



NATIVE GROUSE RIPARIAN HABITAT CONSERVATION

Targeted Implementation Plan

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Chouteau and Cascade County
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TIP Summary

With this project, we will focus on riparian health in the Highwood Mountains with the goal to improve species habitat for non-migratory, native grouse species. This TIP will provide producers with livestock water development and fencing, and we will work one on one to develop a proper grazing plan to improve the quality of vegetation for wildlife habitat and livestock forage. The project area is in the Highwood Mountains and the surrounding foothills in both Chouteau and Cascade County. The TIPs effort will be focused on improving woody riparian habitats along creeks and streams that offer vital winter habitat for many native grouse. Conservation practices implemented with this TIP will provide healthier habitats for ruffed grouse and sharp-tailed grouse, along with many other upland game birds, nongame species (e.g., songbirds, bats, amphibians, pollinators, and small mammals), big game species, and other wildlife in the project area.

The primary resource concern we will focus on is terrestrial habitat for wildlife and invertebrates with the secondary resource concerns being plant productivity and health as well as livestock water availability. We currently have 7 producers interested with the average cost at \$157,662.71 per contract. The total financial cost of this project will be approximately \$1.1 million not including potential funding from outside agencies. It is anticipated that each contract will take between 3-5 years to complete.

Background Information

Ruffed grouse (*Bonasa umbellus*) and sharp-tailed grouse (*Tympanuchus phasianellus*) are upland game bird species that are native to Montana and occur in Chouteau and Cascade Counties. Sharp-tailed grouse habitat is primarily grassland interspersed with shrub and brush-filled coulees (Montana Natural Heritage Program, 2021). They prefer stands of inter-mixed tree and shrub grasslands that include winter food sources and thermal cover associated with woody plants. According to the Montana Field Guide, ruffed grouse are found in moderately dense, brushy, mixed-conifer and deciduous tree often along stream bottoms. In Montana, Ruffed Grouse are observed most at an elevation of 4,500 ft. At these lower elevations, they can mainly be found in riparian habitats and in the thickets of the foothills (Montana Natural Heritage Program, 2021). Both species are permanent residents that occupy their habitats year-round (Figures 1&2). Although the habitats have their differences, each species heavily rely on dense, wooded riparian areas for winter survival. This allows them to have shelter, a food source, and thermal protection. Sharp-tailed grouse east of the Continental Divide and ruffed grouse are classified as S4 in the state. This means “apparently secure, though it may be quite rare in parts of its range, and/or suspected to be declining” (Montana Natural Heritage Program, 2021).

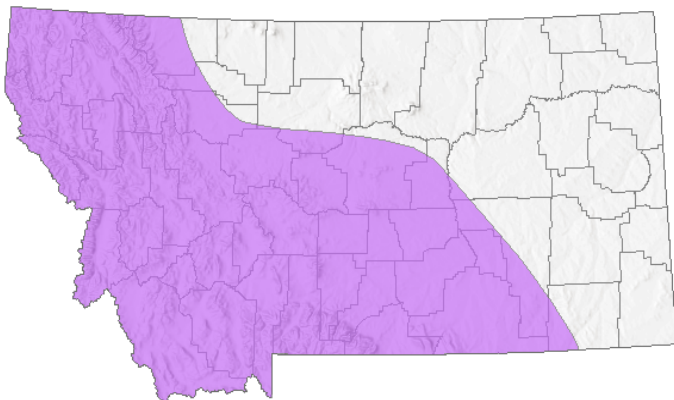


Figure 1. Ruffed grouse year-round range (purple) in Montana (Montana Field Guide)

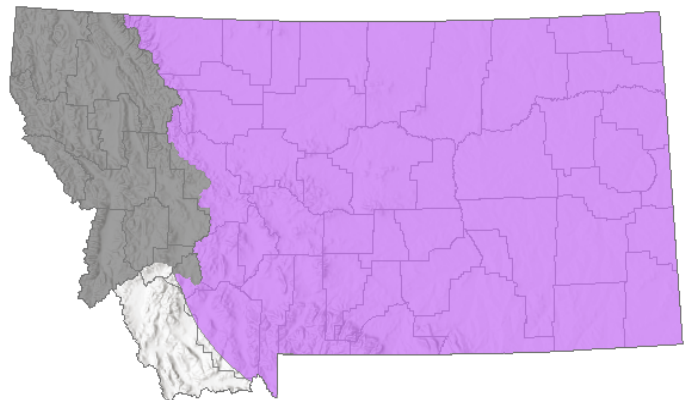
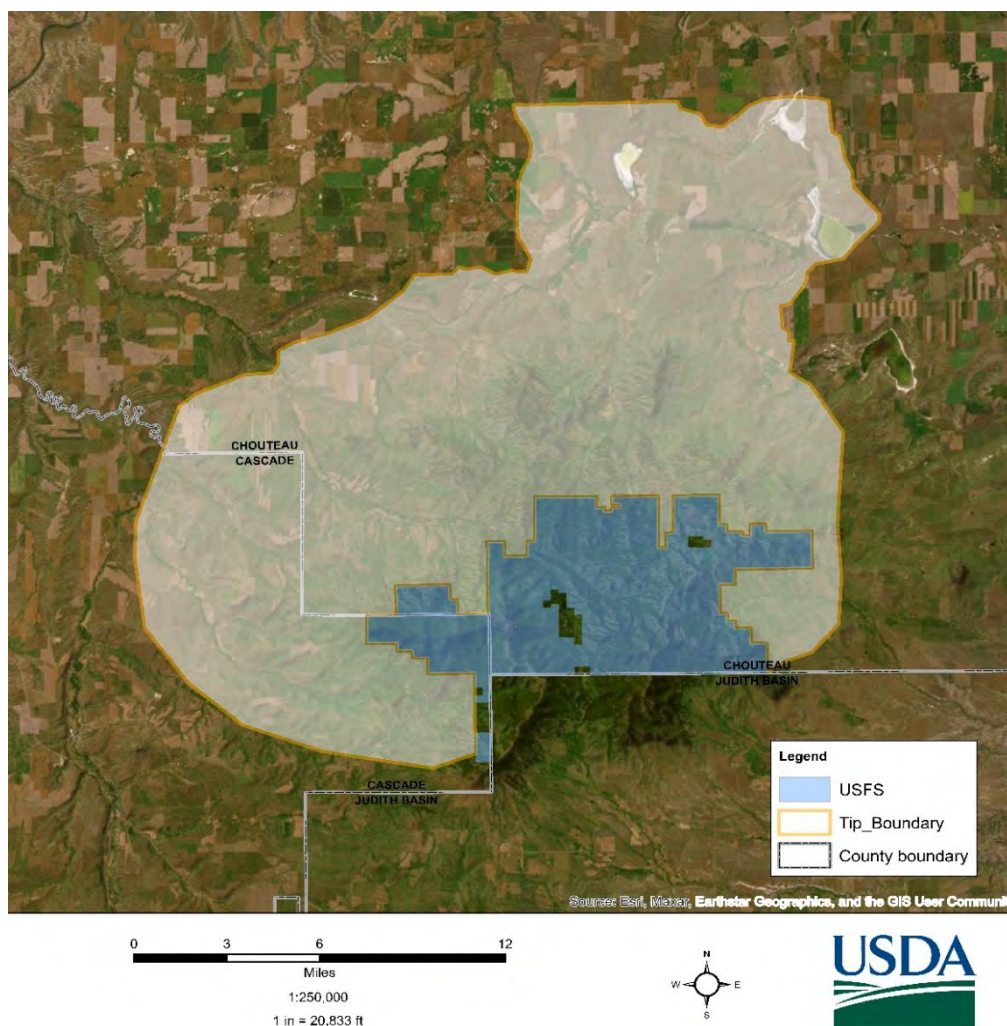


Figure 2. Sharp-tailed grouse year-round range (purple) and historic range (gray) in Montana (Montana Field Guide)

Riparian areas are lands that occur along the edges of rivers, streams, lakes, and other surface water bodies. They provide wildlife habitat and important forage quality for livestock. These riparian ecosystems occupy only a small part of the overall area, but are critical sources for insect and plant diversity, which in turn provides a food source for many of Montana's native wildlife species. Many other species, although not completely dependent on riparian habitats, tend to use them to a greater degree than upland areas (USFS). These systems are also important for recreation, wildlife habitat, and perform a variety of ecosystem services, such as filtering nutrients and pathogens from surface runoff to protect streams and lakes. Though riparian areas are important sources of forage for grazing livestock, inappropriate and uncontrolled grazing management can result in damage to these ecosystems, decrease productivity, and harm the environment (Haan & Barlett, 2010). According to the Montana Field Guide, both grouse species are commonly found in and associated with 'Rocky Mountain Lower Montane-Foothill Riparian Woodland and Shrubland' among many other species of concern such as the Short-eared Owl, Little Brown Myotis, Ferruginous Hawk, etc. Occurrences are found within the flood zone of rivers, floodplain swales, and on immediate streambanks. There is approximately 360K acres of this ecological system across Central and Western Montana, including the Highwood Mountains and the Bears Paw in Chouteau County. Heavy grazing by cattle along these streams and can result in increased erosion and eliminate the vegetative regeneration. In sites where there is prolonged disturbance, shrub cover will decrease, resulting in a more open canopy not suitable for the target species (Montana Natural Heritage Program, 2017). Implementing this TIP would enhance the habitat that would help ensure native grouse populations stay healthy and abundant in Chouteau and Cascade County.



Geographic Focus

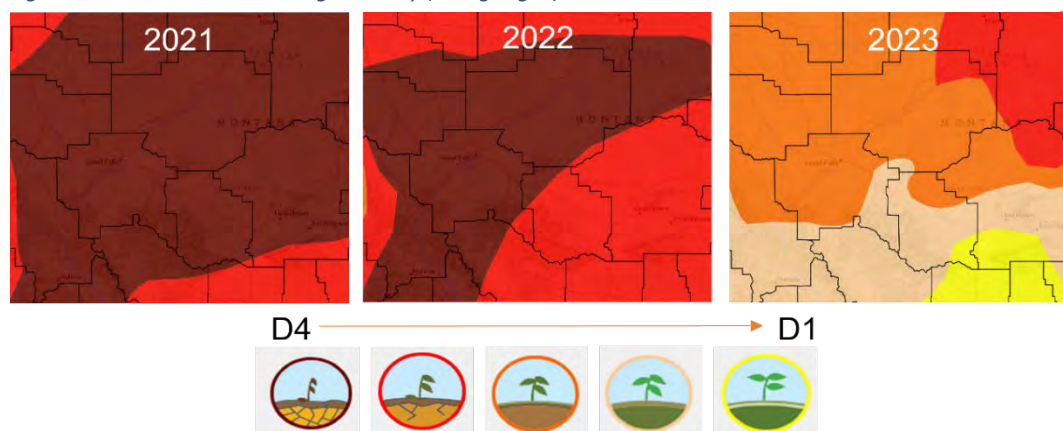
The TIP area totals 189,738 acres with 30,778 acres of crop, 37,133 acres of pasture, 114,249 acres of range, 3,519 acres of riparian area, and 4,059 acres of other non-NRCS categorized land uses. The target area is specific to the Highwood Mountains and the surrounding foothills and borders USFS land.

Montana Fish, Wildlife & Parks (FWP) initially suggested conducting the project in the Highwoods, and with help from NRCS State Staff, Ducks Unlimited, and FWP, the boundary was carefully identified using ruffed grouse distribution, known sharp-tailed grouse leks, and producer interest. The TIP area has been agreed upon with partner agencies.

Resource Concern

Since 2021, much of Chouteau and Cascade County were in a D4 drought (Figure 3) status meaning there was widespread crop and pasture loss, fire risk, and water shortages (NOAA, 2021). Multiple years of drought coupled with limited water distribution, leads producers to overgraze in pastures where water is available, resulting in degraded plant condition and wildlife habitat. As a result, livestock are concentrated around available water sources more than in previous years and grazed in those areas for longer than usual. Many producers in the Highwood Mountains rely on springs and creeks as a continuous source of water for their cattle. In addition, cattle spend long periods of time in these riparian areas, as they provide shade and cooler temperatures during hot summer days. Improper grazing on riparian systems and disproportionate use of riparian areas by livestock can cause permanent damage including, but not limited to, reduced dissipation of stream energy, soil erosion, reduced floodplain recharge, and subsequently a reduction in the riparian plant communities that are used as forage and cover by various wildlife species. Changing grazing management and implementing a proper grazing system in the Highwoods is critical for increasing plant productivity for healthy wildlife habitat and livestock forage.

Figure 3. Central Montana drought history (drought.gov)



The Chouteau County Local Working Group has identified fish and wildlife habitat, livestock production limitations (inadequate livestock water), and degraded plant conditions as three of their resource concerns. In addition, Cascade County Local Working Group has identified livestock water availability as

well as plant suitability, condition, and management as two of the county's resource concerns. Refer to page 13 in the Chouteau County Long Range Plan. With the implementation of this TIP, we will be able to address the resource concerns in both counties noted in the long-range plan and assess them using the NRCS objectives and planning criteria.

NRCS Resource Concern	Objective
Terrestrial habitat for wildlife and invertebrates	Improve quantity and quality of habitat to meet requirements of identified wildlife species
Inadequate livestock water quantity, quality, and distribution	Supply adequate quantity and quality of water to meet basic livestock needs and assure proper distribution to reduce negative impacts to other resources
Plant productivity and health	Improve poor plant productivity and health

Goals and Objectives

The primary goal of this TIP is to maintain/restore the riparian ecosystems habitats for native grouse species, by improving plant productivity and health through a proper grazing management system. Moderately dense wooded and shrub areas are the main habitats for these native grouse species and by improving the degraded condition of existing woody habitats, we can address the species' habitat needs and ensure healthy populations. To achieve this goal, we must address inadequate livestock water distribution. According to Michigan State University Extension, riparian areas can be best managed by creating vegetation buffers and limiting livestock access to protect stream banks (Haan & Barlett, 2010). Proper livestock management can be done by providing adequate off-stream distribution of reliable livestock water. We can then begin to control the access to riparian areas with fencing and/or provide access points in the stream with limited and timely grazing in a way that would improve the forage quality and the wildlife habitat. This will address poor plant productivity and health and begin the recovery/maintenance of the riparian habitats. Researchers in Oregon have found that fencing and delayed grazing of riparian areas in mountains can be beneficial to vegetation, stream banks, wildlife, and livestock. Delaying and limiting grazing throughout the growing season ensures that impacts on vegetation is minimal (Holechek, Pieper, & Herbel, 2010). By implementing this TIP, we can protect and/or improve up to 3,519 acres of riparian area within the Highwood Mountains. In addition to upland game birds, many other wildlife species such as ungulates, invertebrates, raptors, aquatic species, etc. will benefit from increased plant productivity and riparian ecosystem health in the TIP area.

Alternatives

Alternative 1: This alternative will adopt a high intensity rest-rotation grazing system, but it will also remove all impacts and disturbance on the riparian habitats from livestock grazing. Livestock water distribution will be added to facilitate rest-rotation grazing system. It will include fencing off all available riparian habitats and stream systems and remove all riparian grazing to allow for the plant community to repair itself. By doing so, the producer will have minimal flexibility with the practices and grazing opportunities.

Alternative 2: This alternative will adopt a grazing system and would allow for controlled, limited access to a riparian area for grazing. Grazing will be able to be better managed with the implementation of wildlife friendly fencing as well as livestock water development. By addressing inadequate livestock water quality, quantity, and distribution on range and pastureland units, producers will be able to change management, adopt a proper grazing system, and limit impacts on the riparian and upland habitats. This TIP alternative will provide producers with the opportunity to have more reliable water sources and improve riparian habitat and vegetation. Improving habitat will ensure healthy populations of upland game birds and forage for livestock.

Alternative 3: If no action is taken, the quantity and quality of habitat for upland game birds and forage for livestock will likely continue to decrease over time. Uncontrolled access, livestock disturbance, and improper grazing management will continue to negatively affect the condition of riparian habitats causing lasting effects on the productivity and profitability of the Highwoods landscape. This could eventually lead to declines in upland game bird populations and reductions in the number of livestock that can be supported by available forage.

Alternative 2 is the chosen alternative as it meets the goals and objectives for this TIP. It will offer flexibility in grazing and fencing by allowing the possibility of limited access to streams and creeks while still improving habitat for native grouse, as well as aquatic and other terrestrial wildlife. With Alternative 3, water availability will continue to be a limiting factor for the producer's operation, particularly in future droughts. This alternative does not meet the goals and objectives of the livestock producers in the TIP boundary or of engaged partners. Alternative 1 meet the goal of protecting the riparian habitats from overuse by livestock, however it is seemingly unrealistic for producers to complete and does not allow for any flexibility for use of forage within riparian areas. This alternative does not meet the goals and objectives of the livestock producers in the TIP boundary.

The following practices (with NRCS practice codes) will be included in this TIP to make it successful:

- (382) Fencing
- (516) Livestock Pipeline
- (528) Prescribed Grazing
- (574) Spring Development
- (645) Upland Wildlife Habitat Management*
- (561) Heavy Use Area Protection
- (614) Watering Facility
- (533) Pumping Plant
- (224) Aquifer Flow Test
- (642) Water Well

*Required Practice

Implementation

The contracts will be max of 5 years in length with at least 1 year of system implementation followed by an optional 3-year grazing plan in pasture and rangeland. Cascade and Chouteau Counties have adequate staffing to fully implement this proposed TIP. The field office staff will manage plan implementation with assistance from Civil Engineering Technicians. System operation and maintenance will be covered by NRCS practice standards and specifications. Letters were sent out to determine participation among producers. Between 7 responses, we have 3 producers that are ready for first year signups. Since then, we have had more conversations that have piqued the interest of additional

producers, leaving the potential of more involvement. First year plans have preliminary engineering and cost estimates completed. Office labor will be heavily weighted for the first 3 years of a contract. FWP has offered assistance as they are integrated into this project. The extent of participation and funding from FWP is still to be determined.

Fiscal Year	Contracts	Average Cost/Contract	Estimated Total
2024	3	\$157,662.71	\$472,988.14
2025	2	\$162,392.60	\$324,785.19
2026	2	\$167,264.37	\$334,528.74
Total	7		\$1,132,302.07

For Fiscal Year 2024, there are three producers ready for implementation with field visits and preliminary engineering completed. The initial average cost is \$157,662.71 with 1,000 acres on average per contract; averages are determined based on the first 3 producers estimated total contract costs. FY 2024 cost in the table below represents actual estimates based on preliminary field visits and engineering. The remaining four interested producers will use the average cost for the sake of FY 2025 and 2026 totals. There is a potential for increase in the annual payment schedule.

Example of Expected EQIP Cost Requirements for a Typical Contract*					
Practice Code	Practice Name	Scenario Name	Amount	Payment Rate	Total
382	Fencing	Barbed/Smooth Wire	10,000 Ft	\$2.39	\$23,900.00
		Electric	2,000 Ft	\$1.56	\$3,120.00
516	Livestock Pipeline	Below Frost, HDPE	10,000 Ft	\$3.05	\$30,500.00
614	Watering Facility	Permanent, 1,000-5,000 Gallons	3 x 1,500 Gallons Each	\$2.59	\$11,655.00
533	Pumping Plant	Electric-Powered, ≤5 HP	2 HP	\$2,025.55	\$4,051.10
533	Pumping Plant	Solar Powered ≤ 250 ft total heal	1 Solar Pump	\$5,699.51	\$5,699.51
574	Spring Development	Spring Development	1 Spring	\$4,350.11	\$4,350.11
642	Water Well	1,001ft or greater, 6in casting	1,500 Ft	\$90.03	\$135,045.00
528	Prescribed Grazing	Range, less than 2,500 acres	1,280 Acres x 3 years	\$4.05	\$15,552.00
645	Upland Habitat Management	Low intensity, low complexity	300 Acres x 3 years	\$15.29	\$13,761.00
Total Cost	With Spring Development				\$106,889.21
Total Cost	With Water Well				\$237,584.10

*Payment Rates based on FY2023 Payment Schedule. Practice Code 561 Heavy Use Area Protection not included.

Partners

This TIP involves multiple agencies and private companies with a range of contributions. FWP brought this idea to NRCS's attention in the Spring of 2021 after collaborating on potential projects in the area. Since then, NRCS has been working closely with FWP to identify the TIP boundary and develop strategies with interested producers to improve habitat conditions. FWP has attended preliminary field visits, providing an estimated 80 hours of employee time and has helped in assessing habitat conditions. There is an opportunity for additional funding for producers from FWP through the Upland Game Bird Enhancement Program (UGBEP). Additional funding through the UGBEP will be dependent on available funds and overall program fit. Each UGBEP project will undergo an internal proposal and ranking period to determine if the project meets state and regional strategic goals as outlined in the UGBEP strategic plan. By participating in the UGBEP, the producer will in return provide public upland bird hunting access. Amount of public bird hunting access will depend on contract length, expense, and size of project. With maintained engagement with FWP and Pheasants Forever, it is anticipated that each agency will provide at least 20 hours each year of staff time from State Coordinators with additional project funding on a case-by-case basis.

Partners	Estimated Contributions
Montana Fish, Wildlife & Parks	Area Biologist Staff time, UGBEP Staff time and case by case funding, Non-game Biologist Staff time and case by case funding, Migratory Bird Biologist Staff time and case by case funding
Pheasants Forever	Partner Biologist staff time and additional funding
Ducks Unlimited	Partner Biologist staff time
Chouteau County Conservation District	In-kind support and staff time
Trout Headwaters, Livingston, MT	In-kind support with riparian habitat restoration
Northern Great Plains Joint Venture	In-kind support with upland game bird habitat and case by case funding
Montana State University, Bozeman	In-kind support with monitoring grouse distribution

Outcomes

A Wildlife Habitat Evaluation Guide (WHEG) will be conducted to determine the anticipated outcome (improvement in habitat) of the TIP. By implementing the TIP practices, it is expected that the WHEG score will increase. In addition to the WHEG, a Riparian assessment will allow us to identify the potential of riparian areas in the TIP area. The WHEG and Riparian assessment will be conducted pre- and post-implementation of the TIP practices. Subsequent ratings over a period of time can be used to evaluate trend and provide an assessment of conservation practice and management effectiveness. Throughout the contract, we will monitor improvements by conducting vegetation transects with photo points. Contracted acres, including uplands, will have either Upland Wildlife Habitat Management (645) or Prescribed Grazing (528) planned to conduct the required monitoring. This can be done by the producer

with help from NRCS Field Office Staff. By having the producer conduct the monitoring, they will be able to see the conservation impacts firsthand. With proper grazing and supporting livestock infrastructure, it is expected that we will see an increase in plant productivity, diversity, and a decrease in shrub hedging/browsing, as well as a decrease in bare ground.

Monitoring will also be conducted through prescribed grazing (528) by utilizing indicators of Rangeland Health tools. Graduate students with Montana State University in Bozeman are currently working on monitoring mountain grouse distribution in the state and can be of assistance with this TIP. FWP can help with monitoring grouse populations through the UGBEP. In addition to monitoring, the UGBEP will increase the opportunity for public upland game bird hunting access. Montana is known for its outdoor recreation with it being the 2nd largest sector of the states economy. According to the Montana Office of Outdoor Recreation, Montana generated \$7 billion and more than 71,000 jobs in 2018 (Economics, 2018). Improving habitat for game and non-game species through this TIP will provide for a variety of outdoor recreational activities in the Highwood Mountains. Figures 4 & 5 show how adopting a strategy like this TIP could impact riparian habitat in the TIP area. Bishop Creek and Lacey Creek are neighboring drainages in the Highwood Mountains. Compared to Figure 4, Figure 5 shows high plant productivity and healthy shrub habitat. Lacey Creek is a well-vegetated riparian area comprised of healthy herbaceous and woody plants species. Among the many benefits that will come out of this TIP, we expect to see a major improvement in the riparian health, wildlife habitat, and an increase in livestock forage quality and availability.



Figure 4. Bishop Creek Drainage-- Without Riparian Habitat Management



Figure 5. Lacey Creek Drainage—With 15 years of Riparian Habitat Management

Ranking Questions

1. Is 51% of the planned acres within the FWP ruffed grouse mapped range and/or within 3 miles of a known sharp-tailed grouse lek?
 - a. Yes
 - b. No
2. Will fencing and livestock water distribution be implemented to address disturbance of the riparian habitat and/or degraded plant condition?
 - a. Yes
 - b. No
3. Is the overall WHEG score under 0.5 or less than 50% of the maximum score and are the contracted practices expected to improve the WHEG score to greater than 0.5 or 50%?
 - a. Yes
 - b. No
4. Is the Riparian assessment rating "At Risk" and are the contracted practices expected to result in a rating of "Sustainable" or upward trend?
 - a. Yes-
 - b. No
5. What percentage of the grazing units will be contracted to a three-year Prescribed Grazing plan?
 - a. 100% of the grazing units
 - b. 51% - 99% of the grazing units
 - c. 50% or less of the grazing units
 - d. Prescribed Grazing will not be contracted

References

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