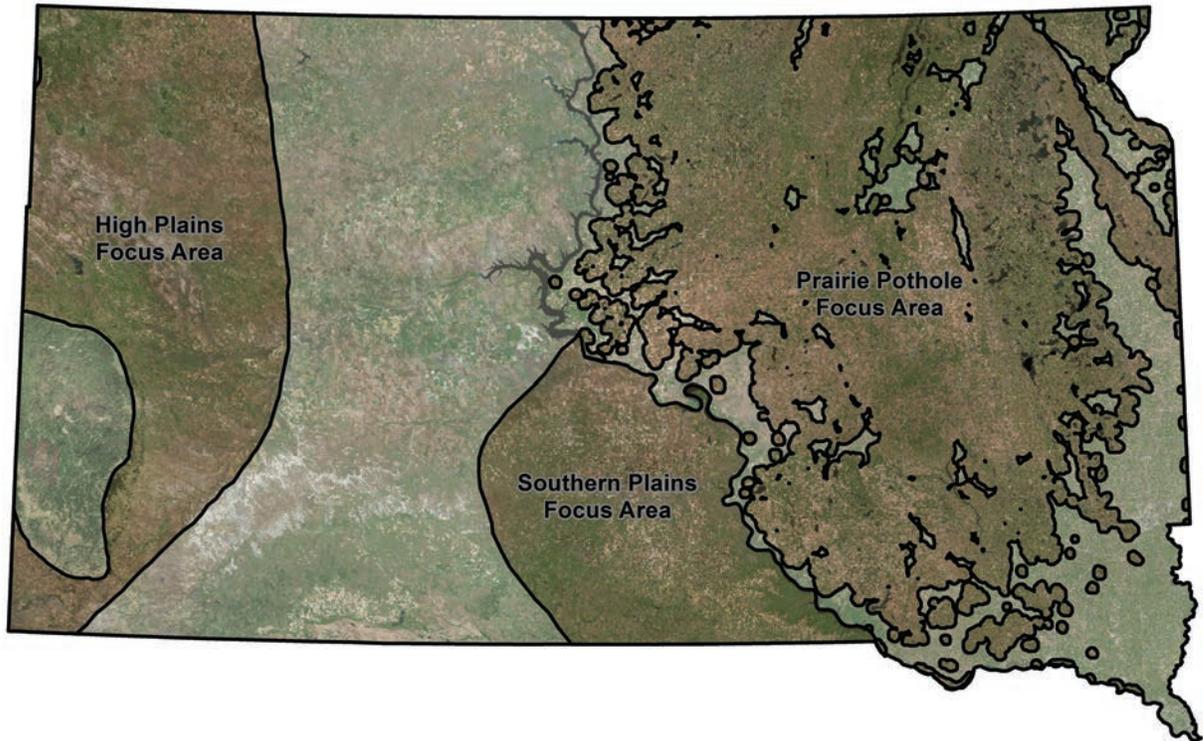


South Dakota



South Dakota PFW program Focus Areas. USFWS map.

Focus Area Selection

South Dakota's 2017–2021 PFW focus areas were primarily developed by utilizing updated biological and spatial data to refine and improve our ongoing focus on high priority wetland and grassland landscapes. For example, updated data on breeding waterfowl distribution from the Service Region 6 Habitat and Population Evaluation Team (HAPET) were used as the central basis for refining the Prairie Pothole Focus Area. In addition, Breeding Bird Survey data was used to confirm the strategic importance of the Prairie Pothole Focus Area to other high focal species such as the chestnut-collared longspur, LeConte's sparrow, black tern and marbled godwit. Modifications to the Southern Plains Focus Area were primarily based on the new Service Monarch Butterfly

National Conservation Priority GIS layer. In addition, Breeding Bird Survey data was also used to document the importance of the Southern Plains Focus Area to other high priority focal species including the lark bunting and long-billed curlew. The South Dakota Greater Sage-Grouse Management Plan (SDGFP 2014a) was used as the basis to develop the biological core of the High Plains Focus Area and the Service-derived estimate for the historical range of the greater sage-grouse was used to define the boundaries of the focus area. In addition, Breeding Bird Survey data and Grassland Bird Conservation Area models (Johnson et al. 2010) were used to confirm the importance of the High Plains Focus Area to other high priority focal species including Baird's sparrow, Sprague's pipit and grasshopper sparrow. In the broadest terms, the 2017–2021

PFW focus area updates are the next step in a 25+ year emphasis on strategic grassland and wetland conservation in support of several key initiatives including the Prairie Pothole Joint Venture (Ringelman 2005), Northern Great Plains Joint Venture (Pool and Austin 2006) and the South Dakota All Bird Conservation Plan (Bakker 2005). In addition, the focus area refinements also strategically support the resource priorities outlined for Region 6 of the Service (Service 2015b) and the Refuge System in Region 6 (Service 2015c).

Partner Coordination

Since the late 1980s the South Dakota PFW (SD PFW) program has implemented over 6,800 individual Wildlife Extension Agreements (WEAs) and Private Landowner Agreements (PLAs) with landowners throughout the

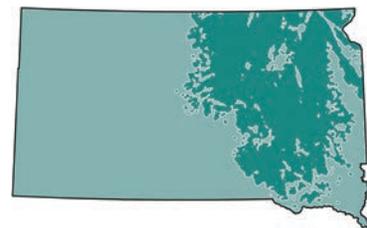


Mallard drakes. Photo by Kurt Forman, USFWS.

state. Ongoing coordination with our landowner partners is the central theme in all of our partner outreach and coordination efforts. As in previous strategic planning exercises, we relied heavily on the input and advice of individual landowners and their associated organizations to guide many of our changes in the 2017–2021 SD PFW Strategic Plan. Most notably, the SD PFW program has a long history of collaborating with the South Dakota Association of Conservation Districts (SDACD) and their 68 county-level affiliates. SDACD’s unique combination of local landowner knowledge and statewide leadership plays a vital role in a wide variety of South Dakota’s natural resource issues. To gather input for the 2017–2021 South Dakota PFW Strategic Plan we coordinated closely with SDACD at a variety of levels. During the first quarter

of 2016 SD PFW staff personally met with 24 individual county-level Conservation Districts representing over 110 landowners and Conservation District members. Additional input for the Strategic Plan update was provided by other key partners including the South Dakota Department of Game Fish and Parks (SDGFP), Pheasants Forever, the NRCS, South Dakota Grassland Coalition (SDGC) and the South Dakota Conservation Commission. As in previous strategic plans, the PFW program also continues to integrate all of its work with other Service programs in the state. For instance, we work on a regular basis with the Ecological Services office and the Wetland Management Districts (WMD) of South Dakota.

Prairie Pothole Focus Area



The South Dakota Prairie Pothole Focus Area is based on the highest priority wetland and grassland habitats remaining in the PPJV portion of the state. More specifically, the focus area only includes landscapes with the documented potential to host at least 25 breeding duck pairs per square mile. This determination is based on 29 years of HAPET survey data of five key waterfowl species (mallards, northern pintails, blue-winged teal, northern shovelers, gadwalls). The focus area contains a variety of unique



Much of the South Dakota PFW program Prairie Pothole Focus Area is characterized by large grassland tracts with high wetland densities. USFWS Photo.

glaciated landforms. The Prairie Coteau hills in the northeastern portion of the focus area has very high wetland densities and also hosts some of the largest remaining tracts of northern tallgrass prairie in the Nation (Service 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 duck densities in North America. Maintaining the Prairie Pothole Focus Area as a viable “recruitment source” for all suites of prairie nesting ducks has been identified as a high priority of the Service, Delta Waterfowl and DU. Annual survey and banding data continue to reaffirm the critical role the eastern Dakotas play in supporting continental duck populations. For example, published banding data documents the Eastern Dakotas Breeding Reference area (which encompasses

the SD PFW Pothole Focus Area and the PPJV portion of North Dakota) and is vitally important to supporting blue-winged teal populations for the entire western hemisphere. Specifically, an extensive analysis of banding data recently documented that despite the Eastern Dakotas Breeding Reference area only being one of 12 such banding regions for blue-winged teal, it accounted for 42.6% of the entire blue-winged teal harvest from 1994–2003 (Szymanski and Dubovsky 2013).

While many of the habitat actions in this focus area are primarily designed to conserve breeding waterfowl habitat, this type of landscape-scale grassland and wetland conservation also yields direct benefits to a wide spectrum of other trust species. For example, these types of landscape-scale conservation actions 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, maintaining the remaining native prairie landscapes of the Dakotas is emerging as an important strategy for conserving pollinators such as the Dakota skipper (Service 2014d), monarch butterflies, and a variety of wild bee species (Koh et al. 2015).

While the South Dakota Prairie Pothole Focus Area is high priority habitat for a wide variety of trust species, this region has also garnered much attention related to the topic of native prairie loss. The conversion of native prairie grasslands to other uses has drawn a wide degree of interest from academia (Conner et al. 2001), ecologists (Ogg 2006), policy analysts (GAO 2003, GAO



Black-crowned night heron on a PFW wetland restoration in the Prairie Pothole Focus Area. Photo by Kurt Forman, USFWS.

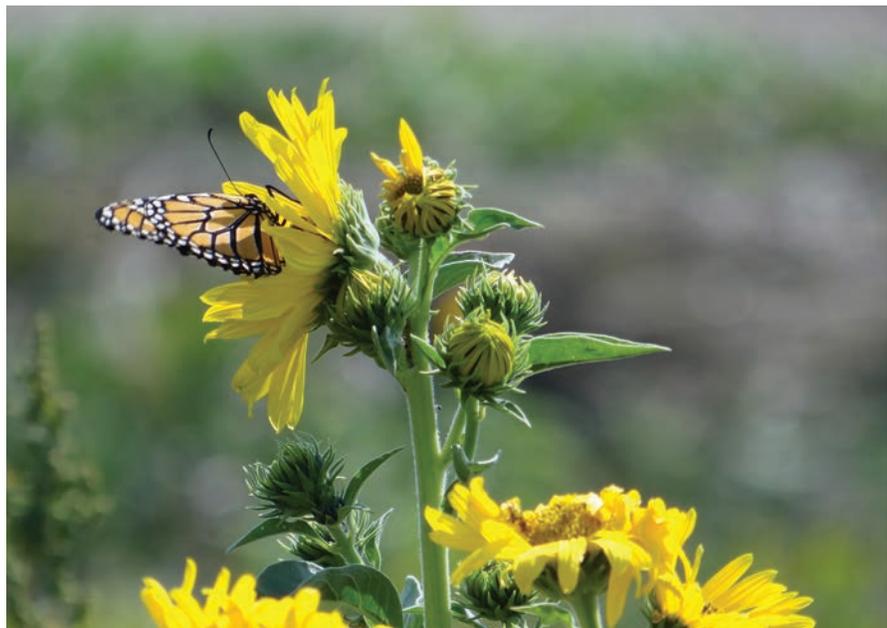
2007, CRS 2007) and wildlife conservationists (Rashford et al. 2010). Most recently, Wright and Wimberly (2013) documented a disproportionately high degree of grassland loss in the eastern Dakotas and concluded that, “Grassland conversion between 2006 and 2011 was mostly concentrated in North Dakota and South Dakota, east of the Missouri River”. The same researchers also documented a significant spatial nexus between grassland loss and wetlands. Within South Dakota, it was documented that, “nearly 100,000 ha of grassland conversion occurred within a 100-meter buffer surrounding wetlands.”

One of the most viable techniques noted for conserving the unique habitats of this region is to forge new and accelerated partnerships with the local ranching community (Higgins et al. 2002). Most recently, partnering with local grassland ranchers was a central theme noted by the Service in the approval of the Dakota Grasslands Conservation Area (DGCA). A specific goal cited for the DGCA is to “conserve working landscapes based on ranching and livestock operations that support a viable livestock industry” (Service 2011).

In an effort to support this goal, 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 voluntary habitat conservation programs designed to simultaneously benefit grazing lands important to ranchers and the vital landscape attributes needed by a wide variety of trust species. Specific PFW habitat actions include restoring grasslands and wetlands, implementing beneficial grazing systems and creating wetlands. The efforts of the SD PFW program in this focus area are largely based upon the broad strategies and goals of the North

American Waterfowl Management Plan (Service 2012), 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), the North American Waterbird Conservation Plan (Beyersbergen et al. 2004, Kushlan et al. 2002), and the South Dakota Wildlife Action Plan (SDGFP 2014b). In addition, the PFW actions conducted in the Prairie Pothole Focus Area support the goals specified by the Service in Region 6 (Service 2015b) and the Service Refuge System in Region 6 (Service 2015c). For example, the Service Region 6 priorities include the following as a priority goal – “Protect enough grassland and wetlands in the Prairie Pothole Region to ensure stable populations of waterfowl, and wetland and grassland migratory birds.”



Monarch butterfly utilizing a native prairie restoration project completed by the South Dakota PFW program in the Prairie Pothole Focus Area. Photo by Jen Briggs, USFWS.

Prairie Pothole Focus Area Focal Species

- Mallard
- Black tern
- LeConte’s sparrow
- Chestnut-collared longspur
- Marbled godwit
- Sandhill crane
- Topeka shiner (Endangered)
- Dakota skipper (Threatened)
- Monarch butterfly

Prairie Pothole Focus Area Habitat Targets

- Grassland Restoration: 4,000 acres
- Grassland Enhancement: 95,000 acres
- Wetland Restoration : 900 acres
- Wetland Establishment: 200 acres

Prairie Pothole Focus Area Partnership Targets

- Private Landowner Agreements: 600
- Partnerships: 1,080
- Technical Assistance: 325 staff/days
- Percent Leveraging: 70% or more of non 1121 sources

Implementation strategy for habitat objectives: As in previous years, upland objectives will primarily be met by expanding the number of projects completed with livestock producers, primarily cattle ranchers. Most notably, SD PFW staff will coordinate closely with local landowners to design and implement managed grazing systems and grassland restorations that simultaneously support grassland-based ranching and trust species conservation. Specific conservation practices to be completed for upland conservation include, grass seedings, forb seedings, cross-fence, boundary fence and a wide variety of livestock water developments.

Wetland objectives will primarily be addressed by restoring wetlands in grassland tracts, and creating multiple purpose wetlands that simultaneously benefit trust species and provide ranchers with additional options for livestock water and grazing management.

Implementation strategy for partnership objectives: As in previous versions of the SD PFW Strategic Plan, new partners will primarily be landowners participating in new PLAs. 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. 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 funds and landowner contributions. Other partners playing a key role in the Prairie Pothole Focus Area include SDACD, SDGFP, Pheasants Forever, SDGC and DU.



Wetland restoration completed by PFW in the Prairie Pothole Focus Area. Photo by Chuck Pyle, USFWS.



Wetland restoration jointly completed by PFW and Refuge staff on private land in the Prairie Pothole Focus Area, South Dakota. USFWS Photo.



Native prairie restoration completed by the South Dakota PFW program in the Prairie Pothole Focus Area. Photo by Jim Madsen, South Dakota landowner.



A wetland and grassland complex in the Prairie Coteau portion of the Prairie Pothole Focus Area. Photo by Kurt Forman, USFWS.

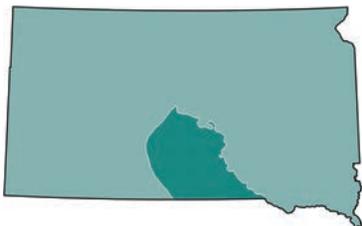


Trumpeter swan on a South Dakota PFW program wetland establishment in the Prairie Pothole Focus Area. Photo by Steve Bunkers, South Dakota landowner.



Wetland restoration completed by the South Dakota PFW program in the Prairie Pothole Focus Area. Photo by Steve Spawn, USFWS.

Southern Plains Focus Area



Large contiguous tracts of mixed-grass prairie and high densities of un-glaciated wetland basins (Rieger 2006) are the defining landscape features of the Southern Plains Focus Area. While the core landscape attributes of the focus area have not changed from previous strategic plan versions, the focus area boundaries have changed significantly in the 2017–2021 Strategic Plan. The focus area boundary was adjusted significantly from previous years based on the new Service Monarch

Butterfly National Conservation Priority GIS layer. In addition, Breeding Bird Survey data was also used to document the importance of the Southern Plains focus area to other high focal species including the lark bunting and long-billed curlew. The focus area boundary refinement and the change in focal species both strategically support the Service Region 6 priorities (Service 2015b) which include the following as priority goals, (1) “Reverse the declining trend for monarchs and other endemic pollinators” and (2) “Reverse the declining trend of grassland nesting migratory birds.”

At the largest scale, the SD PFW efforts within this focus area are largely based upon the conservation goals of the North American Waterfowl Management Plan (Service 2012), 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 Implementation plan (Pool and Austin 2006). All of these plans note landscape-scale habitat work as an effective vehicle for conservation, particularly for migratory birds.

As in other portions of South Dakota, working with ranchers to maintain and restore grasslands is widely noted as the most effective way to conserve trust species habitat in the Southern Plains Focus Area. For example, the initial 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



A combined wetland establishment and grazing system completed by the South Dakota PFW program in the Southern Plains Focus Area. Photo by Jesse Lisburg, USFWS.

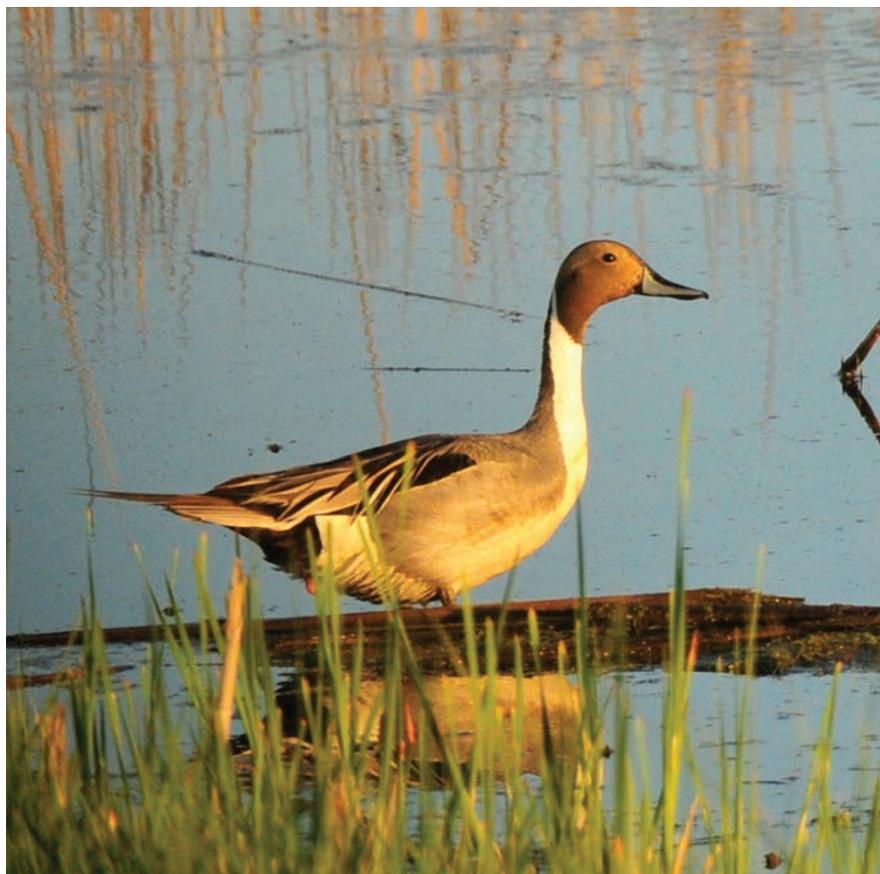
grass and other natural features.” Likewise, the Partners in Flight Conservation Plan (Pashley et al. 2000) for this portion of South Dakota notes, “Maintenance of a ranching economy here is compatible with the needs of grassland birds and should be the highest conservation priority.” For over 20 years, the SD PFW program has forwarded community-based conservation programs in the Southern Plains Focus Area by providing a wide variety of options to ranchers to assist in meeting their grassland stewardship goals. More specifically, SD PFW staff coordinate closely with local landowners to design and implement managed grazing systems and grassland restorations that simultaneously support grassland-based ranching and trust species conservation. Specific upland conservation practices include, grass seedings, forb seedings, cross-fence, boundary fence and livestock water

developments. Likewise, multiple purpose wetland establishments are configured to simultaneously

provide benefits to migratory birds, and at the same time provide ranchers with additional



Much of the South Dakota PFW program Southern Plains Focus Area is characterized by large contiguous tracts of native mixed-grass prairie used for livestock grazing. Photo by Kurt Forman, USFWS.



Northern pintail drake. Photo by Tom Koerner, USFWS.

options for livestock water and grazing management. Ground nesting songbirds, shorebirds and waterfowl receive particularly high benefits from PFW grassland and wetland conservation efforts in the Southern Plains Focus Area. In addition, spatial data recently developed by the Service illustrates this portion of South Dakota contains high priority monarch butterfly habitat. 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).

Implementation strategy for habitat objectives: As in previous versions of the SD PFW strategic plan, grassland habitat targets will primarily be met by expanding the number of grazing management projects completed with livestock producers. Wetland objectives will primarily be addressed by creating multiple purpose wetlands that simultaneously provide trust species benefits and also provide ranchers with additional options for livestock water and grazing management.

Implementation strategy for partnership objectives: As in previous years, a diverse group of partners have joined the SD PFW program in conserving this unique landscape. Primary partners in this effort include SDGFP, SDGC, Pheasants Forever, SDACD and landowner partners. Collectively, this group of partners strives to implement conservation goals of mutual interest that meet both the needs of the landscape and landowners of the Southern Plains Focus Area. 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. The SD PFW program will continue to secure a high proportion of “non-1121” funding sources for our habitat projects. As in the past, this will be accomplished through a combination of grant writing, non-federal partner contributions and landowner input.

Southern Plains Focus Area Focal Species

- Monarch butterfly
- Chestnut-collared longspur
- Northern pintail
- Mallard
- Lark bunting
- Wilson’s phalarope
- Long-billed curlew

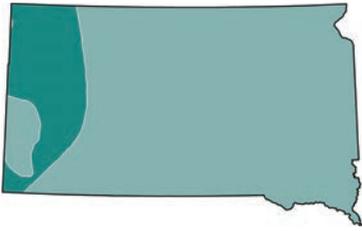
Southern Plains Focus Area Habitat Targets

- Grassland Restoration: 800 acres
- Grassland Enhancement: 20,000 acres
- Wetland Establishment: 200 acres

Southern Plains Focus Area Partnership Targets

- Private Landowner Agreements: 80
- Partnerships: 176
- Technical Assistance: 110 staff/days
- Percent Leveraging: 70% or more of non -121 sources

High Plains Focus Area



The South Dakota High Plains Focus Area is characterized by large tracts of shortgrass prairie interspersed with a wide variety of riparian features (Rieger 2006). Greater sage-grouse core areas (SDGFP 2014) continue to be the biological core of the High Plains Focus Area, however the focus area boundary was adjusted significantly from previous years based on the Service-derived estimate of the historic range of the greater sage-grouse. In addition, GBCA spatial data was utilized to confirm the new focus area boundary included a high proportion of the largest contiguous GBCAs remaining in

western South Dakota. Breeding Bird Survey data was also used to confirm the importance of the revised focus area to high focal species including Baird's sparrow, Sprague's pipit and grasshopper sparrows.

As in other portions of South Dakota, PFW efforts within the High Plains Focus Area are closely aligned with the conservation goals of the North American Waterfowl Management Plan (Service 2012a), the National Partners in Flight Plan (Rich et al. 2004, Pashely et al. 2000) and the Northern Great Plains Joint Venture Implementation Plan (Pool and Austin 2006). All of these bird conservation efforts note landscape-scale habitat work as an effective vehicle for bird conservation. Additionally, the focus area boundary refinement and the change in focal species strategically support the Service Region 6 priorities (Service 2015-A) which include the following

as priority goal: (1) "Reverse the declining trend of grassland nesting migratory birds" and (2) "Ensure self-sustaining populations of sage-dependent birds and other sagebrush associated species".



A grazing management project completed by the South Dakota PFW program in the High Plains Focus Area. Photo by Steve Fairbairn, USFWS.

High Plains Focus Area Focal Species

- Greater sage-grouse
- Northern pintail
- Lark bunting
- Sprague's pipit
- Baird's sparrow
- Grasshopper sparrow
- Chestnut-collared longspur
- Wilson's phalarope
- Long-billed curlew

Implementation strategy for habitat objectives: Upland habitat objectives will primarily be met by partnering with local landowners to implement grazing management plans that are tailored to the more arid landscapes of the High Plains Focus Area. More specifically, the PFW program will continue to work closely with local Conservation Districts and NRCS staff to identify and implement grazing management projects that benefit ranchers and trust species, particularly greater sage-grouse. The PFW program will continue to integrate closely with SGI, NRCS and BLM staff to ensure the PFW program most strategically contributes to the conservation of sage brush habitats and associated wildlife species in the High Plains Focus Area.

Implementation strategy for partnership objectives: Primary partners assisting the SD PFW program in the High Plains Focus Area include the National Fish and Wildlife Foundation, Pheasants Forever, SDACD, SDGDP and SDGC. Most importantly however, new landowner partners will be critical to successfully implementing shared conservation goals in the High Plains Focus Area. New landowner partners will primarily be ranchers who are interested in enhancing 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 grazing deferment plans for their operations. The SD PFW program will continue to secure a high

High Plains Focus Area Habitat Targets

- Grassland Restoration: 300 acres
- Grassland Enhancement: 25,000 acres
- Wetland Establishment: 90 acres

High Plains Focus Area Partnership Targets

- Private Landowner Agreements: 120
- Partnerships: 264
- Technical Assistance: 75 staff/days
- Percent Leveraging: 70% or more of non-1121 sources

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. Special emphasis will be placed

on securing additional funding opportunities in support of greater sage-grouse conservation.



The South Dakota PFW program High Plains Focus Area includes 100% of the greater sage-grouse core areas identified in the South Dakota Game, Fish, and Parks 2014–2018 South Dakota Greater Sage-Grouse Plan. Photo by Joe Nichols, USFWS.



The South Dakota PFW program High Plains Focus Area is primarily defined by large tracts of shortgrass prairie. Photo by Joe Nichols, USFWS.

South Dakota Statewide Goals



Improve Information Sharing and Communication

Objectives

- Participate in, or contribute to 15 youth activities throughout South Dakota.
- Participate in, or contribute to 10 Congressional outreach activities.
- Participate in 20 NRCS state technical committee meetings or associated sub-committee meetings throughout South Dakota.
- Participate in 15 meetings of the PPJV and NGPJV.

Implementation Strategy

As in previous versions of the SD PFW Strategic Plan, the primary vehicle for improved communication with landowners will be the ongoing relationship between the SD PFW program and SDACD. SD PFW staff will continue to regularly participate in county-level Conservation District meetings and state-level SDACD functions. In recent years the SD PFW program has also greatly expanded our landowner-based partnership with the SDGC. SD PFW staff regularly attend SDGC functions. In

addition, the SD PFW program and SDGC recently developed a coordinated system for introducing PFW landowner partners to the technical assistance programs available through SDGC. The SD PFW program will continue to remain very active in the NRCS state technical committee and program-specific sub-committees. Likewise, 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 staff are standing members of the Northern Great Plains Working Group and the technical committees of both the PPJV and NGPJV.

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.



South Dakota PFW program biologist assists the South Dakota Grassland Coalition with their annual "Grazing School." Photo by Chuck Pyle, USFWS.



South Dakota PFW program staff participate in wide variety of partner events including the South Dakota Association of Conservation Districts (SDACD) annual convention pictured here. USFWS Photo.

- Annually complete Individual Development Plans (IDPs) for the entire South Dakota PFW staff.
- Strategically place new PFW biologists in initial positions where they can be effectively mentored by senior PFW staff.
- Annually enter 150-190 new PFW projects into HABITS and integrate the same data into the HAPET-PLGIS to assess biological outcomes.

Implementation Strategy

Most PFW training needs during 2017–2021 will be met through the annual SD PFW staff meeting. Annual PFW training provides a mix of policy updates, technical training and guest presentations. As a standing practice, the annual SD PFW training session often includes key conservation partners from throughout South Dakota. The annual meetings of the South Dakota chapter of The Wildlife Society also provide a valuable opportunity for additional training and coordination with conservation partners from throughout the state. In addition, all SD PFW staff complete IDPs each year and are encouraged to pursue other training sessions and career development opportunities.

Implementation Strategy

The SD PFW program's recently implemented monitoring plan will serve as our primary guide for increasing accountability and evaluating program effectiveness. As in previous years, we will continue

Increase Accountability

Objectives

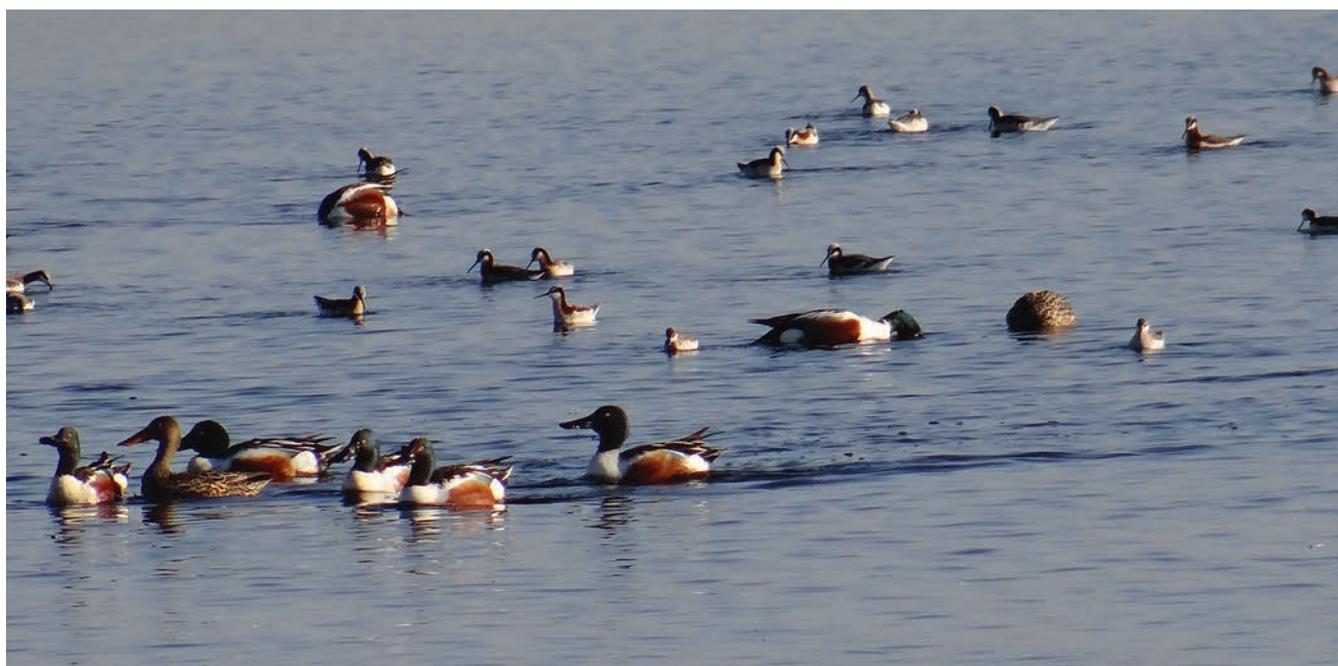
- Complete 850 Level 1 “On-Site” status reviews of individual PFW projects as outlined in the SD PFW Monitoring Plan. This represents 100% of the PLAs estimated to be completed during 2017–2021 throughout all of South Dakota.
- Complete 1,195 Level 1 “Off-Site” mid-term status reviews of individual PFW projects as outlined in the SD PFW Monitoring Plan.
- Complete Level-II biological monitoring on 85 individual PFW projects as outlined in the SD PFW Monitoring Plan.
- Complete 5 annual narratives documenting PFW activities throughout South Dakota.



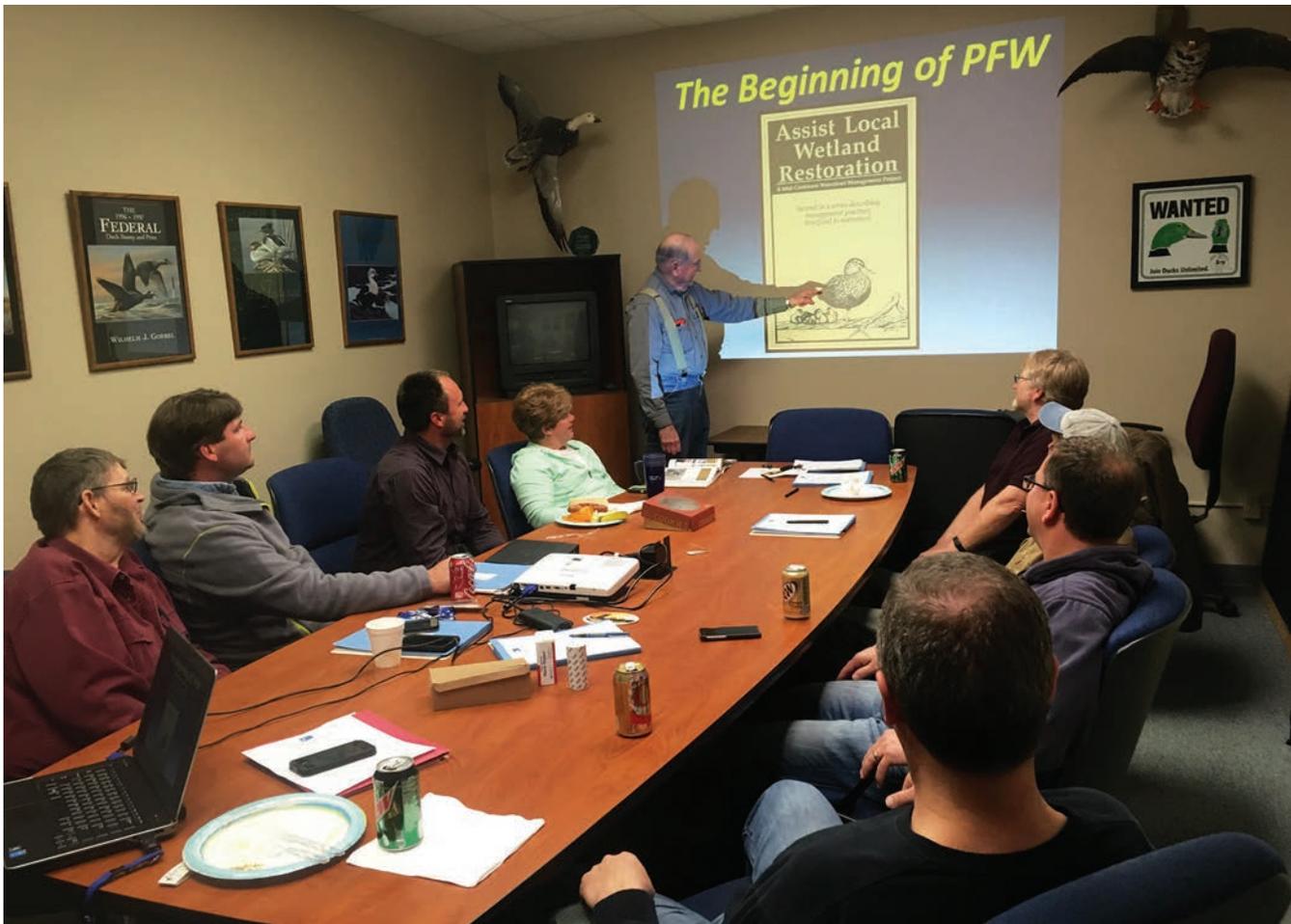
South Dakota PFW staff partner with South Dakota Association of Conservation Districts to host the annual South Dakota Association of Conservation Districts convention for over 200 landowners and other conservation partners. USFWS Photo.



The South Dakota PFW program partnered with the city of Brookings, SD to complete a 2.3 acre pollinator seeding with 44 native forb species as part of the National Wildlife Federation's Mayor's Monarch Challenge. Additional partners included the Brookings Wildlife Federation, Pheasants Forever, Milborn seeds and the Brookings School District. Photo by Boyd Schulz, USFWS.



Wilson's phalaropes and northern shovelers on a HAPET shorebird route annually surveyed by the South Dakota PFW program. Photo by Kurt Forman, USFWS.



Carl Madsen, one of the original pioneers of the PFW program, discusses conservation philosophy at the 2016 South Dakota PFW annual staff meeting. USFWS Photo.

to actively develop and maintain a full GIS coverage and associated database of all historic PFW projects in South Dakota. Likewise, all new PFW projects will 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-specific benefits. Initial benefits will be quantified for PFW wetland and grassland projects and their use by mallards, gadwall, blue-winged teal, northern shovelers and northern pintails in the Prairie Pothole Focus Area. In addition, the SD PFW program has a long history of coordinating with researchers at South Dakota State University. We will continue to look for opportunities to partner on wetland and grassland research projects with a direct nexus to applied conservation. In addition, we will seek to support additional research opportunities in the arena of “human dimensions” with an emphasis on the social and economic factors that influence land-use decisions.

Biological Outcomes (Prairie Pothole Focus Area)

The SD PFW program continues to work closely with wildlife researchers to quantify biological outcomes. Most notably, PFW staff have collaborated with the Service’s Region 6 HAPET office to assess duck recruitment and breeding pair outcomes in the PFW Prairie Pothole Focus Area of South Dakota. Specifically, published data and peer reviewed HAPET models were used to model recruitment and habitat protection benefits for five key upland nesting duck species (mallard, gadwall, blue-winged teal, northern shoveler, northern pintail). For additional details, see the Level III Section of the South Dakota Monitoring Plan.

Monitoring Plan

Background

Since the program’s inception, the SD PFW program has completed approximately 6,800 individual projects totaling over 805,000 acres throughout the state. The strategic foundation of the SD PFW program is largely based upon the broad strategies and goals of the North American Waterfowl Management Plan (NAWMP 2012), Prairie Pothole Joint Venture Implementation



Conducting vegetation surveys as part of a Rangeland Monitoring Workshop. USFWS photo.

Plan (Ringelman 2005), 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), Northern Great Plains Joint Venture Implementation Plan (Pool and Austin 2006), and the North American Waterbird Conservation Plan (Beyersbergen et al. 2004). A primary theme among all the major bird conservation plans in the Northern Great Plains is strategically targeted landscape-scale conservation, especially of wetland and grassland resources. Accordingly, the SD PFW program has consistently focused on wetland and grassland conservation. For example, of the 4,957 SD PFW projects completed during the period 1998-2015, 97.1% were specifically implemented for grassland or wetland conservation. Furthermore, 100% of the SD PFW wetland and grassland conservation effort was implemented via the reoccurring use of four primary conservation practices (grassland restorations, grassland enhancements, wetland restorations and wetland establishments). SD PFW's strategic emphasis on wetland and grassland conservation was reaffirmed in the 2007, 2012 and 2017 Region 6 PFW Strategic Plans (Service 2007, Service 2012).

The benefits of wetland and grassland conservation are well documented. Over the last six decades hundreds

of research projects and related publications have been completed throughout the Northern Plains assessing grassland/wetland habitats and associated wildlife. In addition, a wide variety of ongoing monitoring projects are active in the state (Attachment 1). Specific to PFW projects, the SD PFW program has worked closely with the Service's Region 6 HAPET to quantify biological outcomes for five key upland nesting duck species (mallards, blue-winged teal, gadwall, northern pintail and northern shoveler) in the SD PFW Prairie Pothole Focus Area. In addition, the SD PFW program has worked closely with South Dakota State University to evaluate specific SD PFW conservation practices (Larson 1997, Roush 1998, Juni 2001, May 2001). The goal of the subject SD PFW monitoring plan is to augment previous monitoring efforts with a formalized strategy based on a larger sample size.

Level I - Status Reviews

The SD PFW program will conduct Level I status reviews at two temporal scales. On-site field visits will be conducted for all new projects. In addition, off-site mid-term status reviews for older projects will be conducted remotely via a combination of Region 6 PLGIS data and imagery from the National Agricultural Imagery Program (NAIP).

Level I On-Site Methods

SD PFW staff will complete a standardized Region 6 PFW Status Review Form for each newly finished PFW project (Attachment 2). SD PFW staff will physically review each newly completed project to ensure that prescribed conservation practices were installed in accordance with provisions of the Private Landowner Agreement (PLA). The site visit and Status Review Form will be completed before the payment process is initiated and the Status Review Form will be submitted to the Brookings PFW office as part of the payment initiation request. Completed Status Review Forms will be incorporated into the official PLA file at the field level and also attached to

the PLA copies retained in the Brookings PFW office. It is estimated that approximately 170 new SD PFW projects will undergo level 1 on-site field reviews each field season.

Level I Off-Site Methods

SD PFW staff will utilize a combination of Region 6 PLGIS data and NAIP imagery to remotely conduct mid-term status reviews of a sub-set of older Wildlife Extension Agreements (WEAs) and PLAs. The combination of PLGIS polygons and the most current NAIP imagery will provide a means to remotely review the basic status of the four most common SD PFW conservation practices (grassland enhancements,

Year Status Review to be Completed	Year of PFW Agreements	Sample Size	Year of NAIP Imagery
2016	2011	208	2014
2017	2012	309	2016
2018	2013	266	2016
2019	2014	246	2018
2020	2015	166	2018

SD PFW Conservation Practice	Key Habitat Attributes (Presence or Absence)	Trust Species* (Presence or Absence Only)	Trust Species** (Survey-Count)
Grassland Enhancement	Perennial Cover (Y/N) Native Grass Species (Y/N) Native Forb Species (Y/N) Milkweed (Y/N)	Grassland Songbirds (Y/N) Shorebirds (Y/N) T&E Species (Y/N) Monarch Butterfly (Y/N)	N/A
Grassland Restoration	Perennial Cover (Y/N) Native Grass Species (Y/N) Native Forb Species (Y/N) Milkweed (Y/N)	Grassland Songbirds (Y/N) Shorebirds (Y/N) T&E Species (Y/N) Monarch Butterfly (Y/N)	N/A
Wetland Establishment	Hydrology (Y/N) Hydrophytes (Y/N) Mudflats (Y/N)	N/A	Number of Breeding Waterfowl Pairs Utilizing the Project Number of Shorebirds, T&E Species and Waterbirds Utilizing the Project
Wetland Restoration	Hydrology (Y/N) Hydrophytes (Y/N) Mudflats (Y/N)	N/A	Number Breeding Waterfowl Pairs Utilizing the Project Number of Shorebirds, T&E Species & Waterbirds Utilizing the Project

*One centrally located fixed width belt transect (200 meters x 100 meters) will be surveyed in each grassland tract for the presence/absence of grassland passerines. Standardized field techniques and survey parameters will be used (Salo 2003, Bakker and Higgins 2009). Additionally, the presence/absence of shorebirds, T&E species and monarch butterflies will also be recorded during the same survey on a standardized data card.

**Standard HAPET 4-square mile survey techniques and data cards will be used to assess breeding waterfowl pairs. In addition, all shorebirds, waterbirds and T&E species observed on the sampled wetlands will also be recorded during the same survey.

grassland restorations, wetland establishments and wetland restorations). The following framework and schedule (Table 1) will serve as a guide to strategically implement the remote status review protocol for approximately 1,195 projects.

Level II - Site Specific Biological Monitoring

SD PFW staff will complete a combination of presence/absence surveys and counts of key Federal Trust Species and associated habitat attributes on a stratified random sample of 10% of SD PFW projects. The random sample will be stratified by the four primary SD PFW conservation practices (grassland restorations, grassland enhancements, wetland restorations and wetland establishments). The annual sample universe will consist of SD PFW projects in HabITS completed two years prior to the current fiscal year. The two-year interval will provide a suitable amount of time for the vegetation and hydrology components of most projects to become fully established. For example, in FY 2016 the stratified random sample would consist of 10% of the SD PFW projects completed in FY 2014. Habitat attribute data and focal species data will be collected on the same site visit. A one-page standardized SD PFW grassland status review form (Attachment 3) will be used to collect data on each grassland site in the sample. Standard HAPET 4-square mile data cards will be used on sampled wetland sites (Attachment 4). Completed SD PFW grassland status review forms and HAPET data cards will be incorporated into the official PLA file at the field level and also attached to the PLA copies retained in the Brookings PFW office. During the period 2017–2021, the SD PFW sampling universe for Level II biological monitoring is estimated to be 850 total sites, with a corresponding sample size of 85. The following core biological and habitat metrics (Table 2) will be assessed for the four most common SD PFW conservation practices.

Level III - Landscape-Scale Biological Monitoring

The South Dakota PFW program will continue to work closely with the Region 6 HAPET office to quantify biological outcomes for five key upland nesting duck species (mallards, blue-winged teal, gadwall, northern pintail and northern shoveler) in the SD PFW Prairie Pothole Focus Area. Specifically, PFW will continue to collaborate with HAPET to assess breeding pair and recruitment benefits associated with new PLAs in the Prairie Pothole Focus Area. Specific SD PFW conservation practices to be evaluated include wetland restorations, wetland establishments (i.e. wetland creations), grassland restorations and grassland enhancements. Closely coordinating with HAPET on Level III monitoring will help assure that the work of the SD PFW program is fully integrated at the landscape-scale with the PPJV Implementation Plan and is also well supported by current peer-reviewed literature. For example, a growing body of data documents that the primary demographic factors influencing population growth of mid-continent mallards are nest success and breeding survival. Thus, the most effective conservation action for mallards (and by inference all upland nesting ducks) is to conserve those landscape features that enhance nest success and breeding survival. The SD PFW program strives to do this by conserving high priority landscapes as recruitment sources for ducks. These actions also have a high likelihood of benefitting additional trust species, most notably neotropical and temperate migrant songbirds. Conserving the largest possible tracts of upland nesting habitat is of mutual benefit to prairie nesting ducks, grassland songbirds and shorebirds. Working closely with landowners is recognized as an effective tool to protect and enhance the largest remaining grassland/wetland complexes in the Northern Great Plains (Higgins et al. 2002). The Level III landscape-scale biological monitoring protocol will involve three distinct steps (Flowchart)– 1: Coordinate with HAPET to generate projected biological outcome estimates, 2: Annually pro-rate biological outcomes by actual PFW accomplishments and, 3: Annually summarize actual PFW biological outcomes and compare to projected outcomes.

Level III Landscape Scale Biological Monitoring Flowchart

Step 1: Coordinate closely with HAPET to develop biological outcome estimates for the primary conservation practices completed in the South Dakota PFW Prairie Pothole Focus Area (2017-2021)

State	Focus Area	Project Type	Class	Target Acres	Term (Yrs)	Annual Pairs ¹	Cumulative Pairs ²	Annual Productivity ³	Cumulative Productivity ⁴
South Dakota									
> 25 Breeding Duck Pairs East River									
Wetland Restoration									
			Temporary	72	10	74	737	131	1,305
			Temporary	108	99	110	10,938	196	19,380
			Seasonal	108	10	109	1,086	194	1,938
			Seasonal	162	99	163	16,134	291	28,779
			Semipermanent	180	10	113	1,134	137	1,369
			Semipermanent	270	99	170	16,840	204	20,323
			Totals	900		739	46,869	1,153	73,093
			Wetland Creation						
			Semipermanent	200	10	126	1,260	342	3,420
			Totals	200		126	1,260	342	3,420
			Grassland Restoration ⁵						
			New	1,200	10			260	2,602
				2,800	99			607	60,097
			Totals	4,000				867	62,699
			Grassland Enhancement ⁶						
			Maintenance	95,000	10			20,596	205,960
			Totals	95,000				20,596	205,960
			Grand Totals						
				1st 10 Years		8,653		229,581	
				Remaining Years		39,476		115,591	
				Cumulative			48,129		345,172

Note: South Dakota and North Dakota used identical definitions, assumptions and expansion factors as the basis for generating biological outcome estimates. See page 202 for details.

Step 2: Annually summarize HabITS derived accomplishment data for PFW projects completed in the South Dakota Prairie Pothole Focus Area. Accomplishments are then pro-rated according to HAPET estimates of projected pairs and recruits to generate annual biological outcome estimates.

Step 3: Annually summarize biological outcomes from the SD PFW Prairie Pothole Focus area and compare actual biological outcomes to projected biological outcomes.

Year	Actual Cumulative # of Breeding Pairs Benefited	Projected Goal for Cumulative # of Breeding Pairs Benefited	Actual Cumulative # of Recruits Benefitted	Projected Goal for Cumulative # of Recruits Benefitted
2017	To be determined	9,625	To be determined	69,034
2018	To be determined	9,625	To be determined	69,034
2019	To be determined	9,625	To be determined	69,034
2020	To be determined	9,625	To be determined	69,034
2021	To be determined	9,629	To be determined	69,036

Attachment 1

South Dakota Ongoing Monitoring Efforts Listed by Focus Area

Prairie Pothole Focus Area

- A. Four Square Mile Breeding Waterfowl Survey
 - i. Annual survey of the five most common breeding waterfowl species in South Dakota.
 - ii. Surveys are conducted on randomly selected wetlands within four square mile blocks of habitat and have been conducted for the past 29 years.
 - iii. Survey coordinated by the Service Habitat and Population Evaluation Team (HAPET) and conducted by the Service.
- B. North American Breeding Waterfowl Survey
 - i. Annual breeding waterfowl survey of over 80,000 miles of waterfowl habitat. Surveys are conducted from the air and ground.
 - ii. Survey has been conducted for the past 50 years and is believed to be the most extensive, comprehensive, long-term annual wildlife survey in the world.
 - iii. Survey conducted by the Service.
- C. Breeding Shorebird Survey
 - i. Annual survey of six breeding shorebird species.
 - ii. Surveys are conducted on 25 mile routes with survey points every half mile.
 - iii. Surveys are conducted twice a year with the first period being the last week of April through the first 10 days of May and the second period being from the last week of May to the first week of June.
 - iv. Survey coordinated by the HAPET and conducted by the Service.

High Plains Focus Area

- A. Greater Sage-Grouse Monitoring
 - i. Annual lek counts that have been ongoing since 1971.
 - ii. The number of males on 22 priority leks are counted.
 - iii. Survey is conducted by the South Dakota Department of Game, Fish and Parks (GFP).
- B. Pheasant Brood Survey
 - i. Annual pheasant brood survey conducted on 109 brood routes that are 30 miles long each.
 - ii. Surveys are conducted from July 25 to August 15 each year.
 - iii. Survey is conducted by SD GFP.
- C. SD Colonial Water Bird Project
 - i. Thirty-three species of colonial and semi-colonial waterbirds that breed in SD are annually surveyed.
 - ii. Survey is conducted by the Rocky Mountain Bird Observatory (RMBO).

Southern Plains Focus Area

- A. Grassland Bird Survey
 - i. Point count survey in wet meadow and grassland area consisting of over 200 points on LaCreek National Wildlife Refuge.
 - ii. Survey is conducted by Service and RMBO.
- B. Trumpeter Swan Survey
 - i. Aerial survey of western SD for trumpeter swans.
 - ii. Survey has been conducted for the past 30 years.
 - iii. Survey is conducted by the Service.
- C. Prairie Grouse Survey
 - i. Annual spring lek count using both “traditional” and “listening station” methods. Survey has been conducted since the 1940s.
 - ii. Survey is conducted by the GFP.



Attachment 2 SD PFW Level I Monitoring Form



SITE VISIT REPORT

Landowner Agreement # _____

Prism FA Award # _____

Final or Interim

Select One

Scope of Work

(Describe the restoration activities ex. fence and/or livestock watering facilities were installed to facilitate proper grazing management, grassland enhancement and migratory bird conservation).

Project Status

(To be used for an interim report ie...what's been done up to the 1 year mark)

(Example Language)-About 2 paragraphs

Species Benefited

_____. (You can reference conservation plans as/if you deem necessary)

Optional/ Literature Cited: (Example)

U.S. Fish and Wildlife Service [USFWS]. 2012. Partners for Fish and Wildlife Program Mountain-Prairie Strategic Plan, 2012–2016. U.S. Fish and Wildlife Service, Lakewood, Colorado.

Payment Method

Describe selection of the payment method (Ex. SF-270, this is a private landowner who chose to be waived from the ASAP system)

As the PFW biologist managing this project I certify that Landowner Agreement # ____ (project type ex. Wetland enhancement) has been completed (or for interim...is in the process of being completed) in accordance with all provisions of the agreement.

PFW Biologist

Date

Landowner / Cooperator

Date



Attachment 3

SD PFW Grassland Transect Survey Form



Transects are 200m long by 100m (50m each side of center) wide and located in a representative portion of the tract

Observer _____ Date _____ County _____

LA# _____ Conservation Practice (grazing system or seeding) _____

Wind Speed _____ Temperature _____ Start Time _____ End Time _____

Primary Habitat Attributes

	YES	NO
Perennial Nesting Cover Present		
Native Grass Species Present		
Native Forb Species Present		
Milkweed Present		

Primary Trust Species

	YES	NO
Grassland Passerines Present		
Shorebirds Present		
Threatened & Endangered Species Present		
Monarch Butterflies Present		
Waterfowl Present		

Trust Species Positively Identified in the Transect

List All Species:

