

DRAFT

ENVIRONMENTAL ASSESSMENT

Spotted Dog Wildlife Management Area Grazing and Water Development Plan

(FWP-SEA-WLD-R2-24-001)

January 12, 2024



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Acronyms and Abbreviations

ARM	Administrative Rules of Montana
ARCO	Atlantic Richfield Company
AUM	Animal Unit Month
DNRC	Department of Natural Resources and Conservation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EOU	Exchange of Use
ESA	Endangered Species Act
MCA	Montana Code Annotated
MEPA	Montana Environmental Policy Act
NRCS	U.S.D.A. Natural Resources Conservation Service
FWP	Montana Fish, Wildlife and Parks
MU	Management Unit
MTNHP	Montana Natural Heritage Program
NRDP	Natural Resource Damage Program
SDWMA	Spotted Dog Wildlife Management Area
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WMA	Wildlife Management Area

Environmental Assessment

The Montana Department of Fish, Wildlife and Parks (FWP) has prepared this Draft Environmental Assessment (EA) in accordance with the requirements of the Montana Environmental Policy Act (MEPA). The purpose of an EA is to identify, analyze, and disclose the impacts of a proposed state action. This document may disclose impacts that have no required mitigation measures, or over which FWP, more broadly, has no regulatory authority.

Local governments and other state agencies may have authority over different resources and activities under separate regulations. FWP actions will only be approved if the proposed action complies with applicable regulations. FWP has a separate obligation to comply with any federal, state, or local laws and to obtain any other permits, licenses, or approvals required for any part of the proposed action.

This EA was prepared for the following action:

PROJECT NAME: Spotted Dog Wildlife Management Area Grazing and Water Development Plan	
LOCATION: Approx. 19,000 acres northeast of Deer Lodge, MT	COUNTY: Powell
PROPERTY OWNERSHIP: <input type="checkbox"/> FEDERAL <input checked="" type="checkbox"/> STATE <input type="checkbox"/> COUNTY <input type="checkbox"/> PRIVATE	
EA PREPARER: Liz Bradley, Kirstie Yeager, Kelvin Johnson, Torrey Ritter	DATE ISSUED:

I. Compliance with the Montana Environmental Policy Act

Before a proposed *project* may be approved, environmental review must be conducted to identify and consider potential impacts of the proposed project on the human and physical environment affected by the project. The Montana Environmental Policy Act (MEPA) and its implementing rules and regulations require different levels of environmental review, depending on the proposed project, significance of potential impacts, and the review timeline. § 75-1-201, Montana Code Annotated (“MCA”), and the Administrative Rules of Montana (“ARM”) 12.2.430, General Requirements of the Environmental Review Process.

FWP must prepare an EA when:

- It is considering a “state-proposed project,” which is defined in § 75-1-220(8)(a) as:
 - (i) a project, program, or activity initiated and directly undertaken by a state agency;
 - (ii) ... a project or activity supported through a contract, grant, subsidy, loan, or other form of funding assistance from a state agency, either singly or in combination with one or more other state agencies; or
 - (iii) ... a project or activity authorized by a state agency acting in a land management capacity for a lease, easement, license, or other authorization to act.
- It is not clear without preparation of an EA whether the proposed project is a major one significantly affecting the quality of the human environment. ARM 12.2.430(3)(a));
- FWP has not otherwise implemented the interdisciplinary analysis and public review purposes listed in ARM 12.2.430(2) (a) and (d) through a similar planning and decision-making process (ARM 12.2.430(3)(b));
- Statutory requirements do not allow sufficient time for the FWP to prepare an EIS (ARM 12.2.430(3)(c));
- The project is not specifically excluded from MEPA review according to § 75-1-220(8)(b) or ARM 12.2.430(5); or
- As an alternative to preparing an EIS, prepare an EA whenever the project is one that might normally require an EIS, but effects which might otherwise be deemed significant appear to be mitigable below the level of significance through design, or enforceable controls or stipulations or both imposed by the agency

or other government agencies. For an EA to suffice in this instance, the agency must determine that all the impacts of the proposed project have been accurately identified, that they will be mitigated below the level of significance, and that no significant impact is likely to occur. The agency may not consider compensation for purposes of determining that impacts have been mitigated below the level of significance (ARM 12.2.430(4)).

MEPA is procedural; its intent is to ensure that impacts to the environment associated with a proposed project are fully considered and the public is informed of potential impacts resulting from the project.

II. Background and Description of Proposed Project

Name of Project: Spotted Dog Wildlife Management Area Grazing and Water Development Plan

Under the proposed action, Montana Fish, Wildlife & Parks (FWP) would adopt and implement a cattle grazing and water development plan for the Spotted Dog Wildlife Management Area (SDWMA). Under this action, FWP would achieve a desired wildlife habitat improvement treatment on portions of SDWMA by implementing one or more grazing leases with neighboring private landowners. Use of SDWMA for cattle grazing by private landowners would be in exchange for resting adjacent native range on private land from cattle grazing on a rotational basis to benefit wildlife, especially wintering elk, by enhancing native wildlife habitats. This type of arrangement is referred to as an “exchange of use grazing lease agreement”, or EOU agreement. The intended wildlife habitat enhancements from EOU agreements are described in the sections that follow. The EOUs would also require affected landowners to provide public hunting access to their private lands, thereby maintaining or improving public recreational opportunities on and adjacent to SDWMA. FWP also proposes water development on SDWMA to focus grazing treatments where needed and avoid livestock use of sensitive riparian areas, wetlands, and aspen stands.

BACKGROUND

In 2010, FWP purchased SDWMA from Rock Creek Cattle Company using Natural Resource Damage Program (NRDP) funds. FWP assumed ownership of the property on September 2, 2010. The goals of the purchase, as listed in FWP’s grant application to NRDP, were to:

- Permanently protect priority fish and wildlife resources.
- Enhance critical winter habitat for elk and mule deer.
- Maintain migratory patterns to and from the National Forest for a regionally significant elk herd.
- Provide lasting public access to previously inaccessible lands.
- Maintain landscape connectivity between the Blackfoot and Clark Fork watersheds.
- Replace lost and injured natural resources that were the subject of Montana v. ARCO.

Upon acquiring SDWMA, the previous owner, Rock Creek Cattle Company, continued grazing the WMA from 2010-2012 as specified in the purchase agreement and with a one-year extension implemented in 2012 for the 2013 grazing season. Thereafter, FWP’s initial management direction was to exclude livestock grazing on SDWMA until a Habitat Plan was developed that included habitat enhancement objectives that could be achieved through well-planned livestock grazing treatments. Starting in 2014, FWP rested SDWMA from

livestock grazing as outlined in its Management Plan and the Livestock Grazing Amendments to the Plan (Spotted Dog Acquisition EA Decision Notice - August 2010).

From 2013 to 2019, FWP began exploring opportunities for working with neighboring landowners of SDWMA on behalf of fish and wildlife habitat. As a part of that effort, the Spotted Dog Work Group was formed in 2013. The Spotted Dog Work Group consists of constituents and agency partners tasked with providing input and guidance on the management of SDWMA. The Work Group originally comprised 18 citizens, mostly from the vicinity of the WMA, representing landowners, sportspersons, government, education, and other interested parties.

In 2015, an Ecological Inventory and Health Assessment of Spotted Dog WMA (Hansen et al. 2015) was completed and formed a foundation for FWP's approach to future management. This product described the SDWMA landscape in terms of a mosaic of ecological health, ranging from near pristine to unhealthy and nonfunctional, depending on the site in question. In the Hansen et al. 2015 survey, upland grasslands remote from water sources were in the best ecological condition overall, while riparian and wetland habitats and adjacent uplands were the most negatively impacted plant communities on the WMA.

With the Hansen et al. 2015 survey as a basis for understanding the current state of the various habitat types on SDWMA, the Work Group developed and finalized the Spotted Dog Wildlife Management Area Habitat Plan (Habitat Plan) in 2018. Guiding principles, as defined in the Habitat Plan, are as follows:

- The primary purpose of the Spotted Dog WMA is to benefit wildlife and fish habitats, and natural resources on behalf of the public.
- Actions will be sustainable for future generations.
- Provide access for a wide variety of uses consistent with the management plan.
- Be a good neighbor with the landowners and the residents of Powell County.

The Executive Summary for the Habitat Plan can be found at the end of this environmental assessment (EA), in Appendix A. The Habitat Plan emphasizes the WMA is "part of a larger whole," including a larger, essential landscape and ecosystem than the WMA alone. Therefore, under the guidance of the Habitat Plan, cross-boundary habitat management is a priority to maintain and enhance not only the habitats on the WMA, but adjacent habitats on which species that use the WMA are also dependent.

In the Habitat Plan, the Work Group recommended fencing out any authorized or unauthorized livestock from riparian and wetland habitats to promote the recovery of these areas on the WMA. The Work Group also provided direction for the management of native bunchgrasses. The Work Group recommended that FWP consider prescribed cattle grazing to diversify vegetation community structure in grasslands and to improve and maintain species diversity and productivity. However, the Work Group recommended that any cattle grazing should avoid the core winter range for elk on the WMA due to the winter forage needs of elk. Therefore, targeted cattle grazing should focus on transitional areas for elk on the WMA, where elk are traveling from winter range to summer range via the WMA.

Habitat objectives for grazing on the WMA are described in more detail in the "WILDLIFE HABITAT ENHANCEMENT" section of this Draft EA. Based on Hansen et al. (2015), recommendations of the Work Group, and FWP's field observations, in 2016 FWP identified portions of SDWMA that would benefit from scheduled,

periodic grazing treatments. That original analysis has been refined and updated as part of this Draft EA (Figure 5).

SDWMA's Management Units

In order to effectively manage the various regions and habitats on SDWMA, the WMA was divided into five descriptive Management Units (MU) via the Habitat Plan (Figure 1). Each MU generally corresponds with one principal drainage system and access route, with MU-5 being somewhat of an exception.

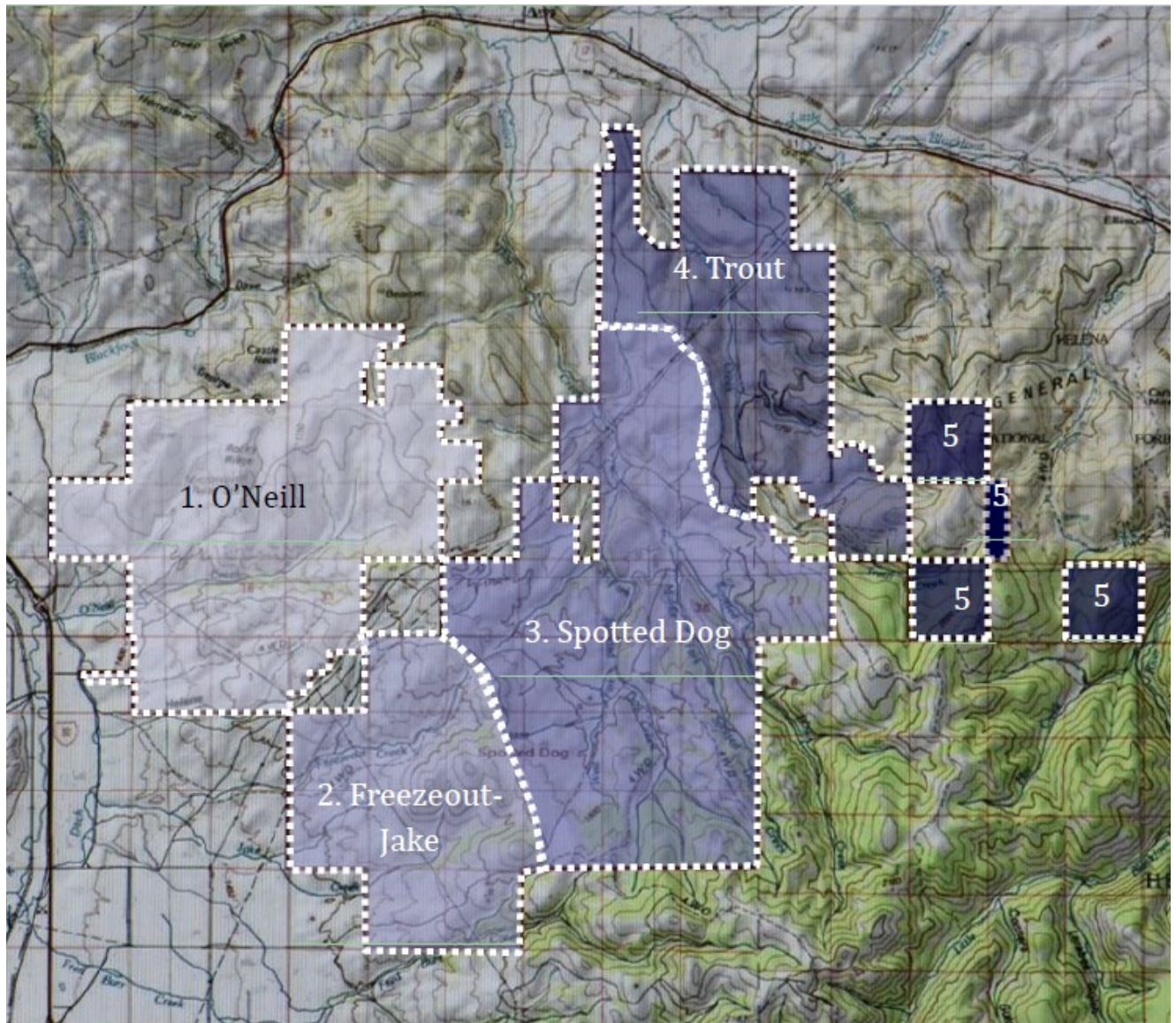


Figure 1. Management Units, consisting of properties deeded to Montana Fish, Wildlife & Parks (FWP) and State Trust Lands leased by FWP and managed by the Montana Department of Natural Resources and Conservation (DNRC). Note the Habitat Plan was completed before a property exchange took place with Cross Canyon Ranch in 2018. Therefore, this map does not depict the updated property boundaries, though this change was relatively minor in the context of considering these Management Units.

The five MUs generally represent distinct vegetation types. The O'Neill Creek MU (MU-1) and the Freezeout-Jake Creek MU (MU-2) consist of vast swaths of grassland habitats interrupted by small patches of conifers and stringers of shrubby draws and riparian areas. These two MUs are generally the driest landscapes on SDWMA with the least habitat diversity. MU-1 and MU-2 encompass the bulk of core elk winter range along the west side of SDWMA. As such, the winter range portions of these two MUs were specifically identified by the Work Group as areas to avoid for any future, prescriptive cattle grazing. The Spotted Dog MU (MU-3) likely ranks highest in overall terrestrial species diversity by virtue of its relative abundance and quality of riparian and wetland habitats as well as its extension into forested areas in higher elevations. The Trout Creek MU (MU-4) steps down slightly in terrestrial species diversity because of its lesser habitat complexity compared with MU-3. The Forested Checkerboard MU (MU-5) lies in the highest moisture regime of SDWMA and is unique in its nearly continuous coverage of coniferous forest habitat types.

MU-5 and part of MU-4 are unfenced and managed as parts of active livestock grazing allotments on the Helena-Lewis and Clark National Forest. Unauthorized cattle grazing elsewhere on SDWMA has occurred throughout the years since FWP purchased the property. To mitigate unauthorized cattle use of SDWMA, FWP has sequentially replaced old, faulty boundary fences. In addition, a land exchange with a neighboring ranch, completed in 2018, allowed for replacement of boundary fences that failed to prevent cattle from grazing on SDWMA. FWP Region 2 staff continue to work with neighboring landowners to expediently remove unauthorized cattle and identify and repair fence issues.

A substantial portion of the Hansen et al. 2015 survey has been repeated in 2023. Although the final report will not be completed in time to include in this EA, the updated survey will provide an assessment of changes to vegetation on SDWMA since it was purchased and will also serve as one of two forms of vegetation monitoring that is providing FWP with guidance for the proposed project (see WILDLIFE HABITAT ENHANCEMENT for more detail on monitoring efforts).

MCQUEARY EXISTING EXCHANGE OF USE GRAZING LEASE AGREEMENT (2019-2024)

SDWMA provides most of the winter resources needed by resident elk herds, but critical winter range also exists on adjacent private lands managed for livestock production. During severe winters, elk congregate on these private lands, conflicts occur, and producers suffer significant losses. The need to mitigate these losses yet still provide critical resources for elk is evident.

During 2017-2018, FWP met with neighboring landowners to discuss proposed grazing exchange agreements where producers could graze on the WMA in exchange for resting portions of their grazing lands, improving range conditions and wildlife habitat on their lands while also accomplishing wildlife habitat objectives on the WMA (these objectives are described in more detail under the "WILDLIFE HABITAT ENHANCEMENT" portion of this draft EA). FWP refers to these as "exchange of use grazing lease agreements" or EOU agreements. At the time of this outreach effort, the needs of most local producers were not compatible with the goals of the WMA as outlined in the Habitat Plan.

During severe winters, substantial portions of the elk herd north of Cottonwood Creek congregate on relatively small portions of neighboring ranches. One of those ranches, the McQueary Ranch, receives particularly heavy

use by elk during these severe winters. As an example, in the winter of 2018, 46% of elk observed by FWP biologists north of Cottonwood Creek were located on the McQueary Ranch. These observations make it evident that elk depend greatly on the winter resources on the McQueary Ranch during severe winters and therefore have the potential to cause damage to pasture and grazing infrastructure. The McQueary property represents an ideal candidate for an EOU agreement. The winter range that elk depend on during severe winters on the McQueary Ranch could benefit from being rested from livestock use to prevent overgrazing of key grassland habitats.

FWP and the McQueary Ranch entered into an EOU agreement that started in 2019 and will continue through July 31, 2024. Under the current EOU agreement, FWP allows grazing on 8% of the WMA (2,800 acres) divided into four, 600-700-acre pastures (Figure 2). The McQueary Ranch grazes 240 animal unit months (AUMs) annually on one of the four WMA pastures. In exchange, the McQueary Ranch provides growing season grazing rest in one pasture and yearlong rest from cattle grazing in two pastures on their 2,100-acre pasture system on a rotational basis. WMA pastures are grazed for a single season (June-August), then are rested for three years. As a result of this EOU agreement, forage produced on rested private land pastures is available to elk during winter.

Through this EOU agreement with the McQueary Ranch, FWP is effectively working with neighboring landowners to expand wildlife-focused grassland management across land ownership boundaries, essentially using available, potentially under-used forage resources on the WMA to benefit potentially over-used forage resources on neighboring lands. The ultimate goal is to spread livestock and elk grazing pressure more evenly across the larger landscape to benefit both wildlife and neighboring landowners.

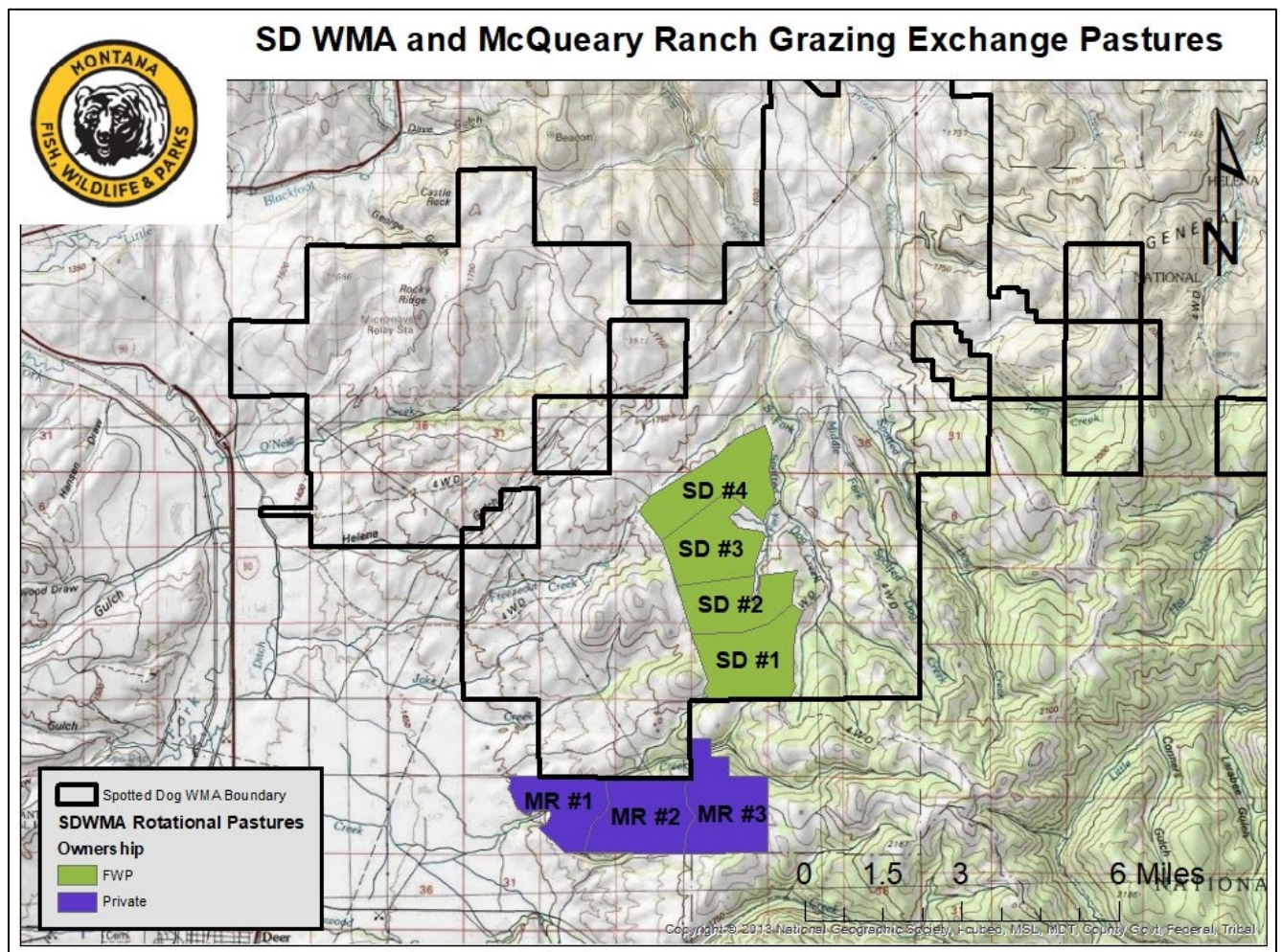


Figure 2: Current exchange of use grazing lease agreement pastures with the McQueary Ranch. One of the WMA pastures is grazed each year then rested from livestock use for three years. One of the McQueary Ranch pastures is grazed each year while the other two are rested from livestock grazing for the entire year.

The McQueary EOU agreement has been in effect for five seasons, so there is one year remaining of this EOU agreement. For the first four seasons, the WMA pastures were bound by a temporary electric fence. In practice, the fence was difficult to maintain and repeatedly failed, and effectively restricting cattle grazing to the designated pasture was compromised many times. To address these issues, during year five of the EOU agreement (2023), FWP and the lessee implemented virtual-fence technology to replace the electric fences. Collars that allowed animals to be remotely monitored were deployed on all McQueary Ranch cows prior to being moved onto the WMA for the season (Figure 3). Collars were programmed with virtual fence polygons (Figure 4) and collared cattle were confined via audio and electronic stimuli to the pasture within the virtual fence polygons. Though not 100% effective, a major improvement in containment was observed with virtual technology relative to electric fences. FWP will work with the manufacturer (Vence) to improve the efficacy of the technology and intends to use it during the final year of the current EOU agreement (2024).

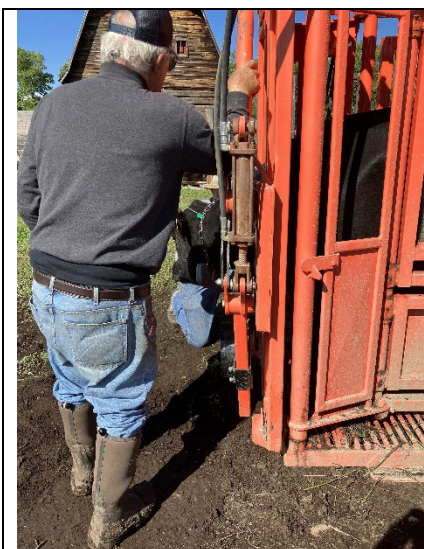


Figure 3: Collars are applied prior to moving cattle onto the WMA. Virtual fence polygons are programmed into the collars.



Figure 4: Vence's collar management program (Herd Manager) provides a visual representation of the virtual fence polygon (red). In this scenario, each collar (or cow) is displayed as a blue or yellow cow icon on the screen. Virtual fence boundaries can be modified at any time, and the modification is sent to the collars remotely via the Herd Manager program.

As this was the first EOU agreement with a private landowner on the SDWMA, FWP started with a conservative stocking rate. So far, the level of grazing intensity has not been substantial enough to achieve the desired wildlife habitat benefits. Despite improvements in containment, a stocking rate of 240 AUMs has proven insufficient to effectively treat a 600-700-acre pasture over a two-month grazing season. Each year, portions of the WMA pasture were grazed enough to achieve grazing treatment goals, but large portions of the pasture scheduled for grazing received little to no grazing pressure.

DESCRIPTION OF THE PROPOSED PROJECT

In order to achieve grazing treatment goals on pastures within SDWMA, FWP proposes a framework where stocking rate and pasture size can be adjusted through individual EOU agreements and virtual fencing. FWP is proposing to expand livestock grazing into the areas determined in 2016 to be appropriate for enhancing wildlife habitat through targeted cattle grazing, and into two small additional areas for special circumstance grazing (Figure 5).

Grazing would be conducted using regenerative grazing practices through EOU agreements that meet or exceed FWP Grazing Standards (See Appendix B). For the purposes of this proposal, regenerative grazing is defined as rotationally moving livestock through pastures using short-duration grazing periods, followed by appropriate periods of grazing rest. Regenerative grazing practices are used to promote soil, plant, and animal health through introducing or enhancing a variety of natural processes in rangelands including soil stabilization and formation, water infiltration, nutrient cycling, biomass production and diversity, and ecosystem resilience.

The proposed project would develop the framework for entering into EOU agreements with neighbors to SDWMA. If this proposed action were adopted, each individual EOU agreement would be proposed to the Fish

and Wildlife Commission for their consideration and approval, which would also include the opportunity for public review and comment on each proposed EOU agreement. As proposed, FWP would implement EOU agreements and water development incrementally (over a span of approximately 5-10 years), as need, funding, and staff resources allow.

DETAILS OF PROPOSED GRAZING ON SDWMA

This Draft EA identifies three types of areas where livestock grazing could be used as a tool to enhance wildlife habitat. The first area, shaded green in Figure 5 and labeled as Elk Transition Grazing Areas, represents a refined outline of the general areas determined to be appropriate for enhancement using prescriptive cattle grazing, as defined by the 2018 Habitat Plan. SDWMA pastures associated with the current EOU agreement with the McQueary Ranch are within the Elk Transition Grazing Areas. The second area, shaded tan-orange and labeled as Red Barn Special Treatment Grazing Area, consists of a deteriorated native grassland area downslope of traditional elk winter range that had historically received heavy livestock grazing impacts on an annual basis. The third area, also shaded tan-orange and labeled Pauley Place Special Treatment Grazing Area, has been highly altered through human activity. Pauley Place consists of a series of flood irrigated hayfields dominated by smooth brome and timothy that are distinctly different than the surrounding landscape in terms of historical impacts and current vegetation communities. The following sections describe these three targeted grazing areas and their proposed grazing prescriptions in more detail.

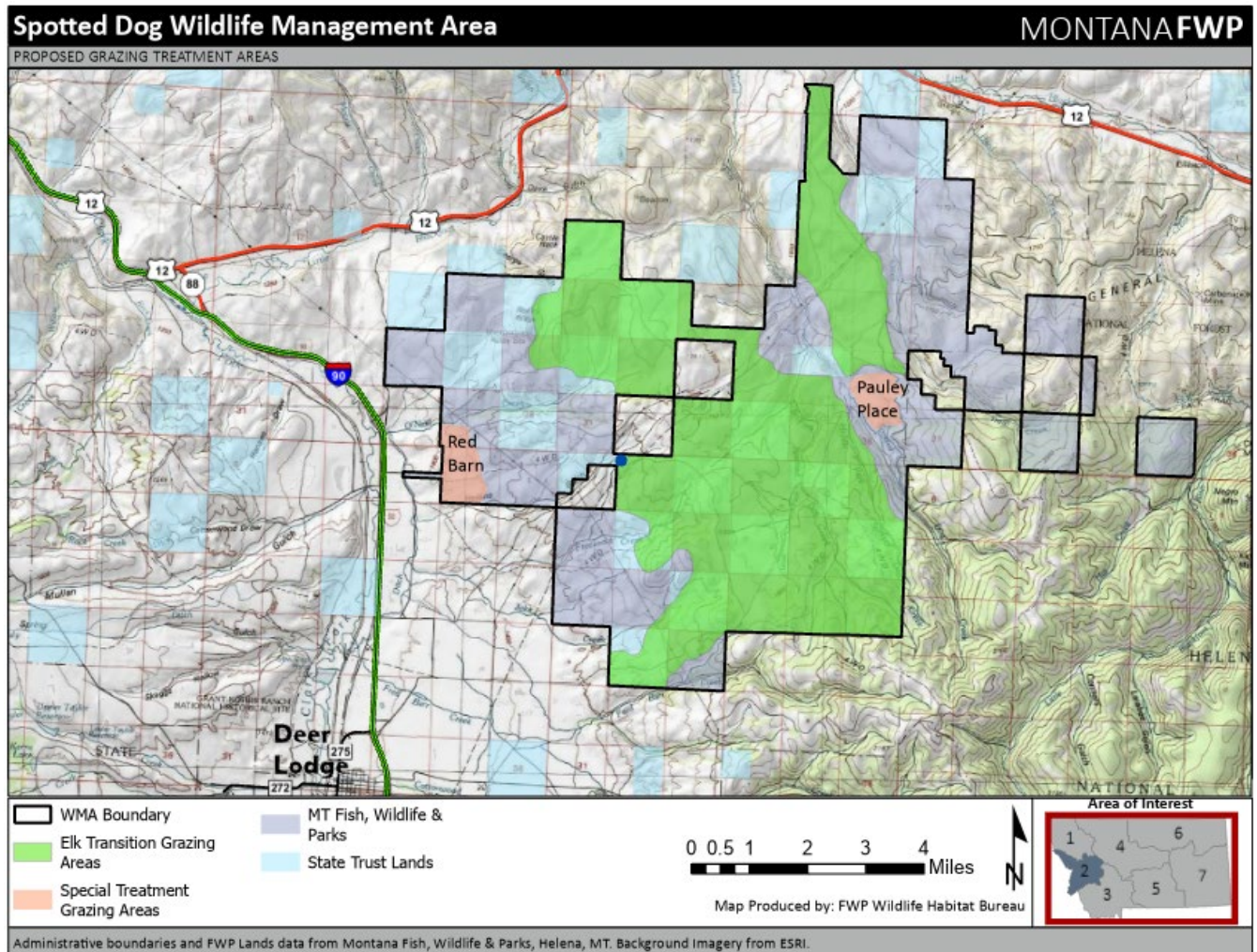


Figure 5. Proposed grazing areas on Spotted Dog Wildlife Management Area.

Elk Transition Grazing Areas

The Elk Transition Grazing Areas constitute the bulk of the proposed grazing program on SDWMA. Because elk winter range and transition range boundaries on SDWMA fluctuate depending on annual winter severity, some smaller portions of the proposed grazing program extend into what could be considered elk winter range, as suggested through elk count data shown in Figure 10 below. The proposed elk transition grazing areas are intact, native, rough fescue dominated grasslands and make up most of the elk transition habitats between downslope winter range and upslope summer range. The primary purposes for cattle grazing in the elk transition grazing areas include:

- Enhancing spring green-up conditions for big game,
- Improved elk use of transition habitat on the WMA, thereby providing more rest on grasslands that comprise both elk winter and summer range, and reducing potential for damage on private land,
- providing structural diversity within herbaceous plant communities for a variety of wildlife,
- increasing native plant productivity and diversity, and

- improving and maintaining soil health (see “WILDLIFE HABITAT ENHANCEMENT,” below, for more details).

Regenerative grazing practices that meet or exceed FWP Grazing Standards (Appendix B) would be employed on the Elk Transition Grazing Areas. Each year, varied levels of high-intensity, short-duration, rotational grazing would be conducted to treat select pastures, with a preference toward grazing before and during the growing season. Treated pastures would then be typically rested for three to four years. Livestock would be contained via existing boundary fences, temporary electric fence, or virtual electric fence (e-collar technology). Aspen stands, springs, streams, and riparian areas would be excluded whenever and wherever appropriate and possible.

Water development on SDWMA would be necessary to source water across much of the identified elk transition habitat so that treatments could be focused where needed. Primary water sources would include remote water tanks located in the uplands and sourced from local springs. The northeast portion of the Elk Transition Grazing Area would include remote water tanks located in the uplands, likely sourced from a well at the Pauley Place. Secondary and temporary water sources would include water gaps on existing creeks. These water gaps would be used for initial EOU agreements but off-stream watering infrastructure would become the primary water sources as they are developed over time. Access to those natural water sources for cattle would be limited through the use of virtual e-collar technology or temporary electric fencing. Water gaps would be places in areas with relatively low potential for negative impacts to existing riparian vegetation and wetlands.

Red Barn Special Treatment Grazing Area

The Red Barn Special Treatment Grazing Area constitutes heavily impacted native range located on the far western portion of SDWMA. The primary purposes for cattle grazing in this area include:

- Providing native range restoration, including reducing bare ground,
- increasing species productivity and diversity,
- improving soil health, and
- promoting green-up conditions and plant palatability for big game.

Regenerative grazing practices that meet or exceed FWP Grazing Standards (Appendix B) would be employed as a habitat restoration tool. Varied levels of high-intensity, short-duration grazing would be used, with a preference toward late-spring grazing prior to the growing season. These treatments would be employed as frequently as every other year with a focus on building soils and enhancing nutrient cycling, which are necessary for restoring the plant community and ecological function of the affected area(s) to more natural conditions suitable for wildlife. Livestock would be contained via existing boundary fences, temporary electric fence, or virtual e-collar technology.

There are currently no naturally occurring water sources in this area so grazing could not occur until water development is installed. An existing well near the red barn would serve as the primary source of water needed in this treatment area. Water would be delivered via pipeline to remote water tanks.

Pauley Place Special Treatment Grazing Area

The Pauley Place Special Treatment Grazing Area constitutes historical hayfields dominated by smooth brome and timothy. The primary purposes for grazing in this area include:

- Increasing plant palatability and attractiveness for big game,
- increasing plant productivity, and
- improving soil health.

FWP Grazing Standards (Appendix B) for non-native range would be employed, which could include varied levels of high-intensity, short-duration grazing during the spring and summer with a preference towards growing-season grazing. Within the grazing standards, grazing could occur as frequently as every other year, or by providing two treatments every three years. Livestock would be contained via existing boundary fences, temporary electric fence, or virtual e-collar technology.

Aspen, willows, and wetlands exist in small quantities in this area and would be excluded from livestock grazing to the greatest extent possible. The primary area in need of livestock exclusion is the Spotted Dog Creek riparian restoration site, located directly west of the hayfields. This area is bounded by a new hard-wire fence to ensure cattle exclusion. Slope wetland restoration has also occurred within the boundaries of the Pauley Place Special Grazing Treatment Area, and these wetlands would also be fenced to exclude cattle grazing. An existing well at the Pauley Place building site would be used as the primary water source for this treatment area via pipeline to remote water tanks.

Virtual Fencing (e-collar technology)

Virtual fence technology using e-collars, towers, and online resources allows producers to manage animal movements digitally and remotely. Fences using wire or electric lines are replaced by invisible polygons uploaded onto e-collars that are deployed on livestock. Communication towers for the e-collars are mobile and have a relatively small footprint. Each tower housing is 3.5' X 3.5' X 5.3' and the antenna extends approximately 20' above ground (Figure 6). The towers are placed on the landscape in line-of-sight to e-collared cows. E-collared cattle are contained within virtual pastures via audio and electric stimuli delivered by the e-collars. Grazing polygons can also be configured to exclude cattle from sensitive areas. At any time, pasture boundaries can be redrawn via a computer or smartphone, shifting animals to new locations within minutes. This flexible system allows grazing intensity to be manipulated at smaller spatial and temporal scales and provides real-time feedback to producers on e-collar status and the specific location of each e-collared cow.

In 2023, multiple partners collaborated with FWP to test virtual fence technology on SDWMA via a pilot project on the McQueary Ranch. Montana Outdoor Legacy Foundation, Rocky Mountain Elk Foundation, and National Wildlife Federation funded the communication tower purchases. Rocky Mountain Stockgrowers supported the lessee, McQueary Ranch, by covering e-collar subscription costs. Prior to moving cattle onto SDWMA for the season, McQueary Ranch collared 120 cows. Though not complete at the time of this Draft EA publication, e-collar data will be analyzed to show small-scale grazing intensity differences across the pasture. So far, e-collar technology has proven to be an effective alternative to other fence types.

Because of the initial success during the pilot effort, FWP intends to use e-collar technology in this proposed grazing plan as a primary method to contain cattle within scheduled pastures and exclude cattle from restoration areas, riparian zones, and other sensitive habitats.



Figure 6: Virtual fence communication towers have a relatively small footprint and are not permanent structures.



Figure 7: Cattle are fitted with e-collars prior to moving onto the WMA. The e-collars keep cattle within the virtual polygon boundaries (see Figure 4) via audio and, if needed, electric stimuli.

EOU Agreement Monitoring

EOU agreements would be monitored throughout the length of time each agreement is in place. Compliance with the terms of each EOU agreement would be monitored by FWP staff that would work with producers to assure that lessees are abiding by the agreement. Any violation of the grazing prescription, such as out-of-bounds cattle, would be remedied promptly. Additionally, FWP staff would visually verify pasture schedules on both SDWMA and private lands. FWP and lessees would monitor pasture conditions on SDWMA throughout the season to ensure cattle have adequate resources and that adverse resource impacts are not occurring. Individual pasture boundaries would be adjusted, as needed.

Water Development Within the Grazing Areas

Water availability is important for successful grazing management and is often referred to as the “backbone” of a grazing management system. Existing water sources in the proposed grazing areas consist of streams, wetlands, and springs. Much of the uplands in the proposed grazing areas contain minimal water sources, which limits opportunity for managing uplands with periodic cattle grazing. In these circumstances, cattle tend to underutilize forage resources in areas that are far away from water, or in areas with steep topography, thereby relying on and causing adverse impacts to streams, wetlands, riparian habitats, and aspen stands. Therefore,

focused grazing in upland areas requires developing water resources to serve as that “backbone” to the grazing system.

In the spring of 2023, FWP staff began working with the Natural Resources Conservation Service (NRCS) in Deer Lodge to investigate the feasibility of developing water in the targeted grazing areas using existing wells and springs on SDWMA. The intent of this water development effort would be to support livestock grazing treatments in remote upland areas while simultaneously reducing dependency on streams and wetlands as watering sources. Water development would be conducted with existing water rights and filing for groundwater certificates as needed (see Appendix F for a list of existing water rights in project area).

Two wells were investigated, the Castle Well, located by the red barn on the west boundary of SDWMA, and the Pauley Well, located at the building site of the Pauley Place. A water well contractor tested both wells during the summer of 2023. The Pauley Well produced 20 gallons per minute (gpm) and was in good working order. The Castle well produced 10 gpm but needed maintenance and new pumping equipment.

There is a rocky outcropping that extends across the western portion of SDWMA and results in bedrock at or near the surface of the ground between the Castle Well and the targeted grazing areas above it. Therefore, lengthy pipelines from existing wells are not feasible in this area. Instead, the Castle Well would be used to serve a localized water system in the Red Barn Special Treatment Grazing Area.

The Pauley Well could be used to serve a water system in the Pauley Place Special Treatment Grazing Area and in the nearby Elk Transition Grazing Area located north of the Pauley Place building site. This portion of the WMA is not nearly as constrained by bedrock when it comes to burying pipeline so the Pauley Place Well will be able to provide water to nearby elk transition grazing areas via buried pipeline and remote tanks.

FWP and NRCS staff toured the remaining project area and found several springs that could serve as long-term, reliable water sources for grazing on portions of the WMA that are far from the two existing wells. NRCS recommended placing submerged water collection units on these sites, and then using solar pumps to deliver water to large cisterns located on higher ground, away from the source springs. These cisterns would deliver water, via gravity flow, through buried pipelines to water tanks stationed across uplands of the western portion of the Elk Transition Grazing Areas.

Water development would occur incrementally as funding and engineering capacity allows. Where grazing is to be implemented before water development occurs, cattle would be allowed access to existing streams and springs via water gaps created using physical fences and/or e-collar technology. The first priority for water development on SDWMA would be to install a spring development within the grazing footprint of the current EOU agreement with the McQueary Ranch that would extend water resources for cattle further into upland grasslands within the Elk Transition Grazing Area. Estimated expenses for this initial development are included in Appendix C. A schematic example of a developed spring water system is illustrated in Figure 8.

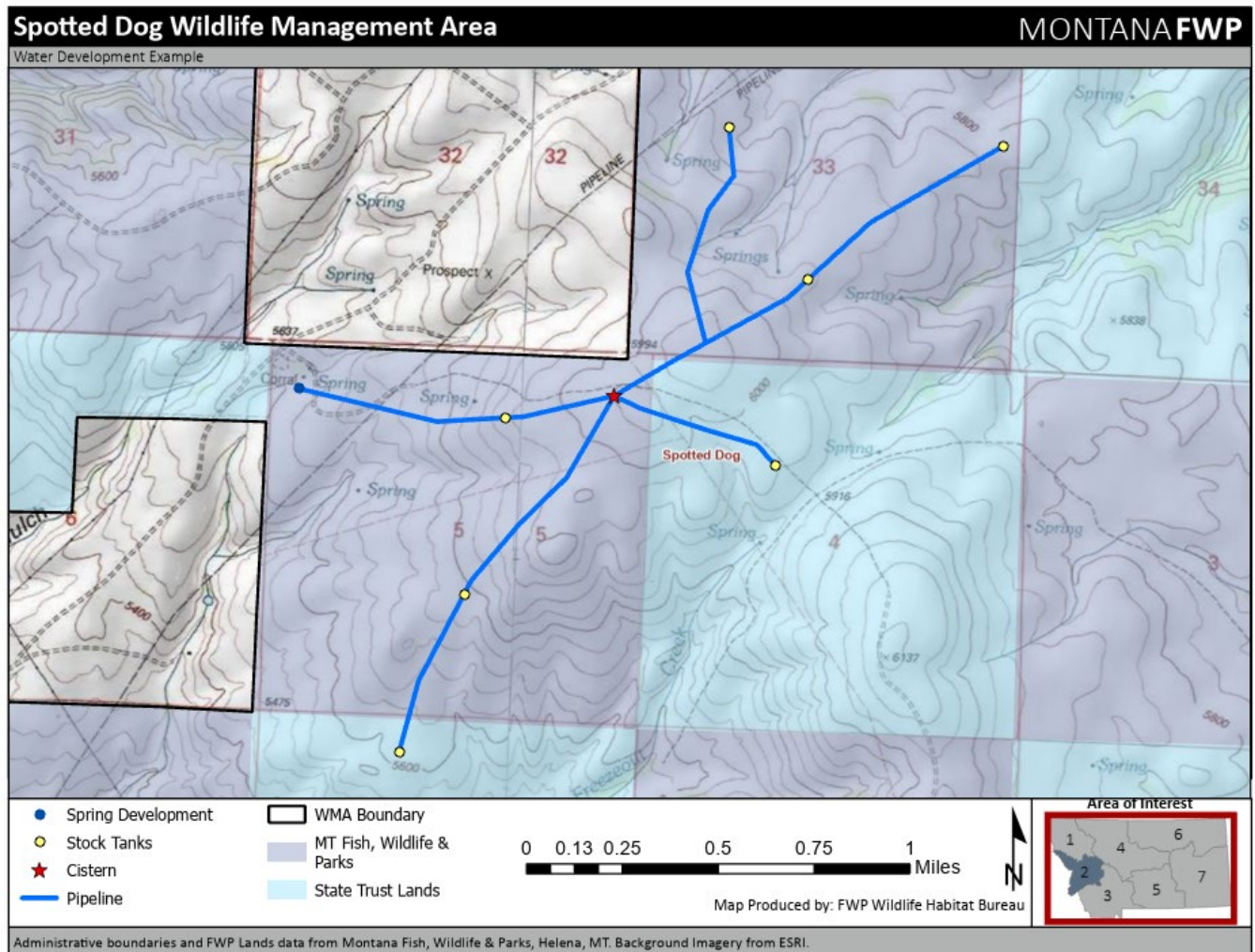


Figure 8. Example of potential spring water system to deliver water, via gravity flow, from springs to cisterns and water tanks.

WILDLIFE HABITAT ENHANCEMENT

The proposed action is designed to benefit wildlife habitat on SDWMA and neighboring private lands by improving grassland diversity and structure and soil health. The following section details how the treatment would be designed to meet these objectives. FWP would plan to conduct short- and long-term monitoring to assure desired grazing treatments are achieved.

GRASSLAND DIVERSITY AND STRUCTURE

FWP proposes to use scheduled cattle grazing treatments followed by three or four-year periods of grazing rest to accomplish wildlife habitat enhancement on SDWMA. More specifically, the grazing treatments would include cattle foraging on grass and forb plants species, trampling vegetation, and depositing manure. These disturbances, when well-managed, can improve wildlife forage through removal of excessive dead plant material, trampling of seeds into soil, promoting root growth, and supporting soil health (Bailey et al. 2019, Teague and Kreuter 2020).

Periodic removal and trampling of vegetation also increases variation in grassland structure, providing a wide breadth of niches for a variety of mammals, birds, and insects (Derner et al 2009).

Overall, the treatments sought in this proposal are intended to enhance wildlife habitats on SDWMA and adjacent private lands for both game and nongame species. On SDWMA, periodic managed cattle grazing would introduce and maintain structural diversity of ground-cover vegetation within grasslands (Derner et al. 2009, Toombs et al. 2010). Cattle grazing would help periodically reduce the amount of litter, providing more high-quality nutritious forage for elk and other wild ungulates during post-grazing treatment spring green-up (see Wildlife Response section below). Structural diversity in vegetation brought about by periodic disturbance is an important component of a healthy ecosystem (Hobbs and Huenneke 1992, Fuhlendorf and Engle 2001, LaRue et al. 2023). Structurally diverse grasslands provide for greater diversity of nongame species such as small mammals and songbirds through the creation of a greater diversity of ecological niches (MacArthur and MacArthur 1961, Hobbs and Huenneke 1992, Golding and Dreitz 2017, Lipsey and Naugle 2017). Various species require or prefer different structural components of grasslands habitats (e.g., standing grass cover, forb abundance, amounts of litter, etc.) for all or portions of their life cycles (Fisher and Davis 2010). Therefore, offering affected wildlife species a greater variety of vegetation structure allows more species and more individuals of those species to forage, nest, and raise young on a given landscape.

Raptors and smaller mammalian carnivores are also dependent on structurally diverse grasslands. The ability of small mammals to evade predators changes with the density and distribution of vegetation the small mammals move through (Bowman and Harris 1980, Baker and Brooks 1982). Aerial predators tend to benefit from areas with shorter grass or edges between structure classes of vegetation as prey are more readily seen and pursued under such conditions. Contrarily, ground predators such as weasels and foxes may prefer taller vegetation as they are more concealed when sneaking up on prey. Again, a diversity of habitats provides for a greater diversity of species.

On adjacent, private lands involved in cooperative grazing systems, additional rest periods would help restore or maintain the ecological integrity of grasslands with additional benefits to some shrublands and riparian habitats. Unlike on SDWMA, wetlands and riparian areas may not be fenced out on private lands, via the e-collar technology or otherwise. Therefore, additional rest from grazing would be beneficial to these habitats. Additional standing grass cover associated with rested private-land pastures would be available for a variety of wildlife including seed and insect-feeding birds and mammals and wintering elk.

SOIL HEALTH

Rangeland health and soil health are interdependent (Teague and Kreuter 2020). Rangeland health is the degree to which the integrity of the soil, vegetation, water, and air, as well as the ecological processes of the rangeland ecosystem, are balanced and sustained (National Research Council 1994, as cited by Pyke et al. 2002). Soil health is the capacity of a specific kind of soil to function within natural or managed ecosystem boundaries, sustain plant and animal productivity, maintain or enhance the quality of water and air, and support human health and habitation (NRCS 2016).

Soil health affects plant community diversity, wildlife habitat productivity, and weed and drought resistance (NRCS 2016, Derner et al. 2018). Changes to soil health can drive changes in vegetation species either towards desired plant communities, through healthier soils, or towards establishment of invasive plants and associated

communities if soil health is inadequate (NRCS 2016). Soil health affects rates of erosion caused by wind and water as well as water infiltration rates and water availability for plants (NRCS 2016).

Prescriptive livestock grazing, as proposed, would increase incorporation of soil organic matter, support soil biological activity (e.g., fungi, bacteria, insects, worms, dung beetles, etc.), and accelerate nutrient cycling through manure and periodic trampling of plant residue to the soil surface. These processes improve the development and maintenance of healthy soils (Teague and Kreuter 2020). Improving and maintaining soil health has been connected to ecosystem resilience and drought tolerance (NRCS 2016, Odom et al. 2017, Derner et al. 2018, Teague and Kreuter 2020).

Vegetation Assessment and Soil Health Monitoring

The proposed grazing areas would be included in FWP's ecological health assessment program for WMAs. Under this program, a variety of habitat types on SDWMA would be assessed on a 5–10-year schedule. The assessment technique closely follows the Ecological Inventory and Health Assessment conducted by Hansen et al. in 2015. Plots from the Hansen et al. 2015 survey were resurveyed in 2023 and a summary report of findings, with comparisons to the 2015 survey results, is currently in progress.

The ecological health assessment is a detailed accounting of vegetation and physical site data within representative polygons (Hansen et al. 2015). For upland sites, data measured and analyzed includes occurrence and abundance of invasive plant species, native plant composition and community structure, shrub structure and health (e.g., browse utilization and proportion of dead material), occurrence of plant litter and bare soils, and evidence of accelerated erosion. Assessments of riparian and wetland habitats include many of these same measures, but also take into consideration riparian cover, increased species associated with disturbance, preferred tree and shrub occurrence, vegetation streambank protection, human sources of alteration (e.g., livestock impacts), and stream channel incision. Finally, the assessment includes photo point surveys for upland and wetland sites to visualize coarse-scale changes over time. These photo surveys would also be conducted on privately owned wildlife habitats associated with the EOU agreements.

Above-ground condition of rangeland is a reasonable indicator of soil health (NRCS 2015, Pellant et al. 2020). Four factors have been identified as critical to maintaining or improving soil health (NRCS 2015):

- 1) Maintaining a diverse plant composition which reflects biological diversity in the soil.
- 2) Minimizing soil disturbance which prevents accelerated erosion.
- 3) Keeping plants growing throughout the year (for rangelands, this factor is served by retaining a full complement of cool- and warm-season native vegetation).
- 4) Keeping soil covered with litter and live vegetation to retain moisture.

Each of these four factors are evaluated as part of the ecological health assessment technique described above. There are more direct measures of soil health, such as water infiltration rates, soil organic composition, soil stability, soil PH, and soil biological activity. However, these metrics are time-consuming and costly to monitor at-scale, so unless a specific question arises pertaining soil health, these more direct measures are outside the scope of the proposed action.

<https://www.wardlab.com/wp-content/uploads/2019/09/Haney-Rev-1.0-Interpretation-Guide.pdf>

WILDLIFE RESPONSE

By improving structure and species diversity of grasslands, as well as soil health, FWP anticipates wildlife would respond positively to the proposed grazing treatments. The following section outlines the desired wildlife response in more detail as well as any related monitoring that would occur.

DESIRED WILDLIFE RESPONSE: INCREASE ELK USE OF TRANSITIONAL HABITAT BETWEEN SUMMER AND WINTER RANGE

In addition to winter range habitats, SDWMA provides important spring and fall forage for elk. Migratory elk tend to move upslope in the spring as the snow melts and the vegetation begins to grow. Emerging green vegetative growth has the high nutritional content that elk need just prior to and after calving. Research has shown that elk prefer spring forage that contains less standing litter, commonly associated with areas that received light to moderate cattle grazing the previous year (Grover and Thompson 1986, Jourdonnais and Bedunah 1990, Crane et al. 2016).

Prior to its inception, SDWMA was an operational ranch owned and managed by Rock Creek Cattle Company and extensively grazed by cattle. When Rock Creek Cattle Company ceased grazing SDWMA property, litter began to accrue throughout the grasslands, making these pastures less desirable to elk during spring green-up and summer periods. Cattle grazing can be an effective tool to reduce litter and support high-quality, early-spring foraging habitat for elk (Anderson and Scherzinger 1975, Frisina 1992, Yeo et al. 1993). The early spring period is also a time when elk depredation on private grazing lands can be most impactful. The goal of reintroducing managed cattle grazing to specific areas of SDWMA is to attract elk away from private lands and to SDWMA during spring green-up to benefit rangeland health on private lands.

DESIRED WILDLIFE RESPONSE: UNGULATES HAVE IMPROVED WINTER FORAGE ON PRIVATE LAND

In the Deer Lodge Valley, FWP biologists survey elk in the winter when elk are congregated on winter range and are relatively easily observed (Figures 9 and 10). During the annual elk survey flights conducted between 2011 and 2023, locations were logged for each observation of elk groups. Figure 9 was created from these locations and indicate areas of high elk use. This map shows that elk primarily use SDWMA during the winter months but also use resources on adjacent private lands, with the heaviest use along the southern boundary of SDWMA. During severe winters, such as in 2018, elk were found to make greater use of private lands situated closer to the valley floor suggesting the most critical winter range exists in these locations.

One such property recognized as providing resources critical to elk during severe winters is the McQueary Ranch, which borders SDWMA on its southern boundary. During the annual elk survey in 2018, 46% of all elk seen north of Cottonwood Creek were observed on the McQueary Ranch (Figure 10). Considerable foraging by wintering elk on pastures was also reported. These data suggest that certain private lands are integral to meeting SDWMA's purpose of "enhancing critical winter habitat for elk." EOU agreements with private landowners provide an opportunity for private land to be rested on a rotational basis thereby providing more nutritional forage for elk during winter, especially during hard winters (Shamhart et al. 2012).

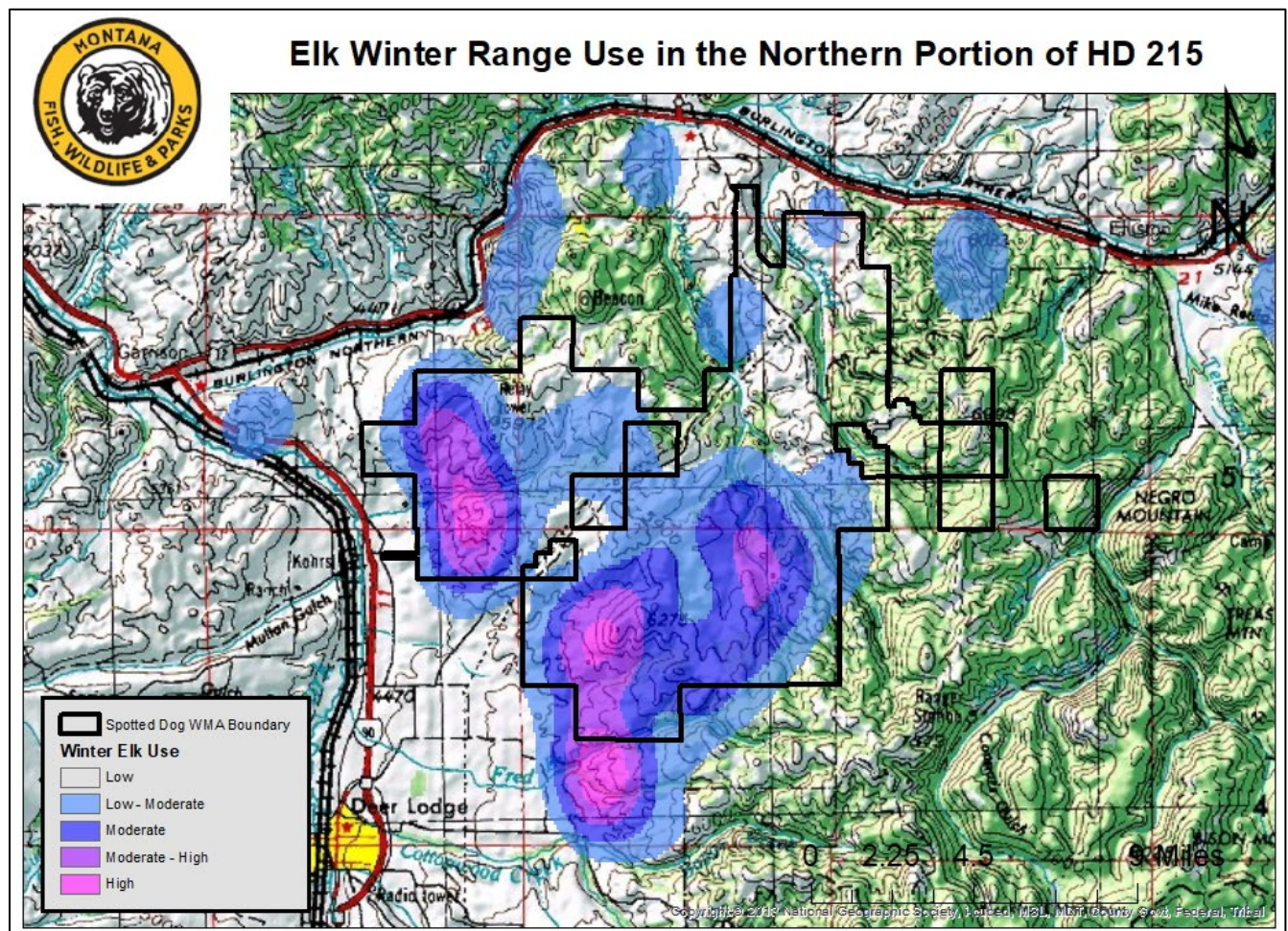


Figure 9. Post-hunt elk counts are conducted annually during the winter months of January and February. Locations of groups of elk are logged for all observations. Using location data from 2012-2022, this map shows areas of high elk use while on winter range.

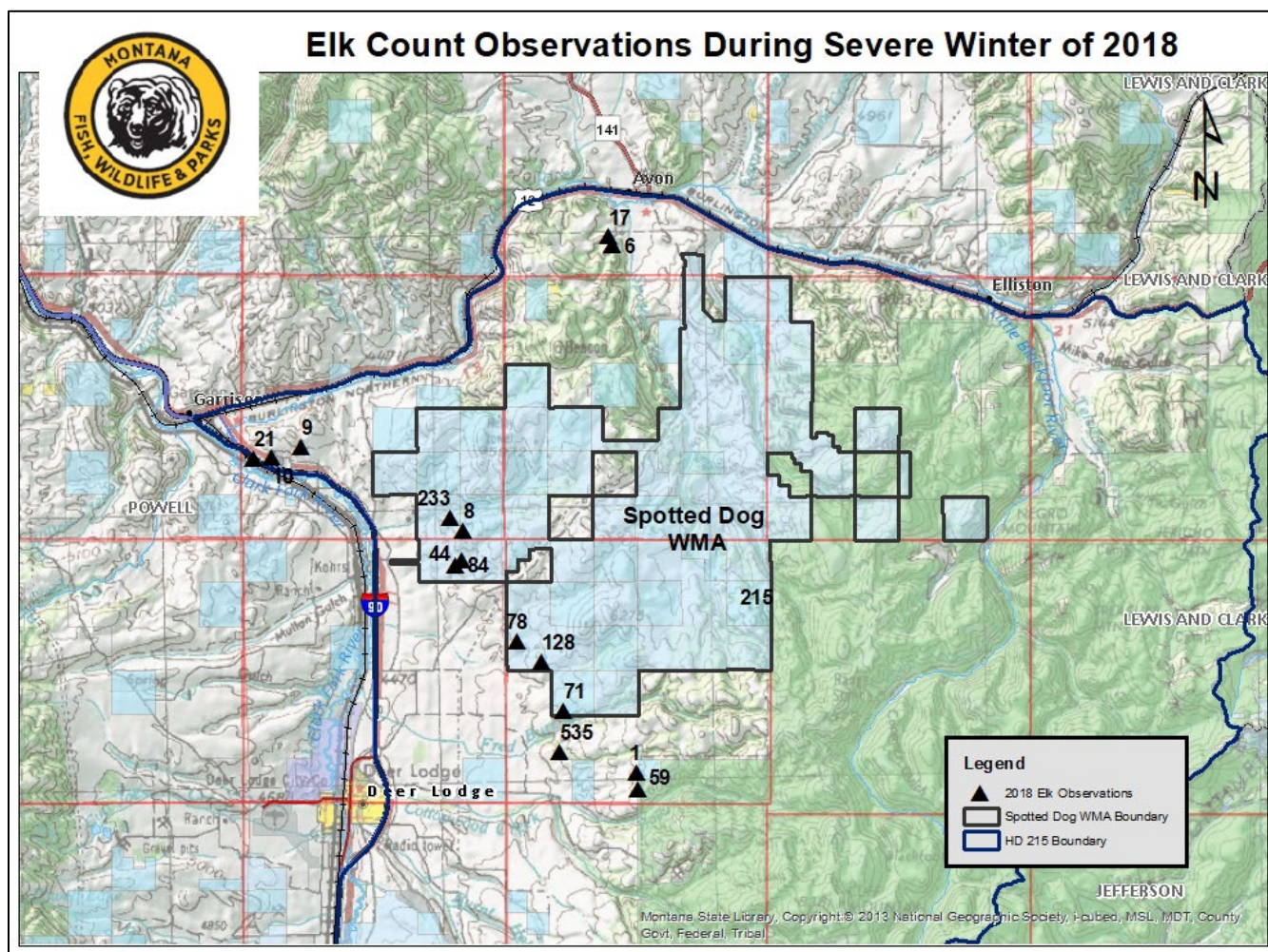


Figure 10. Elk counts and locations during severe winter conditions in 2018. These conditions pushed elk farther down the valley and onto private lands. Numbers next to triangle icons indicate number of elk in the group at that location.

Elk Monitoring on SDWMA and Private Land

To evaluate the effectiveness of this proposal for attracting spring elk use, and to document winter elk use on involved private grazing lands, post-green-up pellet surveys would be conducted along transects in both grazed (treated) and rested pastures on SDWMA and on the private lands affected by the EOU agreement. These pellet surveys would be conducted during the development and implementation phases of the proposed project and would discontinue once enough information had been gathered to adequately assess elk response to grazing treatments. Deer and elk locations obtained during annual winter surveys would also inform use-trends, as would game damage reports. In addition, FWP would explore the possibility of implementing a new study using GPS collars to evaluate fine-scale elk movements in the affected area.

DESIRED WILDLIFE RESPONSE: INCREASE DIVERSITY OF GRASSLAND BIRD SPECIES ON SDWMA

Periodic, managed cattle grazing would introduce disturbance to grassland habitats on SDWMA, thereby enhancing the structural diversity of the vegetation at localized and landscape scales. Enhancing the diversity of vegetative structure on SDWMA would provide habitat for the abundance and diversity of wildlife species that would be expected to use SDWMA's grassland habitats under healthy rangeland and riparian/wetland conditions (Davis et al. 2019). Structurally diverse vegetation increases ecological niches various species need in grasslands like those found on SDWMA. For example, species like horned lark and long-billed curlew generally prefer shorter grasses for nesting and foraging, while species like grasshopper sparrows and savannah sparrows prefer taller vegetation. Additionally, species like long-billed curlew nest in short grass areas but also require areas of taller grass for raising their young once they have hatched (Fellows and Jones 2009). So, providing a mosaic of grassland vegetation structure through targeted, well-managed cattle grazing not only provides habitat for a greater variety of species but can also be important for single species' life cycles.

Monitoring of Grassland Bird Species on SDWMA

Long-term monitoring would include continued, periodic (every 5 years) bird and vegetation surveys on SDWMA under the Integrated Monitoring in Bird Conservation Regions (IMBCR) framework (Pavlacky et al. 2017). IMBCR surveys include detailed surveys of bird species using SDWMA combined with vegetation surveys that measure vegetation structural elements. The IMBCR data collected on SDWMA would provide valuable insights into bird abundance, species diversity, and density across multiple spatial scales. Furthermore, with these data, FWP would investigate underlying habitat conditions that could spur changes in bird communities, allowing FWP to document tangible outcomes of grazing-induced changes to vegetation structure in grasslands on SDWMA.

IMBCR surveys were conducted across SDWMA in 2013 as part of an initial survey and inventory effort on the newly acquired SDWMA property. Those same surveys were repeated in 2023, with effectively 10 years of rest from widespread cattle grazing. Additionally, in 2019, IMBCR grids and transects were established at the start of the McQueary grazing exchange and were repeated in 2023 after SDWMA pasture rotation had been completed. These new transects and grids were arranged to overlap the grazing exchange pastures on both public and private lands and included smaller riparian corridors that were within the grazing pastures. IMBCR grids and transects that fall within pastures to be included in any grazing rotation would be surveyed at the conclusion of each rotation and for at least three full rotations. As funding and staff resources allow, such surveys would be continued through the duration of the grazing exchanges.

Wildlife Species Listed as Species of Concern (state), or listed as Endangered, Threatened, or Potentially Threatened under the Endangered Species Act (Federal)

Forty-seven vertebrate animal species that reside within or potentially use the SDWMA for various parts of their life cycles have been identified by the Montana Natural Heritage Program as SOC (Appendix E). Further, one carnivore listed as *Threatened* under the ESA (grizzly bear), one furbearer listed as *Threatened* under the ESA (North American wolverine), one ESA-delisted carnivore (gray wolf), and one ESA-delisted bird species (bald eagle) are found within or potentially use habitats on SDWMA. SDWMA is also within the potential range for another ESA-threatened species, Canada lynx, but falls outside of the critical habitat as designated by the US Fish and Wildlife Service (USFWS 2014).

The proposed project would generally improve grassland habitats in the affected area by introducing periodic disturbance through livestock grazing. Springs, streams, wetlands, and aspen stands would be protected to the greatest extent possible using e-collar technology and electric fencing as needed. However, some temporary impacts to these resources may occur prior to, and during, watering infrastructure development. FWP expects any SOC, ESA-listed, potentially ESA-listed, or ESA-delisted species inhabiting or using SDWMA would benefit from the proposed project in the long-term, though short-term and localized negative impacts may occur for some SOC species. Overall, the proposed project would not be expected to impede recovery of any of the listed species and may establish conditions that are more conducive to their recovery.

Plant Species Listed as Species of Concern (state)

Thirty-six plant species listed as SOC have been confirmed, suspected, or are possibly located within SDWMA (Appendix E). The proposed project would generally improve grassland habitats in the affected area by introducing periodic disturbance through livestock grazing. Springs, streams, wetlands, and aspen stands would be protected to the greatest extent possible using e-collar technology and electric fencing as needed. However, some temporary impacts to these resources may occur prior to, and during, watering infrastructure development. FWP expects any plant SOC inhabiting SDWMA would benefit from the proposed project in the long-term, though short-term and localized negative impacts may occur for some plant SOC. Overall, the proposed project would not be expected to impede recovery of any of the listed plant species and may establish conditions that are more conducive to their recovery.

RECREATION

By improving the structural diversity of grasslands, FWP anticipates an increase in wildlife use on SDWMA and subsequent increased recreational opportunities. Viewing opportunities for a variety of nongame wildlife, such as raptors and grassland birds, could increase. Improved spring/fall forage for elk and other ungulates using SDWMA may improve wildlife viewing opportunities and increase hunting opportunities.

As with all FWP EOU agreements, partner producers on SDWMA must allow sufficient access to their private lands for public hunters. This is necessary to provide the hunting pressure (during the general season) needed to aid in meeting FWP's big game population objectives for the affected area. The level of public hunting allowed would be evaluated by the regional hunting enhancement coordinator, using hunter-use data from nearby Block Management Areas and a qualitative assessment of potential hunting pressure on private lands involved with the grazing program. As an example, The McQueary Ranch has agreed to allow at least 150 hunter-days to the public during Commission-approved hunting seasons. FWP provides a map and contact information to inquiring hunters and the McQueary Ranch manages hunters and provides summary documentation at the end of each hunting season. Any additional EOU agreements would also include public hunting access on participating private lands. Therefore, public hunting opportunity across lands included in EOU agreements would be maintained or increased because of the proposed project.

Affected Area / Location of Proposed Project

The Spotted Dog Wildlife Management Area is located within FWP Administrative Region 2 in the foothills of the Boulder Range northeast of Deer Lodge in Powell County, Montana (Figure 11).

- Legal Description
 - Latitude/Longitude: 46.47651, -112.58796
 - Section, Township, and Range:
 - All or a portion of Sections: 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, and 21, Township 8 North, Range 8 West
 - All or a portion of Sections: 2, 11, 13, 14, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 29, 30, 33, 34, 35, and 36, Township 9 North, Range 8 West
 - A portion of Section 35, Township 10 North, Range 8 West
 - Portions of Sections 24, 25, and 35, Township 9 North, Range 9 West
 - A portion of Section 2, Township 8 North, Range 9 West
 - Town/City, County, Montana: Deer Lodge, Powell County, Montana
- Location Map (Figure 11)

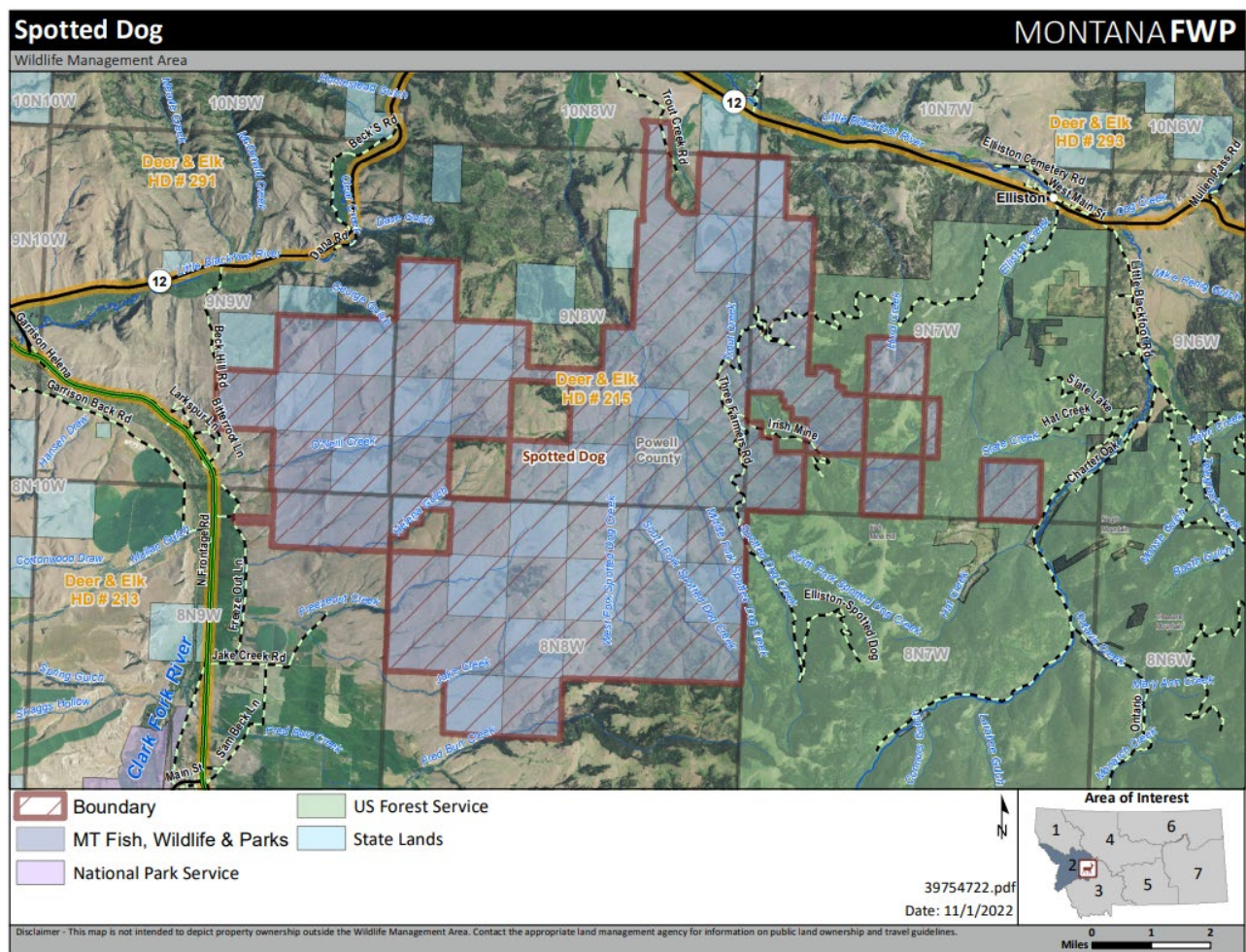


Figure 11: Spotted Dog Wildlife Management Area

III. Purpose and Benefits of Proposed Project

FWP’s purpose for the proposed project is to enhance the structural and species diversity of native grasslands over a large landscape by establishing grazing EOU agreements on a portion of SDWMA and neighboring private lands. Improving grassland conditions would benefit a variety of game and nongame species. Water development and virtual fencing using e-collar technology would focus the grazing treatments on high-priority grassland habitats while minimizing livestock impacts on ecologically sensitive riparian and wetland areas.

More specifically, project goals for habitat enhancement include the following:

- Enhance native plant productivity and species diversity within ecologically intact grassland habitats.
- Enhance and maintain soil health within ecologically intact grassland habitats as well as on two unique areas of SDWMA affected by historical land uses.

By implementing and achieving these habitat enhancement goals, FWP anticipates the following wildlife benefits:

- Increased elk use of transitional habitat between summer and winter range on SDWMA.
- Maintenance and improvement of winter forage for ungulates and wildlife habitat productivity on adjacent private lands.
- Increased diversity of grassland bird species on SDWMA.

Another benefit of the proposed project would be to maintain or improve recreational opportunities on and adjacent to SDWMA.

FWP would implement grazing leases and portions of water development incrementally, as time and funding allow.

If FWP prepared a cost/benefit analysis before completion of the EA, the EA must contain the cost/benefit analysis or a reference to it. ARM 12.2.432(3)(b).

	Yes*	No
Was a cost/benefit analysis prepared for the proposed project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* If yes, a copy of the cost/benefit analysis prepared for the proposed project is included in Attachment A to this Draft EA

IV. Other Agency Regulatory Responsibilities

FWP must list any federal, state, and/or local agencies that have overlapping or additional jurisdiction, or environmental review responsibility for the proposed project, as well as permits, licenses, and other required authorizations. ARM 12.2.432(3)©.

A list of other required local, state, and federal approvals, such as permits, certificates, and/or licenses from affected agencies is included in **Table 1** below. **Table 1** provides a summary of state requirements but does not necessarily represent a complete and comprehensive list of all permits, certificates, or approvals needed. Rather, **Table 1** lists the primary state agencies with regulatory responsibilities, the applicable regulation(s) and the purpose of the regulation(s). Agency decision-making is governed by state and federal laws, including statutes, rules, and regulations, that form the legal basis for the conditions the proposed project must meet to

obtain necessary permits, certificates, licenses, or other approvals. Further, these laws set forth the conditions under which each agency could deny the necessary approvals.

Table 1: Federal, State, and/or Local Regulatory Responsibilities

Agency	Type of Authorization (permit, license, stipulation, other)	Purpose
DNRC	Improvements Request	For water infrastructure development
DNRC	Pasturing Agreement	Grazing on State Land sections
SHPO	Guidance on effects of ground disturbance	Cultural Review
DNRC	Groundwater certificates	Water Development
FWP	Montana FWP Management Area Grazing Leases: A Programmatic Review & Guide	Guidance for cattle grazing on FWP-managed lands to achieve rangeland habitat objectives
FWP	State Wildlife Action Plan (2015) - currently under revision	Guidance for conservation of Montana Species of Greatest Conservation Need and Community Types of Greatest Conservation Need
FWP	An Ecological Inventory and Health Assessment of Spotted Dog WMA (Hansen et al. 2015)	Baseline assessment of habitat conditions on SDWMA conducted soon after transfer of land to public ownership
FWP	Spotted Dog WMA Habitat Plan (2018)	Guidance for FWP's management of SDWMA
FWP	FWP Integrated Noxious Weed Management Plan	Guidance for addressing and managing noxious weeds on FWP-managed properties

V. List of Mitigations, Stipulations

Mitigations, stipulations, and other *enforceable* controls required by FWP, or another agency, may be relied upon to limit potential impacts associated with a proposed Project. **Table 2** below lists and evaluates enforceable conditions FWP may rely on to limit potential impacts associated with the proposed Project. ARM 12.2.432(3)(g).

Table 2: Listing and Evaluation of Enforceable Mitigations Limiting Impacts

<i>Are enforceable controls limiting potential impacts of the proposed action? If not, no further evaluation is needed.</i>			Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<i>If yes, are these controls being relied upon to limit impacts below the level of significance? If yes, list the enforceable control(s) below</i>			Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Enforceable Control	Responsible Agency	Authority (Rule, Permit, Stipulation, Other)	Effect of Enforceable Control on Proposed Project	
Grazing Rotation	FWP	Grazing Lease	Limit long-term grazing impacts	
Noxious Weeds	FWP	FWP Integrated Noxious Weed Management Plan	Limit the potential for noxious weed infestation	
Grazing Standards	FWP	FWP Minimum Standards for Grazing Livestock	Limit grazing impacts and conserve wildlife habitat	
Streamside Management Zone	DNRC	Streamside Management Zone Law	Protect and maintain function of streamside management zones	

Cultural Resource Protection	FWP, State Historic Preservation Office	Antiquities Law	Avoid actions that substantially alter heritage properties or paleontological remains on lands owned by the state
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VI. Alternatives Considered

In addition to the proposed Project, and as required by MEPA, FWP analyzes the "No-Action" alternative in this EA. Under the "No Action" alternative, the proposed project would not occur. Therefore, no additional impacts to the physical environment or human population in the analysis area would occur. The "No Action" alternative forms the baseline from which the potential impacts of the proposed Project can be measured.

	Yes*	No
Were any additional alternatives considered and dismissed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* If yes, a list and description of the other alternatives considered, but not carried forward for detailed review, is included below

VII. Terms Used to Describe Potential Impacts on the Physical Environment and Human Population

The impacts analysis identifies and evaluates **direct**, **secondary**, and **cumulative impacts**.

- **Direct impacts** are those that occur at the same time and place as the action that triggers the effect.
- **Secondary impacts** "are further impacts to the human environment that may be stimulated or induced by or otherwise result from a direct impact of the action." ARM 12.2.429(18).
- **Cumulative impacts** "means the collective impacts on the human environment of the proposed action when considered in conjunction with other past and present actions related to the proposed action by location or generic type. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures." ARM 12.2.429(7).

Where impacts are expected to occur, the impact analysis estimates the **extent**, **duration**, **frequency**, and **severity** of the impact. The duration of an impact is quantified as follows:

- **Short-Term:** impacts that would not last longer than the proposed project.
- **Long-Term:** impacts that would remain or occur following the proposed project.

The severity of an impact is measured using the following:

- **No Impact:** there would be no change from current conditions.
- **Negligible:** an adverse or beneficial effect would occur but would be at the lowest levels of detection.
- **Minor:** the effect would be noticeable but would be relatively small and would not affect the function or integrity of the resource.
- **Moderate:** the effect would be easily identifiable and would change the function or integrity of the resource.

- **Major:** the effect would irretrievably alter the resource.

Some impacts may require mitigation. As defined in ARM 12.2.429, mitigation means:

- Avoiding an impact by not taking a certain action or parts of a project;
- Minimizing impacts by limiting the degree or magnitude of a project and its implementation;
- Rectifying an impact by repairing, rehabilitating, or restoring the affected environment; or
- Reducing or eliminating an impact over time by preservation and maintenance operations during the life of a project or the time period thereafter that an impact continues.

FWP may, as an alternative to preparing an EIS, prepare an EA whenever the action is one that might normally require an EIS, but effects which might otherwise be deemed significant appear to be mitigable below the level of significance through design, or enforceable controls or stipulations, or both, imposed by the agency or other government agencies. For an EA to suffice in this instance, the agency must determine that all the impacts of the proposed action have been accurately identified, that they will be mitigated below the level of significance, and that no significant impact is likely to occur. The agency may not consider compensation for purposes of determining that impacts have been mitigated below the level of significance. ARM 12.2.430(4).

A list of any mitigation strategies including, but not limited to, design, enforceable controls or stipulations, or both, as applicable to the proposed project is included in **Section VI** above.

FWP must analyze impacts to the physical and human environment for each alternative considered. The proposed project considered the following alternatives:

- Alternative 1: No Action
- Alternative 2: Proposed Action, SDWMA Grazing Plan and Water Development. Reference Section(s) II and III, above, for more information related to the proposed action.

VIII. General Setting of the Affected Environment

The analysis area for direct, secondary, and cumulative impacts on the physical environment and human population resources analyzed by this draft EA includes a portion of SDWMA located in Powell County, Montana. Powell County borders Deer Lodge, Flathead, Granite, Jefferson, Lewis and Clark, and Missoula counties. SDWMA encompasses 37,877 acres in south Powell County, with 27,616 acres deeded to FWP and 10,261 acres leased from the Montana Department of Natural Resources and Conservation (DNRC). The WMA is within an hour's drive of the towns of Deer Lodge, Butte, Anaconda, and Helena, and is 1 ½ hours from Missoula.

Physical Environment

Over 50% of Powell County is owned by state or federal government. The county is home to six scenic mountain ranges, three major rivers, vast swaths of rangeland, and pockets of irrigated cropland and pasture. Federal land managers include the United States Forest Service (USFS), Bureau of Land Management (BLM), and National Park Service or NPS (Grant-Kohrs Ranch National Historic Site). USFS lands include portions of four National Forests (Beaverhead-Deerlodge, Lolo, Helena-Lewis and Clark, and Flathead) and two wilderness areas (Scapegoat and Bob Marshall). State land

ownership includes DNRC, Montana State Prison, and FWP. In addition to SDWMA, FWP owns and manages Aunt Molly WMA, Nevada Lake WMA, and the Blackfoot-Clearwater WMA as well as 12 Fishing Access Sites in Powell County.

Intermountain Grasslands are abundant on SDWMA with over 12,420 acres of lower montane, foothill, and valley grasslands. Native bunch grasses dominate these grassland communities and grass species include rough fescue, Idaho fescue, blue bunch wheat grass, Sandbergs bluegrass, and blue grama. These grasslands provide year-round habitat, including winter range, for pronghorn antelope, mule deer, and elk. These grasslands also support a wide variety of non-game species that are dependent on intact native grasslands. SDWMA is identified as a priority landscape in FWP's 2015 State Wildlife Action Plan as part of the Upper Clark Fork-East Deer Lodge Tier I Terrestrial Focal Area.

Although most of the affected area for the proposed action is grasslands, uplands across SDWMA are made up of a complex mosaic of grasslands, shrublands, riparian zones, and forested areas. Lower elevations contain large stands of the important browse species, *Purshia tridentata* (antelope bitterbrush), on west facing slopes and ridge lines that remain relatively free of deep snow accumulation. Other sites support extensive, nearly pristine, stands of the highly desirable forage species, *Festuca campestris* (rough fescue); and higher elevation sites contain forested areas. Forested areas are dominated by *Pseudotsuga menziesii* var. *glauca* (Douglas fir), and most of the larger stands have been harvested for timber over the past few decades. Among the plant species confirmed, suspected, or possibly found on the SDWMA, 36 species are listed as SOC (Appendix E).

According to Hansen et al. 2015, Forest/Woodland sites in SDWMA were categorized as mostly Healthy, but with Problems. Only three percent rated Healthy, and 19 percent rated Unhealthy. This range of conditions reflected the degree of disturbance from livestock grazing and timber harvest prior to public ownership. The shrublands showed a broad spectrum of health rating, reflecting the wide variation of usage experienced by these sites across the WMA.

The abundance of large, continuous tracts of intermountain grasslands makes the Upper Clark Fork River Basin (UCFRB), and the Deer Lodge Valley, unique. During the last century, intermountain grasslands and riparian habitats have declined significantly in Montana as a result of sod busting, noxious weed invasions, cattle grazing, and residential development. SDWMA is the second-largest block of unbroken native grasslands (14,049 acres) west of the Continental Divide in Montana and the most significant single block of winter range for elk in the UCFRB.

Riparian habitats on SDWMA are located along 45 miles of perennial and seasonal creeks as well as on the edges of numerous springs, ponds, and seeps. Riparian woodlands, wet meadows, and emergent marsh cover an estimated 621 acres. In a dry landscape these rare habitats provide especially important habitat for birds, bats, reptiles, small mammals, and amphibians.

Shrub Grasslands dominated by mountain big sagebrush and antelope bitterbrush and its associates (rabbit brush, juniper, forbs) occupy 4,371 acres. Mule deer use these habitats extensively as do calving elk, antelope, and nongame species.

Although most of the affected area for the proposed action do not have or have limited amounts of invasive plants, invasive weeds were documented by Hansen et al. (2015) across most of SDWMA. There are 22 invasive plant species that have been identified on the WMA. Invasive plants on SDWMA classified as "noxious weeds" by the state of Montana include cheatgrass (632 acres), spotted knapweed (437 acres), nodding plumeless thistle (290 acres), Canada thistle (251 acres), houndstongue (191 acres), field brome (157 acres), bull thistle (16 acres), field sowthistle (10 acres), black henbane (4 acres), and tall buttercup (4 acres) (Hansen et al. 2015). Other noxious weeds are present on SDWMA but are limited in their distribution (i.e., cover of less than 3 acres). Noxious weed infestations are most prevalent in riparian areas where Canada thistle, houndstongue, and spotted knapweed are most common. In the uplands, cheatgrass is generally present in areas with heavy previous cattle use such as along fence lines, around salt block and

water tank locations, and around conifer patches where cattle would congregate to access shade. Uplands also have some patches of spotted knapweed associated with areas of heavy cattle use and in areas with heavy use by wintering elk.

Wildlife species found on SDWMA include: small and large mammals (63), birds (125), reptiles (4), amphibians (3), and fish (3). A full species list is provided in Appendix D. Forty-seven of these species are listed as state Species of Concern (SOC; Appendix E). SDWMA provides habitat for seven big game species (elk, antelope, mule deer, white-tailed deer, moose, black bear, mountain lion); five furbearers (beaver, muskrat, mink, marten, bobcat); one omnivore listed as *Threatened* under the ESA (grizzly bear), one furbearer listed as *Threatened* under the ESA (North American wolverine), one ESA-delisted carnivore (gray wolf), and one ESA-delisted bird (bald eagle). SDWMA is within the potential range of another ESA-threatened species, Canada lynx, but falls outside of critical habitat as designated by the US Fish and Wildlife Service (USFWS 2014). SDWMA provides habitat for three upland game bird species (ruffed grouse, dusky grouse, gray partridge).

Human Population

The population of Powell County as of the 2020 U.S. Census was 6,944, down from 7,180 in the 2000 census. In the town of Deer Lodge, the county seat, there were 2,938 residents in 2020, down from 3,421 in the 2000 census (<https://www.census.gov/quickfacts/fact/table/powellcountymontana/PST045222>).

Economics

In 2021, the median household income in the United States was \$70,784, and the median household income was \$60,560 in Montana. In 2021, Powell County had a median household income of \$47,687 which is 33% and 21% below the national and Montana median income levels, respectively.

The economy of Powell County is dependent on government, agriculture, manufacturing, retail trade, and service industries as the primary economic drivers (<https://www.powellcountymt.gov/wp-content/uploads/2021/05/GrowthPolicy202105.pdf>). The economy of Powell County employs 2,630 people. The largest industry is Health Care & Social Assistance (385 people). Agriculture, Forestry, and Fishing & Hunting employ another 369 people and Construction employs 323 people. The highest paying industries are Mining, Quarrying, and Oil & Gas Extraction (\$250,001), Educational Services (\$52,083), and Public Administration (\$50,694) (<https://datausa.io/profile/geo/powell-county-mt>).

Agriculture

About 38% of land in Powell County is classified as farmland. Cattle (74%) and hay (20%) comprised 94% of total crop and livestock sales in 2017. The percentage of smaller farms, those less than 500 acres, decreased from 61% to 57%, while the percentage of larger farms, those 500 acres or more, increased from 39% to 43% from 2012 to 2017. There were an estimated 35,243 cattle in the county in 2017 (https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_State_Level/Montana/mt_v1.pdf).

Agricultural production employed 789 workers, or 27% of the county's labor force. According to IMPLAN, an economic impact model, 477 of these workers were directly employed in production agriculture. An additional 279 workers were employed in businesses supporting agricultural production, such as feed and fertilizer dealers, and another 33 workers were employed in other related businesses, such as grocery and drugs stores. For every ten jobs on farms and ranches, seven additional jobs are generated in the county (www.bls.gov/#cntyaa).

Mining

Powell County has a long history of mining, which was a major industry in the county until approximately 1990, when the last phosphate mine shut down. The Anaconda smelter also employed many Powell County residents before the Atlantic Richfield Company (ARCO) shut down operations in 1980. Powell County includes a portion of the Clark Fork River which is designated as a federal Superfund site due to heavy metals (cadmium, copper, zinc and lead) and arsenic from historical mining, milling, and smelting processes linked to the Anaconda Company operations in Butte and Anaconda (<https://www.powellcountymt.gov/county-departments/planning-department/superfund/>). SDWMA was purchased with funds from NRDP that were designated to remediate lost and damaged resources from the effects of mining in the UCFRB.

Recreation

Western Montana, including Powell County, is nationally renowned for its high-quality fishing, hunting, camping, hiking, river floating, skiing, snowmobiling, wildlife viewing, and sightseeing opportunities. SDWMA was purchased with the intent of protecting fish and wildlife habitat but also for public recreational opportunities. SDWMA is especially popular for hiking, hunting, horseback riding, and bird watching.

IX. Cumulative Impact Analysis

For the purposes of MEPA, “cumulative impact” means the collective impacts on the human environment of the proposed action when considered in conjunction with other past and present actions related to the proposed action by location or generic type. Related future actions must also be considered when such actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. ARM 12.2.429(7).

Under the “No Action” alternative, the proposed project would not occur. Therefore, no cumulative impacts to the physical or human environment in the analysis area would occur. The “No Action” alternative forms the baseline from which the potential impacts of the proposed project are measured. For the purposes of the proposed project, the cumulative impacts analysis below applies to all resources analyzed under Alternative 2, Proposed Project (Section X.A and B).

No significant adverse cumulative impacts would be expected because of the proposed project. However, under the proposed action, cumulative impacts would occur. The information below identifies past, present, and related future actions (i.e., activities to be considered under the cumulative impacts analysis). Actions considered in these analyses were identified by FWP and other subject matter experts. Past and present actions are accounted for as part of the existing, or “baseline,” environmental conditions. MEPA is forward-looking, with analyses focused on the potential impacts of the proposed action with consideration for any past, present, or future related actions.

Related Past, Present, and Future Actions

Among the plant species confirmed, suspected, or possibly found on the SDWMA, 36 species are listed by the state of Montana as SOC (Appendix E). Also, forty-seven vertebrate animal species that reside within and/or potentially use the SDWMA for various parts of their life cycle have been listed by the Montana Natural Heritage Program as SOC (Appendix E). Further, one omnivore listed as *Threatened* under the ESA (grizzly bear), one furbearer listed as *Threatened* under the ESA (North American wolverine), one ESA-delisted carnivore (gray wolf), and one ESA-delisted bird species (bald eagle) locate within and/or potentially use the SDWMA for part of their life cycle. Spotted Dog WMA

is also within the potential range of another ESA-threatened species, Canada lynx, but falls outside of their critical habitat, as designated by the US Fish and Wildlife Service (USFWS 2014).

Specific to the ESA-listed *Threatened* grizzly bear, North American wolverine, and Canada lynx, the ESA defines "take" as follows: to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct. 16 U.S. C. 1542(b). The term *harm* in the definition of 'take' means an act which actually kills or injures wildlife. Such an act may include *significant habitat modification or degradation* where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering." 50 C.F.R. § 17.3.

In order to find that habitat modification, such as that proposed, constitutes a taking of listed species under the federal definition of "harm", all aspects of the harm definition must be triggered. Therefore, for the purposes of the proposed project, the following conditions must all be met for a taking or a significant adverse impact to occur to grizzly bears, the North American wolverine, and Canada lynx (USFWS, FWS/AES/067974, April 26, 2018):

- Is the modification of habitat significant? No. Under the proposed action FWP would adopt and implement a cattle grazing and water development plan for SDWMA. Under this action, FWP would achieve a desired wildlife habitat improvement treatment on portions of SDWMA by implementing one or more grazing leases with neighboring private landowners. Use of SDWMA for cattle grazing by private landowners would be in exchange for resting adjacent native range on private land from cattle grazing on a rotational basis to benefit wildlife, especially wintering elk, by enhancing native wildlife habitats under enforceable EOU agreements. The intended wildlife habitat enhancements from EOU agreements are more fully described in *Section II, Background and Description of Proposed Action*. FWP also proposes water development on SDWMA to focus grazing treatments where needed and avoid livestock use of sensitive riparian areas, wetlands, and aspen stands. Therefore, with consideration for the enforceable controls/mitigation strategies and the proposed new water system, no significant adverse secondary impacts to the identified ESA listed species would be expected because of the proposed project.
- If so, does that modification also significantly impair an essential behavior pattern of an ESA-listed species? No.
- If so, is the significant modification of the habitat, with a significant impairment of an essential behavior pattern, likely to result in the actual killing or injury of wildlife? No.

Therefore, no significant, adverse cumulative impacts to the identified SOC, ESA-listed species, or those species that have been delisted would be expected because of the proposed project. However, cumulative impacts to such designated species may occur.

SDWMA has a long legacy of cattle grazing and the vast majority of historic cattle grazing occurred prior to public ownership of the SDWMA property. Since its 2010 acquisition, FWP extended grazing activities managed by Rock Creek Cattle Company on SDWMA for three additional years. However, since 2014, authorized cattle grazing was removed from SDWMA, until 2019 when an EOU agreement was established with the McQueary ranch to graze up to 8% of SDWMA (~2% annually) on a rest-rotation basis. The only cattle use on the remaining 92% of the SDWMA property was limited, and due entirely to unauthorized cattle.

Riparian areas, wetlands, streams, and aspen stands have realized adverse impacts from legacy cattle grazing operations on SDWMA. However, most of these habitats have been on a recovery trend since SDWMA came under public ownership. Conifer patches surrounded by grasslands have also realized adverse cumulative impacts from legacy grazing, primarily in the form of soil compaction and noxious weed infestations caused by cattle congregating in these areas when seeking shade. The affected grasslands have far fewer long-term adverse impacts, though some areas that have experienced noxious weed infestation have not fully recovered, to date.

The proposed project represents the reintroduction of cattle grazing disturbance to the affected habitats located on SDWMA (see discussion above). Therefore, adverse cumulative impacts to these habitats and the wildlife species that use these habitats, including any SOC or ESA-nexus species, would be expected because of the proposed project. Under the proposed project cattle grazing operations would be carefully managed using rest and rotation grazing strategies, e-collars, electric fencing, and the proposed water development project. Therefore, with consideration for such mitigation strategies, FWP anticipates any cumulative impacts from cattle grazing would be largely beneficial to SOC and ESA-nexus species, and any adverse cumulative impacts would be limited to relatively small areas of the SDWMA for short time periods.

Introducing and managing periodic, rotational cattle grazing on SDWMA's grasslands would benefit some SOC and ESA-nexus species, have no impact to other species and may adversely impact others. However, none of these impacts would be at a scale that would be expected to cause significant adverse population-level impacts to a specific SOC or ESA-nexus species' located within the larger ecosystem of which SDWMA is a part. Increased diversity of grassland habitats due to rest and rotation cattle grazing would be expected to improve grassland habitat conditions for some plant and animal species, including SOC and ESA-nexus species, though some areas that receive heavier cattle use may realize adverse cumulative impacts (e.g., areas around watering tanks and areas with shade). Streams where water gaps are used as a water source for cattle may be heavily impacted while livestock are present, but those impacts would be periodic and short-term due to the nature of the rotational grazing strategies required by the EOUs. Impacts to streams would also be confined to a relatively small portion of the affected stream and managed by the use of e-collars and/or temporary electric fencing.

The understory of forested areas contained within the affected grazing pastures would continue to realize adverse cumulative impacts from livestock due to cattle congregating in these areas to access shade. These conifer patches would be excluded from grazing pastures to the greatest extent possible, but some adverse impacts may be unavoidable. However, any adverse impacts would be limited to a relatively small portion of the overall affected landscape; therefore, when considered in the context of the larger landscape of which SDWMA is part, any adverse cumulative impacts to the affected habitats or to the affected wildlife species, including any SOC or ESA-nexus species, that use or may use these habitats would be short- and long-term, negligible to minor, consistent with historic impacts, and mitigated by the proposed rest and rotation grazing strategies and the proposed water system. FWP would adhere to all applicable requirements related to management and preservation of the affected species as outlined by the ESA and applicable SOC guidance.

Therefore, any adverse cumulative impacts to state-listed SOC, federal ESA-listed species, and ESA-delisted species because of the proposed project would be short- and long-term, negligible to moderate, consistent with historic impacts, limited to relatively small areas of SDWMA, and mitigated by the proposed, and required, rest and rotation grazing strategy and associated practices as well as the proposed water development project upon implementation. Any beneficial cumulative impacts to these species would be long-term and negligible to moderate. Overall, the proposed project would not be expected to impede recovery of any of the listed species and may establish conditions that are more conducive to their recovery, as discussed previously.

The following list of historical MEPA projects identifies prior MEPA review conducted to assess potential impacts to the affected human environment from historical projects affecting SDWMA:

Environmental Assessment: Proposed Wildlife Management Area Land Acquisition – Spotted Dog Property (June 2010). FWP proposed action to purchase via fee title the 27,616-acre Spotted Dog property in Powell County from Rock Creek Cattle Company (RCCC) and lease an additional 10,260 acres of DNRC lands to establish a ~38,000-acre WMA between I-90 and Highway 12. FWP's goals for acquiring and managing the proposed Spotted Dog WMA are to:

- Permanently protect fish and wildlife resources;

- Enhance critical winter habitat for elk, mule deer, and antelope;
- Maintain migratory patterns to and from the National Forest for a regionally significant elk herd;
- Provide lasting public access to previously inaccessible lands;
- Maintain landscape connectivity between the Blackfoot and Clark Fork watersheds;
- Replace lost and injured natural resources that were the subject of Montana v. ARCO.

Environmental Assessment: Proposed Wildlife Management Area Land Acquisition – Spotted Dog Property – Decision Notice (August 2010). Final decision notice to purchase via fee title the 27,616-acre Spotted Dog property from Rock Creek Cattle Company. With the corrections and clarifications preserved as noted in the Decision Notice, FWP adopts the Draft EA, Draft Management Plan, and Draft Socio-Economic Assessment as final.

Environmental Assessment: Spotted Dog Grazing Lease – Proposed One-Year Extension (December 2012). Montana FWP proposes to extend the grazing lease with RCCC on FWP's 27,616-acre SDWMA to December 31, 2013. Under the purchase agreement (dated July 28, 2010), by which RCCC agreed to sell the WMA lands to FWP, the grazing lease was to expire on December 31, 2012.

Environmental Assessment: A Proposal to use cattle grazing for managing elk habitat on a portion of the Spotted Dog Wildlife Management Area and neighboring private lands (February 2019). The subject of this EA is the proposed agreement for a cooperative grazing system involving selected pastures on the WMA and McQueary Ranch. This proposal would provide yearlong rest from cattle grazing on 1,400-1,500 acres of a 2,100-acre pasture system—on a rotational basis—on the McQueary Ranch in exchange for grazing 600-700-acre pastures on a rest-rotation basis annually on SDWMA.

Environmental Assessment: Upper Spotted Dog Creek Restoration Project (May 2020). The subject of this EA is a proposed restoration project on approximately 6,000 feet of the main stem of Spotted Dog Creek and adjacent slope wetlands using a variety of restoration techniques. These techniques include channel realignment and new channel construction, existing channel enhancement, streambank construction and stabilization, floodplain grading and surface roughness, wetland creation and enhancement, slope wetland restoration, instream beaver habitat structure construction, riparian perimeter fencing, and weed control. The proposed action was meant to address stream and wetland degradation that had occurred previously on the property due to excessive cattle grazing and direct stream channel manipulations.

Based on the project-specific environmental review provided by the above-referenced EAs, and in accordance with all applicable laws, rules, regulations, and policies, FWP determined none of the proposed projects would have significant adverse impacts on the physical environment and human population affected by the proposed project. Therefore, preparation of EIS-level MEPA review was not required, and each historical project was approved through EA-level MEPA review.

Further, several guiding documents inform, have informed, and will continue to inform actions at SDWMA. These guiding documents outline strategies and considerations for taking management action and addressing any potential impacts from such management actions. These guiding documents, and affected regulatory entities, include the following:

- FWP Minimum Standards for Grazing Livestock (Appendix B)
- Montana Fish Wildlife & Parks Wildlife Management Area Grazing Leases: A Programmatic Review & Guide
- FWP Integrated Noxious Weed Management Plan
- State Wildlife Action Plan (2015) - currently under revision

- FWP Statewide Elk Management Plan (2023)
- An Ecological Inventory and Health Assessment of Spotted Dog WMA (Hansen et al. 2015)
- Spotted Dog WMA Habitat Plan (2018)
- Endangered Species Act (1973)

X. Alternative 1: No Action. Evaluation and Summary of Potential Impacts on the Physical Environment and Human Population

Under the No Action Alternative, FWP would not implement the SDWMA Grazing and Water Development Plan. Grasslands on SDWMA would continue to accumulate litter, would be less attractive to elk during the spring green-up period, and would lack the structural diversity that could be accomplished with periodic grazing treatments. Elk would likely continue to use spring and fall habitats on SDWMA to a lesser extent than could be achieved through proactive range management, contributing to ongoing game damage issues on private lands adjacent to SDWMA. Additionally, grassland habitats on private lands would not be included in a cooperative grazing rotation with SDWMA, allowing periodic rest for the purposes of enhancing wildlife habitat. FWP would retain funds that would be used to implement the grazing system but would miss the opportunity to work collaboratively on grazing to accomplish wildlife habitat objectives.

XI. Alternative 2: Proposed Project. Evaluation and Summary of Potential Impacts on the Physical Environment and Human Population

A. Evaluation and Summary of Potential Impacts on the Physical Environment

1. Terrestrial, Avian, and Aquatic Life and Habitats

Existing Environment/Baseline Conditions (No Action Alternative):

Wildlife species found on SDWMA include small and large mammals (63), birds (125), reptiles (4), amphibians (3), and fish (3) (Appendix D). Forty-seven of these species are listed as state “Species of Concern” (SOC; Appendix E). SDWMA provides habitat for seven big game species (elk, antelope, mule deer, white-tailed deer, moose, black bear, mountain lion); five furbearers (beaver, muskrat, mink, marten, bobcat); one omnivore listed as *Threatened* under the ESA (grizzly bear), one furbearer listed as *Threatened* under the ESA (North American wolverine), one ESA-delisted carnivore (gray wolf), and one ESA-delisted bird (bald eagle). SDWMA is within the potential range for Canada lynx but falls outside of critical habitat as designated by the USFWS (USFWS 2014). SDWMA provides habitat for three upland game bird species (ruffed grouse, dusky grouse, Hungarian partridge). See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected environment.

Direct Impacts:

No significant, adverse, direct impacts to terrestrial, avian, and aquatic life and habitats, including the identified species listed as SOC and those protected under the ESA, would be expected because of the proposed action. Various wildlife species found on the SDWMA have been shown to prefer the structural diversity in grasslands that result from periodic cattle grazing, including small mammals, grassland birds, raptors, elk, and mule deer. In contrast, some species like weasels, foxes, and other

small carnivorous mammals prefer taller, ungrazed grasslands which conceal them better from prey. These lists are representative but do not constitute a complete list of wildlife species present on the SDWMA and directly impacted by grazing.

Adverse, direct impacts from both construction activities and cattle grazing would vary by wildlife species and would be mitigated by rest-rotation grazing strategies required by the associated EOU agreements. Infrastructure development and construction (i.e., towers for e-collar technology, temporary e-fences, and water tanks) may temporarily displace certain wildlife species. Further, grazing pressure that is rotated seasonally may temporarily reduce upland bird nesting cover and temporarily displace or cause wildlife, including the identified species listed as SOC and those protected under the ESA, to avoid the affected areas while livestock are present and while the water systems are developed.

Because SDWMA has historically been used for grazing, any direct impacts to terrestrial, avian, and aquatic life and habitats would be consistent with current and historical impacts. FWP would adhere to all applicable requirements related to management, preservation, and recovery of listed species as outlined by the ESA and applicable SOC guidance. These practices would further support limiting potential adverse direct impacts to many other wildlife species located on or using SDWMA. Therefore, any adverse, direct impacts to wildlife, including any state-listed SOC, ESA-listed species, and/or ESA-delisted species, because of the proposed project would be consistent with historical impacts, short-term, minor to moderate, and mitigated by rest-rotation grazing practices.

Livestock Grazing

Some wildlife species, including big game species, may be adversely affected by livestock grazing through the potential for displacement from areas where livestock are active (Stewart et al. 2002). The proposed EOU agreements would also result in the increased presence of producers and FWP staff on SDWMA, as necessary, to manage various aspects of the project. The increased presence of producers and FWP staff may also displace wildlife. To minimize wildlife displacement, the grazing treatments would be conducted during the late spring and summer after most deer and elk, for example, have migrated to higher elevations. Within a given treatment year, FWP estimates that approximately one-fourth to one-third of the targeted grazing area would receive a grazing treatment.

The proposed action would primarily implement e-collar technology and, if necessary, temporary electric fences to manage grazing distribution in lieu of hard fences. Hard fencing can act as a barrier to big game species movement as well as an entanglement hazard. In addition, the construction or installation of communication towers needed for the e-collar technology may adversely impact wildlife. However, the towers would have a relatively small footprint and would not be permanent structures. Therefore, little to no adverse impact to wildlife movements, nesting, or other activities would be expected. Overall, any adverse, direct impacts caused by grazing on the SDWMA would be short-term, minor to moderate, consistent with current and historical impacts, and mitigated by rest-rotation grazing practices contained in the EOU agreements.

Water Development

Development of water systems would directly disturb wetland sites where water is sourced and upland areas where pipelines, cisterns, and tanks are installed. The activity of contractors, equipment, and FWP staff while developing proposed water systems would cause localized disturbances that could

temporarily displace or otherwise disturb individual animals or groups of wildlife, both in the upland and wetland sites. The proposed water developments could temporarily displace small mammals and other ground-inhabiting wildlife. Further, installation of water lines could disrupt subsurface wildlife tunnels and dwellings. Ground-nesting birds, amphibians, reptiles, and fish that use the areas within or near the development sites may be temporarily affected during construction. However, upon completion of construction activities, no disturbances to the ground would be expected, except as needed for future repairs. Therefore, any adverse, direct impacts from development of the necessary water infrastructure would be short-term and minor to moderate.

Consistent, upland water resources, combined with strategic containment of livestock, helps promote grazing use outside of riparian areas such as creeks, springs, and aspen stands. The upland water tanks provide an alternative water source for livestock to use other than riparian areas, thereby benefitting wildlife, including the identified species listed as SOC and those protected under the ESA that rely on the riparian environment for all or part of their life cycle. Water would typically be drawn from high flow, year-round springs and demand for water would only occur during prescribed periodic grazing treatments, which would be followed by long periods of livestock grazing rest. Any adverse, direct impacts from drawing water would be short-term and minor to moderate, and mitigated by rest-rotation grazing practices.

Secondary impacts:

Livestock Grazing

Certain wildlife species, including the identified species listed as SOC and those protected under the ESA, may be adversely affected by the modification of vegetative cover within the grazed pastures. Hiding cover would be temporarily reduced in grazed areas, which may adversely impact small mammals, reptiles, and upland nesting birds. Some grassland bird species nest in heavier cover, while others are attracted to lighter cover (Pulliam et al. 2020), so grazing treatments would benefit some birds and either have neutral or adverse impacts on others. However, periodic turning over of senescent vegetation by livestock in combination with grazing rest would be expected to help improve and maintain vegetation productivity, supporting green leaf and seed growth and corresponding insect diversity (Goosey et al. 2019), which would benefit most species affected by the proposed project. Wetland and riparian habitats would largely be excluded from grazing exchange except for some small portions of streams used as watering sites; upland watering systems will be the primary source of water for livestock in the long-term. Therefore, any adverse impacts to species that use streams and associated habitats on SDWMA would be expected to be short-term and minor to moderate, because of the proposed project.

The proposed project would generally improve grassland habitats in the affected area while largely protecting most riparian habitats by using water development to shift most livestock use away from water sources in the long-term. Therefore, FWP expects affected wildlife, including any SOC, ESA-listed, potentially ESA-listed, or ESA delisted species inhabiting or using the SDWMA would benefit from the proposed project. Overall, the proposed project would not be expected to impede recovery of any of the listed species and may establish conditions that are more conducive to their recovery.

For the long-term, the proposed grazing strategies are intended to enhance spring green-up conditions for big game, provide structural diversity within herbaceous plant communities for a variety of wildlife, increase native plant productivity and diversity, and improve and maintain soil health (see Section II, Background and Description of Proposed Project, “WILDLIFE HABITAT ENHANCEMENT for more details). Grazing pressure that is rotated seasonally may temporarily reduce upland bird nesting cover but would also benefit perennial grasses and forbs, keeping them in a more productive state through time and thereby improving existing conditions for wildlife. Overall, any adverse, secondary impacts caused by grazing on the SDWMA would be short-term, minor to moderate, consistent with current and historical impacts, and mitigated by rest-rotation grazing practices contained in the EOU agreements. Beneficial impacts would be short- and long-term and minor to moderate.

Water Development

Once the proposed construction of water developments is completed, ongoing disturbances would include periodic checking and maintenance of the systems while livestock are present. Such activities may result in limited disturbance to wildlife. Following construction, the proposed water system would benefit a variety of species, potentially including the identified species listed as SOC and those protected under the ESA, by ensuring a reliable source of water for wildlife consumption and use in upland areas that historically have not had a reliable water resource.

Evidence of disturbance to wetland and aquatic vegetation within the construction sites would remain permanently wherever water collection structures are located. However, areas that received disturbance and exposing of surface and subsurface bare soils would be expected to heal in time, resulting in no long-term, adverse, secondary impacts to terrestrial and aquatic species. Any adverse, secondary impacts from implementation and ongoing maintenance of the proposed water system would be long-term and minor. Beneficial impacts would be long-term and minor to moderate.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. However, under the proposed action, cumulative impacts would occur. FWP’s acquisition of the land now encompassing the SDWMA occurred in 2010. The previous landowner, Rock Creek Cattle Company (RCCC), owned and operated a livestock grazing operation on the property prior to FWP’s 2010 acquisition, and RCCC continued grazing the SDWMA from 2010-2013 per the terms of the purchase agreement and a one-year extension implemented in 2012. From 2014 forward, FWP provided rest from livestock grazing as outlined in the SDWMA Management Plan and the Livestock Grazing Amendments to the Plan contained in the Decision Notice for the purchase of the SDWMA (August 2010).

Since FWP’s 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement in 2019 that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. Further, no significant adverse impacts to terrestrial, avian, and aquatic life and habitats have been identified through prior and related environmental review and no significant, adverse cumulative impacts resulting from the proposed project would be expected. Therefore, with consideration for any and/all prior, related environmental review associated with SDWMA, any adverse cumulative impacts to terrestrial, avian, and aquatic life and habitats, including any state-listed SOC, ESA-listed species, and ESA-delisted species, would be short-term and negligible to moderate. Any beneficial cumulative impacts would be long-term and negligible to moderate. Further, the proposed project would not be expected to impede

recovery of any of the SOC and ESA-listed species and may establish conditions that are more conducive to their recovery. A more detailed discussion of past actions and associated impacts to the SDWMA property and its associated fish and wildlife species and habitats, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

2. Water Quality, Quantity, and Distribution

Existing Environment/Baseline Conditions (No Action Alternative):

SDWMA includes approximately 45 miles of streams including reaches of the Spotted Dog Creek, Trout Creek, Fred Burr Creek, and O'Neil Creek, several perennial and ephemeral springs, and a portion of Spotted Dog Reservoir. These streams drain into the Little Blackfoot and Clark Fork Rivers. While lotic and lentic wetland sites in SDWMA occupy a very small portion of the entire property, these sites are disproportionately important as wildlife habitat and, ecologically, as riparian habitat types.

An ecologic assessment, completed in 2015, determined a large part of the lotic wetland sites (39 percent of the total acres) were categorized as Unhealthy, and most of the remainder were categorized as Healthy, but with Problems. Of the few small lentic sites, over half (56 percent) were rated Unhealthy. The condition of these lotic and lentic wetland sites reflects the long history of livestock use and the habit of the livestock to disproportionately impact these wetland systems (Ecological Inventory and Health Assessment of Spotted Dog WMA, Ecological Solutions Group, 2015). See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected environment.

Direct impacts:

No significant, adverse impacts would be expected because of the proposed project. The quantity of water used by cattle would be consistent with current and historical levels in the affected area. Existing surface water resources located on the WMA would be used for watering livestock and no new water resources would be needed for such purposes. However, construction and operation of new infrastructure to move water to select locations within the SDWMA would be required.

Short-term, adverse impacts to natural water sources on SDWMA could occur when livestock are present and when equipment is present during the construction phase of the water systems. However, because the proposed project would implement rest-rotation grazing strategies and eventually primarily use off-stream watering infrastructure, and because the SDWMA property has historically been used for cattle grazing without the benefit of adequate rest, any direct impacts would be short-term, intermittent, consistent with historical impacts, and minor.

Livestock Grazing

Cattle grazing in upland habitats on SDWMA may temporarily cause increased runoff of sediment and manure into nearby streams due to cattle presence, trampling of soils, and removal of vegetation. As water development is occurring, water gaps at existing creeks may be heavily used by livestock which would cause localized impacts to water quality through hoof shear of stream banks and introduction of sediment and manure into the stream during cattle use. However, use of water gaps as primary water

sources on existing streams would be short-term, lasting only as long as it takes to complete development of off-stream watering infrastructure.

Water Development

Proposed water developments could increase sediment and turbidity during the construction phase. Construction equipment used to develop springs and transport and store water to upland sites would temporarily disrupt the sites when constructing the water collection structures and associated pipelines.

Once completed, evidence of disturbance to wetland and aquatic vegetation within the construction zones would remain permanently where actual water collection structures are located, but areas that received disturbance resulting in bare soils would be expected to heal within a growing season, resulting in no long-term impacts to springs or riparian areas. Water tanks, located in upland sites, would become the primary water sources for grazing livestock across the proposed grazing areas, thereby limiting direct impacts to natural water sources.

Water would typically be drawn from high flow, year-round springs. Demand for water would only occur during prescribed periodic grazing treatments, which would be followed by long periods of livestock grazing rest. Any adverse, direct impacts to springs from drawing water would be short-term and minor to moderate, and mitigated by rest-rotation grazing practices.

Secondary impacts:

No significant, adverse secondary impacts would be expected because of the proposed project. Any secondary impacts would be long-term, minor to moderate, and beneficial.

Livestock Grazing

Maintaining or improving range conditions and residual cover from grazing would maintain or increase water infiltration into soils which would reduce runoff from the uplands, maintaining or improving water quality during summer and fall periods.

Water Development

Construction and operation of the proposed water system would reduce and eventually eliminate reliance on natural riparian areas historically used for watering cattle. This would result in a long-term reduction of sediment run-off and associated water turbidity as well as less deposition of wastes or manure in streams, springs, and ponds.

Cumulative impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

3. Geology

Existing Environment/Baseline Conditions (No Action Alternative):

SDWMA is a large, geologically complex area between the Garnet and Boulder Mountains. The proposed grazing areas include large, rolling hills with moderately steep slopes and upland benches interspersed with many streams, small drainages, swales, and rock outcrops. The drainages in the western portion of SDWMA generally slope west and drain into the Clark Fork River directly, while the drainages in the eastern portion of SDWMA drain into the Little Blackfoot River, which ultimately flows into the Clark Fork River.

A small portion of the northwestern corner of SDWMA lies within the Carter Creek Coberly Formation, which is a cretaceous, sedimentary rock map unit. A different cretaceous sedimentary member of the Blackleaf Formation is found on the eastern edge of SDWMA (Montana Bureau of Mines and Geology 2007). However, the majority of the area is within igneous and metamorphic map units, particularly the Elkhorn Mountains Volcanic unit, and the Andesite/basalt unit. Parent materials range from colluvium, calcareous alluvium, to residuum weathered from igneous rock (USDA Natural Resources and Conservation Service 2015). Moderate to steep slopes and benches, which tend to be higher in relative elevation, have a combination of the Braziel-Tolbert complex, 15 to 35 percent slopes, Braziel stony loam, 15 to 35 percent slopes, and the Yreka gravelly loam, 15 to 35 percent slopes soil classifications. Lower elevation benches and slopes tend to have a combination of the Braziel-Tolbert complex, 8 to 15 percent slopes, Roy-Tolbert complex, 15 to 35 percent slopes, and the Danvers clay loam, 8 to 15 percent slopes soil classifications. There are over 35 soil classification units found on the WMA, however the major soil classification units mentioned above in combination make up approximately 70 to 80 percent of the area. These soil classifications are generally well drained, have deep water tables, and rarely or never flood (USDA Natural Resources and Conservation Service 2015). See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected environment.

Direct Impacts:

No significant, adverse direct impacts would be expected because of the proposed project. Any adverse, direct impacts would be short-term, negligible, and consistent with historical impacts.

Livestock Grazing

There are no important or unique geologic structures or formations located within the proposed grazing areas. Further, the proposed grazing strategies would not directly affect the geologic surface of affected areas. The proposed grazing treatment areas have historically been used for grazing. Therefore, any potential impacts to geology in the affected area would be consistent with historical impacts.

Water Development

Only existing wells and springs would be used to source water for the grazing systems. Ground disturbances would be limited to burying pipeline, typically within 18 inches of the surface, and these would not be frost-free delivery systems so water would only be supplied through the pipes during spring through summer. While bedrock is near and at the surface in many locations on SDWMA, any adverse impacts to bedrock and soil profile are expected to be small, temporary, and occur only during the construction phase. Once completed, no direct effects to the soils and geology would be expected,

except when the systems need maintenance. Any adverse, direct impacts from maintenance activities would be short-term and negligible.

Secondary Impacts:

No secondary impacts to geology would be expected to occur. Therefore, no significant, adverse secondary impacts would be expected because of the proposed project.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

4. Soil Quality, Stability, and Moisture

Existing Environment/Baseline Conditions (No Action Alternative):

Soil types that are represented throughout the proposed area at greater than 5% occurrence, as identified by the U.S.D.A. Natural Resources Conservation Service (NRCS), and include the following: Braziel-Tolbert complexes, Libeg-Monad-Copenhaver complexes, and Monad Loam. Over 50 other soil types exist on SDWMA but make up less than 5% of soil types in the affected area. Historical activities that could have impacted soil resources include logging, grazing, and farming.

Average temperatures range from well below freezing during mid-winter, to moderately hot during mid-summer. Weather records indicate average annual temperatures ranging from 28.1 to 55.9 F. Weather records also indicate an average between 10.6 and 11.32 inches of precipitation annually (Deer Lodge and Helena, MT). The wettest months for the area are May and June (IDcide 2012, The Weather Channel 2011). See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected environment.

Direct Impacts:

No significant, adverse direct impacts would be expected because of the proposed project. Short-term, adverse impacts to soils would be expected when livestock are present and during construction of the water systems. However, any adverse, direct impacts would be short-term and minor.

Livestock Grazing

Soil quality may be affected, both beneficially and adversely, by livestock grazing practices. When present, livestock disturb soil surfaces via hoof action, which can introduce organic matter into the soil and provide pockets for rain and snow to accumulate. Forage digestion can further introduce organic nutrient cycling into the soil. Conversely, areas where livestock congregate over long periods of time can result in soil compaction, reducing soil capacity for water infiltration and nutrient cycling. Proposed grazing strategies are expected to promote nutrient cycling when livestock are present, and

considerable rest treatments would prevent significant damage to these resources. Any adverse, direct impacts would be short-term and minor.

Water Development

Water gaps at existing streams would be needed in the initial phases as water development is occurring. At these sites, heavy impacts to stream banks and associated soils would likely occur while livestock are present, but would be short-term, due to the nature of periodic rest-rotation grazing. In most cases, these periodic short-term impacts are expected to last only until off-stream water development is completed. Ground disturbances would be limited to burying pipeline, typically within 18 inches of the surface, and these would not be frost-free delivery systems so water would only be supplied through the pipes during spring through summer. While bedrock is near and at the surface in many locations on the WMA, impacts to bedrock and soil profile are expected to be temporary, occurring only during the construction phase. Once completed, no direct effects to the soils and geology are expected, except for whenever the systems would need maintenance, where impacts would once again be expected to be temporary.

Secondary Impacts:

No significant, adverse secondary impacts would be expected because of the proposed project. Any adverse or beneficial secondary impacts would be long-term and minor to moderate.

Livestock Grazing

Cattle grazing can cause adverse impacts to grassland systems when left unmanaged, including reduced productivity of grasslands resulting in reduced soil health. Reducing productivity of grasslands can also result in increased areas of bare soil, which in-turn equate to site availability that will likely become occupied by less desirable plants such as cheatgrass, which is common in the Clark Fork valley.

In contrast, the proposed grazing strategies would be expected to increase species diversity and plant productivity of the existing grassland habitats by periodically grazing to reduce litter and trampling seeds and residual vegetation material into the soil, thus promoting nutrient cycling, water infiltration, organic build-up, and overall soil health.

Water Development

Dispersed, reliable water sources (water tanks) would help facilitate effective grazing treatments under the proposed grazing strategies by providing consistent water sources in upland grasslands that would otherwise be far removed from natural watering sources. As a result, nutrient cycling via hoof action, vegetation trampling, and forage digestion by grazers would promote soil health maintenance and enhancement in upland sites that may otherwise have shallow, minimally productive soils or areas that typically receive minimal grazing effects due to long distance from natural watering sources.

The proposed water developments would be expected to further facilitate grazing strategies designed specifically to promote soil health by further enhancing grazing strategies that meet or exceed FWP grazing standards that would otherwise not be possible when riparian areas are the sole source of water for implementing grazing practices.

Periodic maintenance of water development structures may temporarily disrupt soil, especially in regard to any replacement or repairs of pipes that could be buried underground. However, any impacts from maintenance are expected to be short-term and minor to moderate.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

Livestock Grazing

EOU agreements would allow private rangelands that are experiencing heavy grazing and an associated decline in ecological state to receive more rest, which would be expected to improve soil and plant conditions. A primary objective of FWP's SDWMA acquisition was to conserve and manage highly productive, diverse plant communities that provide high-quality forage and cover for native wildlife species. Improving soil and plant conditions would be expected to improve wildlife habitats and expand on FWP's objective.

5. Vegetation Cover, Quantity, and Quality

Existing Environment/Baseline Conditions (No Action Alternative):

Uplands within SDWMA comprise a complex mosaic of grasslands, shrublands, and forested areas. Lower elevations contain large stands of an important browse species for ungulates, antelope bitterbrush, on west-facing slopes and ridgelines that remain relatively free of deep snow accumulation. Other sites support extensive, nearly pristine stands of the highly desirable forage species, rough fescue; and higher elevation sites contain forested areas. Forested areas are dominated by Douglas-fir, and most of the larger stands have been harvested for timber over the past few decades. Thirty-six plant species listed as SOC have been confirmed, suspected, or are possibly located within SDWMA (Appendix E).

Forest/Woodland sites in SDWMA were rated mostly Healthy, but with Problems (Hansen et al. 2015). Only three percent rated Healthy, and 19 percent rated Unhealthy. This range of conditions reflects the degree of disturbance from past livestock grazing and timber harvest. The shrublands showed a broad spectrum of health ratings, reflecting the wide variation of usage experienced by these sites across the WMA. Grasslands occupy approximately two thirds of all upland area on the WMA. Forty-five percent of these grasslands were rated Healthy, with fifty percent rated Healthy, but with Problems, leaving only five percent rated Unhealthy.

Modified sites are dominated by vegetation that has been affected by human manipulation. These sites essentially lack naturally occurring native perennial plants as the result of human manipulation, such as plowing and seeding. Approximately 14 percent of the vegetation cover in SDWMA has been replaced by introduced species, such as Canada bluegrass, Kentucky bluegrass, smooth brome, and timothy

(Hansen et al. 2015). See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected environment.

Direct Impacts:

No significant, adverse direct impacts to vegetation, including the 36 plant species listed as SOC (Appendix E), would be expected because of the proposed project. Short-term, adverse impacts would be expected while livestock are present and during the construction phase of water development. Any adverse, direct impacts would be short-term, minor, consistent with historical impacts, and mitigated by implementation of rest-rotation grazing practices and implementation of FWP's noxious weed management strategy/program.

Adverse, direct impacts from both construction activities and cattle grazing would vary by plant species and would be mitigated by rest-rotation grazing strategies required by the associated EOU agreements. Infrastructure development and construction (i.e., towers for e-collar technology, temporary e-fences, and water tanks) may adversely impact certain plant species, including the identified species listed as SOC. Further, grazing pressure that is rotated seasonally may temporarily reduce vegetation cover. However, because of the relatively small footprint associated with infrastructure development and the short timeframe needed to complete such activities, any adverse, direct impacts would be short-term and minor.

Because the SDWMA has historically been used for grazing, any direct impacts to vegetation, including the identified species listed as SOC, would be consistent with historical impacts. FWP would adhere to all applicable requirements related to management, preservation, and recovery of listed species as outlined by the applicable SOC guidance. These practices would further support limiting potential adverse, direct impacts to many other plant species found on SDWMA. Therefore, any adverse, direct impacts to vegetation, including any species listed as SOC, would be consistent with historical impacts, short-term, minor, and mitigated by rest-rotation grazing practices.

Livestock Grazing

Grazing may directly and adversely impact the diversity, productivity, and abundance of vegetation, including some plant species listed as SOC (Appendix E). Livestock grazing may result in both beneficial and adverse impacts on vegetation productivity and diversity depending on how it is managed. When present, grazing livestock would be expected to reduce vegetation cover across pastures scheduled for grazing. As part of the proposed grazing strategies, long periods of rest would be scheduled, post grazing, to allow grazed plants ample time to replenish root reserves.

Implementing livestock grazing strategies on targeted grazing areas would bring some risk of spreading noxious weeds into SDWMA pastures. However, livestock that would graze on SDWMA would come from the immediate area, thus the risk of introducing new invasive, noxious weed species onto the WMA would be low. Any potential establishment or spread of noxious weeds would be mitigated by annual weed monitoring followed by chemical and/or biological treatment according to weed management practices contained in FWP's Integrated Noxious Weed Management Plan.

Water Development

During construction, springs and upland sites would be disturbed through development of the water collection system's pipelines, cisterns, and water tanks.

Spring development within wetlands would be expected to revegetate quickly because of the wet nature of these habitats. Upland sites would be slower to recover and would be susceptible to weed invasion and infestation. Where needed, FWP would control weeds and consider reseeding until disturbed sites have filled in with native vegetation.

Until water development is completed, water gaps on existing streams would be used to supply water to livestock in some pastures. Cattle use of these water gaps would reduce wetland and riparian vegetation and potentially cause the spread of invasive plant species. However, these water gaps would cover a small portion of the streams and most would be used temporarily until upland watering infrastructure is completed, so direct impacts would be short-term and limited in extent. At the conclusion of the water development portion of the proposed action, off-stream watering infrastructure would become the primary water sources and wetland and riparian areas that are particularly vulnerable to degradation by cattle would be excluded from proposed grazing areas through the use of fencing and e-collars.

Secondary Impacts:

No significant, adverse secondary impacts would be expected because of the proposed project. Any adverse or beneficial secondary impacts would be long-term and minor to moderate. The proposed project would generally improve grassland habitats in the affected area as well as protect most sensitive springs and other existing water resources and their associated riparian habitats located on SDWMA. FWP expects affected plant species, including any SOC that have been confirmed, suspected, or are possibly found on the SDWMA, would benefit from the proposed project. Secondary impacts to forested areas and associated plant species that are encompassed by grazing pastures would have short- and long-term, minor to moderate, adverse secondary impacts, but those impacts would be limited to a relatively small portion of these habitat types of the WMA. Overall, the proposed project would not be expected to impede recovery of any of the listed species and may establish conditions that are more conducive to their recovery in some areas.

Livestock Grazing

Changes in the timing, duration, and intensity of livestock grazing on SDWMA and adjacent lands may cause subsequent changes to grazed plant communities. Proposed grazing strategies would be expected to stimulate plant growth, palatability, and change green-up timing in the affected areas. Increasing and maintaining graminoid and forb species diversity would also be expected. These changes would be expected to benefit ungulates such as elk and mule deer by improving the quality of spring forage. In addition, adverse grazing impacts to woody species, especially aspen, willow, and antelope bitterbrush, would be minimal due to the exclusion of such sites from grazing operations as required by grazing prescriptions contained in the EOU agreements.

Water Development

Using water gaps on existing streams as the sole source of water for cattle until off-stream watering infrastructure is developed would be short-term and would therefore not result in adverse secondary impacts to those streams and riparian areas. Proposed water developments would be expected to further facilitate effective grazing strategies by providing additional flexibility in the timing, duration,

and intensity of livestock grazing on SDWMA that meet or exceed FWP grazing standards. Such protections would not otherwise be possible when riparian areas are the sole source of water for implementing grazing practices. As a result, achieving grazing treatments in the uplands while reducing foraging and mechanical impacts that livestock can have on riparian habitats (Kaufman and Krueger 1984) would be further realized by the proposed project.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of SDWMA, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

Further, no significant, adverse impacts to vegetation have been identified through prior and related environmental review since FWP took over responsibility for management of the SDWMA property. No significant, adverse cumulative impact resulting from the proposed project would be expected for grasslands and wetlands/riparian areas, though localized adverse cumulative impacts may occur in riparian/wetland areas that are used temporarily or intermittently as water gaps. Water development (tanks) will be the primary long-term source of water for livestock. Forested areas may experience adverse, cumulative impacts associated with cattle grazing, but these would be limited in extent. Therefore, with consideration for any/all prior, related environmental review associated with SDWMA, any adverse, cumulative impacts to vegetation cover, quantity, and quality, including any listed SOC, would be short- and long-term and negligible to moderate. Any beneficial cumulative impacts would be long-term and negligible to moderate. Further, the proposed project would not be expected to impede recovery of any of the SOC-listed species and may establish conditions that are more conducive to their recovery. A more detailed discussion of past actions and associated impacts to the SDWMA property and its associated vegetation, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

Livestock Grazing

Proposed prescriptive grazing treatments would be expected to keep the upland plant communities in a high ecological condition while allowing areas that were historically impacted by cattle grazing to continue to recover to higher ecological conditions.

On private land pastures associated with EOU agreements, increased periodic rest from cattle grazing would likely provide healthier range conditions and move the grasslands towards a more climax state with stable, healthy soils and a diversity of desired plant species.

Water Development

Providing reliable water sources in the uplands of SDWMA may further promote landscape-level conservation of grasslands, both on and off the WMA. A primary objective of FWP's SDWMA acquisition was to conserve and manage highly productive, diverse plant communities that provide high-quality forage and cover for native wildlife species. The proposed water system would be expected to improve wildlife habitats and expand on FWP's objective. Specifically, the water systems would provide water in areas where habitat management via periodic grazing is appropriate but are too remote from natural

water sources to achieve effective grazing treatments. These systems would be expected to increase FWP's capacity to enter additional EOU agreements with neighboring landowners.

Climate Change

The proposed action would not result in significant adverse direct, secondary, or cumulative climate change impacts. Any impacts of the proposed action would be consistent with current impacts (i.e., the no action alternative).

6. Aesthetics

Existing Environment/Baseline Conditions (No Action Alternative):

SDWMA encompasses a large view-shed located to the south of Highway 12 between the towns of Elliston and Garrison in the Little Blackfoot River basin and from Garrison to Deer Lodge in the Clark Fork River basin along the Interstate-90 corridor. The open, uncluttered views of grasslands and forests as an observer enters the Little Blackfoot or upper reaches of the Clark Fork River reveal some of the least-developed grassland valleys in Western Montana.

Highway 12 within the Little Blackfoot basin is an especially scenic drive with a narrow canyon bounded by an agricultural landscape. The western half of SDWMA drains into the Clark Fork River and its topography is gently sloping. The eastern half of SDWMA drains into the Little Blackfoot River and has steeper slopes between broad, prominent benches and plateaus. From the eastern portions of SDWMA there are unobstructed views across the Deer Lodge Valley and the Flint Creek Mountain Range. Several rocky outcrops and small cliffs are present, especially in the vicinity of Beacon Hill, located on DNRC land at the head of George Gulch located near the north boundary of SDWMA.

Direct Impacts:

No significant, adverse direct impacts would be expected because of the project. Domestic livestock and signs of livestock use on SDWMA may be objectionable to some segments of the public, particularly anglers, hunters, hikers, or campers using the area. However, livestock have historically used the affected property for grazing. Therefore, any impacts would be consistent with historical use and the existing aesthetic nature of the WMA. Livestock use would be completed prior to the archery and general hunting seasons when, historically, most of the use on SDWMA has occurred. Overall, any direct impacts from grazing would be short-term, minor, consistent with historical impacts, and mitigated by rest-rotation grazing practices.

Installation of virtual fence towers and water tanks could cause a short-term disruption to the viewshed with the use of temporary equipment. Any direct impacts from construction activities associated with the proposed project would be short-term and minor.

Secondary Impacts:

No significant, adverse secondary impacts would be expected because of the proposed project. Any adverse or beneficial secondary impacts would be long-term and minor. The virtual fence towers and water tanks would cause a visual impact in an otherwise undeveloped landscape. However, this

infrastructure would be necessary for FWP to meet its goal to manage SDWMA for the benefit of wildlife. The visual impacts would be needed to promote the recovery of riparian/wetland areas and direct future grazing treatments to ensure they result in improved habitat. In contrast, virtual fence towers would benefit the viewshed by replacing the need for fences to contain livestock within individual pastures. Therefore, any impacts from installation of towers and water tanks would be minor, offset by fence removal, and mitigated by habitat improvements to grassland and riparian communities.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of SDWMA, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

7. Air Quality

Existing Environment/Baseline Conditions (No Action Alternative):

No significant, adverse impacts would be expected because of the proposed project. According to the Montana Department of Environmental Quality (DEQ), air quality in the area affected by the proposed project is currently unclassifiable or in compliance with applicable National Ambient Air Quality Standards (NAAQS). Existing sources of air pollution in the area are limited and generally include fugitive dust associated with high-wind events and exposed ground, vehicle travel on unpaved roads, and vehicle exhaust emissions. No significant point-sources of air pollution exist in the area affected by the proposed project. No air quality restrictions exist for the affected area.

Direct Impacts:

No significant, adverse direct impacts to air quality would be expected because of the proposed project. Air quality in the area affected by the proposed project is currently unclassifiable or in compliance with applicable National and Montana Ambient Air Quality Standards (NAAQS/MAAQS). Further, no significant point-sources of air pollution exist in the area affected by the proposed project. Existing sources of air pollution in the area are limited and generally include fugitive dust associated with high-wind events and exposed ground, vehicle travel on unpaved roads (fugitive dust), vehicle exhaust emissions, and various agricultural practices (vehicle exhaust emissions and fugitive dust). Fugitive dust emissions resulting from the movement of cattle over exposed ground may contribute to existing air quality impacts (fugitive dust). However, any impacts to air quality would be short-term, negligible, and consistent with existing impacts.

Secondary Impacts:

No secondary impacts to air quality would be expected to occur. Therefore, no significant, adverse secondary impacts would be expected because of the proposed project.

Future maintenance of water resources and fencing on the SDWMA may temporarily increase fugitive dust emissions associated with ground disturbing activities on exposed ground and vehicle travel on

exposed roads and areas. Further, vehicle/heavy equipment used for such purposes would result in increased fossil-fuel exhaust emissions (primarily PM_{2.5}, CO, and NO₂). However, due to the infrequent occurrence and limited potential for air quality impact associated with such activities, and because the affected area is unclassifiable or attainment for all applicable NAAQS, the area is not subject to air quality restrictions. Therefore, any adverse, secondary impacts would be short-term, negligible, and consistent with existing and historical impacts in the affected area.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of SDWMA, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

8. Unique, Endangered, Fragile, or Limited Environmental Resources

Existing Environment/Baseline Conditions (No Action Alternative):

A complete list of Species of Concern and Threatened or Endangered species that have been observed or are thought to occur in the affected area is included in Appendix E. See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected existing environment.

Direct Impacts:

No significant, adverse direct impacts would be expected because of the proposed project. The presence of any animal and/or plant species designated Threatened or Endangered under the federal ESA and located within or using the affected area were assessed. There are three federally Threatened species that occur in the vicinity of the project area: grizzly bear, wolverine, and Canada lynx. Grizzly bears have been known to travel in and around SDWMA. All wolverine observations have been from nearby areas of public lands administered by the U.S. Forest Service in the higher elevations surrounding SDWMA. There is one historical harvest record of Canada lynx adjacent to SDWMA. SDWMA falls outside of critical habitat for the Canada lynx as designated by the USFWS (USFWS 2014). Further, 47 wildlife SOC and 36 plant SOC have been confirmed, are suspected, or possibly inhabit SDWMA.

Adverse, direct impacts from both construction activities and cattle grazing would vary by plant and wildlife species and would be mitigated by rest-rotation grazing strategies required by the associated EOU agreements. Infrastructure development and construction (i.e., towers for e-collar technology, temporary e-fences, and water tanks) may adversely impact certain state-listed plant and wildlife SOC. Further, grazing pressure that is rotated seasonally may temporarily reduce vegetation cover, including for SOC. However, because of the relatively small footprint associated with infrastructure development and the short time frame needed to complete such activities, any adverse, direct impacts would be short-term and minor.

Because SDWMA has historically been used for cattle grazing, any direct impacts to SOC and ESA-listed species would be consistent with historical impacts. FWP would adhere to all applicable requirements related to management, preservation, and recovery of listed species as outlined by the applicable SOC

guidance and requirements of the ESA. These practices would further support limiting potential adverse, direct impacts to many other plant and wildlife species found on SDWMA. Overall, the proposed project would be expected to improve wildlife habitat and conditions for SOC-listed plant species in some areas and have either neutral or adverse impacts in others. However, these impacts would be localized and would not be expected to cause population-level impacts to SOC-listed plant species on SDWMA, or across the larger landscape of which SDWMA is a part. Therefore, any adverse, direct impacts to SOC or ESA-listed species would be consistent with historical impacts, short-term, minor to moderate, and mitigated by rest-rotation grazing practices.

Livestock distribution would be regularly monitored and assessed to avoid direct conflict with grizzly bears. In the event a conflict between a grizzly bear and livestock occurs, and according to applicable state and federal law, the situation would be handled by US Department of Agriculture (USDA), US Fish and Wildlife Service (USFWS) and FWP's bear management specialists. FWP has recently hired a bear management technician specifically for the Upper Clark Fork River Basin to aid with monitoring, education, and conflict management for grizzly bears. Therefore, the proposed project would not be expected to adversely impact grizzly bears.

As noted above, numerous other state-designated plant and animal SOC are located within or near SDWMA (see Appendix E). Because the proposed project would be expected to improve habitat overall on SDWMA, and because wetlands and riparian areas would eventually be excluded from cattle use, any adverse impacts to SOC would be consistent with historical impacts, short-term, minor, and mitigated by rest-rotation grazing practices.

Secondary Impacts:

No significant adverse secondary impacts to any unique, endangered, fragile, or limited environmental resources would be expected because of the proposed project. Specific to the ESA-listed *Threatened* grizzly bear, North American wolverine, and Canada lynx, the ESA defines "take" as: to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct. 16 U.S.C. 1542(b). The term *harm* in the definition of 'take' means an act which actually kills or injures wildlife. Such an act may include *significant habitat modification or degradation* where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering." 50 C.F.R. § 17.3.

In order to find that habitat modification, such as that proposed, constitutes a taking of listed species under the federal definition of "harm", all aspects of the harm definition must be triggered. Therefore, for the purposes of the proposed project, the following conditions must all be met for a taking or a significant adverse impact to occur to grizzly bears, North American wolverine, or Canada lynx (USFWS, FWS/AES/067974, April 26, 2018):

- Is the modification of habitat significant? No. Under the proposed action FWP would adopt and implement a cattle grazing and water development plan for SDWMA. Under this action, FWP would achieve a desired wildlife habitat improvement treatment on portions of SDWMA by implementing one or more grazing leases with neighboring private landowners. Use of SDWMA for cattle grazing by private landowners would be in exchange for resting adjacent native range on private land from cattle grazing on a rotational basis to benefit wildlife, especially wintering elk, by enhancing native wildlife habitats under enforceable EOU agreements. The intended wildlife habitat enhancements from EOU agreements are more fully described in *Section II, Background and Description of Proposed Action*. FWP also proposes water development on

SDWMA to focus grazing treatments where needed and avoid livestock use of sensitive riparian areas, wetlands, and aspen stands. Therefore, with consideration for the enforceable controls and proposed new water system, no significant adverse secondary impacts to the identified habitats and ESA listed species would be expected because of the proposed project.

- If so, does that modification also significantly impair an essential behavior pattern of an ESA-listed species? No.
- If so, is the significant modification of the habitat, with a significant impairment of an essential behavior pattern, likely to result in the actual killing or injury of wildlife? No.

The proposed cattle grazing and water development plan for SDWMA would also be expected to limit any potential adverse secondary impacts to state-listed SOC. Therefore, no significant, adverse cumulative impacts to the identified SOC, ESA-listed species, or those species that have been delisted would be expected because of the proposed project. However, impacts to such designated species may occur.

The proposed project would generally improve grassland habitats in the affected area as well as protect most springs and other existing water resources and their associated riparian habitats located on SDWMA in the long-term. Therefore, FWP expects affected wildlife, including any SOC, ESA-listed, potentially ESA-listed, or ESA-delisted species inhabiting or using SDWMA, would largely benefit from the proposed project. Overall, the proposed project would not be expected to impede recovery of any of the listed species and may establish conditions that are more conducive to their recovery.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. Further, no significant adverse cumulative impacts to SOC, ESA-listed, potentially ESA-listed, or ESA delisted species inhabiting or using SDWMA and their associated habitats have been identified through prior and related environmental review. Therefore, with consideration for any/all prior, related environmental review associated with SDWMA, no adverse cumulative impacts to state-listed SOC, ESA-listed species, and ESA-delisted species, would be expected because of the proposed project. Any beneficial, cumulative impacts would be long-term and negligible to moderate. Further, the proposed project would not be expected to impede recovery of any of the SOC and ESA-listed species and may establish conditions that are more conducive to their recovery in some areas. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

9. Historical and Archaeological Sites

Existing Environment/Baseline Conditions (No Action Alternative):

Prehistorical and historical use of the Deer Lodge Valley was by many Native American tribes including Pend d'Oreille, Shoshone, Blackfoot, Nez Perce, Salish, and Kootenai. Additionally, there were homesteaders, trappers, pioneers, and other travelers through the area. All these groups used the proposed project area and there are known and unknown historical, archaeological, and other sites of importance across the proposed project area.

Direct Impacts:

No significant, adverse impacts to historical and archaeological sites would be expected because of the proposed project. In keeping with the Montana Antiquities Act and related regulations (ARM 12.8.501-12.8.510), all undertakings on state lands are assessed by a qualified archaeologist or historian for their potential to affect cultural resources. The process for this assessment may include a cultural resource inventory and evaluation of cultural resources within or near the project area, in consultation with the State Historic Preservation Office. FWP also consults with all Tribal Historic Preservation Offices affiliated with each property in accordance with FWP's Tribal Consultation Guidelines. If cultural resources within or near the project area are recorded and are eligible for the National Register of Historic Places, they would be protected from adverse impacts through adjustments to the project design or cancellation of the project if no design alternatives are available. If cultural resources are unexpectedly discovered during project implementation, FWP would cease implementation and contact FWP's Heritage Program for further evaluation. Further, the WMA has historically been used for grazing. Therefore, no significant impacts to any historical and archaeological sites would be expected because of the proposed project.

To support the initial WMA land acquisition, the Montana State Historic Preservation Office (SHPO) completed a cultural assessment of the property making up SDWMA and reported that there are a few previously recorded sites within the project area. Most of the sites are associated with a historical irrigation system and railroad stage route that traversed numerous sections of the property. The proposed project would not directly impact the previously recorded historical or archaeological sites located on the SDWMA. Therefore, no impacts to any historical or archaeological sites would be expected because of the proposed project.

Secondary Impacts:

No adverse, secondary impacts to any known historical or archaeological sites located on SDWMA would be expected because of the proposed project.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

10. Demands on Environmental Resources of Land, Water, Air, and Energy

Existing Environment/Baseline Conditions (No Action Alternative):

Much of the proposed project area is considered rural and relies on the resources of the land and water for agricultural operations. Both land and water are used for recreational opportunities throughout the

project area. See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected existing environment.

Direct Impacts:

No significant, adverse direct impacts would be expected because of the proposed project. SDWMA has historically been used for grazing. Through ongoing and directed grazing rest and rotation practices, a primary objective of FWP's management of SDWMA would be conserve and manage highly productive, diverse plant communities that provide high-quality forage and cover for native wildlife species. As identified previously through the analyses of potential impacts to water quality, quantity, and distribution; soil quality, stability, and moisture; vegetation cover, quantity, and quality; and air quality; some impacts to the environmental resources of land, water, and air may occur because of the proposed project. However, any such impacts would be consistent with current and historical impacts and mitigated by grazing rest and rotation practices. Finally, a limited amount of increased fuel use would be required for the construction phase of the proposed project, and therefore any impacts to the environmental resource of energy would be short-term and negligible. Overall, any direct impacts would be short- and long-term, beneficial, and negligible to minor (see cited impacts analyses above). No other impacts to demands on the environmental resources of land, water, air, and energy would be expected because of the proposed project.

Secondary Impacts:

No secondary impacts to demands for the environmental resources of land, water, air, and energy would be expected to occur; therefore, no significant, adverse secondary impacts would be expected because of the proposed project.

No significant, adverse secondary impacts would be expected because of the proposed project. Water sources from natural springs would be ongoing to support grazing operations. Therefore, some increased demand for water would be realized because of the proposed project. However, because the proposed project would only require the intermittent filling of water tanks from localized water resources, overall increased water use would be limited. Further, FWP and the affected local cattle operations would use existing water rights to fulfill this need. Therefore, any adverse impacts to demands for water in the affected area would be long-term, intermittent, consistent with historical use, and negligible.

Cumulative Impacts:

No significant adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

B. Evaluation and Summary of Potential Impacts of the Proposed Project on the Human Environment

1. Social Structures and Mores

Existing Environment/Baseline Conditions (No Action Alternative):

Agriculture, and in particular cattle ranching, are a primary driver of the economy in Powell County and constitute a culturally accepted way of life. See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected existing environment.

Direct Impacts:

No significant, adverse impacts to social structures and mores would be expected because of the proposed project. The proposed project would increase grazing activity on SDWMA using a rest and rotation grazing strategy to promote diverse plant communities. One of the primary goals for SDWMA is to conserve and manage highly productive, diverse plant communities that provide high-quality forage and cover for native wildlife species. Many Montanans and those visiting the state for outdoor recreational purposes hold conservation of public lands, such as WMAs, in high regard. The proposed project would not change current land use or human activities in the affected area, but would increase grazing opportunities for local producers, thereby supporting the local agricultural economy. Therefore, the proposed project would not impact any pre-project social structures, customs, values, and conventions in the affected area.

Secondary Impacts:

No secondary impacts to pre-project social structures and mores would be expected to occur. Therefore, no significant adverse secondary impacts would be expected because of the proposed project.

Cumulative Impacts:

No significant adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

2. Cultural Uniqueness and Diversity

Existing Environment/Baseline Conditions (No Action Alternative):

See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected existing environment.

Direct Impacts:

No significant impacts to cultural uniqueness and diversity in the affected area would be expected because of the proposed project. The proposed project would continue historical grazing activity on SDWMA and would not result in any new or changed employment opportunities. Therefore, the

proposed project would not be expected to result in any relocation of people in to or out of the affected area and no impacts to the existing cultural uniqueness and diversity of the affected area would be expected because of the proposed project.

Secondary Impacts:

No secondary impacts to pre-project cultural uniqueness and diversity would be expected to occur. Therefore, no significant, adverse secondary impacts would be expected because of the proposed project.

Cumulative Impacts:

No significant adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

3. Access to and Quality of Recreational and Wilderness Activities

Existing Environment (No Action Alternative):

See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected existing environment.

Direct Impacts:

No significant, adverse direct impacts would be expected because of the proposed project. The proposed project would take place entirely on land designated as a WMA. No designated Wilderness Areas exist in the affected area. Therefore, no impacts to Wilderness recreation activities would occur because of the proposed project. Domestic livestock have historically used SDWMA for grazing and would continue to do so under the proposed action. The presence of livestock on SDWMA may be viewed by some as decreasing the quality of recreational activities on SDWMA. To mitigate such impacts, livestock would be removed from SDWMA prior to the hunting seasons when most recreational activity occurs in the affected area. The proposed grazing program would ensure some pastures are free from livestock every year and no closure of public lands would occur because of the proposed project. Additionally, in exchange for use of SDWMA pastures, the lessees would agree to grant free public hunting to their deeded lands, thereby increasing the quality and quantity of recreational activities across the affected area. Therefore, any adverse impacts to access to and the quality of recreational and wilderness activities in the affected area would be short-term, minor, and consistent with current and historical impacts.

Secondary Impacts:

No significant, adverse secondary impacts would be expected because of the proposed project. In exchange for use of SDWMA pastures, the lessees would agree to grant free public hunting to their deeded lands, thereby increasing the quality and quantity of recreational opportunities and activities

across the affected area. Further, operation of the proposed water system would lessen reliance on natural riparian areas historically used for watering cattle, thereby resulting in a long-term improvement of affected streams, springs, and ponds for the enjoyment of recreational users of SDWMA. Any secondary impacts would be long-term, minor to moderate, and beneficial.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. A primary objective of the WMA designation is to conserve and manage highly productive, diverse plant communities that provide high-quality forage and cover for native wildlife species. Providing suitable habitat and forage for wildlife would increase opportunities for birding and other wildlife viewing as well as hunting on SDWMA and surrounding private lands. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

4. Local and State Tax Base and Tax Revenue

Existing Environment/Baseline Conditions (No Action Alternative):

FWP is required by law to make tax payments to counties equal to the amount that a private landowner would be required to pay per Montana Code 87-1-603. Tax Year 2022 property tax equivalent payments for SDWMA amounted to \$24,416.72. DNRC does not pay property taxes on land it owns, so the tax status on the DNRC land would not change as a result of FWP leasing those acres for cattle grazing through EOU agreements.

Direct Impacts:

No significant, adverse impacts to local and state tax base and tax revenue would occur because of the proposed project. MFWP already pays annual taxes on the property and the proposed action would not affect the tax base. Therefore, no additional impacts to the local and state tax base and tax revenue would be expected because of the proposed project.

Secondary Impacts:

No secondary impacts to the local tax base and tax revenues would be expected to occur. Therefore, no significant, adverse secondary impacts would be expected because of the proposed project.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

5. Industrial, Commercial, and Agricultural Activities and Production

Existing Environment/Baseline Conditions (No Action Alternative):

See Section VIII, General Setting of the Affected Environment, for more detailed information related to the affected existing environment.

Direct Impacts:

No significant, adverse direct impacts would be expected because of the proposed project. The proposed project would benefit agricultural production by continued support for grazing activities. Industrial production is not allowed on public lands designated as a WMA. Therefore, no direct impact to industrial production would be expected because of the proposed project. Under the proposed project, grazing activity on SDWMA would increase and provide opportunities for neighboring livestock operations to benefit from a EOU agreement. Therefore, any direct impacts to agricultural production would be short-term, minor to moderate, and beneficial.

Secondary Impacts:

No significant, adverse secondary impacts would be expected because of the proposed project. The proposed project would benefit agricultural and commercial production through improvement of grasslands and water resources that support higher quality and increased grazing activities and associated production on SDWMA and neighboring private lands. A primary objective of the WMA designation is to conserve and manage highly productive, diverse plant communities that provide high-quality forage not only for wildlife but also for cattle operations. Because the proposed project would improve such conditions on SDWMA, beef production and quality would be expected to improve. Industrial production is not allowed on public lands designated as a WMA. Therefore, no secondary impacts to industrial production would be expected because of the proposed project.

Cumulative Impacts:

No significant, adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

6. Human Health and Safety

Existing Environment/Baseline Conditions (No Action Alternative):

See Section VIII, General Setting of the Affected Environment (statewide), for more detailed information related to the affected existing environment.

Direct Impacts:

No significant, adverse direct impacts would be expected because of the proposed project. The proposed project constitutes a reintroduction of historical grazing activity and development of a new water system and virtual fence technology to support grazing operations. Affected government staff and/or contractors hired to conduct aspects of the project may realize increased risk to human health and safety during construction. However, FWP would require affected staff and/or contractors to operate in a safe manner and use best management practices, including the use of available and appropriate safety precautions. Further, the proposed project would include ongoing monitoring and control of noxious weeds potentially spread by such activities (see summary analysis of Vegetation Cover, Quantity, and Quality above). Chemical and/or biological treatment of noxious weeds would occur on SDWMA regardless of whether livestock grazing on the WMA occurred. According to guidance provided by FWP's Integrated Weed Management Plan, chemical and biological treatment is part of FWP's weed management strategy to limit the potential for infestation of noxious weeds on its properties. Weed treatment, storage, and the mixing of chemicals would be accomplished according to the guidelines provided by the Integrated Weed Management Plan, which includes safety precautions. Therefore, any impacts would be short-term and negligible, occurring only during the application of chemical or biological weed control, and only affected staff would potentially be impacted. Overall, any adverse direct impacts would be short-term and negligible to minor.

Secondary Impacts:

No secondary impacts to human health and safety would be expected to occur. Therefore, no significant, adverse secondary impacts would be expected because of the proposed project.

No significant, adverse secondary impacts would be expected because of the proposed project. Affected government staff and/or contractors hired to conduct activities associated with the project may realize increased risk to human health and safety associated with the potential for ongoing and increased management of noxious weeds spread by the proposed action. However, FWP would require affected staff and/or contractors to operate in a safe manner and use best management practices, including the use of available and appropriate safety precautions. Ongoing monitoring and control of noxious weeds potentially spread by such activities (see summary analysis of Vegetation Cover, Quantity, and Quality above) may increase the need for and use of chemical and/or biological treatment to control noxious weeds on SDWMA. According to guidance provided by FWP's Integrated Weed Management Plan, chemical and biological treatment is part of FWP's weed management strategy to limit the potential for infestation of noxious weeds on its properties. Weed treatment, storage, and the mixing of chemicals would be accomplished according to the guidelines provided by the Integrated Weed Management Plan, which includes safety precautions. Therefore, any secondary impacts would be long-term and negligible, occurring only during the application of chemical or biological weed control and only affected staff would potentially be impacted. Overall, any adverse, secondary impacts would be short-term and negligible.

Cumulative Impacts:

No significant adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed

discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

7. Quantity and Distribution of Employment

Existing Environment/Baseline Conditions (No Action Alternative):

See Section VIII, General Setting of the Affected Environment (statewide), for more detailed information related to the affected existing environment.

Direct Impacts:

No significant, adverse direct impacts would be expected because of the proposed project. The proposed project constitutes a reintroduction of grazing activity on SDWMA and no new government or private employment opportunities would be expected because of the proposed project. Therefore, the proposed project would not increase or reduce employment opportunities in the affected area. No impacts would be expected because of the proposed project.

Secondary Impacts:

No significant, adverse secondary impacts would be expected because of the proposed project. No secondary impacts to the quantity and distribution of employment would be expected to occur. Therefore, no significant adverse secondary impacts would be expected because of the proposed project.

Cumulative Impacts:

No significant adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

8. Density and Distribution of Human Population and Housing

Existing Environment/Baseline Conditions (No Action Alternative):

See Section VIII, General Setting of the Affected Environment (statewide), for more detailed information related to the affected existing environment.

Direct Impacts:

No significant, adverse direct impacts to the distribution and density of population and housing would be expected because of the proposed project. The proposed project constitutes a reintroduction of grazing activity on SDWMA and would not result in the movement of existing or new population into or

out of the affected area. Therefore, no impacts to the distribution and density of population and housing in the affected area would be expected because of the proposed project.

Secondary Impacts:

No secondary impacts to the density and distribution of human population and housing would be expected to occur. Therefore, no significant, adverse secondary impacts would be expected because of the proposed project.

Cumulative Impacts:

No significant adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

9. Demands for Government Services

Existing Environment/Baseline Conditions (No Action Alternative):

See Section VIII, General Setting of the Affected Environment (statewide), for more detailed information related to the affected existing environment.

Direct Impacts:

No significant, adverse direct impacts would be expected because of the proposed project. FWP staff would support development and implementation of the proposed project, which would increase the need for government services. Any direct impacts would be short-term and negligible, lasting only as long as the construction phase of the proposed project. Following development, normal and routine government maintenance costs on SDWMA would occur with or without development and implementation of the proposed project. There may be a slight increase in government costs associated with increased noxious weed management activities and associated staffing resources. However, FWP staff responsible for managing SDWMA would accommodate such activities as part of their typical workload. Overall, any increase in administrative costs and/or FWP staff workload associated with the proposed project would be negligible. No additional demands for government services would be required for project development and implementation. Therefore, any adverse direct impacts would be short-term, negligible, and consistent with existing and historical impacts.

Secondary Impacts:

No secondary impacts to the demands for government services would be expected to occur. Therefore, no significant adverse secondary impacts would be expected because of the proposed project.

Cumulative Impacts:

No significant adverse cumulative impacts would be expected because of the proposed project. Since

FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

10. Locally Adopted Environmental Plans and Goals

Existing Environment/Baseline Conditions (No Action Alternative):

See Section VIII, General Setting of the Affected Environment (statewide), for more detailed information related to the affected existing environment.

Direct Impacts:

No direct impacts to locally adopted environmental plans and goals would be expected to occur. Therefore, no significant, adverse direct impacts would be expected because of the proposed project.

Secondary Impacts:

No significant, adverse secondary impacts would be expected because of the proposed project. The affected property is currently, and would remain, a designated WMA. A primary goal of WMAs is to conserve and manage highly productive, diverse plant communities that will provide high-quality forage and cover for native wildlife species and, in this case as well as many other WMAs, for cattle. The proposed project would further such goals on SDWMA. FWP is unaware of any other locally adopted environmental plans or goals that may be impacted by the proposed project. Therefore, no additional secondary impacts to locally adopted environmental plans and goals would be expected because of the proposed project.

Cumulative Impacts:

No significant adverse cumulative impacts would be expected because of the proposed project. Since FWP's 2010 acquisition of the SDWMA property, FWP has implemented several projects on the property, including the McQueary Ranch EOU agreement that served as a precursor to the proposed project. Each historical FWP action has been subject to, and complied with, MEPA. A more detailed discussion of past actions on the SDWMA property, since FWP's acquisition, is included in Section IX, Cumulative Impacts Analysis.

XII. Determining the Significance of Impacts

If the EA identifies impacts associated with the proposed action FWP must determine the significance of the impacts. This determination forms the basis for FWP's decision as to whether it is necessary to prepare an environmental impact statement. FWP considered the criteria identified in **Table 3** below to determine the significance of each impact on the quality of the physical and human environment. ARM 12.2.431.

The significance determination is made by giving weight to these criteria in their totality. For example, impacts identified as moderate or major in severity may not be significant if the duration is short-term. However, moderate or major impacts of short-term duration may be significant if the quantity and quality of the resource is limited and/or the resource is unique or fragile. Further, moderate or major impacts to a resource may not be significant if the quantity of that resource is high or the quality of the resource is not unique or fragile.

Table 3: Determining the Significance of Impacts

Criteria Used to Determine Significance	
1	<p>The severity, duration, geographic extent, and frequency of the occurrence of the impact</p> <p>“Severity” describes the density of the potential impact, while “extent” describes the area where the impact will likely occur, e.g., a project may propagate ten noxious weeds on a surface area of 1 square foot. Here, the impact may be high in severity, but over a low extent. In contrast, if ten noxious weeds were distributed over ten acres, there may be low severity over a larger extent.</p> <p>“Duration” describes the time period during which an impact may occur, while “frequency” describes how often the impact may occur, e.g., an operation that uses lights to mine at night may have frequent lighting impacts during one season (duration).</p>
2	The probability that the impact will occur if the proposed project occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur
3	Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts
4	The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources and values
5	The importance to the state and to society of each environmental resource or value that would be affected
6	Any precedent that would be set as a result of an impact of the proposed project that would commit FWP to future actions with significant impacts or a decision in principle about such future actions
7	Potential conflict with local, state, or federal laws, requirements, or formal plans

XIII. Private Property Impact Analysis (Takings)

The 54th Montana Legislature enacted the Private Property Assessment Act, now found at § 2-10-101. The intent was to establish an orderly and consistent process by which state agencies evaluate their proposed projects under the "Takings Clauses" of the United States and Montana Constitutions. The Takings Clause of the Fifth Amendment of the United States Constitution provides: "nor shall private property be taken for public use, without just compensation." Similarly, Article II, Section 29 of the Montana Constitution provides: "Private property shall not be taken or damaged for public use without just compensation..."

The Private Property Assessment Act applies to proposed agency projects pertaining to land or water management or to some other environmental matter that, if adopted and enforced without due process of law and just compensation, would constitute a deprivation of private property in violation of the United States or Montana Constitutions.

The Montana State Attorney General's Office has developed guidelines for use by state agencies to assess the impact of a proposed agency project on private property. The assessment process includes a careful review of all issues identified in the Attorney General's guidance document (Montana Department of Justice 1997). If the use of

the guidelines and checklist indicates that a proposed agency project has taking or damaging implications, the agency must prepare an impact assessment in accordance with Section 5 of the Private Property Assessment Act.

Table 4: Private Property Assessment Act (Taking and Damaging Assessment)

PRIVATE PROPERTY ASSESMENT CHECKLIST			
Does the Proposed Action Have Takings Implications under the PPAA?	Question #	Yes	No
Does the project pertain to land or water management or environmental regulations affecting private property or water rights?	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the action result in either a permanent or an indefinite physical occupation of private property?	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the action deprive the owner of all economically viable uses of the property?	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the action require a property owner to dedicate a portion of property or to grant an easement? (If answer is NO, skip questions 5a and 5b and continue with question 6.)	4	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is there a reasonable, specific connection between the government requirement and legitimate state interest?	4a	<input type="checkbox"/>	<input type="checkbox"/>
Is the government requirement roughly proportional to the impact of the proposed use of the property?	4b	<input type="checkbox"/>	<input type="checkbox"/>
Does the action deny a fundamental attribute of ownership?	5	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the action have a severe impact of the value of the property?	6	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public general? (If the answer is NO, skip questions 7a-7c.)	7	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the impact of government action direct, peculiar, and significant?	7a	<input type="checkbox"/>	<input type="checkbox"/>
Has the government action resulted in the property becoming practically inaccessible, waterlogged, or flooded?	7b	<input type="checkbox"/>	<input type="checkbox"/>
Has the government action diminished property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?	7c	<input type="checkbox"/>	<input type="checkbox"/>
Does the proposed action result in taking or damaging implications?		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Taking or damaging implications exist if YES is checked in response to Question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to question 4a or 4b.			
If taking or damaging implications exist, the agency must comply with MCA § 2-10-105 of the PPAA, to include the preparation of a taking or damaging impact assessment. Normally, the preparation of an impact assessment will require consultation with agency legal staff.			
Alternatives: The analysis under the Private Property Assessment Act, §§ 2-10-101-112, MCA, indicates no impact. FWP does not plan to impose conditions that would restrict the regulated person's use of private property to constitute a taking.			

XIV. Public Participation

Scoping

Scope is the full range of issues that may be affected if an agency implements a proposed action or alternatives to the proposed action. The scope of the environmental review is described through a definition of those issues, a reasonable range of alternatives considered, a description of the impacts to the physical and human

environments, and a description of reasonable mitigation measures that would ameliorate the impacts. Scoping is the process used to identify all issues that are relevant to the proposed action.

Depending on the level of impact associated with a proposed action, the scoping process may include a request for public participation in the identification of issues.

FWP hosted a field trip on SDWMA with interested stakeholders on July 25th, 2023 to discuss any issues and concerns with potentially expanding livestock grazing opportunities and initiating water development on SDWMA. About 20 people attended and participants included representatives from the Spotted Dog Work Group, Rocky Mountain Stockgrowers, Anaconda Sportsman's Club, Helena Hunters and Anglers, Backcountry Hunters and Anglers, Montana Wildlife Federation, Powell County extension, and other local ranchers and interested citizens.

Scoping also includes efforts to engage internal and affected external agencies. For the proposed project, these scoping efforts included queries to the following websites, databases, and/or personnel:

- Montana State Historic Preservation Office (SHPO)
- Montana Department of Natural Resource and Conservation (DNRC)
- Montana Natural Heritage Program
- US Department of the Interior
 - US Fish and Wildlife Service
- US Department of Agriculture
 - Forest Service
 - Animal and Plant Health Inspection Service
 - Natural Resource Conservation Service
 - Rural Development
 - Other

Public Review of Environmental Assessments

The level of analysis in an EA will vary with the complexity and seriousness of environmental issues associated with a proposed action. The level of public interest will also vary. FWP is responsible for adjusting public review to match these factors (ARM 12.2.433(1)). For the proposed project, FWP determined the following public notice strategy will provide an appropriate level of public review:

- An EA is a public document and may be inspected upon request. Any person may obtain a copy of an EA by making a request to FWP.
- Public notice will be served on the Montana Fish, Wildlife and Parks website at: <https://fwp.mt.gov/public-notice>.
- Public notice will be served on the Montana Environmental Quality Council's MEPA Document List website at: <https://leg.mt.gov/mepa/search/>.
- As applicable, copies will be distributed to neighboring landowners to ensure their knowledge of the proposed project and opportunity for review and comment on the proposed action.
- FWP maintains a list of persons interested in a particular action or type of action. FWP will notify all interested persons and distribute copies of the EA to those persons for review and comment (ARM 12.2.433(3)).

Public notice announces availability of the Draft EA for public review, summarizes the proposed project, identifies the time-period available for public comment, and provides direction for submitting comments.

- **Duration of Public Comment Period:** The public comment period begins on the date of publication of legal notice. Written or e-mailed comments will be accepted until 5:00 p.m., Mountain Time, on the last day of public comment, as listed below:
- **Length of Public Comment Period:** 30 days
- **Public Comment Period Begins:** January 12, 2024
- **Public Comment Period Ends:** February 12, 2024

Comments must be addressed to the FWP contact listed below.

- **Where to Mail or Email Comments on the Draft EA:**

Email: fwprg22@mt.gov

Mailing Address:

To: Liz Bradley

Attn: Spotted Dog Grazing EA

Montana Fish Wildlife & Parks
3201 Spurgin Rd, Missoula, MT 59804

XV. Recommendation for Further Environmental Analysis

NO further analysis is needed for the proposed action	<input checked="" type="checkbox"/>
FWP must conduct EIS level review for the proposed action	<input type="checkbox"/>

XVI. EA Preparation and Review

	Name	Title
EA prepared by:	Liz Bradley, Kirstie Yeager, Kelvin Johnson, Torrey Ritter	R2 Wildlife Manager, Wildlife Biologist, Habitat Biologist, Nongame Biologist
EA reviewed by:	Eric Merchant	FWP MEPA Coordinator

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Appendix A: Executive Summary of 2018 Spotted Dog Habitat Plan, reprinted from the Spotted Dog Wildlife Management Area Habitat Plan (March 2018)

Spotted Dog Wildlife Management Area Habitat Plan--2018

Executive Summary

This is a Habitat Plan (including Public Access)

This is the Habitat Plan for the Spotted Dog Wildlife Management Area (WMA). For the purposes of this Habitat Plan, public use of the WMA is considered part of the manageable environment to which soil, vegetation, fish and wildlife respond. So, the reader will find a section on Public Access, as well as sections addressing Native Species Diversity; Species of Concern; Elk Winter Habitat; Fisheries; Aspen, Wetlands & Riparian; Native Bunchgrass; Antelope Bitterbrush; Coniferous Forest; Invasive Plants (Weeds) and Infrastructure.

Montana's Elk Management Plan Pertains

This Habitat Plan does not specifically address elk population management; i.e., elk numbers, objectives, harvest and hunting regulations. Elk population management is addressed in the Montana Final Elk Management Plan (January 2005), separate from this Habitat Plan. Spotted Dog WMA is located in elk Hunting District (HD) 215; elk management objectives and strategies for HD 215 can be found under the heading of Deer Lodge Elk Management Unit (EMU) in the Montana Final Elk Management Plan. In 2008, Montana Fish, Wildlife & Parks (FWP) revisited the elk population objective for HD 215 with a working group of interested citizens, resulting in a proposal to up the objective from 1,000 to 1,400. The Montana Fish, Wildlife & Parks Commission adopted the higher objective in 2008.

In 2008, the elk count for HD 215 was 1,365 and at its objective. Two years later, FWP acquired Spotted Dog WMA. In 2013, the Spotted Dog Work Group formed to work with FWP on issues related to the WMA. From 2009 to 2017 the elk count for HD 215 rose to 2,850, double its objective.

The Work Group and FWP understand that no matter its management, the WMA cannot feasibly attract enough elk from neighboring ranches to alleviate elk damage at these high elk numbers. Therefore, habitat management—the topic of this Habitat Plan—cannot substitute for elk harvest and population management, which is already directed by the Montana Final Elk Management Plan and must be addressed accordingly. These facts do not preclude livestock grazing as a tool for enhancing wildlife habitat on portions of the WMA and on private lands in a cooperative habitat management agreement.

Roles of FWP, the Work Group & the Public

FWP is responsible for managing Spotted Dog WMA in keeping with the goals for acquiring and maintaining it with dedicated public funds. Therefore, all citizens have a voice in WMA management.

FWP and the Spotted Dog Work Group collaborated to prepare a draft Habitat Plan for broader public review. The Work Group is comprised of 18 citizens, mostly from the area local to the WMA, representing landowners, sportspersons, government, education and other interests. The Work Group formed in 2013 and its meetings (~30 to date) are open to the public.

FWP advertised the draft plan's availability for public review and comment from 8 Nov. to 8 Dec. 2017, and held a public meeting in Deer Lodge on 30 Nov. 2017. Comments are preserved in Appendix H of this final Habitat Plan for continuing reference and consideration.

Formal public involvement as directed under the Montana Environmental Policy Act (MEPA) will be solicited if and when specific habitat projects outlined in this Habitat Plan are proposed in the future. Such projects would include livestock grazing on the WMA, a revised travel management plan, and land transactions, to name a few.

Purpose & Goals (page 8)

FWP acquired and established the Spotted Dog WMA on September 2, 2010. The goals of the purchase, as listed in FWP's grant application to the Natural Resource Damage Program (NRDP), were to protect priority fish and wildlife resources; enhance critical winter habitat for elk and mule deer; maintain migratory patterns to and from the National Forest for a regionally significant elk herd; provide lasting public access to previously inaccessible lands; maintain landscape connectivity between the Blackfoot and Clark Fork watersheds; and to replace lost and injured natural resources that were the subject of *Montana v. ARCO*.

The Work Group developed and adopted the following Guiding Principles for preparing the draft Habitat Plan:

1. The primary purpose of the Spotted Dog WMA is to benefit wildlife and fish habitats, and natural resources on behalf of the general public.

2. Actions will be sustainable for future generations.
3. Provide access for a wide variety of uses consistent with the management plan.
4. Be a good neighbor with the landowners and the residents of Powell County.

Area Description (pages 9-26)

Spotted Dog WMA covers 37,877 acres in south Powell County, with 27,616 acres deeded to FWP and 10,261 acres leased from the Montana Department of Natural Resources and Conservation (DNRC). Herein, we divided the WMA into five Management Units (MU) for planning purposes. Each MU generally corresponds with one principal drainage system and access route. The MUs also generally reflect broad distinctions of vegetation and wildlife.

The MUs present differing challenges of management. The O'Neill Creek MU (MU-1) contains the primary public access point to the WMA from the Deer Lodge side of the property, via Freezeout Lane; includes the Rocky Ridge communications site and the BPA 500-KV powerline; and is bordered by a residential area along Beck Hill Road. MU-1 and the Freezeout-Jake MU (MU-2) border ranches along the Old Stagecoach county road, which has been closed to public access in recent decades. Public access to MU-2 from the Jake Creek Road is also currently closed where the road crosses private land before reaching the WMA. The Spotted Dog MU (MU-3) also borders private ranches along the track of the Old Stagecoach Road, and includes the old Pauly Place buildings and corrals, as well as Spotted Dog Reservoir. Public access is available to the Trout Creek MU (MU-4) from Avon, continuing into MU-3. A groomed snowmobile route runs across MU-4 and the Forested Checkerboard MU (MU-5) from Avon to Elliston. MU-5 and part of MU-4 are unfenced against an active livestock allotment on the Helena National Forest. Whereas the other MUs will be managed with an eye toward the larger rangeland and riparian landscape, MU-5 will be managed with an awareness of its contribution as part of the larger coniferous forest.

Land Use History (page 16)

The property now known as Spotted Dog WMA has a long history of ranching, involving cattle and in earlier years, sheep. Under the purchase agreement (dated July 28, 2010) by which FWP acquired the WMA property from the Rock Creek Cattle Company (RCCC), it was agreed that RCCC would retain limited grazing rights on the WMA through December 31, 2012. At the request of RCCC, the Montana Fish, Wildlife & Parks Commission subsequently extended that grazing agreement through 2013. From 2014 forward, FWP has provided rest from livestock grazing as outlined in its Management Plan and the Livestock Grazing Amendments to the Plan contained in the Decision Notice for the purchase of Spotted Dog WMA (August 2010). Livestock trespass continues across the WMA's unfenced boundary with the Helena National Forest.

Ecological Inventory & Health (pages 27-28)

Hansen et al. (2015) characterized the soil, water and vegetation of FWP deeded lands across 90% of Spotted Dog WMA. Upland grasslands are in the best condition, and the best of the best are concentrated in the northernmost sections of MU-4. Conversely the problem area for upland grassland, shrubland and wetland environments is in western MU-1.

Despite the unhealthy and non-functional condition of some uplands in MU-1, O'Neill Creek ranked highest in ecological condition among streams, with an overall health rating of 79%. The MU-2 streams came second in order of ecological condition, with Fred Burr Creek at 74%, Freezeout Creek at 65% and Jake Creek at 61%. MU-3 followed with Spotted Dog Creek at 62%. Trout Creek, in MU-4, ranked last in stream health (54%).

Monitoring (pages 29-30)

The ecological inventory and health assessment (EIHA) by Hansen et al. (2015) offers a repeatable framework for future ecological monitoring. FWP will plan to repeat the EIHA by 2025 to monitor the condition and trend of vegetation under the influence of this Habitat Plan. Inherent in the repeated EIHA is a check for changes in noxious weed distribution. Photo points will be established to monitor representative habitats that are featured in this plan at more frequent intervals between replicates of the EIHA.

Maintenance activities on the WMA will be compiled in an annual report, including weed control, fence repair and other activities. Fish and wildlife surveys will be scheduled as needed in accordance with regional information priorities.

Prescribed management treatments, such as livestock grazing, fence construction and forest management, will be monitored during the periods while those treatments are occurring on the land to assure compliance with prescriptions and to identify adjustments that may be needed.

Invasive Plants (Weeds) (pages 31-32)

MU-1 had the highest proportion of sampling plots (51%) with >10% coverage of invasive species, followed by MU-2 (31%), MU-4 (26%) and MU-3 (21%) (Hansen et al. 2015). Twenty-two invasive plant species were identified on the WMA, with cheatgrass covering the most acres (632) and spotted knapweed ranking second (437 acres). Weed management objectives and strategies are addressed where they pertain under the resource headings/priorities (e.g., Native Species Diversity, Elk Winter Habitat, etc.) in this Habitat Plan.

- ◆ A weed management strategy common to every resource priority is to make a habit of documenting and treating new weed occurrences while driving roads, fixing fences and in the course of other duties on the WMA.
- ◆ Comply with FWP's Statewide Weed Plan and the Powell County Weed Plan. Encourage the public to report changes in weed species and distribution.
- ◆ Work with Powell County to develop a WMA weed map.

Executive Summary

Part of a Larger Whole (pages 33-34)

Cooperation is essential to achieve compatible management of fish and wildlife habitat across the larger landscape, of which the WMA is but a part. It will be a priority to budget for the time commitment required to work thoughtfully and effectively with our neighbors. For that purpose, FWP employs a decentralized operational structure. Locally-based professionals are vested with the delegated authority to speak and act on behalf of FWP, and are charged with becoming part of their local communities.

Native Species Diversity (pages 35-36)

Direction: Enhance the food web, focusing on the base of the energy pyramid: soil health, litter, native forbs, pollinators and the like.

Base Budget Items and Work Priorities:

- ◆ Prevent new weed establishments with early detection and eradication.
- ◆ Where herbicide is needed to control weeds, spot-spray whenever possible rather than broadcast spray, and use the most selective herbicide for the job.
- ◆ Watch cheatgrass distribution and avoid creating niches for cheatgrass expansion.
- ◆ Maintain boundary fences to minimize livestock trespass.
- ◆ Consider prescribed cattle grazing to enhance structural diversity in grasslands.
- ◆ When grazing, limit grazing impacts during the nesting season and/or rotate treatments.
- ◆ Allow litter to develop and decay in grassland communities where litter should accumulate.
- ◆ Prevent off road vehicular travel.
- ◆ Recruit and retain large snags in forests.

Priorities for Special Projects when Feasible:

- ◆ Consider forest restoration treatments to foster the recruitment of naturally occurring stand characteristics in historically harvested stands.
- ◆ Develop forest management treatments to manage the risk of stand replacement events.
- ◆ Remove conifer encroachment in grasslands, aspen, and wetlands as appropriate.

Species of Concern (pages 37-38)

Direction: Reverse population declines for Species of Concern.

Base Budget Items and Work Priorities:

- ◆ Maintain native species diversity in healthy habitats, and work to restore species diversity in degraded habitats. Native species diversity includes managing native plant communities to support species-rich native animal communities including songbirds, raptors, reptiles, amphibians, small mammals, and insects.
- ◆ Riparian, wetland, and aspen communities support the highest wildlife species diversity, so those communities need to be managed with special care to ensure their protection and enhancement on the WMA.
- ◆ Maintain and/or restore populations of Species of Concern that are naturally found in WMA habitats.
- ◆ Explore ways for the public to view and learn about wildlife, while minimizing impacts to wildlife and plants.

Elk Winter Habitat (pages 39-40)

Direction: Prioritize Elk Winter Habitat in MUs 1 & 2.

Base Budget Items and Work Priorities:

- ◆ Maintain fences to minimize livestock trespass and reserve forage for wintering elk.
- ◆ Identify and eradicate first occurrences of new weed species or weeds in new places.
- ◆ Watch cheatgrass distribution and avoid creating niches for cheatgrass expansion.
- ◆ Coordinate closely with communications towers maintenance and powerline right-of-way maintenance.
- ◆ Retain forest stringers and thickets.
- ◆ Close WMA to the public from December 2-May 15.
- ◆ Control hunting access if hunting is needed during winter to achieve elk harvest goals, while minimizing disturbance to elk on their winter range.

Executive Summary

Coniferous Forest (pages 49-50)

Direction: Coniferous forest makes up about 15% of the lands deeded to FWP within Spotted Dog WMA. Most of it lies within MU-5, intermingled in the Helena National Forest, and is largely cutover, having been harvested shortly before the property was acquired by FWP. In the near term, forest management on Spotted Dog WMA will be limited, as follows:

Base Budget Items and Work Priorities:

- ◆ Eradicate new weed species or weeds in new places.
- ◆ Protect snags and snag recruits.
- ◆ Prohibit wood cutting for offsite use.

Priorities for Special Projects when Feasible:

- ◆ Inventory the forest.
- ◆ Develop a forest management plan that focuses on regeneration of a healthy forest structure.
- ◆ Treat forest disease issues as they arise and take any preventative actions identified in the forest plan.

Public Access (pages 51-54)

Direction: Offer access to appreciate fish and wildlife, and to effectively balance wildlife with their habitat.

Base Budget Items and Work Priorities:

- ◆ Maintain open roads to WMA statewide standards.
- ◆ Enforce road closures and other user regulations to lessen user conflicts and resource damage.
- ◆ Manage hunter access to provide the publicly desired hunting experience and manage wildlife populations.
- ◆ Allow over-the-snow access on USFS Road 314.
- ◆ Maintain the winter closure to limit human disturbance of wintering elk and deer, with any exceptions as may be required to manage wildlife populations.
- ◆ Maintain effective signage, focusing on identifying property boundaries to prevent trespass on neighboring lands.
- ◆ Enact fire season restrictions with interagency collaboration.
- ◆ Develop and maintain updated travel maps, regulations and information online and on paper for distribution.

Priorities for Special Projects when Feasible:

- ◆ Develop portal/entrance signage.
- ◆ Develop a trail system, pending definition and funding.
- ◆ Identify designated camping areas if needed in the future, but avoid installing campground developments.

Interpretive Resources (pages 55-56)

Direction: Develop interpretive signage and other informational materials to enhance the public's appreciation of their WMA.

Base Budget Items and Work Priorities:

- ◆ Design and install a large-panel highway sign, to be placed along Highway 12 or other appropriate highway location, to inform the public about Spotted Dog WMA and identify its funding sources and purposes.
- ◆ Work with Audubon and local birders to develop a bird list and birding brochure for Spotted Dog WMA.
- ◆ Work with local historians to uncover and interpret the history of the Spotted Dog area.

Priorities for Special Projects when Feasible:

- ◆ Develop interpretive signage, recognizing that it is vulnerable to vandalism in remote locations.
- ◆ Develop a trail system involving low-profile interpretive signage and/or brochures. Consider a diversity of travel types, including motorized travel routes on the established open road system, as well as trails for nonmotorized use.

Infrastructure (pages 57-58)

Direction: Establish mutually beneficial property boundaries, facilities and improvements.

Base Budget Items and Work Priorities:

- ◆ Communicate routinely and effectively with Powell County, DNRC, USFS and neighbors.
- ◆ Cooperate with all affected parties on the Old Stagecoach Road issue.
- ◆ Work with DNRC on leases of DNRC lands to FWP.
- ◆ Work with private neighbors on fences, weeds, property exchanges, and trailing livestock across the WMA.
- ◆ Work with USFS on management of intermingled parcels.
- ◆ Prepare an annual report of maintenance activities.

Priorities for Special Projects when Feasible:

- ◆ Construct new boundary fences where still needed.
- ◆ Develop portal/entrance signage.
- ◆ Identify designated camping areas if needed in the future, but avoid installing campground developments.
- ◆ Work on proposing land transactions and public involvement to block up FWP ownership within the WMA.

Priorities for Special Projects when Feasible:

- ◆ Forest management will employ a light touch as needed in MU-1 and MU-2, if at all, to extend the function of small-acreage stands into the future and to manage risk.

Aspen, Wetlands & Riparian (pages 41-42)

Direction: Recover or restore aspen, wetland and riparian systems

Base Budget Items and Work Priorities:

- Protect aspen, wetland and riparian areas from noxious weeds as a focus of overall weed management efforts.
- Protect these areas from unauthorized livestock.
- Avoid and correct road, culvert and sediment impacts.
- Prevent damage from off road vehicles.
- Manage conifer encroachment in aspen.
- Protect beaver on Spotted Dog WMA.
- Recruit and protect snags, especially deciduous spp.

Priorities for Special Projects when Feasible:

- Plant native riparian vegetation (i.e., willows).
- Prescribe more extensive forest management and conifer treatment to rejuvenate aspen.
- Consider redistributing beaver at such time as the forage base would support beaver.
- In the absence of beaver, consider mimicking beaver activity with instream structures.

Fisheries (pages 43-44)

Direction: Enhance habitat for native westslope cutthroat trout.

Base Budget Items and Work Priorities:

- Protect streambanks from noxious weeds to minimize sediment delivery to streams.
- Protect streams from livestock impacts.
- Avoid and correct road, culvert and sediment impacts.
- Prevent damage from off road vehicles.

Priorities for Special Projects when Feasible:

- Utilize active stream restoration to address habitat degradation and channelization.
- Plant woody riparian vegetation where absent due to past land use practices.
- Remove or resize stream crossings (e.g., culverts).

Native Bunchgrass (pages 45-46)

Direction: Maintain climax rough fescue stands where they currently exist, and manage for soil stability and a healthy

mix of native increasers and decreasers in bunchgrass vegetation types overall.

Base Budget Items and Work Priorities:

- ◆ Maintain fences to minimize livestock trespass.
- ◆ Identify and eradicate first occurrences of new weed species or weeds in new places.
- ◆ Watch cheatgrass distribution and avoid creating niches for cheatgrass expansion.
- ◆ Consider prescribed cattle grazing to add vegetation community structure in grasslands other than designated rough fescue reference sites, and as a tool for achieving grazing improvements on privately owned bunchgrass communities as well.
- ◆ Confine motorized traffic to open roads.

Priorities for Special Projects when Feasible:

- ◆ Restore native communities on sites dominated by cheatgrass on a prioritized basis, pending the development of sound methodologies for cheatgrass control.
- ◆ Develop interpretive signage to increase the public's appreciation for native grasslands and their management.
- ◆ Remove conifer encroachment.

Antelope Bitterbrush (pages 47-48)

Direction: Reserve antelope bitterbrush stands for their unique wildlife habitat qualities.

Base Budget Items and Work Priorities:

- ◆ Maintain fences to minimize livestock trespass.
- ◆ Identify and eradicate new weeds or weeds in new places.
- ◆ Watch cheatgrass distribution and avoid creating niches for cheatgrass expansion.
- ◆ Use biological controls or spot spray with the most selective herbicides to avoid damage to bitterbrush while addressing noxious weeds in MU-1 and MU-2.
- ◆ Keep elk numbers in balance.
- ◆ In MU-1 and MU-2 discourage public camping and prohibit fires.
- ◆ Limit motorized access to few well worn roads.

Priorities for Special Projects when Feasible:

- ◆ Monitor bitterbrush condition and trend over time.
- ◆ Monitor wildlife use in bitterbrush.
- ◆ Develop interpretive signage to help the public appreciate bitterbrush and its value.
- ◆ There may be a need at some point to intensively treat cheatgrass in bitterbrush stands, pending development of effective cheatgrass control methods.

Appendix B – FWP Grazing Standards

Version 1.2

FWP MINIMUM STANDARDS FOR GRAZING LIVESTOCK

Introduction

The following grazing standards represent the minimum required by FWP of a landowner who reserves the right to pasture and graze livestock (private and public land). These standards apply to all FWP funded projects; at times it may be necessary to provide more rest from grazing than described as minimum to meet specific wildlife or fisheries habitat objectives. The minimum is most frequently applied (without additional adjustment for wildlife and fisheries needs) on projects like conservation easements and Upland Game Bird Habitat Enhancement Projects where the property remains in private ownership and agricultural use remains the primary objective. On FWP-managed Wildlife Management Areas (WMAs), wildlife production and habitat conservation are the primary objective and when livestock grazing occurs it is not unusual for the amount of rest from livestock grazing to exceed that required by the minimum standard. Also on WMAs, grazing intensity may be reduced to a level significantly lower than allowable by the minimum standard. These standards are designed to address management of both upland and riparian landforms.

Why a minimum standard?

Livestock grazing is the predominant land use in Montana. As the state's primary fish and wildlife management agency, FWP is actively involved with livestock grazing as it influences fish and wildlife habitats throughout Montana. About 2.4 million cattle are maintained in Montana. Livestock grazing occurs on about 69% of the state's land surface. Potential impacts to fish, wildlife and their habitats caused by grazing are well documented in the literature. Also well documented are potential benefits for conservation that can be derived for some wildlife species through carefully planned livestock grazing strategies. Conserving wildlife habitat while continuing livestock grazing typically requires management strategies that differ from those employed for the sole purpose of maintaining a sustainable livestock forage base that maximizes livestock production. One reason for the difference in management strategies is because vegetation is much more than a forage base for wildlife. Vegetation species composition, structure, and diversity are important aspects of cover essential to the survival and production of wildlife. Healthy riparian communities are critical not only for aquatic species but for proper channel and flood plain function. Seventy-five percent of all Montana wildlife species rely on riparian areas for all or a portion of their lives. This includes many species covered in the FWP's Comprehensive Fish and Wildlife Strategy. When livestock grazing occurs, it is not unusual for cover to be the population limiting factor for many species. Aldo Leopold referred to this concept of habitat quality as 'Quality of Landscape'. Addressing cover is especially important in implementation of FWP's Comprehensive Fish and Wildlife Strategy. It is therefore possible that a livestock operator may be employing a grazing strategy that maintains a sustainable forage base on most of the property, but may not be providing adequate forage, cover, or floral diversity for important fish and wildlife species. Sustainable livestock production often employs grazing strategies emphasizing production and maintenance of grass species while placing less emphasis on the maintenance of forbs and woody plants. Many wildlife species require grazing strategies that emphasize healthy woody plants and availability of forbs and grass seed heads on at least portions of the landscape every year. The maintenance of robust woody vegetation and cover is also a very important component of healthy riparian systems. Healthy ecological systems are essential for a variety of aquatic and terrestrial riparian obligates. The purpose of FWP's minimum grazing standards is to achieve a balance between maintaining sustainable agriculture and quality fish and wildlife

habitat on working ranches and to provide flexibility to conserve and protect habitat needs on WMAs where wildlife habitat is the primary objective and agriculture is secondary. FWP has applied the standard successfully over the past 30 years on a variety of projects ranging from working cattle ranches to FWP WMAs. There are examples in Montana and other states where a grazing standard similar to FWPs is being applied by livestock operators independent of FWP.

Grazing Plan

Prior to grazing livestock, the Landowner and FWP must agree upon and implement a grazing plan. A grazing plan includes a map of the pastures, a grazing formula specific to those pastures, the class of livestock, and other information pertinent to the management of livestock. Format for the grazing plan is included as part of the management plan template for conservation easements. The grazing plan will be included as part of the Management Plan for easement projects and will define the limits and extent to which grazing may occur. The Management Plan may be amended by mutual consent, as more particularly described in Paragraph II.E. of the Conservation Easement. For other projects, the management plan will be included as an attachment to the grazing lease or contract. On conservation easements, the grazing plan will be enforceable only on lands covered by the easement.

Upland Minimum Grazing Standard for Summer/Fall Systems

This standard applies to upland pastures in native plant communities (i.e. generally on soils that have never been plowed) and for all riparian pastures. The grazing plan must meet or exceed minimum levels of periodic rest from livestock grazing to allow native plants adequate opportunity to reproduce and replenish root reserves. The minimum amount of rest required for any pasture grazed in one year during the plant growing season is defined as rest throughout the following year's growing season (i.e. grazing deferred until seed-ripe), followed by one year of yearlong rest, as shown in Table 1. Each pasture receives only one grazing treatment per year, and the treatments are rotated annually as shown in Table 1. The growing season is defined as beginning with the period of rapid plant growth (generally early to mid-May) until seed-ripe for the latest maturing native grasses, such as bluebunch wheatgrass or western wheatgrass (generally early August). Because the exact dates can vary as much as a few weeks depending on the location in Montana, specific dates for livestock movement are developed for each project. Occasionally it may be necessary for the grazing system to allow for some livestock to be in the pasture scheduled for the A treatment (Table 1) beyond the growing season. A three-pasture grazing system is used as an example (Table 1) to show how the landowner might typically rotate livestock through pastures to meet the minimum levels and required sequence of rest from livestock grazing. In practice, the landowner is not limited to any particular number of pastures; many projects include more than three pastures. In some instances, sub-pastures are employed to meet riparian or other objectives on the land. If livestock are grazed, they must be moved through the pastures in compliance with these standards and the grazing plan. Where grazing occurs during the growing season, the three-treatments outlined in Table 1 are essential and the total number of pastures and/or sub-pastures will vary between projects.

Table 1. Livestock Grazing Formula using a three pasture approach as an example.

Grazing Seasons	Pasture 1	Pasture 2	Pasture 3
Year One	A	B	C
Year Two	B	C	A
Year Three	C	A	B
When all treatments have been applied to all pastures, the grazing rotation begins again at year one.			
A = livestock grazing allowed during the growing season; B = livestock grazing begins after seed-ripe time; C = rest from livestock grazing yearlong.			

Winter and/or Early Spring Grazing

In some situations, an early grazing treatment (prior to mid- May) may be considered. However, it must be kept in mind that grazing capacity and forage production in the year a pasture is grazed from winter to beyond mid-May, will be temporarily reduced. On projects where early spring grazing (prior to rapid plant growth) is combined with summer (active growing season) grazing the three grazing treatments described in Table 1 must be employed. It is usually more efficient to manage winter grazing separately from spring-summer grazing. If livestock are to be grazed in a native range or riparian pasture in winter or early spring (generally December through early May), and a separate grazing formula is required, it must be coordinated with the summer-fall grazing system as follows: Minimum required rest in pastures where livestock are grazed and/or fed hay during winter is one winter of rest in every two (2) years. Hay, grain, salt, protein or other supplements will not be placed in riparian areas during winter or any other season. Minimum required rest in pastures where livestock are grazed in spring, prior to early May, is one spring of rest in every two years. Any pastures grazed later in spring than early-mid May require the greater amount of rest shown in the table 1. As a minimum, when grazing is limited to winter or the non-growing season period, a two-pasture alternate use approach is frequently used. The area designated for winter grazing is divided into two pastures and each year one pasture is grazed during winter months and the other rested and use is alternated from year to year. During winter months cattle tend to concentrate in wooded areas (shrub or tree-dominated areas) for shelter. This must be kept in perspective when assessing the impacts to woody vegetation. It is often the case that with careful placement of hay, cattle impacts to woody vegetation can be kept to a small portion of the area. If this is not the case, it might be necessary to fence a portion of the woody vegetation to protect it from damage but should only be done once efforts to control livestock distribution by other means have proven ineffective. An acceptable level of impact will vary depending on the objectives (i.e. a level of woody vegetation impact acceptable for a working cattle ranch may be much different than for a WMA).

Scope

The goal is to include as much of the lands under easement as possible within the grazing system, but one must be realistic in recognizing the unique needs of a livestock operation. For instance, it may be necessary to set aside small areas as animal husbandry units to be used at the landowner's discretion. Such areas might include calving pastures, branding pastures, sorting pens, bull pastures, holding corrals, or pastures used for weaning and shipping. Also, one or more pastures may be necessary for rounding up or transitioning livestock between summer/fall and winter seasons, which may require annual fall grazing. As long as the majority of the native rangelands involved are within a grazing system that meets the minimum standards for yearlong rest and season long deferment, this is acceptable.

Non-native Pasture

It is common for livestock operators to have pastures on their land that are non-native range. The landowner's goal is usually to keep these pastures productive as non-native pasture. The pastures typically are seeded with an exotic pasture grass or grass mix. On occasion forbs like dry-land alfalfa are included in the planting. The minimum standards for season long deferment and yearlong rest applied to native rangelands do not necessarily apply to non-native pastures. In cases of non-native pasture, a grazing strategy that is coordinated with the grazing system and meets the needs of the ranch should be worked out. In the case of crested wheatgrass pasture it may be necessary to allow grazing early (late-winter or early spring) each year to maintain palatability. In the case of other pasture grasses, such as smooth brome, a deferred approach works well; a pasture is grazed during the growing season in year one then deferred from grazing until near seed-ripe in year 2 (about the time such grasses would normally be harvested as hay). This will maintain the productivity of the non-native species until replanting is necessary and in some cases maintain them as attractive feeding sites for large wild ungulates. It is important to keep in mind that these areas, unlike native range, are essentially cropland and whether grazed or left idle will eventually need some sort of agricultural practice to maintain their productivity. It is usually best to leave irrigated pasture management to the landowner's discretion. If important riparian is included in the field it might be necessary to fence the riparian zone from the irrigated pasture to protect it from livestock grazing. Usually grazing strategies employed on irrigated pasture are not consistent with proper management of key native riparian plants. In such situations, it may be necessary to apply the guideline Series entitled: The Need for Stream Vegetated Buffers Parts 1 through 3, Montana Department of Environmental Quality 2008. Livestock operators often place cows in hayfields during winter months. In such cases the field should be managed at the landowner's discretion and in some instances, it might be necessary to fence out riparian from the hayfield to protect it from grazing.

Stocking Rate

Usually FWP does not require a maximum stocking rate as part of the grazing strategy on easements or Upland Game Bird Habitat Enhancement Projects. In such cases it is clearly stated in the grazing plan, that the maximum stocking rate will be ultimately determined by the operator's ability to conform to the grazing system. In other words, the livestock numbers may increase as long as the plan can be followed and livestock movement dates are not compromised. Such an approach is consistent with the reality that, for most easement projects, the primary use of the land is agricultural. Occasionally a landowner has requested that an upper limit stocking rate be established as a stipulation in the easement. As long as the number of livestock is realistic this is not a problem. On lands owned by FWP any grazing that occurs will be at stocking levels determined by the agency and approved by the FWP Commission.

Mineral and Other Supplements

On privately owned grazing lands the landowner is given more discretion on locations for placement of mineral block than on FWP lands. However, regardless of land ownership the placing of mineral block within riparian areas will be strongly discouraged. On FWP lands the placement of mineral block will be described as part of the grazing plan. Supplements will be placed away from riparian areas, ponds, and roads. Rocky (stable soil) areas on ridge tops or in the trees are preferred sites. On FWP lands livestock within pasture grazing systems are not to be fed hay.

Flexibility

Rarely, a severe environmental influence (i.e. fire, drought, grasshoppers) may require a onetime deviation from the prescribed grazing plan. In such cases the landowner is to notify the local FWP representative of the problem. In a timely manner the local FWP representative, Habitat Section representative, and landowner will meet to discuss the issue and work out a solution. It is important to keep in mind that short term adjustments to the grazing plan must be the exception rather than the rule. Allowing grazing to occur in a pasture scheduled for rest is always a last resort. FWP has managed grazing systems across Montana through a variety of severe environmental events. This experience has shown that when a legitimate problem exists an alternative can usually be found that avoids grazing the pastures scheduled for rest.

Appendix C – Spotted Dog Stock Water System Preliminary Budget Table

Prepared by Montana FWP

DATE: 09-27-2023

BASE BID				Engineers est.	
ITEM	Bid Item	Unit	Quantity	Unit Price	Bid Price
1	Mobilization	LS	1	\$4,000.00	\$ 4,000.00
2	1-1/2" HDPE Water Line	LF	26,400	\$4.50	\$ 118,800.00
3	Attach to spring development	EA	1	\$ 300.00	\$ 300.00
4	Install "T" and Curb Stop	EA	3	\$ 800.00	\$ 2,400.00
5	Curb Stop w/ Drain	EA	6	\$ 800.00	\$ 4,800.00
6	Watering Assembly - Roberts Mfg. Co. Bob Float Model No. R400 - 1	EA	7	\$ 1,000.00	\$ 7,000.00
7	Air Vent	EA	4	\$ 750.00	\$ 3,000.00
8	1000 Gallon Stock Tank (Hartland Tank w/ concrete base)	EA	7	\$ 4,500.00	\$ 31,500.00
9	Cistern	LSUM	1	\$ 23,000.00	\$ 23,000.00
10	Spring development	LSUM	1	\$ 8,000.00	\$ 8,000.00
	Project Total				\$ 202,800.00
	Contingency			15%	\$ 30,420.00
	Grand Total				\$ 233,220.00
Inflation from 2021 to 2024				12%	\$ 261,206.40

Appendix D – Affected Wildlife Species

Vertebrate species observed on or nearby the Spotted Dog Wildlife Management Area property, or likely to occur there based on species distribution and habitat suitability.

Common Name	Species Group	Scientific Name
Columbia Spotted Frog	<i>Amphibians</i>	<i>Rana luteiventris</i>
Long-toed Salamander	<i>Amphibians</i>	<i>Ambystoma macrodactylum</i>
Western Toad	<i>Amphibians</i>	<i>Anaxyrus boreas</i>
American Kestrel	<i>Birds</i>	<i>Falco sparverius</i>
American Coot	<i>Birds</i>	<i>Fulica americana</i>
American Crow	<i>Birds</i>	<i>Corvus brachyrhynchos</i>
American Goshawk	<i>Birds</i>	<i>Accipiter atricapillus</i>
American Robin	<i>Birds</i>	<i>Turdus migratorius</i>
American Three-toed Woodpecker	<i>Birds</i>	<i>Picoides dorsalis</i>
American White Pelican	<i>Birds</i>	<i>Pelecanus erythrorhynchos</i>
Bald Eagle	<i>Birds</i>	<i>Haliaeetus leucocephalus</i>
Bank Swallow	<i>Birds</i>	<i>Riparia riparia</i>
Barn Swallow	<i>Birds</i>	<i>Hirundo rustica</i>
Barrow's Goldeneye	<i>Birds</i>	<i>Bucephala islandica</i>
Belted Kingfisher	<i>Birds</i>	<i>Megaceryle alcyon</i>
Black-billed Magpie	<i>Birds</i>	<i>Pica hudsonia</i>
Black-backed Woodpecker	<i>Birds</i>	<i>Picoides arcticus</i>
Black-capped Chickadee	<i>Birds</i>	<i>Poecile atricapillus</i>
Black-headed Grosbeak	<i>Birds</i>	<i>Pheucticus melanocephalus</i>
Bobolink	<i>Birds</i>	<i>Dolichonyx oryzivorus</i>
Boreal Owl	<i>Birds</i>	<i>Aegolius funereus</i>
Brewer's Sparrow	<i>Birds</i>	<i>Spizella breweri</i>
Brown-headed Cowbird	<i>Birds</i>	<i>Molothrus ater</i>
Brown Creeper	<i>Birds</i>	<i>Certhia americana</i>
Canada Goose	<i>Birds</i>	<i>Branta canadensis</i>
Cassin's Finch	<i>Birds</i>	<i>Haemorhous cassinii</i>
Cassin's Vireo	<i>Birds</i>	<i>Vireo cassinii</i>
Cedar Waxwing	<i>Birds</i>	<i>Bombycilla cedrorum</i>
Chipping Sparrow	<i>Birds</i>	<i>Spizella passerina</i>
Clark's Nutcracker	<i>Birds</i>	<i>Nucifraga columbiana</i>
Cliff Swallow	<i>Birds</i>	<i>Petrochelidon pyrrhonota</i>
Common Merganser	<i>Birds</i>	<i>Mergus merganser</i>
Common Nighthawk	<i>Birds</i>	<i>Chordeiles minor</i>
Common Poorwill	<i>Birds</i>	<i>Phalaenoptilus nuttallii</i>
Common Raven	<i>Birds</i>	<i>Corvus corax</i>
Common Yellowthroat	<i>Birds</i>	<i>Geothlypis trichas</i>

Common Name	Species Group	Scientific Name
Cooper's Hawk	<i>Birds</i>	<i>Accipiter cooperii</i>
Cordilleran Flycatcher	<i>Birds</i>	<i>Empidonax occidentalis</i>
Dark-eyed Junco	<i>Birds</i>	<i>Junco hyemalis</i>
Downy Woodpecker	<i>Birds</i>	<i>Picoides pubescens</i>
Dusky Flycatcher	<i>Birds</i>	<i>Empidonax oberholseri</i>
Dusky (Blue) Grouse	<i>Birds</i>	<i>Dendragapus obscurus</i>
Eastern Kingbird	<i>Birds</i>	<i>Tyrannus tyrannus</i>
European Starling	<i>Birds</i>	<i>Sturnus vulgaris</i>
Evening Grosbeak	<i>Birds</i>	<i>Coccothraustes vespertinus</i>
Ferruginous Hawk	<i>Birds</i>	<i>Buteo regalis</i>
Flammulated owl	<i>Birds</i>	<i>Psiloscops flammeolus</i>
Golden Eagle	<i>Birds</i>	<i>Aquila chrysaetos</i>
Golden-crowned Kinglet	<i>Birds</i>	<i>Regulus satrapa</i>
Gray Catbird	<i>Birds</i>	<i>Dumetella carolinensis</i>
Gray Jay	<i>Birds</i>	<i>Perisoreus canadensis</i>
Gray Partridge	<i>Birds</i>	<i>Perdix perdix</i>
Great Blue Heron	<i>Birds</i>	<i>Ardea herodias</i>
Great Gray Owl	<i>Birds</i>	<i>Strix nebulosa</i>
Great Horned Owl	<i>Birds</i>	<i>Bubo virginianus</i>
Green-tailed Towhee	<i>Birds</i>	<i>Pipilo chlorurus</i>
Hammond's Flycatcher	<i>Birds</i>	<i>Empidonax hammondi</i>
Hairy Woodpecker	<i>Birds</i>	<i>Picoides villosus</i>
Hooded Merganser	<i>Birds</i>	<i>Lophodytes cucullatus</i>
Horned Lark	<i>Birds</i>	<i>Eremophila alpestris</i>
House Wren	<i>Birds</i>	<i>Troglodytes aedon</i>
Hermit Thrush	<i>Birds</i>	<i>Catharus guttatus</i>
Lazuli Bunting	<i>Birds</i>	<i>Passerina amoena</i>
Least Flycatcher	<i>Birds</i>	<i>Empidonax minimus</i>
Lewis's Woodpecker	<i>Birds</i>	<i>Melanerpes lewis</i>
Lincoln's Sparrow	<i>Birds</i>	<i>Melospiza lincolnii</i>
Long-billed Curlew	<i>Birds</i>	<i>Numenius americanus</i>
MacGillivray's Warbler	<i>Birds</i>	<i>Oporornis tolmiei</i>
Mallard	<i>Birds</i>	<i>Anas platyrhynchos</i>
Merlin	<i>Birds</i>	<i>Falco columbarius</i>
Mountain Bluebird	<i>Birds</i>	<i>Sialia currucoides</i>
Mountain Chickadee	<i>Birds</i>	<i>Poecile gambeli</i>
Mourning Dove	<i>Birds</i>	<i>Zenaida macroura</i>
Northern Flicker	<i>Birds</i>	<i>Colaptes auratus</i>
Northern Harrier	<i>Birds</i>	<i>Circus cyaneus</i>
Northern Oriole	<i>Birds</i>	<i>Icterus galbula</i>

Common Name	Species Group	Scientific Name
Northern Pygmy-Owl	<i>Birds</i>	<i>Glaucidium gnoma</i>
Northern Rough-winged Swallow	<i>Birds</i>	<i>Stelgidopteryx serripennis</i>
Northern Saw-whet Owl	<i>Birds</i>	<i>Aegolius acadicus</i>
Northern Shrike	<i>Birds</i>	<i>Lanius excubitor</i>
Northern Waterthrush	<i>Birds</i>	<i>Seiurus noveboracensis</i>
Olive-sided Flycatcher	<i>Birds</i>	<i>Contopus cooperi</i>
Orange-crowned Warbler	<i>Birds</i>	<i>Vermivora celata</i>
Osprey	<i>Birds</i>	<i>Pandion haliaetus</i>
Pine Grosbeak	<i>Birds</i>	<i>Pinicola enucleator</i>
Pine Siskin	<i>Birds</i>	<i>Carduelis pinus</i>
Pileated Woodpecker	<i>Birds</i>	<i>Dryocopus pileatus</i>
Prairie Falcon	<i>Birds</i>	<i>Falco mexicanus</i>
Red-breasted Nuthatch	<i>Birds</i>	<i>Sitta canadensis</i>
Red Crossbill	<i>Birds</i>	<i>Loxia curvirostra</i>
Red-naped Sapsucker	<i>Birds</i>	<i>Sphyrapicus nuchalis</i>
Red-tailed Hawk	<i>Birds</i>	<i>Buteo jamaicensis</i>
Red-winged Blackbird	<i>Birds</i>	<i>Agelaius phoeniceus</i>
Rock Pigeon	<i>Birds</i>	<i>Columba livia</i>
Rock Wren	<i>Birds</i>	<i>Salpinctes obsoletus</i>
Rough-legged Hawk	<i>Birds</i>	<i>Buteo lagopus</i>
Ruby-crowned Kinglet	<i>Birds</i>	<i>Regulus calendula</i>
Ruffed Grouse	<i>Birds</i>	<i>Bonasa umbellus</i>
Rufous Hummingbird	<i>Birds</i>	<i>Selasphorus rufus</i>
Sage Thrasher	<i>Birds</i>	<i>Oreoscoptes montanus</i>
Sandhill Crane	<i>Birds</i>	<i>Grus canadensis</i>
Savannah Sparrow	<i>Birds</i>	<i>Passerculus sandwichensis</i>
Sharp-shinned Hawk	<i>Birds</i>	<i>Accipiter striatus</i>
Snow Bunting	<i>Birds</i>	<i>Plectrophenax nivalis</i>
Song Sparrow	<i>Birds</i>	<i>Melospiza melodia</i>
Sora	<i>Birds</i>	<i>Porzana carolina</i>
Spotted Sandpiper	<i>Birds</i>	<i>Actitis macularius</i>
Spotted Towhee	<i>Birds</i>	<i>Pipilo maculatus</i>
Swainson's Thrush	<i>Birds</i>	<i>Catharus ustulatus</i>
Townsend's Solitaire	<i>Birds</i>	<i>Myadestes townsendi</i>
Tree Swallow	<i>Birds</i>	<i>Tachycineta bicolor</i>
Trumpeter Swan	<i>Birds</i>	<i>Cygnus buccinator</i>
Turkey Vulture	<i>Birds</i>	<i>Cathartes aura</i>
Veery	<i>Birds</i>	<i>Catharus fuscescens</i>
Vesper Sparrow	<i>Birds</i>	<i>Pooecetes gramineus</i>
Violet-green Swallow	<i>Birds</i>	<i>Tachycineta thalassina</i>

Common Name	Species Group	Scientific Name
Warbling Vireo	<i>Birds</i>	<i>Vireo gilvus</i>
Western Meadowlark	<i>Birds</i>	<i>Sturnella neglecta</i>
Western Screech-owl	<i>Birds</i>	<i>Megascops kennicottii</i>
Western Tanager	<i>Birds</i>	<i>Piranga ludoviciana</i>
Western Wood-Pewee	<i>Birds</i>	<i>Contopus sordidulus</i>
White-breasted Nuthatch	<i>Birds</i>	<i>Sitta carolinensis</i>
White-crowned Sparrow	<i>Birds</i>	<i>Zonotrichia leucophrys</i>
Willow Flycatcher	<i>Birds</i>	<i>Empidonax traillii</i>
Wilson's Snipe	<i>Birds</i>	<i>Gallinago delicata</i>
Wilson's Warbler	<i>Birds</i>	<i>Wilsonia pusilla</i>
Yellow-rumped Warbler	<i>Birds</i>	<i>Dendroica coronata</i>
Yellow Warbler	<i>Birds</i>	<i>Dendroica petechia</i>
American Beaver	<i>Mammals</i>	<i>Castor canadensis</i>
Badger	<i>Mammals</i>	<i>Taxidea taxus</i>
Big Brown Bat	<i>Mammals</i>	<i>Eptesicus fuscus</i>
Black Bear	<i>Mammals</i>	<i>Ursus americanus</i>
Bobcat	<i>Mammals</i>	<i>Lynx rufus</i>
Bushy-tailed Woodrat	<i>Mammals</i>	<i>Neotoma cinerea</i>
Columbian Ground Squirrel	<i>Mammals</i>	<i>Spermophilus columbianus</i>
Coyote	<i>Mammals</i>	<i>Canis latrans</i>
Deer Mouse	<i>Mammals</i>	<i>Peromyscus maniculatus</i>
Dusky or Montane Shrew	<i>Mammals</i>	<i>Sorex monticolus</i>
Dwarf Shrew	<i>Mammals</i>	<i>Sorex nanus</i>
Elk or Wapiti	<i>Mammals</i>	<i>Cervus canadensis</i>
Ermine	<i>Mammals</i>	<i>Mustela erminea</i>
Fringed myotis	<i>Mammals</i>	<i>Myotis thysanodes</i>
Golden-mantled Ground Squirrel	<i>Mammals</i>	<i>Spermophilus lateralis</i>
Grizzly Bear	<i>Mammals</i>	<i>Ursus arctos horribilis</i>
Heather Vole	<i>Mammals</i>	<i>Phenacomys intermedius</i>
Hoary Bat	<i>Mammals</i>	<i>Lasiurus cinereus</i>
Little Brown Myotis	<i>Mammals</i>	<i>Myotis lucifugus</i>
Long-eared Myotis	<i>Mammals</i>	<i>Myotis evotis</i>
Long-legged Myotis	<i>Mammals</i>	<i>Myotis volans</i>
Long-tailed Vole	<i>Mammals</i>	<i>Microtus longicaudus</i>
Long-tailed Weasel	<i>Mammals</i>	<i>Mustela frenata</i>
Marten	<i>Mammals</i>	<i>Martes americana</i>
Masked Shrew	<i>Mammals</i>	<i>Sorex cinereus</i>
Meadow Vole	<i>Mammals</i>	<i>Microtus pennsylvanicus</i>
Mink	<i>Mammals</i>	<i>Mustela vison</i>
Montane Vole	<i>Mammals</i>	<i>Microtus montanus</i>

Common Name	Species Group	Scientific Name
Moose	<i>Mammals</i>	<i>Alces alces</i>
Mountain Cottontail	<i>Mammals</i>	<i>Sylvilagus nuttallii</i>
Mountain Lion	<i>Mammals</i>	<i>Puma concolor</i>
Mule Deer	<i>Mammals</i>	<i>Odocoileus hemionus</i>
Muskrat	<i>Mammals</i>	<i>Ondatra zebithicus</i>
North American Porcupine	<i>Mammals</i>	<i>Erethizon dorsatum</i>
North American Water Vole	<i>Mammals</i>	<i>Microtus richardsoni</i>
Northern Flying Squirrel	<i>Mammals</i>	<i>Glaucomys sabrinus</i>
Northern Pocket Gopher	<i>Mammals</i>	<i>Thomomys idahoensis</i>
Pika	<i>Mammals</i>	<i>Ochotona princeps</i>
Porcupine	<i>Mammals</i>	<i>Erethizon dorsatum</i>
Preble's Shrew	<i>Mammals</i>	<i>Sorex preblei</i>
Pronghorn (Antelope)	<i>Mammals</i>	<i>Antilocapra americana</i>
Pygmy Shrew	<i>Mammals</i>	<i>Sorex hoyi</i>
Raccoon	<i>Mammals</i>	<i>Procyon lotor</i>
Red Fox	<i>Mammals</i>	<i>Vulpes vulpes</i>
Red Squirrel	<i>Mammals</i>	<i>Tamiasciurus hudsonicus</i>
Red-tailed Chipmunk	<i>Mammals</i>	<i>Tamias ruficaudus</i>
Silver-haired Bat	<i>Mammals</i>	<i>Lasionycteris noctivagans</i>
Southern Red-backed Vole	<i>Mammals</i>	<i>Clethrionomys gapperi</i>
Snowshoe Hare	<i>Mammals</i>	<i>Lepus americanus</i>
Spotted Bat	<i>Mammals</i>	<i>Euderma maculatum</i>
Striped Skunk	<i>Mammals</i>	<i>Mephitis mephitis</i>
Townsend's Big-eared Bat	<i>Mammals</i>	<i>Corynorhinus townsendii</i>
Vagrant Shrew	<i>Mammals</i>	<i>Sorex vagrans</i>
Water Shrew	<i>Mammals</i>	<i>Sorex palustris</i>
Western Jumping Mouse	<i>Mammals</i>	<i>Zapus princeps</i>
Western Pygmy Shrew	<i>Mammals</i>	<i>Sorex eximius</i>
Western Small-footed Myotis	<i>Mammals</i>	<i>Myotis ciliolabrum</i>
Western Spotted Skunk	<i>Mammals</i>	<i>Spilogale gracilis</i>
White-tailed Deer	<i>Mammals</i>	<i>Odocoileus virginianus</i>
White-tailed Jackrabbit	<i>Mammals</i>	<i>Lepus townsendii</i>
Wolverine	<i>Mammals</i>	<i>Gulo gulo</i>
Yellow-bellied Marmot	<i>Mammals</i>	<i>Marmota flaviventris</i>
Yellow-pine Chipmunk	<i>Mammals</i>	<i>Tamias amoenus</i>
Common Gartersnake	<i>Reptiles</i>	<i>Thamnophis sirtalis</i>
Gophersnake	<i>Reptiles</i>	<i>Pituophis catenifer</i>
North American Racer	<i>Reptiles</i>	<i>Coluber constrictor</i>
Terrestrial Gartersnake	<i>Reptiles</i>	<i>Thamnophis elegans</i>
Westslope Cutthroat Trout	<i>Fish</i>	<i>Oncorhynchus clarkia lewisi</i>

Common Name	Species Group	<i>Scientific Name</i>
Brook Trout	<i>Fish</i>	<i>Salvelinus fontinalis</i>
Longnose Sucker	<i>Fish</i>	<i>Catostomus platyrhynchus</i>

Appendix E – Affected Species of Concern

Montana Species of Concern (SOC) and Federally listed Threatened/Endangered species that have been observed on or directly adjacent to Spotted Dog Wildlife Management Area or are predicted to occur within the property based on available habitats. “Confirmed” species have been observed on or directly adjacent to the property. “Suspected” are species who are likely to occur on the WMA based on available habitat and range maps, but have not been directly observed. “Possible” species are those whose ranges overlap the WMA but are less likely to occur on the WMA due to habitat conditions or due to the WMA being on the edge of their range or only included in migratory routes (i.e., the WMA is likely stopover habitat for the species).

Species Group	Common Name	Scientific Name	ESA/SOC Rank	Habitat	Confirmed	Suspected	Possible
Amphibians	Western Toad	<i>Anaxyrus boreas</i>	S2	Wetlands, floodplain pools	X		
Birds	American Goshawk	<i>Accipiter atricapillus</i>	S3	Mixed conifer forests	X		
Birds	Clark's Nutcracker	<i>Nucifraga columbiana</i>	S3	Conifer forest	X		
Birds	Cassin's Finch	<i>Haemorhous cassinii</i>	S3	Drier conifer forest	X		
Birds	Evening Grosbeak	<i>Coccothraustes vespertinus</i>	S3	Conifer forest	X		
Birds	Great Gray Owl	<i>Strix nebulosa</i>	S3	Conifer forest near open meadows	X		
Birds	Pileated Woodpecker	<i>Dryocopus pileatus</i>	S3	Moist conifer forests	X		
Birds	Brewer's Sparrow	<i>Spizella breweri</i>	S3B	Sagebrush	X		
Birds	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Delisted (ESA), S4	Riparian forest	X		
Birds	Bobolink	<i>Dolichonyx oryzivorus</i>	S3B	Moist grasslands	X		
Birds	Veery	<i>Catharus fuscescens</i>	S3B	Riparian forest	X		
Birds	Long-billed Curlew	<i>Numenius americanus</i>	S3B	Grasslands	X		
Birds	Great Blue Heron	<i>Ardea herodias</i>	S3	Riparian forest	X		

Birds	Lewis's Woodpecker	<i>Melanerpes lewis</i>	S2B	Riparian forest	X		
Birds	Golden Eagle	<i>Aquila chrysaetos</i>	S3	Grasslands	X		
Birds	Hooded Merganser	<i>Lophodytes cucullatus</i>	S4	Rivers, Riparian/Wetland	X		
Birds	Brown Creeper	<i>Certhia americana</i>	S3	Moist conifer forests		X	
Birds	Ferruginous Hawk	<i>Buteo regalis</i>	S3B	Sagebrush grassland			X
Birds	Sage Thrasher	<i>Oreoscoptes montanus</i>	S3B	Sagebrush			X
Birds	Green-tailed Towhee	<i>Pipilo chlorurus</i>	S3B	Shrub woodland			X
Birds	Black-backed Woodpecker	<i>Picoides arcticus</i>	S3	Conifer forest burns		X	
Birds	Barrow's Goldeneye	<i>Bucephala islandica</i>	S4	Mountain Lakes and Wetlands		X	
Birds	Rufous Hummingbird	<i>Selasphorus rufus</i>	S4B	Riparian shrub		X	
Birds	Western Screech-Owl	<i>Megascops kennicottii</i>	S3S4	Riparian forest		X	
Birds	Trumpeter Swan	<i>Cygnus buccinator</i>	S3	Lakes, ponds, reservoirs			X
Birds	Flammulated Owl	<i>Psilosops flammeolus</i>	S3B	Dry conifer forest		X	
Birds	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	S4B	Shrub grassland		X	
Birds	Boreal Owl	<i>Aegolius funereus</i>	S3S4	Conifer forest			X
Birds	American White Pelican	<i>Pelecanus erythrorhynchos</i>	S3B	Lakes, ponds, reservoirs			X
Fish	Westslope Cutthroat Trout	<i>Oncorhynchus clarkii lewisi</i>	S2	Mountain streams, rivers, lakes	X		
Invertebrates	Western Pearlshell	<i>Margaritifera falcata</i>	S2	Mountain streams, rivers	X		

Invertebrates	Suckley Cuckoo Bumble Bee	<i>Bombus suckleyi</i>	S1	Montane/steppe grassland and shrubland			X
Invertebrates	Keeled Mountainsnail	<i>Oreohelix carinifera</i>	S1	Limestone, dry conifer forests			X
Mammals	Long-legged Myotis	<i>Myotis volans</i>	S3	Conifer forest	X		
Mammals	Fringed Myotis	<i>Myotis thysanodes</i>	S3	Riparian and dry mixed conifer forest	X		
Mammals	Wolverine	<i>Gulo gulo</i>	S3	Boreal Forest and Alpine Habitats	X		
Mammals	Hoary Bat	<i>Lasiurus cinereus</i>	S3B	Riparian and forest	X		
Mammals	Little Brown Myotis	<i>Myotis lucifugus</i>	S3	Generalist	X		
Mammals	Long-eared Myotis	<i>Myotis evotis</i>	S3	Forest	X		
Mammals	Grizzly Bear	<i>Ursus arctos</i>	Threatened (ESA), S2S3	Conifer forest	X		
Mammals	Canada Lynx	<i>Lynx canadensis</i>	Threatened (ESA), S3	Subalpine conifer forest	X		
Mammals	North American Porcupine	<i>Erethizon dorsatum</i>	S3S4	Mixed forest	X		
Mammals	Preble's Shrew	<i>Sorex preblei</i>	S3	Sagebrush grassland			X
Mammals	Western Pygmy Shrew	<i>Sorex eximius</i>	S3	Forest, grasslands, and shrublands, often near water			X
Mammals	Dwarf Shrew	<i>Sorex nanus</i>	S2S3	Rocky habitat			X
Mammals	Silver-haired Bat	<i>Lasionycteris noctivagans</i>	S4	Riparian and forest			X
Mammals	North American Water Vole	<i>Microtus richardsoni</i>	S4	Alpine and subalpine aquatic habitats			X

Mammals	Western Spotted Skunk	<i>Spilogale gracilis</i>	SU	Riparian shrub			X
Mammals	Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	S3	Caves in forested habitats			X
Mammals	Spotted Bat	<i>Euderma maculatum</i>	S3	Cliffs with rock crevices			X
Vascular Plants	Hare's-foot Locoweed	<i>Oxytropis lagopus var. conjugans</i>	S3S4	Sagebrush (low-elevation)	X		
Vascular Plants	Howell's Gumweed	<i>Grindelia howellii</i>	S2S3	Vernally moist sites (Open, Low-elevation)	X		
Vascular Plants	Whitebark Pine	<i>Pinus albicaulis</i>	S3	Subalpine forest, timberline	X		
Vascular Plants	Idaho Sedge	<i>Carex idahoensis</i>	S3	Wetland/Riparian	X		
Vascular Plants	Missoula Phlox	<i>Phlox kelseyi var. missoulensis</i>	S3	Slopes/ridges (Open, foothills to subalpine)	X		
Vascular Plants	Small-winged Sedge	<i>Carex stenoptila</i>	S2S3	Grasslands (Montane)			X
Vascular Plants	Peculiar Moonwort	<i>Botrychium paradoxum</i>	S3	Meadows (Mesic Montane/Subalpine)			X
Vascular Plants	Linear-leaf Fleabane	<i>Erigeron linearis</i>	S2	Sagebrush/Grasslands (Foothills to Montane)			X
Vascular Plants	Platte Cinquefoil	<i>Potentilla plattensis</i>	S3	Grasslands/Sagebrush (Mesic)			X
Vascular Plants	Crawe's Sedge	<i>Carex crawei</i>	S2S3	Wetland/Riparian			X
Vascular Plants	Least Moonwort	<i>Botrychium simplex</i>	S2	NA			X
Vascular Plants	Wedge-leaf Saltbush	<i>Atriplex truncata</i>	S3	Wetland/Riparian			X

Vascular Plants	Rydberg's Parsley	<i>Musineon vaginatum</i>	S3S4	NA			X
Vascular Plants	Suksdorf Monkeyflower	<i>Mimulus suksdorfii</i>	S3S4	NA			X
Vascular Plants	Letterman's Needlegrass	<i>Stipa lettermanii</i>	S1S3	Talus and Grasslands (low-elevation)			X
Vascular Plants	Dense-leaf Draba	<i>Draba densifolia</i>	S2	Alpine			X
Vascular Plants	Western Moonwort	<i>Botrychium hesperium</i>	S3	Various Mesic Sites			X
Vascular Plants	Flatleaf Bladderwort	<i>Utricularia intermedia</i>	S2	Fens (Aquatic)			X
Vascular Plants	Floriferous Monkeyflower	<i>Mimulus floribundus</i>	SH	NA			X
Vascular Plants	Musk-root	<i>Adoxa moschatellina</i>	S3	Rock/Talus			X
Vascular Plants	Mealy Primrose	<i>Primula incana</i>	S3	Wetland/Riparian			X
Vascular Plants	Northern Moonwort	<i>Botrychium pinnatum</i>	S3	NA			X
Vascular Plants	Fleshy Stitchwort	<i>Stellaria crassifolia</i>	S2	Wetland/Riparian			X
Vascular Plants	Divide Bladderpod	<i>Physaria klausii</i>	S3	Slopes (Open, Montane/subalpine)			X
Vascular Plants	Austin's Knotweed	<i>Polygonum austiniae</i>	S3S4	Rock/Talus			X
Vascular Plants	Pale-yellow Jewel-weed	<i>Impatiens aurella</i>	S3	riparian			X
Vascular Plants	Simple Kobresia	<i>Kobresia simpliciuscula</i>	S3	Alpine			X
Vascular Plants	High Northern Buttercup	<i>Ranunculus hyperboreus</i>	S3S4	Wetland/Riparian (Montane)			X

Vascular Plants	Western Joepyeweed	<i>Ageratina occidentalis</i>	S2	Rock/Talus			X
Vascular Plants	Flat-topped Broomrape	<i>Orobanche corymbosa</i>	S3S4	NA			X
Vascular Plants	Wavy Moonwort	<i>Botrychium crenulatum</i>	S3	Various Mesic Sites			X
Vascular Plants	Small Yellow Lady's-slipper	<i>Cypripedium parviflorum</i>	S3S4	NA			X
Vascular Plants	Tufted Club-rush	<i>Trichophorum cespitosum</i>	S2	Fens and wet meadows			X
Vascular Plants	Long-sheath Waterweed	<i>Elodea bifoliata</i>	S2?	Wetland/Riparian (Shallow water)			X
Vascular Plants	Panic Grass	<i>Dichanthelium acuminatum</i>	S2S3	NA			X
Vascular Plants	Beaked Spikerush	<i>Eleocharis rostellata</i>	S3	Wetlands (Alkaline)			X

Appendix F – Water Rights on Spotted Dog WMA

Water Rights List - SD WMA	Ownership	
76G 115721-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	SPOTTED DOG
76G 210601-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 210602-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 210603-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 210604-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 210605-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 214060-00	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 214061-00	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 214062-00	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 214063-00	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 25799-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 40990-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 40991-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 40992-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 40993-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 40994-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 40995-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 40996-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 40997-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 40998-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 40999-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 5892-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91603-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91605-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91606-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91607-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91609-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91610-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91613-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91614-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91616-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91617-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91619-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91627-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91629-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91630-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91631-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91634-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91635-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91636-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	

76G 91639-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91640-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91641-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91643-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91654-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91655-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91656-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91665-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91672-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91676-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91677-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91683-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91687-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91688-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91691-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91692-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91693-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 91694-00	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 30112586	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 30112587	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 30112589	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 30112706	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 30112708	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 30112709	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 30112710	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 30112711	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 30113174	MONTANA STATE BOARD OF LAND COMMISSIONERS TRUST LAND MANAGEMENT DIVISION	
76G 30131000	SPOTTED DOG CANYON LAND INVESTMENTS LLC	
76G 30131001	SPOTTED DOG CANYON LAND INVESTMENTS LLC	
76G 30131014	SPOTTED DOG CANYON LAND INVESTMENTS LLC	
76G 30144421	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 30144422	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	
76G 30144504	MONTANA, STATE OF DEPT OF FISH WILDLIFE & PARKS	

SPOTTED DOG
LLC

CROSS CANYO