United States Department of Agriculture

Biennial Monitoring Evaluation Report (BMER)

for the Dakota Prairie Grasslands

Fiscal Year 2021

Forest Service **Dakota Prairie Grasslands** **February 2022**

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Acronyms & Glossary

Acronym	Definition
BMER	Biennial Monitoring Evaluation Report
BMP	Best Management Practices
CWA	The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. Its objective is to restore and maintain the chemical, physical, and biological integrity of the nation's waters; recognizing the responsibilities of the states in addressing pollution and providing assistance to states to do so, including funding for publicly owned treatment works for the improvement of wastewater treatment; and maintaining the integrity of wetlands.
DPG	Dakota Prairie Grasslands
EPA	Environmental Protection Agency
FACTS	The Forest Service's Natural Resource Manager (NRM) Forest Activity Tracking System (FACTS) is the agency standard for managing information about activities related to fire/fuels, silviculture, and invasive species. FACTS is an activity tracking application for all levels of the Forest Service.
FS	Forest Service
FY	Fiscal Year (01-October to 30-September)
GIS	A Geographic Information System (GIS) is a conceptualized framework that provides the ability to capture and analyze spatial and geographic data. GIS applications (or GIS apps) are computer-based tools that allow the user to create interactive queries (user-created searches), store and edit spatial and non-spatial data, analyze spatial information output, and visually share the results of these operations by presenting them as maps.
HUC	Hydrologic unit code (HUC) The numerical identifier of a specific hydrologic unit or drainage area consisting of a two-digit sequence for each specific level within the delineation hierarchy.
IDT	Interdisciplinary Team
INFRA	Infrastructure application
LiDAR	Light Detection and Ranging. LiDAR is a method for determining ranges (variable distance) by targeting an object with a laser and measuring the time for the reflected light to return to the receiver. LiDAR can also be used to make digital 3-D representations of areas on the earth's surface and ocean bottom, due to differences in laser return times, and by varying laser wavelengths. It has terrestrial, airborne, and mobile applications.
LMNG	Little Missouri National Grassland
NAIP	The National Agriculture Imagery Program (NAIP) acquires aerial imagery during the agricultural growing seasons in the continental U.S. A primary goal of the NAIP program is to make digital ortho photography available to governmental agencies and the public within a year of acquisition.
NA	Not Applicable
NHD	The National Hydrography Dataset (NHD) is a digital database of surface water features used to make maps. It contains features such as lakes, ponds, streams, rivers, canals, dams, and stream gages for the United States. Cartographers can link to or download the NHD to use in their computer mapping software. The NHD is used to represent surface water on maps and is also used to perform geospatial analysis. It is a digital vector geospatial dataset designed for use in geographic information systems (GIS) to analyze the flow of water throughout the nation. The dataset represents over 7.5-million miles of streams/rivers and 6.5-million lake/ponds.
NRM	Natural Resource Manager (NRM) is responsible for developing, maintaining, and enhancing over 40 programmatic software applications in support of the Forest Service mission. These applications are used by more than 9,000 Forest Service employees, and are designed to comply with laws, regulations, and policy.

Acronym	Definition
PFC	The abbreviation PFC describes both the assessment method and a defined, on-the-ground condition of a riparian area. The on-the-ground condition termed PFC refers to how well physical processes are functioning. A system in PFC has a high likelihood of withstanding a moderately high flow event (such as the 5-, 10- or 25-year flow). If impairment does occur with higher magnitude events, a system in PFC can recover more quickly. The PFC assessment method refers to a consistent approach for considering hydrologic, vegetative, and geomorphic attributes and processes to assess the condition of riparian areas at a point in time. Information pertaining to 17 attributes and processes of a riparian system is foundational to determining its physical function and is synthesized on an assessment form.
RCPP	Regional Conservation Partnership Program
RVI	Ratio Vegetation Index
SD DENR	South Dakota Department of Environment & Natural Resources
SNG	Sheyenne National Grassland
USGS	United States Geological Survey
WCATT	The Watershed Classification Assessment Tracking Tool (WCATT) is a national web-based map application used to classify and track watershed condition classes using a core set of aquatic and terrestrial, physical and biological indicators and attributes.
WCC	Watershed condition classification (WCC) is the process of describing watershed condition in terms of discrete categories (or classes) that reflect the level of watershed health or integrity. In the context of this framework, watershed health and integrity are conceptually the same: watersheds with high integrity are in an unimpaired condition in which ecosystems show little or no influence from human actions.
WIT	Watershed Improvement Tracking (WIT) manages data, observations, and planning details about activities to improve watershed and aquatic ecosystem health and function. It is a restoration activity tracker for wildlife, watershed, fisheries, and soil program areas. The location of each restoration activity must be mapped in WIT. The mapping and reporting products deliver valuable improvement information to project leaders, program managers, and public relations staff.
WRAP	Watershed Restoration Action Plans (WRAP) are programmatic documents in which the Forest Service describes existing resource conditions and identifies possible management actions that could be taken to move the Agency towards a desired future condition.

Summary on the status of Monitored Plan Components and Adaptative Management Recommendations

Table 1. Summary of Findings for All Plan Monitoring Items

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION [2] *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT [2] *If a change may be warranted, where may the change be needed?* [2]
GEOLOGY and PALEONTOLOGY				
MON-GEO-01 To what extent are geologic and Paleontological resources being made available for the education, use or enjoyment of the general public?	2021	(B) Uncertain – Based on the need to compile additional data and methods.	Yes	Monitoring Plan: change monitoring question to align better with the plan objective Suggested change: What is the status of providing interpretation of geological and paleontological sites? Also suggest the development of methodology to assess the status of the objective.
Proposed Methodology to address suggested changes to align monitoring plan question with plan objective and status. • Define clearly what an interpretive site is. • Confirm the number of known paleontological sites the DPG has, in order to compare with the 20% stated goal in the LRMP. • Complete an accurate assessment of displayed or curated specimens excavated from the DPG. • Determine if the 20% goal in the LRMP is reasonable compared to the number of sites and the numbers specimen curated.				
SOIL INTEGRITY				
MON-SOIL-01 To what extent have soils been disturbed and restored?	2021	(B) Uncertain – Continue collecting, updating, and acquiring data.	Yes	Monitoring Plan: Include GIS library as a data source for rangeland infrastructure in the monitoring program.
AQUATIC				

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS** [1] *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** [2] *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** [2] *If a change may be warranted, where may the change be needed?*[2]
MON-AQU-01 What is the condition of perennial and intermittent streams and high value spring and high value wetlands?	2021	(B) Uncertain – More data is needed to determine a trend. Goal 1a Objective 2: Riparian areas that are "self-perpetuating …" are in PFC The monitoring directly addresses Goal 1a Objective 3.	Yes	Management Action: Initiate survey of high value springs, and high value wetlands, as funding allows. Discuss the addition of "riparian restoration" as an adaptive management tool in future vegetation management plans with leadership. Plan for outyear budgets for future district-wide PFC surveys.
MON-AQU-02 What is the water quality condition?	2021	Watershed Condition Class – (E) Yes – WCC data directly addresses the first two bullet points, improving 20% of HUCs and utilizing criteria of geomorphic integrity.	Yes	Monitoring Plan: Changes will be made in a future agency-wide monitoring protocol revision.
		303(d) streams – (B) Uncertain – 303(d) assessments directly address the 3rd bullet point, improving water quality.	No	
		Water quality – (B) Uncertain – Water quality assessments directly address the 3rd bullet point, improving water quality.	Yes	Monitoring Plan: DPG-wide water quality sampling potentially in 2022 or 2023.

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MON-AQU-03 What is the effectiveness of Best Management Practices in preventing degradation to water bodies?	2021	BMP Total number prescribed and implemented – (C) Uncertain	Yes	Monitoring Plan*
		BMP Implementation, Effectiveness and Composite ranking – (E) Yes	Yes	
***MANAGEMENT RECOMMENDATIONS:** 1. Drop plan objectives from this question as they are answered in AQU-02: Improve 20% of 6th Hydrologic Unit Code (sub-watershed) level watersheds from Class II to Class I or from Class III to Class II. Maintenance of unimpaired watersheds and restoration of impaired watershed are high priorities. 2. Utilize criteria of geomorphic integrity, water quality integrity, biotic information, watershed vulnerability, and potential partnerships to prioritize watershed improvement projects. 3. Change indicator of "BMP total number prescribed and implemented" to include total number of BMP surveys only.				
MON-AQU-04 To what extent have surface water, sub-surface flows, and aquifers been protected from contamination by management actions?	2021	(E) Yes – Based on wells are being decommissioned appropriately, spill cleanup is preventing contamination, and BMPs are being applied effectively.	No	NA
BOTANY				
MON-BOT-01A What is current population status of *Platanthera praeclara* (western prairie fringed orchid)?	2021	(E) Yes – Monitoring of the orchid population has occurred for many years and results demonstrate that the population fluctuates annually, but overall is maintained.	No	NA
MON-BOT-01B What is the current and potential habitat capability for *Platanthera praeclara*	2021	(E) Yes – Orchids have been surveyed across the Sheyenne National Grassland over many years; we are able to identify current and potential habitat. It	No	NA

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(western prairie fringed orchid)?		appears the habitat is being maintained.		
MON-BOT-01C What management actions and naturally occurring events have influenced change to *Platanthera praeclara* (western prairie fringed orchid) status and/or its habitat?	2021	(B) Uncertain – Flooding events between 2009 and 2011 brought in an invasive hybridized cattail that is able to sustain in less water. It has the potential to outcompete the orchid.	Yes	Monitoring Plan: Orchid habitat dominated by invasive species should be tracked to see if this affects orchid populations. Include an additional indicator of acres of orchid habitat in the invaded state. Vegetation treatments and orchid populations need to be evaluated further to determine if there is a cause-and-effect relationship.
MON-BOT-02 What is the status of rare plants?	2021	(B) Uncertain – The extent of potential habitat across the DPG's four grasslands for most of the listed R1 DPG sensitive plant species is unknown. Additional monitoring needs to occur among all districts for DPG to evaluate the status of conservation of rare plants.	No – the new Regional Botany Protocol and DPG data collection process along with attributes in the DPG GIS Layer there is no need for changes. Efforts to use these tools to further make botany data collection consistent throughout the Districts is needed.	NA
WILDLIFE				
MON-WLD-01A What is the current population status of black-tailed prairie dog	2021	(D) No – Lacking one complex on Grand River Ranger District (based on 2018 mapping data). Striving for 2 complexes on	Yes	Monitoring Plan: Control efforts should be evaluated to determine if efforts have had

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(*Cynomys ludovicianus*)? MON-WLD-01B What is the current black-tailed prairie dog occupancy? MON-WLD-01C What management actions and naturally occurring events have influenced change to black-tailed prairie dog status and/or its habitat?		Grand River National Grassland. Control efforts may influence progress toward plan objectives.		negative impacts to establishing or maintaining desired complex numbers. Recommend merging MON-WLD-01B with MON-WLD-01A due to redundancy.
MON-WLD-02A What is the current population status of 1) sage grouse (*Centrocercus urophasianus*), 2) sharp-tailed grouse (*Tympanunchus phasianellus*), and 3) greater prairie chicken (*Tympanuchus cupido*)?	2021	Sharp-tailed Grouse: (E) Yes – Implementation of Plan Component(s) are trending, progressing, and/or conducted as desired (On SNG, however, discouragement of sharp-tailed grouse numbers may be necessary for prairie chicken to persist). Greater Sage Grouse & Prairie Chicken: (D) No	Yes – For Greater Prairie Chicken & Greater Sage Grouse.	Management Action: If prairie chicken & sage grouse are to persist, more focused management such as prescribed fire, tree reduction, invasive species management and native restoration will need to be done on the species habitat.
MON-WLD-02B What is the current and potential habitat capability for 1) sage grouse, 2) sharp-tailed	2021	(C) Uncertain	Yes	Management Action: Visual Obstruction on SNG:

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grouse, and 3) greater prairie chicken?				Analyze past polygon mapping data A more detailed assessment of sage grouse habitat is needed to evaluate future management options.
MON-WLD-02C What management actions and naturally occurring events have influenced change to the status and/or habitat for 1) sage grouse, 2) sharp-tailed grouse, and 3) greater prairie chicken?	2021	(C) Uncertain	Yes	Management Action: Habitat Management data records need to be recorded at a scale that is sensitive to representative distribution of grouse monitoring sites. Monitoring Plan: Drop AUMs from indicators in monitoring program.
MON-WLD-03 What is the population and habitat status of the Dakota Skipper (*Hesperia dacotae*) in high potential habitat?	2021	(B) Uncertain – Although occupancy survey efforts have been initiated and are ongoing, the extent of the species range has not been surveyed for high quality habitat or individuals. It is expected that this effort will continue over the long-term given limitations in occupancy surveys.	No	

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MON-WLD-04 What is the distribution and status of Northern Long-Eared Bat (*Myotis septentrionalis*)?	2021	(C) Uncertain – Based on lack of adequate monitoring protocols to assess the status of the Northern Long-Eared Bat.	Yes	Monitoring Plan: Need to incorporate bat habitat considerations into management and develop a monitoring program.
MON-WLD-05 What is presence of Poweshiek Skipperling (*Oarisma poweshiek*) during Dakota Skipper surveys?	2021	(D) No – Based on the lack of detections during targeted surveys.	Yes	Monitoring Plan: Pending confirmation of extirpated status, re-evaluate need for monitoring.
MON-WLD-06 Are management actions effective in protecting Golden Eagle nests?	2021	(C) Uncertain – The indicator is not adequate to help understand the status of the plan component.	Yes	Monitoring Plan: Reevaluate indicator and monitoring plan. Monitoring efforts and indicator should be refocused on maintaining the inventory of Golden Eagle nests to ensure stipulations are effectively applied. Additional post-project monitoring efforts should be implemented to evaluate the effectiveness of stipulations.
MON-WLD-07 Are management actions effective in protecting	2021	(C) Unknown – While timing limitations are in place to protect Bighorn Sheep populations during	Yes	Monitoring Plan: Develop an effective indicator and adjust plan timing limitation

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Bighorn Sheep lambing?		critical lambing periods, there is no data contributing to our knowledge of these limitations impacting populations.		to extend through July 15. An appropriate indicator should involve evaluating Bighorn Sheep populations against timing limitations at the extend of the species' location within the LMNG administrative boundary.
TERRESTRIAL NOXIOUS WEEDS				
MON-NOX-01 To what extent has the integrated prevention and pest control management for noxious weeds being implemented?	2021	(E) Yes – Based on our partnership coordination and implementation of the integrated prevention and pest control program.	Yes	Monitoring Program: Develop a strategy on monitoring effects of treatments to align with Goal 1.c Objective 6 - Within 10 years, limit further expansion of areas affected by noxious weeds.
VEGETATION				
MON-VEG-01 What is the status of rangeland conditions relative to site potential?	2021	(B) Uncertain – As more baseline data collection still ongoing.	Yes	Plan Components*
*When LRMP revision is initiated: Update the LRMP with new desired conditions, goals, and objectives that include the state and transition models for individual ecological site within the MLRA's across the DPG. Identify desired state and community phases and if transition between existing and desired states can occur.				
MON-VEG-02 What management actions have occurred that contribute to the ability of plant communities to	2021	(E) Yes – There is a trend of moving towards the objective of managing plant communities to maintain vigor which allows them to retain or	Yes	Monitoring Plan: One of the most widely used vegetation management tools used on the grasslands is

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retain function or regain function after disturbance?		regain function after disturbance. For prescribed fire treatments not all the objectives are being achieved at the desired rate due to weather conditions and funding constraints.		prescribed grazing which is not accounted for as an indicator. Include prescribed grazing as an indicator for MON-VEG-02 in the monitoring program.
MON-VEG-03 What is the status of woody draw conditions relative to site potential?	2021	(D) No – 67% of the woody draws sampled are not trending toward the desired condition. Only 27% of the woody draw plots sampled have pathways back to the desired community phases; however, a portion of these will be in the native/invaded state.	Yes	Management Action: Identify sites having pathways that will move them to the desired state. Prioritize in near future management actions to shift the community to desired site potential, as only 27% have pathways back to desired conditions.
RECREATION				
MON-REC-01 To what extent are trails managed to meet regional standards?	2021	(E) Yes – Based on maintenance of 50% of trails maintained to regional standards.	Yes	Management Action: Attempt to increase *Trail Improvements* annually across the DPG.
MON-REC-02 To what extent are recreation opportunities meeting public interests?	2021	(E) Yes – Based on the extensive outdoor recreation opportunities provided on the DPG.	Yes	Management Action: Maintain developed recreation and improve dispersed recreation opportunities across the DPG.
MON-REC-03 To what extent are management	2021	(E) Yes – Approved activities did not	Yes	Grasslands Plan: Consider reviewing why

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activities influencing the features important of suitable wilderness (MA 2.1A)?		degrade Wilderness character.		CCC campground is in management area 1.2 as it does not promote solitude and requires infrastructure. Monitoring Program: The monitoring item refers to suitable for wilderness as MA 2.1A, however the correct MA for suitable for wilderness is MA 1.2A. Error will be corrected.
MON-REC-04 To what extent have scenery integrity objectives been met?	2021	(B) Uncertain – As data was not compiled.	Yes	Monitoring Program: Provide capacity for all program managers to provide data on projects for scenic integrity objectives for 2023 report. Change monitoring question to "To what extent has the unit progressed with scenic integrity objectives?"
MON-REC-05 To what extent is off-road vehicle use (permitted and unpermitted) damaging	2021	(D) No – Though the Sheyenne Ranger District has a travel management plan in place, other districts on the Dakota Prairie	Yes	Management Action: Develop travel management plan on LMNG.

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grassland resources and causing erosion, sedimentation, and vegetation loss?		Grasslands such as the Little Missouri National Grassland have not developed a travel management plan.		
HERITAGE				
MON-HRT-01 Are the National Register sites and districts being identified and managed?	2021	(C) Uncertain – Due to the lack of appropriate information to assess the status of the plan component.	Yes	Monitoring Program: Ensure the capacity for the heritage program manager to implement the monitoring program.
MON-HRT-02 Are tribes being consulted on sites of religious and cultural significance?	2021	(C) Uncertain – Due to the lack of appropriate information to assess the status of the plan component.	Yes	Monitoring Program: Utilize Government-to-Government Consultation tracking procedures and the existing NRM and INFRA systems to track and monitor the identification and protection of Traditional Cultural Properties and Sacred Sites.
COMMUNITY RELATIONS				
MON-CMR-01 What multiple use services have been provided?	2021	(E) Yes – The DPG has contributed to the capability of the grasslands to provide a desired sustainable level of uses, values, products, and services as described in the *Federal Payments and Revenue sharing with State & Local Governments, AUMs,*	No	NA

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		Oil and Gas Permits, and SUPs.		
MON-CMR-02 To what extent is cooperation with external interested parties occurring for control of animal damage?	2021	(E) Yes – The Dakota Prairie Grasslands continues to work with partners on prairie dog management, as well as any other animal damage issues as they arise.	Yes – For the Prairie Dog control for GRNG.	Management Action: There is a need to update the NEPA for GRNG prairie dog control.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired.

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*.

See body of the report for more details regarding any specific recommendations/opportunities for change.

Introduction

Policy and Regulations

Monitoring and evaluation requirements have been established through the National Forest Management Act (NFMA) at 36 CFR 219. Additional direction is provided by the Forest Service Handbook (FSH 1909.12) Chapter 30 – Monitoring.

The Dakota Prairie Grasslands Plan Monitoring Program (PMP) was updated in July 2016, for consistency with the 2012 planning regulations [36 CFR 219.12 (c)(1)]. The Dakota Prairie Grasslands Land and Resource Management Plan (LRMP) was administratively changed to include the updated plan monitoring program. For a copy of the current monitoring program go to this web link. Monitoring questions and indicators were selected to inform the management of resources on the plan area and not every plan component was determined necessary to track [36 CFR 219.12(a)(2)].

Providing timely, accurate monitoring information to the responsible official and the public is a key requirement of the plan monitoring program. This report is the vehicle for disseminating this information.

In the context of forest management there are three main monitoring goals:

1. Are we implementing the LRMP properly? Are we moving towards our management targets and project guidelines? (implementation monitoring)
2. Are we achieving our Forest Plan management goals and desired outcomes? (effectiveness monitoring)
3. Does our hypothesis testing indicate we may need to change the Forest Plan? (validation monitoring)

Purpose of the Biennial Monitoring Evaluation Report (BMER)

The Biennial Monitoring Evaluation Report (BMER) is designed to evaluate the three above monitoring goals for the purpose of providing this information to help the responsible official determine a course of action based on the recommended management adjustments of this BMER. This report considers information related to LRMP components to evaluate if recommended changes needed in LRMP direction, such as plan components or other plan content that guide management of resources in the plan area (e.g., forest plan, management activities, monitoring program or forest assessment). The full 2021 BMER for the Dakota Prairie Grasslands (DPG) is available at the DPG Resource Management Page.

The BMER is not a decision document—it evaluates monitoring questions and indicators presented in the PMP chapter of the LRMP, in relation to management actions carried out in the plan area.

Monitoring and evaluation are continuous learning tools that form the backbone of adaptive management. For this reason, we will produce an evaluation report every two years. This is our first written monitoring evaluation report for the revised 2016 Monitoring Program for the DPG.

Implementation monitoring is important for tracking progress and accomplishments. However, effectiveness and validation monitoring drive and support the adaptive management process. Effectiveness monitoring evaluates condition and trend relative to desired conditions. Validation monitoring tests hypotheses and provides information that might necessitate changes to desired conditions in the plan (e.g., is what we think the desired state accurate?).

Objectives

To achieve the goals and purposes outlined above, this BMER includes the following objectives (as guided by FSH 1909.12_34):

- Document implementation of the PMP, including changed conditions or status of key characteristics used to assess accomplishments and progress toward achievement of the selected LRMP plan components.
- Evaluate relevant assumptions, changed conditions, management effectiveness, and progress towards achieving the selected desired conditions, objectives, and goals described in the LRMP.

- Assess the status of previous recommended options for change based on previous monitoring & evaluation reports.
- Document any scheduled monitoring actions that have not been completed and the reasons and rationale why it has not.
- Present any new information, not outlined in the current PMP, that is relevant to the evaluation of the selected monitoring questions.
- Incorporate broader scale monitoring information from the Northern Region Broader Scale Monitoring Strategy that is relevant to the understanding of the selected monitoring question.
- Present recommended change opportunities to the responsible official.

Monitoring Evaluation and Adaptive Findings

The following sections present the most current information (data and evaluations) for all monitoring questions contained within the DPG-LRMP. Each monitoring item includes, 1) a summary of the monitoring question, its indicator(s), and the plan components the monitoring question is assessing; 2) monitoring results and discussion; 3) evaluation of the results to determine an adaptive management finding on whether recommended management changes are warranted or not.

This report identifies indicators that could be influenced by climate change. For additional information on the influence of climate change as it relates to monitoring, see: https://www.fs.usda.gov/treesearch/pubs/55974.

Geology

Monitoring Item MON-GEO-01

Plan Component(s) being assessed by this monitoring item:				
Goal 2.c Objective 1. Within 15 years, provide interpretation for at least 20% of important geological and paleontological sites consistent with the conservation plans.				
Monitoring Question	**Indicators***	**Data collection interval**	**Data Source / Partner**	**Point of Contact**
To what extent are geologic and Paleontological resources being made available for the education, use or enjoyment of the general public?	Visitor Days (N)	Annually	Area Museums	Area Museum Staff
	DPG Paleo Permits Issued (N)	Annually	DPG SO and District Records	Minerals and Land Program DPG SO
	Public Field Days (N)	Annually	DPG SO Records	Minerals and Land Program DPG SO
	Partnerships and Agreements (N)	Annually	DPG SO Records	Minerals and Land Program DPG SO

(*Influenced by climate change? Y, N, Uncertain)

Table 2. Monitoring Item MON-GEO-01 - Monitoring Collection Summary

For monitoring item 1:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2010 (draft)
Next scheduled MER evaluation of this monitoring item:	2023

The DPG has multiple geological formations in that contain diverse and accessible paleontological specimens including vertebrate, invertebrate, and plants. Many geologic and paleontological resources are non-renewable resources, which provide valuable educational, scientific, and recreational opportunities. These resources require sound management and protection for current and future generations to enjoy. The DPG LRMP Goal 2 Multiple Benefits to People; To provide a variety of uses, values, products, and services for present and future generations by managing within the capability of sustainable ecosystems. (DPG LRMP Chapter 1-4).

Methods

Monitoring methods may change based on changes in technology, staffing, budgets, and issues. Only standardized protocols will be used in collecting monitoring item data. Protocols will be peer-reviewed as appropriate. Monitoring precision and reliability depends on the particular program or activity to be monitored.

Two classes of precision and reliability are recognized:

• Class A: These methods are generally well accepted for modeling or measuring the resource. They produce repeatable results that are statistically valid. Reliability, precision, and accuracy are very good. The cost of conducting these measurements is higher than other methods. These methods are often quantitative in nature.

• Class B: These methods are based on project records, communications, on-site ocular estimates, or less formal measurements like pace transects, informal visitor surveys, aerial photograph interpretation, and other similar types of assessments. Reliability, precision, and accuracy are good, but usually less than Class A. Class B methods are often qualitative in nature, but still provide valuable information on the status of resource conditions.

DPG LRMP Class B was used for Monitoring Item MON-GEO-01.

Results

Visitor Days

Table 3. Locations of Dakota Prairie Grassland Specimens and Average Annual Visitors

Locations where DPG Specimens are Displayed	Average Annual Visitors	Comments
North Dakota Heritage Center, Bismarck, ND	220,000 – 240,000 (for years 2014 – 2020)	2020 numbers down (141,000) due to COVID19
Badlands Dinosaur Museum, Dickinson, ND	16,000 – 17,189 (for years 2016 – 2020)	2016 a partial year 2020 numbers were down (12,708) due to COVID19
Pioneer Trails Museum, Bowman, ND	2,000 – 2,500 (for years 2016 – 2020)	2020 numbers were down due to COVID19
Grand River Museum, Lemmon, SD	Unable to contact	Museum closed September until May

Permits Issued: Five DPG Paleontological Permits were issued on the DPG from 2015 to 2017: 3 Special Use Permits and 2 Mineral Geology Permits.

Public Field Days: There have been 0 public field days.

There have been a number of public digs conducted on the DPG either by Forest Service or with partnering organizations. No public digs have been conducted on the DPG within the last 5 years.

Partnerships and Agreements: From 2016 to 2020, there have been 3 cooperative agreements: 1. with the North Dakota Industrial Commission, 2. ND Heritage Center, and 3. with Geological Society of America (GeoCorps).

In 2020, a survey of surrounding museums, which house specimens or portions of specimens that came off the DPG, was conducted. Three local museums were surveyed: ND Heritage Center in Bismarck, ND; The Badlands Dinosaur Museum, in Dickinson, ND (and assumed new ownership in 2016); the Pioneer Trails Museum in Bowman, ND.

Discussion

The number of public displays from previous monitoring reports declined.

The number of paleontological permits issued was consistent with prior monitoring reports.

This is the first data review of visitor use days, which will be considered baseline data. This data helps to determine public interest in DPG paleontological resources. However, each of these museums has other attractions, so how much can be attributed strictly to paleontological exhibits is unknown.

Public field days have declined from previous reported numbers. Public interaction with the paleontological resources may improve with agreement for paleontological support with the ND Heritage Center and the ND State Paleontologist. USDA Forest Service paleontologists are few, so increased cooperation with the State of North Dakota may help with public participation and public interaction.

The 2009 Omnibus Public Land Management Act included a subtitle called the Paleontological Resources Preservation Act (Act), 16 U.S.C. 470aaa through 16 U.S.C. 470aaa–11 expanded the protections for paleontological resources to include invertebrate and plants. From this a new code of federal regulations was created for the Forest Service, CFR Title 36 Part 291.

The DPG is planning to expand survey on projects which will improve baseline paleontological resource data, distribution, and specimens. Additional law and emphasis on paleontological resources will help focus management efforts and interpretation.

Current metrics provide a baseline for understanding the status of the above plan objective. Additional development of methodology to assess the status of the objective is needed.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 2.c Objective 1. Within 15 years, provide interpretation for at least 20% of important geological and paleontological sites, consistent with the conservation plans.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS** [1] *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?* [2]
MON-GEO-01 To what extent are geologic and Paleontological resources being made available for the education, use or enjoyment of the general public?	2021	(B) Uncertain – Based on the need to compile additional data and methods.	Yes	Monitoring Plan: Change monitoring question to align better with the plan objective: Suggested change: What is the status of providing interpretation of geological and paleontological sites? Also suggest the development of methodology to assess the status of the objective.
Proposed Methodology to address suggested changes to align monitoring plan question with plan objective and status: • Define clearly what an interpretive site is. • Confirm the number of known paleontological sites the DPG has to be able to compare with the 20% stated goal in the LRMP. • Complete an accurate assessment of displayed or curated specimens excavated from the DPG. • Determine if the 20% goal in the LRMP is reasonable compared to the number of sites and the numbers specimen curated.				

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired.

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to* ***the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment****, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area.*

Soils

Monitoring Item MON-SOIL-01

Plan Component(s) being assessed by this monitoring item:

Goal 1a Objective 1. Within 10 years identify watershed conditions to provide baseline data sufficient to meet the following objectives: Achieve a 20% reduction in acres of eroded or disturbed soils caused by Forest Service permitted or management actions.

Monitoring Question	Indicators*	Data collection interval	Data Source / Partner	Point of Contact
To what extent have soils been disturbed and restored?	By allotment or pasture: Similarity index (weight of plant species within dominant sites in a pasture/allotments) – same indicators as MON-VEG-01 (Y) State transition (acres of each state/transition per ecological site) – same indicators as MON-VEG-01 (Y)	Annual- approx. 75 plots/yr., each plot read every 5-15 yrs. depending on NEPA decisions	Supervisor's Office records	Watershed Program Manager; Range Program Manager
	Rangeland infrastructure (acres of) (N)		WIT INFRA GIS Library	Watershed Program Manager; Range Program Manager
	Rangeland Improvements (acres and numbers of actions that contribute towards improvement) (N)		FACTS WIT	Watershed Program Manager; Range Program Manager
	Oil and gas well pad development (acres of) (N) Road development (acres of) (N) Reclamation (acres of reclaimed lands) (N)		Supervisor's Office records	GIS Coordinator

(*Influenced by climate change? Y, N, Uncertain)

Table 4. Monitoring Item MON-SOIL-01 - Monitoring Collection Summary

For monitoring item MON-SOIL-01:	Year
Data was last collected or compiled in:	2018
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

Methods

Similarity Index/State Transition

See Monitoring Item MON-VEG-01

Rangeland Infrastructure

Range improvements such as fencing, pipelines, and wells were added in Watershed Improvement Tracking (WIT) for FY 2013, 2014, 2016, and 2017. However, all range infrastructure for all years was extracted directly from the DPG's Geographic Information System (GIS) Library.

In 2018, there were 10 range improvement projects completed benefitting 24,031 acres. In 2019, there were 19 range improvement projects benefitting 38,229 acres. Rangeland infrastructure includes pipelines, tanks, wells, and fencing. Fencing controls use of the rangeland areas and prevents overgrazing. Overgrazing could lead to erosion. Pipelines, tanks, and wells provide water sources away from riparian areas where cattle would otherwise congregate and cause erosion.

Rangeland Improvements

Rangeland improvement data is reported from the Forest Activity Tracking System (FACTS) into WIT. Not all data from FACTS goes into WIT. Data extracted included invasive weed control, prescribed burns, and mowing. Refer to the BMER Soils & Aquatics Monitoring Guide for instructions for extracting data from WIT and FACTS (Semenza, 2021).

Oil and Gas Well Pad Development

The dataset was created by digitizing oil pads using National Agriculture Imagery Program (NAIP) and Light Detection and Ranging (LiDAR). The current dataset can be considered baseline data. The dataset is not complete when comparing to 2020 NAIP photos.

Data from WIT is also baseline data.

Road Development and Reclamation

The GIS layer used for this is baseline data. This dataset should be able to be compared to the layer next year to determine if there are more or fewer roads each year.

Results

Similarity Index/State Transition

See Monitoring Item MON-VEG-01

Rangeland Infrastructure

Table 5. Rangeland Infrastructure Improvement 2018

Year	Management	Treatment Name	Acres
2018	Electric Fence & Compress Rotate	9 RVI Weeds, Temp Fence, Rot. Change	11,938
	Electric Fence & Compress Rotate	7 RVI Temp Fence, Rot. Change	5,491
	Electric Fence - Imp. Distribution	429 RVI Temp Fence	393
	New Pipeline System	182 RVI Pipeline System 2019	1,132
	New Pipeline System & Rotation	074 RVI Pipeline system	1,248
	New Pipeline System & Rotation	198 RVI Pipeline system	1,714
	New X-Fence & Pipeline System	063 RVI Cross fence & range water pipeline system	630
	Realigned Fence - Imp. Distribution	493 RVI Fence Mod	189
	Temp Stock Tank - Imp Distribution	333 RVI Temp Tank	1,072
	Temp Stock Tank - Imp Distribution	470 RVI Temp Tank	224
2018 Total			24,031
2019	Fence Install	130 RVI Fence Install	674
	P 3&5Cross Fence	393 RVI Cross Fence and Rotation	763
	P 3&5 added stock tank	393 RVI Pipeline system	434

Year	Management	Treatment Name	Acres
	P 3&5 Cross Fence 3 past rot	387 RVI Cross Fence and Rotation	1,984
	P 3&5 Rip/agcr x fence & tanks	361 RVI Cross Fence, Pipeline System & NX Weed	5,832
	Past 3&5 added stock tank	359 RVI Pipeline system	428
	Pipeline & Tank	136 RVI RCPP Pipeline & Tank	150
	Pipeline & Tank	128 RVI RCPP Pipeline & Tank	1,426
	Pipeline & Tank	126 RVI RCPP Pipeline & Tank	386
	Pipeline & Tank	248 RVI RCPP Pipeline & Tank	612
	Pipeline & Tanks	288 RVI RCPP Pipeline & Tanks	1,779
	Pipeline & Tanks	256 RVI RCPP Pipeline & Tank	3,706
	Pipeline & Tanks	054 RVI RCPP Pipeline & Tank	610
	Solar Pump Pipeline & Tanks	325 RVI Red Hills Pipeline	1,361
	Temp Electric Fence	450 RVI Temp Fence	437
	Temp Electric Fence	5C RVI Temp Electric Fence	234
	Temp Electric Fence and Rested	9 RVI Temp Electric Fence and Rested Acres	11,938
	Temp. Electric Fence	7 RVI Temp Fence, Rot. Change	5,475
2019 Total			38,229
2018 – 2019 Total			62,260

Rangeland Improvements

Rangeland improvements include weed control, mowing, and controlled burning. The WIT accomplishment reporting is a small subset of FACTS.

Table 6. Number and Acres of Rangeland Improvements 2018-2020 (WIT)

Year	Range Improvement Activity	Acres of Improvement
2018	Invasive Species Management	4,666
	Prescribed Fire	1,922
2018 Total		6,588
2019	Invasive Species Management	6,641
	Native Plant Restoration	252
	Other Fuel Treatment	3,420
	Prescribed Fire	3,094
	Thinning-Pre-commercial	31
2019 Total		13,438
2020	Fuel Treatment-Chip-Crush	2,498
	Invasive Species Management	7,406
2020 Total		9,903
2018 – 2020 Total		29,929

Table 7. Number and Acres of Rangeland Improvements 2018-2020 (FACTS)

Year	Range Improvement Activity	Acres of Improvement
2018	Broadcast Burning - Covers a majority of the unit	1,922
	Invasive - Biocontrol, Classic	157
	Invasive - Biocontrol, Livestock	17,516
	Invasive - Pesticide Application	6,416
	Pollinator habitat improved, restored, or maintained	58
	Range Control Vegetation	15,781
	Range Cover Manipulation	52,453
	Re-vegetation treatments – herbicides	44
	Thinning for Hazardous Fuels Reduction	52
2018 Total		103,576
2019	Broadcast Burning - Covers a majority of the unit	2,945
	Grazing and Range Mgt. for Hazardous Fuels Reduction	1,636

Year	Range Improvement Activity	Acres of Improvement
	Invasive - Biocontrol, Classic	2
	Invasive - Biocontrol, Livestock	21,349
	Invasive - Pesticide Application	8,225
	Pollinator habitat improved, restored, or maintained	7
	Range Control Vegetation	24,118
	Range Cover Manipulation	31,625
	Re-vegetation treatments – herbicides	109
	Thinning for Hazardous Fuels Reduction	31
2019 Total		93,237
2020	Grazing and Range Mgt. for Hazardous Fuels Reduction	2,684
	Invasive - Biocontrol, Livestock	22,944
	Invasive - Pesticide Application	7,914
	Range Control Vegetation	15,104
	Range Cover Manipulation	33,108
	Rearrangement of Fuels	34
	Thinning for Hazardous Fuels Reduction	107
2020 Total		93,237
2018 – 2020 Total		306,499

Table 8. Comparison of Reported Acres WIT vs. FACTS

Activity Year	Acres Reported	
	WIT	FACTS
2018	6,588	103,576
2019	13,438	109,686
2020	9,903	93,237
Total	29,929	306,499

Oil and Gas Well Pad Development

Table 9. Pad Acres extracted from *Oil and Gas Pads* Layer

Rehab Type	Pad Acres
Elkhorn Production Rehab	11.70
Elkhorn Total Rehab	57.58
Production Rehab	799.58
Total Rehab	2,492.20

Road Development and Reclamation

Table 10. Acres of Road Reclamation extracted from WIT

Year	Acres of Reclamation
2016	2
2017	23
2018	8
2020	5

Miles of FS Roads 2021: 3,353
Acres of FS Roads 2021: 4,343

Discussion

The data collected to date is good, but several more years of data will have to be collected. North Dakota State University will continue to collect baseline data (next 3-4 years). Once baseline data is completed, DPG can do subsampling for continued monitoring to better understand the status of achieving the above associated plan

language ("Achieve a 20% reduction in acres of eroded or disturbed soils caused by Forest Service permitted or management actions"). The subsampling later on will show the status of this progress.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1a Objective 1. Within 10 years, identify watershed conditions to provide baseline data sufficient to meet the following objectives: Achieve a 20% reduction in acres of eroded or disturbed soils caused by Forest Service permitted or management actions.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS** [1] *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?*[2]
MON-SOIL-01 To what extent have soils been disturbed and restored?	2021	(B) Uncertain – Continue collecting, updating, and acquiring data.	Yes	Monitoring Plan: Include GIS library as a data source for rangeland infrastructure in the monitoring program.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to* ***the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment****, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Aquatics

Monitoring Item MON-AQU-01

Plan Component(s) being assessed by this monitoring item:

Goal 1a Objective 2. Move at least 80% of riparian areas and woody draws toward self-perpetuating plant and water communities that have desired diversity and density of understory and overstory vegetation within site capability.

Goal 1a Objective 3. Meet or move toward Proper Functioning Condition (PFC) on at least 80% of perennial streams.

Monitoring Question	Indicators*	Data collection interval	Data Source / Partner	Point of Contact
What is the condition of perennial and intermittent streams and high value springs and high value wetlands?	17 indicators of PFC to determine: Miles of intermittent and perennial streams in: Proper functioning condition, Functioning at risk, Non-functioning (Y) Acres of wetlands and springs in: Proper functioning condition, functioning at risk, Non-functioning (Y)	10-yr interval	Supervisor's Office records	Watershed Program Manager; GIS Coordinator

(*Influenced by climate change? Y, N, Uncertain)

Table 11. Monitoring Item MON-AQU-01 - Monitoring Collection Summary

For monitoring item MON-AQU-01:	Year
Data was last collected or compiled in:	Sheyenne RD 2016-2017 Grand River RD 2016 Medora RD 2012, 2013 McKenzie Rd 2013
Next scheduled data collection/compilation:	Sheyenne 2026 Grand 2026 Medora 2022 McKenzie 2023
Last MER evaluation for this monitoring item:	2005
Next scheduled MER evaluation of this monitoring item:	2023

"The Grassland management goal to improve and protect watershed conditions to provide the water quality and quantity […] to support ecological functions and intended beneficial water uses and move at least 80% of riparian areas […] toward self-perpetuating plant and water communities that have desired diversity and density of understory and overstory vegetation within site capability." The intent of the objective is complete through the following:

- B (2) "Allow only those actions next to perennial and intermittent streams, seeps, springs, lakes, and wetlands that maintain or improve long-term proper functioning of riparian ecosystem conditions. Standard. (p. 1-9)
- B (4) Maintain and protect the hydrologic regime that supplies ground water to the wetlands so as to support species and habitats dependent on the existing water table and its natural variations. Standard (p. 1-4)

- B (13) For streams identified as "non-functioning" or "functioning at risk with a downward trend," begin corrective action within 3 years of stream inventories. Guideline (p. 1-11)".

Methods

Riparian Areas

The data sources for this report include the USGS National Hydrography Database (NHD) which was used as the base for survey locations and for the Proper Functioning Condition (PFC) field surveys conducted by contractors and DPG personnel using specific protocols (Dickard et al 2015, Prichard et al 1998). PFC assessment is used as a way to identify riparian areas that are not functioning properly and pinpoint the factors that may be affecting their health. A PFC protocol is a qualitative assessment based on quantitative science (Prichard et al. 1998) and can be used to determine monitored and/apparent trends

The following are the specific protocol used for each of the last surveys and the reports:

- Sheyenne RD, Prichard et al, 1981,
- Medora RD, Prichard et al, 1998,
- McKenzie RD, Prichard et al, 1998,
- Grand River RD, Dickard et al, 2015,

Data was collected in the field by contractors for Grand River Ranger District (RD) and Little Missouri National Grassland (LMNG). Due to the low number of streams in Sheyenne RD, Forest Service personnel conduct PFC surveys. Once surveys are completed, the data is put into a spreadsheet with Lat/Lon and uploaded into the DPG's GIS library where it can be analyzed.

Additional survey data was required by contract for the last LMNG surveys. These should be added for all future surveys.

- Instream Cover: Habitat available in stream (fallen trees, logs, branches, large rocks, and undercuts).
- Embeddedness: Extent which rocks (gravel, cobble, boulders) are covered or sunken into stream.
- Stream Bank Conditions: Extent which erosion is occurring or has the potential to occur.
- Bank Vegetation Conditions: The amount of the stream bank that is covered by vegetation.
- Extent of Grazing Pressure: The extent of grazing impacts and its effect on streamside vegetation and instream pools.

For analysis purposes, all the PFC data was merged into one geo-database feature class. The entirety of the feature class was exported to a spreadsheet. Because several surveys took two field seasons, survey years were modified/combined as follows:

- Sheyenne RD, 1997, 2000, 2002, 2007-2008, 2010-2011, 2012, 2016-2017
- Grand River RD, 2003, 2004-2005, 2010-2011, 2016
- Medora RD, 1998, 2004-2005, 2006, 2012-2013
- McKenzie RD, 1998, 2004-2005, 2008, 2013

Stream reaches with PFC ratings of ephemeral, not applicable, or unknown [totaling 108] were removed. These ratings were not used in analysis.

Wetlands and Springs

Surveys were not conducted on wetlands and springs.

[1] This survey was conducted in house. Sheyenne RD personnel were unaware there was a new protocol.

Results

Table 12. Miles of Stream Condition Class and Percent of those at or approaching PFC

District	Year	PFC	FAR-U	FAR-NA	FAR-D	NF	Total	% PFC or FAR-U
Sheyenne	1997	0.56	0.61	3.12	1.04	-	5.33	22
Sheyenne	2016-2017	1.36	2.27	-	-	-	3.63	100
Grand River	2003	91.12	0.77	7.17	25.2	23.93	148.19	62
Grand River	2016	116.36	0.25	12.65	37.37	-	166.63	70
Medora	1998	196.98	12.99	73.01	28.45	4.32	315.75	67
Medora	2012-2013	124.7	17.7	103.51	110.03	40.82	396.76	36
McKenzie	1998	90.09	20.29	49.03	17.35	10.2	186.96	59
McKenzie	2013	215.77	4.49	67.9	75.6	7.05	370.81	59
DPG (District-wide Surveys)	1997-2003	378.75	34.66	132.33	72.04	38.45	656.23	63
DPG (District-wide Surveys)	2012-2016	458.19	24.71	184.06	223	47.87	937.83	51

PFC = Proper functioning condition, FAR-U = Functioning at risk with an upward trend, FAR-NA = Functioning at risk with no apparent trend, FAR-D = Functioning at risk with a downward trend; NF = Non-functioning

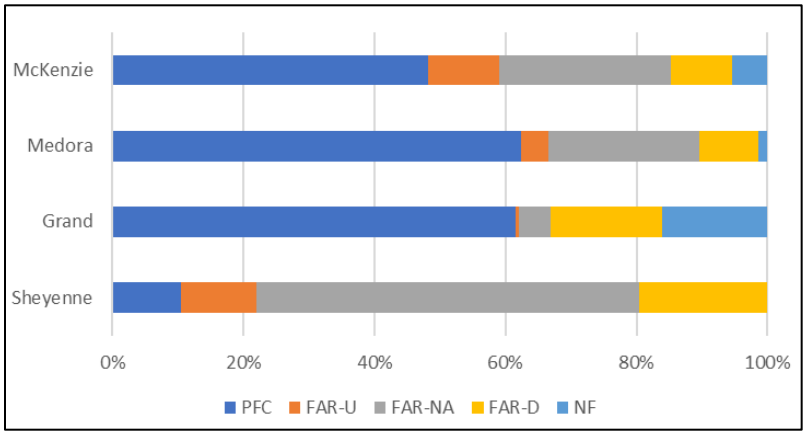


Figure 1. PFC Data 1997-2003 by District

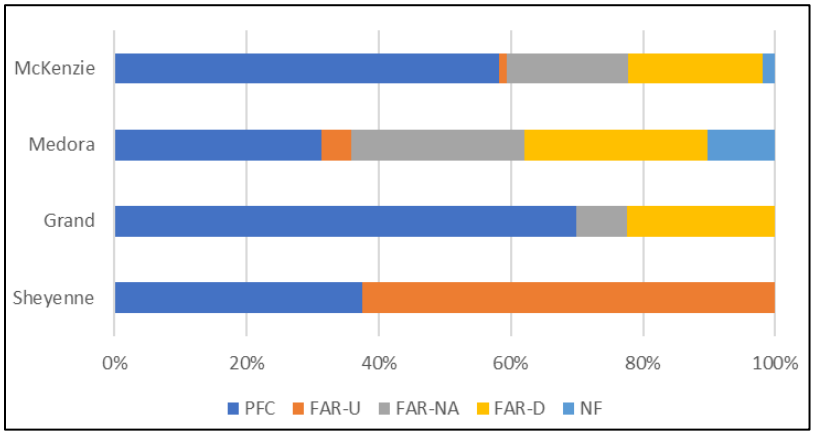


Figure 2. PFC Data 2012-2017 by District

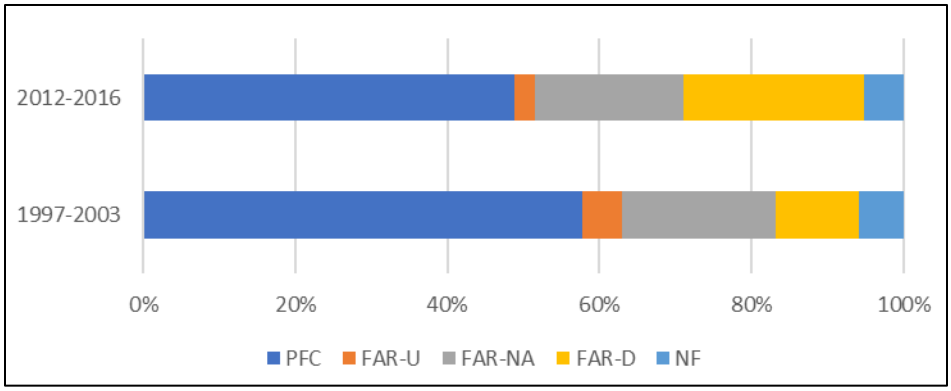


Figure 3. Combined District-Wide PFC Surveys

Sheyenne RD: Sheyenne has the fewest intermittent or perennial contiguous streams of all the districts. PFC surveys have been conducted in Sheyenne RD seven times. In 2016, a nearly complete PFC survey was conducted. The previous nearly complete survey was conducted in 1998. In 1998, only 22% of streams were found to be in or approaching PFC. In 2016, all streams surveyed were in or approaching PFC.

Grand River RD: District-wide surveys were conducted in 2003, 2005, and 2016. The survey conducted in 2005 was project-based and only covered blocks 69 and Corson County. The percentage of streams in, or approaching, PFC has increased slightly.

Medora RD: Medora has the most surveyed intermittent and perennial streams. Four surveys were conducted. The 1998 and 2013 surveys are the only district-wide surveys. Surveys in 2004 - 5 and 2006 were project based and conducted for the North Billings Environmental Impact Statement (EIS). The number of streams in PFC or FAR-UP has dropped from 66.5% down to 35.89%.

McKenzie RD: Two district-wide surveys were conducted in 1998 and 2012. Even though both surveys were district-wide, the 1998 survey covered 187 miles of stream while the 2012 survey covered 371, nearly twice the stream miles of the 1998 survey. The percent of streams at or approaching PFC increased by 0.4%. However, due to the difference in total stream miles surveyed, this result is inconclusive.

Grassland Wide: Overall, the percentage of streams on the DPG at or approaching PFC had declined 11.51%. However, the surveyed stream miles increased 43% from 656 miles to 938 miles.

Discussion

The 2005 monitoring report was based on the Grasslands Land and Resource Management Plan (LRMP). In 2016, the DPG modified the monitoring program to be consistent with the 2012 Planning Rule. The National Hydrography Dataset (NHD) data has gone through several updates. Changes to the NHD include name corrections, channel locations, and data corrections. These changes to NHD have little to no effect on PFC survey data collection.

In total, the DPG has nineteen years of PFC surveys. Due to the scale of the surveys, district-wide surveys are only conducted once every 10-years. Project-based surveys are conducted as needed. Project-based surveys are included in the PFC GIS library.

District-wide surveys were conducted in 2012, 2013, and 2016. These surveys included an additional 282 miles of stream channels. The data reflects a decrease in the percentage of streams that are at or approaching PFC. The greatest decrease is reflected in streams located in the Medora Ranger District. DPG-wide, the percentage of riparian areas at or approaching PFC has decreased. Goal 1a Objective 2 states “Move at least 80% of riparian areas […] toward self-perpetuating plant and water communities that have desired diversity and density of understory and overstory vegetation within site capability.” Goal 1a Objective 3 “Meet or move toward Proper Functioning Condition (PFC) on at least 80% of perennial streams.” PFC ratings, in Table 12, are for all streams surveyed. Grand

River and Sheyenne RDs had more streams at or moving towards PFC in the latest survey. On the McKenzie RD, these numbers were nearly unchanged. On the Medora RD, a decrease in streams at or approaching was observed.

The DPG appears to be moving away from achieving 80% of perennial streams at or approaching PFC when all districts are combined. This may not be due to any specific management practices. It was noted in the Medora RD PFC report that the area had experienced peak stream flows. Flooding occurred May 2011. The Little Missouri River near Medora and Beaver Creek recorded record flood events. It was also noted in the McKenzie RD PFC report, the area experienced extremely heavy precipitation prior to surveying Magpie Creek.

Goal 1a Objective 3 of the DPG LRMP specifically calls out perennial streams. The first surveys used stream class from USGS NHD data. The latest surveys used field observations to determine which streams were perennial. Because different criteria were used to determine which streams were perennial, specific trends cannot be determined pertaining to perennial streams. Future data collection on stream classes will be based on field observations.

For reaches accessible by cattle, with adaptive management and best management practices, it should have been expected that more riparian areas would be at or approaching PFC. Due to the limited number of surveys, survey interval, and the time frame, no specific rate of change can be determined. PFC survey data is the only monitoring conducted directly relevant to the monitoring question.

Conditions may decline due to climate change. North Dakota has experienced an average annual temperature increase of 0.26 ºF per decade. This trend is expected to continue. The annual precipitation and number of severe precipitation events have increased each year. Intensity of droughts is predicted to increase.

Range management practices such as fencing, creation of riparian pastures, livestock rotation, and water and mineral locations did lead to improvements in some riparian areas.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1a Objective 2. Move at least 80% of riparian areas and wood draws toward self-perpetuating plant and water communities that have desired diversity and density of understory and overstory vegetation within site capability.
- Goal 1a Objective 3. Meet or move toward Proper Functioning Condition (PFC) on at least 80% of perennial streams.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-AQU-01 What is the condition of perennial and intermittent streams and high value spring and high value wetlands?	2021	(B) Uncertain – More data is needed to determine a trend. Goal 1a Objective 2: Riparian areas that are "self-perpetuating …" are in PFC The monitoring directly addresses Goal 1a Objective 3	Yes	Management Action: Initiate survey of high value springs, and high value wetlands, as funding allows. Discuss the addition of "riparian restoration" as an adaptive

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?*[2]
				management tool in future veg management plans with leadership. Plan for outyear budgets for future district-wide PFC surveys.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired.

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area.*

Monitoring Item MON-AQU-02

Plan Component(s) being assessed by this monitoring item:

Goal 1a Objective 1. Within 10 years, identify watershed conditions to provide baseline data sufficient to meet the following objectives:

- Improve 20% of 6th Hydrologic Unit Code (sub-watershed) level watersheds from Class II to Class I or from Class III to Class II. Maintenance of unimpaired watersheds and restoration of impaired watershed are high priorities.
- Utilize criteria of geomorphic integrity, water quality integrity, biotic information, watershed vulnerability, and potential partnerships to prioritize watershed improvement projects.
- Improve the water quality associated with 20% of degraded water bodies.

Monitoring Question	Indicators*	Data collection interval	Data Source / Partner	Point of Contact
What is the water quality condition?	Watershed Condition Class (number of watersheds moved from one Class to a higher functioning Class, e.g., 3 to 2 or 2 to 1) (Y)	Watersheds assessed 2010 Reassessment planned 2021-2022	WCATT (access with completion of watershed actions plans)	Watershed Program Manager
	303(d) streams (miles of impaired streams) (Y)	2-years	North Dakota Department of Environmental Quality South Dakota Department of Environment and Natural Resources	Watershed Program Manager

Plan Component(s) being assessed by this monitoring item:

Goal 1a Objective 1. Within 10 years, identify watershed conditions to provide baseline data sufficient to meet the following objectives:

- Improve 20% of 6th Hydrologic Unit Code (sub-watershed) level watersheds from Class II to Class I or from Class III to Class II. Maintenance of unimpaired watersheds and restoration of impaired watershed are high priorities.
- Utilize criteria of geomorphic integrity, water quality integrity, biotic information, watershed vulnerability, and potential partnerships to prioritize watershed improvement projects.
- Improve the water quality associated with 20% of degraded water bodies.

Monitoring Question	Indicators*	Data collection interval	Data Source / Partner	Point of Contact
	Water quality (levels of pH, conductivity, total dissolved solids, sulfate, chloride, sodium) (U)	Specific interval not set	Supervisor's Office records (5 yr)	Watershed Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 13. Monitoring Item MON-AQU-02 - Monitoring Collection Summary

For monitoring item MON-AQU-02:	Year
Data was last collected or compiled in:	Watershed assessments 2010. WRAPs completed 2013, 2014, 2017. Impaired waters: SD 2020, ND 2018. Water Quality: Grand River 2019, LMNG 2017.
Next scheduled data collection/compilation:	Watershed reassessments planned 2021. Next WRAP planned 2021. Impaired waters: SD 2022, ND 2020[1]. Water Quality: Sheyenne[2] and McKenzie 2020[3].
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

[1] The North Dakota 2018 Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads is currently only available in draft as of 02/03/2021. The final report may be available 04/2021.

[2] Report received 01/25/2021.

[3] Field work was conducted in 2020. Final reports are forthcoming as of 02/03/2021. Analysis and data compiling were slowed due to COVID-19.

Methods

Watershed Condition Class

Watershed is broken into three classes: Class 1 = Functioning Properly, Class 2 = Functioning at Risk, and Class 3 = Impaired function. This is determined through the 4 process categories which are broken down into 12 indicators each with specific attributes. Data was collected from Grassland and Regional GIS databases and analyzed by an interdisciplinary team. Each attribute was given a numeric rating of 1-GOOD, 2-FAIR, 3-POOR, or NA in accordance with the Watershed Condition Classification Technical Guide. Indicators are calculated from the average of the attribute scores. Process category are calculated from the average of the indicators. The watershed condition score is calculated using weighted averages (Table 14). Watershed condition score corresponds to watershed condition class (Table 15).

Table 14. Watershed Condition Class Model

Process Categories	Indicators	Attributes
Aquatic Physical (Weight = 30%)	Water Quality	Impaired Waters

Process Categories	Indicators	Attributes
		Water Quality Problems
	Water Quantity	Flow Characteristics
	Aquatic Habitat Condition	Habitat Fragmentation
		Large Woody Debris
		Channel Shape Function
Aquatic Biological (Weight = 30%)	Aquatic Biota	Life Form Presence
		Native Species
		Aquatic Invasive Species
	Riparian-Wetland Vegetation	Riparian Vegetation Condition
Terrestrial Physical (Weight = 30%)	Roads and Trails	Open Road Density
		Road Maintenance
		Proximity to Water
		Mass Wasting
	Soils	Soil Productivity
		Soil Erosion
		Soil Contamination
Terrestrial Biological (Weight = 0%)	Fire Regime or Wildfire	Fire Condition Class
		Wildfire Effects
	Forest Cover	Forest Cover
	Rangeland Vegetation	Range Vegetation Condition
	Terrestrial Invasive Species	Extent Spread Rate
	Forest Health	Insects Disease

Table 15. Watershed Condition Score translated to Watershed Condition Class

Watershed Condition Score	Watershed Condition Class	Description
1.0 – 1.6	Class 1	Functioning Properly: watersheds exhibit high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.
1.7 – 2.2	Class 2	Functioning at Risk: watersheds exhibit moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.
2.3 – 3.0	Class 3	Impaired Function: watersheds exhibit low geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

The following attributes were not used because they did not apply to the Grassland: “Large Woody Debris, Mass Wasting, and Forest Cover”.

The following attributes were modified from the guidance document:

- Water Quality Problems - PFC data was used when 303(d) information was not available.
- Flow Characteristics & Habitat Fragmentation - NWI data was used to determine number of modifiers within the watershed.
- Channel Shape Function & Riparian Vegetation Condition - PFC data was used.
- Soil Productivity & Soil Erosion - Number of oil & gas wells was used.

Data for Watershed Condition Class can be found in multiple places including:

- NRM ArcGIS GI /Water/Watershed Classification
- NRM Website

303(d) Streams

States and territories are required under the Clean Water Act (CWA) to report on the quality of their water. This information is provided to the Environmental Protection Agency (EPA) and is available to the public. This data is available from both the State and the EPA.

Impaired waters spatial data was generated by the EPA and respective States. This data was pulled from the EPA. Each reach in these sets is linked to the Waterbody Quality Assessment Report. The data in the spatial sets is from 2012, and therefore not current. The linked Waterbody Quality Assessment Report has links to more recent reports up to 2016. The database containing the Waterbody Quality Assessment Report's was retired and replaced in 2017.

Current impaired waters GIS data for North Dakota available to the public can be found online at North Dakota GIS Hub Data Portal (search for "Assessed Rivers and Streams"). This spatial data set does not have links to any detailed data sheets as the 2012 data.

Current impaired waters data for South Dakota is also available online at this link; however, the data cannot be edited. Dave Hertle, (David.Hertle@state.sd.us), (605) 773-6508) at the South Dakota Department of Environment & Natural Resources (SD DENR) said he could send a geodatabase or shape file to us if we wanted.

Water Quality

Water quality monitoring was conducted by Dr. Andre DeLorme, from Valley City State University (Delorme 2017, 2018, 2019, 2020). The surveys included water quality sampling using a Hydrolab multiprobe "sonde" [measuring instrument], lab sample analysis, macroinvertebrate sampling [which correlates to water quality], and habitat assessment, which has similarities to PFC surveys. Specific methods and protocols are contained within the reports. Additionally, data was extracted from the reports and imported into ArcGIS for further analysis.

Results and Discussion

The monitoring question seems vague and could be changed to something specific like: "To what extent have watersheds on the National Grasslands been maintained or restored by Forest Service permitted management actions?". The items concerning improving watersheds and prioritizing projects, could have been written for Watershed Condition Class (WCC). The additional item from the monitoring report instructions concerning water quality could apply to WCC and is a factor of WCC but is not as specific. Additionally, because 303(d) streams and water quality are components of WCC, they are redundant in this monitoring element and could be moved to AQU-04.

Watershed Condition Class

One hundred sixty-six watersheds were assessed and rated by an Interdisciplinary Team (IDT) (Table 16). Watershed Action Plans (WRAP) were written for all priority watersheds (Table 17). Three WRAPs have been completed with a fourth to be completed 2021.

Table 16. Watersheds Analyzed

Watershed Condition Class	Pre 2020	2020
Class 1	17	20
Class 2	147	144
Class 3	2	2
All	166	166

Table 17. Watershed Projects

FY	Watershed	HUC121	Notes
2013	Giles Creek – North Fork Grand River	101303010603	
2014	Deer Creek – North Fork Grand River	101303010504	
2015	Magpie Creek	101102050102	Considered but not started
2017	Pigeon Point	090202040504	
2020	Prairie Dog Creek	101102040508	Planned completion 2021

The Giles Creek-North Fork; Grand River, Pigeon Point; Sheyenne River, and Deer Creek-North Fork /Grand River watersheds assessments were completed and changed from Class-2 to Class-1.

One issue with the original calculated scores was how to analyze Non-FS lands within the watersheds. In some cases, the conditions of the Non-FS lands were not fully understood and could not be analyzed. It was decided that

non-FS lands within the watershed would be given the same score as the FS land. This is not in the written protocol but is understood. This change may explain some of the discrepancies between the original scores and calculated scores.

303(d) Streams

This indicator has not been analyzed in previous monitoring. The 2012 data set contains only category-5[2] waters. Coverage for this data set is nationwide. The 2018 data sets contain all categories, but category-5 can be selected out. The coverage is limited to their respective states. The only miles of 303(d) listed stream on DPG land was compared between the 2012 and 2018 data sets.

In 2012, there were 98.7 miles of 303(d) listed waters vs. 83.4 miles in 2018. There are fewer miles of impaired reaches in more recent surveys. However, because there are only two data sets, there is no specific trend.

Water Quality

Water samples collected from 2017-2020 form a baseline data set. Analysis and discussion of the results are found in the reports.

The water quality and 303(d) indicators both fit in with the first indicator, Watershed Condition Class.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1a Objective 1. Within 10 years identify watershed conditions to provide baseline data sufficient to meet the following objectives:
    - Improve 20% of 6th Hydrologic Unit Code (sub-watershed) level watersheds from Class II to Class I or from Class III to Class II. Maintenance of unimpaired watersheds and restoration of impaired watershed are high priorities.
    - Utilize criteria of geomorphic integrity, water quality integrity, biotic information, watershed vulnerability, and potential partnerships to prioritize watershed improvement projects.
    - Improve the water quality associated with 20% of degraded water bodies.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-AQU-02 What is the water quality condition?	2021	Watershed Condition Class – (E) Yes- WCC data directly addresses the first two bullet points, improving 20% of HUCs and utilizing criteria of geomorphic integrity.	Yes	Monitoring Plan: Changes will be made in a future agency-wide monitoring protocol revision
		303(d) streams – (B) Uncertain- 303(d) assessments directly address the 3rd bullet point, improving water quality.	No	

[2] Cat 1 = meets standards, Cat 2 = Waters of concern, Cat 3 = Insufficient data, Cat 4 = Impaired/does not require TMDL, and Cat 5 = Impaired waters requiring TMDL, 303(d) waters

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?*[2]
		Water quality – (B) Uncertain- Water quality assessments directly address the 3rd bullet point, improving water quality.	Yes	Monitoring Plan: DPG-wide water quality sampling potentially in 2022 or 2023

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired.

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*.

Monitoring Item MON-AQU-03

Plan Component(s) being assessed by this monitoring item:

Goal 1a Objective 1. Within 10 years, identify watershed conditions to provide baseline data sufficient to meet the following objectives:

- Improve 20% of 6th Hydrologic Unit Code (sub-watershed) level watersheds from Class II to Class I or from Class III to Class II. Maintenance of unimpaired watersheds and restoration of impaired watershed are high priorities.
- Utilize criteria of geomorphic integrity, water quality integrity, biotic information, watershed vulnerability, and potential partnerships to prioritize watershed improvement projects.
- Improve the water quality associated with 20% of degraded water bodies.

(Note: same Plan Component as MON-AQU-02)

Monitoring Question	Indicators*	Data collection interval	Data Source / Partner	Point of Contact
What is the effectiveness of Best Management Practices in preventing degradation to water bodies?	BMP (total number of activities that BMPs have been prescribed and implemented) (N)	Annual	BMP national database	Watershed Program Manager
	BMP implementation ranking (sampling of total are checked for implementation) (N)	Annual	BMP national database	Watershed Program Manager
	BMP effectiveness ranking (sampling of total are checked for effectiveness) (N)	Annual	BMP national database	Watershed Program Manager
	BMP composite ranking (sampling of total implementation and effectiveness rankings) (N)	Annual	BMP national database	Watershed Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 18. Monitoring Item MON-AQU-03 - Monitoring Collection Summary

For monitoring item MON-AQU-03:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

The objective for monitoring item MON-AQU-03 is described in the National Core Best Management Practices (BMP) Technical Guide. The purpose of the National BMP Program is to provide a standard set of core BMPs and a consistent means to track and document the use and effectiveness of BMPs on NFS lands across the country. The objectives of the National BMP Program are as follows:

1. To establish uniform direction for BMP implementation to control nonpoint source pollution on all NFS lands to avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources that will meet the intent of the Federal and State water quality laws and regulations, Executive orders, and USDA and Forest Service directives.
2. To establish a consistent process to monitor and evaluate Forest Service efforts to implement BMPs and the effectiveness of those BMPs at protecting water quality at national, regional, and forest scales.
3. To establish a consistent and creditable process to document and report agency BMP implementation and effectiveness.

The National BMP Program has four components: 1) A national core set of BMPs; 2) a procedural guide for monitoring BMP implementation and effectiveness; 3) a data management system; 4) corresponding national direction. This technical guide contains the national core set of BMPs to be used in the National BMP Program.

Methods

Data collection methods are explained in individual protocols.

BMP Evaluation targets are assigned by the Forest Service Washington Office and Regional Office. For Fiscal Year 21/22, the target is 14 evaluations. DPG was assigned the following 10 evaluations: Aquatic Ecosystems, Chemical Uses, Facilities, Fire (2), Minerals (2), Grazing (2), Recreation, Roads (2), Vegetation Management, and Water Uses.

Data is collected by an IDT made up of specialists. Line officers and partners might also participate. Once data is collected, it is uploaded into a Forest Service Access database (via Citrix and National Applications). Once in the access database, the fields are set up the same way they are set up in the monitoring protocols. Currently, there is no way to write directly to the data base from data collection tablets in the field of “upload pdf” and “autofill”. Reports were created using IBM Cognos Analytics.

The following reports were pulled using IBM Cognos Analytics:

- Best Management Practices (BMP) Evaluation Counts,
- Best Management Practices (BMP) Implementation Scores Analysis,
- Best Management Practices (BMP) Effectiveness Scores Analysis.

Site selection differed from the protocol for sites selected in 2019/2020. Due to the emphasis on timber and fuels, the target number was reduced and the requirement that the site be randomly selected was waived. Evaluations were assigned to Little Missouri Grassland (LMNG) and Sheyenne National Grassland (SNG). Because the evaluations were assigned to specific districts, the selection was not truly random. Sites on the SNG were selected due to accessibility. With the exception of the road BMP, sites on the LMNG were selected because they were the only ones fitting the criteria of the protocols.

Results

A total of 25 BMP reviews were conducted from 2015 to 2020. All BMP reviews were conducted using the Forest Service’s National Core Best Management Protocols (BMP) (Table 19 and Table 20). BMP reviews consist of

Implementation and Effectiveness Monitoring. Implementation Monitoring evaluates the degree to which planned soil and water conservation measures for a given activity or project have been carried out. Effectiveness Monitoring, in turn, evaluates whether implemented soil and water conservation practices successfully avoided resource impacts. In reviews conducted between 2015 and 2020, 17 out of the 25 reviews yielded Fully Effective ratings. One review resulted in a "Mostly Effective" rating, one review resulted in a "Marginally Effective" rating, four resulted in "Not Effective" ratings, and two had incomplete data (Figure 4, Figure 5). The BMP database generates ratings independent of the reviewer, making it difficult to determine what specifically led to the individual implementation and effectiveness ratings.

Table 19. Number and Types of National Core BMP Reviews conducted 2015 – 2020

		Evaluation Type							
BMP Review	**Number of Evaluations**	**Imp Count**	**Eff Count**	**Imp-Eff Count**	**Follow-up Imp Count**	**Follow-up Eff Count**	**Follow-up Imp-Eff Count**	**Random Count**	**Non-Random Count**
Chemical	1	0	0	1	0	0	0	0	1
Facility	4	0	0	4	0	0	0	2	2
Fire	2	0	0	2	0	0	0	0	2
Mineral	8	0	0	8	0	0	0	6	2
Range	4	1	0	3	0	0	0	3	1
Recreation	3	0	0	3	0	0	0	2	1
Road	3	1	0	2	0	0	0	1	2
WaterUses	2	0	0	2	0	0	0	1	1
Total	27	2	0	25	0	0	0	15	12

The specific targets for BMP evaluations for 2015/2016 and 2017/2018 were not known at the time of this report. The DPG was assigned seven assessments for the 2019/2020 monitoring period. Originally, the target was 14, but due to the emphasis on ramping up timber and fuels, the target was reduced.

Table 20. BMP Evaluations and Scores by Fiscal Year

FY	Monitoring activity	Site	Evaluation Type	Implementation	Effectiveness	Composite
2015-2016	Min_B	Federal 6-2	Both	Marginal	Effective	Good
		Demores Federal 31-10 TFH	Both	Marginal	Effective	Good
		Enduro Operating 9 147 102	Both	Mostly	Effective	Excellent
		Nance 9-6H	Both	Mostly	Effective	Excellent
	Range_A	GRRD 1B West	Both	Mostly	Effective	Excellent
		GRRD 3B West	Both	Mostly	Mostly	Good
	Rec_A	Magpie Campground	Both	No BMPs	Effective	No Plan
	Min_D	Debra Rauch 1-1H	Both	Fully	Effective	Excellent
		BSMU 0103	Both	Fully	Effective	Excellent
	Range_A	Pfingsten East, 924	Implementation	Fully		
	Road_E	701a	Implementation	Fully		
	WatUses_A	INFRA ID 100288 Ekre Yearling	Both	Mostly	Effective	Excellent

FY	Monitoring activity	Site	Evaluation Type	Implementation	Effectiveness	Composite
2017-2018	Fac_D	Tesoro Exposed Line Removal SESE	Both	Marginal	Effective	Good
		SM Energy-Elkhorn Tank Site	Both	Fully	Effective	Excellent
		016 Dam Reclamation Project (AG-872	Both	Fully	Marginal	Fair
	Fire_A	J West	Both	Fully	Effective	Excellent
	Fire_B	Magpie Creek	Both	Fully	Not	Poor
	Min_B	Mormon Butte Fed 5-25 2B	Both	Mostly	Effective	Excellent
	Range_A	Chicken Creek Exclosure	Implementation	Marginal		
	Rec_D	North Country National Scenic, 1001	Both	Mostly	Not	Poor
2019-2020	Chem_A	A Anex*	Both	Mostly	Effective	Excellent
	Fac_B	Woods Cabin	Both	No BMPs*	Not*	No Plan
	Min_D	Tower Butte #1 Tank Battery T144N	Both	Mostly	Effective	Excellent
	Range_A	Pfingsten East, 924	Effectiveness	(fy2016)	Missing Q45*	Missing data*
	Road_C	805-2	Both	No BMPs	Missing Q49*	Missing data*
	Road_F	712-28	Both	Marginal	Effective	Good
	WatUses_A	100278*	Both	Not*	Effective	Good

* Missing data or error

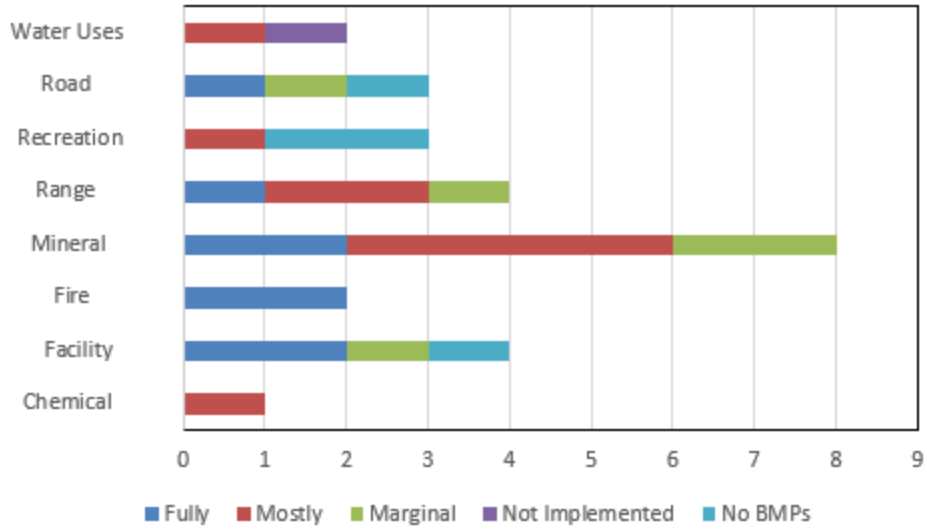


Figure 4. Implementation Ratings for BMP Reviews conducted using FS National Core BMP Protocols from 2015 to 2020

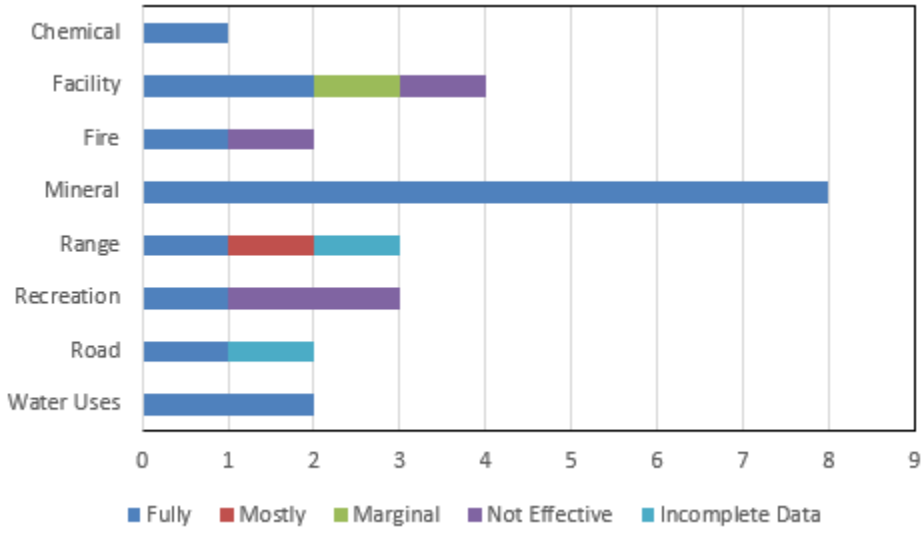


Figure 5. Effectiveness for BMP Reviews conducted using FS National Core BMP protocols from 2015 to 2020

Discussion

The DPG achieved its target of seven BMP assessments for 2015/2020. In total, 5 years of data has been collected. During each cycle, the DPG has achieved or exceeded the assigned targets.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1a Objective 1. Within 10 years, identify watershed conditions to provide baseline data sufficient to meet the following objectives:
    - Improve 20% of 6th Hydrologic Unit Code (sub-watershed) level watersheds from Class II to Class I or from Class III to Class II. Maintenance of unimpaired watersheds and restoration of impaired watershed are high priorities.

- Utilize criteria of geomorphic integrity, water quality integrity, biotic information, watershed vulnerability, and potential partnerships to prioritize watershed improvement projects
- Improve the water quality associated with 20% of degraded water bodies.

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?*[2]
MON-AQU-03 What is the effectiveness of Best Management Practices in preventing degradation to water bodies?	2021	BMP Total number prescribed and implemented – (C) Uncertain BMP Implementation, Effectiveness and Composite ranking – (E) Yes	Yes	Monitoring Plan*

***MANAGEMENT RECOMMENDATIONS:**

1. Drop plan objectives from this question as they are answered in AQU-02: Improve 20% of 6th Hydrologic Unit Code (sub-watershed) level watersheds from Class II to Class I or from Class III to Class II. Maintenance of unimpaired watersheds and restoration of impaired watershed are high priorities.
2. Utilize criteria of geomorphic integrity, water quality integrity, biotic information, watershed vulnerability, and potential partnerships to prioritize watershed improvement projects.
3. Change indicator of "BMP total number prescribed and implemented" to include total number of BMP surveys only.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired.

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area.*

Monitoring Item MON-AQU-04

Plan Component(s) being assessed by this monitoring item:

Goal 1a Objective 5. Prevent contamination of surface water, sub-surface flows, and aquifers.

Monitoring Question	Indicators*	Data collection interval	Data Source / Partner	Point of Contact
To what extent have surface water, sub-surface flows, and aquifers been protected from	Decommissioned wells (number of oil and water wells properly decommissioned) (N)	Annual	Supervisor's Office records WIT Database	Watershed PM Medora: Brian Kempenich brian.kempenich@usda.gov 701-227-7847 McKenzie: Cale Bickerdyke cale.bickerdyke@usda.gov

Plan Component(s) being assessed by this monitoring item: Goal 1a Objective 5. Prevent contamination of surface water, sub-surface flows, and aquifers.				
Monitoring Question	**Indicators***	**Data collection interval**	**Data Source / Partner**	**Point of Contact**
contamination by management actions?				701-842-8502 Sheyenne: Stacy Swenson stacy.swenson@usda.gov 701-683-4342
	Hazardous spills and clean actions (*number of)* (N)		District Office records Supervisor's Office records	Medora: Jacki Nelson Jaclyn.Nelson@usda.gov 701-227-7826 McKenzie: Keri Rummel Keri.Rummel@usda.gov 701-842-8512
	Same indicators for MON-AQU-03. • Best Management Practices -BMP (N) • BMP implementation ranking (N) • BMP effectiveness ranking (N) • BMP composite ranking (N)	Annual	BMP national database	Watershed PM

(*Influenced by climate change? Y, N, Uncertain)

Table 21. Monitoring Item MON-AQU-04 - Monitoring Collection Summary

For monitoring item MON-AQU-04:	**Year**
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2006-2010 (wells and spills)
Next scheduled MER evaluation of this monitoring item:	2023

The DPG LRMP contains several standards and guidelines protecting the watershed and ground water.

Additional laws protect the watersheds:

- Clean Water Act (CWA)
- Organic Administration Act of June 4, 1897, as amended
- Bankhead Jones Farm Tenant Act of July 22, 1937, as amended
- North Dakota Administrative Code Chapter 33-16-02.1 Standards of Quality for Waters of the State
- USDA Departmental Regulation 9500-8 (DR 9500-8). This departmental regulation provides direction for all USDA agencies regarding the protection and enhancement of groundwater quality
- Forest Service Directives: FSM 2540 establishes procedures for complying with Federal policy and state water rights laws

Methods

Decommissioned Wells

At the McKenzie RD, wells are recorded as decommissioned when the entire pad is rehabilitated. Reclaimed or 'rehabbed' pads are entered into WIT for accomplishment tracking. Eleven pads were reclaimed within the

McKenzie RD boundaries during the monitoring time period for this report. Information needs to be requested from the ranger districts for accomplishment reporting.

No artesian wells were plugged within the Sheyenne RD boundaries for this monitoring time period. Two wells were plugged in 2015. Several more wells are marked as *planned* for rehabilitation in WIT. These can be found using the "Feature Inspector" in WIT.

Hazardous spills and clean-up actions

The "Spills Coordinator" for Medora RD is Jacki Nelson (Jaclyn.Nelson@usda.gov, 701-227-7826). The Medora has been tracking spills with a spreadsheet since 2008 (Table 23). The "Spills Coordinator" for McKenzie RD is Keri Rummel (Keri.Rummel@usda.gov, 701-842-8512). The Ranger District Offices track spills and provide that data to the DPG Supervisors Office (SO).

Data used in this report will be stored on Pinyon, a US Forest Service electronic filing program.

Best Management Practices

Refer to Monitoring Item MON-AQU-03

Results

Decommissioned Wells

Eleven well pads were rehabbed in FY2020. No Artesian wells were plugged since the last monitoring.

Table 22. Wells Decommissioned; Pads Rehabilitated McKenzie 2020

Count	Associated Activity ID	Completed Acres	Accomplished Date
1	011807-Morgan Draw Fed C5 WP4.7 Ac	4.7	09/30/20
2	011807-Corey Fed 12-5 WP 5.0 Ac	5	09/30/20
3	011807-FHMU G-808 WP 1,4 Ac	1.4	09/30/20
4	011807-H&R Tower Butte 1 WP 2.4 Ac	2.4	09/30/20
5	011807-Rosevelt Fed 2-4H WP 3.1 Ac	3.1	09/30/20
6	011807-Summit Fee 1-9H WP 3.5 Ac	3.5	09/30/20
7	011808-Bicent 10-34H WP 4.2 Ac	4.2	09/30/20
8	0118018-CMNU C-205 WP 1 Ac	1	09/30/20
9	011808-ERRMU 1-8WIW WP 1Ac	1	09/30/20
10	011808-ERRMU 4-12R WP 1 Ac	1	09/30/20
11	011808-USA 2B-2-2 WP 1 Ac	1	09/30/20

Hazardous spills and clean-up actions

A total of 787 spills occurred on the Little Missouri National Grassland (LMNG) from 2011-2020 (Figure 6, Table 23).

Table 23. Spills 2011 – 2020

Year	Medora	McKenzie	LMNG Combined
2011	60	13	73
2012	64	24	88
2013	55	49	104
2014	69	32	101
2015	52	33	85
2016	51	19	70
2017	6	34	40
2018	43	31	74

Year	Medora	McKenzie	LMNG Combined
2019	56	50	106
2020	29	17	46
Total	485	302	787

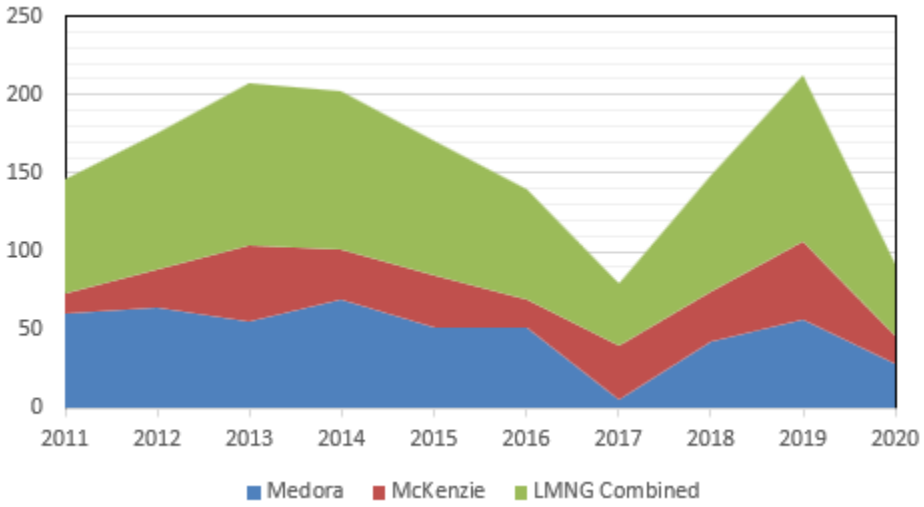


Figure 6. Spills and Cleanups per Year

Discussion

The data for decommissioned wells is considered baseline data and was previously not recorded in WIT. However, all future well decommissioning data will be recorded in WIT.

Oil and gas activities are mostly responsible for all hazardous material spills within the DPG. Between 2010 and 2020, 787 such spills were known to occur. All were cleaned up preventing contamination of surface and ground water. The number of spills and cleanups increased slightly from 2010 to 2014. This increase follows the oil boom which ended in 2014, when oil prices fell from $108 to $40 per barrel (Figure 8). The number of wells producing oil and gas continued to increase, but the barrels of oil per well decreased. Beginning in 2017, the production per well started to increase again which corresponds with the increased number of spills and cleanups (Figure 6, Figure 7). Production decreased in 2020, with a second drop in oil prices (Figure 8) and decreased demand due to COVID-19.

It should be noted that the number of spills and cleanups includes all unfavorable events. Not all unfavorable events, like fires and freshwater spills or leaks, are a threat to water resources.

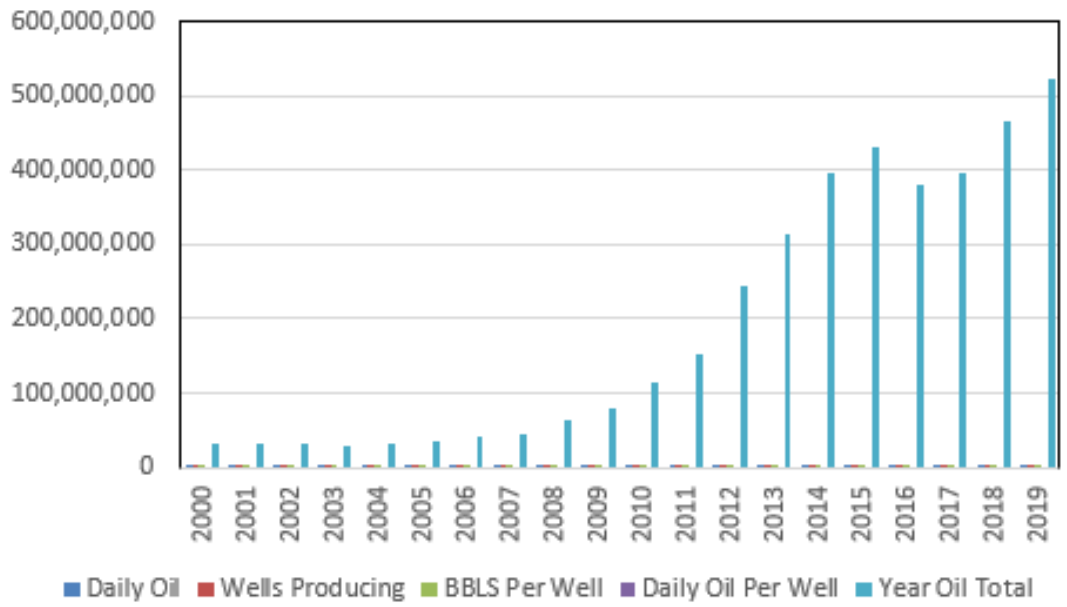


Figure 7. Historical Annual Oil Production Totals 2000 - 2019 (Data extracted from ND Dept. Mineral Resources)

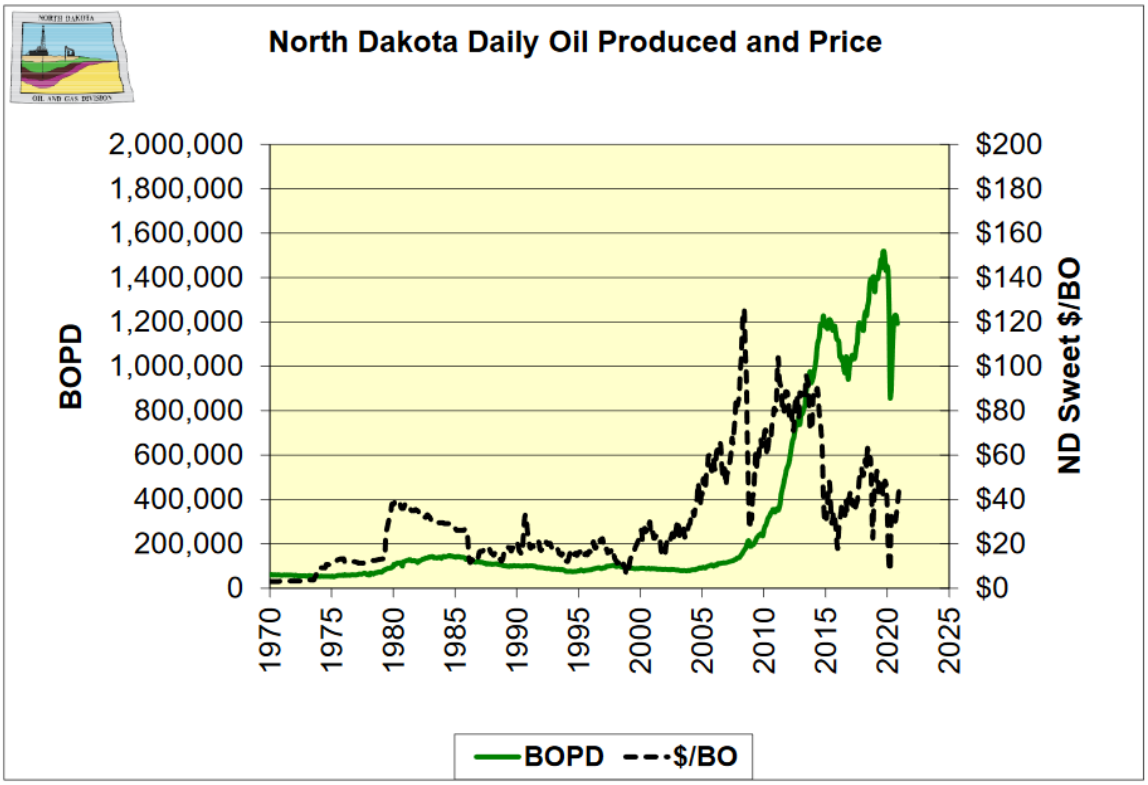


Figure 8. Chart of Daily Oil Production with Price per Barrel (from ND Dept. of Mineral Resources)

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1a Objective 5. Prevent contamination of surface water, sub-surface flows, and aquifers

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?*[2]
MON-AQU-04 To what extent have surface water, sub-surface flows, and aquifers been protected from contamination by management actions?	2021	(E) Yes – Based on wells are being decommissioned appropriately, spill cleanup is preventing contamination, and BMPs are being applied effectively.	No	NA

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired.

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*.

Botany

Monitoring Item MON-BOT-01A, -01B, -01C

Plan Component(s) being assessed by this monitoring item:

Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.

Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

(Note: Same as for MON-WLD-01, 02, 03, 04, 05 and MON-BOT-01)

Monitoring Question	Indicators*	Data collection interval	Data Source / Partner	Point of Contact
What is the current population status of *Platanthera praeclara* (western prairie fringed orchid)?	Occurrences (number of flowering stems, number of pods that set seed per flowering plant, and the number of viable seeds incorporated into the seedbank) (Y) Surveys (number of pastures and allotments surveyed for flowering orchids) (N)	Annual	SNG records	SNG Supervisory Range Management Specialist
What is the current and potential habitat capability for Platanthera praeclara (western prairie fringed orchid)?	Potential habitat (acres of) (Y) Current habitat (acres of) (Y)	Annual	SNG records	SNG Supervisory Range Management Specialist
What management actions and natural occurring events have influenced change to Platanthera praeclara (western prairie fringed orchid) status and/or its habitat?	Grazing activities (acres grazed and not grazed overlapping with orchid occurrences, acres of orchid occurrences rested between 6/1-9/15 within each core allotment. (N) Vegetation treatments (e.g, acres treated for leafy spurge within core and satellite area, acres burned or mowed in core and satellite areas, including rested areas. (N)	Annual	SNG records	SNG Supervisory Range Management Specialist

(*Influenced by climate change? Y, N, Uncertain)

Table 24. Monitoring Item MON-BOT-01A, -01B, 01C - Monitoring Collection Summary

For monitoring item MON-BOT-01A, -01B, -01C:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2005

For monitoring item MON-BOT-01A, -01B, -01C:	Year
Next scheduled MER evaluation of this monitoring item:	2023

The DPG LRMP contains standards and guidelines and monitoring for the western prairie fringed orchid. Appendix N Recovery Strategy for the Western Prairie Fringed Orchid on the Sheyenne National Grassland of the LRMP represents the best identified approach for managing the orchid in a multiple use setting and meets the intent of the Threatened and Endangered Species Act. These monitoring questions exist to identify the trends of the western prairie fringed orchid population and status of habitat.

The LRMP, Appendix N describes general conditions necessary for the maintenance of the orchid on the Sheyenne National Grassland and include the following:

- Manage western prairie fringed orchid populations consistent with metapopulation concepts.
- Manage toward sustainable native tallgrass prairie ecosystems.
- Manage the Sheyenne National Grassland to promote the ecological processes that provide the structural and floristic diversity characteristic of the tallgrass prairie ecosystem.

Management activities should favor practices that 1) reduce woody and exotic plant species such as leafy spurge and Kentucky bluegrass, 2) provide a mosaic of structural classes, seral stages and plant communities characteristic of tallgrass prairies, using fire, grazing, and other suitable practices, and 3) maintain the hydrological regime that supplies ground water to the wetlands supporting the orchid.

Methods

MON-BOT-01A-What is current population status of western prairie fringed orchid?

Surveys

In 2002, the Forest Service installed permanent plots to monitor orchids. Each plot is 100 x 100 meters and is monitored annually. The orchids in the plot are GPS'd, the height of the orchid measured, and number of flowers and buds of each plant are recorded. This data is recorded by the district and filed in the 2600 District Files.

Locations of microplots:

- McLeod: McLeod Allotment South Pasture, T134N R53W SW ¼ Sec 35
- Penberthy Plot A: Penberthy Allotment South Pasture Plot A, T135N R53W SW ¼ Sec 30
- Penberthy Plot B: Penberthy Allotment South Pasture Plot B, T135N R53W SW ¼ Sec 30
- R: R Allotment Northeast pasture, T133N R52W NW ¼ Sec 34
- Venlo: Venlo Allotment South Pasture, T134N R54W SE ¼ Sec 1

In 2002, the Forest Service designated macro plots to monitor orchid populations. Each plot is approximately 160 acres in size. From 2002-2017, the plots were monitored annually and from that point forward they will be inventoried every 5 years. All flowering orchids within the plots are counted. The protocol to count the orchids is to have surveyors line up and walk across the plot in a swath, counting all flowering orchids. This data is recorded by the district and filed in the 2600 District Files.

Locations of macroplots:

- McLeod: McLeod Allotment North Pasture, T134N R53W NW¼ Sec 27
- Milton Jr.: Milton Jr. Allotment North Middle Pasture, T135N R52W NW¼ Sec 13

- Olerud: Olerud Allotment West Pasture, T135N R53W SW¼ Sec 34
- Sagvold: Sagvold Allotment West Pasture, T134N R53W SW¼ Sec 4
- Venlo: Venlo Allotment South Pasture, T134N R54W SE¼ Sec 1
- Viking Prairie: Viking Prairie General Resource Area, SW¼ Sec 9

The western prairie fringed orchid occurs primarily in and adjacent to graminoid wetlands in several habitat types within the Hummocky Sandhills and Deltaic Plain habitat associations as described by Manske Habitat Associations and Habitat Types on the Sheyenne National Grasslands of North Dakota (ndsu.edu), including mesic toe slopes and wetlands as classified as the Lowland Grassland habitat type, and adjacent tallgrass prairie classified as the Midland Grassland habitat type. The Lowland Grassland habitat type occupies wet-mesic, ephemerally inundated settings having a shallow water table, and is confined to the basins of shallow wetlands, the margins of deeper wetlands, and waterway margins. The Midland Grassland habitat type exists adjacent to the Lowland types on the sides of hummocks, on loamy fine sand soils with low to moderate available soil water. With the creation of Ecological Site Descriptions (ESD) by NRCS multiple soil complexes were combined into the new ESDs.

Within the survey plots noted above orchids occur across five ecological sites and nine soil complexes.

Ecosites:

Choppy Sands,
Limy Subirrigated,
Sands,
Subirrigated Sands,
Wet Meadow,

Soil complexes:

Aylmer-Bantry fine sands, 0 to 6% slopes;
Aylmer-Rosewood-Serden complex, 0 to 9% slopes;
Borup silt loam, 0 to 1% slopes,
Hamar fine sandy loam, 0 to 1% slopes;
Hamar loamy fine sand, 0 to 1% slopes;
Hecla-Garborg loamy fine sands, 0 to 2% slopes;
Hecla-Garborg-Arveson complex, 0 to 2% slopes;
Rosewood fine sandy loam, 0 to 1% slopes;
Serden fine sand, 6 to 35% slopes;
Serden Hamar complex, 0 to 15% slopes;
Ulen fine sandy loam, 0 to 2% slopes;
Ulen-Garborg-Aylmer complex, 0 to 2% slopes.

When funding is available, North Dakota Parks and Recreation (NDPR), Heritage Division contracts for grazing allotments to be inventoried for orchids on the Sheyenne National Grassland. Each year NDPR personnel coordinate with Sheyenne District personnel for recommendations of which areas to inventory. NDPR maps and counts all flowering orchids in the agreed upon areas and provides a report of findings to USDA Forest Service.

MON-BOT-01B - What is the current and potential habitat capability for western prairie fringed orchid

Current habitat

Acres of current habitat are reported by using the GIS layers (orchid point and orchid poly) that include all areas on the Sheyenne National Grassland where orchids have been inventoried from 1982 to 2020. This layer is updated annually in the GIS reference library. To analyze the data, we buffered the orchid points by five feet and then joined this layer with the orchid polygon layer to produce acres of current habitat.

Potential habitat

The habitat for the western prairie fringed orchid generally occurs in wet meadows within ecological sites. These are not easily mapped due to the complexity of the soil complexes on the Sheyenne National Grassland as described above. After reviewing data from almost 40 years of extensive surveys for the western prairie fringed orchid it is apparent that these orchids tend to grow in certain sites and for unknown reasons, not in others. We are reporting acres of "potential habitat" as equal to "current habitat" because we are unable to use GIS layers to correctly display the potential habitat based solely on ESD or soil map layers. Due to the complexity of the soils within each ecological site description, and where orchids are found, it is not easily mapped. The discussion in the survey section above shows the number of ecological sites and soil complexes within these sites.

MON-BOT-01C - What management actions and naturally occurring events have influenced change to western prairie fringed orchid status and/or its habitat?

Grazing activities

Acres grazed and not grazed overlapping with orchid occurrences are analyzed by comparing the current orchid habitat with location of grazing allotments by using the GIS layers.

Appendix N of the LRMP states that each year, 1/3 of the acres historically occupied by orchids in core allotments will not be grazed June 1 to September 15. Areas that are rested during this time period encompass a topographic gradient to allow for the local population shifts and are adjusted spatially to account for future metapopulation shifts. These orchid deferment areas are mapped with GPS and reported annually by the district and are also indicated in the grazing program's Annual Operating Instructions.

Implementation of the deferred acres has been a gradual process. Orchid deferment areas are either an entire pasture (these pastures were previously fenced for cattle rotations) that is deferred from grazing impacts by working this into the grazing rotation or areas where USDA Forest Service purchases and installs temporary electric fence to defer a specific area of orchid habitat within a pasture.

Vegetation treatments

Data for acres treated for leafy spurge within core and satellite areas is collected by gathering the information for these allotments from NRM FACTS database.

Data for acres burned, mowed, or rested in core and satellite areas is collected by gathering the information for these allotments from NRM FACTS database.

Results

MON-BOT-01A - What is current population status of western prairie fringed orchid?

The current population status of western prairie fringed orchid is shown in Table 25, Table 26, and Table 27 below. Table 25 shows how the population of the western prairie fringed orchid (based on flowering orchids) within the microplots has changed from year to year. Table 26 and show how the population of the western prairie fringed orchid (based on flowering orchids) within the macroplots has changed from year to year. Table 27 represents acres that have been surveyed for the western prairie fringed orchid. These areas are different each year and contain varying amounts of potential orchid habitat so they cannot be compared from year to year like the micro and macro plots can be.

Table 25. Western Prairie Fringed Orchid Count in Sheyenne National Grassland Microplots by Year**

Year	McLeod		Penberthy Plot A		Penberthy Plot B		R		Venlo		Total	
	*F	*V	*F	*V	*F	*V	*F	*V	*F	*V	*F	*V
2002	25	20	6	0	74	68	1	0	30	57	136	145
2003	12	11	20	12	41	124	17	7	6	16	96	170
2004	30	11	1	7	2	10	0	0	5	38	38	66
2005	45	1	12	0	166		6	0	5	15	234	16
2006	38	3	20	2	224	36	6	0	5	1	293	42
2007	9	0	5	0	25	8	4	0	0	0	43	8
2008	37	14	6	0	23	3	6	0	5	1	77	18
2009	8	0	2	0	1	1	2	0	15	0	28	1
2010	11	2	12	5	13	0	1	1	0	0	37	8
2011	2	--	0	--	2	--	0	--	3	--	7	--
2012	0	--	18	--	42	--	0	--	2	--	62	--
2013	2	--	3	--	20	--	0	--	2	--	27	--
2014	0	--	3	--	11	--	0	--	0	--	14	--
2015	8	--	3	--	5	--	0	--	2	--	18	--
2016	21	3	11	0	47	5	0	0	3	1	82	9
2017	15	5	6	6	58	29	2	2	18	0	99	42
2018	2	1	0	0	1	7	0	0	65	0	68	8
2019	6	0	3	0	35	3	3	0	42	2	89	5
2020	0	0	0	0	0	0	9	0	1	0	10	0

*F-flowering orchid, V-vegetative orchid

**Cells with -- indicate there were no visits during those years.

Table 26. Western Prairie Fringed Orchid Counts in Sheyenne National Grassland Macroplots by Year *

Year	McLeod	Milton Jr.	Olerud	Sagvold	Venlo	Viking Prairie	Annual Total
2001	--	256	--	--	--	647	--
2002	--	--	--	--	--	119	--
2003	--	--	7	--	--	38	--
2004	--	--	--	--	--	27	--
2005	--	--	--	--	--	194	--
2006	--	--	1815	--	186	206	--
2007	19	162	339	218	198	94	1030
2008	277	14	62	293	117	322	1085
2009	258	115	67	265	374	315	1394
2010	100	952	48	62	6	744	1912
2011	159	282	94	106	120	612	1373
2012	37	11	53	138	31	319	589
2013	101	28	48	57	174	65	473
2014	196	225	113	182	15	50	781
2015	--	--	--	--	--	--	--
2016	140	119	149	1	237	120	766
2017	2	51	132	158	259	85	687
2018	94	--	--	--	--	107	--

**Cells with -- indicate there were no visits during those years.

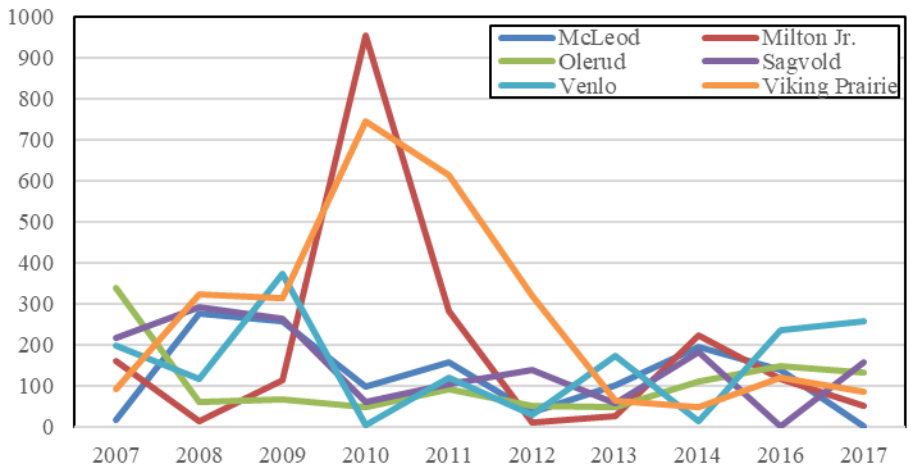


Figure 9. Western Prairie Fringed Orchid Counts in Sheyenne National Grassland Macroplots by Year

Table 27. Acres Surveyed for Western Prairie Fringed Orchid by North Dakota Parks and Recreation*

Year	Acres Surveyed	Number of Orchids
2001	4,401	1,042
2002	10,298	174
2003	885	--
2004	4,720	85
2005	3,640	3,209
2006	3,558	560
2007	4,404	1,433
2008	3,019	2,544
2009	2,997	1,347
2010	5,473	1,595
2011	3,814	1,666
2012	4,148	480
2013	0	--
2014	5,062	1,017
2015	4,779	2,487
2016	5,130	1,781
2017	0	--
2018	4,292	853
2019	5,134	634
2020	5,106	125

*Cells with -- indicate there were no visits during those years.

MON-BOT-01B - What is the current and potential habitat capability for western prairie fringed orchid?

Table 28. Current and Potential Habitat Capability for Western Prairie Fringed Orchid

	Acres
Current habitat	8,380
Potential habitat	8,380

MON-BOT-01C - What management actions and naturally occurring events have influenced change to western prairie fringed orchid status and/or its habitat?

Table 29, Table 30, and Table 31 show different management actions that may influence change to Western prairie fringed orchid status and/or habitat. Table 29 shows acres of orchid habitat within the Sheyenne National Grassland that is grazed or not grazed. Almost all of the orchid habitat is grazed each year on the Grassland. Table 30 shows those acres of orchid habitat that are rested each year from June 1 to September 15 to avoid grazing impacts to the orchid. Table 31 shows other vegetation treatments that may occur nearby or within orchid habitat.

Table 29. Acres Grazed and Not Grazed Overlapping with Orchid Occurrences

	Acres
Orchid habitat – grazed	8,350
Orchid habitat – not grazed	30

Table 30. Acres of Orchid Habitat Rested between June 1 to September 15 within Core Allotments

Allotment	Year																			
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
A Annex	--	--	50	50	22	22	50	22	39	26	24	24	39	24	20	23	35	30	27	--
Bjugstad (satellite)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	873	331	333	333
McLeod	--	--	--	160	160	191	160	160	99	142	177	105	164	105	161	103	153	26	32	--
Milton Jr	160	320	160	320	160	160	160	160	146	158	159	171	155	171	155	168	152	161	171	155
North Durler	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	606	581	26	33	--
North S	--	--	245	274	245	297	200	281	241	281	246	281	246	20	3	18	21	14	12	--
Olerud/ Sagvold	--	--	--	160	320	160	320	160	161	152	161	159	145	152	158	160	170	140	161	158
Penberthy	--	--	460	311	160	18	22	60	24	25	22	18	22	18	15	14	158	204	157	260
Venlo	--	--	--	--	300	89	320	100	92	268	110	274	98	268	27	40	90	298	279	298
Wall	--	439	160	160	160	160	160	160	173	152	152	171	152	171	152	152	232	367	203	152
Total Acres	160	759	1,075	1,435	1,527	1,097	1,392	1,103	975	1,204	1,051	1,203	1,021	929	691	1,284	2,,465	1598	1,408	1,356

**Cells with -- indicate there were no visits during those years.

Vegetation treatments (e.g, acres treated for leafy spurge within core and satellite areas, acres burned or mowed in core and satellite areas, including rested areas). Acres of leafy spurge treatments that are listed in Table 31 include biocontrol releases, sheep or goat grazing, and herbicide application. Noxious weed treatments in orchid habitat follow all mitigation measures within the DPG Noxious Weed Project EIS and LRMP Appendix N. Acres of mown wet meadows were not recorded in the Natural Resource Manager (NRM) database until 2012. Mowing treatments occurred before this time but have not been digitized or summarized. Brush reduction in wet meadows did not occur until vegetation projects were completed and these treatments were not implemented until 2016. Brush reduction includes using an aerator or diamond brush mower to reduce willow in wet meadow sites.

Table 31. Acres of Vegetation Treatments in Core and Satellite Allotments by Year

Year	Leafy Spurge Treatment		Prescribed Fire		Mowing Wet Meadows		Brush Reduction in Wet Meadows	
	Core	Satellite	Core	Satellite	Core	Satellite	Core	Satellite
2002	981	2,110	1,071	524	--	--	--	--
2003	3,870	2,216	1,964	1,088	--	--	--	--
2004	2,226	3,656	709	1,653	--	--	--	--
2005	7,179	6,312	1,939	1,887	--	--	--	--
2006	5,255	5,203	1,316	3,731	--	--	--	--
2007	1,483	4,931	734	1,431	--	--	--	--
2008	5,364	5,729	2,721	1,118	--	--	--	--
2009	664	1,781	0	741	--	--	--	--
2010	293	896	0	373	--	--	--	--
2011	30	423	0	0	--	--	--	--
2012	1,594	3,106	1,059	1,382	685	1,213	--	--
2013	984	3,025	0	320	999	1,093	--	--
2014	2,258	6,486	875	1,621	999	1,001	--	--
2015	6,163	2,416	732	419	1,053	1,168	--	--
2016	5,718	6,273	911	0	992	1,406	43	50
2017	6,945	2,809	0	1,067	1,217	1,256	339	96
2018	7,867	3,670	1,010	325	1,240	1,392	445	128
2019	7,326	4,027	0	1,486	155	514	162	0
2020	7,759	4,575	0	0	717	610	0	39

**Cells with -- indicate there were no visits during those years.

Discussion

MON-BOT-01A - What is current population status of western prairie fringed orchid?

The orchid survey data shows that the population varies from year to year. From 2002 to 2020 there were between 7 to 293 total flowering orchids within the microplots. From 2007 to 2017 (years when all plots were counted) there were between 473 to 1912 total flowering orchids within the macroplots. The allotment surveys that are done also vary in number of orchids by year, but this data is not comparable between years since different areas are surveyed each year. An average of 4000 acres have been surveyed for orchids annually from 2001-2020.

When looking at the data from the macroplots it shows that the orchid population can vary greatly from year to year, but it appears that the population overall is maintaining itself when you look across the 10 years of data.

MON-BOT-01B - What is the current and potential habitat capability for western prairie fringed orchid?

The current and potential habitat for western prairie fringed orchid is 8380 acres. See the methods section for further information on how this was calculated.

MON-BOT-01C - What management actions and naturally occurring events have influenced change to western prairie fringed orchid status and/or its habitat?

Management actions and naturally occurring events may influence change to western prairie fringed orchid status and/or its habitat. The indicators that were assigned for this question only ask for acres of many of the vegetation management actions that occur on the Sheyenne National Grassland. Those actions include grazing, rest from grazing, leafy spurge treatment, prescribed burning, and mowing. In order to see if these management actions actually influenced orchid status or habitat, there would need to be a much more in-depth review of how those actions may or may not correlate with fluctuating orchid numbers. The management activities that are being tracked do not appear to be affecting the population or habitat in a negative way. However, there are other naturally occurring events (e.g., invasive species such as reed canary grass and hybrid or invasive cattails) that may be directly affecting the habitat that are not addressed in the indicator.

The greatest impact to the orchid status and habitat is likely fluctuating ground water conditions. The orchid prefers growing in sites with saturated soils. Precipitation creates fluctuation in the habitat quality within the wet meadow sites from year to year so population levels can vary greatly. Flooding events between 2009 and 2011 brought in an invasive hybridized cattail, that is able to sustain in less water. This may be competing with the orchid for habitat as they will be able to survive in this same habitat that the orchid prefers, which is drier than the non-hybridized cattail.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.
- Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.
- Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

MONITORING ITEM	**YEAR UPDATED**	**PLAN INTENT [1]** *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing)* of the associated plan components listed with this monitoring item?	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-BOT-01A What is current population status of *Platanthera praeclara* (western prairie fringed orchid)?	2021	(E) Yes – Monitoring of the orchid population has occurred for many years and results demonstrate that the population fluctuates annually, but overall is maintained.	No	NA
MON-BOT-01B	2021	(E) Yes – Orchids have been surveyed across the Sheyenne	No	NA

MONITORING ITEM	**YEAR UPDATED**	**PLAN INTENT** [1] *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing)* of the associated plan components listed with this monitoring item?	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?*[2]
What is the current and potential habitat capability for *Platanthera praeclara* (western prairie fringed orchid)?		National Grassland over many years we are able to identify current and potential habitat. It appears the habitat is being maintained.		
MON-BOT-01C What management actions and naturally occurring events have influenced change to *Platanthera praeclara* (western prairie fringed orchid) status and/or its habitat?	2021	(B) Uncertain – Flooding events between 2009 and 2011 brought in an invasive hybridized cattail that is able to sustain in less water. It has the potential to outcompete the orchid.	Yes	Monitoring Plan: Orchid habitat dominated by invasive species should be tracked to see if this affects orchid populations. Include an additional indicator of acres of orchid habitat in the invaded state. Vegetation treatments and orchid populations need to be evaluated further to determine if there is a cause-and-effect relationship.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to* ***the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment****, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-BOT-02

Plan Component(s) being assessed by this monitoring item:

Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

Goal 1.b Objective 5. As rare plant and wildlife communities are identified, inventory them and develop associated management strategies to conserve them.

Goal 1.b Objective 9. Conduct target surveys for globally rare plant species and other rare plant species with viability concerns.

Monitoring Question	Indicators*	Data collection interval	Data Source / Partner	Point of Contact
What is the status of rare plants?	Occurrences (# of stems, acres of occupancy) (U) Surveys (presence/absence) (U)	Supervisor's Office records (Annual) Note: Not all occurrences will be visited every year. Selection of interval of visits dependent on life history of plants.	USDA Forest Service	LMNG Botanist & Biology Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 32. Monitoring Item MON-BOT-02 - Monitoring Collection Summary

For monitoring item MON-BOT-02:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

To ensure that Forest Service actions do not contribute to loss of population viability of sensitive plant species or contribute to a trend towards Federal listing under the Endangered Species Act (DPG LRMP pages 1-3 and 1-15, and Forest Service Manual 2270). Eriogonum visheri (Dakota buckwheat, Visher's Buckwheat) and Chenopodium subglabrum (smooth goosefoot) are species with Global conservation ranking of G3 and G2. There are two guidelines within the LRMP, page 1-16 number 38 and 39, that guide us to do target surveys and implement conservation strategies for. Eriogonum visheri a signed conservation strategy. However, Chenopodium subglabrum only has a drafted conservation strategy.

Methods

The methods used to collect this data includes the Region 1 Botany Field Protocol (July 2020) and Little Missouri Biological Survey and Reporting Guidelines (2016 through 2020). Methods used on occurrence revisits was a presence and absence survey. The extent of occurrences was determined and individual stems were counted, and recorded using Collector Classic. Historical occurrence data (going back to 1992) will then be compared to determine trends. A data dictionary was developed by the DPG GIS staff and botanist to assure all field requirements were covered for future input into Natural Resource Information System (NRIS). Each year the survey data is uploaded into the DPG Botany GIS layer.

Results

Table 33. Number of Stems and Year Collected based on GIS Point Data of DPG Sensitive Plants**

Plant Species	2016	2017	2018	2019	2020	Total
Apios americana (groundnut)	--	--	0	--	--	0
Campanula aparinoides (marsh bellflower)	--	--	30	--	--	30
Carex formosa (handsome sedge)	--	--	0	--	--	0
Chenopodium subglabrum (smooth goosefoot)	--	--	0	--	--	0
Cypripedium reginae (showy lady's slipper)	--	--	0	--	--	0
Equisetum palustre (marsh horsetail)	--	--	0	--	--	0
Eriogonum cernuum (nodding buckwheat)	--	--	156	0	--	156
Eriogonum visheri (Dakota buckwheat)	--	318	13,978	34,561	3,965	52,822
Escobaria missouriensis (Missouri foxtail cactus)*	144	15	1,981	--	--	2,140
Euonymus atropurpureus (wahoo)	--	--	0	--	--	0
Galium labradoricum (bog bedstraw)	--	--	0	--	--	0
Gymnocarpium dryopteris (oakfern)	--	--	0	--	--	0
Menyanthes trifoliata (buckbean)	--	--	0	--	--	0
Onoclea sensibilis (sensitive fern)	--	--	0	--	--	0
Ophioglossum pusillum (adder's tongue fern)	--	--	0	--	--	0
Phlox alyssifolia alyssum (leaved phlox)	--	--		--	25	25
Populus x acuminata (lanceleaf cottonwood)	--	--	22	--	--	22
Solidago flexicaulis (zigzag goldenrod)	--	--	20	--	--	20
Townsendia exscapa (Easter daisy)	0	2	--	--	--	2
Townsendia hookeri (Townsendia hookeri)	225	36	--	1,881	921	3,063
Total	369	371	16,187	36,442	4,911	58,280

**Escobaria missouriensis* was removed from the R1 DPG sensitive plant species (May 2019)

**Cells with -- indicate there were no visits during those years.

Table 34. Number of Stems, Acres of Occurrence, and Year Collected based on GIS Polygon Data of DPG Sensitive Plants[1]

Species	2016		2017		2018		2019		2020		Total Stem Count	Total Acres
	Stem Counts	Acres	Stem Counts	Acres	Stem Counts	Acres	Stem Counts	Acres	Stem Counts	Acres		
Eriogonum cernuum	--	--	--	--	78	0.05	--	--	--	--	78	0.05
Eriogonum visheri**	--	--	0	0.18	6,489	0.50	44,446	9.01	3,000	N/A	53,935	9.70
Escobaria missouriensis*	0	1.19	59	0.30	207	6.31	--	--	--	--	318	8.36
Hudsonia tomentosa	0	0.01	--	--	--	--	--	--	--	--	0	0.01
Populus x acuminata	--	--	--	--	11	0.05	--	--	--	--	11	0.05
Townsendia hookeri	50	0.11	--	--	--	--	919	0.45	1,000	1.89	1,969	2.45
Townsendia sp.			--	--	--	--	--	--	--	--	11	0.02
Total	50	1.31	59	0.48	6,785	6.91	45,365	9.46	4,000	1.89	56,322	20.64

**Escobaria missouriensis* was removed from the R1 DPG sensitive plant species (May 2019).

***Eriogonum visheri* stem count may be doubled up with point data; However, over all stem counts are between 52,000 to 54,000.

[1]Cells with -- indicate there were no visits or no survey information for that year.

Table 35. DPG Sensitive Species Project Survey Acres, Number of Projects Number of Meta-Populations Found, and Year of Surveys

Year	Number of Projects Surveyed	Number of Meta-Populations	Surveyed Acres*
2016	19	3	1,899
2017	20	20	865
2018	32	20	~1,067.43
2019	32	13	717
2020	77	75	1,537
Total	180	131	6,649

* Acreage does not include targeted occurrence revisit surveys

Discussion

The DPG, in the last 5-years, has revisited and discovered new occurrences of sensitive plant species on three of the four grasslands. Table 33 illustrates the number of stems counted for 18 DPG sensitive plant species. The extent (acres) of the occurrences, within Table 33, cannot be determine since the data was collected as a point feature. Result presented in the table show that DPG focused on Eriogonum visheri for revisits which would be consistent with our Grassland Plan. Twenty-three occurrences were revisited and as a result, new subpopulations were discovered. Two new occurrences of Eriogonum visheri were found in Slope county in 2020. Table 34 illustrates the extent of the meta-populations in acres and the number of stems recorded. Based on historical occurrence data and results from the revisits of this species seem to be stable, which indicates that current and past management on the DPG has not had an effect on species. Only one Chenopodium subglabrum revisit has been conducted in the last five years. This plant is also an annual that has a tendency of moving down stream of the Little Missouri River. No individuals were found during the revisit of the occurrence in 2018. A trend for this species cannot be determined until a more thorough survey is conducted along the Little Missouri River and on the Grand River National Grassland. The information provided in the tables below does not provide enough information to determine a trend of the existing occurrences of past and current management on the DPG.

Table 35 illustrates the number of projects surveyed for sensitive plant in the last five years. The data provided for 2016 and 2017 was inconsistent across districts on the DPG. Changes have been made and data provided from 2018 through 2020 captures the number of surveys, and the presence and absence of sensitive plant occurrences. DPG does not know the extent of potential habitat across the DPG's five grasslands for most of the list R1 DPG sensitive plant species. The DPG also doesn't know the exact number of projects that will be surveyed annually. The data provided below indicates that on average 36 project are surveyed for sensitive plants per year. On average 26.2 occurrences are detected annually and on average 1329.8 acres are surveyed annually. These occurrences maybe historical occurrences or new occurrences. Townsendia hookeri is the most common species found during project surveys and the reason for this is that the DPG has made adjustments in the timing of the surveys to capture this species in the flower stage (USFS 2020b).

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.
- Goal 1.b Objective 5. As rare plant and wildlife communities are identified, inventory them and develop associated management strategies to conserve them.
- Goal 1.b Objective 9. Conduct target surveys for globally rare plant species and other rare plant species with viability concerns.

MONITORING ITEM	YEAR UPDATED	PLAN INTENT [1] *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT If a change may be warranted, where may the change be needed?[2]
MON-BOT-02 What is the status of rare plants?	2021	(B) Uncertain – The extent of potential habitat across the DPG's five grasslands for most of the listed R1 DPG sensitive plant species is unknown? Additional monitoring needs to occur among all districts for DPG to evaluate the status of conservation of rare plants.	No – The new Regional Botany Protocol and DPG data collection process along with attributes in the DPG GIS Layer there is no need for changes. Efforts to use these tools to further make botany data collection consistent throughout the Districts is needed.	NA

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Wildlife

Monitoring Item MON-WLD-01A, -01B, -01C

Plan Component(s) being assessed by this monitoring item:

Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.

Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

(Note: Same as for MON-WLD-01, 02, 03, 04, 05 and MON-BOT-01)

Monitoring Question	Indicators*	Data collection interval	Data Source / Partner	Point of Contact
What is the current population status of black-tailed prairie dog (*Cynomys ludovicianus*)?	Prairie dog locations (mapped locations and acres of prairie dogs) (Y) Complexes (number of complexes - collection of colonies) (Y) Active colonies (total acreage and number of active colonies) (Y)	3 years	Supervisor's Office prairie dog maps (3-year interval) (DPG GIS files, GRNG Allotment Management Plan Monitoring Reports, USFS yearly reports on Black-footed Ferret Recovery Prairie Dog Habitat Management Activities)	Biology Program Manager
What is the current Black-tailed Prairie Dog occupancy?	Habitat availability (acres of current prairie dog occupancy) (Y)	3 years	Supervisor's Office prairie dog maps (3-year interval, contract)	Biology Program Manager
What management actions and naturally occurring events have influenced change to black-tailed prairie dog status and/or its habitat?	Damage control (acreage of prairie dog towns controlled) (Y) Prescribed fires (acres of) (Y) Vegetation exclosures (numbers of) (Y)	Annual	Damage Control: -SD State Wildlife control office (annually compile) -ND – DPG contract reports (annually compile) Prescribed Fires: FACTS (Discussion with Districts) Vegetation Exclosures: FACTS (Discussion with Districts, GRNG Allotment Management Plan Monitoring Reports)	Biology Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 36. Monitoring Item MON-WLD-01A, -01B, -01C - Monitoring Collection Summary

For monitoring item MON-WLD-01A, -01B, -01C:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2002, 2003, 2005
Next scheduled MER evaluation of this monitoring item:	2023

The Dakota Prairie Grasslands LRMP (2001) designated Black-tailed Prairie Dog as a management indicator species (MIS). The black-tailed prairie dog occurs on both districts (Medora and McKenzie) of the Little Missouri National Grassland (LMNG) and on the Grand River National Grassland (GRNG), Grand River Ranger District. The species is now absent from the Cedar River National Grassland on Grand River Ranger District. The Sheyenne Ranger District is outside of the range of this species.

Prairie dog populations on the DPG are managed in terms of complexes while also complying with the good neighbor policy. The current DPG LRMP includes guidelines to promote development of prairie dog complexes within the interior of the NFS lands, including an LRMP objective to develop four prairie dog complexes across the LMNG. The purposes of a complex are to help support prairie dog species viability and help provide sufficient habitat for associated species.

Methods

MON-WLD-01A - What is current population status Black-tailed Prairie Dog?

Black-tailed Prairie Dogs are highly social burrowing animals that live in large colonies which makes visual counts and subsequent population level estimates problematic. Current Black-tailed Prairie Dog monitoring methods on the DPG do not provide information necessary to estimate population levels. However, population level changes are roughly reflected in changes to the acres of occupied colonies. While population levels may not be accurately inferred from occupancy data, trends or significant changes in population levels can be inferred (see Acres of Active Colonies in results).

Prairie Dog Locations & Active Colonies

As resources allow, black-tailed prairie dog colonies are surveyed every three years. Methods for mapping prairie dog colonies are summarized in Carlson-McCain 2018. Recent Prairie Dog mapping is ground-based, but could include Unmanned Aerial Vehicles, also known as drones in the future as cost and quality of data collection allows.

Complexes

A complex is defined as "*a group of at least ten prairie dog colonies with nearest-neighbor, inter-colony distances not exceeding 6 miles and with a total colony complex acreage of at least 1,000 acres*" (Appendix G, LRMP). Prairie dog populations on the Grand River Ranger District are managed to establish two or more complexes. On the LMNG, there is a goal to establish four prairie dog complexes. Acreages for complexes in this report are listed at mapping time 2018.

MON-WLD-01B – What is the current Black-tailed Prairie Dog occupancy?

See MON-WLD-01A - What is current population status Black-tailed Prairie Dog?- Prairie Dog Locations and Active Colonies.

MON-WLD-01C - What management actions & naturally occurring events have influence change to Black-tailed Prairie Dog status &/or its habitat?

Damage

Prairie dog populations are controlled with the rodenticide zinc phosphide, placed along a ¼ mile zone paralleling non-NFS property authorized by the Little Missouri National Grassland Prairie Dog Management Project Environmental Assessment (EA), 2018. Prairie Dog control is also authorized through Vegetation Management Plan EAs on the Grand River National Grassland (GRNG). Information about prairie dog control is found in the DPG GIS files, GRNG Allotment Management Plan Monitoring Reports, and USFS yearly reports on Black-footed Ferret Recovery and Prairie Dog Habitat Management Activities.

Prescribed Fire

No prescribed fires have occurred on the western DPG for over a decade.

Vegetation Exclosure

Vegetation exclosure data was obtained through discussion with GRNG and GRNG Allotment Management Plan Monitoring Reports. A vegetation management cattle-exclosure is temporary (electric fence) or permanent (3 strand-wire) fence to provide visual/high structure barrier and discourage colony expansion.

Results

MON-WLD-01A - What is the current population status of black-tailed prairie dog (BTPD)(*Cynomys ludovicianus*)?

Prairie Dog Locations & Active Colonies:

Complexes

Prairie dog populations on the Grand River National Grassland (GRNG) are managed to establish two or more complexes. As of 2018, GRNG has one complex. Prairie dog populations on the Little Missouri National Grassland (LMNG) are managed to establish four or more complexes. As of 2018, LMNG has four complexes.

Table 37. Little Missouri National Grassland Prairie Dog Complexes

Ranger District	Complex	Acres
Medora	South Unit Theodore Roosevelt National Park	1,519
	SW Slope (also known as Boyce Creek/Indian Creek)	1,948
McKenzie	SW McKenzie	1,380
	NW McKenzie	1,689

Active colonies

Table 38. Acres of Mapped Prairie Dog Colonies by District and Year

District	2012 Acres	2015 Acres	2018 Acres
McKenzie	2,881	2,263	3,547.5
Medora	2,062	3,242.6	4,680.7
Grand and Cedar River	2,362	2,180.1	2,697.2
Total	7,305	7,685	10,825

Colony data within the DPG from the following BTPD Reports (Carlson-McCain 2012, 2015, 2018):

2018. Black-tailed Prairie Dog Colony Mapping DPG. Prepared for: USDA – DPG USFS. 27 p.
2015. Black-tailed Prairie Dog Colony Mapping DPG. Prepared for: USDA – DPG USFS. 34 p.
2012. Black-tailed Prairie Dog Colony Mapping DPG. Prepared for: USDA – DPG USFS. 25 p.

MON-WLD-01B – What is the current Black-tailed Prairie Dog occupancy?

See acres reported in MON-WLD-01A - What is the current population status of black-tailed prairie dog (BTPD)(*Cynomys ludovicianus*)?.

MON-WLD-01C - What management actions & naturally occurring events have influence change to Black-tailed Prairie Dog status &/or its habitat?

Damage Control

Table 39. Prairie Dog Control Acres by Year

Ranger District	2011	2014	2017	2018	2019	2020
McKenzie		107		1,774	1,225	975
Medora				2,046	1,473	1,568
Grand and Cedar River	189 acres, control done 11/2011	Control done Fall 2014?	200	~287	None	161

Vegetation Exclosures

On GRNG, there is one prairie dog exclosure. On Medora RD, there are six prairie dog exclosures.

Discussion

MON-WLD-01A - What is the current population status of the Black-tailed Prairie Dog (*Cynomys ludovicianus*)?

Black-tailed Prairie Dogs are burrowing animals that live in large social colonies. Visual counts or estimates of population levels are not possible with the current monitoring methods, nor would this data inform management as appropriately as Black-tailed Prairie Dog occupancy (see MON-WLD-01B) which has a spatial component that better informs management decisions. Population status for Black-tailed Prairie Dogs is also correlated with occupancy. Presently, this indicator is redundant and it is recommended to combine this with MON-WLD-01B to provide a more thorough review of prairie dog populations.

Prairie Dog Locations & Active Colonies

Acres of prairie dog colonies contract and expand based on forage availability. The last mapping in 2018 showed expanded acreage which correlates with a low precipitation year in 2017 where it is expected that colonies would expand for increased vegetation. The DPG began rodenticide applications targeting prairie dogs in 2018 which has caused some alteration in acreages.

Complexes

Using 2018 data, there is only one complex on the GRNG, one complex less than the ideal two. Also based on the 2018 data, there are four complexes on the LMNG as desired in the LRMP (2001). Number of complexes may have changed since 2018 due to control efforts; this would be identified by further surveys scheduled to be completed in 2021.

MON-WLD-01B – What is the current Black-tailed Prairie Dog occupancy?

This monitoring question and the indicator (acres of occupied prairie dog colonies) is redundant with MON-WLD-01A; therefore, the two questions should be merged as discussed in MON-WLD-01A.

MON-WLD-01C - What management actions & naturally occurring events have influenced change to Black-tailed Prairie Dog status &/or its habitat?

The last mapping of black-tailed prairie dog was accomplished after a below average precipitation year in 2017, potentially leading to the larger acreage in 2018. Precipitation in Bowman, North Dakota, located approximately 15 miles south of the nearest LMNG administrative boundary, was only about 11 inches throughout 2017. The average annual precipitation for the area is approximately 16 inches.

Damage Control

The DPG completed the Little Missouri National Grassland Prairie Dog Management Project Environmental Assessment (EA) in 2018. Prairie Dog control is also discussed in MON-CMR-02 of this report. NEPA may need to be updated for Grand River National Grassland Prairie Dog control in the future.

Vegetation Enclosures

Authorized in the Little Missouri National Grassland Prairie Dog Management Project Environmental Assessment (EA) of 2018, once control procedures are assessed and determined to have the desired efficacy, a vegetation barrier may be established to discourage future encroachment. This vegetation barrier would be placed after at least two to three years of black-tailed prairie dog control efforts.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.
- Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.
- Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

MONITORING ITEM	YEAR UPDATED	PLAN INTENT [1] *Do monitoring results demonstrate intended progress (i.e., maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?*[2]
MON-WLD-01A What is the current population status of black-tailed prairie dog (*Cynomys ludovicianus*)? MON-WLD-01B What is the current black-tailed prairie dog occupancy? MON-WLD-01C What management actions and naturally occurring events have influenced change to black-tailed prairie dog status and/or its habitat?	2021	(D) No – Lacking one complex on GRRD (based on 2018 mapping data). Striving for 2 complexes on GRNG. Control efforts may influence progress toward plan objectives.	Yes	Monitoring Plan: Control efforts should be evaluated to determine if efforts have had negative impacts to establishing or maintaining desired complex numbers. Recommend merging MON-WLD-01B with MON-WLD-01A due to redundancy.

Monitoring Item MON-WLD-02A, -02B, -02C

Plan Component(s) being assessed by this monitoring item:

Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.

Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

(Note: Same as for MON-WLD-01, 02, 03, 04, 05 and MON-BOT-01)

Monitoring Question	Indicators*	Data collection interval	Data Source Partner	Point of Contact
What is the current population status of 1) sage grouse (*Centrocercus urophasianus*), 2) sharp-tailed grouse (*Tympanuchus phasianellus*), and 3) greater prairie chicken (*Tympanuchus cupido*)?	By each grouse species: Leks (number of) This needs to be changed (*Y) Gender ratio (number of males & females within each lek) (Y)	Annual	DPG records	Biology Program Manager
What is the current and potential habitat capability for 1) sage grouse, 2) sharp-tailed grouse, and 3) greater prairie chicken?	By each grouse species: Robel Pole/Visual obstruction readings (vegetation height & density on sites dominated by herbaceous vegetation. percentage of Low %: Medium %: High % by each established monitoring block or by geographic area	Annual	DPG records	Biology Program Manager
What management actions and naturally occurring events have influenced change to the status and/or habitat for 1) sage grouse, 2) sharp-tailed grouse, and 3) greater prairie chicken?	By each grouse species: Habitat improvements (number and acres of actions that improve habitat) (Y) Animal Unit Month at the 17 blocks (actual use) (Y) Annual Precipitation (Y)	Annual	DPG records	Biology Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 40. Monitoring Item MON-WLD-02A, -02B, -02C - Monitoring Collection Summary

For monitoring item MON-WLD-02A, -02B, -02C:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2001
Next scheduled MER evaluation of this monitoring item:	2023

The DPG LRMP designated three species of grouse as Management Indicator Species (MIS): Greater Prairie Chicken, Greater Sage Grouse, and Sharp-tailed Grouse. All three species are referred to as "Prairie Grouse" within the DPG. Standards and Guidelines relating to Prairie Grouse are found on P. 1-13 and P.1-14 of the DPG LRMP. Sharp-tailed Grouse (STG) are found throughout the DPG. Greater Prairie Chicken (PC) is only found on the Sheyenne National Grassland (SNG) located in south eastern North Dakota. Greater Sage Grouse is only found on a small southwest area on the Little Missouri National Grassland.

Methods

Annual lek surveys are conducted for Sharp-Tailed Grouse and Greater Prairie Chickens across the DPG. Visual Obstruction Readings (VOR), an established protocol utilized for determining standing crop on grasslands (see MON-WLD-02B - What is the current & potential habitat capability for 1) Greater Sage Grouse, 2) Sharp-tailed Grouse, & 3) Greater Prairie Chicken?), are completed annually on the LMNG and every three years on the Grand River National Grasslands. The Sheyenne National Grassland completes VOR surveys across the entire unit on established locations.

Sharp-tailed Grouse & Prairie Chicken

Methods for Prairie Grouse surveys conducted on the DPG follow standard prairie grouse census protocols. Listening runs occur to locate all dancing grounds in a block usually mid-March to early April. Counts occur from April 1 to April 30 and may extend to May 15 during late spring years. Peak of attendance by females on grounds in North Dakota is usually April 15-25 but may vary up to a week depending on the year (NDGF, 2020).

Sharp-tailed grouse (STG) surveys have been conducted in established representative land areas, called monitoring blocks, throughout the DPG. The GRNG has 4 blocks of these surveys about 9 square miles each in size and the SNG with 3 blocks about 9 square miles each in size. The western ranger districts prairie grouse census takes place within these STG survey blocks. Within the SNG, prairie grouse census counts occur across the entire grassland annually in conjunction with North Dakota Game and Fish since the late 1980's, mainly because SNG has 1 of the 2 populations of Greater Prairie Chicken in the state of North Dakota.

MON-WLD-02A What is the current population status of 1) Greater Sage Grouse, 2) Sharp-tailed Grouse, & 3) Greater Prairie Chicken?

Greater Sage Grouse

No sage grouse active leks exist on DPG land, therefore no monitoring is done by the DPG. Sage Grouse only exists in a small part of southwest North Dakota near the Medora RD. Recovery effort and surveys are done by North Dakota Game and Fish (NDGF).

Sharp-tailed Grouse

The current population status of Sharp-tail Grouse was up 22% statewide according to the NDGF Census summary (2020). Drought conditions in 2017 caused a crash of the population; since then, numbers have been steadily increasing (NDGF, 2020).

Greater Prairie Chicken

There was a steady increase in the Greater Prairie Chicken (GPC) population from 2002 to 2005. A sharp decline occurred for unknown reasons in the GPC from 2006 to 2009. There was significant flooding on the SNG from 2009-2011. Prairie chickens' numbers and leks had been staying steady from 2011 to 2018. In 2018 GPC started slowly declining again. In 2020, GPC numbers were only partially counted because of equipment failure and Covid-19. In 2021, there was a large wildfire that occurred in most of the GPC habitat that may have displaced many of the GPC, so numbers were also expectedly low post-survey.

MON-WLD-02B - What is the current & potential habitat capability for 1) Greater Sage Grouse, 2) Sharp-tailed Grouse, & 3) Greater Prairie Chicken?

Visual Obstruction Readings (VOR) are an agency accepted protocol for collecting and monitoring vegetative structure. Vegetation structure, VORs are based on North Dakota State University's recommendations for monitoring VORs on biologically capable ecological sites for Major Land Resource Area (MRLA) 54 and 58c. VOR measures the height and density of vegetation including both standing live and dead plant material at the time of observation. VOR are measured throughout the DPG in the fall. A diversity of visual obstruction conditions provides for a diversity of grassland birds and wildlife. The DPG-LRMP (Chapter 2) established objectives for a diverse array of grassland vegetative structure. Based on monitoring prior to 2010 it was observed that the objective for moderate-structure vegetation was being achieved or exceeded. Additionally, pre-2010 data indicated that the DPG was achieving the objective for short-structure vegetation. Dakota Prairie Grasslands was typically *below* objectives for high-structure vegetation so the remainder of this discussion will focus on high-structure vegetation. The limiting factor for Prairie Grouse is the availability of residual high-structure vegetation. On the LMNG and GRNG, at least 20% of the VOR should be in the "High" category (>3.5"). On SNG, 30% of the VOR should be in the "High" category (>6"). Methods for VOR are summarized in USFS 2013 and USFS 2015.

The DPG wildlife staff surveys transects grasslands-wide in biologically capable areas that have the conditions to support high structure vegetation. The wildlife staff sited transects in 2018 in areas that support higher visual structure vegetation. Documentation in Klempel (2015) estimates 42% of the LMNG, 63% of the SNG, and 67% of the GRRD have biologically capable soils. Recent definitions of the term "biologically capable" considers biomass production with a heavier weight than was considered in the past for biologically capable areas.

MON-WLD-02C - What management actions & naturally occurring events have influenced change to the status &/or habitat What management actions & naturally occurring events have influenced change to the status &/or habitat?

Greater Sage Grouse

No sage grouse habitat improvement occurred in the reporting window.

Sharp-tail Grouse and Greater Prairie Chicken

Grazing management largely determines the vegetative structure available to nesting birds; therefore, grazing management is critical to prairie grouse management.

Prescribed burning and mowing can influence suitability of nesting and brooding habitat depending on the timing, location, and extent of these activities. Burning can help control development of undesirable woody vegetation in or near brooding, nesting, and roosting habitat. Increasing the amount of burning on the Sheyenne National Grassland has been recommended for prairie-grouse habitat enhancement, though care must be used to not further decrease nesting cover availability (Kobriger, et al. 1988).

Greater Prairie Chicken broods often prefer using areas that were previously burned or mowed (Svedarsky & Van Amburg, 1996) but they avoid areas mowed during the current year. To ensure that broods had a choice of habitats (Eng, et al 1988) suggested mowing only a third of a given pasture per year.

Sharp-tailed Grouse and Greater Prairie-Chickens are vulnerable to raptor predation. Scattered perch trees in large grassland expanses increase the efficiency of predators such as Red-tailed Hawks and great horned owls. The removal of these trees has been recommended by Greater Prairie Chicken researchers (Svedarsky & Van Amburg, 1996), (USFS, 2014). Removing invasive shrubs and trees from prairie habitats would be expected to improve prairie chicken habitat quality.

Results

MON-WLD-02A – What is the current population status of 1) Greater Sage Grouse, 2) Sharp-tailed Grouse, & 3) Greater Prairie Chicken?

Data collected and presented cannot be used for trends in any grouse species due to variety and quality of data recording methods. Variables include things like residual vegetation obscuring grouse, thereby preventing an accurate count or gender determination from being made. Spring weather conditions can prevent monitoring (rain, fog, wind), poor driving conditions make access difficult, and low staffing availability to conduct surveys. Some observers have difficulty identifying gender. There is still some value in having the entire numbers of grouse per lek, even if the data isn't subdivided by gender.

Sage Grouse

For context, Sage Grouse numbers are presented here as supplied and surveyed by North Dakota Game and Fish.

Table 41. Number of Males by Year on Greater Sage Grouse Leks near Medora RD, Slope & Golden Valley Counties (data courtesy NDGF)

Lek ID	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
S1	3	3	2	1	0	0	0	0	0	0
S5DT	1	0	0	0	0	0	0	0	0	0
S11	3	5	4	2	0	0	0	0	0	0
S12*	0	0	4	1	0	0	0	0	0	0
S14	0	0	1	0	0	0	0	0	0	0
S15	1	3	0	0	0	0	0	0	0	0
S18	9	7	3	1	0	3	3	0	0	1
S20*	0	0	0	0	2	0	0	0	0	0
GV13	1	0	0	0	0	0	0	0	NA	0

* Areas are traditionally on USFS lands

2018-2019 Counts may include translocated males, when translocated individuals were observed, they were removed from counts. In 2019, release leks were counted prior to translocations, so males translocated in 2019 aren't included.

Sharp-tailed Grouse & Greater Prairie Chicken

Table 42. Sheyenne National Grassland Sharp-tailed Grouse (STG) and Prairie Chicken (PC), Number of Leks containing Species/Number Male Birds by Year (2010-2020)

Number of Leks containing Species/Number Male Birds by Year (2010-2020)	2010	2011	2012	2013	2014	2015	2016[a]	2017	2018	2019	2020 *Incomplete surveys
Active PC Leks	14	12	12	10	14	9	7	5	12	13	2
Total Number of PC Males	79	51	52	51	60	51	42	62	58 (5 UNK Sex)	44	5
Active STG Leks	41	30	24	25	24	30	33	24	34	37	13
Total Number of STG Males	372	216	235	358	285	352	246	274	489 (17 UNK Sex)	448 (78 UNK Sex)	126

PC, STG and Mixed Leks were surveyed

*2020 Census incomplete because of equipment failure and COVID-19 limitations.

PC & mixed PC/STG leks were surveyed; the only STG leks surveyed were ones w/in the vicinity of these leks. Leks may contain both PC & STG.

Active leks that contained PC have varied between 9-14 leks for years that leks were completely surveyed across SNG; average & median lek size was ~12 PC. When all leks across the SNG were counted (2010, 2012-2015, 2018-2019, an average of ~56 Male PC were seen (range 44-79 PC, median 52 PC). The DPG LRMP states that a stable to increasing population of at least 250 Male Greater Prairie Chicken should be reached; this currently has not been reached.

There are more leks that contained STG, varying in # between 24-41 leks for years they were surveyed completely across SNG; average # of STG leks was ~31, median # of STG leks was ~30.

UNK=Unknown

Table 43. McKenzie Sharp-tailed Grouse, Number of Leks/Number of Birds (both sexes combined) by Year

Block Number	2015	2016	2018	2019	2020
1	6/86	8/108	2/25	~9/~95	5/64
2	~4/~74	4/65	--	~5/~31	6/104
3	1/26	2/27	None observed	1/10	--
4	4/116	7/180	5/67	2/29	8/71
5	3/68	4/94	--	None observed	--
6	7/172	7/137	--	7/35	--
Total Number of Leks (for years all blocked counted)	25	32	--	21	--
Total Number of Birds (both sexes for years all blocks counted)	426	581	---	200	---

Data not available for 2017, or 2010-2014. For the 3 years that all blocks were surveyed (2015, 2016, 2019); there was an average of ~26 leks counted, w/a median of 25 leks. Likewise, the average # of STG (both sexes) counted across all blocks was ~402 STG, w/a median of 426 STG.

Table 44. Medora District Sharp-tailed Grouse, Number of Leks/Number of Birds (both sexes combined, unless otherwise noted) by Year

Block Name (#)	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bell Lake (8)	--	3/ 24M	4/ 50M	--	4/ 50M	6/ 105M	6/ 70M	5/54	4/ 19M	6/ 36	4/ 34
Boyce Crk (10)	6/ 69M	--	7/ 92M	--	6/ 86M	6/ 72M	6/ 116M	5/ 75M	3/ 31M	3/ 60	3/ 70
N. Billings aka Ice Caves (7)	3/ 16M	5/ 52	5/ 38M	~6/ ~51	6/ 65M	8/ >113	4/ 87M	5/ >102	3/ 22M	8/ 57	4/ 49
Upper Davis (9)	--	5/ 50	7/ 73M	--	7/ 102	9/ ~97	6/ 115M	~8/ 106M	4/37	6/ 67	4/67
Total Number of Lek (for years all block counted)	--	--	23	--	23	29	22	~23	14	22	15
Total # birds (both sexes for years all blocks counted)	--	--	253	--	303	285	388	~337	109	220	220

Active STG lek numbers have varied between ~14-29 leks for years that all the blocks were surveyed (2012, 2014-2020); the average # of leks was ~ 21 leks, w/a median of ~23 leks. M=Male

Table 45. GRNG ST Grouse Populations (# Leks/#Birds (both sexes combined, unless otherwise noted) by Year

Block	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Pasture 6ES	4/ 48M	--	4/ 55M	--	3/ 27	3/ 151	6/ 105	None observed	None observed	5/ 49	5/ 116
Pasture 8	4/ 60M	3/ 65M	5/ 77M	--	3/ 64	6/ 166	6/ 116	2/ 25	1/ 12	5/ 69	5/ 38
Pasture 9	9/ 78M	6/ 66M	8/ 126M	8/ 111	7/ 82	8/ 161	4/ 80	5/ 78	5/ 41	7/ 97	6/ 89
Texley (Corson)	1/ 24	2/ 36	2/ 51	--	None observed	3/ 36	--	1/ 25	1/ 3	2/ 9	--
Total # leks (for years all blocks counted)	18	--	19	--	13	20	--	8	7	19	--
Total # birds (both sexes for years all blocks counted)	--	--	--	--	173	514	--	128	56	224	--

There was a range of ~7-20 leks counted for each year that all blocks were counted (2012, 2014, 2017-2019); this came to an average of ~15 leks counted per year, w/a median of ~18 leks. For years where STG of both sexes & all leks were counted across GRNG, the average # of STG counted was ~219 across all of the blocks, w/a median of ~173 STG.M=Male

MON-WLD-02B - What is the current & potential habitat capability for 1) Sage Grouse, 2) Sharp-tailed Grouse, & 3) Greater Prairie Chicken?

The current and potential habitat capability data for the Grouse species of the DPG have been collected throughout the years in various intensities and locations. Different systems have been used to locate these transects over the years. For example, some monitoring data was only collected in the Sharp-tailed Grouse blocks, some data was collected for vegetation management planning (and not LRMP monitoring purposes), and,

around 2017, some new transects were established across DPG. The most important percentage to note in the charts below is "high" VOR, which is the limiting factor for Prairie Grouse.

Visual Obstruction measurements can be impacted by precipitation, plant composition, hail, frost free days, temperature, and management practices. Lack of visual obstruction can also be due to a lack of plant species composition diversity/ or overabundance of invasive grassland resulting in uniform vegetative structure.

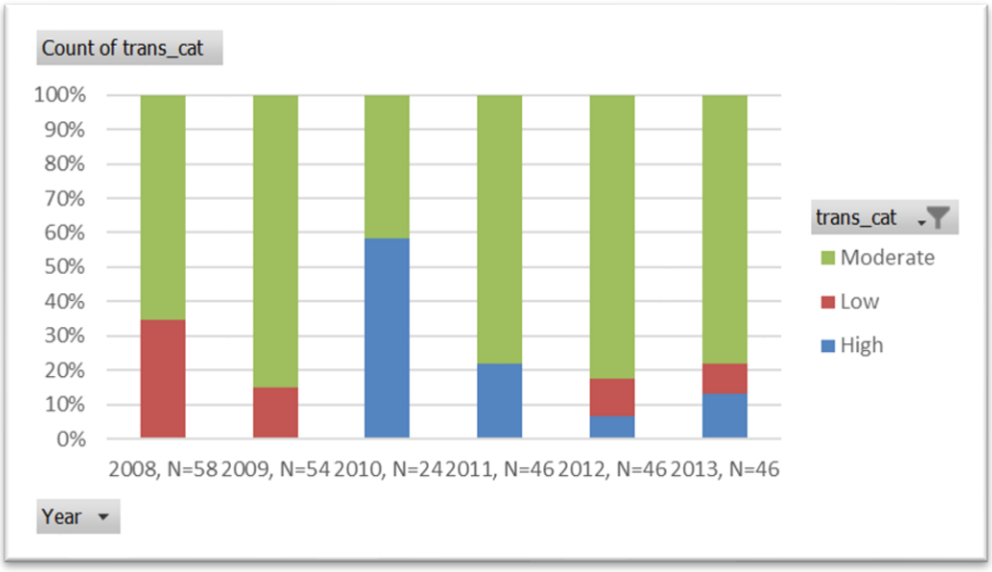


Figure 10. Visual Obstruction Readings, Sheyenne National Grassland, Area contains STG & PC (1/6 years had >30% of transects w/high VOR)

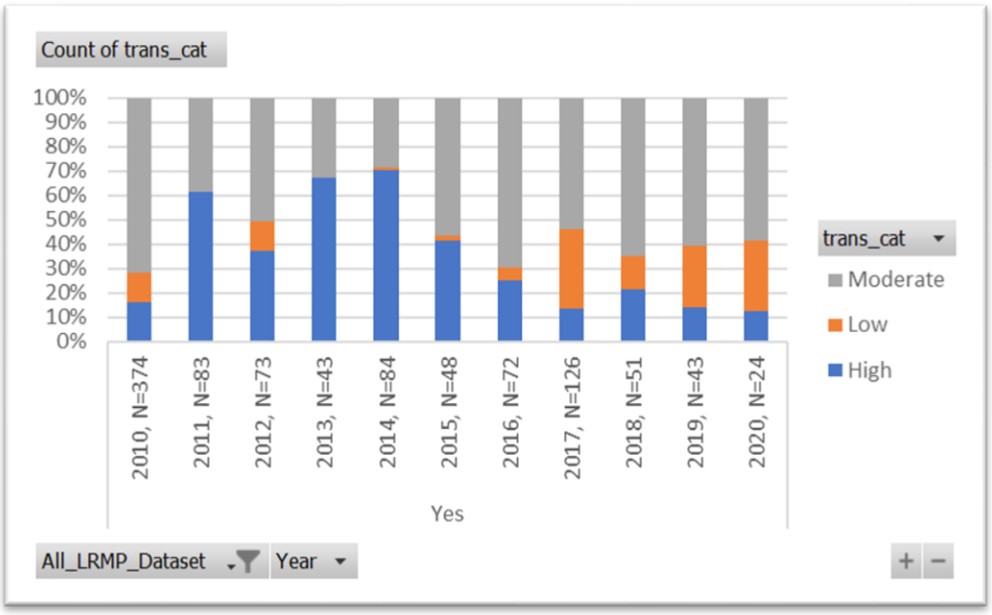


Figure 11. Visual Obstruction Readings, West DPG (GRNG & LMNG) (Area contains STG; Small Portion of Area contains Greater Sage Grouse. 7/11 years had > 20% of the transects w/high VOR)

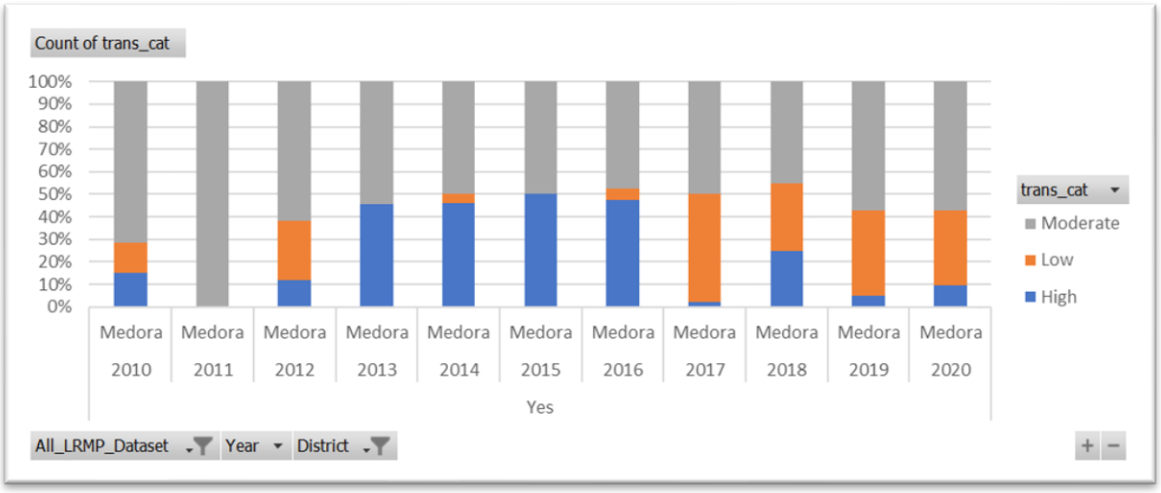


Figure 12. Medora District Visual Obstruction Readings (District contains STG, part of District Contains Greater Sage Grouse. 5/11 years had >20% of the transects w/high VOR)

MON-WLD-02C - What management actions & naturally occurring events have influenced change to the status &/or habitat for 1) Sage Grouse, 2) Sharp-tailed Grouse, & 3) Greater Prairie Chicken?

Invasive Plant Control

Please refer to Monitoring Item MON-NOX-01 portion of the monitoring report for noxious weed treatment by district.

Habitat Improvements, Greater Prairie Chicken

Greater Prairie Chicken is not a tree tolerant grouse species; therefore, willow and sumac reduction restores current habitat that is shifting from open tall grass prairie to woodland. Prescribed burning improves current habitat by restoring or maintaining tallgrass prairie which Greater Prairie Chickens rely on for quality nesting habitat. Mowing 1/3 of the sedge meadows in a pasture removes excess litter, improving brood rearing habitat for Greater Prairie Chicken by ensuring broods have a choice of habitats (Eng, et al. 1988).

Table 46. Sheyenne National Grassland Habitat Improvements for Prairie Chicken, from FACTS

Activity	2014	2016	2017	2018	2019	2020
Mowing -done in the wet meadows—vegetation removed is usually sedge or cattails		9.3	2.1			
Aerator -done in the wet meadows to reduce willow		93.1	14.2	770.6	289.2	39.5
Diamond Mower -reduces willow in wet meadows & sumac in the high dunes					211	
Herbicide treatment of willow or sumac w/ground equipment	48.3	50	77.5	218		78.6
Herbicide treatment of willow or sumac w/airplane						716.8

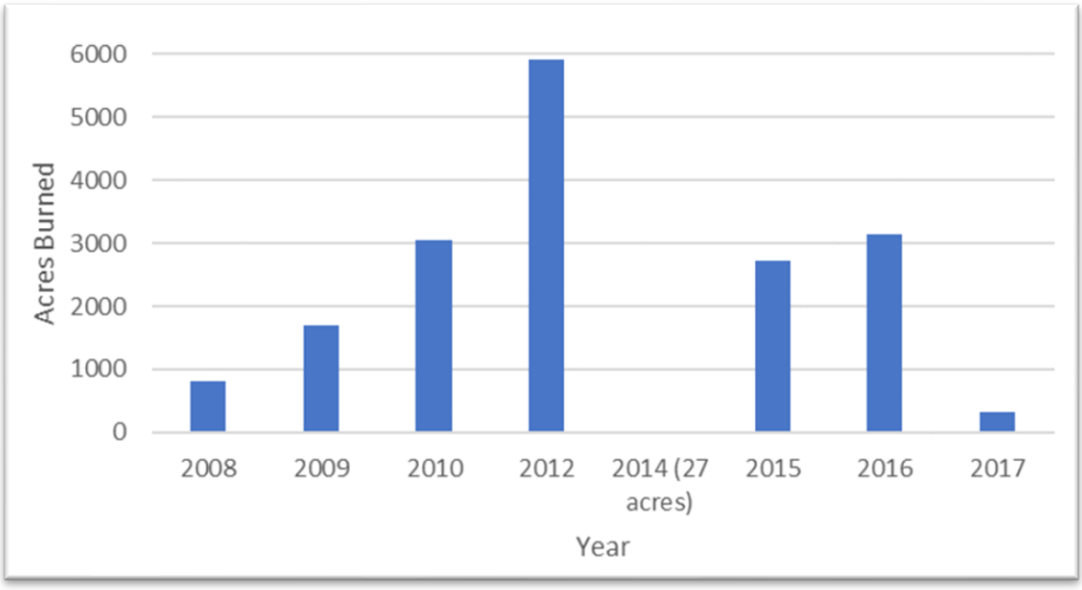


Figure 13. Prescribed Burn, Sheyenne National Grasslands

Discussion

MON-WLD-02A What is the current population status of 1) Sage Grouse, 2) Sharp-tailed Grouse, & 3) Greater Prairie Chicken?

1. **Sage Grouse** are not currently monitored by DPG staff. Future monitoring could be considered due to indications in the literature (Dyke et al. 2015) that sage grouse numbers are decreasing across North Dakota in general. Given the reintroduction efforts by North Dakota Game and Fish there is still hope of finding Sage Grouse within the DPG boundaries.
2. **Sharp-tailed Grouse** is a game species and not in danger of becoming rare on the DPG according to North Dakota Game and Fish. Despite survey effort variability, within Sheyenne National Grassland, there has been an upward general trend of Sharp-tailed Grouse numbers since 2011 (Table 42). A study researching habitat selection and survival of Sharp-tailed Grouse nests (2009-2015) and broods (2013-2015) on the GRNG observed that there was a high nest and brood survival rate when compared to other studies on the Northern Great Plains (Geaumont & Graham 2015).
3. **Greater Prairie Chicken** numbers are dwindling in North Dakota according to outside sources (Dyke et al. 2015). The DPG LRMP states that: "a stable to increasing population of at least 250 male prairie chickens should be reached" this goal is not being met. New methods (other than the "block" method) should be investigated for DPG LRMP grouse monitoring in collaboration with State Game and Fish agencies to help protect this important species and answer monitoring questions.

Sheyenne National Grassland (SNG)

Sharp-tailed Grouse & Greater Prairie Chicken leks, the name of an area where grouse congregate in the spring for courtship displays by males, were counted across the SNG in 2010, 2012-2015, 2018-2019. An average of ~56 male prairie chickens were seen (range 44-79 chickens, median 52 chickens). The number of leks containing Greater Prairie Chicken (average 12) have remained relatively stable across SNG since 2010. From 2002-2009, however, the average number of leks that had Greater Prairie Chicken was 22 (range 18-26 leks, median 22 leks). In the context of this larger timeframe, Greater Prairie Chicken numbers are not what they once were. The population decline coincided with a period of flooding within the SNG. The SNG-area population is isolated from other Greater Prairie Chicken populations. Habitat connectivity to other populations is limited, putting the

species at risk. The decline of the Greater Prairie Chicken could be due to inter-species competition for resources between Pheasants and Sharp-tailed Grouse. These trends could lead to the Sharp-tailed Grouse dominating the Greater Prairie Chicken to their detriment, further decreasing Greater Prairie Chicken populations. There are currently mixed leks (leks containing both Greater Prairie Chicken and Sharp-tailed Grouse) on SNG. Hybrids have been seen between the two species on SNG. Possible Sharp-tailed Grouse and Pheasant reduction in areas that Greater Prairie Chicken occur could benefit Greater Prairie Chicken by reducing competition for available resources. Tree and shrub along with invasive weeds encroachment have also contributed to the decline of Greater Prairie Chickens on the SNG. By implementing woody species reduction through mowing and prescribed fire and invasive weed management we can improve the available habitat for Greater Prairie Chicken.

MON-WLD-02B - What is the current & potential habitat capability for 1) Sage Grouse, 2) Sharp-tailed Grouse, & 3) Greater Prairie Chicken?

Visual Obstruction Readings (VOR) have not been as consistently collected across the DPG, making it harder to detect relationships between prairie grouse and VOR. Across the DPG there have been fewer transects read in recent years than from 2010-2014, with more consistent and repeatable readings on the Medora RD in the last few years. At one time, LRMP VOR monitoring was focused on the block level, providing for some opportunities to correlate VOR readings with Sharp-tailed Grouse surveys. In recent years, however, VOR measurements for LRMP purposes have been done outside of blocks. *To increase confidence, more data collection in a configuration that allows for detecting management patterns with Prairie Grouse numbers is needed.*

Little Missouri National Grasslands

Seven of 11 years had over 20% high structure VOR for western DPG. At least two of the four years (2017, 2020) had low precipitation levels (less than 16 inches, which is the average for Bowman, ND). The above numbers do not take into account the slightly differing definition of what constitutes biologically capable post-2015.

Medora Ranger District

The location of the Medora Ranger District, in Dickinson, ND, is the only district on the Grasslands with nearby Sage Grouse. The Medora Ranger District had 5-11 years with over 20% high structure VOR (notably, the listed data is district-wide). At least two of the years associated with not having over 20% high structure VOR had below average precipitation. The distribution and extent of sagebrush, particularly big sagebrush (*Artemisia tridentata*), is a key habitat component for Sage Grouse. Discussion of the big sagebrush community may merit further monitoring and analysis in future reports.

Grand River Ranger District

The following is a breakdown of the precipitation data and the percent high structure transect by planning area per year. Precipitation and sweet clover blooms weigh very heavily on the probability of reaching high structure.

Table 47. Precipitation Data and the Percent High Structure Transect by Planning Area per Year

Planning Area	Year													
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cedar (%)		77	83	47				100	40	7		17		16
Corson (%)	22			44				96	67					
1-5 (%)			3	65	61	0 (all medium)	99	88	21	33				
6-9 (%)	2		12	17	65	80		70	38	19		39		
Mean Precip/Yr (in)	17.5	25.6	22.6	25.6	18.7	13.4	34.0	18.1	17.8	20.9	10.2	15.4	21.0	14.9
*Transect was classified as high structure vegetation if transect averaged >3.5". All weather data is from Lemmon Weather Station, except for 2008 which was from Shadehill Reservoir Station (see http://climod.unl.edu/). 2017 was a drought year w/few VOR readings collected; yearly average precipitation for Perkins County is about 17.5 inches. 2019 and 2020 may be missing cooperator data. 2019 was conducted by the USFS.														

Sheyenne National Grasslands: Sharp-tailed Grouse & Prairie Chicken

The habitat on the Sheyenne NG is different than the further west DPG units. Determining which areas are biologically capable of producing high structure vegetation is challenging due to the difficulty of mapping soils. Furthermore, not all of the high structure habitat is available to nesting Greater Prairie Grouse in the spring because some of it may be flooded.

Visual Obstruction Readings (VOR) met the high structure thresholds one out of the six years sampled. The most recent VOR data on the SNG is from 2013. Transects were sited, but not read, around 2018 on biologically capable areas. Recent VOR monitoring was prevented by early season snowfall. Another method on SNG, called polygon mapping, has been done to measure residual vegetation. In this method, trained observers sketch out polygons of vegetative structure on aerial maps. Each polygon is put in a structure category (i.e., 0-2", 2-4", 4-6", 8-10", >10"). These polygons are in both biologically capable and non-biologically capable areas. To get a clearer idea of the vegetation structure on SNG, analysis of past polygon mapping data may be helpful.

MON-WLD-02C - What management actions & naturally occurring events have influenced change to the status &/or habitat for 1) Sage Grouse, 2) Sharp-tailed Grouse, & 3) Greater Prairie Chicken?

It's hard to detect what management actions have influenced change to prairie grouse because the methods and consistency do not yield the appropriate data to fully identify answers. For example, not all Animal Unit Months (AUM) and VOR readings are completed in blocks, making it difficult to correlate trends. More analysis and better sampling/measuring methods may be helpful in increasing understanding between habitat management and prairie grouse. Future habitat evaluations could potentially incorporate Emergency Situation Determinations. New questions and methods should be discussed for the Grasslands Plan revision.

Weed control occurs every summer within the DPG, generally in woody draws, or snowberry patches within the draws. This would be an "incidental" habitat improvement not specifically done for improving grouse habitat.

The recent Vegetation Management Plans (VMPs) were completed to improve conditions on allotments (e.g., structure and composition objectives). This may not become evident for many years. Increased flexibility from updated VMPs may create opportunities for grazing regimes that can improve habitat. The Vegetation Plans create much greater flexibility in rotations, timing, and intensity of grazing, allowing the Grasslands to have more pastures within allotments. This means we can control utilization (and thus structure) much better.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.
- Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.
- Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

(Note: Same as for MON-WLD-01, 02, 03, 04, 05 and MON-BOT-01

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?	**RECOMMENDATION** Based on the evaluation of monitoring results, may changes be warranted?	**MANAGEMENT** If a change may be warranted, where may the change be needed?[2]
MON-WLD-02A What is the current population status of 1) Sage Grouse (*Centrocercus urophasianus*), 2) Sharp-tailed Grouse (*Tympanunchus phasianellus*), and 3) Greater Prairie Chicken (*Tympanuchus cupido*)?	2021	Sharp-tailed Grouse: (E) Yes – Implementation of Plan Component(s) Are trending, progressing, and/or conducted as desired (On SNG, however, discouragement of sharp-tailed grouse numbers may be necessary for prairie chicken to persist). Sage Grouse & Greater Prairie Chicken: (D) No	Yes – for Greater Prairie Chicken & Greater Sage Grouse.	Management Action: If Prairie Chicken & Sage Grouse are to persist, more focused management such as prescribed fire, tree reduction, invasive species management and native restoration will need to be done on the species habitat
MON-WLD-02B What is the current and potential habitat capability for 1) Sage Grouse, 2) Sharp-tailed Grouse, and 3) Greater Prairie Chicken?	2021	(C) Uncertain	Yes	Management Action: Visual Obstruction on SNG: Analyze past polygon mapping data A more detailed assessment of Sage Grouse habitat is needed to evaluate future management options.
MON-WLD-02C	2021	(C) Uncertain	Yes	Management Action: Habitat

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?	RECOMMENDATION Based on the evaluation of monitoring results, may changes be warranted?	MANAGEMENT If a change may be warranted, where may the change be needed?[2]
What management actions and naturally occurring events have influenced change to the status and/or habitat for 1) Sage Grouse, 2) Sharp-tailed Grouse, and 3) Greater Prairie Chicken?				Management data records need to be recorded at a scale that is sensitive to representative distribution of grouse monitoring sites. Monitoring Plan: Drop AUMs from indicators in monitoring program

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to* ***the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment****, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-WLD-03

Plan Component(s) being assessed by this monitoring item:

Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.

Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

(Note: Same as for MON-WLD-01, 02, 03, 04, 05 and MON-BOT-01)

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
What is the population and habitat status of the Dakota skipper	Suitable habitat (acres of modeled habitat determined to be suitable) (Y)	Annual	Supervisor's Office records	Biology Program Manager

Plan Component(s) being assessed by this monitoring item:

Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.

Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

(Note: Same as for MON-WLD-01, 02, 03, 04, 05 and MON-BOT-01)

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
(*Hesperia dacotae*) in high potential habitat?	Occurrences (# of individuals) (Y)	Annual	Supervisor's Office records (Contract, 3rd party Contracts, Visiting Researchers)	Biology Program Manager
	Forage use (Landscape Appearance protocol) (Y)	Annual	Supervisor's Office records	Biology Program Manager
	Oil & gas Activity (Acres/# of activities in Critical Habitat) (Y)	Annual	Supervisor's Office records	Biology Program Manager
	Habitat improvements (# or acres of habitat improvement actions) (Y)	Annual	Supervisor's Office records	Biology Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 48. Monitoring Item MON-WLD-03 - Monitoring Collection Summary

For monitoring item MON-WLD-03:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

The Medora and McKenzie Ranger Districts have known occupancy of DASK, which is listed as threatened under the Endangered Species Act (ESA). The DPG LRMP states we will protect ESA species habitat. The McKenzie and Sheyenne Ranger Districts also have US Fish and Wildlife Service (USFWS) Designated Critical Habitat (DCH). DCH boundaries for the DASK were finalized by the USFWS in 2015. The DPG LRMP contains the following guidelines specific to DASK:

- "Emphasize late fall (September or later) mowing, instead of prescribed burning, at sites of historic or existing populations of DASK, Poweshiek Skipper[ling], Prairie Skipper, or Arogos Skipper, if consistent with restoration objectives".
- "Rest areas with historic or existing populations of sensitive butterflies and skippers, particularly DASK. Such areas should be rested several years, if consistent with restoration objectives. Rested areas may need to encompass only a portion of a pasture".
- "Conduct butterfly and skipper surveys in areas with historic or existing populations of sensitive butterflies and DASK".

Methods

Suitable Habitat

In order to help determine where potential DASK habitat may occur a GIS tool was developed for the Sheyenne National Grassland. Categories for habitat were developed by analyzing various components and how they related to DASK habitat. GIS tool methods are summarized in SNG DASK Consultation Agreement USFS (2015b) for SNG. There was historically a DASK habitat model on McKenzie Ranger District; however, that model is currently invalid. Currently areas are identified by an initial desktop survey followed by field checks using methods outlined in the DPG LMNG Biological Survey & Reporting Guidelines.

Occurrences

Since listing of DASK in 2014, there have been numerous butterfly surveys throughout the Sheyenne National Grassland (SNG) and McKenzie Ranger District (RD). Surveys have been done under contract, by third party contractors, and also by researchers who have asked for permission to conduct their work on the Grasslands**.** Please see Fauske et al. 2015; SWCA (2017, 2018), Limb et al. (2018-2020), Beaver Creek Environmental 2020, Reiser & Reiser 2020, Runquist et al. (2019), Selby (2016, 2019), and USFS 2020 for methods.

Forage Use

Cattle grazing is allowed in potential, occupied, and Critical DASK Habitat areas at 0 to 40% utilization levels (USFS 2016a). To measure this utilization, the landscape appearance protocol is used (US Department of the Interior USDI- BLM 1996). This technique uses a visual estimate of forage utilization based on the general appearance of the rangeland. Utilization levels are determined by comparing observations with written descriptions of each utilization class. This method is adapted to areas where perennial grasses, forbs, and/or browse plants are present and to situations where utilization data must be obtained over large areas using only a few examiners.

Oil & Gas Activity

Two crude oil pipelines were installed after completion of NEPA in 2018, along the edge of County Road 2, bordering Designated Critical Habitat. These pipelines were routed to avoid suitable habitat and/or utilized construction methods such as Horizontal Directional Drilling (HDD) boring that would avoid any surface disturbance. There has been no other oil and gas activity within Designated Critical Habitat for the DASK.

Habitat Improvements

There have been weed control activities that could help improve DASK habitat. Please refer to **MON-NOX-01** portion of this document for general noxious weed treatment information for SNG and McKenzie RD. In 2020, remediation efforts were undertaken after a company experienced an inadvertent return while installing a project via HDD bore along the edge of Designated Critical Habitat Unit 12 and County Road 2 that impacted 0.36 acres of Designated Critical Habitat. The project was installed using bore methods in an effort to avoid surface disturbance to Designated Critical Habitat. The project proponent undertook efforts to remediate disturbance including restoration of a nearby well pad utilizing a seed mix specifically designed to benefit DASK and create additional habitat. Further details are provided in the report from Beaver Creek Environmental (2020).

Results

Suitable Habitat

Color	Definition	Acres
Green	Not suitable for Dakota Skipper	70,567
Orange	Areas contain the proper ecological sites for DASK & habitat has been field verified as moderate to good habitat. These areas need to have DASK surveys to verify occupation	30
Yellow	Ecological sites that potentially could support habitat that are currently dominated with invasive species	1,016

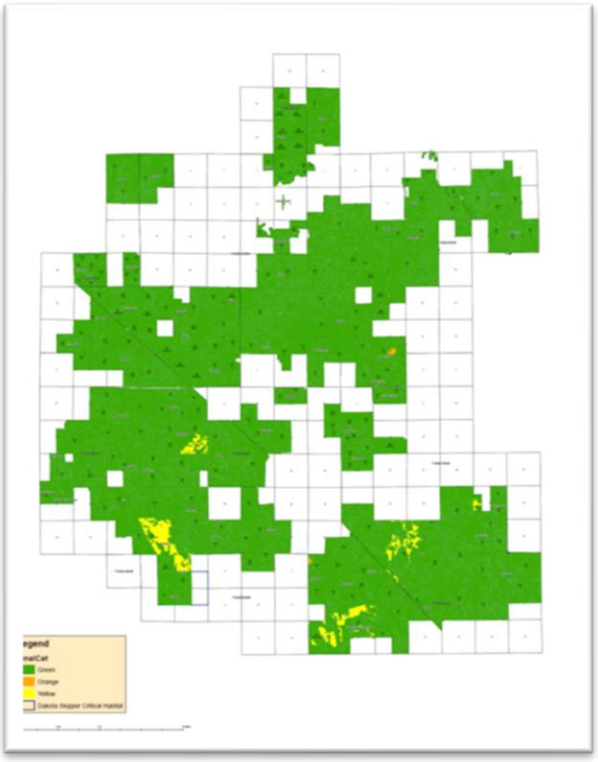


Figure 14. DASK GIS Tool 11/27/2020

Occurrences

Dakota Skipper have been observed annually on McKenzie RD; they haven't been seen on the SNG.

Forage Use

Measurements were completed in DASK Critical Habitat. Notably, the Landscape Appearance protocol is somewhat limited because it is difficult to assess the precision of the subjective qualitative estimate. The Landscape Appearance protocol was determined to be the most appropriate assessment method because it is one of the USFS approved methods of monitoring annual herbivore use and accounts for the limited time and personnel resources available to complete these monitoring efforts. To mitigate subjectivity involved with this survey method, the surveyor compares their on-the-ground observations with accepted written descriptions of each available utilization class and applies their results appropriately.

SNG Forage Use

Table 49. SNG Forage Use, Landscape Appearance Protocol. Data courtesy SNG

Transect	Date	Utilization (%)
MiltonSr	3/12/2015	48.1
Gregor	3/12/2015	18.4

McKenzie RD Forage Use

Table 50. McKenzie RD Critical Habitat and Summer and Fall Utilization

Transect	Critical Habitat #	Summer Utilization (%) 7/15-7/16, 2015	February Utilization 2/23-2/25, 2016	Fall Utilization (%) 10/19-10/20, 2016	Summer Utilization (%) 6/27/2018	Fall Utilization (%) 10/23/2018	Summer Utilization (%) 7/25/2019	Fall Utilization (%) 10/23/2019
PHPT1	12	10	30	16.67	10	29	10	29
PHPT2	12	10	33.3	21.67	11	20	12	20
PHPT3	-	10	30	-	10	13	10	13
PHPT4	11	10	44	16.67	10	19	12	19
PHPT5	11			27.3	10	17	10	17

Data Sources:

USFS. 2015. Dakota Skipper Monitoring, McKenzie Ranger District, McKenzie Critical Habitat #11.
USFS. 2015. Dakota Skipper Monitoring, McKenzie Ranger District, McKenzie Critical Habitat #12.
USFS. 2018. Dakota Skipper Monitoring, McKenzie Ranger District, Critical Habitat Report.
USFS. 2019. Dakota Skipper Monitoring, McKenzie Ranger District, Critical Habitat Report.

Of the measurements taken, most of the utilization points fall below the 40% threshold with only one exception, of a measurement on SNG at 48% in 2015 out of 2 taken. On the McKenzie RD, of the years measured (2015-2019), only one measurement was higher than 40% at 44%.

Oil & Gas Activity

Oil wells have not been drilled in these areas; however, there have been two pipelines built in the road ditch on either side of County Road (CR) 2 in Critical Habitat 12 (Beaver Creek 2020).

Habitat Improvements

The DPG oversaw one native prairie rehabilitation effort specific to DASK. This was completed by a third party as part of a remediation for impacts from a pipeline inadvertent return in Designated Critical Habitat Unit 12. The mitigation efforts were completed on an abandoned well pad totaling 3.13 acres located near Designated Critical Habitat Unit 12 on the McKenzie RD. The third party completed construction efforts by recontouring the location with certified weed-free topsoil and planted a DASK-specific seed mix (Beaver Creek Environmental 2020).

Please refer to MON-NOX-01 portion of this report for invasive plant control for SNG and McKenzie RD.

Discussion

This question is also related to MON-WLD-05 (Poweshiek Skipperling).

Suitable Habitat

There is some habitat field check data from Oil & Gas 3rd party contractors. This data could be compiled into a common GIS layer to be used as a reference for further understanding DASK habitat distribution, although there are potential discrepancies between different 3rd party contractors. Additionally, there have been others who have created DASK models in the region; this may be an avenue to pursue via cooperative agreement or contract.

Occurrences

Dakota Skipper has not been seen on the SNG since 2002 (Spomer 2004).

Surveys were completed by Selby in 2021 on pre-determined locations of potential habitat on both the McKenzie and Medora RDs. individuals were confirmed on both districts and a final report is expected to be made internally available by the end of the 2021 calendar year.

Western North Dakota is considered to be the most poorly understood area for Dakota Skipper distribution; it is believed there are populations there yet to be found (USFWS 2018). In particular, more Dakota Skipper surveys should be done near the shared boundary of the McKenzie and Medora RDs to further understand the distribution of the species.

During 2020, a known Dakota Skipper population inside Critical Habitat 11 on the McKenzie RD, was augmented with offspring from individuals gathered from the site of a future well pad approximately 1 mile to the west on North Dakota state land. (USFWS 2020b).

Forage Use

Areas containing Dakota Skipper beyond the Critical Habitat should be monitored for forage use. New methods that may not be as time efficient; yet are more quantitative than Landscape Appearance Protocol method, should be considered for monitoring.

Oil & Gas Activity

Since most of the Oil and Gas activity was located in road ditches, that are already disturbed land, or accomplished through boring methods, it is determined that effects to Dakota Skipper will be minimal.

One pipeline project occurred in Critical Habitat 11 prior to Critical Habitat designation (Houston Engineering 2015).

Habitat Improvements

On DPG, invasive plant control occurs every summer. This is an "incidental" habitat improvement not specifically done for improving DASK habitat. Weed control data is not collected on a level that can be easily correlated with Dakota Skipper occurrences.

Considering the limited species survey window (2-3 weeks annually) paired with the lack of known populations throughout the species range on the DPG; and, limited number of qualified surveyors, it is expected that moving toward Objectives 2 and 4 may require a longer timeline than the limited amount of time since species listing in 2014. Larger steps are being taken to move toward Objective 6 both internally and through a statewide recovery council with USFS representation. Presently, changes are not warranted, but acknowledgment of limitations moving forward is important.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.
- Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.
- Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

MONITORING ITEM	YEAR UPDATED	PLAN INTENT [1] *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?* [2]
MON-WLD-03 What is the population and habitat status of the Dakota Skipper (*Hesperia dacotae*) in high potential habitat?	2021	(B) Uncertain – Although occupancy survey efforts have been initiated and are ongoing, the extent of the species range has not been surveyed for high quality habitat or individuals. It is expected that this effort will continue over the long-term given limitations in occupancy surveys.	No	

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-WLD-04

Plan Component(s) being assessed by this monitoring item:

Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.

Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

(Note: Same as for MON-WLD-01, 02, 03, 04, 05 and MON-BOT-01)

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
What is the distribution & status of Northern Long-eared Bat (*Myotis septentrionalis*)?	Occurrences (presence/ absence) (Y)	Annual	Supervisor's Office records (Visiting Researchers, 3rd party contractors Cooperative Agreement)	Biology Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 51. Monitoring Item MON-WLD-04 - Monitoring Collection Summary

For monitoring item MON-WLD-04:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

Distribution and Status of Northern Long-eared Bat (*Myotis septentrionalis*)

Prior to 2009, there had never been a statewide effort to document occurrences and distributions of bat species in North Dakota. Since then, a total of eleven species have been confirmed in the state, with the highest diversity of bats found in the badlands region, including the Little Missouri National Grassland (LMNG) (Nelson et al. 2015).

Due to significant population declines from white-nose syndrome (WNS), the Northern Long-eared Bat *(Myotis septentrionalis*) was listed as threatened under the Endangered Species Act on April 2, 2015. A final 4(d) rule allowing the USFWS to promulgate special rules for species listed as Threatened that provide flexibility in implementing the ESA was published in the Federal Register on January 14, 2016.

White-nose syndrome (WNS) is a disease caused by a fungal pathogen, Pseudogymnoascus destructans (Pd; formerly Geomyces destructans). First recorded in New York in 2006, WNS has killed millions of bats and spread to 39 states and several Canadian provinces. In affected hibernacula, 90 to 100% mortality is common; total overall deaths so far are estimated at over 6 million bats. Twelve species of bat have been confirmed to be impacted from WNS and another 8 species have tested positive for the fungus but have not yet been found with the diagnostic signs of WNS. WNS was first documented in North Dakota in early 2019 on a live little brown bat (*Myotis lucifugus*) at the Knife River Indian Villages National historic Site along the Missouri River. In early May of 2020, six little brown bats found dead in Medora tested positive for WNS. Further information: https://www.whitenosesyndrome.org/.

In North Dakota, cottonwood and green ash trees in riparian zones seem to be preferred summer roosts. Across the species distribution, winter habitat (hibernacula) are typically found in caves and mines. It is unknown if Northern Long-eared Bats overwinter in ND although there are abundant potential hibernacula in the form of geologic “piping” which forms cave-like structures throughout the badlands. Occurrences of Northern Long-eared Bats in ND have so far been limited to the Missouri River Valley and the Little Missouri River and associated badlands. Occurrences also seem to be increasingly rare, which may be indicative of declining populations. While these bats are considered to have a broad distribution, habitat suitability analysis predicts a much more restricted distribution in the state (see Figure 15). Notably, areas administered by the DPG are relatively moderate to higher for habitat suitability than the majority of the state.

Methods

The DPG has not yet developed a monitoring program or initiated baseline trend surveys of populations, habitats, or ecological conditions that contribute to the viability of Northern Long-eared Bats (LRMP: Goal 1.b Objective 6). Sporadic mist net and/or acoustic surveys of bats have been conducted on or near DPG administered lands by various non-Forest Service entities over the years (See Results).

Results

Note: Results reported here as occurrences will focus primarily on physical capture (occurrences) of bats. Surveys using only acoustic methods are addressed separately below. Bats have similar echolocation call characteristics, particularly in Myotis species, and this may lead to misidentification of species. Also, this reduces the reliability of echolocation calls as sole indicators of species presence/absence. Further, Nelson et al (2015), noted misclassification specifically of Northern Long-eared Bat calls from bats captured in ND using automated classification methods.

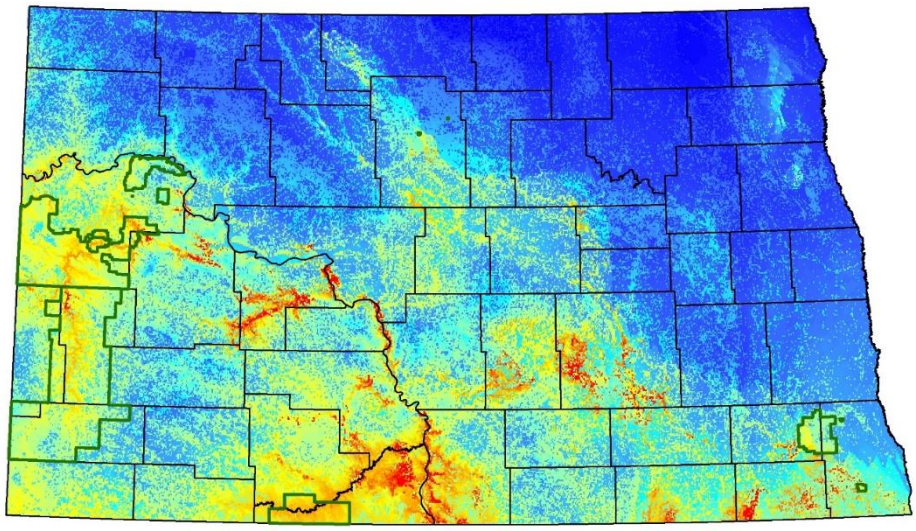


Figure 15. Modeled Habitat Suitability for Northern Long-eared Bats in ND (Areas of highest predicted suitability are shown in red, lowest in blue. The DPG administrative boundary is outlined in green)

Surveys Prior to 2015 Listing

The DPG contracted a survey report in 2006 from a third party named Tigner who reported the capture of three post-lactating female Northern Long-eared Bats from one site (Section 15 Reservoir; T139 R103 section 15) on the Little Missouri National Grassland in central Golden Valley County. Bat surveys were conducted within the McKenzie Ranger District, who reported no occurrences of northern long-eared bats (Lenard (2010), Gillam and Students (2018)). Lenard (2010) and Gillam and Students (2018), attempted to conduct the first comprehensive survey of bats for the state of North Dakota, starting in 2009. Multiple sites were surveyed on LMNG land in Billings County with no occurrences of Northern Long-eared Bats documented. However, five Northern Long-eared Bats were captured in the North Unit of Theodore Roosevelt National Park which is encompassed by the McKenzie Ranger District. Sites in the vicinity of the Sheyenne National Grassland were also surveyed but no occurrences of northern long-eared bats were reported.

Surveys Post-Listing

In order to confirm species that had been acoustically identified, Trubitt (2017, 2019), conducted systematic acoustic surveys on the Sheyenne Ranger District in 2016 that included some sporadic mist netting. Guinn and Dragswolf (2017) conducted acoustic surveys in 2016 and 2017 and mist netting surveys at select sites in 2016 on the McKenzie Ranger District. Gillam and students (2017) conducted 5 nights of mist net surveys at sites on the Medora and Sheyenne Ranger districts. Mist netting was also done during WNS survey work (Abernathy 2019) conducted in Theodore Roosevelt National Park. No Northern Long-eared Bats were documented in any of these surveys; however, Bachen (2019) captured and genetically confirmed Northern Long-eared Bats in 2016-2019 at multiple sites in eastern Montana bordering McKenzie County, ND and the McKenzie Ranger District.

Acoustic Only Surveys

National Park (Licht 2017) acoustic monitoring did not document any Northern Long-eared Bats in Theodore Roosevelt National Park. Long term acoustic monitoring conducted by the Montana Natural Heritage Program (Bachen et al 2019, Bachen et al 2020) on the McKenzie Ranger District also did not confirm Northern Long-eared Bats. A survey conducted as part of a highway reconstruction project (KLJ 2016) did positively record Northern Long-eared Bats adjacent to the North Unit of Theodore Roosevelt National Park and National Forest System lands within the McKenzie Ranger District administration boundary.

The North American Bat Monitoring Program (NABat) has coordinated ongoing acoustic survey efforts that also include sites in North and South Dakota. The data for these surveys can be requested from NABat at https://www.nabatmonitoring.org/.

Discussion

Occurrences of Northern Long-eared Bats on or near the DPG have been unsurprisingly rare given the species status. The DPG currently lacks systematic monitoring protocols for this species. There is a need for the DPG to develop a monitoring plan for bats as well as management strategies for bat habitat.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.
- Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.
- Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-WLD-04 What is the distribution and status of northern long-eared bat (*Myotis septentrionalis*)?	2021	(C) Uncertain – Based on lack of adequate monitoring protocols to assess the status of the long-eared bat.	Yes	Monitoring Plan: Need to incorporate bat habitat considerations into management and develop a monitoring program.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to* ***the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment****, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-WLD-05

Plan Component(s) being assessed by this monitoring item:

Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.

Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

(Note: Same as for MON-WLD-01, 02, 03, 04, 05 and MON-BOT-01)

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
What is presence of Poweshiek Skipperling (*Oarisma poweshiek*) during Dakota skipper surveys?	Occurrences (presence / absence of Poweshiek Skipperling during Dakota skipper surveys MON- WLD-03) (Y)	Annual	Supervisor's Office	Biology Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 52. Monitoring Item MON-WLD-05 - Monitoring Collection Summary

For monitoring item MON-WLD-05:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

The only district on Dakota Prairie Grasslands (DPG) that is historically associated with Poweshiek Skipperling is Sheyenne National Grassland (SNG). Poweshiek Skipperling is currently listed as endangered.

Methods

Since the listing of DASK in 2014, there have been both general butterfly surveys and DASK/Poweshiek Skipperling focused butterfly surveys on the Sheyenne National Grassland. Surveys have been completed under contract or through academic research. Please refer to Fauske et al. (2015); SWCA (2017, 2018) and Limb et al. (2018, 2019, 2020) for methods.

Results and Discussion

Poweshiek Skipperling butterflies have not been documented in recent surveys (Fauske et al. 2015; SWCA 2017, 2018; and Limb et al. 2018, 2019, 2020) and have not been documented within the SNG since 2001 (Spomer 2004). It's currently believed that Poweshiek Skipperling may be extirpated from North Dakota (US Fish and Wildlife Service 2014b). Targeted surveys, in cooperation with the US Fish and Wildlife Service, need to confirm local extinction or "extirpation" of the Poweshiek Skipperling within the Sheyenne National Grassland, before moving forward with additional monitoring or conservation plans. A draft recovery plan for the Poweshiek Skipperling was published by the USFWS in June 2021. This document will help to guide future survey and eventual recovery efforts of the species range wide.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.
- Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.
- Goal 1.b Objective 6. Establish scientifically credible monitoring programs, develop survey methods, and initiate baseline and trend surveys for populations, habitats, and/or ecological conditions to contribute to viability of threatened and endangered species, species at risk, and MIS.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-WLD-05 What is presence of Poweshiek Skipperling (*Oarisma poweshiek*) during Dakota Skipper surveys?	2021	(D) No – Based on the lack of detections during targeted surveys.	Yes	Monitoring Plan: Pending confirmation of extirpated status, re-evaluate need for monitoring.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-WLD-06

Plan Component(s) being assessed by this monitoring item:

Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.
Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
Are management actions effective in protecting Golden Eagle nests?	Active territory (presence/absence w/in 1/2 mile following implementation) (Y)	Survey as needed, post implementation	Supervisor's Office records	Biology Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 53. Monitoring Item MON-WLD-06 - Monitoring Collection Summary

For monitoring item MON-WLD-06:	Year
Data was last collected or compiled in:	NA
Next scheduled data collection/compilation:	NA
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

Are management actions effective in protecting Golden Eagle nests?

The DPG LRMP contains stipulations (see LRMP, Appendix D), to help protect wildlife from the adverse effects of oil development. This question is meant to assess the effectiveness of those stipulations.

Methods

The DPG keeps and updates GIS records on existing Golden Eagle nests as resources allow. When feasible and appropriate, nests within a half mile of proposed projects are surveyed during the same year as project implementation to determine timing of those operations so they do not impact nests. In order to monitor nests post-project implementation, additional qualified personnel would be necessary. See results and discussion below.

Results and Discussion

There are standards and guidelines in the LRMP to protect eagle nests and mitigate for potential impacts. Timing restrictions and buffer distances from project activities protect active nests. Golden Eagles have large territories and may use multiple nests across years. There is no clear way to determine if a nest is avoided or simply not chosen in subsequent seasons post-implementation of a project. However, pooled data on nest occupancy post implementation of projects could provide insights into the effectiveness of management stipulations.

Current monitoring indicators are not adequate to assess the status or progress of the above plan components. The DPG may need to reevaluate the indicator and develop an improved monitoring plan.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.
- Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-WLD-06 Are management actions effective in protecting Golden Eagle nests?	2021	(C) Uncertain – The indicator is not adequate to help understand the status of the plan component.	Yes	Monitoring Plan: Reevaluate indicator and monitoring plan. Monitoring efforts and indicator should be refocused on maintaining the inventory of Golden Eagle nests to ensure stipulations are effectively applied. Additional post-project monitoring efforts should be implemented to evaluate the effectiveness of stipulations.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-WLD-07

Plan Component(s) being assessed by this monitoring item:

Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.

Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

Note: Same as MON-WLD-06

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
Are management actions effective in protecting bighorn sheep lambing?	Timing restrictions of projects/permits w/timing stipulations (Y)	NA	Supervisor's Office records	Biology Program Manager
	Lambing periods (during year of activity) (Y)	NA	State Wildlife records for lambing periods	Biology Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 54. Monitoring Item MON-WLD-07 - Monitoring Collection Summary

For monitoring item MON-WLD-07:	Year
Data was last collected or compiled in:	NA
Next scheduled data collection/compilation:	NA
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

The DPG Land and Resource Management Plan (LRMP) contains standards, guidelines, and stipulations, defined as: "a condition or requirement that is specified or demanded as part of an agreement" to help protect wildlife from the adverse effects of oil and gas development. This monitoring question is meant to assess the effectiveness of the DPG-LRMP stipulations in protecting bighorn sheep lambing.

Methods

There are timing restrictions and stipulations in the DPG-LRMP to monitor and track the number of projects and permits impacting areas of Bighorn Sheep lambing. This data is coordinated with the North Dakota Game and Fish Department (NDGFD) to assess the suitability of the timing limitation dates in comparison to actual recorded lambing dates.

Results and Discussion

Timing Restrictions

The DPG has not tracked the number of projects/permits where timing stipulations have been applied. Tracking projects with applied stipulations is not a sensitive enough indicator to assess achievement of the plan component intent. Some projects where stipulations have been applied may not yet be, or may never be,

implemented. Others may be implemented outside of the lambing season regardless of the timing stipulation. A new indicator or alternative monitoring plan may need to be developed.

Lambing Periods

The timing stipulation for Bighorn Sheep lambing is not consistent with the timing recommended by the North Dakota Game and Fish Department. The North Dakota Bighorn Sheep Management Plan states that "*Construction activities and other sources of disturbance that are temporary (e.g., pipelines, water developments, road construction) [should] not occur within 660 yards of lambing habitat from April 1 to July 15 – a period when lambs are most dependent on escape terrain but also most likely to flee.*" (Wiedmann and Hosek 2013) The DPG currently uses the North Dakota Game and Fish Department recommended timing as mitigation as appropriate. A plan amendment or plan revision will be needed to further address this issue.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.b Objective 2. Within 15 years, for threatened, endangered, sensitive, and MIS, demonstrate positive trends in population viability, habitat availability, habitat quality, and population distribution within the planning area.
- Goal 1.b Objective 4. Within 15 years, conserve populations of species at risk and rare communities by demonstrating positive trends in habitat availability and quality or any other applicable factors affecting species at risk.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-WLD-07 Are management actions effective in protecting Bighorn Sheep lambing?	2021	(C) Unknown – While timing limitations are in place to protect Bighorn Sheep populations during critical lambing periods, there is no data contributing to our knowledge of these limitations impacting populations.	Yes	Monitoring Plan: Develop an effective indicator and adjust plan timing limitation to extend through July 15. An appropriate indicator should involve evaluating Bighorn Sheep populations against timing limitations at the extend of the species' location within the LMNG administrative boundary.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to* ***the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment****, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Vegetation

Monitoring Item MON-NOX-01

Plan Component(s) being assessed by this monitoring item:

Goal 1.c Objective 4 - Within 5 years, develop and maintain cooperative noxious weeds and invasive species management plans in
consultation with appropriate partners and agencies.

Goal 1.c Objective 6 - Within 10 years, limit further expansion of areas affected by noxious weeds.

Goal 1.c Objective 7 - Within 10 years, implement an integrated prevention and pest control management program for noxious weeds and invasive plant species.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
To what extent has the integrated prevention and pest control management for noxious weeds been implemented?	Acres of treatment types (Biocontrol , Herbicide Cultural – Sheep Grazing, or other types) (Y)	Annual	FACTS (treatment data)	Range Program Manager
	Partners (number of partners with cooperative agreements) (N)	Annual	Supervisor's Office records NRM (grants and agreements)	Range Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 55. Monitoring Item MON-NOX-01 - Monitoring Collection Summary

For monitoring item MON-NOX-01:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2001
Next scheduled MER evaluation of this monitoring item:	2023

The DPG LRMP contains standards and guidelines and monitoring requirements for noxious weeds. Appendix N of the LRMP is a "Recovery Strategy" that represents the best identified approach for managing the *Platanthera praeclara* (western prairie fringed orchid) in a multiple use setting. Appendix N of the LRMP describes general conditions necessary for the maintenance of the western prairie fringed orchid on the Sheyenne National Grassland and include the following:

"Management activities should favor practices that 1) reduce woody and exotic plant species such as leafy spurge and Kentucky bluegrass, 2) provide a mosaic of structural classes, seral stages and plant communities characteristic of tallgrass prairies, using fire, grazing, and other suitable practices, and 3) maintain the hydrological regime that supplies ground water to the wetlands supporting the western prairie fringed orchid.

Methods

The Dakota Prairie Grasslands has developed and maintained noxious weed participating agreements with each grazing association and county that has federal land within its boundaries. The Sheyenne Ranger district also has a weed participating agreement with The Nature Conservancy under a master agreement that has not been funded yet due to limited funding available.

All pesticide or biological control applications are tracked through the US Forest Service program called Natural Resource Manager (NRM). Data entries have been made in these programs from 2006 to 2020. Data collection and entry comply with the USDA Forest Service National Forest System Data Recording Protocols and Requirements for Invasive Species Survey, Inventory, and Treatment (2014). Areas and acreages infested with noxious weeds and acres treated for noxious weeds were calculated from NRM invasive species national database of record.

An integrated prevention and pest control management program for noxious weeds and invasive plant species has been achieved through the 2007 Dakota Prairie Noxious Weed FEIS (https://www.fs.usda.gov/nfs/11558/www/nepa/4088_FSPLT1_022428.pdf) and the 2013 Silvicide Environmental Assessment (https://www.fs.usda.gov/nfs/11558/www/nepa/85937_FSPLT3_1464355.pdf).

Results

The following is a list of agreements within each District of the Dakota Prairie Grasslands: Grand and Cedar River District – Grand River Coop. Grazing Association; McKenzie District – McKenzie County Grazing Association; Medora – Golden Valley Weed Board, Billings County Weed Board, Little Missouri Grazing Association, Horse Creek Coop Grazing Association; Sheyenne – Ransom County, Richland County, Sheyenne Valley Grazing Association, Nature Conservancy (not funded).

Table 56. Treatment Method (Acres) on each District of the Dakota Prairie Grasslands from 2006-2020

Year	Activity	Sheyenne (acres)	Grand and Cedar River (acres)	Medora (acres)	McKenzie (acres)	Total (acres)
2006	Invasive - Pesticide Application	11793	199.7	252.4	1236	13481.1
	Invasive - Biocontrol, Classic	35		165		200
	Invasive - Biocontrol, Livestock	8000				8000
2006 Total		19828	199.7	417.4	1236	21681.1
2007	Invasive - Pesticide Application	6244	46.6	613.8	233.4	7137.8
	Invasive - Biocontrol, Classic			60		60
	Invasive - Biocontrol, Livestock	9600				9600
2007 Total		15844	46.6	673.8	233.4	16797.8
2008	Invasive - Pesticide Application	10712.5	144.6	815.6	357.2	12029.9
	Invasive - Biocontrol, Classic	40		55		95
	Invasive - Biocontrol, Livestock	5920				5920
2008 Total		16672.5	144.6	870.6	357.2	18044.9
2009	Invasive - Pesticide Application	8831	117	1056.9		10004.9
	Invasive - Biocontrol, Classic	205	25	155		385
	Invasive - Biocontrol, Livestock	9360				9360
2009 Total		18396	142	1211.9		19749.9
2010	Invasive - Pesticide Application	6553	144.5	1469.9	289.9	8457.3
	Invasive - Biocontrol, Classic	455	20	95		570

Year	Activity	Sheyenne (acres)	Grand and Cedar River (acres)	Medora (acres)	McKenzie (acres)	Total (acres)
	Invasive - Biocontrol, Livestock	6002				6002
2010 Total		13010	164.5	1564.9	289.9	15029.3
2011	Invasive - Pesticide Application	5212	106	1544.2	341.6	7203.8
	Invasive - Biocontrol, Classic	160	15	175		350
	Invasive - Biocontrol, Livestock	5607				5607
2011 Total		10979	121	1719.2	341.6	13160.8
2012	Invasive - Pesticide Application	8645	93.9	1194.9	167.6	10101.4
	Invasive - Biocontrol, Classic		7.8	90		97.8
	Invasive - Biocontrol, Livestock	9559				9559
2012 Total		18204	101.7	1284.9	167.6	19758.2
2013	Invasive - Pesticide Application	6267	204.8	1134.1	332.2	7938.1
	Invasive - Biocontrol, Livestock	8437				8437
2013 Total		14704	204.8	1134.1	332.2	16375.1
2014	Invasive - Pesticide Application	7893	393.5	697.6	258.1	9242.2
	Invasive - Biocontrol, Livestock	12932				12932
2014 Total		20825	393.5	697.6	258.1	22174.2
2015	Invasive - Pesticide Application	7867.1	421.2	1672.2	482.3	10442.8
	Invasive - Biocontrol, Classic			215		215
	Invasive - Biocontrol, Livestock	16230.6				16230.6
2015 Total		24097.7	421.2	1887.2	482.3	26888.4
2016	Invasive - Pesticide Application	8094.2	554.8	1993.6	685.5	11328.1
	Invasive - Mechanical /Physical			2.1		2.1
	Invasive - Biocontrol, Classic			370		370
	Invasive - Biocontrol, Livestock	19676.2				19676.2
2016 Total		27770.4	554.8	2365.7	685.5	31376.4
2017	Invasive - Pesticide Application	4338.2	696.9	2473.4	726.9	8235.4
	Invasive - Biocontrol, Classic			40		40
	Invasive - Biocontrol, Livestock	19657				19657
2017 Total		23995.2	696.9	2513.4	726.9	27932.4
2018	Invasive - Pesticide Application	2547.6	678.5	2549.9	640.3	6416.3

Year	Activity	Sheyenne (acres)	Grand and Cedar River (acres)	Medora (acres)	McKenzie (acres)	Total (acres)
	Invasive - Biocontrol, Classic			90	67	157
	Invasive - Biocontrol, Livestock	17516				17516
2018 Total		20063.6	678.5	2639.9	707.3	24089.3
2019	Invasive - Pesticide Application	4909.7	459.3	2393.5	462.5	8225
	Invasive - Biocontrol, Classic		1.7			1.7
	Invasive - Biocontrol, Livestock	21349				21349
2019 Total		26258.7	461	2393.5	462.5	29575.7
2020	Invasive - Pesticide Application	5964.3	478.4	755.3	716.3	7914.3
	Invasive - Biocontrol, Livestock	22944.3				22944.3
2020 Total		28908.6	478.4	755.3	716.3	30858.6
Total Acres Treated 2006 – 2020		299556.7	4809.2	22129.4	6996.8	333492.1

Discussion

In order to have an integrated prevention and pest control management program it is essential to coordinate and plan treatments with the appropriate partners and agencies. Since 2001, ten noxious weed participating agreements have been established with our partners to assist in the treatment of noxious weeds across the Dakota Prairie Grasslands.

The Dakota Prairie Grasslands encompasses 1,265,217 acres total. The Dakota Prairie Grasslands has implemented an integrated prevention and pest control management program for noxious weeds and invasive plant species. This is shown in Table 56 by the amount of acres that are treated annually on the DPG. From 2006 to 2020, 333,492 acres of noxious weeds have been treated with pesticide, leafy spurge beetles, sheep, or goats across the DPG. The amount of noxious weeds treated each year is highly dependent on funding received for this program. Due to the great involvement of our partners, we're always looking for more dollars and so are our partners, a very large percent of money received goes to treatment vs. management. The DPG treats as many acres as possible (dependent on funding) to reduce further expansion of areas affected by noxious weeds.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.c Objective 4 - Within 5 years, develop and maintain cooperative noxious weeds and invasive species management plans in consultation with appropriate partners and agencies.
- Goal 1.c Objective 6 - Within 10 years, limit further expansion of areas affected by noxious weeds.
- Goal 1.c Objective 7 - Within 10 years, implement an integrated prevention and pest control management program for noxious weeds and invasive plant species.

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?[2]*
MON-NOX-01 To what extent has the integrated prevention and pest control management for noxious weeds being implemented?	2021	(E) Yes – Based on our partnership coordination and implementation of the integrated prevention and pest control program.	Yes	Monitoring Program: Develop a strategy on monitoring effects of treatments to align with Goal 1.c Objective 6 - Within 10 years, limit further expansion of areas affected by noxious weeds.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-VEG-01

Plan Component(s) being assessed by this monitoring item:

Goal 1.c - Increase the amount of forests and grasslands restored to or maintained in a healthy condition with reduced risk and damage from disturbance processes, both natural and human-controlled.

Goal 2.c - Improve the capability of the Nation's forests and grasslands to provide a desired sustainable level of uses, values, products, and services.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
What is the status of rangeland conditions relative to site potential?	By allotment or pasture: Similarity index (*weight of plant species within dominant sites in a pasture/allotments*) – same indicators as MON-VEG-01 (Y)	Annual, approx. 75 plots/yr, each plot read every 5-15 yrs depending on NEPA decisions	Supervisor's Office Records	Range Program Manager
	State transition *(acres of each state per ecological site*) – same indicators as MON-VEG-01 (Y)	Annual, approx. 75 plots/yr, each plot read every 5-15 yrs depending on NEPA decisions	Supervisor's Office Records	Range Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 57. Monitoring Item MON-VEG-01 - Monitoring Collection Summary

For monitoring item MON-VEG-01:	Year
Data was last collected or compiled in:	2018
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

On December 3, 2013, the Grasslands Supervisor issued a memorandum (Neitske, 2013) to formally complete the transition from Dakota Prairie Grasslands LRMP direction, with objectives for seral stage percentages across the landscape by geographic area, to use of state-and-transition models. These models describe ecological site descriptions for vegetative composition objectives across the Dakota Prairie Grasslands. The memorandum notes that the information in the ecological site descriptions, including the state-and-transition diagrams, will help identify where the plant community states and phases are moving toward desired conditions and what actions may be required to more towards desired condition. The change from using seral stages to ecological site descriptions for vegetative composition was also highlighted in *The Livestock Grazing Record of Decision 2006*.

Rangeland plant communities are dynamic with their composition changing in response to climatic conditions and disturbance regimes. USDA Natural Resources Conservation Service personnel and their cooperators have developed ecological site descriptions to describe the composition and ecological function of these plant communities (Sedivec and Printz, 2012).

Included in the ecological site descriptions are state-and-transition diagrams which illustrate the current understanding of how these plant communities respond to various disturbance regimes (ecological site descriptions for the LMNG can be found at: https://efotg.sc.egov.usda.gov/#/details.

The state-and-transition diagrams and narratives identify and describe the different plant communities found within a similar soil type. Those descriptions, and departure from what would be considered potential if undisturbed are categorized into ecological states, i.e., Reference, Native/Invaded, and Invaded. Within these states there are groupings of unique plant communities called phases. Between states are pathways called "transitions" that indicate probability of one state transitioning to another through disturbance or input. Understanding these dynamics helps us predict how a plant community will respond to changes in management (Sedivec and Printz, 2012).

Baseline data presented below fall into two Major Land Resource Areas (MLRA). MLRAs are geographically associated land resource units, which are characterized by a particular pattern of soils, climate, water resources, vegetation, and land use (Sedivec and Printz 2012). Geographically, MLRA 54 is situated in a way that is very similar to the Grassland Plan Rolling Prairie Geographic Area; and MLRA 58C is similar to the Badlands Geographic Area. Below is a brief description of each MLRA:
https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_050898.pdf.

MLRA 54's natural prairie vegetation is characterized by western wheatgrass (Pascopyrum smithii), needle and thread (Hesperostipa comata), green needlegrass (Nassella viridula), and blue grama (Bouteloua gracilis). Little bluestem (Schizachyrium scoparium), prairie sandreed (Calamovilfa longifolia), and sideoats grama (Bouteloua curtipendula) are also important species on shallow soils. Prairie rose (Rosa arkansana), leadplant (Amorpha canescens), and patches of western snowberry (Symphoricarpos occidentalis) are interspersed throughout the area. Green ash (Fraxinus pennsylvanica), chokecherry (Prunus virginiana), and buffaloberry (Shepherdia argentea) occur in draws and narrow valleys (USDA NRCS, 2006).

MLRA 58C's natural prairie vegetation is characterized by western wheatgrass, needle and thread, green needlegrass, blue grama, and threadleaf sedge (*Carex filifolia*). Little bluestem and sideoats grama are important species on sloping, shallow soils. Big bluestem (*Andropogon gerardii*) and sideoats grama, along with scattered green ash, chokecherry, and western snowberry, are important species in swales which are lower depressions than the surrounding areas. North-facing slopes support Rocky Mountain juniper (*Juniperus scopulorum*), green ash, and chokecherry and an understory of little bluestem, porcupinegrass (*Hesperostipa spartea*), and needle and thread (USDA NRCS, 2006).

Methods

During the summers of 2009-2013, North Dakota State University (NDSU) collected baseline vegetative data on 564 plots, in cooperation with the Grazing Associations and Forest Service, within 3 vegetation management projects on the Little Missouri National Grassland (Deep Creek, Pastures 3 and 5, and Pastures 4 and 6). Baseline data was then used to determine the existing condition on 175,539 acres of National Forest System (NFS) Land. The NDSU protocol included the following methods: landscape photos, vegetation structure, annual production clippings, basal cover, grass frequency, forb and shrub density, and the indicators of rangeland health protocol. Five hundred and sixty-four individual plots were evaluated to determine the state and community phase of each site based on the ecological site description. The ecological site state-and-transition diagrams can be used to determine the existing condition and how the rangeland vegetation is expected to respond to the proposed management. https://efotg.sc.egov.usda.gov/#/details

The vegetation plot data collected were randomly located across the dominant/co-dominant ecological sites in the allotments within the three vegetative management projects, per NDSU protocol. Each site was summarized into the following: Reference state (Native state), Native/Invaded state, and Invaded state. The Reference (Native) plant community state describes the plant community that would have occupied the site under the historic disturbance regime. This is the plant community that would have had the highest ecological function in terms of hydrology, species diversity, and nutrient cycling. The "historic" plant communities are referred to as the "Reference State (Native state)." The Native/Invaded state describes plant communities dominated by native cool-season grasses, warm-season grasses, or both, and less than 20 to 30% of the plant community is noxious or invasive species. The Invaded state describes plant communities with less than 40% native grasses and greater than 30% noxious or invasive species. All ecological site descriptions explain the different states and the community phases within those states.

The similarity index for each plot was calculated, using the annual production data. Similarity index compares how similar the present vegetation on an ecological site is compared to the potential reference plant community. The evaluation of the similarity index provides existing condition compared to potential. Changes in plant community composition can be monitored over time to determine whether management goals are being met.

Results

A total of 564 plots were sampled on 14 different ecological sites, by NDSU, through a 5-year period. Of the 564 plots, 52% were sampled on either a Loamy or Thin Loamy ecological site. Which indicates that these two ecological sites are the most dominant ecological sites within the 175,539 acres of NFS land sampled (Figure 16).

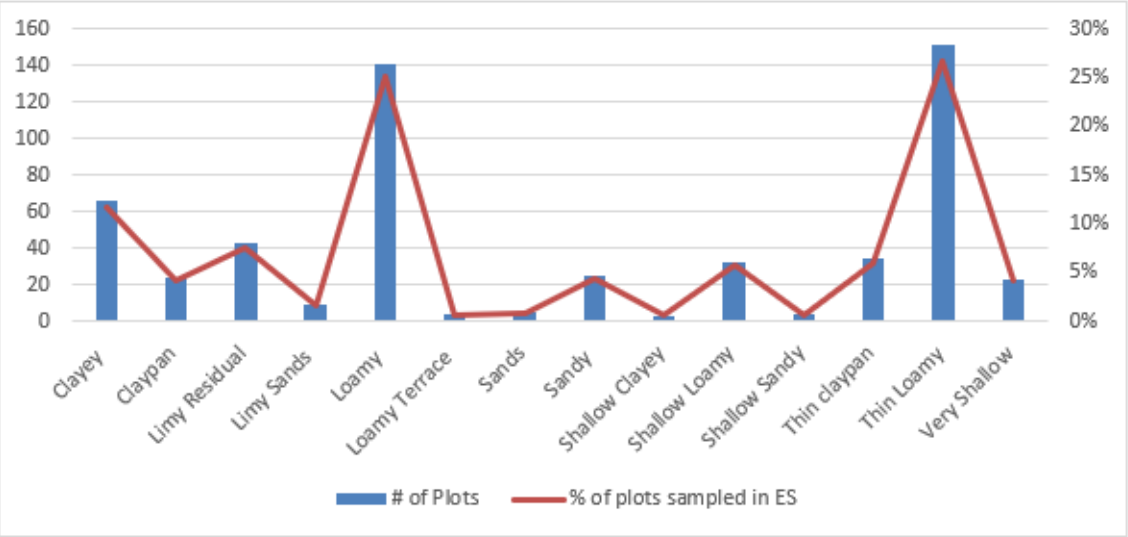


Figure 16. The Number of Plots within Each Ecological Site and Percentage of Each Ecological Site with 564 plots collected on the Little Missouri National Grassland

The NDSU 564 plots sampled were broken down into 5 different states (Figure 17). 58% (327 plots) of the ecological sites sampled are either in a Native/Invaded or an Invaded state. This indicates that noxious or invasive species are commonly found within plant community phases within 14 ecological sites sampled. The plant community phases in the Native/Invaded state are very similar to the Native State in both appearance and function. However, the presence of noxious or invasive species (exotic species) are altering ecological processes and preventing a return back to the Native State and their plant community phases. Future management of these sites are to keep the plant communities within this state and not transition into Invaded State.

As described in the methods section, the invaded state plant communities have less than 40% native grasses and greater than 30% noxious or invasive species (exotic species). This state is the result of invasion and dominance of introduced cool-season grasses such as Kentucky Bluegrass, Crested Wheatgrass, and/or Smooth Brome. This state is characterized by these species and an increasing thatch layer that effectively blocks introduction of other plants into the system. Once the invaded state is well established, single disturbance events such as high-intensity fires or severe grazing will not result in more than a very short-term reduction of these two species. These events may reduce the dominance of the sod grasses, but due to the large amount of rhizomes in the soil, there is no opportunity for the native species to establish and dominate before the sod grasses rebound and again dominate the system NRCS 2018: https://efotg.sc.egov.usda.gov/#/details.

Much of the three vegetation management projects were privately owned at one point. In the 1930s, many of the privately-owned lands were abandoned and became part of the "land utilization project." When the land utilization project lands were transferred to the Soil Conservation Service, much of the ground that had been farmed was seeded to crested wheatgrass (Agropyron cristatum). Depending on the ecological site, areas dominated by crested wheatgrass typically fall into the Go-Back state, unless the ecological site description identifies a specific community state and phase for crested-wheatgrass-dominated sites. Areas dominated by greater than 70% crested wheatgrass would be managed as crested wheatgrass units and grazed early in the season to rest native graminoid species unless allotment-specific restoration activities are identified. Other nonnative, invasive grasses found in the three project areas include Kentucky bluegrass (Poa pratensis), smooth brome (Bromus inermis), cheatgrass (Bromus tectorum), and Japanese brome (Bromus japonicus). Over time, with management, these communities can transition into an Invade or into a Native/Invaded state.

33% of the ecological sites sampled were in the Native state which indicates that the community phases within those ecological sites are under the historic disturbance regime. These communities would have the highest ecological function in terms of hydrology, species diversity, and nutrient cycling.

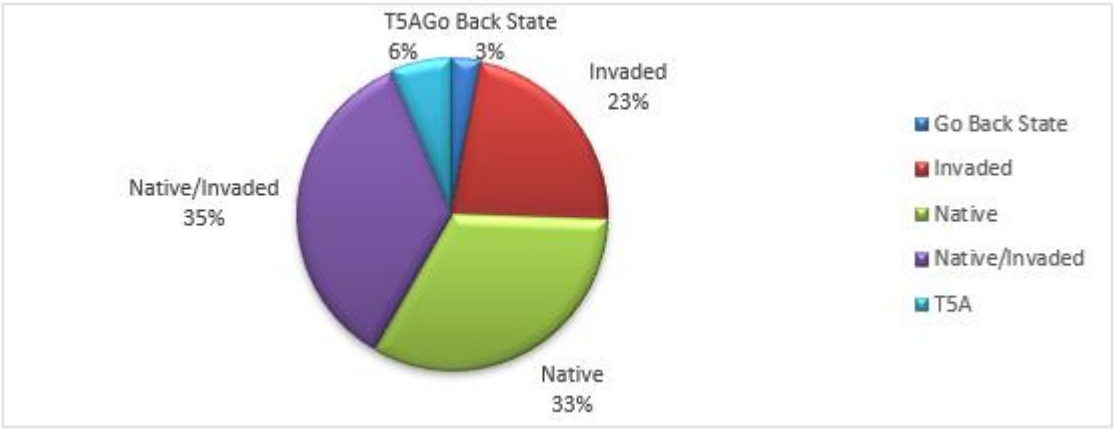


Figure 17. Five Different States and the Percentage of the Ecological Sites Sampled within those States

Discussion

On December 3, 2013, the Grasslands Supervisor issued a memorandum (Neitske, 2013) to formally complete the transition from Dakota Prairie Grasslands plan direction (with objectives for seral stage percentages, across the landscape by geographic area), to use of state-and-transition models (S&TM). These models are described in

ecological site descriptions for vegetative composition objectives across the Dakota Prairie Grasslands. The use of ecological site, ecological site descriptions, and the baseline data NDSU has collected, have identified the existing plant community state, and phases plant communities are in, within the 3 vegetation management projects on the Little Missouri National Grassland. The baseline data identifies past management and what actions are needed to move towards desired condition. This baseline data collection effort, on the Little Missouri National Grassland, is nearing completion within the next 3 to 4 years. Once completed, the DPG will have the ability of doing subsampling of the NDSU plots to determine if the implementation of vegetation management tools is moving towards the desired conditions or if management techniques need to be adjusted.

The use of ecological sites, ecological site descriptions and the NDSU baseline data has allowed the DPG to see what the existing conditions are as a result of past management and where changes need to be made. The State and Transition Models, using the state and community phases, allows the DPG staff and grazing associations identify what pathways or transitions are needed to reach the desired conditions. Along with how the ecological sites are functioning ecologically. The similarity index allows individuals to see the departure from the reference communities and what species are missing, along with the biomass of each individual species.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.c - Increase the amount of forests and grasslands restored to, or maintained in, a healthy condition with reduced risk and damage from disturbance processes, both natural and human-controlled.
- Goal 2.c - Improve the capability of the Nation's forests and grasslands to provide a desired sustainable level of uses, values, products, and services

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-VEG-01 What is the status of rangeland conditions relative to site potential?	2021	(B) Uncertain – As more baseline data collection still ongoing.	Yes	Plan Components*
*When land management plan revision is initiated: Update the LRMP with new desired conditions, goals, and objectives that include the state and transition models for individual ecological site within the MLRA's across the DPG. Identify desired state and community phases and if transition between existing and desired states can occur.				

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-VEG-02

Plan Component(s) being assessed by this monitoring item:

Goal 1.c Objective 1 - Within 10 years, implement management practices, including prescribed fire, that will move landscapes toward desired vegetation composition and structure as described in Geographic Area direction.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
What management actions have occurred that contribute to the ability of plant communities to retain function or regain function after disturbance?	Prescribed fire (acres of Rx fires that maintain or improve community function) (Y)	Annual	FACTS	Range Program Manager
	Mowing (acres of) (Y)	Annual	FACTS	Range Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 58. Monitoring Item MON-VEG-02 - Monitoring Collection Summary

For monitoring item MON-VEG-02:	Year
Data was last collected or compiled in:	2018
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

The Dakota Prairie Grasslands Land and Resource Plan contains standards and guidelines and monitoring requirements for vegetative treatments which include but are not limited to prescribed fire and mowing.

Prescribed fire and mowing are discussed throughout the LRMP and Geographic areas as a tool for vegetative management. They are both talked about extensively in Appendix N - Western prairie fringed orchid Management Guidelines which are unique to the Sheyenne National Grassland and the Sheyenne Geographic Area.

Methods

The Dakota Prairie Grasslands implements yearly vegetative treatment across the Grasslands, which can include all four geographic areas. These treatments include a variety of tools including prescribed fire and mowing.

Data collection and entry comply with the USDA Forest Service National Forest System Data Recording Protocols and Requirements for fuels and vegetation treatments. Acres treated were calculated from NRM hazardous fuels reduction and integrated vegetation treatments national database of record.

Results

Table 59. Treated Acres on Districts of the Dakota Prairie Grasslands

Year	Activity	Sheyenne (acres)	Grand and Cedar River (acres)	Medora (acres)	McKenzie (acres)	Total (acres)
2007	Broadcast Burning - Covers a majority of the unit			70		70

Year	Activity	Sheyenne (acres)	Grand and Cedar River (acres)	Medora (acres)	McKenzie (acres)	Total (acres)
	Underburn - Low Intensity (Majority of Unit)	6035				6035
	Burning of Piled Material			19.6		19.6
	Compacting/Crushing of Fuels - Mowing	1545				1545
	Thinning for Hazardous Fuels Reduction			60		60
2007 Total		7580		149.6		7729.6
2008	Broadcast Burning - Covers a majority of the unit	820				820
	Underburn - Low Intensity (Majority of Unit)	6097				6097
	Compacting/Crushing of Fuels – Mowing	2170				2170
	Thinning for Hazardous Fuels Reduction			102		102
2008 Total		9087		102		9189
2009	Broadcast Burning - Covers a majority of the unit	1701	1014			2715
	Underburn - Low Intensity (Majority of Unit)			220		220
	Thinning for Hazardous Fuels Reduction			268		268
	Range Cover Manipulation - Mowing	1020				1020
2009 Total		2721	1014	488		4223
2010	Broadcast Burning - Covers a majority of the unit	3048	879			3927
	Underburn - Low Intensity (Majority of Unit)			192		192
	Thinning for Hazardous Fuels Reduction			210		210
	Range Cover Manipulation – Mowing	395				395
2010 Total		3443	879	402		4724
2011	Broadcast Burning - Covers a majority of the unit		808			808
	Burning of Piled Material			180		180
	Piling of Fuels, Hand or Machine	178		180		358
	Thinning for Hazardous Fuels Reduction	178		180		358
	Range Cover Manipulation – Mowing	620	130			750
2011 Total		976	938	540		2454
2012	Broadcast Burning - Covers a majority of the unit	5910	829			6739
	Range Cover Manipulation – Mowing	3230				3230
2012 Total		9140	829			9969
2013	Broadcast Burning - Covers a majority of the unit		203			203

Year	Activity	Sheyenne (acres)	Grand and Cedar River (acres)	Medora (acres)	McKenzie (acres)	Total (acres)
	Burning of Piled Material			200		200
	Range Cover Manipulation – Mowing	3562		68		3630
2013 Total		3562	203	268		4033
2014	Broadcast Burning - Covers a majority of the unit	27				27
	Jackpot Burning - Scattered concentrations	320				320
	Burning of Piled Material			41.3		41.3
	Piling of Fuels, Hand or Machine			111.1		111.1
	Thinning for Hazardous Fuels Reduction			69.7		69.7
	Range Cover Manipulation – Mowing	3373.3		89		3462.3
2014 Total		3720.3		311.1		4031.4
2015	Broadcast Burning - Covers a majority of the unit	2729				2729
	Thinning for Hazardous Fuels Reduction	140.6				140.6
	Range Cover Manipulation – Mowing	3406.1	40	21	15.5	3482.6
2015 Total		6275.7	40	21	15.5	6352.2
2016	Broadcast Burning - Covers a majority of the unit	3136				3136
	Rearrangement of Fuels	9.3	4.2	73.2	25.1	111.8
	Piling of Fuels, Hand or Machine			65.6		65.6
	Range Cover Manipulation – Mowing	3668	30			3698
2016 Total		6813.3	34.2	138.8	25.1	7011.4
2017	Broadcast Burning - Covers a majority of the unit	2322				2322
	Burning of Piled Material	21.6		259.7		281.3
	Rearrangement of Fuels	2.1		29.3	21.1	52.5
	Range Cover Manipulation – Mowing	3291.4		86		3377.4
2017 Total		5637.1		375	21.1	6033.2
2018	Broadcast Burning - Covers a majority of the unit	1922.3				1922.3
	Burning of Piled Material			116.7		116.7
	Piling of Fuels, Hand or Machine			52.3		52.3
	Thinning for Hazardous Fuels Reduction			52.3		52.3
	Range Cover Manipulation – Mowing	4715.7		378	37	5130.7
2018 Total		6638		599.3	37	7274.3
2019	Broadcast Burning - Covers a majority of the unit	2944.6				2944.6
	Burning of Piled Material			36.2		36.2

Year	Activity	Sheyenne (acres)	Grand and Cedar River (acres)	Medora (acres)	McKenzie (acres)	Total (acres)
	Grazing and Range Mgt. for Hazardous Fuels Reduction		1636.4			1636.4
	Piling of Fuels, Hand or Machine			99.8		99.8
	Thinning for Hazardous Fuels Reduction			31		31
	Range Cover Manipulation – Mowing	1754.1		68.1	52.5	1874.7
2019 Total		4698.7	1636.4	235.1	52.5	6622.7
2020	Burning of Piled Material	18.4		51.6		70
	Grazing and Range Mgt. for Hazardous Fuels Reduction		2683.5			2683.5
	Rearrangement of Fuels			34		34
	Piling of Fuels, Hand or Machine			107.4		107.4
	Thinning for Hazardous Fuels Reduction			107.4		107.4
	Range Cover Manipulation – Mowing	2949.8	76.1	70.5	34	3130.4
2020 Total		2968.2	2759.6	370.9	34	6132.7
Total 2007 - 2020		73260.3	8333.2	4000.8	185.2	85779.5

Discussion

The results of yearly implementation are measured by number of acres treated as well as visual observation of results. Over the last 14 years, there have been annual treatments with an average of 4,289 acres treated annually across the DPG. The majority of these treatments are prescribed fire and mowing. These treatments are moving towards the objective to implement management practices, including prescribed fire, that will move landscapes toward desired vegetation composition, and structure, as described in Geographic Area direction within 10 years.

The Sheyenne Geographic Area has a specific objective to burn 40,000 acres per decade. This has been accomplished three of the fourteen years as displayed above. The average acres burned per year has been 2,585 acres, with a range of zero to 6,097 treated annually. The variability in the acres treated is due to weather conditions and available funding. As mentioned above, in Appendix N of the LRMP, mowing and prescribed fire, is talked about extensively in relation to their effects on the western prairie fringed orchid habitat. The Sheyenne National Grassland, where the orchid is found, has seen the majority of the on the ground treatment across the Dakota Prairie Grasslands. In the 14 years of treatment data reflected in this report, the Sheyenne has had 73,260 of the total 85,880 acres treated or approximately 85%.

Within the Grand/Cedar Geographic Area there has been a specific objective to burn 5,000 acres per decade. This objective was not accomplished. The average acres burned per year has been 207 acres, with a range of zero to 1,014 treated annually.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.c Objective 1 - Within 10 years, implement management practices, including prescribed fire, that will move landscapes toward desired vegetation composition and structure as described in Geographic Area direction.

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?[2]*
MON-VEG-02 What management actions have occurred that contribute to the ability of plant communities to retain function or regain function after disturbance?	2021	(E) Yes – there is a trend of moving towards the objective of managing plant communities to maintain vigor which allows them to retain or regain function after disturbance. For prescribed fire treatments not all the objectives are being achieved at the desired rate due to weather conditions and funding constraints.	Yes	Monitoring Plan: One of the most widely used vegetation management tools used on the grasslands is prescribed grazing which is not accounted for as an indicator. Include prescribed grazing as an indicator for MON-VEG-02 in the monitoring program.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to* ***the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment****, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-VEG-03

Plan Component(s) being assessed by this monitoring item:

Goal 1.c - Increase the amount of forests and grasslands restored to or maintained in a healthy condition with reduced risk and damage from disturbance processes, both natural and human-controlled.

Goal 1a Objective 2. Move at least 80% of riparian areas and woody draws toward self-perpetuating plant and water communities that have desired diversity and density of understory and overstory vegetation within site capability.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
What is the status of woody draw conditions relative to site potential?	number woody draws in each state/transition per ecological site (by project) (Y)	Interval of visits dependent on project NEPA decision	LMNG Staff	LMNG Botanist/ Biology PM

(*Influenced by climate change? Y, N, Uncertain)

Table 60. Monitoring Item MON-VEG-03 - Monitoring Collection Summary

For monitoring item MON-VEG-03:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

Regional Forester, Brad Powell, signed the Record of Decision (ROD) for the DPG's Land and Resource Management Plan on July 31, 2002. In this ROD he identified the need for a Scientific Review Team (SRT). The primary purpose for creation of the SRT is to address a concern by some that the Final Environmental Impact Statement (FEIS) needed some additional scientific analysis, specifically regarding livestock and wildlife issues. The SRT addresses those concerns by providing an outside independent review of the FEIS through sample Allotment Management Plans and looking at their baseline data, analysis procedures and predicted outcomes. One of the issues identified in the review was the lack of records documenting historical trends in woody communities. They also indicated the lack of measurable objectives and recommended developing quantitative objectives for each woody community type (Report of The Scientific Review Team, Dakota Prairie Grasslands, May 2005). As a result of the SRT concerns, the 2013 memorandum (Neitske, 2013), and the DPG transitioning to state and transition models, a group consisting of Natural Resource Conservation Services, Forest Service, Rocky Mountain Research Station (RMRS), and National Park Service individuals taking a harder look. These groups started developing ecological site descriptions for woody draw communities. In 2016, the group finished three provisional ecological site descriptions and as a result, Dr. Jack Butler (RMRS) developed a protocol that would assist in placing woody draws into a state and community phase based on the data collected in the field.

Methods

Surveys

DPG Staff sampled 171 woody draw points throughout the Little Missouri National Grassland during the growing seasons of 2016 through 2020 (Table 61). Three provisional woody draw ecological site descriptions (NRCS 2016) were used to describe the existing condition of the woody draws and the Protocol for Determining Community Phases of Wooded Draws on the LMNG using Ecological Site Descriptions (Butler, 2016). Figure 18 is an example of the Butler (2016) protocol for woody draw sampling on the DPG.

Plot placement: Select the center of the most representative section of the draw and establish plot #3. Plots 1 and 2 should be 30 to 75 m downslope from plot # 3 while plots 4 and 5 should be 30 to 75 m from plot # 3. Distances between plots can be adjusted according to the length of the draw, but each plot should be at least 30 m apart. For larger draws, consider sampling more than 1 set of 5 plots by dividing the draw in half, or thirds, or more for really large draws. For multiple sets of 5 plots in larger draws, evaluate each series of 5 plots separately (portions of the large draws could be disturbed differentially).

Date: _____ Crew: _____

Ecological Site (circle): LO FB SS Name of draw: _____

Slope: _____ Aspect: _____ Distance between plots: _____

Comments:

For green ash and American elm trees, record number of individuals in each 3 m radius plot (28.3 m^2). Reference values are provided for each plot up to 5 plots. Keep a running sum of trees for each series of plots. For exotic grasses (Kentucky bluegrass, smooth brome, and crested wheatgrass) estimate percent foliar cover for each species in a 1 m radius plot using 4 cover classes: 1 = trace to 25%, 2 = 26 to 50%, 3 = 51 to 75%, 4 = > 75%. Record presence of Juniper (any size) and Green ash seedlings less than 45 cm (18 inches) tall in each plot. 10 cm ≈ 4 inches.

	Exotic Grasses	Chokecherry	Juniper	Green ash < 45 cm tall	Trees (Green ash and American elm)[1]			
Plots	Cover Class	Cover Class (CC)	Record + if present, 0 if absent	Record + if present, 0 if absent	< 10 cm dbh	**Reference < 10 cm**	≥ 10 cm dbh	**Reference > 10 cm**
1						**5**		**1**
2						**11**		**2**
3						**16**		**4**
4						**22**		**5**
5						**27**		**6**
Total (average CC for cover)								
Reference	Absent	Avg. CC > 1	Absent					

[1]Reference values were developed for green ash only.

Reference values for green ash trees ≥ 10 cm dbh were calculated using data from Nelson (1961; Table 1, page 33) and Butler (1983; Table 15, page 65, lightly grazed site). Reference values for green ash trees < 10 cm dbh were calculated using data from Butler (1983; Table 11, page 60, and Table 13, page 62, lightly grazed site. Values for shrubs and saplings were averaged and used as reference values for green ash < 10 cm dbh).

Figure 18. Example of the Woody Draw Sampling Protocol

The desired diversity and desired conditions within the Land and Resource Management Plan (LRMP), for the Dakota Prairie Grasslands (DPG), would be representative of a flat bottom and steep sided woody ecological site in a reference state and community phase of 1.1 (USDA NRCS, 2016). For a loamy overflow ecological site reference state and community phase, 1.4 community phase would be the desired diversity and desired condition, since this ecological site can have either an herbaceous plant community, shrub community, or a woody community (USDA NRCS, 2016),

https://efotg.sc.egov.usda.gov/references/public/ND/flat_bottom_wooded_draw_R058CY102ND.pdf,
https://efotg.sc.egov.usda.gov/references/public/ND/steep_sided_wooded_draw_R058CY101ND.pdf
https://efotg.sc.egov.usda.gov/references/public/ND/loamy_overflow_RO58CY074ND.pdf

Below is an example of Loamy Overflow, Steep Sided, Flat Bottom ecological sites state and transition models (Figure 19, Figure 20, Figure 21).

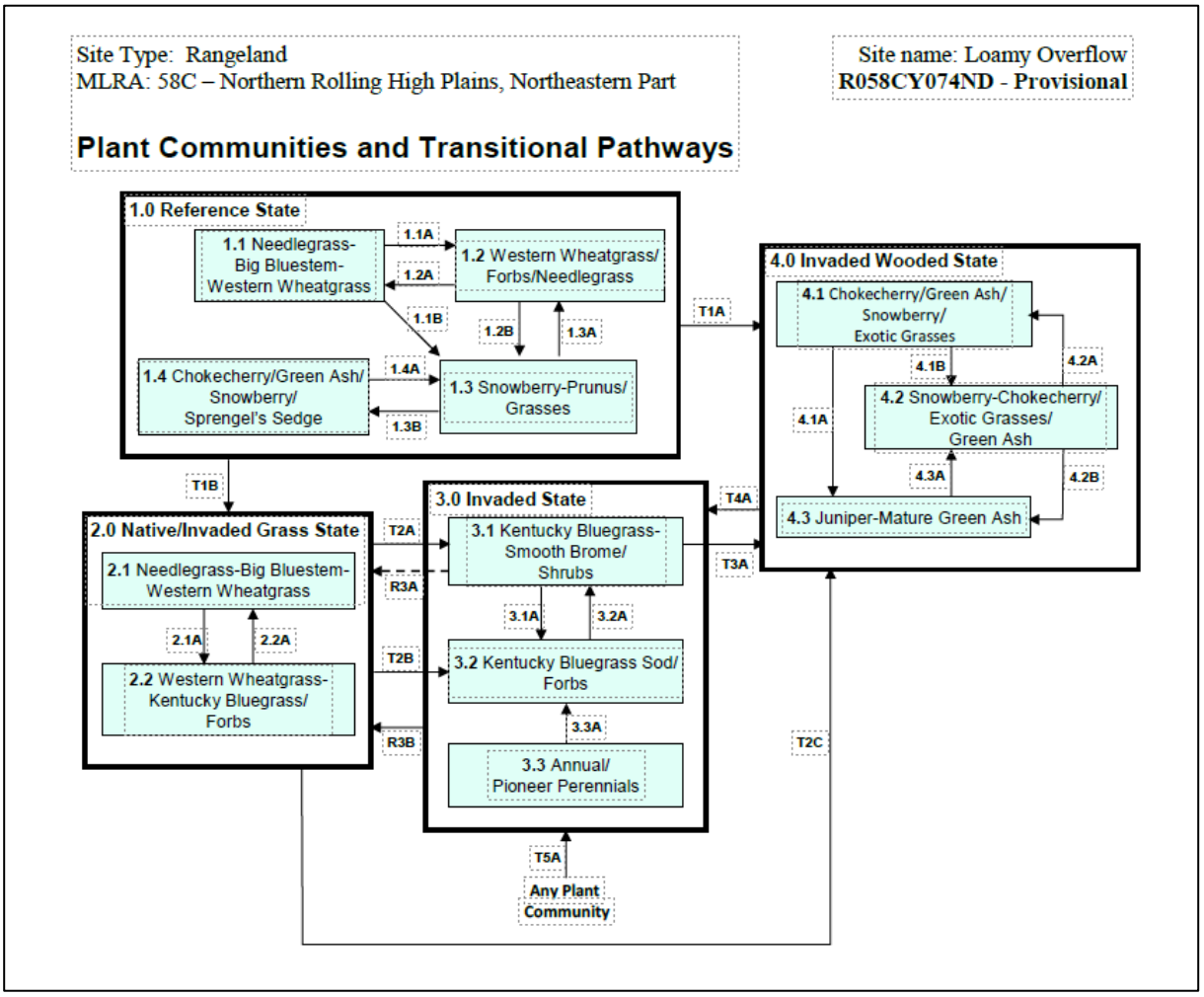


Figure 19. Loamy Overflow State and Transition Model

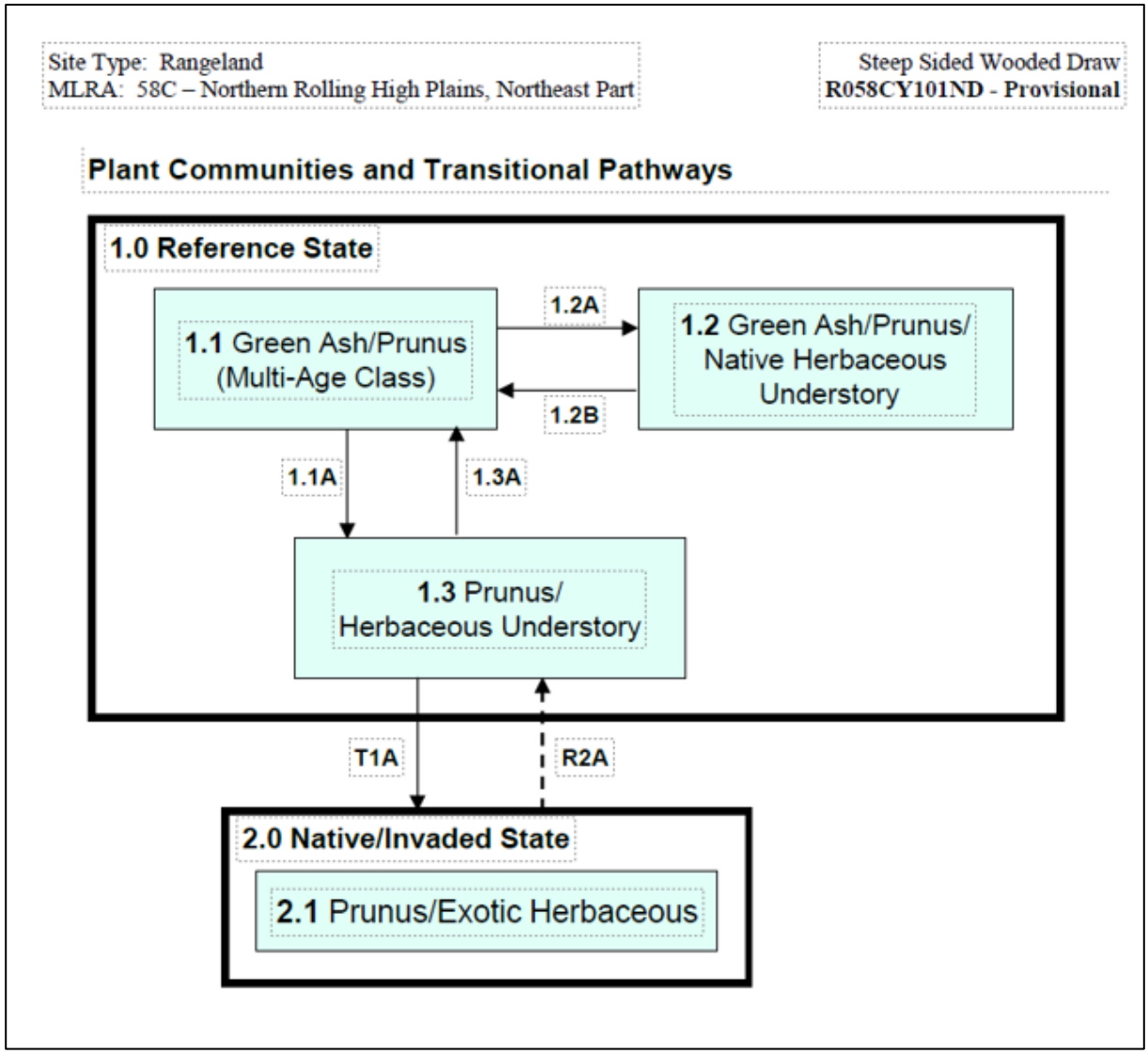


Figure 20. Steep Sided Wood Draw State and Transition Model

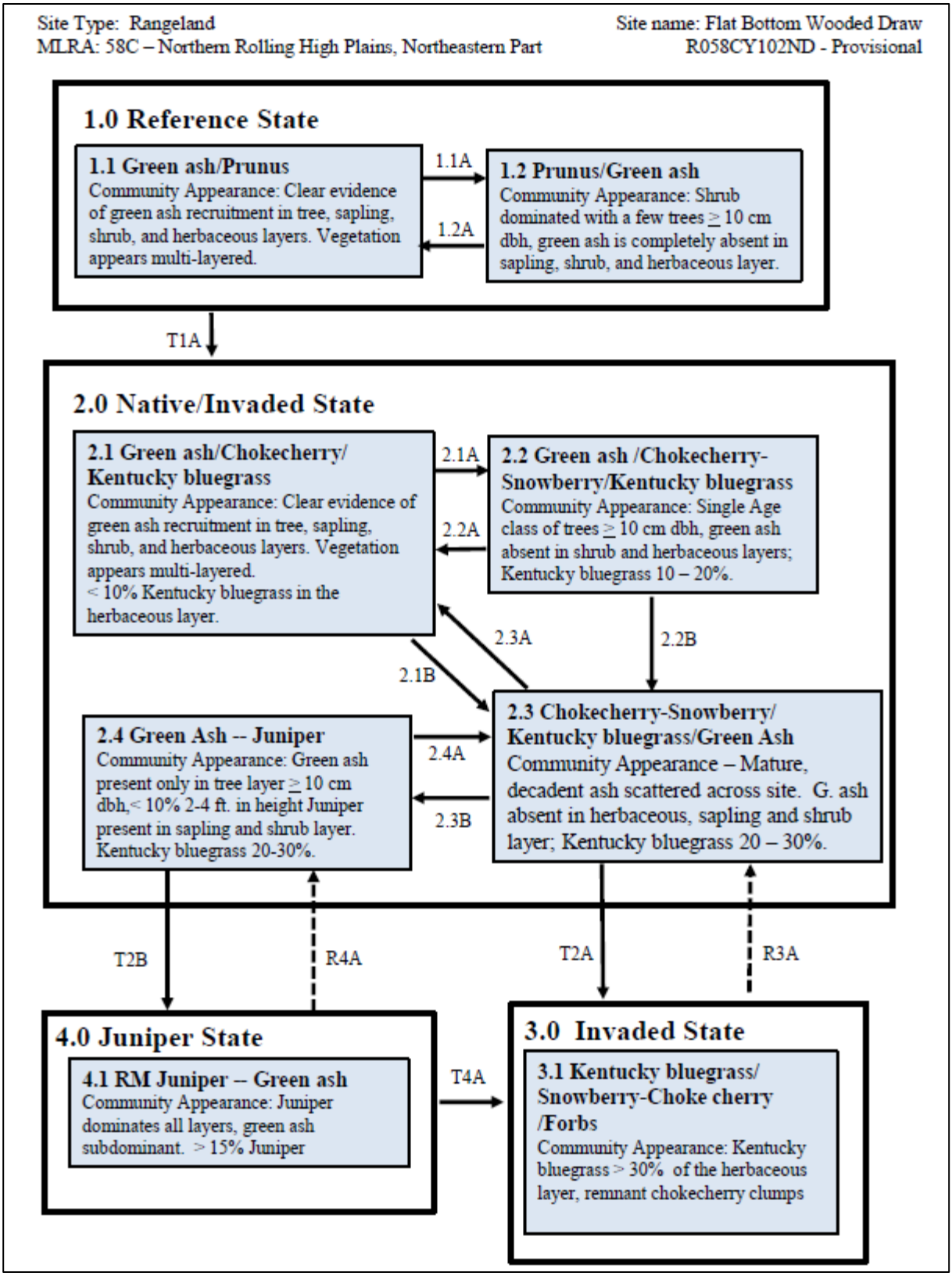


Figure 21. Flat Bottom Wooded Draw State and Transition Model

Results

Table 61. Woody Draw Plots by Ecological Sites Sampled from 2016 – 2020 on the Little Missouri National Grasslands

Ecological Site	State and Community Phase	Number of Plots
Flat Bottom	1.2 Prunus(Chokecherry/Plum)/Green Ash	2
	2.1 / Green Ash/Chokecherry/Kentucky bluegrass	3
	2.2 Green Ash/Chokecherry/Snowberry/Kentucky bluegrass	4
	2.3 / / Chokecherry – Snowberry/Kentucky bluegrass/Green Ash	8
	2.4 Green Ash - Juniper	9
	3.1 / / Kentucky Bluegrass/Snowberry-Chokecherry/Forbs	27
	4.1 / /Western Snowberry/ RM Juniper- Green Ash	1
Loamy Overflow	1.3 / Snowberry-Prunus/Grasses	1
	1.4 / /Western Chokecherry/ Green Ash/ Snowberry/Sprengel's Sedge	6
	3.1 Kentucky bluegrass/Smooth Brome/Shrubs	10
	4.1 Chokecherry/ Green Ash /Snowberry/Exotic Grasses	20
	4.2 Snowberry-Chokecherry/Exotic grasses/Green Ash	30
	4.3 Juniper-Mature Green Ash	4
	Other[1]	1
Other[2]	Other	10
Steep Sided	1.1 Green Ash/Prunus (Multi-Age Class)	2
	1.2 Green Ash/	10
	1.3 Prunus/Native Herbaceous Understory	3
	2.1 PR/EX Prunus/Exotic Herbaceous	18
Very Shallow[3]	Other	2
Total Woody Draw Points		171

[1]*Other means it didn't fit any of the community phases w/in the states in loamy overflow ecological site.*
[2]*Didn't fit any of the 3 ecological sites w/woody draw components.*
[3]*The site keyed out to a very shallow ecological site & at the time there was no community phase with a woody component.*

Eight woody draw plots sampled would achieve the desired diversity and desired conditions within the LRMP. Three plots within the flat bottom woody draw ecological sites would represent the desired conditions; however, have the presence of exotic species.

67% of the woody draws sampled are not meeting desired conditions. Approximately 27% of the woody draw plots sampled have pathways back to the desired community phases. However, a portion of these will be in the native/invaded state. Eventually, woody draws may be impacted by Emerald Ash Borer (Agrilus planipennis), which is currently not on LMNG.

Discussion

The data presented is baseline data that was collected from 2016 to 2020. Additional plots will be sampled in the future for upcoming vegetation management projects on the Little Missouri National Grassland. A combination of what has been collected and what will be collected will give the DPG an understanding of what the existing conditions are and what management tools can be used to improve the woody draw communities that can be improved. Past management, exotic species, insects, and disease all have had an effect on the woody draws.

The DPG LRMP will undergo revision in the near future. Best science to evaluate future desired conditions will be applied when conducting the assessment for revision. The following recommendations could be considered for future revision efforts:

1. Desired conditions, goals, and objectives that consider the state and transition models for individual ecological sites within the MLRA's across the DPG.
2. Identify state and community phases that are desired and identify if transition between states can occur. This would guide the DPG in management of this resources.
3. Assessment of woody draws and riparian areas to be separated from one another. This is based on plant communities, soils, hydrology, and ecological function.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.c - Increase the amount of forests and grasslands restored to or maintained in a healthy condition with reduced risk and damage from disturbance processes, both natural and human-controlled.
- Goal 1a Objective 2. Move at least 80% of riparian areas and woody draws toward self-perpetuating plant and water communities that have desired diversity and density of understory and overstory vegetation within site capability.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-VEG-03 What is the status of woody draw conditions relative to site potential?	2021	(D) No – 67% of the woody draws sampled are not trending toward the desired condition. Only 27% of the woody draw plots sampled have pathways back to the desired community phases; however, a portion of these will be in the native/invaded state.	Yes	Management Action: Identify sites having pathways that will move them to the desired state. Prioritize in near future management actions to shift the community to desired site potential, as only 27% have pathways back to desired conditions.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to* ***the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment****, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Recreation

Monitoring Item MON-REC-01

Plan Component(s) being assessed by this monitoring item:

Goal 2.a Objective 1. Annually, maintain or reconstruct 20% of national grassland trails to regional standards.

Goal 2.a Objective 6. Provide Nonmotorized and motorized trails for a wide variety of uses and experiences.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
To what extent are trails managed to meet regional standards?	Trails maintained (*miles of*) (Y) Trails improve (*miles of*) (Y)	Annually	INFRA	Recreation Specialist
	Maintenance needs (number or miles of needing maintenance) (Y)	Annually	INFRA	Recreation Specialist
	Trail regional standards (miles of trails meeting and not meeting regional standards) (Y)	Annually	INFRA	Recreation Specialist
	Non-motorized trails (*miles of*) (N)	Annually	INFRA	Recreation Specialist

(*Influenced by climate change? Y, N, Uncertain)

Table 62. Monitoring Item MON-REC-01 - Monitoring Collection Summary

For monitoring item MON-REC-01:	Year
Data was last collected or compiled in:	2019
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2002
Next scheduled MER evaluation of this monitoring item:	2023

The Dakota Prairie Grasslands (DPG) maintain 250.4 miles of non-motorized National Forest System Trails. Users can recreate on the trails through hiking, biking, horseback riding, and winter activities. The question of, "*To what extent are trails managed to meet regional standards*" is important to analyze to provide users with satisfactory recreation opportunities as well as identify areas of improvement. Trails are an important aspect of federal public lands by contributing factors into the Recreation Opportunity Spectrum (ROS) and improving multiple use opportunities on the landscape.

Methods

The plan component consists of two objectives: Objective 1. Annually, maintain or reconstruct 20% of National Grasslands trails to regional standards. Objective 6. Provide non-motorized and motorized trails for a wide variety of uses and experiences. To identify if the objectives are being met, the data for trail use and maintenance is collected daily by the seasonal trail crew and recorded into the Forest Service INFRA database annually at the end of each season. An annual report of trail accomplishments is then generated to provide the number of trail miles maintained, improved, meeting standards, or needing improvements.

Additional methods for data collection are obtained through volunteer groups while performing trail maintenance. The volunteer groups provide a list of maintenance objectives to the Forest Service Recreation Specialist to categorize priority needs. The volunteer group leader coordinates a work schedule for the volunteers over the season. An annual report of volunteer achievements is then reported to the Forest Service at the end of each season.

Results

Year	Activity	Sheyenne	Grand River	Medora	McKenzie	DPG Total
2016	NFST Miles Maintained	44.7	6.84	102.997	55.965	210.502
	Non-NFST Miles Maintained					
	NFST Miles Improved			6.1		6.1
	Non-NFST Miles Improved					
	NFST Miles Meeting Standard	41.43	5.84	45.2	18.328	110.8520
	Non-NFST Miles Meeting Standard					
	% NFST Miles Meeting Standard	92.68	85.38	33.22	29.29	44.28
2017	NFST Miles Maintained	18.78	6.84	57.107	51.255	133.982
	Non-NFST Miles Maintained					
	NFST Miles Improved	1.21		10.4		11.61
	Non-NFST Miles Improved					
	NFST Miles Meeting Standard	44.7		84.69	12.982	149.212
	Non-NFST Miles Meeting Standard		6.84			
	% NFST Miles Meeting Standard	100.0	100	62.25	20.64	59.58
2018	NFST Miles Maintained	31.7	6.84	123.387	51.113	213.04
	Non-NFST Miles Maintained					
	NFST Miles Improved		0.2	0.2		0.4
	Non-NFST Miles Improved					
	NFST Miles Meeting Standard	36.68	6.84	98.47	3.06	145.05
	Non-NFST Miles Meeting Standard					
	% NFST Miles Meeting Standard	82.05	100	72.38	4.86	57.91
2019	NFST Miles Maintained	36.78	6.84	107.337	53.795	204.752
	Non-NFST Miles Maintained					
	NFST Miles Improved					
	Non-NFST Miles Improved					
	NFST Miles Meeting Standard	44.6	6.84	90.527	8.475	150.442
	Non-NFST Miles Meeting Standard					
	% NFST Miles Meeting Standard	99.77	100	66.54	13.47	60.07

Trails within the Dakota Prairie Grasslands

The Dakota Prairie Grasslands maintains 250.4 miles of non-motorized National Forest System (NFS) trails. Users can recreate on the trails through hiking, biking, horseback riding, and winter activities. Across the DPG, trails traverse a multitude of landscapes ranging from rocky badlands, grassy ridgelines, rolling prairie, riparian lowlands, and oak savannahs. Additionally, unique areas like 31 miles of the North Country National Scenic Trail and Denbigh Experimental Forest Trails pass through the Dakota Prairie Grasslands.

Figure 22. Fat-Tire biking, North Country Trail - Sheyenne National Grassland (2018, Cory Enger)

Figure 23. Volunteer trail improvement, North Country Trail - Sheyenne National Grassland 2016, Cory Enger.

Forest Service trail crews, recreation staff, and volunteer partners have improved 18 miles of trail in the last five years. Volunteer partners are critical to maintaining the DPG trails. An increased enthusiasm for outdoor recreation opportunities has inspired volunteer groups to reach out to the DPG for trail improvement opportunities. Users have helped improve the North Country Trail for hiking and non-profit organizations like "Save the Maah-Daah-Hey" have made impressive moves to improve the trail for mountain biking. These groups are integral to the continued use and maintenance of trails across the DPG. Strong relationships between the groups have enhanced user experience during these last five years. Volunteer partners will continue to be crucial for the recreation program.

On average (annually) 44.54%, or 111.55 total miles, of trail have ongoing maintenance needs. Maintenance needs vary from impacts caused by erosion due to overland water flow, encroachment of noxious weeds, damage

caused by cattle grazing and wildlife, damage to trails from motor vehicle use, and vandalism to trail infrastructure. The DPG continues to monitor the issues and strives to reduce the total maintenance needs through funding opportunities like the Great American Outdoors Act and continued involvement with volunteer partners.

On average (annually) 55.46%, or 138.9 total miles, of trail have been maintained to Regional standards. The capacity to maintain Regional trail standards requires a continued effort by the trail crew, recreation staff, and volunteers. The complexity of trail maintenance includes trail planning, trail design, mitigation of surface water and natural forces, trail foundations, tread maintenance, crossing streams/rivers and wet areas, signage, and tool proficiency. Through these efforts, the DPG achieved *Goal 2.a Objective 1* of the DPG-LRMP which mandates an annual maintenance or reconstruction of 20% of national grassland trails to Regional trail standards.

The Sheyenne National Grassland (SNG) constructed the Sheyenne River Water Trail during 2019. This new trail utilizes existing water features to provide 17 river miles of both motorized and non-motorized use. The trail provides 4 access sites to the Sheyenne River and coordinates a partnership with the North Dakota Game and Fish Department for one of the access sites. Sheyenne River Water Trail provides recreation opportunities for canoeing, kayaking, fishing from shore or motorized watercraft, dispersed camping, hunting, and wildlife viewing. Through this effort, the DPG achieved *Goal 2.a Objective 6* of the DPG-LRMP by providing nonmotorized and motorized trails for a wide variety of uses and experiences.

Figure 24. Trail maintenance, Iron Spring Bridge - Sheyenne National Grassland (2019, Aaron Gaither)

Figure 25. Trail maintenance, Iron Spring Bridge - Sheyenne National Grassland (2019, Aaron Gaither)

Figure 26. Sheyenne National Grassland – Sheyenne River Water Trail (2019, Aaron Gaither)

Discussion

The data for this report has been collected over the past 5 years by the trail crew, recreation staff, and volunteer programs. The report shows the DPG, on average, has achieved all of the goals and objectives for this monitoring item. Despite this success, it is important to note that the Mckenzie Ranger District fell below regional standards in FY18 & 19. This may be due to abnormally high rainfall and flooding in certain areas of the Mckenzie RD that caused trail erosion, and complete trail removal, in some areas during those fiscal years.

The DPG has maintained about 50% of the trails to standard but lacks the ability to provide extra efforts to improve existing trails, so the data shows minimal, less than 5%, National Forest System Trails improved over the past 5 years across all districts. The steady low trend in data does not show any potential for substantial increase in the coming years. The DPG strives to maintain consistency in data collection for the Trails and Recreation Program. However, high turnover and limited capacity to fill positions may result in years of no data collection, or a fluctuation in accuracy of field data collection. The trail crew will maintain the current method of data collection for future monitoring reports.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 2.a Objective 1. Annually, maintain or reconstruct 20% of national grassland trails to regional standards.
- Goal 2.a Objective 6. Provide Nonmotorized and motorized trails for a wide variety of uses and experiences.

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?*[2]
MON-REC-01 To what extent are trails managed to meet regional standards?	2021	(E) Yes – Based on maintenance of 50% of trails maintained to regional standards	Yes	Management Action: Attempt to increase *Trail Improvements* annually across the DPG

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-REC-02

Plan Component(s) being assessed by this monitoring item:

Goal 2.a. Improve the capability of the Nation's forests and grasslands to provide diverse, high-quality outdoor recreation opportunities.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
To what extent are recreational opportunities meeting public interests?	Visitor use (number and type of visits) (N)	1 season every 5 years	National Visitor Use Monitoring (NVUM) 1 season every 5 years	Recreation Specialist
	Fee collections (number or amount of fees collected) (N)	Weekly during operating season	Weekly during operating season	Recreation Specialist
	Recreation use and needs (N)	1 season every 5 years	North Dakota State Comprehensive	Recreation Specialist

Plan Component(s) being assessed by this monitoring item:				
Goal 2.a. Improve the capability of the Nation's forests and grasslands to provide diverse, high-quality outdoor recreation opportunities.				
Monitoring Question	**Indicators ***	**Data collection interval**	**Data Source / Partner**	**Point of Contact**
			Outdoor Recreation Plan (SCORP)	
	Social media hits (comments and suggestions from website on how to improve or new needs) (N)	Periodically	Supervisor's Office records	Public Affairs Officers
	Public outreach events *(number of)* (N)	Periodically	Supervisor's Office records	Public Affairs Officer

(*Influenced by climate change? Y, N, Uncertain)

Table 63. Monitoring Item MON-REC-02 - Monitoring Collection Summary

For monitoring item MON-REC-02:	**Year**
Data was last collected or compiled in:	2018
Next scheduled data collection/compilation:	2022
Last MER evaluation for this monitoring item:	2002
Next scheduled MER evaluation of this monitoring item:	2023

The USDA Forest Service manages its lands under a multiple use approach that includes many different recreation opportunities for public use. The Dakota Prairie Grasslands are an aggregate of four national grasslands that cover much of the far Western region of North Dakota, with the Little Missouri National Grassland, a small region of South East-North Dakota with the Sheyenne National Grassland, and a small area of North Western-South Dakota with the Grand and Cedar River National Grassland. Each National Grassland provides unique opportunities for recreational use on public lands appealing to a wide demographic across the state.

It is important to ask the question, "*To what extent are recreational opportunities meeting public interests*?" This question will help the USDA Forest Service align with its mission statement "*to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations*." Management goals and objectives are formed by the immediate and long-term needs of users that are unique to each specific recreation opportunity.

Methods

The DPG has many different resources available to help answer DPG-LRMP MON-REC-02: *To what extent are recreational opportunities meeting public interests?*

The first method used analyzes visitor use by identifying the number and type of visits through the National Visitor Use Monitoring Program (NVUM). The NVUM surveys are conducted every five years on each National Grassland for one calendar year.

A detailed overview of sampling methods is described by the NVUM Program from 10/2/2019: "*To define the sampling frame, staff on each forest classify all recreation sites and areas into five basic categories called "site types*": Day Use Developed Sites (DUDS), Overnight Use Developed Sites (OUDS), Designated Wilderness Areas (Wilderness), General Forest Areas (GFA), and View Corridors (VC). Only the first four categories are counted as National Forest recreation visits and are included in the visit estimates. The last category is used to

track the volume of people who view National Forests from nearby roads and, since they do not get onto agency lands, they cannot be counted as visits. For the entire sampling year, each day on each site was given a rating of very high, high, medium, low, or no use according to the expected level of recreational visitors who would be observed leaving that location for the last time (last exiting recreation use) on that day. The combination of a calendar day, and a site or area, is called a site day. Site days are the basic sampling unit for the NVUM protocol.

Visitation is estimated through a combination of traffic counts and surveys of exiting visitors. Both are obtained on a random sample of locations and days distributed over an entire forest for a year. All the surveyed recreation visitors are asked about their visit duration, activities, demographics, travel distance, and annual usage. About one-third were also asked a series of questions about satisfaction. Another one-third were asked to provide information about their income, spending while on their trip, and the next best substitute for the visit (National Visitor Use Report FY2018).

- The second method to track visitation analyzes fee collections through the number or amount of fees collected. Campground fees are collected weekly by recreation staff from each developed campground on-site. Visitor passes are also sold in-person at each Ranger District office. All fees are processed through the point of sales system weekly. Annual sales summary reports have been generated for the DPG and compared to each consecutive year for noticeable trends for sales or visitor use. It is important to note that the annual sales summary report does not distinguish between campground fees and visitor use passes but rather a total sales summary and number of transactions.
- The third method analyzes recreation use and needs by using the North Dakota State Comprehensive Outdoor Recreation Plan (SCORP). The SCORP was prepared by the North Dakota Parks and Recreation Department (NDPRD) and is a guide for managing and developing North Dakota's non-consumptive outdoor recreation infrastructure. To determine the demand for, and supply of, non-consumptive outdoor recreation in North Dakota, two distinct surveys were undertaken in 2017.

    1. First, a survey of North Dakota households was conducted to assess interest in outdoor recreation activities and to identify the perceived quantity and quality of facilities for these activities. In March 2017, 800 North Dakotans over the age of 18 were surveyed by telephone, resulting in a 95% confidence level with a maximum margin of error of ±3.5%.
    2. Second, a survey of North Dakota's public outdoor recreation providers was completed to assess perceived demand for facilities, to inventory the quantity and condition of existing facilities and to solicit input on future needs for facilities. In March 2017, 65% of North Dakota's 314 providers (206) completed the mail survey, resulting in a 95% confidence level with a maximum margin of error of ±4.0% (*North Dakota State Comprehensive Outdoor Recreation Plan* 2018-2022).
    3. The data is then comprised and analyzed to show the perspectives of North Dakotans of what they think about recreation opportunities. Finally, a comprehensive list of demand and supply, recommendations, and facility priority needs is generated as a report. Comparing this report to existing infrastructure on the Dakota Prairie Grasslands will help identify any historic or new recreation opportunities available that meet the use and needs of the public.
    4. The fourth method analyzes social media 'hits' for comments and suggestions from websites about how to improve or discovering any new needs.
    5. The fifth method identifies public outreach events by how many, and what type of events, DPG employees attended representing the DPG for recreation opportunities. A list from each ranger district is compiled and compared to each consecutive year for any trends and an increase or decrease of events over 5 years. This information will help identify the DPG's efforts to engage with the public to connect on relevant or new recreation opportunities.

National Visitor Use Monitoring Program definition of terms:

National forest visit is the entry of one person upon a national forest or grassland to participate in recreation activities for an unspecified period of time. A National Forest or Grassland visit can be composed of multiple site visits. The visit ends when the person leaves the national forest to spend the night somewhere else.

Site visit is the entry of one person onto a national forest site or grassland area to participate in recreation activities for an unspecified period of time. The site visit ends when the person leaves the site or area for the last time on that day.

A confidence interval is a range of values that is likely to include an unknown population value, where the range is calculated from a given set of sample data. Confidence intervals are always accompanied by a ***confidence level***, which tells the degree of certainty that the value lies in the interval. Used together, these two terms define the reliability of the estimate, by defining the range of values that are needed to reach the given confidence level. For example, the 2008 national visitation estimate is 175.6 million visits, with a 90% confidence interval of 3.2%. In other words, given the NVUM data, our best estimate is 175.6 million visits, and given the underlying data, we are 90% certain that the true number is between 170.0 million and 181.2 million.

Recreation trip is the duration of time beginning when the visitor left their home and ending when they return to their home.

Site day - a day that a recreation site or area is open to the public for recreation purposes.

Proxy - information collected at a recreation site or area that is directly related to the amount of recreation visitation received. The proxy information must pertain to all users of the site and it must be one of the proxy types allowed in the NVUM pre-work directions (fee receipts, fee envelopes, mandatory permits, permanent traffic counters, group reservations, ticket sales, and daily use records).

Nonproxy - a recreation site or area that does not have proxy information. At these sites a 24-hour traffic count is taken to measure total use for one site day at the sample site.
Use level - for each day of the year, for each recreation site or area, the site day was categorized as very high, high, medium or low last exiting recreation traffic, or no exiting use. No Use could mean either that the location was administratively closed, or it was open but was expected to have zero last exiting visitors. For example, a picnic area may be listed as having no use during winter months (120 days), high last exiting recreation volume on all other weekends (70 days) and medium last exiting recreation use on the remaining midweek days (175 days). This accounts for all 365 days of the year. This process was repeated for every site and area on the forest.

Results

Table 64. 2018 Site Days and Percentage of Days Sampled by Stratum

Stratum*		Days Sampled	Site Days# in Use Level/Proxy Population	Sampling Rate (%)
Site Type†	Use Level‡ or Proxy Codes§			
DUDS	High	10	25	40.0
DUDS	Medium	12	214	5.6
DUDS	Low	16	1,003	1.6
DUDS	DUR4	8	285	2.8
OUDS	High	10	251	4.0
OUDS	Medium	10	861	1.2
OUDS	Low	16	1,977	0.8
OUDS	DUR4	8	365	2.2
GFA	High	24	1,499	1.6
GFA	Medium	41	6,609	0.6
GFA	Low	72	15,402	0.5

Total		227	28,491	0.8

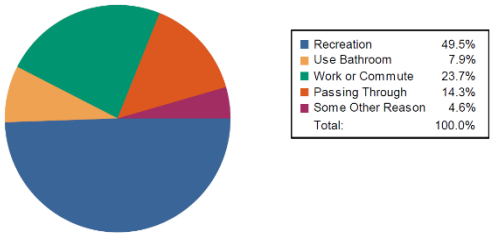
* Stratum is the combination of the site type and use level or proxy code. Sample days were independently drawn within each stratum.
† DUDS = Day Use Developed Site, OUDS = Overnight Use Developed Site, GFA = General Forest Area ("Undeveloped Areas"), WILDERNESS = Designated Wilderness
‡ Use level was defined independently by each forest by defining the expected number of recreation visitors that would be last-exiting a site or area on a given day. The forest developed the range for very high, high, medium, and low and then assigned each day of the year to one of the use levels.
§ Proxy Code - If the site or area already had counts of use (such as fee envelopes or ski lift tickets) the site was called a proxy site and sampled independent of nonproxy sites.
# Site Days are days that a recreation site or area is open to the public for recreation purposes.

Table 65. 2013 and 2018 Annual Visitation Estimate

Visit Type	Visits (1000)		90% Confidence Level	
	2013	2018	2013	2018
Total Estimated Site Visits*	95	141	±25.0	±33.2
Days Use Developed Site Visits	20	5	±57.5	±58.6
Overnight Use Developed Site Visits	18	32	±49.0	±39.8
General Forest Area Visits	58	105	±32.9	±43.0
Total Estimated National Forest Visits	77	96	±26.9	±35.0
Special Events and Organized Camp Use	0	3	±0.0	±0.0

* A site visit is the entry of one person onto a National Forest site or area to participate in recreation activities for an unspecified period of time.

2013



2018

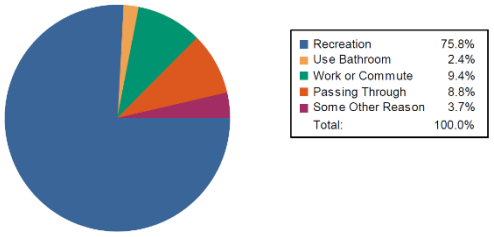


Figure 27. Purpose of Visit by Visitors Who Agreed to be Interviewed (https://www.fs.usda.gov/about-agency/nvum/)

Table 66. 2013 and 2018 Activity Participation

Activity	Participation (%)		Main Activity (%)		Average Hours Doing Main Activity	
	2013	2018	2013	2018	2013	2018
Viewing Natural Features	44.0	41.1	24.7	15.0	0.0	3.4
Hiking/Walking	32.8	53.0	21.4	20.5	2.3	2.8
Viewing Wildlife	31.2	47.7	1.3	3.7	5.0	15.3
Bicycling	19.8	26.5	16.8	21.8	3.3	5.0
Hunting	17.1	24.1	15.9	23.1	9.9	8.6
Driving for Pleasure	16.7	29.3	4.3	1.8	6.0	4.5
Visiting Historic Sites	14.8	7.2	0.9	2.6	2.0	3.4
Developed Camping	10.2	12.6	3.9	1.7	39.0	21.0
Fishing	7.1	0.3	6.8	0.0	4.3	0.0

Activity	Participation (%)		Main Activity (%)		Average Hours Doing Main Activity	
	2013	2018	2013	2018	2013	2018
Relaxing	6.7	31.0	1.8	1.8	6.1	21.9
Non-motorized Water	4.0	0.3	0.0	0.0	0.0	0.0
Nature Center Activities	4.0	4.8	0.0	0.0	0.0	0.0
Horseback Riding	1.6	4.8	1.4	4.2	6.4	4.7
Picnicking	1.3	4.9	0.0	1.2	0.0	1.1
Motorized Trail Activity	0.8	4.4	0.0	0.1	0.0	2.0
Primitive Camping	0.8	3.7	0.0	1.0	0.0	16.0
Some Other Activity	0.5	1.9	0.5	1.3	1.0	4.5
Cross-country Skiing	0.5	0.3	0.0	0.0	0.0	0.0
Nature Study	0.2	7.2	0.2	0.9	30.0	1.0
Other Non-motorized	0.2	1.0	0.0		0.0	
Gathering Forest Products	0.2	1.0	0.0	0.0	0.0	0.0
OHV Use	0.1	2.2	0.0	0.0	0.0	0.0
Resort Use	0.0	0.3	0.0	0.0	0.0	0.0
Snowmobiling	0.0	0.0	0.0	0.0	0.0	0.0
Motorized Water Activities	0.0	0.2	0.0	0.0	0.0	0.0
Other Motorized Activity	0.0	0.0	0.0	0.0	0.0	0.0
Downhill Skiing	0.0	0.0	0.0	0.0	0.0	0.0
No Activity Reported	0.0	0.0	0.0	0.0	-	-
Backpacking	0.0	1.0	0.0	0.0	0.0	0.0

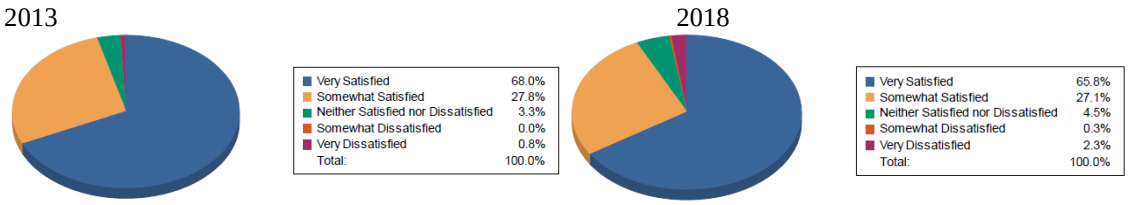


Figure 28. Percent of Dakota Prairie Grassland Visits by Overall Satisfaction Rating, 2013 and 2018

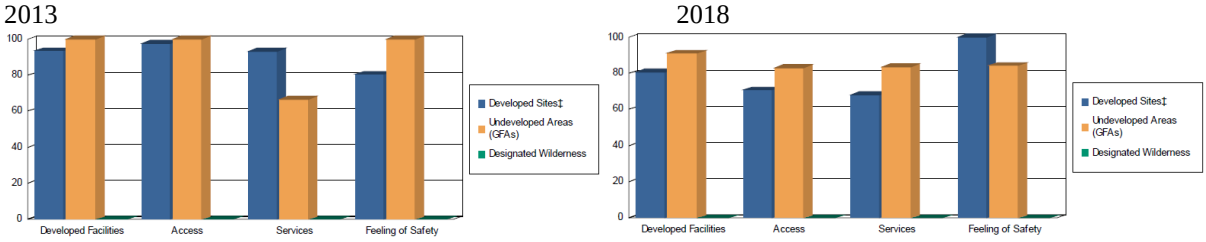


Figure 29. Percent Meets Expectation Scores, 2013 and 2018

Table 67. 2020 Authorized Recreation Fee Changes, Campgrounds

Recreation Site	District	Current Fee	New Fee	RRAC Recommendation
Jorgen's Hollow Campground	Sheyenne	NA	10.00	Yes
Hankinson Hills Campground		6.00	10.00	Yes
Coal Creek Campground	Medora	NA	10.00	Yes
Burning Coal Vein Campground		6.00	10.00	Yes
Elkhorn Campground		6.00	10.00	Yes
Magpie Campground		6.00	10.00	Yes
Wannagan Campground		6.00	10.00	Yes
Buffalo Gap Campground		6.00	20.00	Yes
Bennet Campground	McKenzie	6.00	10.00	Yes
CCC Campground		6.00	10.00	Yes
Sather Lake Campground		6.00	10.00	Yes

Discussion

The estimated annual visitation has increased across the DPG from 2013 to 2018, in four out of five visit types. It is important to note that the confidence level for all types of visits is between 33.2% and 58.6%. These values are very high accompanied by the 90% confidence interval. For example, the total estimated site visits for the DPG in 2018 is 141 thousand visits, with a 90% confidence interval of 33.2%. In other words, given the NVUM data, our best estimate is 141 thousand visits and, given the underlying data, we are 90% confident that the true number is between 94.2 thousand and 187.8 thousand. We should understand that according to observations from field going personnel, the actual visitations are most likely significantly lower than that.

These reports show recreation to be the main reason for visitation on the DPG for those who agreed to be interviewed. The Sheyenne NG opened a new developed recreation site in 2014, bringing visitors from Fargo, ND and surrounding areas. The McKenzie Ranger District plans to significantly improve their Civilian Conservation Corps (CCC) era campground thus increasing recreation for visitor use.

The overall satisfaction results are modest. Only about 65% of people visiting indicated they were very satisfied with their overall recreation experience, and 27% were satisfied. The results for the composite indices were mostly good. Satisfaction ratings for perception of safety were over 90% for all types of sites. Ratings for services were under 70% for all settings.

The DPG finalized campground fee increase and implementation in FY20 for all developed campgrounds on the DPG. Most fees increased from $6.00 to $10.00 except for Buffalo Gap Campground which increased from $6.00 to $20.00. Both Jorgen's Hollow Campground and Coal Creek Campground implemented a $10.00 fee. The initial $0.00 fee at these campgrounds was due to a circumstance surrounding Resource Advisory Council (RAC) review from 2014 and difficulties presenting a new fee proposal to the RAC over a period of five years. The two campgrounds remained fully open with no fee during those years.

The North Dakota State Comprehensive Outdoor Recreation Plan (SCORP) was prepared by the North Dakota Parks and Recreation Department (NDPRD) and is a guide for managing and developing North Dakota's non-consumptive outdoor recreation infrastructure. Examples of non-consumptive outdoor recreation include wildlife viewing, hiking, canoeing, or any other activity in which the user does not remove or harvest resources from the environment. Examples of consumptive recreation include fishing, hunting, foraging, or other activities in which the user harvests resources from the environment. The following figures represent North Dakota's primary needs to meet user demands. The DPG offers mostly semi-primitive recreation opportunities with the exception a few developed campgrounds offering more comfort amenities than others. The DPG recreation program has identified what recreation needs presented by the SCORP align with the program objectives on the DPG to meet visitor use needs appropriately.

Table 68. Statewide Facility Priorities

Primary Needs	Secondary Needs	Tertiary Needs
Non-motorized Trails	Swimming/Water Facilities	Shooting Sport Facilities
Playgrounds/Picnic Areas/Open Space Parks	Recreation Boating Facilities	Canoeing/Kayaking Facilities
Campgrounds	Winter Sports Facilities	Sports Courts/Fields
		Motorized Trails

Primary Needs	Secondary Needs	Tertiary Needs
Campgrounds	Sports Courts/Fields	Winter Sports Facilities
Non-Motorized Trails	Playgrounds/ Picnic Areas/Open Space Parks	Swimming/Water Facilities
		Specialty Facilities
		Shooting Sport Facilities
		Recreational Boating Facilities

Primary Needs	Secondary Needs	Tertiary Needs
Campgrounds	Shooting Sport Facilities	Motorized Trails
Non-Motorized Trails	Sports Courts/Fields	Specialty Facilities
Swimming/Water Facilities	Recreational Boating Facilities	Winter Sports Facilities
Playgrounds/ Picnic Areas/Open Space Parks		Canoeing/ Kayaking Facilities
		Golf Courses

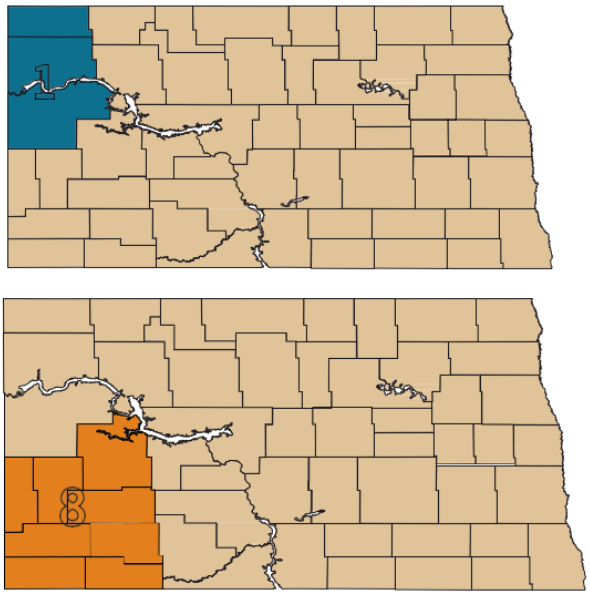


Figure 30. North Dakota's Region 1 & 8 Facility Priorities

Camping within the Dakota Prairie Grasslands

Camping is of interest to 55% of North Dakota households in Region 1, particularly in modern campgrounds (51%), with campers or RVs (47%) and at group campsites (44%). Rental cabins or yurts at campgrounds or parks, semi-modern campgrounds and tent camping sites are primary weaknesses in the Region. Providers report demand exceeds supply for many camping facilities: semi-modern campgrounds (29%), tent/RV/ camper sites without electricity/water hookups (29%), RV/ camper sites with electricity/water hookups (22%) and RV dump stations (22%). 42% of providers report electricity/water hookups and RV/camper sewer hookups are important to enhance user experiences in campgrounds.

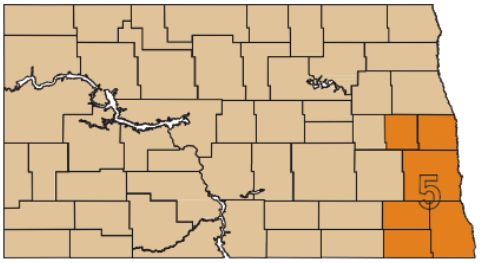
Using trails for walking, running, bicycling, or horseback riding is of interest to 55% of North Dakota households in Region 1, with 47% interested in modern trails. Modern trails, semi-modern trails, and unpaved multi-use trails are a primary weakness for the Region. 29% of providers report demand exceeds supply for paved multiuse trails and exercise trails, while 22% say the same for hiking trails.

The Little Missouri National Grassland offers eight developed campgrounds ranging from semi-primitive to modern camping. There is also one lake access site providing day use activities and fishing opportunities. In addition to camping, there are 200 miles of non-motorized trails for hiking, biking, and horseback riding

opportunities. *Based on the SCORP data, the Little Missouri has facilities in place to meet the primary needs of North Dakota citizens***.** With the help of the Great American Outdoors Act (GAOA), the Little Missouri National Grassland plans to improve both developed campgrounds and non-motorized trails over the next five years.

Figure 31. Buffalo Gap Campground, Little Missouri NG (Rob Schilling 2020)

Figure 32. Whitetail Campground, Little Missouri NG (Rob Schilling 2020)



Primary Needs	Secondary Needs	Tertiary Needs
Non-Motorized Trails	Winter Sports Facilities	Sports Courts/Fields
Campgrounds	Recreational Boating Facilities	Shooting Sport Facilities
Swimming/Water Facilities	Canoeing/ Kayaking Facilities	Specialty Facilities
Playgrounds/ Picnic Areas/Open Space Parks		

Figure 33. North Dakota's Region 5 Facility Priorities

Trails for walking, running, bicycling, or horseback riding are of interest to 61% of North Dakota's Region 5 households with 51% interested in modern trails. 51% are interested in using paved multi-use trails while 44% are interested in unpaved multi-use trails. Hiking trails, semi-modern trails, modern trails, and unpaved multi-use trails are primary weaknesses.

61% of the Region's households are interested in camping. 55% are interested in camping in modern campgrounds, 44% in renting cabins or yurts at campgrounds or parks, 44% in using campers or RVs and 42% in group campgrounds. Primary weaknesses are rental cabins or yurts at campgrounds or parks, semi-modern campgrounds, modern campgrounds, camper or RV camping sites, group campground sites and tent camping sites. According to providers, 35% of group campsites in the Region are in poor condition.

Swimming outdoors is of interest to 56% of North Dakota households in the region, while 51% are interested in going to designated swimming beaches at lakes or rivers and 48% are interested in going to regular pools. Designated swimming beaches along lake shorelines, or riverbanks, and specialty pools, are primary weaknesses in terms of availability. Providers report 25% of regular swimming pools in the Region are in poor condition.

Canoeing and kayaking are of interest to 43% of households in North Dakota's Region 5. Designated paddling trails and waterways for canoeing or kayaking are primary weaknesses.

The Sheyenne National Grassland has 31 miles of the North Country National Scenic Trail (NCT) passing from West to East within the north portion of the district. The trail is an unpaved, non-motorized use trail for horseback, biking, and hiking. The Sheyenne also has a 4-mile loop trail surrounding Jorgen's Hollow Campground; and an 8-mile loop surrounding the Hankinson Hills Campground. Each loop trail has the same specifications as the North Country Trail. The NCT trail has been maintained to national standards, but the recreation program plans to use GAOA funding to resurface with gravel to trail specs, the entire 31 miles of the NCT to improve non-motorized used recreation opportunities over the next five years. There are no paved trails on the Sheyenne and no plans to develop any.

Figure 34. Hankinson Hills Campground, Sheyenne NG, (Aaron Gaither 2020)

Figure 35. DPG Trail Crew first river float, Sheyenne NG, (Aaron Gaither 2020)

Developed Recreation Campgrounds

The Sheyenne National Grassland offers two developed campgrounds providing semi-primitive amenities. Users can camp with horse trailers; and access both trails, and off-trail, horseback riding from the campgrounds. Users can also camp with Recreational Vehicle's and tents in designated campsites. These two campgrounds do not offer cabin or yurt rentals; however, local private and state campgrounds offer those more modern camping amenities. The campgrounds also do not offer large group camping in a single site; however, groups may occupy several adjacent campsites. Dispersed camping is allowed on the district for up to 75 people in an area without a special use permit.

The Recreation Program identified the public's interest in canoeing and kayaking through information gleaned from the SCORP. Paddling and waterway opportunities are lacking and considered a weakness in the North Dakota Region 5. The Sheyenne River Water Trail was started in 2017, and finalized in 2018. The trail is located on the North portion of the Sheyenne National Grassland. The water trail provides access to many recreation opportunities in the area to include canoeing, kayaking, boating, camping, hunting, and fishing. All four of the access sites provide information on proper hand launch and retrieval, dispersed camping on public lands by practicing a "leave no trace" guiding principle, water trail safety, and aquatic invasive species control. All aspects of the Sheyenne River Water Trail help to provide access to public lands and positive public lands stewardship.

It is important to note in FY20 Covid-19 impacted the world in an extraordinary way. With restrictions on travel and stay-at-home orders across the country, management priorities were shifted in unusual ways. Amenities were closed temporarily in the spring, but most sites were opened following a risk analysis for decision making. The public saw public lands as an opportunity to enjoy the outdoors safely through dispersed recreation and trail use. Based on visitor use logs, the DPG saw a 200% increase in recreation use throughout the summer months. Trail use was higher than average, and visitor calls were more frequent with questions around recreation opportunities. Resource specialist have seen a need to maintain developed recreation opportunities and improve dispersed recreation opportunities throughout the DPG.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 2.a. Improve the capability of the Nation's forests and grasslands to provide diverse, high-quality outdoor recreation opportunities.

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?[2]*
MON-REC-02 To what extent are recreation opportunities meeting public interests?	2021	(E) Yes – Based on the extensive outdoor recreation opportunities provided on the DPG	Yes	Management Action: maintain developed recreation and improve dispersed recreation opportunities across the DPG

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-REC-03

Plan Component(s) being assessed by this monitoring item:

Goal 1.2A Standards and Guidelines. Allow uses and activities if they do not degrade wilderness characteristics.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
To what extent do management activities influence the features important to suitable wilderness (MA 2.1A)?	Non-conforming uses (*Number of permits/authorizations that are non-conforming to characteristics of suitable wilderness*) (N)	Periodically	Supervisor's Office records	Recreation Manager
	Permit applications *(number of permit applications received/denied within the suitable wilderness)* (N)	Periodically	Supervisor's Office records	Recreation Manager
	Permitted roads *(number of off-road permits authorized in suitable wilderness)* (N)	Periodically	Supervisor's Office records	Recreation Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 69. Monitoring Item MON-REC-03 - Monitoring Collection Summary

For monitoring item MON-REC-03:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2002
Next scheduled MER evaluation of this monitoring item:	2023

The DPG has identified 38,828.16 total acres of suitable acreage for Wilderness areas (category 1.2A), all within the Little Missouri National Grassland. According to the grassland management plan for the DPG, theUSDA Forest Service has identified these areas as being suitable for Wilderness recommendations to Congress, for inclusion in the National Wilderness Preservation System. The Forest Service is not recommending these areas for Wilderness at this time because of a lack of current Congressional and Gubernatorial support for Wilderness. The DPG is allowing time for consensus to build on recommended Wilderness areas; in the meantime, the wilderness character of these areas will be protected. In the event these areas are threatened by future development that would degrade the wilderness character, the Forest Service would then officially recommend them to Congress for Wilderness designation. Livestock grazing will be continued; however, management activities which do not protect wilderness characteristics will be prohibited or restricted. If consensus is not reached within the life of the DPG-LRMP, a Wilderness recommendation will be reconsidered in the next round of plan revision.

These areas are managed to protect Wilderness characteristics. Vegetation is managed within the range of natural variability which include natural processes such as: fire, insects, disease, rest, grazing control, vegetation composition, and structure. Large pasture size and unobtrusive structural developments promote an open, natural-appearing landscape. Generally, opportunities for primitive recreation are provided, with a moderate degree of solitude available.

There is some evidence of past and present human use, such as fences, trails, water developments, and primitive roads. Existing two-track roads and old roads are evident, but will diminish through lack of use. Some of these may become designated trails. Bridges or other structures may exist to protect resources or provide safe stream crossings during normal water flow.

Use of mechanized equipment for administrative purposes will continue. Opportunities to remove or relocate structural range improvements (fences and water developments), to achieve resource management goals and objectives, will be pursued. Both directional and resource protection signs may be present (*Dakota Prairie Grasslands Land and Resource Management Plan*, 2001).

The standards and guidelines for suitable wilderness (MA 1.2A) are listed below:

1. Forest Plan Standard: Allow uses and activities only if they do not degrade wilderness characteristics.
2. Forest Plan Standard: Reclaim disturbed lands to a near natural resource condition.
3. Forest Plan Standard: Limit all motorized use to administrative purposes (e.g., grazing administration, invasive plant control, and fire suppression) and that deemed necessary to provide public trailhead facilities on public land within these areas.
4. Forest Plan Guideline: Control natural insect and disease outbreaks only when they threaten resource values outside of the management area boundary.
5. Forest Plan Standard: Do not allow new road construction.
6. Forest Plan Standard: Recreation - Prohibit snowmobile use in this management area.
7. Forest Plan Standard: Allow development of necessary trailhead facilities on public land to provide public parking in these areas.

Refer to Chapter 1 (Grassland-wide Direction), Section K, for additional recreation direction.

Methods

The DPG has many different resources available to help answer **MON-REC-03:** *To what extent are management activities influencing the feature importance of suitable wilderness* (MA.1.2A).

1. The first method used analyzes non-conforming uses by identifying the number of permits/authorizations that are non-conforming to characteristics of suitable wilderness. The uses on all Forest Service Lands are processed through a special use permit or authorization. An operating plan for all uses is present in the special use permit. Periodic field inspections are completed before, during and after the defined uses to ensure appropriate use is followed on the landscape. A review of these permits

is completed annually and before any repeat use is done on the landscape. Data is pulled from special use tracker spreadsheet.

2. The second method used analyzes permit applications in the previous 5 years. The total number of permit applications received/denied within the suitable wilderness has been compiled to determine if appropriate screening of special use permit applications is being followed to align with the Grassland LRMP objectives. Data is pulled from special use tracker spreadsheet.

3. The final method used analyzes permitted roads by identifying the total number of off-road permits authorized in suitable wilderness in the previous 5 years.

Results

Table 70. Monitoring Indicator Status Summary

Non-conforming uses (*Number of permits/authorizations that are non-conforming to characteristics of suitable wilderness*)		Recent Trend	
		Towards Target	Away from Target
Current Status	Within Target		+ -
	Outside Target		

Table 71. Monitoring Indicator Status Summary

Permit applications *(number of permit applications received/denied within the suitable wilderness)*		Recent Trend	
		Towards Target	Away from Target
Current Status	Within Target	++	
	Outside Target		

Table 72. Monitoring Indicator Status Summary

Permitted roads *(number of off-road permits authorized in suitable wilderness)*		Recent Trend	
		Towards Target	Away from Target
Current Status	Within Target	++	
	Outside Target		

Discussion

The focused area for this monitoring question about non-conforming uses is relevant only to the McKenzie and Medora Ranger Districts, which together comprise the Little Missouri National Grassland (LMNG). From 2016 to 2020, within the LMNG, a total of 51 special use permit application were submitted for various events. The event descriptions range from: ultra-marathon foot and bike races that travel up to 100 miles along designated trails; winter fat-tire bike race; snowshoe and cross-country ski events; archery tournaments; Outfitter and Guide permits for mountain bike and horseback riding; filming permits; Jeep/off-road trail rides; pointing dog trials; and power parachute flying.

Out of the 51 applications submitted to the LMNG, 24 were accepted and approved within the Suitable for Wilderness area. The event descriptions are the ultra-marathon foot and bike race that travel up to 100 miles along designated trails, fat-tire, snowshoe and cross-country ski events, outfitter and guides for mountain biking, filming permit, and a wedding ceremony. Most of the events have little to no impact on the landscape and conform to management area 1.2 guidelines. The running, snowshoe, skiing, and biking events promote solitude activities and do not require permanent structures on the landscape. The filming permit requires the crew to follow all USDA Forest Service policy, including leave no trace, and does not allow manipulation of the environment for filming.

Wedding ceremonies require a large gathering of people which does not promote solitude and requires infrastructure to be in place for the event. Because of this, the location used for weddings is the CCC Campground. This campground is within management area 1.2 and has been utilized by the Forest Service for many years and continues to gain improvements. A consideration to remove the CCC Campground from management area 1.2 should be reviewed.

Figure 36. Foot race event, Maah-Daah-Hey Trail – Little Missouri National Grassland (2018, Rob Schilling)

The mountain bike events do currently follow all guidelines for management area 1.2 set by the DPG. They are currently some of the largest events on the DPG and follow the Maah Daah Hey and Long X Divide trails. If the area becomes a designated Wilderness Area a decision will need to be considered to remove this event from this area. According to the Wilderness Act of 1964, mechanical transport, including bicycles, is prohibited within all Wilderness Areas.

Out of the 51 applications submitted to the LMNG, 1 was denied. The denial was due to proposed rock-climbing activities within American Indian Traditional Use Area, management area 2.4, and not within Suitable Wilderness Areas. Additionally, off-road use is not permitted within management area 1.2.

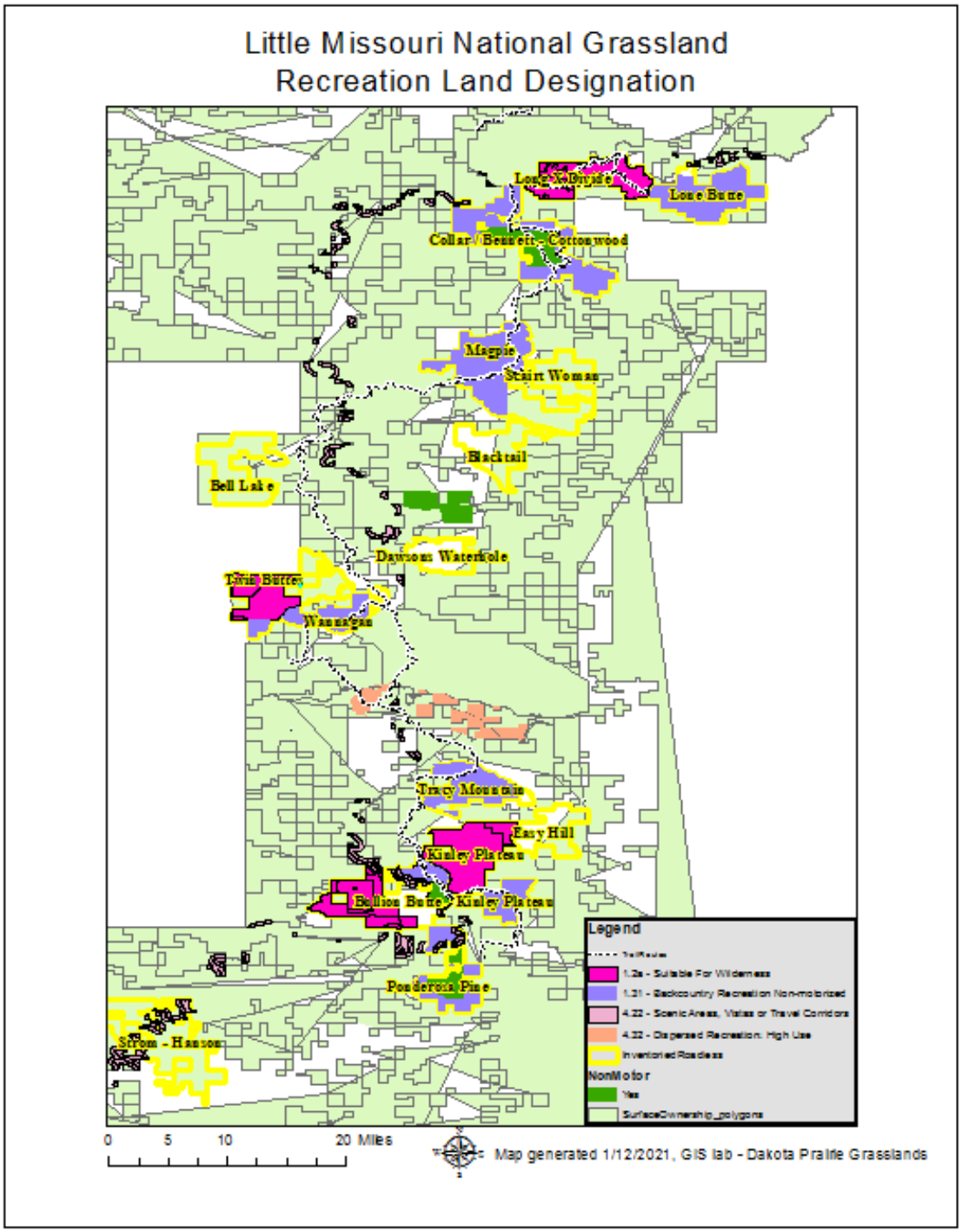


Figure 37. Little Missouri National Grassland Recreation Land

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 1.2A Standards and Guidelines. Allow uses and activities if they do not degrade wilderness characteristics.

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?*[2]
MON-REC-03 To what extent are management activities influencing the features important of suitable wilderness (MA 2.1A)?	2021	(E) Yes – Approved activities did not degrade Wilderness character	Yes	Grasslands Plan: consider reviewing why CCC campground is in management area 1.2 as it does not promote solitude and requires infrastructure Monitoring Program: The monitoring item refers to suitable for wilderness as MA 2.1A, however the correct MA for suitable for wilderness is MA 1.2A. Error will be corrected.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-REC-04

Plan Component(s) being assessed by this monitoring item:

Goal 2.c
Scenery Objective 1. Implement practices that will meet, or move the landscape character toward, scenic integrity objectives consistent with Geographic Area direction.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
To what extent have scenery integrity objectives been met?	Scenic Integrity Objectives (*number of projects that are moving or not moving towards SIO*) (N)	Periodically	Supervisor's Office Records	Recreation Specialist
	Actual scenic integrity (acres and location of desired versus actual scenery integrity condition) (N)	Periodically	Supervisor's Office Records	Recreation Specialist

(*Influenced by climate change? Y, N, Uncertain)

Table 73. Monitoring Item MON-REC-04 - Monitoring Collection Summary

For monitoring item MON-REC-04:	Year
Data was last collected or compiled in:	2010
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2010
Next scheduled MER evaluation of this monitoring item:	2023

Methods

The DPG's scenery management policy is described in the *Dakota Prairie Grasslands Land and Resource Management Plan, 2001* (DPG-LRMP). The DPG LRMP identifies the number and types of projects, within a specific management area, to determine if the DPG is moving towards scenery objectives and, whether or not those projects meet the scenery management guidelines.

Scenery Management

Dakota Prairie Grasslands Land and Resource Management Plan (DPG-LRMP) Guidelines:
Our goal with scenery management on the DPG is to manage activities to be consistent with the scenic integrity objective(s), as referenced by the Adopted Scenic Integrity Objective map of the DPG-LRMP.
https://www.fs.usda.gov/detailfull/dpg/landmanagement/?cid=stelprdb5340280&width=full

Chapter 3 of the DPG-LRMP describes management area directions to include scenic integrity objectives. A Management Area (MA) is defined as a parcel of land, a point, or a linear path, within the Grasslands, that is managed for a particular emphasis. Management areas may comprise very small points, linear paths, or large or small parcels. Each management area has a prescription that outlines the desired conditions and the standards and guidelines that apply to it (in addition to the Grassland-wide standards and guidelines).

For this revision, linear, point, and small management areas were combined into other management areas or are handled through discrete standards and guidelines. This includes campgrounds and picnic grounds (developed recreation sites), utility corridors, woody draws, and riparian areas. Management areas devoted to a particular wildlife species were consolidated into "special wildlife areas."

Except for Congressionally established boundaries or special administrative boundaries, management area boundaries are not firm lines and do not always follow topographic features, such as ridges or drainages, or administrative boundaries. The boundaries represent a transition from one set of opportunities and constraints to another with management directions established for each. The boundaries are flexible to assure that the values

identified are protected and to incorporate additional information gained from further on-the-ground reconnaissance and project level planning. Boundaries can be adjusted up to ¼ mile (with Grasslands Supervisor approval) to facilitate management.

Prescriptions have been broken into six major categories which range from least evidence of disturbance to most evidence of disturbance: For example, Suitable Wilderness (MA 1.2a) would have the least amount of facilities and Rangeland with Broad Resource Emphasis (MA 6.1) would show the greatest evidence of facilities, including things like roads, oil wells, pipelines, and water developments (DPG-LRMP).

The following are the LRMP Guidelines for scenic integrity objectives for the DPG "Management Areas" (areas defined in chapter 3 of the LRMP for certain activities). These objectives apply only to prescription categories one through six within designated management areas.

Land and Resource Management Plan Guideline:

There is a need to rehabilitate areas that are not moving towards the scenic integrity objectives specified for the prescription category. Consider the following when setting priorities for rehabilitation:

1. FP Objective: Relative importance of the area and the degree of deviation from the scenic integrity objectives.
2. FP Objective: Length of time it will take natural processes to reduce the visual impacts so that they move towards the scenic integrity.
3. FP Objective: Length of time it will take rehabilitation measures to move towards scenic integrity.

LRMP Guideline: Benefits to other resource management objectives to accomplish rehabilitation.

Scenic Integrity (Existing or Objective) – The state of naturalness or, state of disturbance created by human activities or alteration impacts scenic integrity over time. Integrity is stated in degrees of deviation, or difference, from the existing landscape character within National Forest System (NFS) lands, which include grasslands like DPG, under USDA Forest Service management.

The scenic integrity levels are:

1. Very High (Unaltered): Preservation: This level refers to landscapes where the valued landscape character is intact with only minute, if any, deviations. The existing landscape character and sense of place is expressed at the highest possible level.
2. High (Appears Unaltered): Retention: This level refers to landscapes where the valued landscape character appears intact. Deviations may be present but must repeat the form, line, color, texture and pattern common to the landscape character so completely and at such scale that they are not evident.
3. Moderate (Slightly Altered): Partial retention: This level refers to landscapes where the valued landscape character appears slightly altered. Noticeable deviations must remain visually subordinate to the landscape character being viewed.
4. Low (Moderately Altered): Modification: This level refers to landscapes where the valued landscape character appears moderately altered. Deviations begin to dominate the valued landscape character being viewed, but they borrow valued attributes such as size, shape, vegetative type changes or architectural styles outside the landscape being viewed. They should not only appear as valued character outside the landscape being viewed but compatible or complimentary to the character within.
5. Very Low (Heavily Altered): Maximum Modification: This level refers to landscapes where the valued landscape character appears heavily altered. Deviations may strongly dominate the valued landscape character. They may not borrow from valued attributes such as size, shape, vegetative type changes or architectural styles within or outside of the landscape being viewed. However, deviations must be shaped and blended with the natural terrain (landforms) so that elements such as roads, and structures do not dominate the composition.
6. Unacceptably Low: This level refers to landscapes where the valued landscape character being viewed appears extremely altered. Deviations are extremely dominant and borrow little if any form, line, color,

texture, pattern, or scale from the landscape character. Landscapes at this level of integrity need rehabilitation.

Results

No information was compiled on the indicators for this monitoring question (1) number of projects that met scenic integrity objectives, 2) and the acres and location of desired versus actual scenery integrity condition. Table 74 provides the management area and its intent for scenic integrity objective. For example, management area 1.2a is designated as area suitable for wilderness. The scenic integrity objective is high, meaning it should appear unaltered. Management objectives should include preservation of the area where landscape characteristics remain intact with only minute, if any, deviations.

Table 74. Management Areas Classified by Scenic Integrity Objectives

Management Area	Very High	High	Moderate	Low	Very Low	Unacceptably Low
1.2A Suitable for Wilderness		X				
1.31 Nonmotorized Backcountry Recreation		X				
2.1 Special Interest Area		X				
2.2 Research Natural Area		X				
2.4 Identified American Indian Traditional Use Area		X				
3.51 Bighorn Sheep Habitat	X	X	X	X	X	
3.51A Bighorn Sheep Habitat with Non-Federal Mineral Ownership	X	X	X	X	X	
3.63 Black Footed Ferret Reintroduction Habitat			X	X		
3.64 Special Plant and Wildlife Habitat	X	X	X	X	X	
3.65 Rangelands with Diverse Natural-Appearing Landscapes	X	X	X	X	X	
3.66 Ecosystem Restoration (Sheyenne Tall Grass Prairie)			X	X		
4.22 River and Travel Corridors		X				
4.32 Dispersed Recreation: High Use		X	X			
5.31 Experimental Forests			X	X		
6.1 Rangeland with Broad Resource Emphasis			X	X		
1.2A Suitable for Wilderness		X				
1.31 Nonmotorized Backcountry Recreation		X				
2.1 Special Interest Area		X				
2.2 Research Natural Area		X				

Discussion

This monitoring item was not completed due to large workloads and insufficient records of scenic integrity objectives for each project. To accurately identify, if all projects on the DPG are moving toward scenic integrity objectives an in-depth analysis of each project, categorized by each management area, should be administered by the appropriate program manager. This level of analysis may require an extensive amount of time and perhaps an additional category of planning to proposed projects.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 2.c Scenery Objective 1. Implement practices that will meet, or move the landscape character toward, scenic integrity objectives consistent with Geographic Area direction.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-REC-04 To what extent have scenery integrity objectives been met?	2021	(B) Uncertain – As data was not compiled	Yes	Monitoring Program: Provide capacity for all program managers to provide data on projects for scenic integrity objectives for 2023 report. Change monitoring question to "To what extent has the unit progressed with scenic integrity objectives?"

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to* ***the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment****, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-REC-05

Plan Component(s) being assessed by this monitoring item:

Goal 4.a Objective 1. Within 5 years, identify travel opportunities and restrictions; including designating motorized travel-ways and areas, to meet land management objectives.

Goal 4.a Objective 2. Provide reasonable access for use of the national grasslands.

Goal 4.a Objective 4. Identify the minimum Forest Service road system for administration, utilization, and protection of national grasslands resources using a science-based roads analysis process. Provide safe and efficient travel and minimize adverse environmental effects.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
To what extent is off-road vehicle use (permitted and unpermitted) damaging grassland resources and causing erosion, sedimentation, and vegetation loss?	Unauthorized use (numbers of and acres of incidents) (N)	Periodically	Supervisor's Office records (opportunistic reports as observed)	Public Affairs Officer
	Cited incidents (number of unpermitted incidents) (N)	Periodically	LEO incident reports	Law Enforcement Officer
	Photo interpretation (Change in resource conditions as seen in plot points) (U)	Periodically	Supervisor's Office records (as needed)	GIS Coordinator

(*Influenced by climate change? Y, N, Uncertain)

Table 75. Monitoring Item MON-REC-05 - Monitoring Collection Summary

For monitoring item MON-REC-05:	Year
Data was last collected or compiled in:	2010
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2010
Next scheduled MER evaluation of this monitoring item:	2023

Methods

The Dakota Prairie Grasslands (DPG) has many different resources available to help answer **MON-REC-05:** To what extent is off-road vehicle use (permitted and unpermitted) damaging grassland resources and causing erosion, sedimentation, and vegetation loss?

The first method identifies travel opportunities and restrictions on the DPG to move toward land management objectives. A summary of roads maintenance and improvement projects were reviewed to determine if travel opportunities improved, diminished, or remained the same. Additionally, travel management plans are intended for providing reasonable access to National Forest System Lands.

The second method uses photo interpretation to show the change in resource condition. The areas identified range from significant reoccurring damage yearly, to new sites discovered periodically. The analysis shows different methods used to deter off-road use and its effectiveness over time. An analysis of unauthorized use and citations from the previous 5 years show the importance of addressing the travel issues.

Results

Table 76. Monitoring Indicator Status Summary

Unauthorized use (*numbers of and acres of incidents)*		Recent Trend	
		Towards Target	Away from Target
Current Status	Within Target		
	Outside Target	-+	

Table 77. Monitoring Indicator Status Summary

Cited incidents (*number of unpermitted incidents*)		Recent Trend	
		Towards Target	Away from Target
Current Status	Within Target		
	Outside Target	- +	

Table 78. Monitoring Indicator Status Summary

Photo interpretation (*Change in resource conditions as seen in plot points*)		Recent Trend	
		Towards Target	Away from Target
Current Status	Within Target		
	Outside Target		- -

Discussion

The Sheyenne National Grassland has seen an increase in user activity over the past 5 years. The increased use is accompanied by a rise in motor vehicle activity throughout the district. Most users adhere to the motor vehicle travel restrictions by means of accessing public lands. As part of improving access to public lands, the minimum maintenance roads system requires improvements.

Program managers identified Forest Service Road #1212 as a main travel corridor across the district by the public, ranchers, and agency personnel in 2018. The original route travels east and west crossing the North Country Trail in three locations. Road #1212 traversed through a low area into a frequently wet portion of district. It also passes by many historic homestead sites along the route. The Sheyenne Ranger District staff and engineering team identified this road for reconstruction and re-route to mitigate resource damage done by motor vehicles.

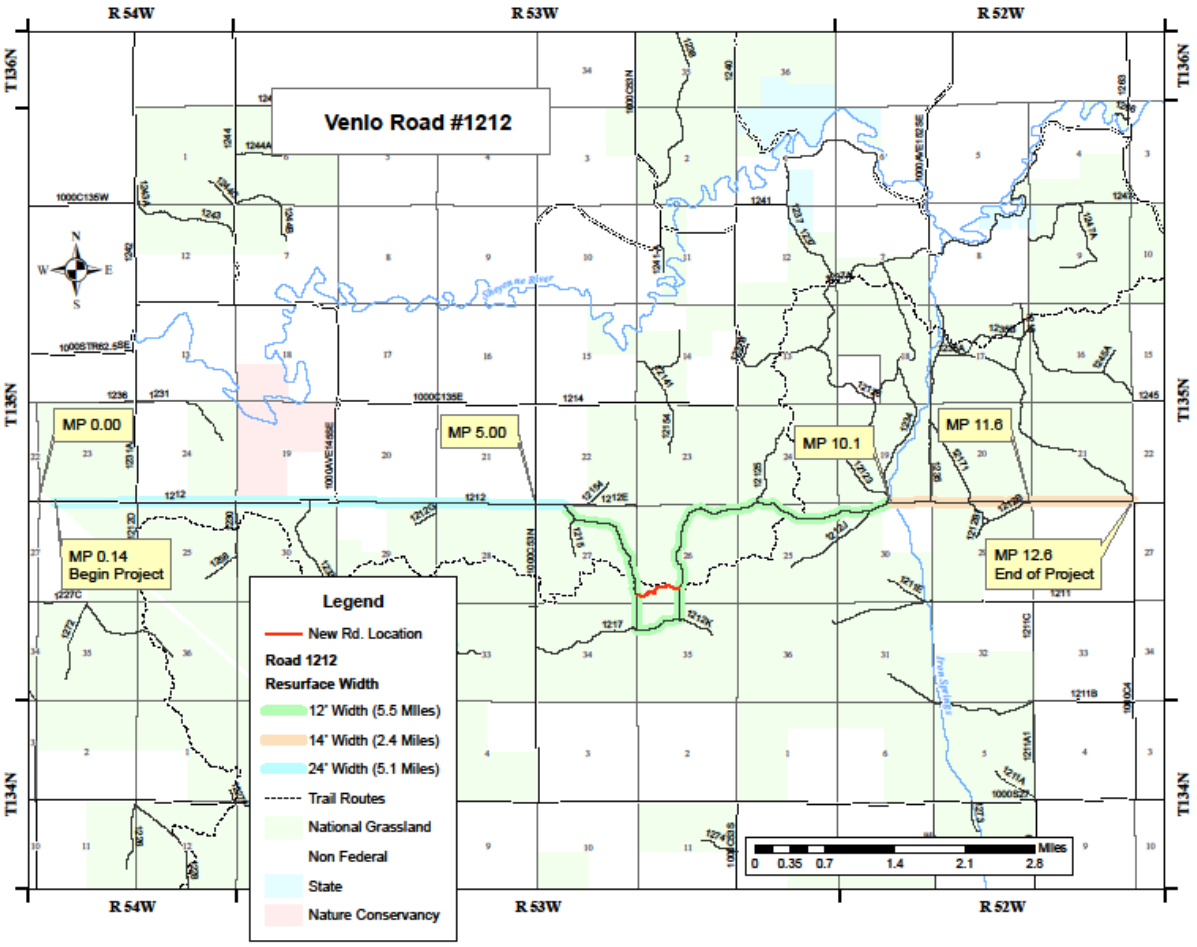


Figure 38. FSRD 1212 Contract Overview, Sheyenne National Grassland – 2019

The improvements made to Road #1212 consisted of widening the road to a minimum of 8 feet throughout the entire length. Some areas were identified to leave as is or widen up to 24 feet to allow for heavy equipment travel. The entire length of the road was resurfaced with class 5 gravel material and compacted to specification. A new road location of approximately 0.5 miles was set in the footprint of an existing administrative road which parallels the North Country Trail route. The placement of this new route avoids the historically wet area of the district and mitigates any further resource damage incurred in the area during times of high water. New cattle guards were set in place at fence crossings; and existing cattle guards were cleaned out. This allows users to travel much more efficiently along the road and mitigates the opportunity for cattle to pass through otherwise open fence gates.

In addition to Road #1212 road reconstruction, 45 miles of roads were maintained / improved across the DPG. The ability to maintain and improve the DPG Forest Service road system has a large impact on the natural landscape. It allows users to safely use existing roads and infrastructure while providing adequate access to public lands. It also deters users from misusing the landscape by providing designated water crossing, access to appropriate entrance locations for recreation, and preserves sensitive landscapes features. Road improvements also generate a positive public perception of the Forest Service by allocating funds to public lands access. The inverse of road improvements, degradation, may influence users to defy travel management plans and cause natural resource damage.

Figure 39. FSRD 1212 before Resurfacing, Sheyenne NG (Russ Walsh 2018)

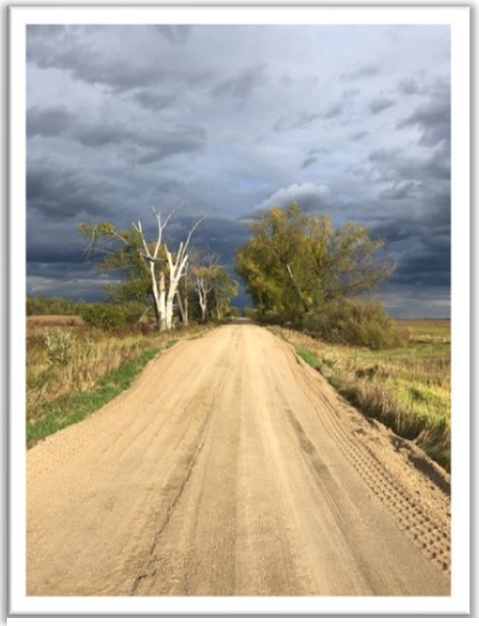


Figure 40. FSRD 1212 after Resurfacing Sheyenne NG (Curt Grudniewski 2019).

Figure 41. Resource Damage caused by Non-permitted ATV Use, Hankinson Allotment, Sheyenne National Grassland (Aaron Gaither 2020)

Figure 42. Resource damage caused by non-permitted, off-highway vehicles, Hankinson Allotment, Sheyenne National Grassland. May 2009. Photo by Dan Svigen

Figure 43. Resource Damage Reclaimed caused by Non-permitted, Off-highway Vehicles, Along FSRD1212, Sheyenne National Grassland (Aaron Gaither 2020)

Figure 44. Resource Damage caused by Non-permitted, Off-highway Vehicles, Sheyenne National Grassland (Aaron Gaither 2020)

Off-road motor vehicle use has been prevalent throughout the DPG, and more specifically on the Sheyenne and McKenzie Ranger Districts (RD) in the past 5 years. Contrary to the Little Missouri National Grassland (LMNG), the Sheyenne has a travel management plan in place to identify existing Forest Service roads for permitted motor vehicle travel; and provide users with a motor vehicle use map (MVUM). The travel management plan allows for detailed records of maintenance and improvements over time. Additionally, the plan allows for law enforcement of prohibited off-road vehicle use to both protect the natural environment and separate motorized vehicle users from visitors seeking quiet and solitude.

Hankinson Hills Recreation Area on the Sheyenne RD has been a challenging location to reduce the off-road all-terrain vehicle (ATV) activity and reclaim the sandy soils from erosion damage. There are numerous locations throughout Hankinson Hills that agency personnel have identified as "racetracks" over the years which are ATV or dirt bike user created trails. The tracks are usually located in choppy sandhills adjacent to designated roads. Some tracks are ¼ mile off road while others are several miles from a designated forest road. The tracks cause wet seasons "blowouts" in the sandy soil, which may take several years to reclaim, and some may never return to natural conditions.

Comparing resource damage from 2009 to 2020, it is easy to see that continued off-road use is occurring at Hankinson Hills with little change in land restoration despite efforts of signage and Forest Protection Officer (FPO) compliance patrols.

Other areas of the Sheyenne district have similar impacts from off-road ATV use but have seen improvements over the years. Areas along FSRD 1212 have been identified and mitigation measures have been in place for several years. Some strategies used are travel management signs at entry points, permanent "no road" signage, carsonite "no motor vehicle" signage, placing logs or branches across the trails, increase availability of MVUM maps, and increased FPO compliance patrols. Some of these images show the success of our mitigation measures by positive land reclamation. However, it takes little effort for users to off road on these trails and reverse years of reclamation in one afternoon.

Occasionally, users feel the need to simply cause resource damage with little respect for public lands. The photo adjacent shows damage caused by off-road motor vehicle use which happened one evening after a rain event on the Sheyenne National Grassland. It doesn't take much effort to destroy prairie landscape which may cause long lasting resource damage to the area. In this instance, a local residence of the area was suspected of causing the damage, but no official contact was made with the suspected perpetrator.

The DPG has recognized the public interest in Off Highway Vehicle (OHV) use throughout the western side of the state and the potential for resource damage to public lands if the public is not recreating responsibly. The DPG sought out cross-agency collaboration with North Dakota Parks and Recreation to facilitate a management plan and develop an OHV Scenic Touring Map through the Little Missouri National Grassland (LMNG). The three main factors identified with OHV use in the area are a mosaic of public land ownership, unidentified Forest System Roads (FSR), and no accurate maps for OHV use.

The Little Missouri National Grassland has a mosaic of land ownership consisting of Forest Service, National Park, State, and private lands all within the LMNG proclamation boundary. The National Park Service does not allow any form of OHV use through the Theodore Roosevelt National Park while the Forest Service and State lands allow permissible use in designated area. Providing information to the public through social media, land boundary signage, and updated maps has increased awareness for OHV use.

The LMNG staff recognized many Forest roads that were not identified on the landscape with a carsonite road number sign. It is nearly impossible to direct the public to permissible roads for OHV use if they are unaware of what roads to use. LMNG staff made considerable efforts to identify the main roads with accurate signage; but there is still an extensive amount of field work to be accomplished. In addition, LMNG districts partnered with Back Country Hunters and Anglers to install "no travel" and "travel restricted" signs at the intersection of NF roads and non-motorized management area boundaries. The Engineering team hopes to implement a DPG wide sign plan with the Great American Outdoors Act (GAOA) funding in the next 5 years.

The OHV Scenic Touring Map was created in partnership with North Dakota Parks and Recreation intended to provided OHV users with identified FSR roads that are open for OHV use. The map has been a tool to combat illegal OHV use on the LMNG. The OHV Scenic Touring Map is geo-referenced and available to the public for free through Avenza map application. OHV users may also contact the Ranger Districts for folding maps and PDF files.

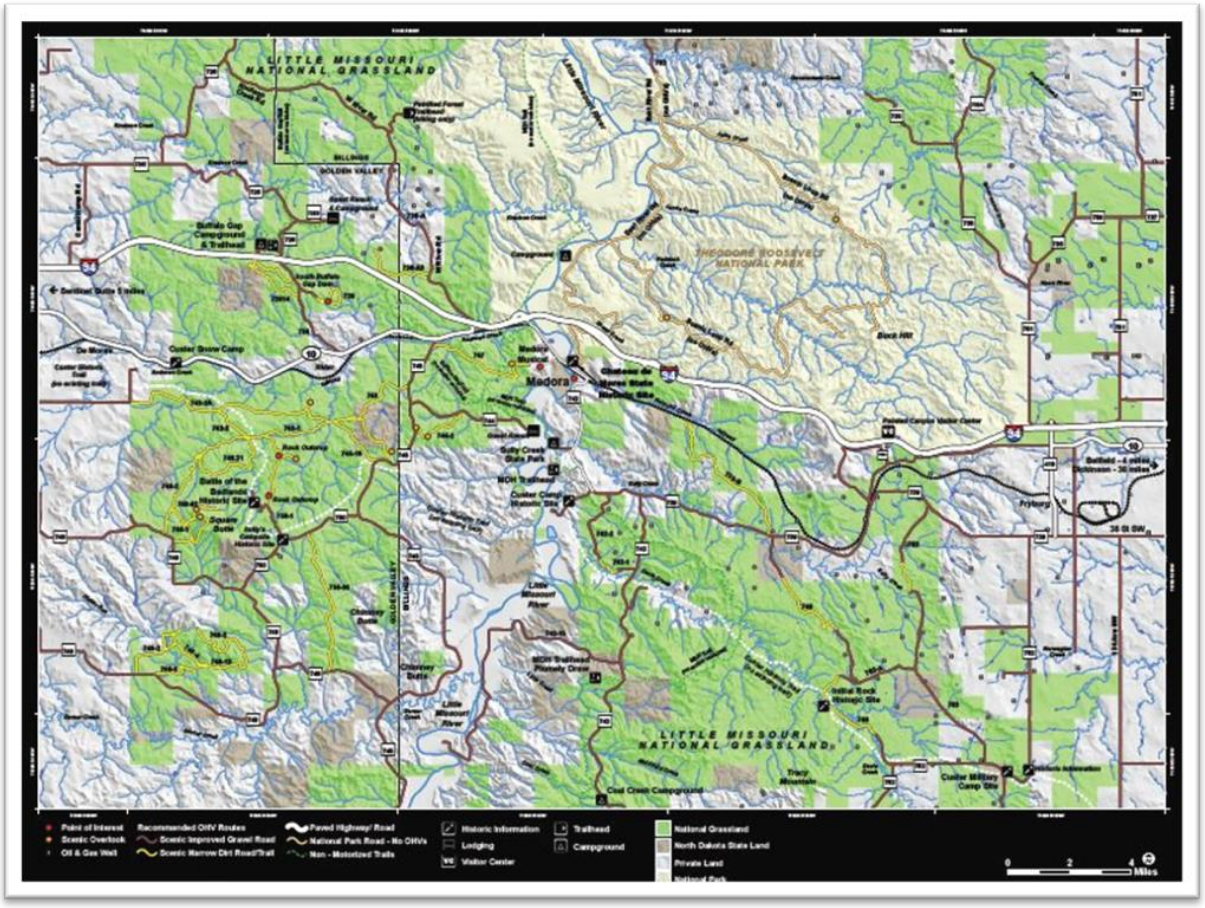


Figure 45. OHV Scenic Touring Map, Avenzamaps.com - South LMNG OHV Scenic Map Geo, 2019 (https://www.avenzamaps.com)

The DPG has between 8 and 12 Forest Protection Officers (FPO) with 2 of those being full time recreation employees. The recreation staff generally patrol for compliance of recreation use that includes fee payment, developed campground use, dispersed recreation use, and off-road use. The use of FPO's across the DPG is integral to the program to enforce misdemeanor level offences and resource protection efforts.

The DPG has been working to improve its law enforcement capabilities over the past 5 years. With turnover in law enforcement staff, the DPG was without a field officer for 2 years from 2018-2019 while an officer was in training for his current Law Enforcement Officer (LEO) position on the DPG. Our new LEO officer has been stationed on the LMNG contrary to the previous LEO who was stationed in Lemmon, South Dakota. The placement of duty station on the LMNG has allowed this officer to be more active in law enforcement by targeting the higher activity areas on the LMNG.

Over the past 5 years, LEO and FPO's have issued 63 warning notices, 90 incident reports, and 12 violation notices related to illegal off-road use. The Sheyenne RD's travel management plan allows for direct implementation of off-road violations following the motor-vehicle use map. The LMNG has a more difficult time with off-road applications as there is no travel management plan and no official motor-vehicle use map. All

the violations reported on the LMNG have been categorized as causing resource damage, disobeying a special closure order for threatened and endangered species, or careless and reckless operation of a vehicle.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 4.a Objective 1. Within 5 years, identify travel opportunities and restrictions; including designating motorized travel-ways and areas, to meet land management objectives.
- Goal 4.a Objective 2. Provide reasonable access for use of the national grasslands.
- Goal 4.a Objective 4. Identify the minimum Forest Service road system for administration, utilization, and protection of national grasslands resources using a science-based roads analysis process. Provide safe and efficient travel and minimize adverse environmental effects.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-REC-05 To what extent is off-road vehicle use (permitted and unpermitted) damaging grassland resources and causing erosion, sedimentation, and vegetation loss?	2021	(D) No – Though the Sheyenne Ranger District has a travel management plan in place, other districts on the Dakota Prairie Grasslands such as the Little Missouri National Grassland has not developed a travel management plan.	Yes	Management Action: Develop travel management plan on LMNG

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Heritage

Monitoring Item MON-HRT-01

Plan Component(s) being assessed by this monitoring item:

Legal – National Historic Preservation Act

Goal 2.b Heritage Sites Objective 2. Within 5 years, assess identified sites eligible for the National Register of Historic Places (NRHP) in conjunction with SHPO and THPO and provide interpretation for National Register of Historic Places sites where appropriate and consistent with developed preservation plans.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
Are the National Register of Historic Places sites and districts being identified and managed?	National registered eligible sites (*total number of number of new*) (Y) National registered properties (*number of listed*) (Y) Priority heritage asset (*number assessed as needing further management*) (Y)	3-5 years	Heritage Natural Resource Manager (NRM), Infrastructure Application System (INFRA), DPG SO Records	Heritage Program Staff

(*Influenced by climate change? Y, N, Uncertain)

Table 79. Monitoring Item MON-HRT-01 - Monitoring Collection Summary

For monitoring item MON-HRT-01:	Year
Data was last collected or compiled in:	2019
Next scheduled data collection/compilation:	2020
Last MER evaluation for this monitoring item:	2010
Next scheduled MER evaluation of this monitoring item:	2023

Cultural/Heritage Resources are non-renewable resources that encompass the physical remains of human activities through time. When found to be of importance to the local, regional, or national level of history and culture, individual Cultural/Heritage Resources can be nominated to the National Register of Historic Places (NRHP). Sites that are determined eligible for the NRHP, or those sites with significance yet with no eligibility determination, are managed and protected from planned actions that could affect that eligibility determination. Sites that have been determined not eligible for nomination to the NRHP are removed from active management.

The National Historic Preservation Act of 1966, as amended (NHPA) was developed to prevent the destruction of our nation's heritage sites, including prehistoric and historic sites. Section 106 of the NHPA, and its implementing regulations (36 CFR 800, inclusive), requires that all federal land management agencies locate and protect all heritage properties that are eligible to the NRHP from planned activities, should the area of the activity contain eligible heritage properties. Through this process a preponderance of the heritage resource properties have been identified. A significant number of these sites have been given eligibility determinations, but a large number are still awaiting that process.

The NHPA also directs the lands management agencies to protect eligible heritage properties, consult with Tribal governments concerning Traditional Cultural Properties, and nominate to the NRHP those sites that are determined eligible for placement on the National Register of Historic Places.

The monitoring questions are found in the DPG Land and Resource Management Plan (DPG-LRMP). The purpose of the question is to determine if the standards, guidelines, and direction are met:

1. Consult with designated representatives of federally recognized American Indian tribes during design of projects with potential to affect cultural rights and practices to help ensure protection, preservation, and use of areas that are culturally important to them. Standard
2. Enhance and interpret significant heritage sites for the education and enjoyment of the public, while protecting the integrity of the site. Guideline
3. Limit non-research oriented ground-disturbing activities on heritage districts and sites eligible for the National Register Historic Preservation (NRHP) that creates adverse impacts to the district or site. Guideline

Method

- Data collection methods and analysis methods are linked to in-field review and inspection of both Priority Heritage Assets (PHA; monitored very 5 years on rotation) and non-PHA sites through the NHPA, Section 106 process. The protocols are defined by the NHPA, 36CFR800, and FSM2360.
- For newly located sites, and those sites monitored for the continuity of their eligibility designation, the protocols for the determination of eligibility are located within the National Register Bulletin "How to Apply the National Register Criteria for Evaluation". The full bulletin which contains all aspects of the established protocol and best management practices is available at: https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf.
- The protocols include evaluation of each heritage property against the NHPA Criteria for Inclusion and the seven “Aspects of Integrity”.
- Data was collected from both the Heritage INFRA database, and within the South Dakota State and Historic Preservation Office (SHHPO) Annual Report; and the North Dakota SHPO Annual Reports (both sets of annual reports filed as PDFs in the confidential Heritage Pinyon folders and in the NHPA Section 112 hard copy report files.

Results

Data in the following Monitoring Table is derived from the Annual Reports and Natural Resource Manager (NRM) and Infrastructure Application System (INFRA) data.

Table 80. Monitoring Indicator Status Summary

Indicators	2016	2017	2018	2019
New sites	8	6	4	8
Relocated, updated sites	11	18	40	32
Priority Heritage Assets Monitored	12	8	5	2
Number of heritage properties/sites nominated	0	0	0	0
Number of new Traditional Cultural Properties identified	0	0	0	0

Discussion

Overall, the results reported above are consistent with past Monitoring Report data and results. The heritage monitoring program is based on two joined questions: “(1) Are eligible sites and (2) Traditional Cultural Properties sites, being identified, protected, and preserved? This approach provides accurate insight into the goals of the heritage program on the DPG.,

Data gathered in 2020 were validated (concurred with) by the SHPO at the time of this monitoring report; and therefore, should be included in the 2023 monitor reporting.

The data from the last two lines of Table 79 can be a little misleading. The decision to nominate sites to the National Register of Historic Places changes little about the overall protection of the site from adverse effects. It does, however, change the management demands for that property, ranging potentially from budget needs- to potential dedication of yearly person hours- to joined programs (i.e., heritage and recreation). The decision to nominate sites to the National Register of Historic Places is something to strive for within overall management of the resource, but not something to take on lightly. Traditional Cultural Properties are defined by Tribal communities and their government(s) and managed by the Grasslands in consultation with that Tribe(s). The lack of new Traditional Cultural Properties reflects Tribal needs rather than Grassland's prioritization of action in moving toward those goals.

Tribal consultation and coordination have not, in the past, had a requirement in place for specifically tracking Tribal participation in the NRHP evaluation of heritage properties. As a priority for the new grasslands archaeologist, this information will be included in the current Supervisor's Office Records of government-to-government Tribal consultation.

Another question posed for the new grasslands archaeologist concerns both the questions asked within the current monitoring program, and the need for that information in relation to current and future needs within the heritage programs' work. We are charged under the NHPA to protect cultural/heritage properties and those aspects of those properties that make them eligible to the NRHP. Do we know that those actions we have implemented as "protective measures" have the efficacy that we have attributed to them?

Monitoring a small number of heritage properties that have had these protection measures put in place, through contract and other measures, would allow for a better, and more defensible, understanding of the status of achieving the plan objective (identifying and interpretation of National Register of Historic Places). The current Heritage NRM and INFRA systems have the capacity for storing this type of monitoring information for later tabulation, analysis, and reporting.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Legal – National Historic Preservation Act
- Goal 2.b Heritage Sites Objective 2. Within 5 years, assess identified sites eligible for the National Register of Historic Places (NRHP) in conjunction with SHPO and THPO and provide interpretation for National Register of Historic Places sites where appropriate and consistent with developed preservation plans.

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?[2]*
MON-HRT-01 Are the National Register sites and districts being identified and managed?	2021	(C) Uncertain – Due to the lack of appropriate information to assess the status of the plan component.	Yes	Monitoring Program: Ensure the capacity for the heritage program manager to implement the monitoring program.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-HRT-02

Plan Component(s) being assessed by this monitoring item:

Goal 2.b Heritage Sites Objective 5. In partnership with American Indian tribes and/or others, educate and interpret, to increase public awareness, protect heritage resources, and further the goals of research.

Monitoring Question		Indicators *	Data Source / Partner	Point of Contact
Are tribes being consulted on sites of religious and cultural significance?	Tribal consultations *(number of tribal consultation visits)* (N)	Annual tribal relation reports	Supervisor's Office records	Heritage Program Staff

(*Influenced by climate change? Y, N, Uncertain)

Table 81. Monitoring Item MON-HRT-02 - Monitoring Collection Summary

For monitoring item MON-HRT-02:	Year
Data was last collected or compiled in:	2010
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2010
Next scheduled MER evaluation of this monitoring item:	2023

Tribal relations and Tribal consultation, on a staff-to-staff basis, is defined as a requirement within the National Historic Preservation Act of 1966, as amended (NHPA). The Tribal voice in the understanding of pre-contact era (prior to European contact) heritage resources; as well as it's continuity through time, and the

maintenance of continued lifeways, is pivotal. The Tribal voice is also critical in understanding the areas of how pre-contact and proto-contact era (during initial European contact and influence) heritage sites' criteria of eligibility should be appropriately applied.

Section 106 of the NHPA, and its implementing regulations (36 CFR 800, inclusive), requires that all federal land management agencies consult with Tribes on both a staff-to-staff level, and a government-to-government level. The staff-to-staff level involves federal agencies heritage professionals working with Tribal staff, including THPOs, to identify and evaluate heritage resources, and assess potential project effects. The Government-to-Government Consultation, which occurs between a federal agency Authorized Official (Line Officer) and an official member of Tribal Government, is also intended to aid in the location, identification, determination of eligibility, assessment of project impacts, and protection of heritage properties This consultation, both Government-to-Government and Staff-to-Staff is to be initiated early in the planning process and is to occur often.

These monitoring questions, addressed in this Monitoring Report, are found in the DPG Land and Resource Management Plan (DPG-LRMP). The purpose of this question: "Are tribes being consulted on sites of religious and cultural significance?" is to determine if the standards, guidelines, and direction for heritage resources are being met:

1. Consult with designated representatives of federally recognized American Indian tribes during design of projects with potential to affect cultural rights and practices to help ensure protection, preservation, and use of areas that are culturally important to them.
2. Enhance and interpret significant heritage resources for the education and enjoyment of the public, while protecting the integrity of the resources. Guideline
3. Limit non-research-oriented ground-disturbing activities on heritage districts and resources eligible for the NRHP, which result in an adverse effect to the district or resource.

Methods

The methods defined within the monitoring plan were to document the consultation and report out in the Annual Tribal Relations Report.

Results

No data is available.

Discussion

While Staff-to-Staff Tribal Consultation with heritage staff did occur consistently throughout the monitoring period, tracking and other documentation of that consultation as it relates to the identification and evaluation of sites of religious and cultural significance has not occurred. Without proper documentation, our ability to assess the efficacy of the measures in place is non-existent.

Though there are procedures in place to track Government-to-Government Consultation with Tribes; there is no protocol in place for tracking and monitoring reporting of heritage (NHPA Section 106 mandated) Tribal consultation and coordination specific to the identification and evaluation of resources. As a priority for the new Dakota Prairie Grasslands archaeologist, this information will be included in the current Supervisor's Office Records of Government-to-Government Tribal Consultation.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 2.b Heritage Sites Objective 5. In partnership with American Indian tribes and/or others, educate and interpret, to increase public awareness, protect heritage resources, and further the goals of research.

MONITORING ITEM	YEAR UPDATED	PLAN IMPLEMENTATION STATUS [1] *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	RECOMMENDATION *Based on the evaluation of monitoring results, may changes be warranted?*	MANAGEMENT *If a change may be warranted, where may the change be needed?[2]*
MON-HRT-02 Are tribes being consulted on sites of religious and cultural significance?	2021	(C) Uncertain – Due to the lack of appropriate information to assess the status of the plan component.	Yes	Monitoring Program: Utilize Government-to-Government Consultation tracking procedures and the existing NRM and INFRA systems to track and monitor the identification and protection of Traditional Cultural Properties and Sacred Sites.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Community Relations

Monitoring Item MON-CMR-01

Monitoring Item Summary

Plan Component(s) being assessed by this monitoring item:

Goal 2.c - Improve the capability of the Nation's forests and grasslands to provide a desired sustainable level of uses, values, products, and services.

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
What multiple use services have been provided?	Federal payments; Revenue sharing with State & Local Governments (N)	2 years	Headwater Economics Tool	RO Economist
	Number AUMs (Y)	Annual	Grazing Statistical Report	WO Range Data Steward
	Number Oil and Gas Permits (N)	Annual	McKenzie and Medora District Offices	Oil and Gas Resource Specialists
	Number of Special Use Permits (Y)	Annual	SO – SUDS	Resource Assistant; GIS Coordinator; Lands Special Uses Assistant Program Manager
	Number of Person at One Time (PAOT) (N)	Annual	SO	GIS Coordinator; Recreation Specialists
	Recreation/Visitor Use/Purpose of Use (N)	5 years	National Visitor Use Monitoring (NVUM)	
	Developed Recreation Sites Available (N)	Annual	SO	GIS Coordinator
	Miles of Non-motorized Recreation Trails Available (N)	Annual	SO	GIS Coordinator
	Interpretive Sites Available (N)	Annual	SO	GIS Coordinator

(*Influenced by climate change? Y, N, Uncertain)

Table 82. Monitoring Item MON-CMR-01 - Monitoring Collection Summary

For monitoring item MON-CMR-01:	Year
Data was last collected or compiled in:	2018 – 2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	NA
Next scheduled MER evaluation of this monitoring item:	2023

Monitoring Item MON-CMR-01 was a revised question in accordance with the 2012 Planning Rule (36 CFR 219.12) (Dakota Prairie Grasslands Plan Monitoring Program 2016). The Monitoring Questions: Community Relations 1, 2, 3 from the 2002 LRMP were combined and modified to create Monitoring Item MON-CMR-01 to monitor and evaluate Goal 2.c. of the 2002 LRMP for the DPG.

Methods

Federal Payments and Revenue sharing with State & Local Governments
Federal Land Payments report from Headwaters Economics for Grasslands are broken into two broad categories:

1. Revenue Sharing (https://www.fs.usda.gov/detail/pts/securepayments/projectedpayments/?cid=fseprd575274): These are payments based on FS receipts (e.g., mineral and grazing receipts). Payments include the 25% Fund, Secure Rural Schools & Community Self-Determination Act, and Bankhead-Jones Farm Tenant Act. Data was compiled for 1994 to 2019 (Figure 46, Figure 47). Data was not available for 2014 and 2015 for North Dakota and 2015 for South Dakota.
2. Payments in Lieu of Taxes (PILT) (https://www.nbc.gov/pilt/counties.cfm): These payments compensate county governments for nontaxable federal lands within their borders. PILT is based on a maximum per-acre payment reduced by the sum of all revenue sharing payments and subject to a population cap. Data used are PILT estimates for DPG Counties (ND-Billings, Golden Valley, Grant, McHenry, McKenzie, Ransom, Richland, Sioux, Slope; SD- Corson, Perkins, Ziebach). Estimates are used as the Department of Interior administers payments, using a formula with other payments made to counties such as revenue sharing (e.g. payments related to oil and gas receipts). NFS acreage within each county was used as a proxy for the percent of total PILT payments that can be attributed to NFS lands. Data was compiled for 1999 to 2019 (Figure 48).

Animal Unit Month (AUM)

Information on NFS Authorized AUMs was retrieved from the Forest Service annual *Grazing Statistical Report* (https://www.fs.fed.us/rangeland-management/reports/index.shtml). Data is collected and reported at the National level. Inquiries into District-level data was requested from the WO Range Data Steward.
The report is created by summarizing the grazing permits across a District and Unit. Data was compiled for 2010 to 2019 (Table 83). For years 2010, 2011, and 2016 there are data quality issues, as the District totals do not equal the listed total for the Unit in the annual *Grazing Statistical Report*. Data for 2014, 2017, and 2019 are off by one AUM between District totals and the Unit total, due to rounding differences.

Oil and Gas Permits

The number of oil and gas permits issued are maintained by the DPG minerals staff. Approved oil and gas permit issued were obtained from year 2006 to 2020 (Table 84).

Special Use Permits (SUPs)

Special Use Permits (SUPs) for 2010 to 2020 were collected from the Special Uses Data System (SUDS) for the Dakota Prairie Grasslands (Table 85).

Recreation/Visitor Use/Purpose of Use

Data for recreation, visitor use, and purpose of use was obtained by National Visitor Use Monitoring Program for years 2008, 2013, and 2018 for the Dakota Prairie Grasslands (https://www.fs.usda.gov/about-agency/nvum/) (See Monitoring Item MON-REC-02).

Person at One Time (PAOT)

Recreation data was obtained from GIS data at the SO. PAOT (Persons at One Time) is a measure of people capacity for which a particular outdoor recreation feature is designed and built. Capacity limits per recreation site on the Dakota Prairie Grasslands are noted in Table 86 and Table 87.

Developed Recreation Sites, Interpretive Sites, Miles of Non-motorized Trail Miles

Recreation data was obtained from GIS data at the SO. Developed recreation sites, miles of non-motorized trail miles, and interpretive sites are listed in Table 86 and Table 87 for the Dakota Prairie Grasslands.

Results

Federal Payments and Revenue sharing with State & Local Governments

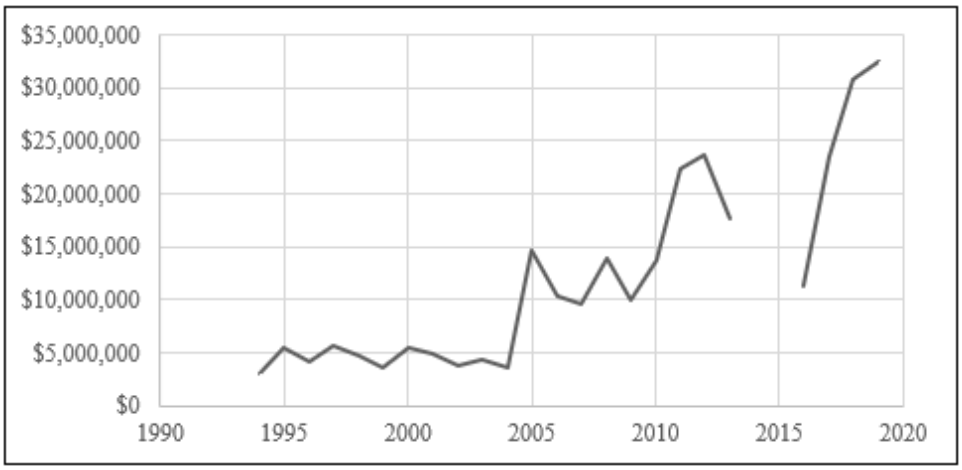


Figure 46. National Grasslands County Revenue Sharing, North Dakota

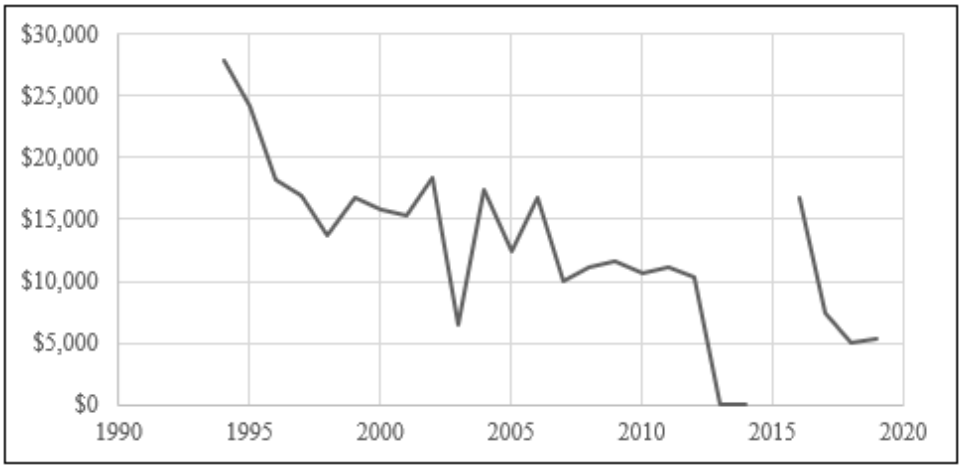


Figure 47. National Grasslands County Revenue Sharing, South Dakota

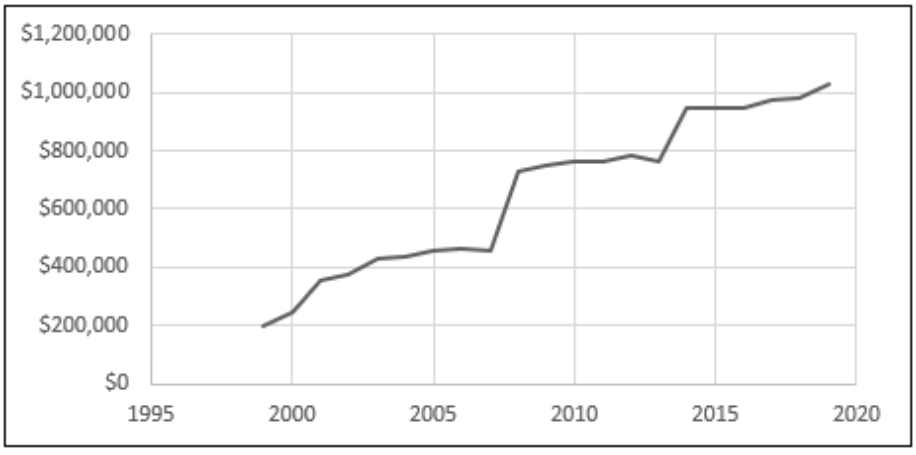


Figure 48. DPG Total Estimated PILT per Year

Animal Unit Month (AUM)

Table 83. Authorized Animal Unit Months on DPG Districts (Grazing Statistical Report)

Year	Total Authorized AUMs					
	Grand	McKenzie	Medora	Sheyenne	DPG	Δ from DPG in *Grazing Statistical Report*
2010	75,425	224,120	229,822	72,063	601,430	+9,600
2011	78,285	198,943	232,381	70,911	580,520	+13,091
2012	79,048	193,352	232,639	72,559	577,598	0
2013	77,644	217,463	221,167	70,767	587,041	0
2014	80,162	229,736	290,054	72,048	672,000*	+1
2015	80,641	228,360	298,214	71,945	679,160	0
2016	81,617	231,000	220,292	72,921	605,830	-10,145
2017	79,401	229,680	228,213	73,343	610,637*	-1
2018	71,827	215,301	224,540	69,914	581,582	0
2019	78,993	221,760	231,187	73,364	605,304*	-1

Oil and Gas Permits

Table 84. Approved Oil and Gas Permits on DPG Districts

Year	McKenzie District	Medora District	DPG Total
2006	14	25	39
2007	13	27	40
2008	12	6	18
2009	11	6	17
2010	19	10	29
2011	27	13	40
2012	13	15	28
2013	5	13	18
2014	23	11	34
2015	0	0	0
2016	19	8	27
2017	27	5	32
2018	65	10	75
2019	57	3	60
2020	21	0	21

Special Use Permits (SUPs)

Table 85. Special Use Permits Issued on the DPG

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Unknown	7											7
Outfitting and Guiding Service	10	8	9	9	8	8	7	7	7	5	4	82
Recreation Event		5	7	10	19	20	21	22	21	17	15	157
Vendor											1	1
Non-commercial Group Use		4	4	4	4	4	4	4	2	1		31
Cultivation	4	4	5	4	5	5	3	3	1		3	37
Apiary	1	1	2	1	2	2	2	3	2	2	3	21
Fence	8	8	8	8	8	1	1	1	2	1	1	47
Agriculture Residence	1											1
Building	1	1	1	1	1	1						6
Corral, Pen & Livestock Area	1											1

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Multi-season Traditional/Cultural Use	3											3
Cemetery	1	1	1									3
School	1	1	1	1	1	1	1	1	1			9
Research Study	7	7	6	6	9	7	5	5	3	2	3	60
Weather Station											1	1
Nondisturbing Use	16	13	23	23	24	28	24	22	23	20	18	234
Disturbing Use, 1979 Act					1	2	2	3	4	3	3	18
Warehouse & Storage Yard	2				1	1						4
Commercial Still Photography						2	2	1	1			6
Motion Picture and TV Location	1						2	1		1	1	6
Geological and Geophysical Exploration			1	2	2	2	2					9
Occupancy Permit, Reserved Mineral Right	9	7	8	5	5	6	6	5	6	5	6	68
Oil and Gas Pipeline	96	108	132	138	143	142	68	56	61	77	64	1,085
Oil and Gas Pipeline Related Facility	39	35	34	31	32	33	32	26	29	33	31	355
Oil and Gas Production & Storage Area		1	1	1	1	1	1	1	1	1	1	10
Powerline, REA Financed	29	26	26	26	30	29	30	31	35	25	19	306
Other Utility Improvement, REA Financed					1	1	1	1	1	1	1	7
Powerline	6	5	5	6	6	6	6	7	6	8	7	68
DOT Easement	59	61	61	61	61	60	60	62	63	64	64	676
Forest Road and Trail Act Easement	249	257	258	264	266	268	275	275	275	274	274	2,935
Federal Land Policy & Mgmt Act Permit	104	98	89	87	101	87	89	75	66	64	62	922
Microwave-Common Carrier	1	1	1	1	1	1	1	1	2	1	1	12
Microwave-Industrial	1	1	1	1	1	1	1	1	2	1	1	12
Private Mobile Radio Service	2	1	1	1	1	1	1	1	1	1	1	12
Telephone and Telegraph Line	4	5	4	4	4	4	4	4	7	7	4	51
Telephone Line, REA Financed	11	11	11	11	11	13	12	12	11	9	8	120
Fiber Optical Cable	2	2	3	3	3	3	3	3	4	4	3	33
Irrigation Water Ditch	1	1	1	1	1	1						6
Irrigation Water Trans Pipeline >= 12” D	1	1	1	1	1	1	1	1	2	1	3	14

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Water Trans Pipeline >= 12" D						1	1	1	1	4	4	12
Water Trans Pipeline < 12" D	9	9	7	7	7	7	7	8	12	10	10	93
Well, Spring or Windmill	1	1	1	1	1	1	1	1	1	1	1	11
Water Quality Monitoring Station	1	1	1	1	1	1	1	1	2	1	1	12
Total	689	685	714	720	763	752	677	646	655	644	619	7,564

Recreation/Visitor Use/Purpose of Use

See Monitoring Item MON-REC-02

Developed Recreation Sites, Interpretive Sites, and Person at One Time (PAOT)

Table 86. Person at One Time (PAOT) by Site Type at each District

District	Site Name	Site Type	Person at One Time	Total
Sheyenne	Hankinson Hills Campground Jorgens Hollow Campground	Recreation	133 70	203
Medora	Buffalo Gap Campground Burning Coal Vein Campground Coal Creek Campground Elkhorn Campground Magpie Campground Wannagan Campground Whitetail Picnic Area	Recreation	230 52 50 64 47 64 46 42	595
	Battle of the Badlands Custer Camp Site Custer Military Camp Site Custer Snow Camp Easy Hill Initial Rock Ice Caves	Interpretive	32 32 32 32 32 35 NA	195
McKenzie	Bennett Campground CCC Campground Sather Lake Campground Summit Campground Homer's Camp	Recreation	75 189 300 36 5	605
	Birnt Hills	Interpretive	5	5
Grand River	Blacktail Picnic Area	Recreation	35	35

Miles of Non-motorized Trail Miles and Person at One Time (PAOT)

Table 87. Miles of Non-motorized Trail Miles and Person at One Time on the Dakota Prairie Grasslands by District

District	Non-motorized Trail Name	Person at One Time	Non-motorized Trail Miles	Non-motorized Trail Total Miles
Sheyenne	North Country National Scenic Hankinson Hills Oak Leaf	21 NA NA NA	29.87 8.14 2.29 0.10	43.74

District	Non-motorized Trail Name	Person at One Time	Non-motorized Trail Miles	Non-motorized Trail Total Miles
	Arboretum Loop	NA	0.11	
	Skyline	NA	3.18	
	Denbigh	NA	0.05	
	Middle Trailhead Spur			
Medora	Coal Creek Access	NA	0.01	170.31
	Buffalo Gap Loop Spud	10	0.13	
	Bully Pulpit	15	0.15	
	Battle of the Badlands	NA	0.19	
	Easy Hill Overlook	NA	0.25	
	Bear Creek	15	0.17	
	Survey Monument	NA	0.13	
	Coal Creek	15	0.69	
	Buffalo Gap Loop	NA	1.34	
	Buffalo Gap Spur	NA	1.27	
	Aspen	NA	0.32	
	Magpie	15	0.33	
	Buffalo Gap	NA	18.91	
	Elkhorn	15	0.06	
	Plumley Draw Spur	NA	0.01	
	Maah Daah Hey	NA	144.31	
	Wannagan	20	0.18	
	Ice Caves	15	1.52	
	Buffalo Gap Viewpoint	NA	0.10	
	Juniper Spur	NA	0.10	
	Coal Creek Spur	NA	0.14	
McKenzie	Sather Spur	NA	0.04	29.19
	Summit Viewpoint	NA	0.22	
	Homer's Camp	NA	0.07	
	Sather Lake	NA	0.20	
	Long X	NA	5.81	
	Birnt Hills Overlook	NA	0.34	
	Birnt Hills Loop	20	3.04	
	Wolf	15	8.76	
	Cottonwood	NA	6.93	
	Bennett	15	3.06	
	Summit	NA	0.12	
	CCC	NA	0.26	
	Sunset	NA	0.34	
Grand River	Blacktail	35	6.84	6.84

Discussion

Since monitoring item MON-CMR-01 was a revised question in accordance with the 2012 Planning Rule (36 CFR 219.12) (Dakota Prairie Grasslands Plan Monitoring Program 2016), this is the first report to include the data. Historical data and trends can be interpreted for the following: federal payments and revenue sharing with state and local government, animal unit month, oil and gas permits, special use permits, and recreation/visitor use/purpose of use. Historical data was not available for developed recreation sites, interpretive sites, miles of non-motorized trail miles and person at one time therefore this report will be considered baseline data for these monitoring elements.

Federal Payments and Revenue sharing with State & Local Governments

PILT payments from the DPG have increased from approximately $200,000 in 1999 to $1,025,000 in 2019 as depicted in Figure 48.

National Grasslands County revenue sharing in North Dakota has increased from approximately $3 million in 1994 to $32.5 million in 2019 (Figure 46). National Grassland County revenue sharing in South Dakota has decreased from approximately $28 million in 1994 to just over $5,000 in 2019 (Figure 47).

Animal Unit Month (AUM)

AUMs have fluctuated minimally from 2010 to 2019 for all Districts and for the total for the DPG (Table 83). Grand River District had a low of 71,827 AUMs in 2018 and a high of 80,641 AUMs in 2015. The McKenzie District had a low of 193,352 AUMs in 2012 and a high of 231,000 in 2016. The Medora District had a low of 220,292 AUMs in 2016 and a high of 298,214 AUMs in 2015. The Sheyenne District had a low of 69,914 AUMs in 2018 and a high of 73,364 AUMs in 2019. Totals for the DPG have fluctuated from a low of 577,598 AUMs in 2012 and a high of 679,160 AUMs in 2015.

Oil and Gas Permits

Oil and gas permit numbers issued out of the McKenzie and Medora Districts have fluctuated from 0 to a high of 65 from 2006 to 2019 (Table 84). Both McKenzie and Medora Districts issued 0 permits in 2015, and additionally Medora District issued 0 permits in 2020. McKenzie issued a high of 65 permits in 2018 and Medora District issued a high of 27 permits in 2007.

Special Use Permits (SUPs)

A variety of Special Use Permits (SUPs) have been issued on the DPG from 2010 to 2020 (Table 85). The most SUPs have been issued in Forest Road and Trail Act Easement and Oil and Gas Pipeline categories. A total of 2,935 SUPs have been issued in Forest Road and Trail Act Easement category with a generally upward trend from 249 SUPs issued in 2010 to 275 SUPs in 2020. A total of 1,085 SUPs have been issued in Oil and Gas Pipeline category with a general positive trend from 2010 to a peak of 143 SUPs issued in 2014 and a downward trend to 64 SUPs in 2020.

Recreation/Visitor Use/Purpose of Use

The estimated annual visitation has increased across the DPG from 2013 to 2018 in four out of five visit types. Based on visitor use logs, the DPG saw a 200% increase in recreation use throughout the summer months in 2020. Trail use was higher than average, and visitor calls were more frequent with questions around recreation opportunities. See MON-REC-02.

Developed Recreation Sites, Interpretive Sites, and Person at One Time (PAOT)

The Districts on the DPG offer a variety of campground sites and interpretive sites (Table 86). Medora District has the most interpretive sites, and recreation sites, on the DPG with 7 sites in each category. The interpretive sites have a total capacity of 195, and the recreation sites have a total capacity of 595. The McKenzie District has 5 recreation sites with a total capacity of 605 and one interpretive site with a capacity of 5. The Sheyenne District has 2 recreation sites with a total capacity of 203 and no interpretive sites. The Grand River District has one recreation site with a capacity of 35 and no interpretive sites.

Miles of Non-motorized Trail Miles and Person at One Time (PAOT)

Miles of non-motorized trail miles and PAOT by District are included in Table 87. The Medora District has the most miles of non-motorized trails with a total of 170.31 miles in 21 different trails. The Sheyenne District has a total of 7 non-motorized trails with a total of 43.74 miles. The McKenzie District has 13 non-motorized trails with 29.19 total miles. The Grand River District has one non-motorized trail with 6.84 miles. There was not enough detail on capacity information for each of the trailheads to make any conclusive remarks.

Historical data was not available for developed recreation sites, interpretive sites, miles of non-motorized trail miles and person at one time therefore this report will be considered baseline data for these monitoring elements.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 2.c - Improve the capability of the Nation's forests and grasslands to provide a desired sustainable level of uses, values, products, and services.

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-CMR-01 What multiple use services have been provided?	2021	(E) Yes – The DPG has contributed to the capability of the grasslands to provide a desired sustainable level of uses, values, products, and services as described in the *Federal Payments and Revenue sharing with State & Local Governments, AUMs, Oil and Gas Permits, and SUPs.*	No	NA

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO -** Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

2 [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to* ***the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment****, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

Monitoring Item MON-CMR-02

Plan Component(s) being assessed by this monitoring item:

Goal 4.b Public & Organizational Relations
Objective 2 - Work in cooperation with federal, state, and county agencies, individuals, and nongovernment organizations for control of noxious weeds, invasive species, and animal damage

Monitoring Question	Indicators *	Data collection interval	Data Source / Partner	Point of Contact
To what extent is cooperation with external interested parties occurring for control of animal damage?	Damage Control *(acreage of prairie dog towns controlled*) (Y)	Annual	See MON-WLD-01C	Biology Program Manager
	Damage Control *(number and locations of damage control – by species)* (Y)	Annual	USDA APHIS Wildlife Services, Internal	Biology Program Manager

(*Influenced by climate change? Y, N, Uncertain)

Table 88. Monitoring Item MON-CMR-02 - Monitoring Collection Summary

For monitoring item MON-CMR-02:	Year
Data was last collected or compiled in:	2020
Next scheduled data collection/compilation:	2021
Last MER evaluation for this monitoring item:	2005
Next scheduled MER evaluation of this monitoring item:	2023

On the Dakota Prairie Grasslands (DPG), black-tailed prairie dogs are the most frequently cited species regarding animal damage. Black-tailed prairie dog occurs on both districts of the Little Missouri National Grassland (McKenzie and Medora) and on the Grand River National Grassland (GRNG).

For prairie dog control, the "good neighbor" policy is accomplished with the directive given in 2004 by the U.S. Department of Agriculture Deputy Under Secretary. The Under Secretary directed DPG to work with state and county officials, and local landowners, to reduce the potential for prairie dog colonies to expand onto adjacent non-federal lands. The policy is further defined in the 2002 DPG Land and Resource Management Plan (LRMP) Record of Decision (ROD).

Methods

Please see "**MON-WLD-01C** – "*What management actions and naturally occurring events have influenced change to black-tailed prairie dog status and/or its habitat*?" for prairie dog control methods. Prairie dog control is currently done through cooperation with the grazing associations. On GRNG, the State of South Dakota does prairie dog control in some cases on neighboring, non-USFS lands.

Results

Please see "MON-WLD-01C" for prairie dog control results.

Discussion

The DPG completed the LMNG Prairie Dog Management Project Environmental Assessment (EA) in 2018. This decision has led to recent prairie dog control on LMNG. Prairie Dog control is authorized through

Vegetation Management Plan EAs on the GRNG. On the GRNG, Prairie Dog control is done by the State of SD. Dakota Prairie Grasslands should continue to work with the State of SD to obtain prairie dog control records. There is a need to update the NEPA for GRNG prairie dog control.

Summary of Findings Assessing the Status of Plan Implementation

Plan Component(s) being assessed by this monitoring item:

- Goal 4.b Public & Organizational Relations Objective 2 - Work in cooperation with federal, state, and county agencies, individuals, and nongovernment organizations for control of noxious weeds, invasive species, and animal damage

MONITORING ITEM	**YEAR UPDATED**	**PLAN IMPLEMENTATION STATUS [1]** *Do monitoring results demonstrate intended progress (i.e. maintaining, trending, or advancing) of the associated plan components listed with this monitoring item?*	**RECOMMENDATION** *Based on the evaluation of monitoring results, may changes be warranted?*	**MANAGEMENT** *If a change may be warranted, where may the change be needed?[2]*
MON-CMR-02 To what extent is cooperation with external interested parties occurring for control of animal damage?	2021	(E) Yes – The Dakota Prairie Grasslands continues to work with partners on prairie dog management, as well as any other animal damage issues as they arise.	Yes – For the Prairie Dog control for GRNG.	Management Action: There is a need to update the NEPA for GRNG prairie dog control.

[1] **PLAN IMPLEMENTATION STATUS: (A) Uncertain -** Interval of data collection beyond this reporting cycle (*indicate date of next time this monitoring item will be evaluated*); **(B) Uncertain -** More time/data are needed to understand status or progress of the Plan Component(s)**; (C) Uncertain -** Methods inadequate to assess the status or progress toward achieving plan component(s).(**D**) **NO** - Implementation of Plan Component(s) ARE NOT trending, progressing, and/or conducted as desired**; (E) YES -** Implementation of Plan Component(s) ARE trending, progressing, and/or conducted as desired

[2] [36 CFR 219.12(d)(2)] - *The monitoring evaluation report must indicate whether or not a change to **the (1) plan, (2) management activities, (3) the monitoring program, or a (4) new assessment**, may be warranted based on the new information. The monitoring evaluation report must be used to inform adaptive management of the plan area*

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