partners Program funding sources for habitat projects. This will be accomplished through a combination of grant writing, non-federal partner contributions, and consideration of landowner financial and in-kind involvement in habitat projects.

Primary Partners

A diverse group of partners have joined the Partners Program to conserve this unique landscape by fostering a sustainable grassland economy based on livestock ranching. Primary partners in this effort include Lower Brule Sioux Tribe; South Dakota Department of Game, Fish and Parks; South Dakota Association of Conservation Districts; Ducks Unlimited; Pheasants Forever; North Central Resource Conservation and Development Association; and hundreds of private landowners. These entities work together to strive to maintain a viable grassland-wetland landscape that meets the long term needs of the resource and livelihoods of the landowners.



Wetland establishment in the Southern Plains Focus Area. USFWS Photo.



High Plains Focus Area

The South Dakota High Plains Conservation Focus Area is characterized by large native grassland tracts interspersed with a wide variety of riparian features (Rieger et al. 2006).

Within this arid portion of the state, the Partners Program works closely with landowners to carefully craft habitat plans that provide mutual benefits for ranching and wildlife conservation. For example, wetland establishment provides wildlife habitat and also serves as vital livestock watering sources. The 2001 concept plan for the Northern Great Plains Joint Venture notes that, “Shallow-water impoundments provide several positive benefits to the Northern Great Plains Joint Venture landscape. In the broadest terms, they help to keep ranchers in the business of growing grass instead of converting grasslands to tillage agriculture.” Other typical

conservation actions offered via the Partners Program include riparian fencing, rotational grazing systems, and native grassland restoration.

- Priority Species**
- American wigeon
 - Northern pintail
 - Black-billed cuckoo
 - Loggerhead shrike
 - Sprague’s pipit
 - Chestnut-collared longspur



Wetlands, imbedded in grassland and sagebrush-steppe, provide habitat for numerous species of wetland and upland wildlife. USFWS Photo.

High Plains Focus Area Five-year Targets

Habitat

- Wetland Establishment: 150 acres
- Riparian Restoration/Enhancement: 6 miles
- Grassland Restoration: 250 acres
- Grassland Enhancement: 10,000 acres

Implementation strategy for habitat objectives: Riparian objectives will be reached by continuing to expand riparian based partnerships throughout the focus area. Specifically, the Partners Program will continue to work closely with local conservation districts to identify strategic riparian restoration locations and funding opportunities. Wetland objectives will be addressed primarily by establishing multiple-purpose wetlands that provide trust species benefits and provide ranchers with additional options for livestock water and grazing management. Grassland objectives will be met by expanding the number of grazing management projects completed with livestock producers, primarily cattle ranchers.

Partnerships

- Number of new landowner partners: 150
- Amount of technical assistance: 75 staff days
- Percentage of leveraging: 60% or more of non-Partners Program sources

Implementation strategy for partnership objectives: New partners will be primarily landowners who value grassland and riparian habitats. Along with financial assistance, the Partners Program also provides a significant amount of technical assistance for habitat projects. A primary emphasis will be placed on assisting ranchers with developing grazing management and riparian deferment plans for their operations. The Partners Program will continue to secure a high proportion of non-Partners Program funding sources for habitat projects. This will be accomplished through a combination of grant writing, non-federal partner contributions, and consideration of landowner financial and in-kind involvement in habitat projects.

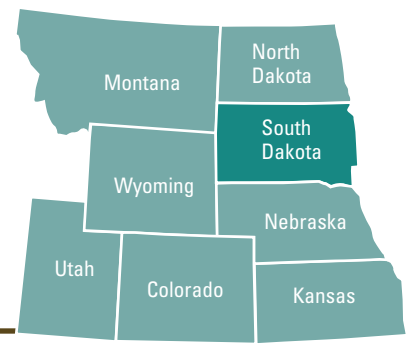
Primary Partners

Primary partners assisting the Partners Program in the High Plains Focus Area include South Dakota Department of Game, Fish and Parks; South Dakota Association of Conservation Districts; Ducks Unlimited; Pheasants Forever; North Central Resource Conservation and Development Association; National Fish and Wildlife Foundation; and hundreds of private landowners.

Related Plans

Partners Program efforts within this focus area are closely aligned with the conservation goals of the 2004 North American Waterfowl Management Plan., National Partners in Flight Plan (Rich et al. 2004, Pashely et al. 2000), 2001 Northern Great Plains Joint Venture Concept Plan, and Northern Great Plains Joint Venture Implementation Plan (Pool and Austin 2006). All of these bird conservation efforts endorse landscape-scale habitat work as an effective vehicle for bird conservation.

South Dakota Statewide Goals and Biological Outcomes



Improve Information Sharing and Communication

Five-year Targets

- Maintain and develop strong and positive partnerships.
- Increase landowner interest in the Partners Program.
- Actively participate in 50 landowner meetings, conferences, workshops, or symposia sponsored by other conservation interests throughout South Dakota.
- Make Partners Program-related presentations at 10 national meetings, conferences, workshops, or symposia.
- Sponsor, or directly assist in the implementation of 10 landowner conferences, workshops, or symposia throughout South Dakota.
- Provide five Partners Program updates to both the Prairie Pothole Joint Venture and the Northern Great Plains Joint Venture.
- Participate in five meetings each of the Service's National Farm Conservation Programs Working Group, Northern Great Plains Working Group, and Dakota Working Group.
- Host three Partners Program partner coordination and award recognition events throughout South Dakota.
- Facilitate 10 media events/news articles on the South Dakota Partners Program.
- Conduct 5 school field trips, in support of the Director's priority to re-connect America's youth to the outdoors.

Implementation Strategy: The primary vehicle for improved communication with landowner groups will be the ongoing relationship between the Partners Program and the South Dakota Association of Conservation Districts. Partners Program staff routinely participate in county-level conservation district functions, and this relationship is the basis for many multi-partner funding agreements. In addition, the Partners Program will maintain an active presence in the USDA Natural Resources Conservation Service's State Technical Committee. In addition, Partners Program staff are standing members of Technical Committee sub-committees for the Wetlands Reserve, Grassland Reserve, Wildlife Habitat Incentives, Environmental Quality Incentives, and Conservation Reserve programs.

The Partners Program will continue to improve communications at the regional and national levels by maintaining a strong presence in a wide variety of private land- and agriculture-related work groups and committees. Specifically, Partners Program staff are standing members of the Service's Farm Conservation Programs Working Group, Northern Great Plains Working Group, and the technical committees of both the Prairie Pothole Joint Venture and Northern Great Plains Joint Venture.

Enhance Our Workforce

Five-year Targets

- Annually provide each Partners Program biologist 25 hours of training on state-of-the-art habitat restoration and GIS techniques.
- Annually provide each Partners Program biologist 15 hours of training on recent developments in natural resource conservation policy and research.
- Annually provide award recognition for two key Partners Program accomplishments.
- Strategically place new Partners Program biologists in initial positions where they can be effectively mentored by senior Partners Program staff.

Implementation Strategy: Most Partners Program training needs will be met through the annual state-wide Partners Program staff meeting. This typically functions as a week-long session that provides a mix of policy updates, technical training, and guest presentations. These sessions also have input from key partners throughout South Dakota. Ad hoc meetings and training sessions will be held, as necessary. The current Partners Program organizational chart has biological science technician positions approved for key locations throughout the state; all are currently considered unfunded positions. In the future, when staffing these positions, a primary consideration will be locating new staff where they can best be mentored by senior Partners Program field biologists.



Partners Program Biologist, Joe Nichols, talks to a local school group about wildlife and their associated habitats. USFWS Photo.

Increase Accountability

Five-year Targets

- Develop a GIS layer and associated database of the more than 4,000 Partners Program projects, completed between 1986-2006, throughout the Prairie Pothole Joint Venture portion of South Dakota.
- Annually enter a minimum of 300 new Partners Program projects in the Private Lands GIS as developed and administered by the Mountain-Prairie Region HAPET office.
- Empirically quantify specified trust species benefits of all Partners Program projects in the Prairie Pothole Joint Venture portion of South Dakota.
- Consult on 2 University level field research projects with direct benefits to the Partners Program.
- Increase the number of HabITS entries, with associated photos, by 5% each year.

Implementation Strategy: The Partners Program will continue to actively work with Pheasants Forever to develop GIS coverage and an associated database of all historic Partners Program projects in the Prairie Pothole Joint Venture portion of South Dakota. A 2005 cooperative agreement forms the basis of this ongoing effort. In addition, all new Partners Program projects will annually be entered into a Service approved GIS system. GIS information will then be the basis for quantifying trust species benefits of Partners Program projects. The Partners Program will work closely with the Mountain-Prairie Region HAPET office to model species benefits. Initial benefits will be quantified for Partners Program wetland projects and their use by mallard, gadwall, northern pintail, northern shoveler, and blue-winged teal. Partners Program staff have a long history of coordinating with researchers at South Dakota State University. This relationship will continue with a proximate emphasis on grassland management techniques that are both economically viable and ecologically sustainable. Assurances will be taken that all Partners Program field staff have state-of-the-art digital cameras, while increasing the number of project photographs will be addressed at annual staff meetings. Partners Program staff will continue to actively work with Ducks Unlimited to develop and field test grassland risk models that will assist in more strategically targeting Partners Program grassland conservation efforts.

External Factors

The agricultural landscape of South Dakota is currently going through a period of significant change (South Dakota Agricultural Statistics Service 2006). Economic and technological realities are transforming much of the landscape from native grassland used for ranching to tillage agriculture. While this is occurring throughout the northern Great Plains, the pattern of change is particularly evident in central South Dakota. For example, in the May/June 2004 issue of *Ducks Unlimited* magazine a feature article on the future of native prairie noted that the loss of native grasslands is "...most acute in central South Dakota where biotech crops and world demand are fueling the destruction of tens of thousands of acres of prime pintail breeding habitat." The primary external factors that are driving this type of landscape change also directly impact the Partners Program's ability to effectively promote grassland and wetland conservation. The conservation philosophy of the Partners Program is largely based upon working with ranchers who have a shared vision of grassland and wetland conservation. This type of landowner partnership is widely supported as the most efficient way to conserve large grassland/wetland landscapes (Higgins, Naugle, and Forman 2002), but its effectiveness can certainly be impacted by the external realities of a rapidly changing agricultural economy.

Biological Outcomes

Estimated waterfowl breeding pair and recruitment benefits for Partners Program wetland and grassland projects in South Dakota focus areas for 2007-2011. (4 May 2007)

The South Dakota Partners Program continues to work closely with a variety of wildlife researchers to quantify biological outcomes in specific focus areas. Most notably, Partners Program staff have collaborated with the USGS Northern Prairie Wildlife Research Center and the Service's Region 6 HAPET office to estimate duck recruitment on Partners Program projects in both the Tallgrass Coteau and Mixed Grass Coteau focus areas. Published data and peer reviewed HAPET models were used to forecast the recruitment of five key waterfowl species (mallard, gadwall, northern pintail, northern shoveler, and blue-winged teal) in these two focus areas. It is estimated that Partners Program projects completed in the next five years will result in positive recruitment benefits to over 250,000 ducks during the course of the Partners Program Wildlife Extension Agreements. More specific recruitment outcomes are described by Partners Program focus area and conservation practice type in the following table.

Estimated Waterfowl Breeding Pair and Recruitment Benefits – South Dakota Focus Areas, 2007-2011									
State	Focus Area	Project Type	Class	Target Acres	Term (Yrs)	Annual Pairs ¹	Cumulative Pairs ²	Annual Productivity ³	Cumulative Productivity ⁴
South Dakota	Tallgrass Coteau	Wetland Restoration	Temporary	16	10	9	93	12	109
			Temporary	10	99	6	578	7	725
			Seasonal	94	10	74	740	94	862
			Seasonal	63	99	50	4,907	63	6,161
			Semipermanent	205	10	83	834	106	972
			Semipermanent	137	99	56	5,517	71	6,927
		Totals	525				12,669		15,757
		Wetland Creation	Semipermanent	125	10	51	508	64	593
			Totals	125			508		593
		Grassland Restoration ⁵	New	1,000	10			217	2,170
			1,500	99			326	32,225	
	Totals	2,500						34,395	
	Grassland Enhancement ^{6,7}	Maintenance	22,500	10			4,883	48,825	
		Totals	22,500					48,825	
	Mixed Grass Coteau	Wetland Restoration	Temporary	14	10	28	282	36	328
			Temporary	9	99	18	1,792	23	2,249
			Seasonal	81	10	143	1,429	181	1,666
			Seasonal	54	99	95	9,434	121	11,845
			Semipermanent	175	10	125	1,246	158	1,453
Semipermanent			117	99	83	8,249	105	10,357	
Totals		450				22,433		27,898	
Wetland Creation		Semipermanent	250	10	250	2,500	316	2,914	
		Totals	250			2,500		2,914	
Grassland Restoration		New	1,320	10			286	2,864	
		1,980	99			430	42,536		
Totals	3,300						45,401		
Grassland Enhancement	Maintenance	35,000	10			7,595	75,950		
	Totals	35,000					75,950		
Wetland Restoration		975				35,102	43,655		
	Wetland Creation	375				3,008	3,507		
Totals	1,350					38,110	47,161		
Grassland Restoration		3,300					79,795		
	Grassland Enhancement	35,000					204,570		
Totals	38,300						124,775		
		Grand Totals	1st 10 Years	1,071					
			Remaining Years	308					
			Cumulative			1,071			
						10,711		150,154	
						27,399		101,578	
						38,110		251,732	

Considerations:

When reviewing the totals, note that the distribution of wetland and/or grassland resources in limited term versus perpetual agreements can significantly affect the cumulative benefits. Similarly, the target distribution of wetland classes will also affect the numbers of pairs that are modeled to benefit from the projects.

¹ Duck breeding pair values per acre of wetland were estimated for each focus area by summing the number of total pairs for the focus area by wetland class, and dividing by the total acres of wetland for the respective class.

- ² The estimated cumulative value of wetland related private lands projects for breeding pairs is PAIRS = ((Acres of Wetland) * (Pair Value) * (Agreement Duration)).
- ³ Recruits related to the acres of wetland restored or created are calculated using the estimated number of pairs attracted to project wetlands and subsequent recruitment derived from Four Square Mile Breeding Waterfowl data 1998-2006 (Wangler and Reynolds 2007). Recruits related to the acres of grassland restored or protected from loss by implementing grazing systems (i.e., enhanced) were derived from simulating grassland change using the mallard model for areas in central North and South Dakota and subsequent changes in duck recruitment. These results were extrapolated to 4 other upland nesting duck species.
- ⁴ The estimated cumulative recruitment value of wetland and grassland related private lands projects for ducks is WETLAND PROJECT BASED RECRUITS = ((Number of Breeding Duck Pairs) * (Recruitment Value) * (Agreement Duration) - (# of PAIRS because there are no 1st year benefits)); GRASSLAND PROJECT BASED RECRUITS = ((Acres of Grassland) * (Recruitment Value) * (Agreement Duration)).
- ⁵ Recruits associated with grassland restoration are considered new recruits to the population.
- ⁶ Recruits associated with grassland enhancement (i.e., grazing systems) are considered existing recruits protected for the duration of the agreement (i.e., prevention of population decline).
- ⁷ The value of grassland and impacts on recruitment is related to the breeding duck density for the area where the grass is either restored or enhanced. The models used for recruitment were derived for areas with relatively high duck density; consequently, the recruits associated with lower duck density priority areas may be overestimated.
-