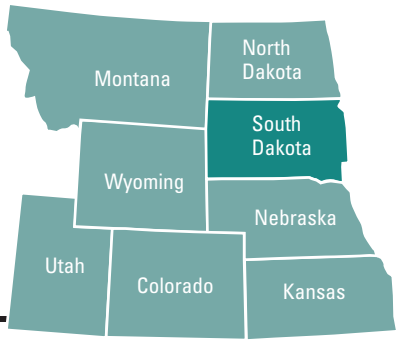
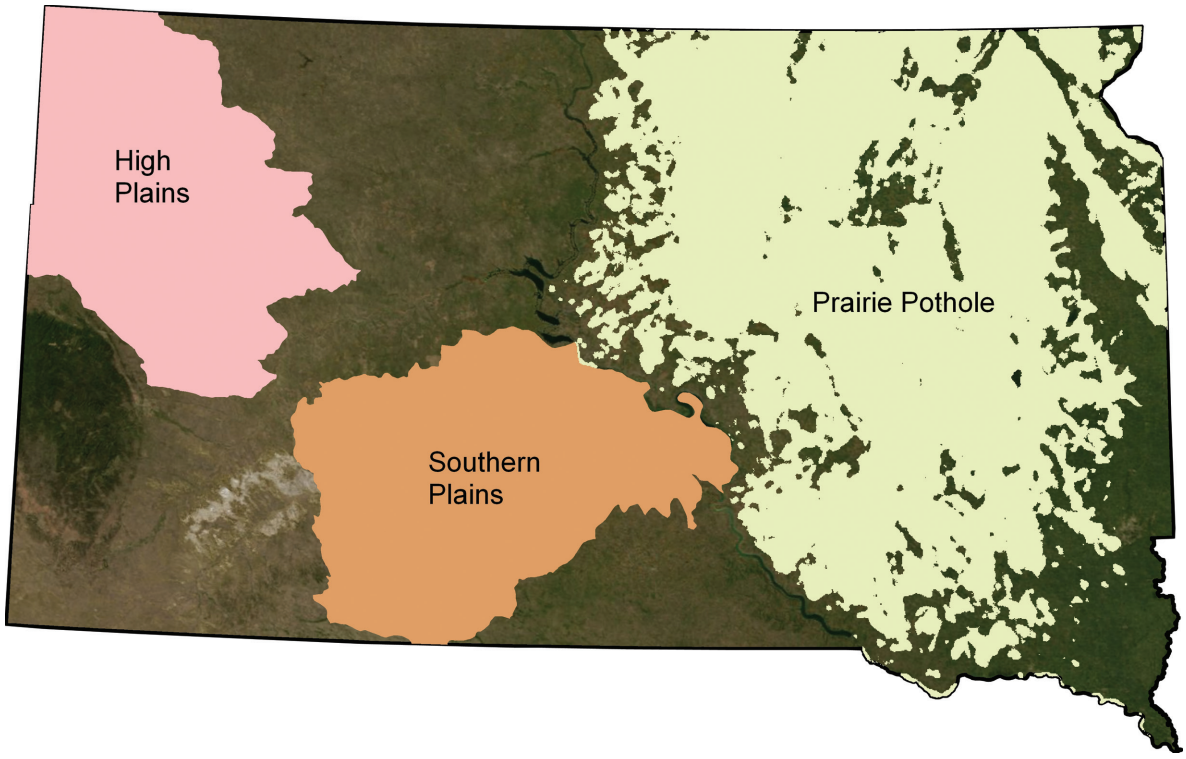
# South Dakota




*South Dakota Partners Program Conservation Focus Areas*

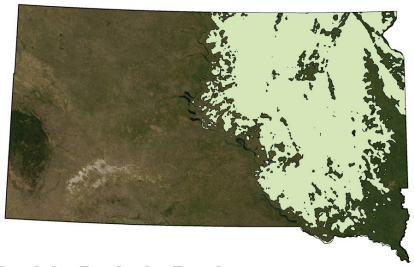
## Introduction and Overview

**Focus Area Selection:**
South Dakota's current focus areas are primarily derived from utilizing updated biological and spatial data to refine and improve our ongoing focus on high-priority wetland and grassland landscapes. Most notably, updated data on breeding waterfowl distribution from the Region 6 Habitat and Population Evaluation Team (HAPET) were used as the basis for developing our Prairie Pothole Region (PPR) focus area. Likewise, updated data on the locations of greater sage-grouse leks were used to refine the boundaries of the High Plains Focus Area. The Southern Plains Focus Area boundary was also slightly adjusted to work with key partners in high-priority grassland areas. 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 (SD) PFW program in all three focus areas is to maintain and restore this unique mix of habitats by providing conservation solutions that work for both landscapes and landowners. SD PFW focus areas are a composite result of this philosophy and ongoing conservation work with over 5,000 landowners. In most cases the technical demarcation of focus area boundaries formalized and fine-tuned broader PFW conservation initiatives that have been ongoing for over 20 years. A variety of long term data sets and GIS layers are utilized to continually refine and assess our efforts. Primary data sources included the National Wetlands Inventory (NWI), various GIS landuse coverages, South Dakota Agricultural Statistics Service information, the South Dakota Comprehensive Wildlife Conservation Plan (SDGFP 2005) and waterfowl breeding pair distribution maps developed by the Region 6 USFWS HAPET office.

**Partner Coordination:**
Since the program's inception, the SD PFW program has implemented over 5,600 individual Wildlife Extension Agreements (WEAs) with landowners throughout the state. Continual coordination with our landowner partners is the central theme in all of our partner outreach efforts. We rely heavily on the input and advice of individual landowners and their associated organizations to guide many of our strategic planning and funding initiatives. As a

result, the SD PFW 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 SD PFW program has served as a catalyst to bring together dozens of funding partners and hundreds of landowners to work in biologically based NAWCA project areas. These NAWCA projects play a vital role in formulating our PFW focus areas. Along with private landowners, we continue to consult with other key partners to guide the PFW program efforts throughout the state. Most recently, we coordinated with a variety of stakeholders in the spring of 2011 as we developed the FY 2012-2016 update to the Region 6 PFW strategic plan.

## Prairie Pothole Region Focus Area



**Prairie Pothole Region Focus Area- (15,680,616 acres)**

**Focus Area Description and Justification:**

The Prairie Pothole Region (PPR) Focus Area is comprised of the glaciated portion of the state that has a documented potential to host at least 20 breeding duck pairs per square mile. This determination is based on 22 years of HAPET survey data of five keystone waterfowl species-mallards, northern pintails, blue-winged teal, northern shovelers and gadwalls. Much of the landscape of the PPR Focus Area is characterized by high wetland densities, large grassland tracts and diverse bird communities. The Prairie Coteau hills in the northeast portion of the focus area contain some of the largest remaining tracts of northern Tallgrass prairie in the U.S. (USFWS 2000). The western portion of the focus area is dominated by the Missouri Coteau which has been documented to host some of the highest breeding ducks densities in all of North America. The biological core of the Missouri Coteau 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 during optimum habitat conditions. This is the largest tract of such high-quality habitat in the U.S. and has been identified as a critically important waterfowl breeding region (PPJV 2005).

Preserving the PPR focus area as a viable "recruitment source" for all suites of prairie nesting birds has been identified as an urgent priority of the USFWS, Delta Waterfowl and DU. While many of the habitat actions in this focus area are designed to conserve waterfowl breeding habitat, they also have direct benefits to the entire spectrum of ground nesting birds. These mutual conservation benefits are especially vital to grassland nesting passerines which are widely considered to be one of the most imperiled bird guilds in North America (Peterjohn and Sauer 1999). In addition to its nationally recognized importance for breeding waterfowl, this focus area hosts hundreds of species of plants, butterflies, reptiles, amphibians and mammals.

It is widely believed 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). In an effort to save the grassland character of this focus area, the SD PFW program has joined a diverse cadre of partners to foster a sustainable grassland economy based on family livestock ranching. The SD PFW 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 PFW program habitat actions include restoring grasslands and wetlands, implementing beneficial grazing systems, and creating wetlands. SD PFW program also provides technical assistance to support voluntary conservation easements. The efforts of the SD PFW program are largely based upon the broad strategies and goals of the North American Waterfowl Management Plan (NAWMP 2004), the National Partners in Flight Plan (Rich et al. 2004, Pashley et al. 2000), the northern plains/pothole portion of the U.S. Shorebird Conservation Plan (Skagen and Thompson 2001) and the North American Waterbird Conservation Plan (Beyersbergen et al. 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 SD PFW program strives to further this philosophy primarily by partnering with family ranchers.

Along with its biological significance, this region is also widely recognized as the national focal point for the ongoing debate regarding the loss of native prairie. Thousands of acres of native prairie are annually converted to cropland in this 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 (GAO 2003, GAO 2007 and CRS 2007) and wildlife conservationists (Higgins et al. 2002). The PFW program actively works with all interests in the area to promote sustainable land uses that benefit both landowners and landscapes. The primary goal of the PFW program is to maintain and restore the landscape characteristics associated with high bird recruitment in the face of a rapidly changing agricultural landscape. Primary partners in the SD PPR Focus Area include DU, PF, the South Dakota Association of Conservation Districts, the East Dakota Water Development District, the South Dakota Izaak Walton League, the Sisseton-Wahpeton Sioux Tribe, Northern Prairies Land Trust, the South Dakota Grassland Coalition, the South Dakota Department of Game, Fish and Parks, and hundreds of landowners.

### Priority Species

- Bobolink
- Black tern
- Marbled godwit
- Mallard
- Blue-winged teal
- Northern pintail
- Gadwall
- Northern shoveler
- American avocet
- Topeka shiner
- Western meadowlark
- LeConte's sparrow
- Chestnut-collared longspur
- Virginia rail
- Grasshopper sparrow
- Dickcissel
- Wilson's phalarope
- Sedge wren
- Ferruginous hawk
- Dakota skipper

### South Dakota Prairie Pothole Region Focus Area Five Year Targets

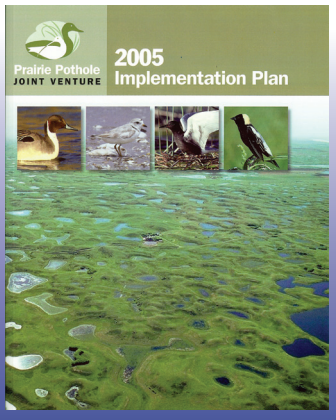
- Grassland Restoration = 4,500 acres
- Grassland Enhancement = 105,000 acres
- Wetland Restoration = 1,100 acres
- Wetland Establishment = 450 acres

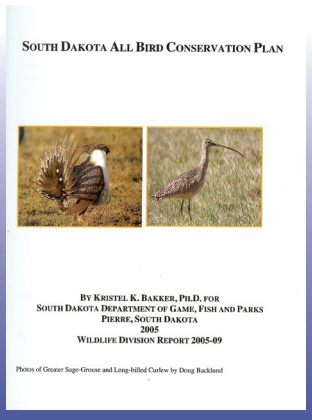
Implementation strategy for habitat objectives: Grassland objectives will be met by expanding the number of projects completed with livestock producers, primarily cattle ranchers. Wetland objectives will be primarily addressed by restoring wetlands in partnership with landowners who own and manage land for non-agricultural purposes or for ranching. A special emphasis will be placed on integrating wetland and grassland restoration projects with Service perpetual conservation easements.

### Partnerships

- Number of new landowner partners = 350 landowners
- Amount of technical assistance 300 staff/days
- Percentage of leveraging = 70% or more of non-1121 sources

Implementation strategy for partnership objectives: New partners will primarily be landowners who value grassland and wetland habitats. Along with financial assistance, the SD PFW program also provides a significant degree of technical assistance for habitat projects. A primary emphasis will be placed on assisting ranchers with developing grazing management plans for their operations. The SD PFW program will continue to secure a high proportion of "non-1121" funding sources for habitat projects. This will be accomplished through a combination of grant writing, non-federal partner contributions and requiring some degree of landowner input for most projects.




*The Prairie Pothole Joint Venture Implementation Plan and the South Dakota All Bird Conservation Plan play an integral role in guiding PFW philosophy and project implementation in the South Dakota PFW PPR Focus Area.*

*Much of the South Dakota PPR Focus Area is characterized by large grassland tracts with high wetland densities. USFWS Photo.*

*The South Dakota PPR Focus Area annually serves as vital breeding and migration habitat for millions of waterfowl. Photo by Dennis Larson, NRCS.*

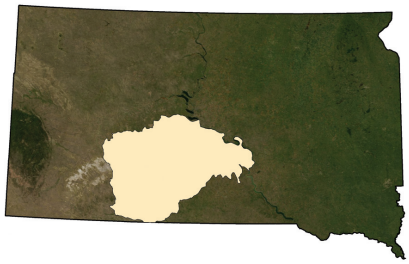
*PFW wetland establishment in the South Dakota PPR Focus Area. USFWS Photo.*

*PFW wetland restoration in the South Dakota PPR Focus Area. USFWS Photo.*


*PFW grassland restoration in the South Dakota PPR Focus Area. Photos by Bob Speck.*

*PFW grassland restoration in the South Dakota PPR Focus Area. USFWS Photo.*

## South Dakota Southern Plains Focus Area



### Focus Area Description and Justification:

The South Dakota Southern Plains Focus Area is characterized by large native grassland tracts and some of the highest natural wetland densities in western South Dakota (Rieger et al. 2006). This area was slightly adjusted from previous years to work with key partners in additional high priority grassland areas. PFW efforts are largely based upon the conservation goals of the North American Waterfowl Management Plan (NAWMP 2004), the National Partners in Flight Plan (Rich et al. 2004, Pashley et al. 2000), the Northern Great Plains Joint Venture concept Plan (NGPJV 2001) and the Northern Great Plains Joint Venture (NGPJV) 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.

Working with ranchers to maintain and restore grasslands is widely noted as the most effective way to conserve trust species habitat in this region. The 2001 concept plan for the Northern Great Plains Joint Venture (NGPJV 2001) 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 SD PFW program supports this philosophy by providing a wide variety of conservation options to assist ranchers in meeting their grassland stewardship goals. Specific conservation practices cost-shared by the SD PFW program include rotational grazing systems, native grassland restorations and wetland establishments. Ground nesting songbirds, shorebirds and waterfowl receive particularly high benefits from PFW grassland conservation efforts.

A diverse group of partners have joined SD PFW in conserving this unique landscape by fostering a sustainable grassland economy based on livestock ranching. Primary partners in this effort include DU, PF, the South Dakota Association of Conservation Districts, the North Central Resource Conservation and Development Association, the Lower Brule Sioux Tribe, the South Dakota Department of Game, Fish and Parks, and hundreds of landowners. Together we strive to maintain a viable grassland-wetland landscape that meets the long term needs of the landscape and landowners.

### Priority Species

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

### South Dakota Southern Plains Focus Area Five Year Targets

- Grassland Restoration = 600 acres
- Grassland Enhancement = 15,000 acres
- Wetland Establishment = 600 acres

Implementation strategy for habitat objectives: Wetland objectives will be primarily addressed by creating 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

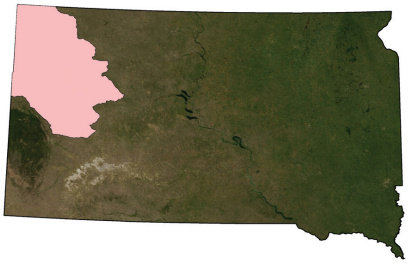
- Number of new partners = 190 landowners
- Amount of technical assistance 150 staff/days
- Percentage of leveraging 60% or more of non 1121 sources

Implementation strategy for partnership objectives: New partners will primarily be landowners who value grassland habitats for livestock grazing. Along with financial assistance, the SD PFW program also provides a significant degree of technical assistance for habitat projects. A primary emphasis will be placed on assisting ranchers with developing grazing management plans for their operations. The SD PFW program will continue to secure a high proportion of "non-1121" funding sources for our habitat projects. This will be accomplished through a combination of grant writing, non-federal partner contributions and requiring some degree of landowner input for most projects.

*PFW wetland establishment in the Southern Plains Focus Area. USFWS photo.*


*PFW grassland restoration in the Southern Plains Focus Area. USFWS photos.*

## South Dakota High Plains Focus Area



### Focus Area Description and Justification:

The South Dakota High Plains Focus Area is characterized by large native grassland tracts interspersed with a wide variety of riparian features (Rieger et al. 2006). The northwest portion of this area is the only region of South Dakota containing sagebrush communities. The FY 2012-2016 strategic plan boundary of the High Plains Focus Area was updated slightly from previous years, based on new location data for greater sage-grouse leks. SD PFW program efforts within this focus area are closely aligned with the conservation goals of the North American Waterfowl Management Plan (NAWMP 2004), the National Partners in Flight Plan (Rich et al. 2004, Pashely et al. 2000), the Northern Great Plains Joint Venture Concept Plan (NGPJV 2001), the 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.

The SD PFW program works hard to implement this concept by working closely with local ranchers. For example, wetland creations provide wildlife habitat and also serve as a vital tool for supporting a ranch-based grassland economy. The 2001 concept plan for the Northern Great Plains Joint Venture (NGPJV 2001) notes that-"Shallow-water impoundments provide several positive benefits to the NGPJV 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 PFW program in the High Plains Focus Area include riparian fencing, rotational grazing systems and native grassland restorations.

Primary partners assisting the SD PFW program in the High Plains Focus Area include DU, PF, the South Dakota Association of Conservation Districts, the North Central Resource Conservation and Development Association, the National Fish and Wildlife Foundation, the South Dakota Department of Game, Fish and Parks, and hundreds of landowners.

### Priority Species

- Sprague's pipit
- Chestnut-collared longspur
- Northern pintail
- American wigeon
- Greater sage-grouse
- Long-billed curlew
- Brewer's sparrow
- Black-billed cuckoo
- Upland sandpiper
- Grasshopper sparrow

### South Dakota High Plains Focus Area Five Year Targets

- Grassland Restoration = 300 acres
- Grassland Enhancement = 10,000 acres
- Wetland Establishment = 300 acres

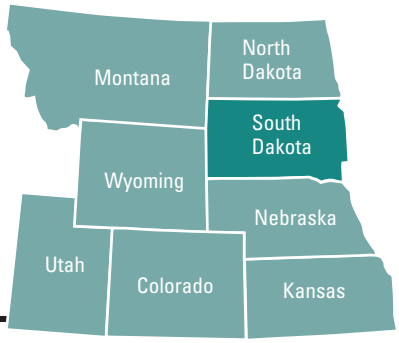
Implementation strategy for habitat objectives: Riparian objectives will be reached by continuing to expand riparian based partnerships throughout the focus area. Specifically, the PFW program will continue to work closely with local conservation districts to identify strategic riparian restoration locations and funding opportunities. 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. In addition to direct benefits to conservation, PFW wetland and grassland projects can also play an important role in moderating any potential future effects of climate change (Milmoe and Forman 2008). For example, managed grasslands have the ability to retain carbon (Conant 2010) and provide the most favorable watershed conditions for maintaining wetland hydrology (Voldseth et al. 2009).

### Partnerships

- Number of new partners 110 landowners
- Amount of technical assistance = 75 staff/days
- Percentage of leveraging = 60% or more of non-1121 sources

Implementation strategy for partnership objectives: New partners will primarily be landowners who value grassland and riparian habitats. Along with financial assistance, the SD PFW program also provides a significant degree 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 SD PFW program will continue to secure a high proportion of "non-1121" funding sources for our habitat projects. This will be accomplished through a combination of grant writing, non-federal partner contributions and requiring some degree of landowner input for most projects.

# South Dakota Statewide Goals




## Improve Information Sharing and Communication

Objectives:

- Actively participate in 50 meetings, conferences or workshops throughout South Dakota.
- Actively participate in, or sponsor, 15 landowner-based field tours throughout South Dakota.
- Actively participate in 20 NRCS technical committee meetings or associated sub-committee meetings throughout South Dakota.
- Actively participate in 5 Congressional outreach activities or briefings.
- Participate in, or facilitate, 5 media events/stories on private lands conservation in South Dakota.
- Participate in the meetings of, or provide information to the Prairie Pothole Joint Venture or the Northern Great Plains Joint Venture at least 15 times collectively.
- Participate in, or facilitate, 10 school field trips or other environmental education events.

Implementation Strategy: As in previous years, the primary vehicle for improved communication with landowner groups will be the ongoing relationship between the SD PFW program and the South Dakota Association of Conservation Districts. PFW program routinely participates in county level conservation district functions and this relationship is the basis of many multi-partner funding agreements. In addition, the SD PFW program will remain very active in the NRCS state technical committee. Specifically, PFW program personnel are standing members of the sub-committees for the WRP, GRP, WHIP, EQIP, and CRP. The SD PFW program will continue to improve communications at the regional and national levels by maintaining a strong presence in a wide variety of work groups and committees. Specifically, PFW employees are standing members of the Services' Farm Bill Working Group, the Northern Great Plains Working Group and the technical committees of both the Prairie Pothole and Northern Great Plains Joint Ventures.

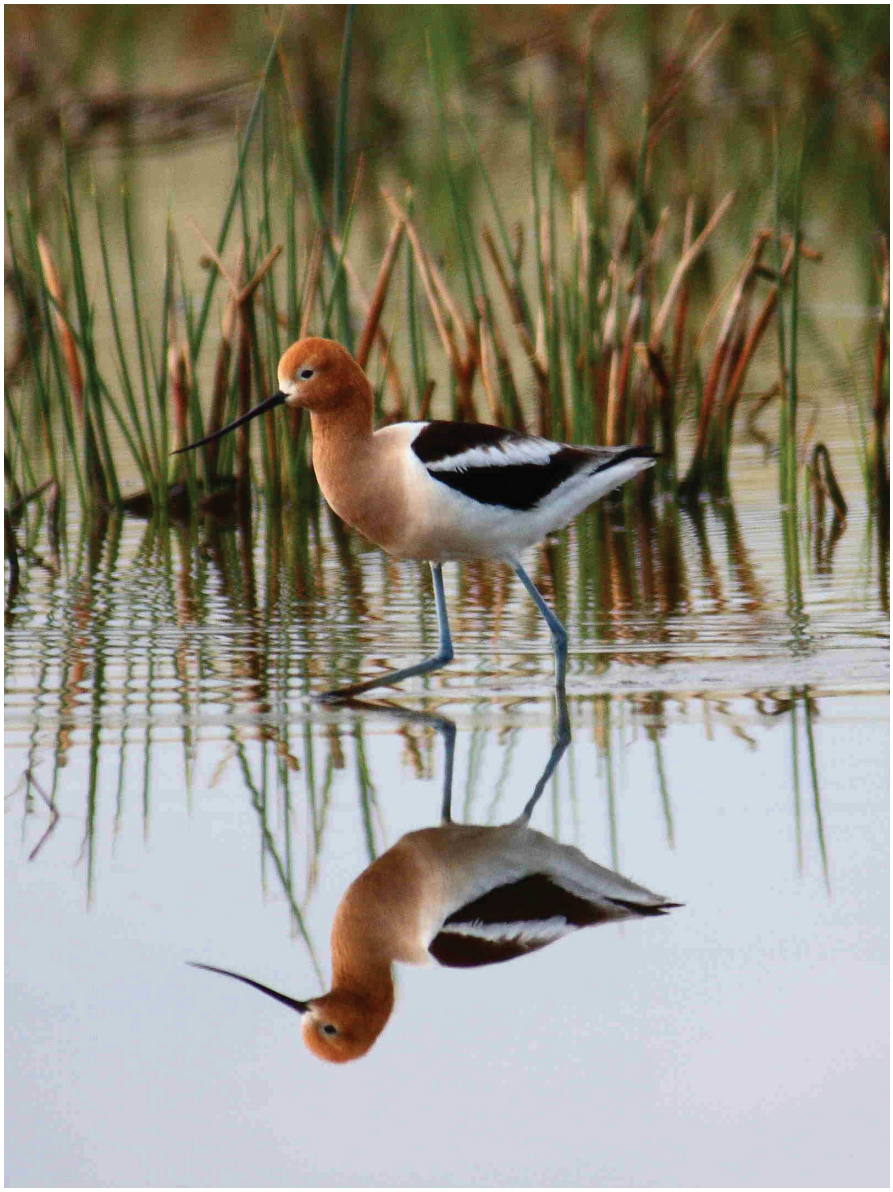
*PFW wetland establishment in the High Plains Focus Area. Photo by Steve Fairbairn, USFWS.*

## Enhance Our Workforce

Objectives:

- Annually provide each PFW biologist 40 hours of training on a wide variety of topics including, but not limited to, habitat conservation, GIS techniques, career development and natural resource conservation policy.
- Annually provide award recognition for two key PFW accomplishments.
- Strategically place new PFW biologists in initial positions where they can be effectively mentored by senior PFW staff.

Implementation Strategy: Most PFW training needs will be met through the annual PFW staff meeting. Annual PFW program training 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 PFW staffing chart has biological science technician positions approved for key locations throughout the state. These positions are currently all vacant. In the future, when staffing these positions, a primary consideration will be locating new staff where they can best be mentored by senior PFW field biologists.



*American avocet on a PFW wetland establishment in the High Plains focus area. Photo by Steve Fairbairn, USFWS.*

*PFW Biologist Jennifer Briggs working with landowners on a grassland conservation tour. USFWS Photo.*

## Increase Accountability

Objectives:

- Complete 5 annual narratives documenting PFW activities throughout South Dakota.
- Annually enter 200-300 new PFW projects into the HAPET-PLGIS and integrate this same data into HabITS.
- Coordinate with HAPET to complete 20 shorebird surveys in the PPR Focus Area.
- Increase the degree of PFW program evaluation in the Northern Great Plains Joint Venture by working with HAPET to annually conduct waterfowl and shorebird surveys on 100 PFW projects.
- Consult on 5 University-level research projects with direct benefits to the PFW program and/or trust-species conservation.
- Increase the number of HabITS entries with associated photos by 5% each year.

Implementation Strategy: The SD PFW program will continue to actively develop and maintain a full GIS coverage and associated database of all historic PFW projects in South Dakota. In addition, all new PFW projects will annually be entered into a HAPET managed GIS system. This information will then be the basis for quantifying trust species benefits of PFW projects. The SD PFW program will work closely with the Region 6 HAPET office to model species benefits. Initial benefits will be quantified for PFW wetland and grassland projects and their use by mallard, gadwall, blue-winged teal, northern shoveler and northern pintail in the PPR focus area (see attached table quantifying biological outcomes). SD PFW program staff will also continue to work closely with HAPET staff to assess the benefits of restored or enhanced wetlands to waterfowl and shorebirds in the High Plains and Southern Plains focus areas. In addition, SD PFW 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 PFW field staff have state-of-the-art digital cameras and a renewed emphasis will be placed on increasing the number of PFW projects photographed during the course of completing annual waterfowl and shorebird surveys.

The South Dakota PFW program has digitized habitat features on over 5,600 Wildlife Extension Agreements. This information is used to evaluate the biological outcomes of current PFW projects and to provide a strategic basis for the implementation of future projects. USFWS photo.

An example of strategic targeting of PFW projects is the distribution of USFWS grassland easements and PFW projects closely correlated with high quality breeding habitat for bobolink. Analysis and map provided by Neal Niemuth, Region 6 HAPET office.

### External Factors

The agricultural landscape of South Dakota is going through a period of significant change (SDASS 2010). Economic and technological realities are continuing to transform much of the northern great plains from native grassland used for ranching to tillage agriculture (Hoekstra et al. 2005, Rashford et al. 2010). While this type of landscape change is occurring throughout all of the northern great plains, the pattern is particularly evident in South Dakota. In a 2007 report published by the United States Government Accountability Office it was noted that "… from 1982-1997, 1.69 million acres of cropland in South Dakota were enrolled in the Conservation Reserve Program, while during the same period, 1.82 million acres of grassland in South Dakota were converted to cropland." The continued conversion of grassland to cropland has also been accompanied by a westward expansion of drainage tile. The external economic factors that are driving these types of landscape change also directly impact the PFW program's ability to forward grassland and wetland conservation. The conservation philosophy of the SD PFW program is largely based upon working with family ranchers who have a shared vision of grassland and wetland conservation. This type of landowner-based partnership is widely supported as the most efficient way to conserve the remaining intact grassland/wetland landscapes of the Northern Great Plains (Higgins et al. 2002). However, the effectiveness of this strategy can be impacted by the external realities of a rapidly changing agricultural economy.

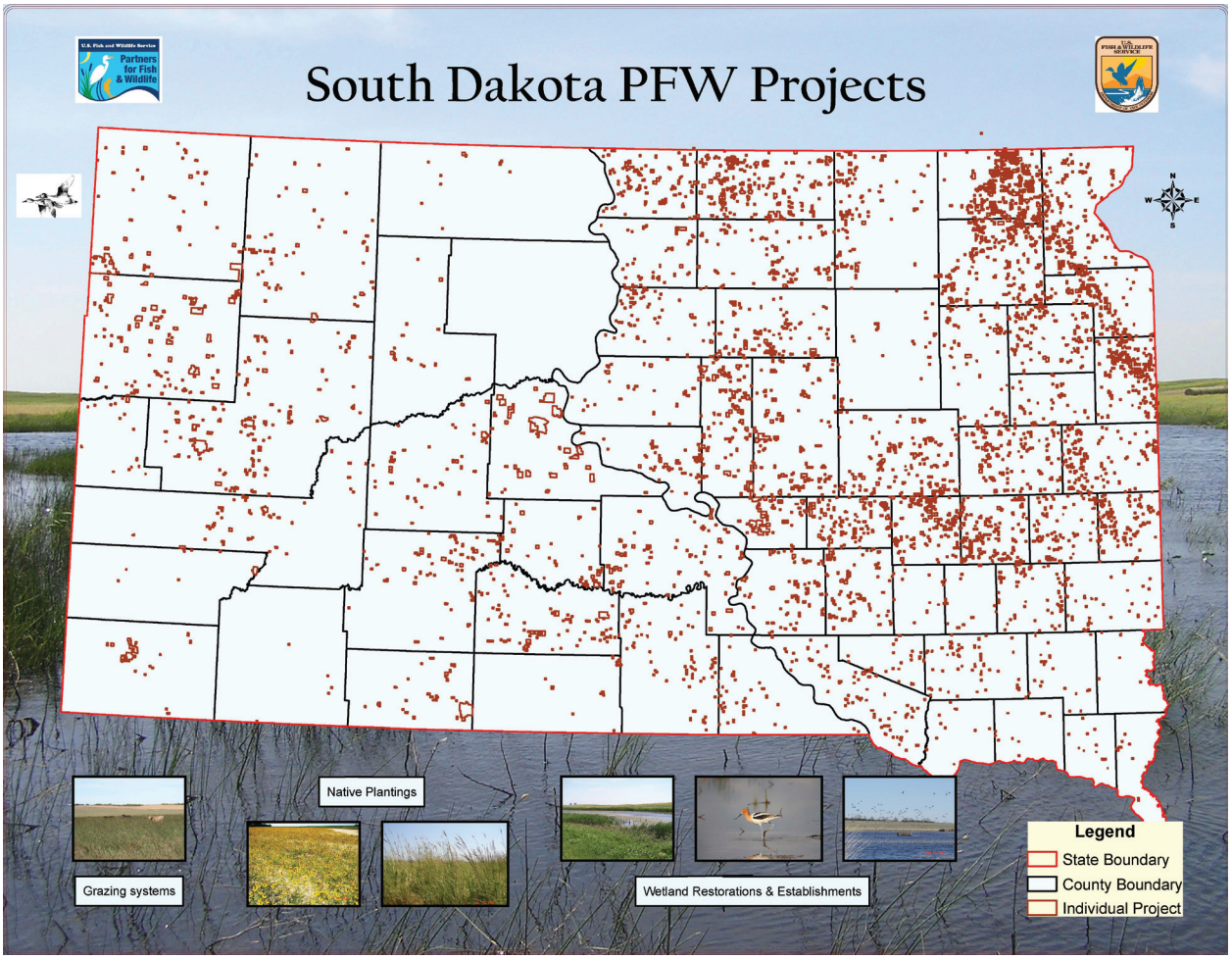
*SD PFW staff regularly participate in grazing workshops sponsored by the South Dakota Grassland Coalition. USFWS Photo.*


*SD PFW will continue to participate in a wide variety of stakeholder meetings, events and field trips. SD PFW staff participated in a April 29, 2011 visit to South Dakota by Secretary of the Interior Ken Salazar. As part of the visit Secretary Salazar signed a WEA to implement a rotational grazing management plan. Pictured left to right at the WEA signing ceremony: Secretary of the Interior Ken Salazar, Lyle Perman (landowner) and Allen Olson (PFW biologist). USFWS photo.*

*SD PFW will continue to recognize and support the full spectrum of landowner and NGO conservation partners. At the 2011 Pheasant Fest in Omaha, PFW recognized Pheasants Forever (PF) staff members Joe Duggan and Ron Leathers for their outstanding support. Pictured from left to right: Howard Vincent- PF president and CEO, Heather Johnson- Region 6 PFW Coordinator, Joe Duggan- PF vice-president of corporate relations, Colleen Duggan, Ron Leathers- PF national grants coordinator and Kurt Forman- SD PFW coordinator. Photo by Matt Filsinger, USFWS.*


*SD PFW staff meet annually to receive training in the latest habitat restoration techniques. USFWS Photo.*


*Boyd Schulz of the South Dakota PFW program works with Dave Steffen of the South Dakota Grassland Coalition during a PFW-sponsored grazing workshop and training event. USFWS Photo.*




*This map represents SD PFW projects from 1987-2011 signifying 25 years of tremendous success. Boyd Schulz, USFWS.*


*New economic realities in agriculture continue to play a central role in defining landscape change throughout the Northern Great Plains. USFWS Photos.*

## Biological Outcomes

Estimated waterfowl breeding pair habitat and recruitment benefits for USFWS PFW wetland and grassland projects implemented in 2012-2016 in the South Dakota Prairie Pothole Focus Area (Data prepared by USFWS Region 6 HAPET office, June 2011)

Background: The South Dakota PFW program continues to work closely with a variety of wildlife researchers to quantify biological outcomes in specific PFW focus areas. Most notably, PFW staff have collaborated with the USFWS Region 6 HAPET office to assess duck recruitment and habitat protection outcomes in the PFW Prairie Pothole Focus Area of South Dakota. Published data and peer reviewed HAPET models were used to model recruitment and habitat protection benefits for five key waterfowl species (mallard, gadwall, blue-winged teal, northern shoveler and northern pintail). It is estimated that PFW projects completed in the next five years will result in positive recruitment and habitat protection benefits to over 350,000 ducks during the term of the associated Wildlife Extension Agreements. More specific recruitment outcomes are described by conservation practice type in the following table.

**Estimated Waterfowl Breeding Pair and Recruitment Benefits - South Dakota Focus Areas, 2012-2017**

| State | Focus Area | Project Type | Class | Target Acres | Term (Yrs) | Annual Pairs[1] | Cumulative Pairs[2] | Annual Productivity[3] | Cumulative Productivity[4] |
|---|---|---|---|---|---|---|---|---|---|
| | | | | **Cumulative** | | | **64,476** | | **230,470** |
| South Dakota | | | | | | | | | |
| | > 25 Breeding Duck Pairs East River | | | | | | | | |
| | | Wetland Restoration | | | | | | | |
| | | | Temporary | 143 | 10 | 205 | 2,050 | 259 | 2,590 |
| | | | Temporary | 77 | 99 | 110 | 10,890 | 140 | 13,860 |
| | | | Seasonal | 214 | 10 | 303 | 3,030 | 384 | 3,840 |
| | | | Seasonal | 117 | 99 | 166 | 16,434 | 210 | 20,790 |
| | | | Semipermanent | 357 | 10 | 514 | 5,140 | 271 | 2,710 |
| | | | Semipermanent | 192 | 99 | 115 | 11,385 | 146 | 14,454 |
| | | | **Totals** | **1,100** | | **1,413** | **48,929** | **1,410** | **58,244** |
| | | Wetland Creation | Semipermanent | 450 | 10 | 270 | 2,700 | 342 | 3,420 |
| | | | **Totals** | **450** | | **270** | **2,700** | **342** | **3,420** |
| | | Grassland Restoration | New | 1,665 | 10 | | | 361 | 3,610 |
| | | | | 2,835 | 99 | | | 615 | 60,885 |
| | | | **Totals** | **4,500** | | | | **976** | **64,495** |
| | | Grassland Enhancement | Maintenance | 105,000 | 10 | | | 22,785 | 227,850 |
| | | | **Totals** | **105,000** | | | | **22,785** | **227,850** |
| | | | **Grand Totals** | **1st 10 Years** | | **16,830** | | **255,130** | |
| | | | | **Remaining Years** | | **34,799** | | **98,879** | |
| | | | | **Cumulative** | | | **51,629** | | **354,009** |

## Considerations

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 by private lands projects are calculated using the estimated number of pairs benefiting from wetland projects and subsequent recruitment derived from Four Square Mile Breeding Waterfowl data. Recruits related to the acres of grassland restored or protected from loss by implementing grazing systems (i.e., enhanced) were derived from scenarios of grassland change using the mallard model for areas in central North and South Dakota and subsequent changes in duck recruitment.

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.