United States Department of Agriculture

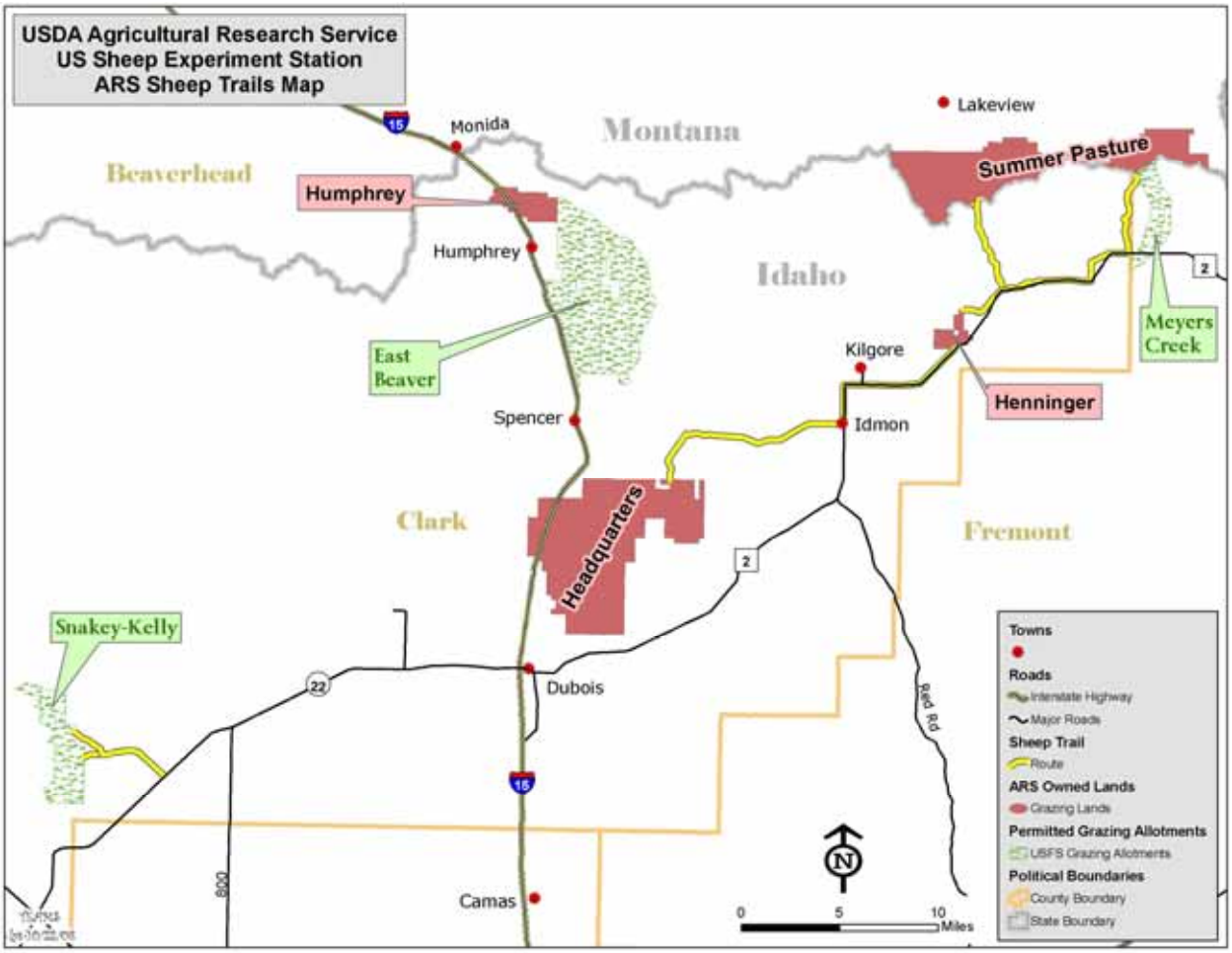
Agricultural Research Service

Pacific West Area

November 2008

Interim U.S. Sheep Experiment Station Grazing and Associated Activities Project

Decision Notice, Finding of No Significant Impact, and Environmental Assessment



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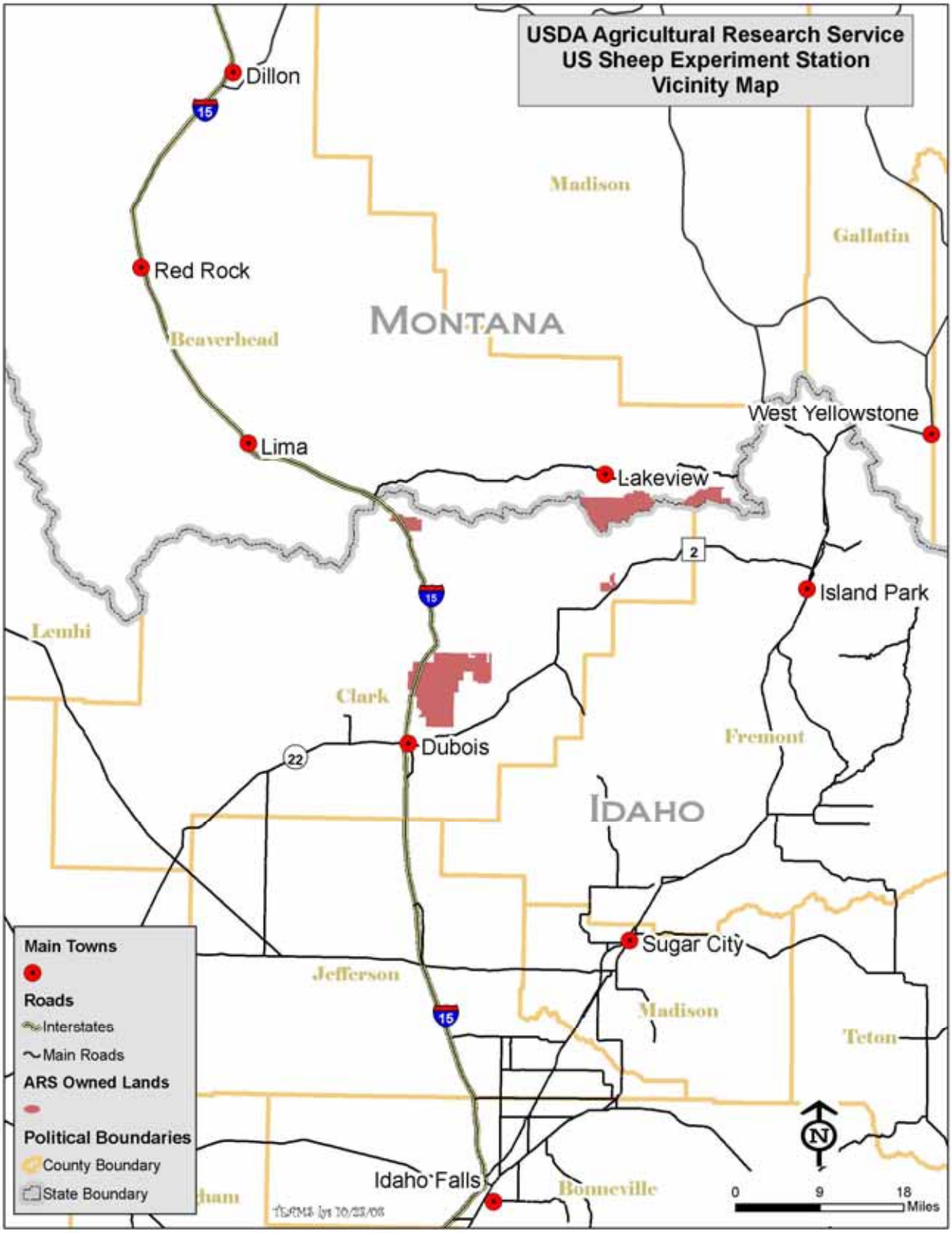


Figure 1. Vicinity Map

Decision Notice

Proposed Action

It is proposed that the Agricultural Research Service (ARS) continue ongoing sheep grazing and associated activities that have been historically occurring (approximately 86 years) in conjunction with ARS, United States Sheep Experiment Station (USSES) research to develop integrated methods for increasing production efficiency of sheep and to simultaneously improve the sustainability of rangeland ecosystems. For detailed descriptions of the individual activities, see Proposed Action, beginning on page 3 of the EA.

See Map 1-Map 7 for the lands used by USSES sheep for sheep grazing and associated activities.

1. **Operations:** Operations include traditional and on-going activities associated with sheep research grazing. In addition to the ARS lands, three National Forest allotments and one BLM allotment are grazed and used for research. The National Forest allotments include: Snakey – Kelly, East Beaver, and Meyers Creek. The BLM allotment is the Bernice Allotment. The Mud Lake Feedlot (on DOE land) is also used for sheep research operations. Harvested feeds (e.g., alfalfa hay, barley straw, small grains, corn, and various by-products) are used to formulate balanced diets to feed sheep when they are in Mud Lake Feedlot.. Table 8, p. 33 displays acres for each range area.

2. **Sheep Grazing:** USSES currently has approximately 3,000 mature sheep, plus attendant young sheep. Including mature ewes and lambs, lambing rates are approximately 170 percent, and weaning rates are approximately 145 percent. The total number of sheep soon after the end of the lambing period is approximately 6,500. The numbers of mature and young sheep retained vary according to research needs. Sheep in excess of those needed for hypothesis-driven research are not retained. USSES sheep harvest most of their feed through grazing. Table 1, p. 4, displays stocking rates for summer pastures from a *Summary of 25 Years of Grazing Summer Range, 1963 to 1988* (Jacobson 2008).

3. **Sheep Transportation by Truck:** The sheep are trucked between grazing locations that are not contiguous or are not within trailing distance. Sheep are trucked from Headquarters to the Mud Lake Feedlot, Humphrey Range, and to Forest Service and BLM allotments.

4. **Sheep Trail and Driveway Use and Maintenance:** Trails and driveways are used to move sheep between grazing areas.

5. **Stock Water Operations:** In areas where water is not readily accessible, such as the grazing lands at USSES headquarters, water is trucked to the sheep and unloaded into water troughs. Troughs are moved as grazing progresses across the pastures.

6. **Camp tending:** Includes sheep herding camps and summer pasture camps

7. **Maintenance and repair of existing permanent fence:** There are about 180 miles of permanent sheep fence on Headquarters, Humphrey, and Henninger ranches. All fences are inspected and repaired annually.

8. **Maintenance and repair of existing roads and fire breaks:** Annual road maintenance is done on main roads as needed. A two mile long firebreak around the USSES headquarters is maintained annually.

9. **Prescribed burning:** Prescribed burning, to improve range land, has been conducted on ARS land since 1936. Burn effects research has been the main objective of prescribed burns after 1990.

10. **Cattle and Horse Grazing:** Cattle and horse grazing with cooperative research is used periodically to improve sheep range conditions. Cattle and horses consume vegetation that sheep typically do not harvest, create more uniform pastures for grazing research, reduce residual on-site forage for other rangeland research, and reduce fuel loads and fire risk.

11. **Predator avoidance and abatement:** Large predators have not been a problem with sheep grazing on ARS lands.

12. **Integrated pest management:** Noxious weeds and exotic plant species

Mitigation Measures

Grizzly Bear

Store all livestock feed, human food, and dog food in bear proof storage containers to prevent bears becoming habituated to these food sources.

Render dead sheep carcasses in close proximity to the Continental Divide Trail and other trails on USSES lands unavailable to bears.

Notify the Caribou-Targhee when conflicts, including trapping efforts, occur so that users of the Caribou-Targhee can be notified if necessary.

Sheep Driveway

At the sheep driveway crossing on Odell Creek in section 11, T15S, R2W there is bare soil, 10 feet wide for about 150, feet on the south side of the crossing on 15 to 20 percent slope. To divert overland flow and prevent soil transport into Odell Creek, cross drains could be constructed on the driveway trail. Three 10 to 12 inch diameter logs (available in the adjacent timber stand) could be angle imbedded three inches deep across the trail to divert runoff into undisturbed areas with existing vegetation ground cover and down woody debris. The three cross drains should be constructed 40 to 50 feet apart, at sites where the trail grade is less than 10 percent, for efficient cross drain function and to minimize maintenance needs. Cross drains should also be constructed on the narrow trail further to the west. This trail segment is turning into a trench, cross drains would divert water off trail and eliminate further down cutting. Cross drains should be monitored annually and maintained after heavy use. The sheep driveway crossing on the south fork of Odell Creek near the south line, section 14, T15S, R2W, is low impact, with grass and forb cover and little adverse effect.

Heritage

To ensure protection for cultural resources

- Review proposed undertakings with the State Historic Preservation Officers prior to implementation.

- If unanticipated discoveries are found during project activities, cease all operations in the vicinity of the discovery until assessed by a professional archaeologist or historian.
- Develop a survey strategy and facilities management plan and schedule during the second stage of the NEPA analysis.

Background

On August 12, 2008, a Scoping package explaining the purpose and need for action, as well as the location and types of proposed activities, was mailed to approximately 100 interested parties. These included individuals and organizations who expressed interest in the project, adjacent landowners, public legislators (federal, state), township supervisors, and plaintiffs in Center for Biological Diversity, and Western Watersheds Project v. U.S. Sheep Experiment Station; U.S. Department of Agriculture; Agricultural Research Service; and U.S. Forest Service.

Nineteen (19) responses to Scoping were received (See Appendix 1: USSES Response to Scoping Comments, pp. 87-105).Comments received during the public Scoping period were used to develop issues (pp. 22-27). Of the issues identified during Scoping none were unresolved. Therefore, no additional alternatives to the proposed action were analyzed in detail (p. 28). Four additional alternatives were considered for this project but were eliminated from detailed analysis (pp. 28-30).

Decision

Based upon my review of the analysis of the proposed activities, I have decided to implement the proposed action, which includes historic and ongoing sheep grazing and associated activities on the ARS USSES, Dubois, Idaho, through March 2010. During that time, the USSES will conduct an analysis that looks at the long-term effects of sheep grazing and associated activities that support the research at the USSES. That analysis will be used to support a new decision concerning grazing and associated activities that support the research at the USSES.

Rationale

The sheep grazing and associated activities analyzed in this environmental assessment have been occurring at the USSES for approximately 86 years. The current condition of the project area is a result of those activities occurring over time. No existing resource damage was identified during field visits by resource specialists[1]. The effects analysis of continuing these activities in the project area through 2010, while an additional environmental analysis looks at the long-term continuation of sheep grazing and associated activities, reached a Finding of No Significant Impact. That finding follows.

[1] Field visits by interdisciplinary team specialists: 05/07/08/2008; 07/07-16/2008; 07/16/2008; 07/29-08/01/2008

Finding of No Significant Impact

In 1978, the Council on Environmental Quality disseminated regulations for implementing NEPA. These regulations (40 CFR Parts 1500-1508) include a definition of "significantly" as used in NEPA. The elements of this definition are critical to reducing paperwork through use of a finding of no significant impact when an action would not have a significant effect on the human environment and is, therefore, exempt from requirements to prepare an environmental impact statement. Significant includes consideration of both context and intensity. These elements are addressed here in relation to the action alternatives.

(a) Context. This means that the significance of an action must be analyzed in several contexts, such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting—in the case of a site-specific action; significance usually depends upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

No significant resource effects are expected, either individually or collectively, that would result from the continuation of historic and ongoing sheep grazing and associated activities at the USSES. Continuation of these activities and the ongoing research would have no effects to the local economy. See item #10, Economics (pp. 3-4) and the Economics Report in the Project File.

(b) Intensity. This refers to the severity of impact.

(1) Impacts may be both beneficial and adverse.

The Wildlife section (pp. 37-62) and the specialist reports in the project file describe effects that are both beneficial and adverse. While both beneficial and adverse effects are important, they are not significant, in either context or intensity, to the degree that an EIS is warranted for the Interim USSES Grazing and Associated Activities Project.

(2) The degree of effects on public health or safety.

No adverse effects to public health or safety are expected from implementation of this project.

Herbicide use must follow directions for use on packaging labels. Therefore, application of herbicide would not affect public health or safety. See Appendix 3: USSES Integrated Invasive Plant /Weed Control, p. 105; Hydrology/Soils Assessment for Grazing Program Environmental Assessment, pp. 5 and 16, and examples of product labels in the project file.

Forest Service Agreement 07-1A-11041561-025 includes mitigations to reduce human/bear interactions when USSES grazes sheep on Forest Service lands. The USSES chooses to apply the same mitigation measures when grazing sheep on ARS land, which is most of the time.

Forest Service Agreement 58-5364-6-142N coordinates trail condition and maintenance activities by the Forest Service on the portion of the Continental Divide National Scenic Trail that passes through USSES lands that adjoin the Caribou-Targhee NF on USSES lands (see Map 1). The USSES has designed signs (see Issues, Continental Divide National Scenic Trail, Figure 2, p. 27) to be posted by the Forest Service along the Continental Divide National Scenic Trail passes through USSES lands warning that there could be guard dogs in the area (see Resolved Issue, Continental Divide National Scenic Trail. If hikers on the trail through USSES lands take appropriate precautions to stay away

from sheep and guard dogs and to keep pets under control, would be no adverse effects to public health and safety.

People who enter Agricultural Research Service lands using the Continental Divide National Scenic Trail are at a no greater risk of developing Q fever than are people who do not enter Agricultural Research Service lands. (Appendix 1, Q Fever, pp. 95-100). Employees of the USSES follow strict protocols to minimize the risk of exposure to Q fever (Appendix 1, Q Fever, pp. 95-100).

(3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

This decision will not significantly affect any unique characteristics of the geographic area. There are no park lands, prime farmlands, wild and scenic rivers, or ecologically critical areas within the project area.

The mitigation measures for heritage resources would ensure compliance with the National Historic Preservation Act of 1966, as amended, and the NEPA.

Pursuant to Executive Order 11990, Protection of Wetlands, under the proposed action there is no degradation or loss of wetlands. See Hydrology/Soils Assessment for Grazing Program Environmental Assessment, pp. 16.

(4) The degree of controversy over environmental effects.

The effects on the quality of the human environment are not likely to be highly controversial. The *Interim USSES Grazing and Associated Activities Project EA* analysis is based upon the best available scientific information and site-specific data. I am not aware of any credible, peer-reviewed scientific literature questioning of the methods used in this analysis, nor of its results.

No concern thresholds for humans will be reached from herbicide use by following label directions during application.

The risk to hikers of contracting Q fever on the portion of the Continental Divide National Scenic Trail that crosses Agricultural Research Service lands is no greater than it is for people who do not enter Agricultural Research Service lands. (Appendix 1, Q Fever, pp. 95-100). Employees of the USSES follow strict protocols to minimize the risk of exposure to Q fever (Appendix 1, Q Fever, pp. 95-100).

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

There are no known effects on the human environment that are highly uncertain or involve unique or unknown risks.

See items #2 and #4 above.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The proposed action does not set a precedent for any future actions with significant effects nor does it represent a decision in principle about a future consideration. The purpose of this project is to provide continuation of the sheep grazing and associated activities at the USSES during the time a more long-

term analysis of such activities can be conducted (through March 2010). This decision only pertains to the grazing and associated activities within the Interim USSES Grazing and Associated Activities Project Area for the time specified. Any future decisions would need to consider relevant scientific and site-specific information available at that time.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

There are no known significant cumulative effects between this project and other projects implemented or planned on the areas separated from or adjacent to the affected area of this project. Cumulative effects have been analyzed and disclosed throughout the Wildlife section (p. 32-63); Project File - USSES Grazing Project Biological Assessment; Hydrology/Soils Assessment for Grazing Program Environmental Assessment; USSES Environmental Assessment Economics Report; Range; Heritage ; Weeds.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

This action will not cause the loss or destruction of significant scientific, cultural, or historical resources. There are no known cultural resource sites that will be affected by this project. See item #3.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

No threatened, endangered, or sensitive species or their critical habitats are affected by this decision. See Wildlife section (pp. 32-54) and Project File - USSES Grazing Project Biological Assessment.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

This action does not violate Federal, State, or local law requirements imposed for the protection of the environment, and has been reviewed by Federal and State agencies (p. 22). There are no known significant effects on civil rights, women or minorities.

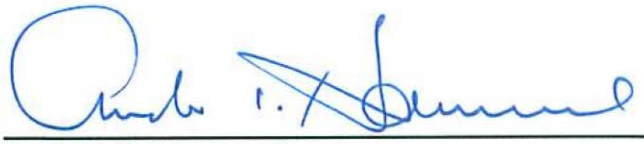
Economics: Activities occurring under the current operating plan support jobs and income in Clark County. Those levels of jobs and income would be maintained under the proposed action. It is estimated that the USSES currently supports between 23 and 25 jobs, and between $843,735 and $864,852 in household income in the local economy. These levels of jobs and income are supported through the direct employment and salary paid at the station, as well as the downstream market transactions measured as indirect and induced effects. These effects occur under current operating plans, and are defined under regional economic theory as the volume of jobs and income generated by inter-industry and household purchases as economic stimulus ripples through the economy. There is no proposed change to activities that would alter economic stimulus in Clark County; thus, there are no additional direct and indirect effects that would occur as a result of implementation of the proposed action. There would be no change to the volume of jobs and income supported. If research activities continue according to the current operating plan, there would be no impact to the local economy in the long term.

Under the proposed action, there would be no disproportionate adverse effects on individual parties and/or stakeholders in the study area. Current levels of jobs and income would be maintained, thus

there would not be any impact on low income and minority populations. As reported in the Environmental Justice section (see Economics Report in the project file), the principles set forth in Executive Order 12898 and CEQ (1997) were considered in regards to the proposed action. Upon this review, it has been determined that the actions set forth under this alternative would not adversely impact minority and low-income populations. Thus, the actions do not appear to threaten violation of any Federal, State or Local laws and regulations in place for the protection of the economic environment.

Given the considerations mentioned above, it has been determined that the proposed action would not impact local economic conditions. Thus, a finding of no significant impact on the economic environment is the recommended conclusion resulting from the analysis conducted in this EA. It has been determined with a high level of certainty that the proposed action would not impact the current state of employment and income in Clark County. Furthermore, there are no variables in the alternative that would suggest any unknown risks to the economic environment. Thus, the analysis conducted results in a finding of no significant impact.

Hydrology: Given the good overall condition of channels, floodplains, valley bottoms and water quality and no observed contributing effects to degradation within or downstream of ARS land, the continued operations through March 2010 are determined to be in compliance with the Clean Water Act. Accordingly, the proposed action is in compliance with Executive Order 11998, Floodplain Management; as there are no expected adverse impacts to floodplains within or downstream of ARS lands due to modification or occupancy, nor any plans for development of same. Pursuant to Executive Order 11990, Protection of Wetlands, under the proposed action there is no degradation or loss of wetlands.



11/24/08

Andrew C. Hammond
Agricultural Research Service
Pacific West Area Director

Date

Purpose and Need and Proposed Action

This environmental assessment is being conducted under National Environmental Policy Act (NEPA) regulations CFR Title 7—Agriculture, Chapter V--Agricultural Research Service, Department Of Agriculture, Part 520--Procedures For Implementing National Environmental Policy Act Part 520.

> *§ 520.6 Preparation of an Environmental Assessment (EA).*
>
> *(c) Format and conclusion.* An EA can be in any format provided it covers in a logical and succinct fashion the information necessary for determining whether a proposed Federal action may have a significant environmental impact and thus warrant preparation of an EIS. The EA will contain the information required by 40 CFR 1508.9. [(b) Shall include brief discussions of the need for the proposal, of alternatives as required by section 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.]. This information will include brief discussions of the need for the project or other proposal, alternatives, environmental impacts of the proposed action and alternatives and a listing of agencies and persons consulted.
>
> *(d) Decision notice.* Upon completion of an EA, the responsible official will consider the information it contains, decide whether an EIS is required or that no significant environmental impact will occur, and will document the decision and the reasons for it. The decision and the EA shall be available to the public in a manner appropriate to the situation. If there is a finding of no significant impact, the EA may be combined with the decision notice.

The project file is incorporated by reference.

Current Status

The U.S. Department of Agriculture (USDA), Agricultural Research Service, (ARS) U.S. Sheep Experiment Station (USSES) is located in the upper Snake River plain at the foothills of the Centennial Mountains, approximately six miles north of Dubois, Idaho, which is the Clark County seat. Clark County contains 1,765 square miles of land and has a population of approximately 980 persons, approximately 500 of whom live in Dubois. The USSES is the second largest employer in Clark County.

Headquarters for the USSES is located within a two-hour drive of Grand Teton and Yellowstone National Parks. The Continental National Scenic Divide Trail crosses USSES land in the Centennial Mountains of Montana.

The USSES has research land in two states (See Maps beginning on page 69):

- 27,930 acres of ARS land at Headquarters, which has office, laboratory, animal, equipment, and residential buildings, dry-lot facilities for research throughout the year, lambing facilities, and lands used for spring and autumn grazing and rangeland research;
- Approximately 16,600 acres of [unsurveyed] ARS land in the Centennial Mountains of Montana, which is used for summer grazing and rangeland research;
- 2,600 acres of ARS land at the Humphrey Ranch in Idaho, which is near Monida, Montana, has animal facilities and equipment buildings, and is used for spring, summer, and autumn grazing and rangeland research; and

- 1,200 acres of ARS land at the Henninger Ranch near Kilgore, Idaho, which has animal facilities and is used for summer grazing and rangeland research.

Elevations of the ARS lands range from 4,800 feet at Headquarters to nearly 10,000 feet in the Centennial Mountain summer pastures. Average annual precipitation ranges from 10 inches in the Snake River plain to a 20 year average of 20.5 inches at Lakeview, Montana. In the Centennial Mountain Range, the average annual precipitation tends to be higher than 21 inches. The USSES land's diverse geography contains mixed conifer and aspen forests, subalpine meadows, foothills sagebrush steppe, and desert shrubland vegetation communities. This diverse habitat provides unparalleled sheep research opportunities for ARS..[2]

Project Location

The project area consists of the ARS, USSES lands as described below (see enclosed maps).

- Headquarters Pasture (Map 2): 11N36E Sections: 1, 11, 12, 13, 14, 16, 22, 23, 24, 25, 26, 27, 34, 35, 36; Part of: 2, 9, 10, 15, 17, 20, 21, 28, 33. T11N37E Sections: 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19; Part of: 2, 3, 4, 11, 14, 20, 22, 23, 29, 30, 31. T10N36E Sections: 1, 2, 11, 12. T10NR37E Sections: Part of: 6, 7.
- Henninger Pasture Map 4): T13N39E Sections: 25; Part of: 24, 36. T13N40E Sections: 19, 30.
- Humphrey Pasture (Map 5): T14NR36E Sections: Part of 19, 20, 21, 22, 27, 28, 29
- Summer Pasture (Map 6 and Map 7)
    - West Pasture: T15SR2W Sections: 1, 2, 3, 4; Part of: 5, 9, 10, 11, 12, 13, 14, 15, 16, 22, 23. T15SR1W Sections: 4, 5, 6, 7; Part of 8, 9, 10, 18, 19. T14SR1W Sections: Part of 31, 32, 33, 34
    - East Pasture: T14S1E: 34; Part of 25, 26, 27, 28, 32, 33, 35. T15S1E Sections: Part of 1, 2, 3, 4, 5, 6.

Throughout the year, sheep utilize Bureau of Land Management (Map 1), Forest Service (Map 1), and Department of Energy (Map 1and Map 14) lands (see Cooperating Agencies, pp. 19-21). These lands will be included in this analysis as appropriate. However, use of these lands is covered under separate agreements with those agencies and will not be part of this decision.

Purpose and Need:

The purpose of this project is to respond to the Settlement Agreement[3] (December, 2007) reached in the lawsuit *Center For Biological Diversity, and Western Watersheds Project v. U.S. Sheep Experiment Station; U.S. Department Of Agriculture; Agricultural Research Service; and U.S. Forest Service*.

The settlement agreement requires that:

[2] http://www.ars.usda.gov/Main/site_main.htm?modecode=53-64-00-00 (01/05/08)
[3] The settlement agreement was signed by plaintiffs on 020/4/08, signed by Department of Justice on 02/12/08, filed by stipulation on 02/13/08, and the court issued an order approving the stipulated settlement agreement on 02/19/08.

1. The U.S. Agricultural Research Service shall prepare an "environmental assessment" ("EA") or "environmental impact statement" ("EIS"), pursuant to the National Environmental Policy Act ("NEPA"), regarding the grazing of sheep and related activities on U.S. Sheep Experiment Station lands. The associated Decision Notice or Record of Decision shall be completed and signed on or before November 28, 2008.

2. The USDA, Agricultural Research Service shall consult with the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act regarding the grazing of sheep and related activities on U.S. Sheep Experiment Station lands. The USDA, Agricultural Research Service agrees to work with the U.S. Fish and Wildlife Service in a good faith effort to complete the consultation by the date that the associated Decision Notice or Record of Decision is completed.

To meet the intent of the settlement agreement, the USSES is using a two-phased approach. The first phase includes this environmental assessment (Interim USSES Grazing and Association Activities Project) and is limited to:

- The sheep grazing and associated activities on the USSES lands that have historically occurred and are ongoing in support of research projects currently being conducted.

- The time necessary (through March 2010) to complete an environmental analysis (phase two) to consider the long-term effects of sheep grazing and associated activities needed to facilitate research at the USSES

The second phase will be an environmental analysis that looks at the long-term effects of sheep grazing and associated activities on the USSES lands that have historically occurred and are ongoing in support of research projects. This document would be reviewed if changed conditions occur or at five-year intervals to ensure that there were no changed conditions

Proposed Action

The USSES is proposing to continue ongoing sheep grazing and associated activities that have been historically occurring in conjunction with ARS USSES research to develop integrated methods for increasing production efficiency of sheep and to simultaneously improve the sustainability of rangeland ecosystems.

Operations

Operations include traditional and on-going activities associated with sheep research grazing. In addition to the ARS lands, three National Forest allotments and one BLM allotment are grazed and used for research. The National Forest allotments include: Snakey – Kelly, East Beaver, and Meyers Creek. The BLM allotment is the Bernice Allotment. The Mud Lake Feedlot (on DOE land) is also used for sheep research operations. Harvested feeds (e.g., alfalfa hay, barley straw, small grains, corn, and various by-products) are used to formulate balanced diets to feed sheep when they are in Mud Lake Feedlot.

Sheep Grazing

USSES currently has approximately 3,000 mature sheep, plus attendant young sheep. Including mature ewes and lambs, lambing rates are approximately 170 percent, and weaning rates are approximately 145 percent. The total number of sheep soon after the end of the lambing period is approximately 6,500. The numbers of mature and young sheep retained vary according to research needs. Sheep in excess of those

needed for hypothesis-driven research are not retained. USSES sheep harvest most of their feed through grazing. Table 1 displays stocking rates for summer pastures from a *Summary of 25 Years of Grazing Summer Range, 1963 to 1988* (Jacobson 2008).

Table 1. Summer range and Meyer's Creek allotment stocking summary

	East Summer Range	West Summer Range	
	Meyer's/Tom's Creek[a]	Big Mountain	Odell Creek
Average number ewes grazed annually	933 ewes	864 ewes	679 ewes
Average number days grazed annually	56 days	53 days	52 days
Total grazeable[c] acres	5538 acres	3687 acres	2534 acres
Average AUM [b] used annually	348 AUM	305 AUM	235 AUM
Average number sheep days/acre	9.5 sheep days/acre	12.5 sheep days/acre	13.9 sheep days/acre
AUMs/acre used	0.06 AUM/acre	0.08 AUM/acre	0.09 AUM/acre
% use[d]	3.8	4.9	5.5

a Meyers Creek = 3,305 acres Tom's Creek = 2,233 acres
b AUM as expressed above is 5 lactating ewes with lamb(s) under 6 months of age at side for 30 days
c Grazeable acres and data is from ARS 2008, A Summary of 25 Years of Grazing Summer Range, 1963 to 1988
d Assuming average forage production is 1338 lb/acre (1500 kg/hectare)

Stocking rates were reduced after 1988, Table 2 displays stocking rates and percent of available AUM used from 1988 to 2007, (Moffet 2008).

Table 2. Summer range stocking from 1989 to 2007

	East Summer Range	West Summer Range	
	Meyer's/Tom's Creek	Big Mountain	Odell Creek
Total grazeable acres	5538 acres	3687 acres	2534 acres
Average AUM used annually	219 AUM	191 AUM	194 AUM
Average number [a] sheep days/acre	6.0 sheep days/acre 0.04 AUM/acre	7.9 sheep days/acre 0.05 AUM/acre	11.7 sheep days/acre 0.08 AUM/acre
% use[b]	2.4	3.1	4.6

a Data is from Quinn Jacobson's grazing records from 1989 to 2007
b Assuming average forage production is 1338 lb/acre (1500 kg/ha)

Grazeable acres vary among Table 1- Table 3 due to vegetation type map boundaries used for data collection and how the grazing areas are combined in the range area groups for spring, fall, summer and winter grazing.

Average forage utilization under current actions for the spring-fall range, summer range and winter range is shown in Table 3. Mud Lake Feedlot facilities are used when sheep are not on grazing lands. Mud Lake facilities includes sheep pens, water stations, feed storage facilities, feed mixing and delivery equipment, tractors to power feed mixing and delivery equipment, and pen cleaning equipment. Harvested feeds (e.g., alfalfa hay, barley straw, small grains, corn, and various by-products) are used to formulate balanced diets to feed the sheep when they are in the feedlot. (Moffet, 2008)

Forage used by sheep grazing is well below total available forage, the highest use is 36.4% on the winter range, with less than 10% of available use on spring, fall and summer grazed areas. Surveys indicate summer range forage use is very low, 6.4 percent, with 93.6 percent available for elk, deer, moose and other wildlife food and cover. Unused forage provides soil and water protection.

Henninger Range is usually grazed in early summer and early fall each year. Meadow pastures are grazed at 25 to 35 sheep days/acre (SD/acre). Sagebrush vegetation types are grazed at 10 to 12 SD/acre in late June and early July with similar grazing rates in fall. Rate variation occurs periodically to provide for research needs. Sheep graze across the landscape on a seasonal basis. Table 4 displays the expected sheep grazing activity schedule for the 2008 through 2009 season, with dates and pastures used. The exact dates may vary each year, depending on weather conditions, however, they are usually within one or two weeks of the previous year dates.

Table 3. Forage available and amount used on spring, fall, summer, and winter ranges

Range	Grazeable Acres	Forage pounds/acre	Total Tons Available Forage	Days Grazed	Tons of Forage Used	Percent of Available Forage Used
Spring and Fall[a]	28,860	850	11,785	102	874	7.4
Summer[b]	15,058	1,338	10,074	75	643	6.4
Winter[c]	28,506	65 to 263 (100 average)	1,412	60	514	36.4
Total	**72,424**		**23,270**	**237**	**2,032**	**8.7**

a Spring and Fall Range; Headquarters, Henninger, Humphrey
b Summer Range; West and East Summer Ranges and USFS Meyers Creek Allotment
c Winter range; BLM Bernice Allotment, and USFS Snakey-Kelly and USFS East Beaver Allotments

Sheep graze across the landscape on a seasonal basis. Table 4 displays the expected 2008-2009 season sheep grazing activity schedule from July, 2008 to May, 2010; with dates and pastures used. The exact dates may vary each year, depending on weather conditions; however, they are usually within one or two weeks of the previous year dates.

Table 4. Grazing schedule for 2008 and 2009 seasons

Dates	Activity	ARS Lands
Early July 2008 - Labor Day 2008	One group of sheep herded across the Forest Service Meyers Creek allotment to summer grazing on Tom's Creek, USSES lands in Montana. Another group of sheep herded from the Henninger Ranch to summer grazing in the Odell Creek and Big Mountain areas of USSES lands in Montana.	Yes/ No
September 2008 - Early November 2008	Sheep return to USSES headquarters lands in Idaho	Yes
Mid-October 2008 - Early December 2008	No grazing occurs, the sheep are maintained at the Mud Lake feedlot facility leased from DOE (this is when the ewes are mated)	No
Early December 2008 - Mid-Late January 2009	Sheep graze on BLM and FS allotments	No
Mid-Late January 2009 - Late April to Early May 2009	No grazing occurs; the sheep are maintained at the Mud Lake feedlot facility leased from DOE and in the feedlot facilities at USSES headquarters (this is where the lambs are born during this period of the year)	Yes/ No

Table 4. Grazing schedule for 2008 and 2009 seasons

Dates	Activity	ARS Lands
Late April to Early May 2009	Sheep are turned out onto USSES headquarters lands in Idaho	Yes
Late April to Early May 2009 - Late June 2009	Grazing on USSES headquarters lands in Idaho	Yes
Late June 2009 - Early July 2009	The sheep are moved from USSES headquarters lands in Idaho to USSES lands at the Henninger Ranch property in Idaho (this move is a transition between the spring and summer feeding grounds)	Yes
Early June to late September 2009	Rams and some other small groups of sheep are grazed at the USSES Humphrey Ranch in Idaho	Yes
Early November 2009 - Early December 2009	No grazing occurs, the sheep are maintained at the Mud Lake feedlot facility leased from DOE (this is when the ewes are mated)	No
Early December 2009 - Mid-Late January 2010	Sheep graze on BLM and FS allotments	No
Mid-Late January 2010 - Late April to Early May 2010	No grazing occurs; the sheep are maintained at the Mud Lake feedlot facility leased from DOE and in the feedlot facilities at USSES headquarters (this is where the lambs are born during this period of the year)	Yes/No

Forest vegetation cover types on Henninger, Humphrey and Summer Range areas are not included as grazeable acres for sheep. Bark beetle activity is prevalent on much of the conifer timber types in Odell Creek. There are extensive areas of Engelmann spruce, lodgepole pine and whitebark pine mortality. Some Engelmann spruce stands in Spring Creek are 70 percent dead. Casey Smith with Centennial Outfitters, Lakeview, Montana, indicated there are extensive areas of whitebark pine on Baldy Mt. with up to 80 percent dead with a high percent of recently killed, red needle trees (Smith 2008, personal communication). Lodgepole pine, mountain pine beetle, mortality is common through out the timbered areas. Mortality is also common in large, dominant old growth Douglas-fir on south aspects in the lower Spring Creek Douglas-fir type. Patches of recent and older dead alpine fir occur on the north aspect in Spring Creek.

Tree mortality in all stands will continue which will add standing and down fuels to timbered areas. Lodgepole pine and Engelmann spruce will fall to the forest floor, two to ten years after they are killed. Well-stocked high mortality stands will accumulate up to 150 tons of dead fuel per acre.

Sheep Transportation by Truck

The sheep are trucked between grazing locations that are not contiguous or are not within trailing distance. Sheep are trucked from Headquarters to the Mud Lake Feedlot, Humphrey Range, and to Forest Service and BLM allotments.

There are permanent corrals and loading chutes at Headquarters, Mud Lake, Humphrey, and Henninger. At the Snakey-Kelly Forest Service allotment, sheep are unloaded on Forest Service Road 202. On the Bernice BLM Allotment, sheep are unloaded on the allotment road at the grazing site. Suitable roads and semi truck and trailer access are available at the loading sites. Trucking occurs on State Highways, County Roads, and National Forest system roads.

Headquarters and Mud Lake loading sites are similar in size and ground cover condition. Headquarters and Mud Lake truck loading sites have permanent corrals with bare soil similar to sheep pens. The

Headquarters loading pen is 0.6 acre. The Mud Lake loading pen is 0.4 acre. Humphrey and Henninger sites are similar. The loading corral at Humphrey is 0.4 acre and Henninger loading corral is 0.8 acre. The Humphrey and Henninger loading sites have low vegetation ground cover.

The number of sheep trucked in and out each year for each range area and allotment:

- Humphrey – 300 ewes
- Winter range – 850 ewes +/- 100 depending on year (FS and BLM allotments)
- Humphrey – 200 rams
- Mud Lake – 3,000 animals +/- at shearing and breeding time

Sheep Trail and Driveway Use and Maintenance

Trails and driveways are used to move sheep between grazing areas.

Trails

Sheep are trailed along existing roads to move sheep from Headquarters and Henninger Ranges to other grazing areas. Sheep are trucked to an unloading site on National Forest Road 202 and trailed along the roads to Snakey-Kelly Allotment (Map 1).

Trails used annually include:

- Headquarters to Henninger: Trailing from Headquarters to Henninger follows a private unnamed two-track road part way with 90 percent of trailing on county roads (Spencer-Idmon and County Road A2).
- From Henninger to Meyers: Sheep are trailed on County Road A2, sheep are moved or trailed while grazing through, Meyers Allotment to the East Summer Range.
- From Henninger to West Summer Range: Sheep are trailed on County road A2, and National Forest East Dry Road 327.
- When returning from East Range to Henninger: Sheep are trailed on Keg Springs National Forest Road 042 and County Road A2.
- Sheep trailed from West Summer Range follow National Forest Road 327 and County Road A2.
- When returning from Henninger to Headquarters: Sheep are trailed on County Road A2, Spencer-Idmon Road, and the unnamed two-track road on private land.
- Sheep are trucked to Humphrey and East Beaver Forest Service Allotment. At Humphrey, sheep are trailed through a gate to the adjacent National Forest East Beaver allotment.
- Sheep are trucked and unloaded on National Forest Road 202, depending on snow depth, sheep are trailed along National Forest Roads 184, 279 and 202 to Snakey-Kelly National Forest Allotment. A temporary corral and mobile loading chute are set up on Road 202 for loading when sheep moved off the Snakey-Kelly Allotment.

Driveways

Sheep are moved along driveways through timbered areas on East and West Summer ranges. Herders on horseback use working dogs to herd sheep from one grazing location to another. There are about four miles of maintained sheep driveways through timbered areas on the West and East Summer Ranges. Sheep driveway locations are shown on Map 9 and Map 10.

There are no sheep driveways on low elevation pastures, the only maintained driveways are through timbered areas in West Summer Range (Odell/Big Mountain) and East Summer Range (Tom's Creek). Annual driveway maintenance is done through the timbered areas. Small diameter down wood across driveways is retained on site; some limbing may be done on retained down trees. Any new or recently fallen trees (greater than 10 or 12 inches in diameter) are cut out and removed (pulled back into adjacent timber stands) from the driveways each year. Occasionally, sheep driveway trails are rerouted, closed, and rehabilitated. Driveways may be rerouted when a better route is located or an alternate route is needed for research. Only one reroute has been done in the past few years. Driveways through timber patches and across meadows are short, generally less than ½ mile long. If adverse effects to soil or water occur, mitigation measures (cross drains with woody debris to divert over land flow) are implemented or a driveway segment maybe rerouted to avoid sensitive areas. Old driveways, no longer needed or used, and corral sites not needed are closed and rehabilitated; seeded with native species, brush or woody debris if available returned to the site, and animals are kept off to restore the area.

At three to four week intervals, sheep are moved from grazing areas to staging areas for data collection. On these drives, sheep are spread out over larger areas in open terrain and moved slowly while grazing to reduce adverse effects on the travel routes.

Driveways are used only on years the pastures in the area are grazed, two out of three years. Each pasture is rested one year in three. Sheep numbers trailed on pastures are an average of the last five years.

- Skyline Unit: Approximately one mile in length and used twice a year. Required time is about 2 hours. Two horses usually used. Ewes=785 head. Lambs= 1165 head.
- Odell Unit 6: About 1/8 mile in length and used once a year. Requires about 1 hour. Usually 2 horses. Ewes = 785 head. Lambs = 1165 head.
- Odell Unit 4: Approximately 1/8 miles in length and used twice a year. Required time is about ½ hour. Usually only 1 horse used. Ewes = 785 head. Lambs = 1165 head.
- Little Odell: Approximately ¼ mile in length and used once a year. Required time is about 1 hour. Usually use 1 horse. Ewes = 785 head. Lambs = 1165 head.
- Big Odell: Approximately ¼ mile in length and usually use 1 horse. Required time is about 1 hour. Used only once a year. Ewes = 785 head. Lambs = 1165 head.
- Big Mountain: Approximately ½ mile in length and usually use 2 horses. Generally used only once a year and requires about 1 ½ hours. Ewes = 782 head. Lambs = 1157 head.
- Corrals to Top: Approximately ½ mile in length and usually use 2 horses. Usually used 4 times a year and requires about 1½ hours. Ewes = 782 head. Lambs = 1157 head.
- Canyon Unit: Approximately ¼ miles in length and takes about 45 minutes. Two horses usually used and occurs once or twice a year. Ewes = 782 head. Lambs = 1157 head.

- Tom's Units 5 & 6: Approximately ½ mile in length and used once or twice a year. Use time about 1 ½ hours; one horse. Ewes = 838 head. Lambs = 1273 head.

- Tom's Units 6 & 7: Approximately ½ mile in length and requires 1 horse and about 2 hours. Used once or less a year. Ewes = 838 head. Lambs = 1273 head.

The sheep driveway crossing on Odell Creek in section 11, T15S, R2W has bare soil, 10 feet wide for about 150 feet, on the south side of the crossing on 15 to 20 percent slope. The narrow trail to the west of the crossing is developing into a trench from overland water runoff. Suggested mitigation to this crossing site is described in the Mitigation section, pages 16-16. The sheep driveway crossing on the south fork of Odell Creek near the south line, section 14, T15S, R2W, is low impact, with grass and forb cover.

Stock Water Operations

In areas where water is not readily accessible at the USSES Headquarters, water is trucked to the sheep and unloaded into water troughs 12 feet long, 12 inches high, and 12 inches wide. Troughs are moved as grazing progresses across the pastures. The number of troughs used at each grazing area depends on the number of sheep to water; up to 25 troughs may be used for large bands, two troughs are adequate where small numbers of sheep are grazed. There are 70 pastures at low elevation where water is trucked, about 80 watering sites are used. Each band has one watering site. Six to eight bands graze at the same time so that six to eight sites could be used at any given time. Watering sites are used for three to seven days and then moved. Areas up to ¼ acre in size are disturbed from sheep use around water troughs, and tend to have crested wheatgrass cover. Henninger and Humphrey pastures have surface water available for watering sheep. Summer pastures have surface water available for sheep and horses with developed sites on Big Mountain pasture described below.

Water Developments

Humphrey and Henninger

Humphrey and Henninger Ranches have developed ditches to divert water onto grazing pastures while sheep are grazing the areas. Flood irrigation water is used to water sheep. Irrigation ditch locations and flood irrigated areas are located on Humphrey and Henninger pastures (Map 12and Map 13). Humphrey and Henninger Ranches were working ranches, purchased from the private sector in the 1940s. Irrigation practices were ongoing before ARS purchased the properties. Water is diverted, from Modoc Creek at Humphrey and from West Dry Creek at Henninger, with canvas dams, into diversion ditches to flood pastures at the time sheep graze in the area. Diverted irrigation water may be used annually, acres watered for each ranch varies, depending on stream flow at time of use. In dry years, very little water is used. Diverted water is used for watering sheep and irrigation provides more green forage longer during the dry season. Number of days water is applied varies from one year to next depending on needs and water availability. When sheep are moved out of the pasture water diversion canvas dams are removed, diversion is shut off. There are about two miles of irrigation ditch at each ranch. Humphrey irrigation has rights for 4,000 cubic feet per second (CFS) from May 1 to October 15. The Humphrey pastures are grazed from May to October. Henninger ranch has water use rights from May 1 to October 31, spring water use is not allowed until the water flow in Dry Creek no longer reaches Spring Creek in mid to late June. Average past ten year use is 675 CFS with a high of 1,125 CFS in 1999 and a low of 474 CFS in 2000. Diversion ditches are inspected and maintained annually.

West Summer Range

Water developments are located on the West Summer Range (Map 10). There are five water developments, in the West Summer Range, in Montana on the Big Mountain area. Springs are developed

with permanent troughs to collect water in low-flow areas needed to water 350 to 900 ewes and 1,250 to 1,400 lambs at one time. Water developments are also used by wildlife.

The five water development sites on the West Summer Range include four metal and one rubber trough. Four of the developments are flume type with metal troughs with three metal and one wood support structures. Flumes are 80 to 90 feet in length, approximately 20 to 24 inches wide, and 14 to 16 inches deep. The fifth development is a series of round rubber troughs, with about 10 gallons capacity each, installed at springs.

Developed water site locations shown on the Map 10 include:

- Short Canyon = SE ¼ NE ¼ Section 6, T15S, T1W (Round rubber troughs).
- Lower Unit 3 = SE ¼ NE ¼ Section 5, T15S, R1W (Flume trough).
- Unit 2 = SW ¼ NW ¼ NW ¼ Section 5, T15S, R1W (Flume trough).
- Upper Unit 3 = SE ¼ SW ¼ Section 33, T14S, R1W (Flume trough).
- Unit 4 = NE ¼ NE ¼ SE ¼ Section 4, T15S, R1W (Flume trough).

Camp Tending

Sheep Herding Camps

Headquarters, Humphrey and Henninger Camps

Low-elevation pastures are administered from existing roads. Herder camps on low elevation spring, fall and winter pastures are equipped with a 12-foot long by 7-foot wide, four-wheel living quarters trailer and a tow-behind camp commissary to transport dog food, oats, saddles, and other gear. These camps are located near existing roads and are moved with pickups as sheep graze through the pastures. Camp activities affect ¼ acre or less at each site. Camp site equipment and activities include a horse trough, a horse picketed on a 20 to 30 foot chain, and dog feeding area. Camps at low elevation pastures are visited by a camp tender at two day intervals. Crested wheatgrass provides the primary ground cover at the ¼ acre or less camp sites where camp activities remove or trample sagebrush and other vegetation. Total area affected by camp sites is a very low or is a negligible percent of the total pasture area.

Summer Range Camps

Summer camp activities have less effect on camp sites than winter camps. Summer camps include a seven foot by seven foot teepee tent, no trough, horses are watered at natural water sites, one horse is picketed, and one horse is loose. Camp areas affect about a 50 foot radius, less than ¼ acre. Camps are moved every three to four days to progress with sheep grazing. Camps follow the sheep closely and, with frequent moves, have little effect on vegetation at the sites. Trash from herders' camps is transported back to USSES Headquarters for proper disposal in a dumpster that is emptied at a legal landfill. Table 5 shows the number of camp sites in each summer pasture and season used.

Table 5. Camps per pasture and season used

Range	Pasture	Camps per Pasture	Season Used
West Summer Range	Odell	9	July 10 – August 29
	Big Mountain	7	July 10 – August 29
East Summer Range	Tom's Creek	6	July 10 – August 28

Maintenance and repair of existing permanent fence

Fences

There are about 180 miles of permanent sheep fence on Headquarters, Humphrey, and Henninger ranches. All fences are inspected and repaired annually. Fence locations, including exclosures, are shown on each ARS pasture area maps beginning on page 69. Fence types are shown and described in the map legend.

Pasture Fences

Sheep-proof fences at Headquarters, Humphrey, and Henninger are maintained to confine sheep. An eight foot high coyote proof fence is maintained at Headquarters around, and subdividing, section 2, T10N, R36E, for coyote-sheep interaction research.

Horse Corral

The horse corral fence on West Summer Range, (Odell) pasture was constructed and is maintained to confine horses used for sheep trailing, camp tending, and other sheep grazing management and research activities (See Map 8). The north and west part of the horse corral is sheep proof net-wire with two strands of barb wire above the net-wire. The south and east portion of the corral is two strand barb wire. All of the corral fence on Odell pasture is let-down type. The drop fence is let down each year after grazing operations are complete.

Exclosures

Exclosures at Headquarters are sheep proof, and are maintained to exclude sheep from grazing excluded areas. The West Summer Range exclosures are drop fences, put up to exclude sheep when pastures in the exclosure areas are grazed. These drop fences are let down after sheep are removed from the pasture.

An eight-foot high wildlife exclosure fence in section 7, T15N, R15S, Odell pasture, is maintained to exclude wild ungulates and sheep. An adjacent four-foot high sheep proof exclosure is maintained to compare grazing effects. This wildlife and sheep exclosure includes a riparian area. These exclosures are located and designed to compare and evaluate domestic and wild ungulate grazing effects on willow and other riparian vegetation. The entire fenced area is less than 1/2 acre.

Maintenance and repair of existing roads and fire breaks

Roads

Road locations are shown on each ARS pasture area map in the Maps section. There are 25 miles of existing system roads on the Headquarters Range (Map 11). No new roads have been developed in at least 15 years. Annual road maintenance is done on main roads as needed. Road segments with ruts or other maintenance needs are bladed or improved for efficient motorized travel. Each year approximately 20 miles of road need maintenance improvements. Road maintenance is contained within the road right-of-way.

An existing road through section 18 that ends at the horse corrals near the southwest corner of section 7, T15S, R1W in the West Summer Range provides motorized access. Motorized travel is limited to the existing road for camp tending and other management activities with occasional off road travel exceptions.

Recent off-road motorized use on the West Summer Range include pickup travel in 2006 and 2007 for research at bed grounds in section 13, T15S, R2W and in section 8, T15S, R1W. A four wheel drive tractor was used for bridge reconstruction on Odell Creek crossing near the north line section 23, T15S, R2W in 2007. A pickup and trailer were used to haul supplies to rebuild the Location 23 exclosure in 2008, one trip to haul supplies in and haul old materials out. All terrain Vehicles (ATVs) were used in 2007 to haul supplies for mine reclamation work on Big Mountain pasture. Camp tending and other management activities on Summer Range are done with horses.

Firebreaks

After the 2000 wildfire, a two mile long firebreak was constructed to protect USSES headquarters buildings and research plots on the Headquarters Range (Map 11). The firebreak around the headquarters area is maintained annually with a motor grader to provide a mineral soil break about 20 feet wide. Chemicals may be used to control noxious weeds on the Headquarters firebreak. Weed management is described in the Integrated pest control section, pages 15-15. Firebreaks 15 to 20 feet wide down to mineral soil are constructed around prescribed burn areas including blackline burn areas.

Prescribed burn firebreaks are constructed with a dozer and motor grader. Unit firebreak lines and blackline firebreaks are generally within 50 to 200 feet of each other. Cleared firebreaks around burn units are also used for vehicle and equipment access during burn operations and for research during and after the areas are burned. Shrub and grass debris removed from fuelbreaks is pulled back and spread over the cleared area on firebreaks not needed for research access after the burn, generally within the same season.

Fire breaks around prescribed burn areas are not maintained. They are not seeded and are left to revegetate with native species. Fire breaks not needed for motorized access for research are rehabilitated. Windrowed shrubs, grass, litter, and top soil are pulled back and spread over the firebreak with a motor grader, generally within the same season. Invasive, noxious weeds have not been a problem on the cleared firebreaks. *Bromus tectorum L.* (cheatgrass), present since 1930s, shows up on some cleared areas but is not persistent at this elevation or environment. A study of cheatgrass encroachment is continuing on the 2005 Hitching-Post Burn at Headquarters Range in parts of sections 5, 6, 7, and 8 T11N, R37E (Taylor 2008).

Prescribed Fire

Range Improvement, Prescribed Burning

Prescribed burning, to improve range land, has been conducted on ARS land since 1936. Burning is conducted, on units that are about 200 acres average size, primarily in the spring and fall. Approximately 670 acres are burned each year. Burn records show the following acres burned:

- Past 30 years, 1978 to 2007, 5,400 acre prescribed burn and 13,867 acres wildfire
- Past 10 years, 1998 to 2007, 2,672 acres prescribed burn and 1,208 acres wildfire

In the past 30 years, burns have been done primarily in the fall, with minor amounts of spring and late summer burning. Wildfire burn areas are evaluated and included when planning prescribed burns. The Headquarters Prescribed Burn Map 16 displays prescribed burn areas and years burned. The Headquarters Wildfire History Map 15 displays wildfires and year burned.

Burn effects research has been the main objective of prescribed burns after 1990. Prior to 1990 burning was done to increase forage production and improve range conditions. Burn research, to determine species composition, range health, and productivity, dates back to 1936. Research with statistically valid replicated plots of unburned areas, within the larger fire area, is done to simulate wildfire frequency and approximate natural fire cycles with a burned-unburned mosaic. Prescribe burn research includes effects on vegetation recovery with sheep grazing before and after the burn on rangeland ecosystems.

The prescribed burn objective, primarily on sagebrush steppe areas, is to improve forage production by removing 95 percent of the vegetation. Remote sensing is used to determine and evaluate fire intensity. The main adverse effect of burning is temporary loss of vegetation and litter ground cover for soil protection. Within two years, after burning, forb and grass cover returns to replace pre-burn shrubs. Shrub cover returns after several decades. Current burn effects monitoring is being done to determine wind caused soil transport on burn areas (Moffet 2008).

ARS plans to burn Headquarters pasture areas about every 30 years, this would equal about 900 acres each year. Burning, for research to improve forage production, also benefits wildlife habitat and other resource as secondary benefits. All burning scheduled for fall 2008 and spring 2009, is located on areas that have been previously prescribe burned. The 2008/2009 burn plan is attached in Appendix 3. Burn unit locations are shown on the ARS-Headquarters Prescribed Fire History Map 16. Unit 6, 74 acres, was burned 10-08-08. Weather conditions failed for the planned 10-09-08 burn on Unit 1 (86 acres) and Unit 3 (88 acres). These two fall burn units were burned 10-18-08. Unit 2 (78 acres), Unit 4 (74 acres), and Unit 5 (74 acres) are scheduled for a spring 2009 burn. Total burn acres, fall 2008 are 248 acres, spring 2009, 226 acres and 29 acres of black line burn.

Range Improvement, Seeding

Occasional reseeding has been done on Humphrey Ranch, 11 acres were reseeded in 2005 and 20 acres were seeded about 1988. Forty-eight acres of the 2000 wildfire burn area were seeded in spring 2001. A native seed mix, an introduced mix, and a mix with natives and introduced species were applied to test results. Plot seeding records are available at the Dubois Headquarters Range office.

Cattle and Horse Grazing

Cattle and horse grazing with cooperative research is used periodically to improve sheep range conditions. Cattle and horses consume vegetation that sheep typically do not harvest, create more uniform pastures for grazing research, reduce residual on-site forage for other rangeland research, and reduce fuel loads and fire risk. Cattle and horse grazing is used mainly on the Headquarters range, with occasional cattle grazing on Humphrey and Henninger ranges. The number of animals used varies from year to year depending on research needs and vegetation conditions. Cattle or horse numbers used are based on the area and amount of vegetation needed to be removed. No cattle grazing was done in 2006 due to drought conditions. Cattle are primarily used with limited horse grazing in past. Pastures are evaluated for forage removal needs and mapped to determine livestock stocking. Grazing bids are solicited and awarded to private livestock owners. Number of animals, number of days, and areas grazed are tracked with detailed yearly records included in the Dubois Station records.

Cattle grazing from November 1 to January 1 started in 1998. Six headquarters pastures are grazed with cattle or horses. The Headquarters Range grazing pasture units vary from 160 to 900 acres, cattle grazed 500 acres in 1998. In 2003, those 500 acres were excluded from cattle grazing. (Williams 2008)

Predator Avoidance and Abatement

USSES employs full time sheep herders, guard dogs, and herd dogs located on site with sheep as they graze in the field. In addition to ensuring that grazing occurs consistent with the prescribed grazing plan, they are charged with the welfare of sheep as it relates to predator control activities. A summary of predator control processes are as follows:

The primary method of avoidance occurs through the presence of full time sheep herders, guard dogs, herd dogs, and removal of associated trash and/or carcasses that might attract predators. Do date, these practices have proven effective in keeping the number of conflicts with large carnivores to a minimum. Herders carry rifles and inventoried ammunition to be used for protection of sheep, or for their own safety. All use of weapons is reported directly to their supervisor. Incidents with wolves and/or grizzly bears are reported to USDA APHIS, Wildlife Services who investigates and conducts control actions in communication with state wildlife agencies.

Black Bear: Herders are allowed to harass or shoot depredating black bear. Herders are provided with bear spray for their protection and are also instructed that they can shoot a black bear in defense of their own life. Most encounters end without incident, before lethal control actions are taken. If black bear problems persist, Wildlife Services is contacted to investigate and follow up with control actions if warranted. To date, it is estimated that less than 10 control actions have been taken in the last decade on USSES lands. (Personal Communications, Farr, and USDA USSES).

Wolves: Herders are instructed that they can harass but not kill a depredating wolf. Wildlife Services is contacted to investigate depredation/conflicts, then they contact state wildlife agencies before implementing control actions such as trapping, collaring, or lethal removal. Authority for control measures rests with state wildlife agencies under MOU with the U.S. Fish and Wildlife Services. To date, only two wolf encounters occurred. One wolf was trapped, collared, and transported. Trapping occurred for the other wolf, but ended without further incidents. No wolves have been lethally removed to date.

(If/when the wolf is delisted, a herder is allowed to first harass, then shoot a depredating wolf if research animals are being maimed or killed. A full report is given to their supervisor, wildlife services, and state wildlife agencies following the incident.

Grizzly Bear: Herders are instructed that upon seeing a grizzly bear they are to do everything possible to avoid an encounter. They are to report the sighting to their supervisor. Moving the sheep is an option if the grizzly bear remains in the area. If the grizzly bear has seen them and is threatening, they are to make loud noise and can discharge their rifle into the air if they think it will help frighten the bear, or kill the bear if the herder's safety is threatened. All grizzly bear encounters are reported to their supervisor and then Wildlife Services (and Forest Service if on Forest Service System lands) is notified. Wildlife Services conducts investigations jointly with a representative from Montana Fish, Wildlife, and Parks before implementing control measures. Similarly, Idaho Department of Fish and Game is also contacted prior to control measures being taken. To date, three grizzly bear encounters have occurred, and none ended in lethal removal.

Fox & Coyotes: Herders are allowed to harass and/or shoot depredating coyotes and fox. Herders report that they are occasionally successful at taking a depredating coyote or fox but more often help is required from Wildlife Services.

Mountain Lions: These animals are uncommon on USSES rangelands and encounters have been few. However, herders are instructed that depredating cougars can be harassed or shot. One encounter, lethal control, has occurred in the past (personal communications with USDA-SES).

Integrated pest management

Noxious Weeds

There are few weed problems on ARS pasture lands. The minimal weed infestations that are present are located in sheep pens and along roads where there is no grazing. Some weed species are present on adjacent lands where cattle graze, over time the adjacent weeds invade ARS lands. Invasive plant species infestations, on ARS lands, are GPS (Global Positioning System) mapped. Area or patch infestations are mapped as polygons and included in the USSES records. Roadside noxious weed locations are identified on hard copy maps and recorded for treatment, as they are found.

Precautions are taken by ARS to minimize weed spread from sheep. To accomplish this, weed areas are grazed in spring when there is little or no risk of spreading weed seeds. ARS also quarantines animals for six days before moving sheep from weed infested areas or from feed with potential weed seeds to other grazing units. ARS does not graze areas when weed seeds are developed and there is risk of spreading seeds to another area.

ARS uses an integrated pest management approach for control and eradication of exotic, invasive weeds. This integrated approach is coupled with research on ecosystem functions and native plant communities, and with research on weed seed production and spread with sheep grazing. As primary weed control, this integrated approach includes the use of strategic sheep grazing as a biocontrol method to reduce the production of weed seed and the spread of weeds. Other biocontrol methods, such as specific species of beetles, alone or in combination with other biocontrol methods, are also used.

Herbicide application is used minimally on invasive weed species that are not consumed by sheep. Herbicides are not used on the rangelands. Herbicides are sprayed annually along some roads and sheep pens with invasive weeds.

Invasive weeds may establish anywhere, at any given time. Many newly established patches would be controlled using appropriate sheep grazing techniques. Other weed areas may be managed with herbicides, where spraying is more effective. In general, existing and potential problem areas have been identified; they are located mainly along other land ownership borders with ARS lands. Herbicide use is more effective in these weed invasion areas than sheep grazing.

Vegetation monitoring is conducted pre and post grazing, which includes annual measurements of invasive weeds, native plant density, occurrence frequency, along with collecting annual or biannual aerial (100 to 200 m above-ground-level) and on-the-ground (1 to 2 m) digital imagery of grazed and non-grazed areas. Post treatment monitoring is conducted with site visits at five year intervals. A description, target species and example of USSES noxious weed strategy is included in Appendix 2.

Mitigation Measures

Grizzly Bear

Store all livestock feed, human food, and dog food in bear proof storage containers to prevent bears becoming habituated to these food sources.

Render dead sheep carcasses in close proximity to the Continental Divide Trail and other trails on USSES lands unavailable to bears.

Notify the Caribou-Targhee when conflicts, including trapping efforts, occur so that users of the Caribou-Targhee can be notified if necessary.

Sheep Driveway

At the sheep driveway crossing on Odell Creek in section 11, T15S, R2W there is bare soil, 10 feet wide for about 150, feet on the south side of the crossing, on 15 to 20 percent slope. To divert overland flow and prevent soil transport into Odell Creek, cross drains could be constructed on the driveway trail. Three 10 to 12 inch diameter logs (available in the adjacent timber stand) could be angle imbedded three inches deep across the trail to divert runoff into undisturbed areas with existing vegetation ground cover and down woody debris. The three cross drains should be constructed 40 to 50 feet apart, at sites where the trail grade is less than 10 percent, for efficient cross drain function and to minimize maintenance needs. Cross drains should also be constructed on the narrow trail further to the west. This trail segment is turning into a trench, cross drains would divert water off trail and eliminate further down cutting. Cross drains should be monitored annually and maintained after heavy use. The sheep driveway crossing on the south fork of Odell Creek near the south line, section 14, T15S, R2W, is low impact, with grass and forb cover and little adverse effect.

Heritage

To ensure protection for cultural resources

- Review proposed undertakings with the State Historic Preservation Officers prior to implementation.
- If unanticipated discoveries are found during project activities, cease all operations in the vicinity of the discovery until assessed by a professional archaeologist or historian.
- Develop a survey strategy and facilities management plan and schedule during the second stage of the NEPA analysis.

Background

The Agricultural Research Service (ARS) is the U.S. Department of Agriculture's chief scientific research agency. Their job is finding solutions to agricultural problems that affect Americans every day, from field to table. ARS conducts research to develop and transfer solutions to agricultural problems of high national priority and provide information access and dissemination to: ensure high-quality, safe food, and other agricultural products. Unlike the Forest Service or Bureau of Land Management, ARS is not a land management agency, and is not subject to the Federal Land Management Policy Act or the Forest Service Organic Act. ARS is solely a research agency. As a research agency, ARS (in this instance, the USSES) is not required to, nor does it manage its lands for multi-purpose public use.

Mission Statement, USSES

The mission of the USSES is to develop integrated methods for increasing production efficiency of sheep and to simultaneously improve the sustainability of rangeland ecosystems.

To contribute to USDA, ARS, National Programs and accomplish the ARS mission at the USSES, ARS scientists address problems defined in the:

- NP 101 Action Plan: Understanding, Improving, and Effectively Using Animal Genetic and Genomic Resources; Preserve and Curate Livestock and Poultry Genetic Resources; Develop and

Implement Genome-Enabled Genetic Improvement Programs; Enhancing Animal Adaptation, Well-Being and Efficiency in Diverse Production Systems; Reducing Reproductive Losses; Improving Efficiency of Nutrient Utilization and Conversion to Animal Products; and

- NP 215 Action Plans: Ecosystems and Their Sustainable Management; Rangeland Management Systems to Enhance the Environment and Economic Viability; Grazing Management; Livestock Production and the Environment; and Integrated Management of Weeds and Other Pests components.

Because of the connectivity among the National Programs and their components, a single experiment at the USSES may contribute to multiple components of NP 101 and NP 215. This feature of the National Programs and USSES programs will lead to an understanding of the interactions between sheep and the environments in which they are produced that can be used to improve sheep production systems and ensure the sustainability of grazing land ecosystems.

Historical Background, USSES, Dubois, Idaho

Establishment of the Station at Dubois

In the fall of 1915, the Bureau of Animal Industry secured authorization to search for a tract of land in the west that could be used as a range for a western sheep breeding experiment station. Two exacting conditions governed the selection of the site:

1. The area must be unappropriated public domain land and not intermingled with homesteads or other property.

2. The location must be accessible by railroad.

The location at Dubois, an area of approximately 28,000 acres, was decided upon, because it was the only location found containing a solid block of public domain land of sufficient acreage and adjacent to a railroad (McWhorter, V. The Pacific Wool Grower, Vol. 4. Nos.10 & 11, 1952).

The U.S. Sheep Experiment Station (USSES) was established as a sheep breeding and rangeland grazing research facility. To provide the natural resource base for sheep and grazing research, lands were withdrawn from the public domain in 1915, 1916, 1919, and 1922. Presidents Woodrow Wilson and Warren G. Harding withdrew the lands with Executive Orders 2268, 2491, 3141, 3165, and 3767. Public Law 97-98-Dec. 22, 1981, clarified administrative jurisdiction of USSES lands, which rests solely with the Secretary of Agriculture, and the purpose of USSES lands, which are designated for "agricultural experiment purposes." There are no detailed records of land use prior to the USSES establishment. Livestock grazing research under the ARS ownership, which dates from circa 1918, predates the county.

Addition of Summer Range

Between 1940 and 1942, the USSES purchased the Humphrey and Henninger Ranches from the private sector. Prior to purchase, the Humphrey and Henninger Ranches were used for farming, some crop land, hay, mainly livestock production. Before transfer to the ARS, Henninger was grazed at much heavier rates than currently used by the USSES. High elevation summer ranges were probably used for sheep grazing that was a common practice at that time (possibly cattle but more likely sheep).

Research at the USSES, Dubois

Since its research began, circa 1918, the USSES is credited with developing three breeds of sheep (i.e., Columbia, Targhee, and Polypay) and has been making germplasm (i.e., breeding stock) available to sheep breeders in North America since the 1920s. Based on numbers of registrations, Columbia has been one of the 10 most popular breeds of sheep in the United States since 1965. Grazing and rangeland research at the USSES has been ongoing since the 1930s, and the research has produced unmatched information on managing grazing on sagebrush steppe to preserve native ecosystems.

Current USSES research is aimed at developing new or improving existing genetic lines of sheep that specialize in paternal and maternal traits that enhance lamb production (i.e., number of lambs born and weaned per ewe), lamb growth, lamb carcass merit, and yield of marketable product; improving nutrient management throughout the sheep production cycle; developing monitoring technologies for landscape-scale assessment of plant communities and for determining the effects of rangeland management activities, including grazing and fire, on vegetation, ground cover, and herbivore selectivity; and developing science-based grazing and prescribed burn management strategies and decision support systems that can be used to guide managers to maintain or improve the ecological function of western rangelands.

USSES research involves at least 34 scientists at nine ARS locations in seven states and 10 universities in seven states, in addition to the scientists at the USSES. Most of the research spans multiple years, and some of the long-term sheep genetics and rangeland research spans more than seven decades. In many cases, the USSES has been the only location in North America with the land and animal resources to conduct the research, and the only location in North America able to establish direct linkages between new research and research conducted during the last 90 years to provide a clear understanding of the long-term consequences of various management strategies. USSES research is published in peer-reviewed scientific journals, which are becoming more readily available to the general public as publishing companies develop open-access electronic archives, and is often rewritten for various trade magazines.

USSES research has been used to:

- Train new scientists;
- Write textbooks to educate university students in animal and rangeland sciences;
- Develop outreach programs that benefit farmers, ranchers, small business owners, agribusiness corporations, and land managers;
- Develop or improve sheep breeds that increase the efficiency of food and fiber production;
- Preserve or improve rangeland ecosystems; and
- Preserve or improve wildlife habitat.

The USSES is known worldwide for its research and sheep breeds. Scientists, sheep producers, students, and industry personnel from throughout the United States and other countries visit, and many more contact, the U.S. Sheep Experiment Station each year to learn more about the research or ask for comments on various issues associated with sheep production and rangeland management.

J.R. Simplot Mine History

During the years from 1956 through 1958, J.R. Simplot an Idaho based mining company conducted surface mining operations for phosphate in the upper reaches of Spring Creek along the Montana-Idaho border. On the Montana side, their surface mining activities were in sections 1 through 5, 9 and 10, T.15 S., R 1 W. Simplot constructed their main haul road down Spring Creek and Odell Creek to the town of Monida, Montana. Ore was then shipped to Ramsey, Montana for beneficiation. The haul road has only been used for access to the mine site since their mining operations ceased in 1958. Since 1958, the haul road has never been maintained and has naturally revegetated. It is currently open only for foot or horse travel. . Simplot operated under a BLM, not ARS, lease for subsurface mineral reserves. ARS objected to the lease (Lewis personal communication 2008).

In the summer of 1995 and 1996 field reviews were conducted under the direction of Mr. John McKay (Bureau of Land Management) to determine reclamation activities needed to restore haul roads (remove culverts, correct erosion, etc.) and to reclaim the mine site. A plan was devised, an Environmental Assessment developed by the Bureau of Land Management, and work was completed during the summer of 1997. Periodic evaluations by the Bureau of Land Management and ARS and Simplot personnel have occurred. Some additional hand work was completed during the summer of 2007.

An ATV was used to haul supplies for mine rehabilitation work at the old mine in 2007. Mine rehabilitation included:

- Lowering overflow channel on catchment pond to confine runoff flow to existing channel.
- Placing sandbags to shore up pond wall and confine sediment.
- Placing rocks and woody debris in overflow channel to dissipate energy and slow flow to arrest down cutting.

Cooperating Agencies

The USSES has agreements with the following federal agencies. To see the full text of these documents, please refer to the project file.

United States Department of Agriculture

U.S. Forest Service, Caribou-Targhee National Forest

Forest Service Agreement 07-1A-11041561-025: This agreement documents the coordination and authorization of the use of National Forest Service Land administered by the Caribou-Targhee National Forest by the USSES for research purposes. The intention is that "the research and investigation work shall be for the benefit of the entire sheep and range industry in Idaho and adjacent states, and for the general benefit of the People of the United States.[4]" This document authorizes the USSES to graze sheep at no cost on Forest Service land administered by the Dubois and Island Park Ranger districts as follows (Table 6; Map 1):

[4] USDA, Forest Service/Agricultural Research Service, July, 2007 USSES. Forest Service Agreement 07-IA-11041561-025

Table 6. Sheep grazing authorized on Forest Service System lands			
Number	**Class**	**Period**	**Allotment**
933	Ewe/Lamb	07/03 – 09/06	Meyers Creek (Island Park Ranger District)
1,210	Dry	06/16 – 09/15	East Beaver Creek (Dubois Ranger District)
1,200		11/06 – 01/02	Snaky Canyon (Dubois Ranger District)
1,000		11/20 - 0103	Kelly Canyon (Dubois Ranger District)

Forest Service Agreement 58-5364—6-142N: The objectives of this cooperative project are to 1) determine the effects of the Continental Divide National Scenic Trail on ecosystem processes on USDA, ARS, USSES lands in the Centennial Mountains of Montana and Idaho and 2) to create a mechanism for completing the construction and accomplishing the maintenance of the trail through the Centennial Mountains.[5] The agreement coordinates trail condition and maintenance activities by the Forest Service on the portion of the trail on USSES lands (see Map 1).

United States Department of the Interior

Bureau of Land Management - 2007

Memorandum of Understanding Between USDI Bureau of Land Management, Upper Snake Field Office and the USDA Agricultural Research Service, U.S. Sheep Experiment Station: The purpose of this MOU is to document, coordinate and authorize the use of public lands known as the Bernice Allotment, administered by the BLM, upper Snake Field Office for research purposes. Research is allowed for the mutually-desired purpose of managing the Bernice Allotment for scientific research while maintaining or improving the ecological condition of the native vegetative communities within the allotment. Research shall be conducted by the USSES for the benefit of the entire sheep and range industry in Idaho and adjacent state, and for the general benefit of the People of the United States.[6] The MOU authorizes the USSES to graze sheep at no cost on public lands within the Bernice Allotment, managed by the Upper Snake Field Office under the terms and conditions previously analyzed in Environmental Assessment #ID -70-00-010 as follows(see Map 1):

Table 7. Sheep grazing authorized on the Bernice Allotment		
Livestock Number	**1,050 Sheep**	
Grazing Begin	11/23	12/06
Period End	02/01	02/05
Type Use	Active	
AUM*	490	428

* AUM as expressed above is = amount of forage a 1,000 pound cow or equivalent would consume in one month, based on an average 26 pounds of dry forage per day. (From the Society of Range Management Glossary)

[5] USDA, Forest Service/Agricultural Research Service, January, 2006. Forest Service Agreement 58-5364-6-142N.
[6] USDI, BLM/USDA, ARS, USSES. December 2007. Memorandum of Understanding Between USDI Bureau of Land Management, Upper Snake Field Office and the USDA Agricultural Research Service, U.S. Sheep Experiment Station.

United States Department of Energy

Nuclear Regulatory Commission - 1963 *(Previously the Atomic Energy Commission)*

Atomic Energy Commission Contract No. AT(10-1)-1154: The purpose of this MOU is for the US Atomic Energy Commission represented by its Idaho Operations Office to grant a license to the USDA, ARS to allow the ARS to occupy, use and maintain a winter feeding area for experimental sheep on its premises called the "Range" within the Commission's National Reactor Testing Station (see Map 1 and Map 14).[7]

Decisions to Be Made

An environmental analysis will evaluate the site-specific issues the public has with the proposed action, consider alternatives to the proposed action, and analyze effects of the proposed action and alternatives on the environment. Based on the needs identified for the Interim USSES Grazing and Associated Activities Project, the scope of the project is limited to decisions concerning activities within the West Stearns Project Area. This environmental analysis (EA) will provide the deciding official with the information to make the following decisions with regard to the Interim USSES Grazing and Associated Activities Project:

- Which actions, if any, will be approved, and
- What additional mitigation measures and monitoring requirements may be needed to protect resources?

The deciding official is Andrew C. Hammond, Agricultural Research Service Pacific West Area Director.

Public Involvement

Scoping

On August 12, 2008, a Scoping package explaining the purpose and need for action, as well as the location and types of proposed activities, was mailed to approximately 100 interested parties. These included individuals and organizations who expressed interest in the project, adjacent landowners, public legislators (federal, state and township supervisors), and plaintiffs in *Center For Biological Diversity, and Western Watersheds Project v. U.S. Sheep Experiment Station; U.S. Department Of Agriculture; Agricultural Research Service; and U.S. Forest Service*.

Nineteen (19) responses to Scoping were received (See Appendix 1). Original responses received can be viewed in the project file located at the USSES, Dubois, Idaho.

Comments generally fell into the following categories (see Issues section below):

- Support for the research conducted at the station over the past 86 years and the ongoing research on various issues associated with sheep production and rangeland management;

[7] DOE, AEC/USDA, ARS. February 1963. Memorandum of Understanding Between The United States Atomic Energy Commission and the United States Department of Agriculture, Agricultural research Service, Animal Husbandry Research Division.

- The need to maintain continuity of research projects currently underway at the USSES;
- Wildlife/sheep/human interactions.
- Concerns with the use of the Continental Divide National Scenic Trail (see Issues section below); and
- Concerns regarding the protection of cultural resources.

Consultation

One requirement of the settlement agreement (Purpose and Need, p. 2) was consultation with the U.S. Fish and Wildlife Service. The project biologist met informally several times with the Fish and Wildlife Service in Chubbock, Idaho. The initial meeting conducted in May, 2008 familiarized the Fish and Wildlife Service biologist with the project location and description of proposed activities. At that time, the project biologist and Fish and Wildlife Service biologist reviewed a list of species in or near the project area having federal status. A preliminary discussion of potential project effects and species occurrences in the area indicated that Canada lynx was the only federally-listed species and effects are unlikely or minimal. A subsequent court injunction restored federal listing status to the Northern Rocky Mountain Gray Wolf Distinct Population Segment, which is a nonessential experimental population in and around the project area. Several additional phone calls took place between July and October, 2008 to review potential effects to species, clarify procedural questions, and finalize that USSES would work with the Chubbuck, ID FWS office as the lead contact. The Biological Assessment (Project File) indicates that potential effects to Lynx and wolf are negligible. The biological assessment has been sent to the Fish and Wildlife Service for consideration and concurrence remains within the confines of informal consultation.

Issues

A response to the comments received during public Scoping can be found in Appendix 1: USSES Response to Scoping Comments (pp. 87-103).

Issues are developed from public comments received during Scoping. Issues are based on public disagreement with the proposed action are then divided into resolved and unresolved issues. To be considered an unresolved issue, a public comment must be:

- Site specific to the USSES Grazing Project Area, and relevant to the USSES Grazing Project proposed action and
- Show a disagreement with the proposed action that cannot be resolved except through the development of an alternative to the proposed action.

Resolved Issues

Text in *italics* represents the views expressed by the public in response to scoping.

Conflicts between sheep and large carnivores

Scoping Issues

- *The USSES lands in the Centennials provide a significant amount of 'high quality´ habitat (defined by WCS [Wildlife Conservation Society] as any area with > 87 percent probability of use by all four*

carnivore species {grizzly bears, wolves, black bears, and cougars}) for large carnivores. Because our data suggest that the Centennial Mountain region, including USSES lands, is important for carnivores, we are concerned about the effects that continuing sheep grazing, specifically related to large carnivore management and removal, will have on levels of connectivity. Such removal could decrease connectivity potential and even ultimately create a sink habitat. Most of our concerns address the 'predator avoidance and abatement´ and 'wildlife monitoring to follow trends in numbers and habitat selection' [of the] proposed activities.

- *Due to the centralized location of USSES lands within the Centennials, management decisions on these lands likely will have disproportionate impacts on carnivore connectivity.*
- *Sheep grazing, associated human activities, and the removal of large carnivores for protection of sheep on USSES lands are contributing to the creation of a bottleneck that inhibits movement across, and residence in, these lands by carnivores in the Centennials.*
- *Wildlife Conservation Society respectfully suggests that the ARS USSES begin to design an extensive research program that addresses ways to reduce and eliminate sheep-carnivore conflicts.*
- *The Centennial Mountains provide habitat that is occupied by grizzly bear, black bear, wolves and mountain lions. Domestic sheep grazing in the same habitats in the Centennial Mountains represents a significant potential for livestock depredations and a resulting mortality risk to large carnivores, particularly bears and wolves. In turn, this potentially fragments habitat connectivity and hinders carnivore dispersal.*
- *The presence of domestic sheep in the action area impacts lynx as well. Far too many of these species are killed in predator control activities for the benefit of ARS-USSES research, when such research could take place in other less sensitive areas.*

Resolution

A preliminary review of the USSES records indicates that very few carnivores are removed to facilitate continued livestock grazing. Other than conflicts with coyotes, predator conflicts with USSES sheep that cannot be resolved by moving the sheep are handled by USDA, Animal and Plant Health Inspection Service, Wildlife Services.

See: Proposed Action, Predator Avoidance and Abatement, p. 14; and Wildlife, Lynx, Wolf, and Grizzly Bear, pp. 38-54.

Grizzly Bears

Scoping Issues

- *ARS-USSES activities are in direct conflict with the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (CS) as well as Grizzly Bear Management Plan for Southwestern Montana.*
- *For a federal agency such as ARS to graze sheep in these areas is in direct conflict with the Final Conservation Strategy for Grizzly Bears in the Greater Yellowstone Area. The continued grazing of sheep in the East, West and Humphrey Pastures is also inconsistent with the Goal 3 for the Grizzly Bear identified in the Grizzly Bear Management Plan for Southwestern Montana October 2002.*
- *The ARS should explore options to manage property in a manner that is consistent with the Final Conservation Strategy for Grizzly Bears in the Greater Yellowstone Area. In this case the federal*

government is the lessee and has the opportunity to discontinue sheep grazing and eliminate this potential threat to grizzly bear survival in this critical habitat.

Resolution

The Yellowstone Distinct Population Segment of grizzly bears has recovered and continues to expand in both population size and distribution. Few grizzly bears have been or would be impacted by continued operations on the USSES. No change to current condition is anticipated and the project is not expected to be detrimental to grizzly bear recovery.

The USSES is consistent with the Final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem[8], specifically by complying with the Caribou-Targhee National Forest Agreement 07-1A-11041561-025[9]. [10]. (Note: This agreement only applies to USSES when it is on FS land, but, as stated before, we choose to follow the guidelines in the agreement when we are on ARS lands. G Lewis)

Outside of the Primary Conservation Area, which includes USSES lands, the Grizzly Bear Management Plan for Southwestern Montana emphasizes coexistence between grizzly bears and livestock use. The Montana plan states that outside the Primary Conservation Area, "FWP [Montana Fish, Wildlife & Parks] feels programs that implement management techniques such as guard dogs, sanitation, etc., in combination with removing livestock-killing bears, will be a more productive approach in building tolerance for expanded bear distribution." Such programs are implemented by the USSES. Conservation measures including the presence of sheep herders, guard dogs, and willingness to move sheep to other areas in pastures has proven effective in minimizing conflicts with bears and other carnivores. Only two confirmed conflicts with grizzly bears have occurred and neither resulted in mortality or removal of the bear.

For additional detail see: Proposed Action, Predator Avoidance and Abatement, p. 14; Wildlife, Grizzly Bear, pp. 47-54.

Scoping Issue

USSES lands in Montana are adjacent to areas of the Caribou-Targhee that are occupied by grizzly bears and therefore, grizzly bears are likely to frequent USSES lands. . In order to minimize conflicts both on and off USSES lands mitigation measures will be implemented to reduce interactions.

Resolution

See Mitigation Measures section, p.15.

[8] 2003. Final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem. Interagency Conservation Strategy Team. 87 p.
[9] USDA, Forest Service/Agricultural Research Service, USSES. Forest Service Agreement 07-IA-11041561-025
[10] USDA, Forest Service/Agricultural Research Service, USSES. Forest Service Agreement 07-IA-11041561-025

Fencing in the Centennials

Scoping Issue

Fences associated with domestic sheep grazing pose problems for antelope, mule deer and elk. Significant numbers of elk, moose, antelope and mule deer travel north and south across the Continental Divide to and from Montana.

Resolution

Fencing that occurs on USSES lands at lower elevations is constructed to specifications that do not limit travel for most ungulates, and upper elevation fencing (horse corral) is temporary, small in size, and is not big enough to substantially affect big game movements. The one large fence present on USSES lands near the headquarters does eliminate big game access to forage on approximately 640 acres. Since the fence is within low elevation sagebrush that does not include any mapped wetlands or unique wildlife habitat features, and is surrounded by thousands of acres of similar habitat, the fence does not limit ungulate use across the landscape or their access to limiting habitats. As a result, effects are limited to the loss of a small amount of available forage for deer and elk, a change in daily movements of deer and elk around the one square mile exclosure.

Wolf

Scoping Issue

ARS-USSES grazing and related activities should be halted because they interfere with wolf recovery by affecting connectivity among populations.

Resolution

On March 28, 2008, gray wolves in the Northern Rocky Mountains were removed from the federal endangered species list, and management of wolves within Idaho and Montana was passed to the state wildlife agencies. According to a news release prepared by the Fish and Wildlife Service, the wolf was de-listed primarily because "population has exceeded its recovery goals for the past several years and is now thriving. Presently, there are more than 1,500 wolves and at least 100 breeding pairs in Montana, Idaho, and Wyoming. The Service and States will cooperatively monitor the wolf population for the next five years." On July 18, 2008, in response to a lawsuit, The U.S. Federal District Court reinstated the Endangered Species Act protections for gray wolves in the northern Rocky Mountains.

There have been only two confirmed wolf interactions on USSES lands in the past that resulted in one being radio-collared and neither has been killed.

The project biologist has determined that gray wolves in the project area are within the Western Distinct Population Segment designated by the U.S. Fish and Wildlife Service, which includes all wolves found in the southern half of Montana, Idaho south of Interstate 90, and all of Wyoming. These wolves are managed as a non-essential experimental population. Considering the potential effects described above, the biologist has determined that the proposed project is "Not likely to jeopardize continued existence of the gray wolf or adversely modify proposed critical habitat" (as none is proposed).

For additional detail see Wildlife, Gray Wolf, pp.43- 47.

Inter-Agency Cooperation

Scoping Issue

IDFG [Idaho Fish and Game] recommends that you develop within your proposed action a plan to increase ARS cooperation and participation with other resource management agencies.

Resolution

The ARS – USSES has formalized Memorandums of Understanding with the Caribou-Targhee National Forest and the Bureau of Land Management to permit sheep trailing and grazing activities on specific public lands. In particular, the Memorandums of Understanding with the US Forest Service ensures compliance with the Grizzly Bear Conservation Strategy (particularly inside the Primary conservation Area) and the Gray Wolf Conservation Strategy when using Forest Service lands. See also Continental Divide Trail, below.

The ARS – USSES is initiating contact with the Montana Fish, Wildlife and Parks and Idaho Fish and Game. The intent is to develop working agreements that recognize the limited mission of USSES as a research facility and sets up regular meetings to share information.

Continental Divide National Scenic Trail

Scoping Issue

The proposed continuation of grazing and associated activities should take into account the importance of the Continental Divide Trail and negative impacts to either the trail or trail users should be mitigated or minimized.

Resolution

The Continental Divide National Scenic Trail passes through USSES lands that adjoin the Caribou-Targhee NF. Due to the importance of this trail the Caribou-Targhee and USSES have entered into Interagency Agreement No. 58-5364-6-142N, in order to coordinate trail condition and maintenance activities on the portion of the trail on USSES lands. Figure 2 displays the signs designed by the USSES to be erected by the Forest Service along the Trail to alert hikers that the Continental Divide National Scenic Trail is crossing the 16,600-acre summer range where U.S. Sheep Experiment Station sheep spend July and August.

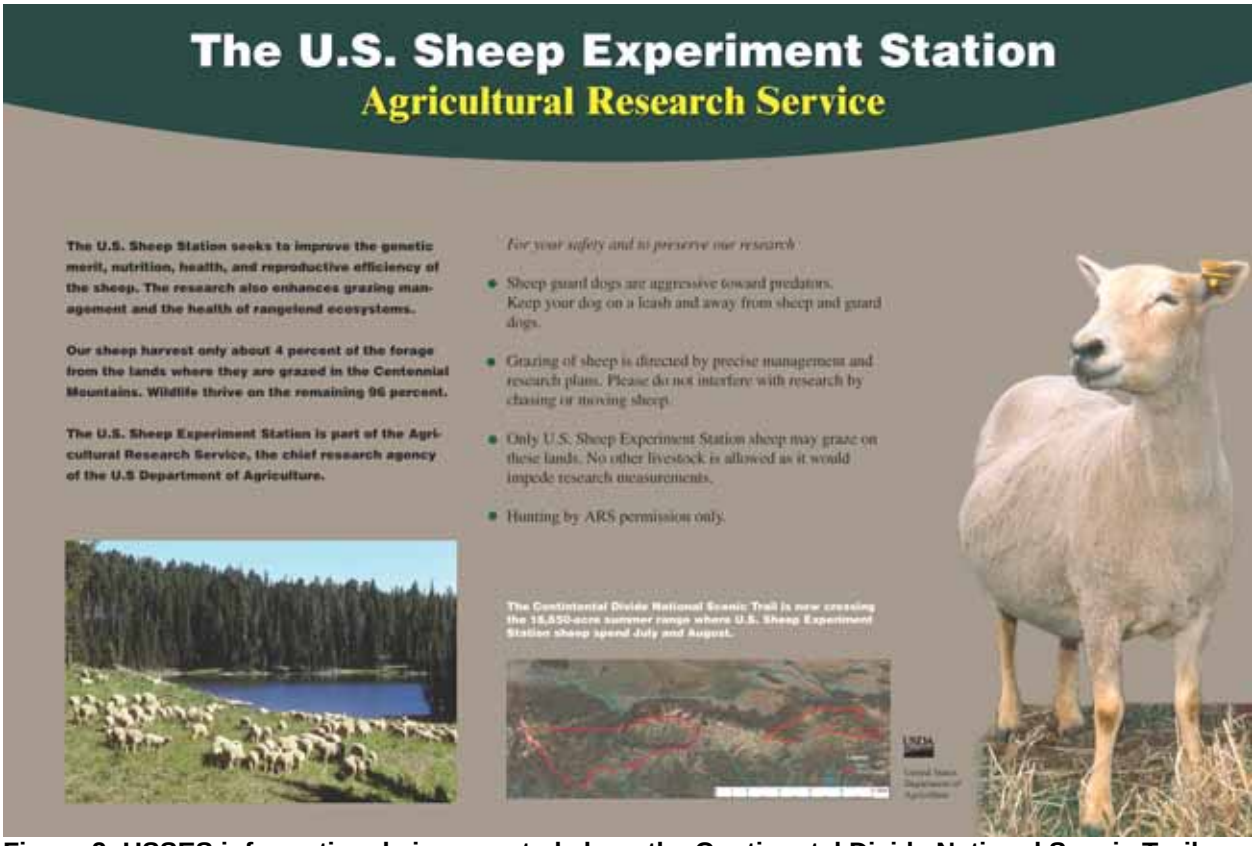


Figure 2: USSES informational signs posted along the Continental Divide National Scenic Trail.

Cultural Resources

Scoping Issues

Unknown cultural resources could be discovered during the course of grazing or associated activities.

All new and existing livestock facilities should be inventoried for impacts to cultural resources on ARS managed federal lands in compliance with the federal requirements.

Resolution

See Mitigation Measures section, p. 15.

Unresolved Issues

There were no unresolved issues.

Alternatives

Five alternatives were considered for this project. In addition to the proposed action analyzed in detail, four alternatives were eliminated from detailed study.

Alternatives Eliminated from Detailed Study

The following alternatives were considered during the environmental assessment process.

No Action – No new federal action

*No **new** federal actions would occur.*

A no action alternative would initiate *no new* federal actions. Ongoing activities would continue. This alternative is similar to the proposed action except in scope. Under a no action alternative existing historic sheep grazing and associated activities would continue for an unspecified time. Under the proposed action, existing, historic sheep grazing and associated activities would continue for a limited time (March 2010), until such time as an environmental assessment can be conducted to assess the long-term effects of these activities.

Therefore, a no action alternative was not analyzed in detail.

Grizzly bear conflicts

- *Phase out domestic sheep grazing in the Centennial Mountains, because of continued conflicts between livestock and wildlife, because, on public lands in occupied grizzly bear habitat within the Greater Yellowstone Ecosystem, domestic sheep grazing has been phased out due to continued conflicts between livestock.*
- *Discontinue grazing sheep in the East and West summer pastures as well as in the Humphrey pasture, because the continued grazing of sheep in these pastures is in direct conflict with the Final Conservation Strategy for Grizzly Bears in the Greater Yellowstone Area and also inconsistent with the Goal 3 for the Grizzly Bear identified in the Grizzly Bear Management Plan for Southwestern Montana October 2002*
- *Move ARS USSES grazing to areas less sensitive to grizzly bear habitat*
- *Focus research on grazing options or other tools to eliminate or mitigate inherent conflicts between grizzly bears, and domestic sheep grazing.*

For a detailed analysis of the grizzly bear see Federally Threatened, Endangered, and Sensitive Species, Delisted, Grizzly Bear, pp. 47-54.

Conflicts on USSES lands are minimal and have not conflicted with grizzly bear recovery. Non-lethal abatement strategies are in place and are consistent with Final Conservation Strategy as well as Montana and Idaho management plans.

The Final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem[11] includes phasing out domestic sheep grazing within the designated Primary Conservation Area. USSES lands are outside of the Primary Conservation Area, where the emphasis is coexistence between grizzly bears and livestock use, according to Grizzly Bear Management Plan for Southwestern Montana. The Montana plan states that outside the Primary Conservation Area, "FWP feels programs that implement management techniques such as guard dogs, sanitation, etc., in combination with removing livestock-killing bears, will be a more productive approach in building tolerance for expanded bear distribution." Such programs are implemented by the USSES.

The Yellowstone Distinct Population Segment of grizzly bear was de-listed on March 22, 2007 because of an increasing population in and around Yellowstone National Park in the bear's Primary Conservation Area, and because grizzly bears are expanding their range to inhabit suitable habitat throughout the boundaries of the Distinct Population Segment, which includes USSES lands.

There have only been two confirmed accounts, 1985 and 1999 of grizzly bear conflicts on USSES lands, and grizzly bears were not killed, captured, or relocated in both instances. In an agreement with the US Forest Service[12], the USSES agrees they will comply with meeting grizzly bear management goals when trailing sheep on the Meyers Creek allotment (which is in the PCA) including notifying appropriate personnel of conflicts, and temporarily stopping or modifying sheep grazing as necessary, should bear conflicts arise with humans or livestock. Forest Service Agreement 07-1A-11041561-025 includes the following mitigations to reduce human/bear interactions when USSES grazes sheep on Forest Service lands. The USSES chooses to apply the same mitigation measures when grazing sheep on ARS land, which is most of the time.

1. Store all livestock feed, human food, and dog food in bear proof storage containers to prevent bears becoming habituated to these food sources.

2. Render dead sheep carcasses in close proximity to the Continental Divide National Scenic Trail and other trails on USSES lands unavailable to bears.

3. Notify the Caribou-Targhee when conflicts, including trapping efforts, occur so that users of the Caribou-Targhee can be notified if necessary.

The USSES at Dubois is the only ARS station in the United States doing research with sheep in extensive management systems – open range, high elevations. Research is done to develop animals with fitness traits or genetics suited to the extensive range conditions. The purpose of this research is to development animals with genetics adapted to that environment. There are three objectives of studies at high elevation (summer range pastures):

1. Studies are done with domestic stock grazing plants detrimental to livestock and wild ungulates; larkspur, lupine, and *Senecio* spp. (includes ragworts and groundsels).

2. Genetic test or development of animals adapted to high elevation extensive ranges are done to determine what animals perform best under these environmental conditions.

3. ARS is doing active research on:

[11] 2003. Final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem. Interagency Conservation Strategy Team. 87 p.
[12] USDA, Forest Service/Agricultural Research Service, USSES. Forest Service Agreement 07-IA-11041561-025

- ARS, Dubois, is doing research in conjunction with Poisonous Plant Research Station, ARS in Utah.
- Bed ground nutrient movement etc
- Stream crossings on sheep driveways
- Plant community diversity of grazed lands at high elevations

The low elevation pastures (27,930 acres on low dry land pastures) is currently under grazed. The number of animals needed in research would exceed range carrying capacity if only low elevation pastures (eliminating the East and West Summer Pastures) were used, sites would be over grazed with adverse effects to soil, water and other resources. This, in turn, could have indirect adverse effects on wildlife species in the area. Feed lot conditions would not provide the environment for extensive sheep grazing conditions needed to develop or test animals with genetic traits for extensive range conditions.

For additional detail see Wildlife, Grizzly Bear, pp. 47-54.

For these reasons the above alternatives concerned with grizzly bears were not analyzed in detail.

Wildlife

- *Highlight the importance of wildlife and their habitats.*

Current ARS structure has no wildlife component and it is not part of the USSES mission. The mission of the USSES is narrowly confined to research to increasing production efficiency of sheep and to simultaneously improve the sustainability of rangeland ecosystems. The USSES is not a land management agency, and because of the enabling legislation for the USSES, it is constrained from developing research projects whose sole purpose would be to focus on wildlife and their habitats. Recognizing the importance of wildlife habitats as part of the rangeland ecosystem, USSES research projects may include components of wildlife habitat where appropriate.

The USSES has initiated contact with the Montana Fish, Wildlife and Parks and Idaho Fish and Game. The intent is to develop working agreements that recognizes the limited mission of USSES as a research facility and sets up regular meetings to share information.

Therefore, an alternative that focused on wildlife and their habitats was not analyzed in detail.

Fencing

- *Removing barrier fencing to improve wildlife habitat, because fences associated with domestic sheep grazing pose problems for the Significant numbers antelope, mule deer, moose, and elk traveling north and south across the Continental Divide to Idaho and Montana*.

Fencing that occurs on USSES lands at lower elevations is constructed to specifications that do not limit travel for most ungulates, and upper elevation fencing (horse corral) is temporary, small in size, and is not big enough to substantially affect big game movements. The one large fence present on USSES lands near the headquarters does eliminate big game access to forage on approximately 640 acres. Since the fence is within low elevation sagebrush that does not include any mapped wetlands or unique wildlife habitat features, and is surrounded by thousands of acres of similar habitat, the fence does not limit ungulate use across the landscape or their access to limiting habitats. As a result, effects

are limited to the loss of a small amount of available forage for deer and elk, a change in daily movements of deer and elk around the one square mile exclosure.

For additional information on fencing see: Proposed Action, Maintenance and Repair of Existing Permanent Fence, p. 11; Wildlife, Grizzly Bear, pp. 47-54.

Therefore, an alternative that eliminated fencing in the East and West Summer Pastures was not analyzed in detail.

Environmental Effects

There were no significant issues raised during the scoping period for this project. However, the majority of the comments received were concerned with wildlife effects. See the following Wildlife section, Appendix 1: USSES Response to Scoping Comments, and Project File: USSES Grazing Project Biological Assessment/ Biological Evaluation for the effects of the proposed action on wildlife species.

Also included in this document is the effects analysis on range, as this is a project concerned with sheep grazing. See Range, pp. 32-37)

For additional resource effects analyses see the specialist reports in the project file located at the USSES, Dubois, ID.

Range

Range Affected Environment

Elevations of the ARS lands range from 4,800 feet at Headquarters to nearly 10,000 feet in the Centennial Mountain summer pastures. Average annual precipitation ranges from 10 inches in the Snake River plain to a 20 year average of 20.5 inches at Lakeview, Montana. In the Centennial Mountain Range, the average annual precipitation tends to be higher than 21 inches. The USSES land's diverse geography contains mixed conifer and aspen forests, subalpine meadows, foothills sagebrush steppe, and desert shrubland vegetation communities. This diverse habitat provides unparalleled sheep research opportunities for ARS.

Agricultural Research Service (ARS), USSES, Dubois station manages and grazing lands for research in Montana and Idaho as described below (see Map 1 - Map 7).

- Head quarters pasture, 27,930 acres of ARS land, includes office, laboratory, animal, equipment, and residential buildings, dry-lot facilities for research throughout the year, lambing facilities, and lands used for spring and autumn grazing and rangeland research;
- West and East Summer pastures, 16,600 acres of ARS land, in the Centennial Mountains of Montana, is used for summer grazing and rangeland research;
- Humphrey Ranch, 2,600 acres of ARS land in Idaho, south of Monida, Montana, has animal facilities and equipment buildings, and is used for spring, summer, and autumn grazing and rangeland research.
- Henninger Ranch, 1,200 acres of ARS land near Kilgore, Idaho, has animal facilities and is used for summer, spring and fall grazing and rangeland research.

Throughout the year, ARS sheep also graze on Bureau of Land Management (BLM), National Forest (USFS), and Department of Energy (DOE) lands. Use of these lands is covered under separate agreements with those agencies. Allotments include USFS Snakey – Kelly, East Beaver, and Meyers Creek and BLM, Bernice Allotment, and DOE: Mud Lake Feedlot. Mud Lake Feedlot facilities are used when sheep are not on grazing lands Table 8 displays acres for each range and allotment area.

Table 8. Range acres

Land Owner	Range Name	Acres
USSES	Headquarters	27930
USSES	Humphrey	2600
USSES	Henninger	1200
USSES	West Summer	11874
USSES	East Summer	3976
USFS	Snakey-Kelly	5819
USFS	East Beaver	20786
USFS	Meyers Creek	3503
BLM	Bernice	22181
DOE	Mud Lake Feedlot	766

Vegetation Community Types

Elevations of the ARS lands range from 4,800 feet at Headquarters to nearly 10,000 feet in the Centennial Mountain summer pastures. Average annual precipitation ranges from 10 inches in the Snake River plain to a 20 year average of 20.5 inches at Lakeview, Montana. In the Centennial Mountain Range, the average annual precipitation tends to be higher than 21 inches. The USSES land's diverse geography contains mixed conifer and aspen forests, subalpine meadows, foothills sagebrush steppe, and desert shrubland vegetation communities. This diverse habitat provides unparalleled sheep research opportunities for ARS.

Vegetation cover types for ARS range lands with associated acres, shown in Table 9, are from GIS data. This data is general but, is the best available data to be digitally analyzed in the interim EA. For the final EA, historical hard copy data (at the Dubois Headquarters office) will be converted into a more useable digital format. The vegetative cover type data was acquired through two different sources for Table 9. Headquarters, Humphrey, and Henninger cover types are from idveg. Idveg is land cover data used in the 2nd generation Idaho Gap Analysis Project. This broad coverage cover type data, from aerial interpretation, may not reflect site specific species types on ARS lands. Examples of noted differences include:

- Basin, and Wyoming, and mountain big sagebrush type should be threetip sagebrush. Only a small corner of Headquarters Range has big sagebrush, all of the sagebrush cover type is threetip sagebrush. The sagebrush cover types at the USSES are threetip sagebrush in the southwest portion of the Headquarters and Mountain big sagebrush in the north east.

- Bitterbrush is present but is not the dominant vegetation represented in the large area shown in Table 9. Much of this cover type is threetipprimarily mountian big sagebrush. with scattered bitterbrush

- Broadleaf and shrub dominated riparian cover is not present on the Headquarters Range. This riparian typed area cover type should be included with adjacent dry land types.

- Agricultural land should not be shown for the Headquarters Range area.

Metadata for the GIS vegetation data can be found in Appendix B of the Range Report.

Summer range vegetation cover types are from SILC3 image interpretation in GIS. This SIL3 data was acquired from the Beaverhead-Deerlodge National Forest (USFS). Metadata is included in Appendix B. Due to tolerance variations in GIS mapping there are small areas along the Montana/Idaho border, within

the project area, that have no available vegetation data. Neither idveg nor SILC3 GIS vegetation data cover this border area. In Table 9, Cover Type without vegetation data is shown as (blank). The total acres without a cover type (or blank cover type) include 66 acres on the East Summer Range and 133 acres on West Summer Range. Summer range plant community types and acres are displayed in Table 9. Total cover type acres for Headquarters, Henninger, and Humprey Ranges are different than total acres shown in Table 1 above due to GIS data generalizations.

Table 9. USSES Range cover types

Range	Cover Type	Acres
Headquarters[a]	Agricultural Land	62
	Basin and Wyoming Big Sagebrush	9507
	Bitterbrush	4448
	Broadleaf Dominated Riparian	100
	Disturbed, Low	252
	Low Sagebrush	9507
	Mountain Big Sagebrush	3152
	Needleleaf Dominated Riparian	9
	Perennial Grassland	130
	Shrub Dominated Riparian	23
	Warm Mesic Shrubs	26
Headquarters Total		**27217**
Henninger[a]	Aspen	57
	Basin and Wyoming Big Sagebrush	12
	Douglas fir	23
	Foothills Grassland	64
	Lodgepole Pine	32
	Mixed Needleleaf, Broadleaf Forest	35
	Mountain Big Sagebrush	963
	Perennial Grassland	15
	Shrub Dominated Riparian	70
	Warm Mesic Shrubs	12
Henninger Total		**1283**
Humphrey[a]	Agricultural Land	203
	Aspen	40
	Basin and Wyoming Big Sagebrush	42
	Bitterbrush	22
	Foothills Grassland	155
	Forb Dominated Riparian	36
	Mixed Needleleaf, Broadleaf Forest	1
	Montane Parkland, Subalpine Meadow	28
	Mountain Big Sagebrush	1714
	Mountain Low Sagebrush	16
	Shrub Dominated Riparian	207
	Warm Mesic Shrubs	122
	Wet Meadow	6
Humphrey Total		**2593**

Table 9. USSES Range cover types

Range	Cover Type	Acres
East Summer Range[b]	Aspen	315
	Douglas-fir	799
	High Cover Sagebrush / Xeric Shrubs (35-100% shrub)	32
	Lodgepole Pine	1373
	Low / Moderate Cover Grasslands	702
	Mixed Lower Subalpine Conifer Forest	167
	Mixed Upper Subalpine Conifer Forest	124
	Moderate / High Cover Grasslands	233
	Rock	23
	Subalpine Fir / Spruce	116
	Very Low Cover Grasslands	10
	Very Low Cover Sagebrush / Xeric Shrubs (5-14% shrub, 25-100% grass)	2
	Whitebark Pine	14
	(blank) -- area between ID & MT with no data (for MT or ID)	66
East Summer Range Total		**3976**
West Summer Range[b]	Aspen	392
	Douglas-fir	5748
	High Cover Sagebrush / Xeric Shrubs (35-100% shrub)	41
	Lodgepole Pine	747
	Low / Moderate Cover Grasslands	2853
	Mesic Shrublands	161
	Mixed Upper Subalpine Conifer Forest	443
	Moderate / High Cover Grasslands	682
	Moderate Cover Sagebrush / Xeric Shrubs (25-34% shrub)	22
	Rock	215
	Subalpine Fir / Spruce	62
	Very Low Cover Grasslands	51
	Very Low Cover Sagebrush / Xeric Shrubs (5-14% shrub, 25-100% grass)	15
	Whitebark Pine	308
	(blank) -- area between ID & MT with no data (for MT or ID)	133
West Summer Range Total		**11874**
Grand Total		**46943**

Data Sources: a – This data was derived in GIS from IDveg data from GAP.
b – This data was derived in GIS from Beaverhead-Deerlodge NF (USFS) Silc3 Vegetation Data

For a description of the various operations and activities occurring on the USSES, see the Proposed Action, pp. 3-15.

Range Direct/Indirect Effects

Continued grazing with monitoring and adaptive management would maintain good to excellent range conditions with an upward trend in watershed health. Current forage utilization at current stocking rates

would maintain favorable environmental conditions with desired groundcover, native vegetation composition, and plant species diversity.

Range utilization monitoring described in the USSES 2007 Project Plan (Lewis, G. 2007) complements ongoing studies of bed ground nutrient transport, and soil nutrient response and vegetation composition from fire and grazing disturbance.

Objectives of the monitoring study are to develop accurate and efficient monitoring methods, management guidelines, and decision support tools for use on rangelands. Continued forage utilization monitoring with the 2007 planned studies would detect trends, and management would be adjusted to compensate for undesireable effects.

Based on Keith Klement's 1994 MS Thesis, data collected on the Centennial Mountains Summer Range areas indicates that the pastures were grazed well below available forage. Percent stocking on the summer rage is displayed in Table 10.

Table 10. Percent Animal Unit Months (AUM*) available, allowed, and stocked on summer pastures

Pasture	West Odell	Big Mountain	Tom's Creek
Total grazeable acres	2,298	3,348	2,310
Average tons forage/acre	1.65	1.65	1.65
Total available forage (tons)	1,538	2,240	1,546
Total allowed forage for use (tons)	769	1120	773
AUM allowed at 50% utilization	1,937	2,822	1,947
Number of AUM used	220	270	289
Forage consumed (tons) by AUM used	87	107	115
Allotment percent stocked	11	10	15

* AUM as expressed above is = amount of forage used by 5 lactating ewes with lamb(s) under 6 months of age at side for 30 days

Average forage utilization under current actions for the spring-fall range, summer range, and winter range is shown in Table 3, p. 5.

Amount of forage used is very low on spring, fall, and summer ranges. The winter range area is grazed at 36.4 percent, higher than the other ranges but well below the allowable 50 percent stocking rate for forage use. Sheep grazing accounts for less than half of the total grazing allocation. Range surveys indicate summer range forage use is very low, 5.7 percent, with 94.3 percent available for elk, deer, moose and other wildlife for food and cover. The high percent of unused forage also provides soil and water protection. Effects on vegetation and soil from grazing related activities including watering sites, camp sites, water developments, sheep driveways, roads, firebreaks, and prescribed burns affect a very small percent of the total range area. Recovery on prescribed burn areas is short term. Camp and watering sites are moved as sheep graze through the pastures allowing vegetation cover to remain at the sites. Sheep driveways retain vegetation cover. A small disturbed site on the sheep driveway crossing Odell Creek can be mitigated with cross drains.

Included on the summer range areas, Henninger, and Humphrey Ranch areas are forest vegetation types, not used for sheep grazing. These timbered areas provide wildlife cover and watershed protection. Direct, indirect and cumulative effects to the range lands from sheep grazing would be very low.

Parts of Henninger Ranch were grazed heavier before the ranch was purchased by USSES in 1940's. The upward trend in range and watershed health that has been observed, and is expected to continue under current grazing actions. Implementing monitoring methods noted in USSES, Dubois, Idaho, December 7, 2007 Project Plan would facilitate additional improvements if needed.

Continued grazing and related activities with monitoring and adaptive management would maintain favorable, good to excellent, range conditions and continued watershed health. Current forage utilization at current stocking levels would maintain favorable groundcover, native vegetation composition, and plant species diversity.

Range Cumulative Effects

Cumulative effects from continued grazing and related activities including past, present and foreseeable future grazing and related actions would not adversely affect the current range resource.

Range Summary

Forage use by sheep grazing is well below total available forage, the highest use is 36.4 percent on the winter range, with less than 10 percent of available use on spring, fall, and summer grazed areas. Surveys indicate summer range forage use is very low, 5.7 percent, with 94.3 percent available for elk, deer, moose and other wildlife food and cover. The high percent of unused forage provides soil and water protection. Effects on vegetation and soil from grazing related activities including watering site, camp site, water developments, sheep driveways, roads, firebreaks, and prescribed burns affect a very small percent of the total range area. Recovery on prescribed burn areas is short term. Camp and watering sites are moved as sheep graze through the pastures allowing vegetation cover to remain at the sites. Sheep driveways retain vegetation cover. A small disturbed site on the sheep driveway crossing Odell Creek can be mitigated with cross drains.

Continued grazing with monitoring and adaptive management would maintain favorable, good to excellent, range conditions and continued watershed health. Current forage utilization at current sheep stocking levels would maintain favorable groundcover, native vegetation composition, and plant species diversity.

Direct, indirect and cumulative effects from continued grazing and related activities including past and foreseeable future grazing actions would not impact the range resource.

Federally Threatened, Endangered, and Proposed Species

The only federally threatened, endangered, or proposed species of concern in the project area are the lynx and gray wolf.

Threatened

Lynx (*Lynx canadensis*)

Canada Lynx Affected Environment

Species Overview

A comprehensive review of Canada lynx life history can be found in Lynx Conservation Assessment and Strategy (Ruediger et al. 2000). A condensed version of life history from the Lynx Recovery Outline (USFWS, 2005) is summarized below. Lynx are highly adapted for hunting snowshoe hare, the primary prey, in the snows of the boreal forest. Lynx in the contiguous United States are at the southern margins of a widely-distributed range across Canada and Alaska. The center of the North American range is in north-central Canada. Lynx occur in mesic coniferous forests that have cold, snowy winters and provide a prey base of snowshoe hare. Lynx survivorship, productivity, and population dynamics are closely related to snowshoe hare density in all parts of its range. Both timber harvesting and natural disturbance processes, including fire, insect infestations, catastrophic wind events, and disease outbreaks, can provide foraging habitat for lynx when resulting understory stem densities and structure provide the forage and cover needs of snowshoe hare. These characteristics include a dense, multi-layered understory that maximizes cover and browse at both ground level and at varying snow depths throughout the winter. Despite the variety of habitats and settings, good snowshoe hare habitat has a common denominator – dense, horizontal vegetative cover 1-3 meters (3-10 feet) above the ground or snow level. In northern Canada, lynx populations fluctuate in response to the cycling of snowshoe hare. Although snowshoe hare populations in the southern portion of the range in the contiguous United States may fluctuate, they do not show strong, regular population cycles as in the north. The southernmost extent of the boreal forest that supports lynx occurs in the contiguous United States in the Northeast, western Great Lakes, northern and southern Rockies, and northern Cascades. Here the boreal forest transitions into other vegetation communities and becomes more patchily distributed. As a result, the southern boreal forests generally support lower snowshoe hare densities, hare populations do not appear to be as highly cyclic as snowshoe hares further north, and lynx densities are lower compared to the northern boreal forest.

Canada lynx is federally listed as a threatened species and historically resided within the Centennial Mountain Range portions of the Sheep Experiment station, which includes Odell, Big Mountain, and Tom's Creek allotments. These areas are outside of, but adjacent to Lynx Analysis Units established on the Targhee National Forest. There is no Canada lynx critical habitat established or proposed in the project vicinity. The Idaho statewide wildlife observation database indicates that historically, a number of Canada lynx have been observed in the Centennial Mountain Range. The project biologist has discussed occurrences of Canada lynx with US Fish and Wildlife Service in Chubbuck, ID (Arena, 2008), Idaho Department of Fish and Game Biologists (Schmidt, personal communications), and US Forest Service Biologists on the Caribou-Targhee National Forest (Aber, Keetch, Orme, personal communications). Biologists with these agencies indicated that Canada lynx are unlikely to be currently residing year-round in the Centennial Range based on a limited number of observations since 1894, negative findings during hair snare surveys in 1999 – 2001, and limited observations from winter track surveys conducted from 1996 – 2004. Data pertaining to the Caribou-Targhee National Forest (adjacent to USSES lands) is summarized in a forest report by Orme, 2005. In a biological assessment (Aber, 2007) completed for

Sheep Grazing on the USFS Myers Creek Allotment (adjacent to Tom's Creek on USSES lands), the biologist determined that grazing activities would have "No Effect" on Canada lynx and are consistent with the LCAS. According to maps prepared for the Lynx Conservation Agreement between the USFS and the FWS (USDA Forest Service, 2006), areas in the Centennial Range are Secondary Habitat, which the Lynx Recovery Outline defines as "those with historical records of lynx presence with no record of reproduction; or areas with historical records and no recent surveys to document the presence of lynx and/or reproduction." A majority of habitat on USSES lands is unsuitable for lynx because it is in lower elevation shrublands. Higher elevation lands (those in Montana) are potential lynx habitat, but are of lower quality because they do not contain large connected expanses of boreal forest. USSES lands are outside of established Lynx Analysis Units.

Based on a review of the above information, this Biological Assessment will consider that suitable habitat exists on USSES lands, but these areas are unlikely to be occupied by a resident lynx population. There is potential for occasional lynx to use the area, traveling through USSES lands temporarily foraging or moving between larger expanses of quality habitat in northwest Wyoming and Central Idaho.

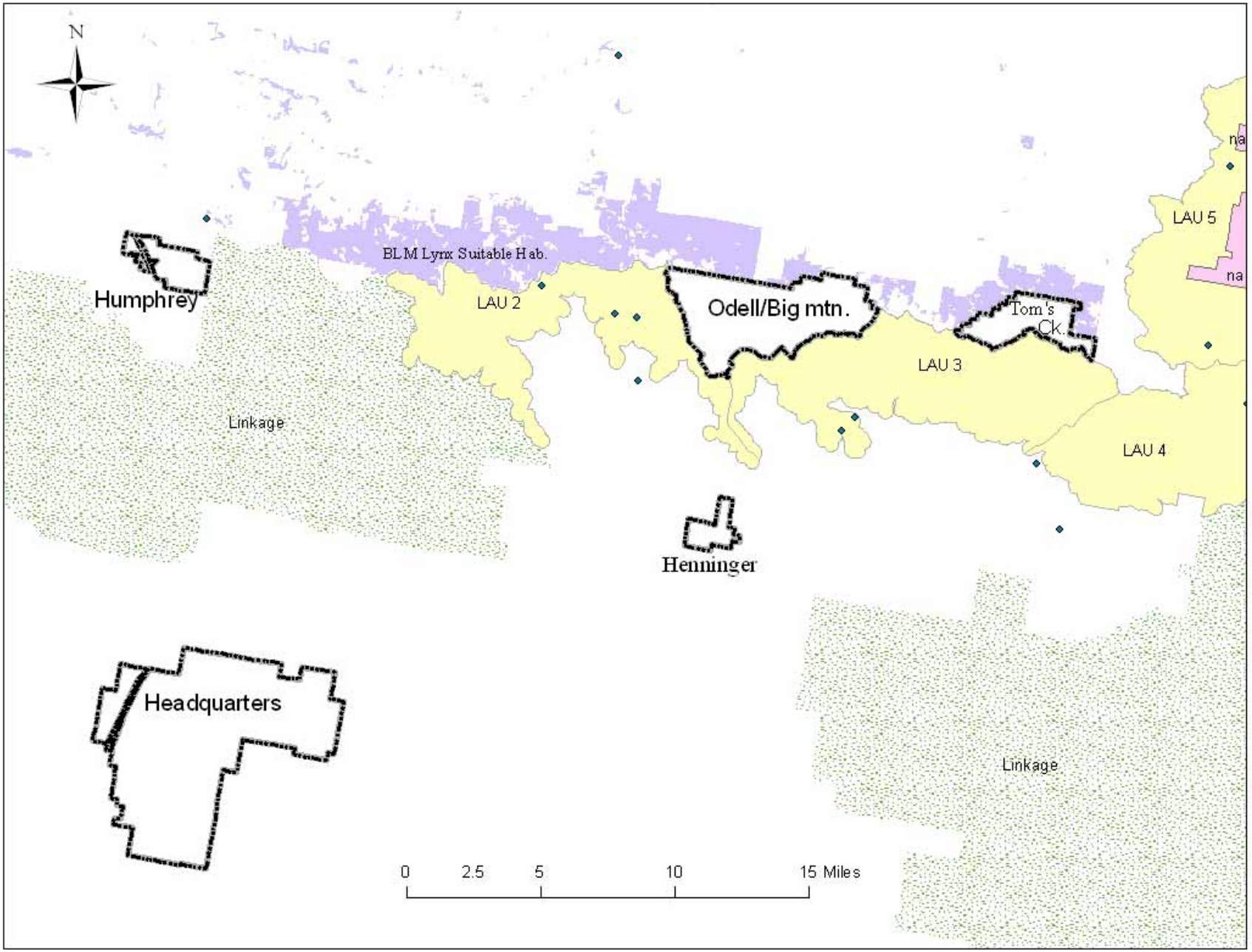


Figure 3 - Sheep Station Lands adjacent to LAUs

Canada Lynx Direct/Indirect Effects

A review of the activities described in the proposed action indicate that minimal effects would occur, if any at all, regarding Canada lynx, both to individuals as well as habitat. No effects will occur to designated critical habitat as none is present, and none is being proposed or considered in the area.

Most of the activities would have no effect on Canada lynx or their habitat. Those activities that occur in sagebrush shrublands at lower elevation are outside of Lynx Analysis Units, occur in areas that do not have continuous forested cover, and do not provide adequate habitat features for denning or routine lynx foraging activities. The activities that are outside of suitable habitat and thus will have no effect include: all livestock grazing and camp tending activities during winter months, livestock trucking activities, cattle and horse research grazing, activities on the feed lot facility, prescribed fire, pest management, temporary watering sites, road maintenance, water diversions, and permanent fencing and its maintenance. Within the Centennial range, there are five permanent watering features. However, their presence and associated maintenance activities do not alter available lynx habitat, do not affect lynx prey, nor would they be expected to affect individual lynx.

Activities that could have minimal effects to Canada lynx occur during the summer season and are within or adjacent to suitable habitat. These activities include sheep grazing and trailing and camp tending activities in the Odell Creek, Big Mountain, and Tom's Creek Allotments. Although Canada lynx have not been recently documented within the Centennial Mountains through hair snare surveys, suitable habitat is present in these high elevation forests. They support a low density population of snowshoe hare, lynx primary prey, as well as patches of large diameter downed wood suitable as denning habitat. The delineation of Lynx Analysis Units in habitat nearby on the Targhee National Forest indicates the presence of suitable habitat.

Though habitat may be suitable, expected effects from the above activities are minimal. Domestic sheep are only present in the area for a short duration during the summer, generally from late July through August. This period is not critical to denning, and any Canada lynx that might be in the area could continue to forage across the landscape. Potential human disturbances, though unlikely based on low potential for occupancy, would be limited to an occasional lynx avoiding the immediate area coincident with a band of domestic sheep, guard dogs, and herd dogs. Where there exists small patches of suitable foraging and denning habitat in sufficient quantities, Canada lynx would remain in the area, but temporarily adjust their travel and foraging locations to avoid direct encounters.

Another potential indirect effect to lynx which should be considered is that associated with competition for browse between livestock and snowshoe hare (Ruediger et al. 2000). On-the-ground conditions indicate that sheep grazing in the Centennial range allotments occurs in relatively low intensity compared to the amount of available forage. Available ground cover in the form of grasses and forbs is abundant throughout the allotments before and after grazing. Forested understory that provides winter cover and browse for snowshoe hares is present in forested patches and remains unaffected by the sheep grazing. Existing on-the-ground conditions indicate that long-term habitat changes, described in the Lynx Conservation Assessment and Strategy (Ruediger et al. 2000) will not occur from the activities.

Little to no effect to Canada lynx from predator control activities is expected. Sheep herders are trained annually on predator control procedures. In order to protect the sheep herd and for the herder's safety, they are outfitted with rifles and all ammunition is inventoried. Fired ammunition is accounted for through an explanation to their supervisor. Herders are instructed how to address problems with wolves (*Canis lupus*), coyotes (*Canis latrans*), mountain lions (*Felis concolor*), and black bears (*Ursus Americanus*). Sheep herders would be shown pictures of Canada lynx, and bobcat (*Lynx rufus*). Instructions would specifically be issued that they should not fire weapons at either species since they are

difficult to identify, and the Canada lynx is a federally protected species. Ruediger (2000) describes the risk of mortality from predator control activities on federal lands as low because of trapping efforts reduced from historical levels, efforts aimed specifically at individual offending animals, and trapping usually occurs in lower elevations (outside of lynx habitats). An interview with Wildlife Services (Farr, personal communication) who conducts control actions on USSES lands indicated that:

- They have not caught any lynx or bobcat in leghold traps.
- The lower elevation USSES lands are not suitable lynx habitat.
- There has been no depredation by felines on Montana properties, so trapping for them has not been necessary.
- Mr. Farr is not aware of lynx being captured in the area related to fur trapping.
- Canada lynx are unlikely, or unexpected to occupy the area.
- Wildlife Services uses lures specifically targeted for canines and thus, greatly reduces potential of inadvertently capturing felines such as Canada lynx. If a Canada lynx was accidently captured, Wildlife Services is instructed to release the animal on-site.

In addition to the information above that indicates a minimal potential for negative effects, it should also be noted that there is a very low probability of Canada lynx occurrences on USSES lands.

Summary of Direct and Indirect Effects to Canada Lynx

Disturbances to Canada lynx are unlikely, based on low potential for year-round occupancy, lack of control measures directed at felines, and the presence of full time sheep herders and guard dogs that limit depredation. However, the potential exists for lynx to move through the area foraging and in search of larger expanses of high quality habitat. In such cases, disturbances would be limited to an occasional lynx avoiding the immediate area coincident with a band of domestic sheep, guard dogs, and herd dogs. Where suitable foraging and denning habitat is present in sufficient quantities, Canada lynx would temporarily adjust their location to avoid encounters, but continue to forage in nearby forested stands.

Canada Lynx - Cumulative Effects

There are no interrelated actions associated with this project. Interdependent actions include sheep grazing permits issued in Targhee National Forest lands, as well as past and proposed timber sales there. Existing habitat on USFS lands is maintained in a condition in compliance with the LCAS, the Lynx Conservation Agreement, and Forest Plan Standards and thus, will maintain conditions that provide for continued protection and recovery of Canada lynx. Considering that additional effects from the proposed project are negligible, and effects from past or planned projects provide for lynx conservation, then there are no additional cumulative effects to Canada lynx.

Canada Lynx Biological Determination

I have determined that "Interim USSES Grazing and Associated Activities - May affect, but are not likely to adversely affect Canada lynx." This determination is supported by rationale presented in the Biological Assessment and summarized below.

- Suitable lynx habitat is present, however that habitat has been identified as "secondary" indicating a low potential for year-round occupancy.

- Canada lynx have not been targeted for abatement on USSES lands, nor are there records of personal accounts indicating that abatement actions have been taken to control Canada lynx on USSES lands. No take would occur from abatement.
- Grazing practices and associated activities implemented by USSES do not affect denning habitat, do not remove cover important to lynx travel, and retain adequate cover and forage available to snowshoe hares, lynx primary prey. Activities are consistent with standards in the Lynx Conservation Assessment and Strategy.
- Cumulative effects of the project are negligible.
- Negative effects are unlikely. If they occur at all, they will be limited to small temporary changes in daily movements. In the Centennial Mountains, individual lynx moving through the area may make small adjustments in habitat use/travel routes to avoiding conflicts with guard dogs and/or humans associated with grazing a band of sheep.

The project will have "No Effect" on critical habitat as none is present or proposed within the project area.

Gray Wolf (*Canis lupus*)

Gray Wolf - Affected Environment

On July 18, 2008, The U.S. Federal District Court reinstated the Endangered Species Act protections for gray wolves in the northern Rocky Mountains. With this reinstatement, gray wolves in or around the project area returned to their previous listing status designated as a nonessential experimental population. A news release issued from the USFWS on July 22, 2008 (USDI Fish and Wildlife Service, 2008) clarifies that "All wolves in the southern half of Montana, all of Idaho south of Interstate 90, and all of Wyoming are managed under the 2005 and 2008 Endangered Species Act nonessential experimental population regulations which allow people to take wolves under certain circumstances, such as when wolves are in the physical act of killing, wounding, chasing, or molesting legally present livestock and dogs."

The reinstatement was issued based on a lawsuit, where the judge found that the delisting decision lacked evidence of important genetic exchange, and that the state of Wyoming's predator status for wolves would not provide enough protection for breeding pairs. Prior to this injunction, gray wolves in the Northern Rocky Mountains were removed from the federal endangered species list, and management of wolves within Idaho and Montana was passed to the state wildlife agencies. According to the news release, the wolf was de-listed primarily because "population has exceeded its recovery goals for the past several years and is now thriving. Presently, there are more than 1,500 wolves and at least 100 breeding pairs in Montana, Idaho, and Wyoming. The Service and States will cooperatively monitor the wolf population for the next five years." In September 2008, the Service requested the court vacate and remand the final delisting rule back to the Service. The court granted the Service's request on October 13 and on October 24, 2008, the U.S. Fish and Wildlife Service announced it is reopening the public comment period on its proposal to de-list the gray wolf in the northern Rocky Mountains (USDI Fish and Wildlife Service, 2008). According to personal communications with Arena, 2008, Idaho and Montana wildlife agencies now have the authority to make all wolf control decisions based on an existing MOU with the USFWS.

Wolf Pack Locations near the USSES

Three gray wolf packs are in the vicinity of Odell/Big Mountain Allotments, Tom's Creek Allotment, and Henninger Ranch property, all part of the USSES ownership. Myers Creek allotment is part of the Caribou/Targhee National Forest. Two wolf packs identified in Southwestern Montana, and one pack in Eastern Idaho are most likely to occur within these USSES lands on occasion. The remainder of USSES lands is far removed from wolf packs, but may occasionally get sightings. Southwestern Montana has two known wolf packs adjacent to USSES lands. They include the Freezeout pack and Horn Mountain pack. Both areas are centered north of USSES. However, the potential exists for individual wolves, or the pack to use areas in the Centennial Mountains.

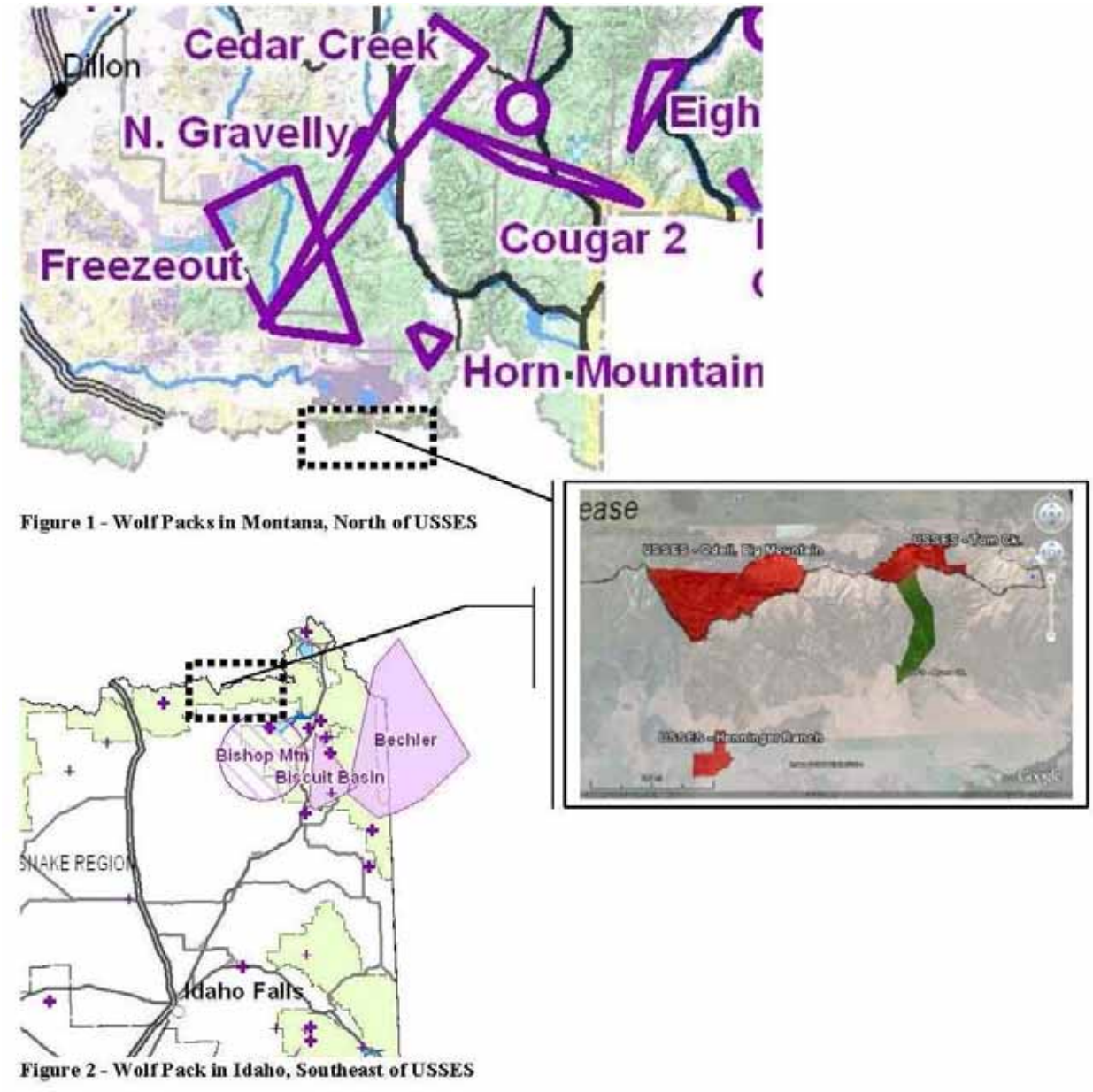


Figure 1 - Wolf Packs in Montana, North of USSES

Figure 2 - Wolf Pack in Idaho, Southeast of USSES

Figure 4: Locations of wolf packs in relationship to the ARS

According to the 2007 monitoring report (Sime et al. 2008), the Freezeout pack first formed in 2001 in the Gravelly Range east of Dillon. It has been one of the larger-sized and longest tenured packs in the Montana portion of the Greater Yellowstone Area outside of Yellowstone National Park. The pack is known to have 5 wolves and no breeding pair. 2006 and 2007 notable activities within the pack included the confirmed killing of a domestic calf on the north side of the Centennial valley. Control actions were implemented by Wildlife Services in 2006 and 2007 to remove depredating wolves, but USSES lands were not involved.

The Horn Mountain pack is made up of seven wolves including a breeding pair. Two of the animals are radio-collared. This is a new pack identified in 2007. Wolves were regularly observed without depredations on nearby livestock. After cattle were shipped from the allotment at the end of the 2007 season, wolves killed an abandoned calf, and no control action was taken since other livestock was already off of the area.

In Idaho, there is one pack in the vicinity of the project area. The 2007 annual monitoring report (Sime et al. 2008) states that "Bishop Mountain is a suspected pack that appeared to be derived from the Nez Perce pack of Yellowstone National Park. The only radio collared wolf in this group was last located in September 2005. There were no radio collared wolves in this group during 2007, and therefore reproduction was not verified. Sightings of multiple wolves have been reported in the range thought to be occupied by this pack, indicating their continued presence."

Wolf Control

Wildlife Services (Farr, personal communications) indicates that leghold traps are used in instances with problem wolves. APHIS, Wildlife Services has MOUs in place between, state wildlife agencies (ID and MT), and the US Fish and Wildlife Service that govern the procedures for control actions regarding wolf. Similarly, they have an annual work plan is in place with the USFS. Wildlife Services procedures are to verify livestock damage before any control actions are taken. If wolf (or grizzly bear) damage is verified, Wildlife Services contacts his appropriate supervisor as well as the state wildlife agency if it is necessary to pursue direct control. Authority for control actions are granted through state wildlife agencies (Arena, Farr, personal communications). Trapping for wolf depredations is uncommon on USSES lands, since most encounters are avoided through regular moving of sheep, and the full time presence of guard dogs and sheep herders. However, traps were set during the summer of 2008 for wolf depredations on the Humphrey Ranch. One animal was captured, collared, and re-located. No trapping for wolves has occurred for several years preceding 2008. Approximately three years ago, another wolf incident occurred but the animal was not successfully trapped, and encounters discontinued. It is estimated that wolf conflicts have not been a concern until recently, as populations and packs expand in size and distribution. As described above, two control actions for wolf have been implemented on USSES lands, none were lethal, and guard dogs and full time sheep herders have been particularly effective in minimizing depredations/conflicts.

Gray Wolf - Direct/Indirect Effects

A review of the activities described in the proposed action indicates that minimal effects would occur to gray wolf individuals or habitat. Most of the activities would have no effect on gray wolf or its habitat

A review of the activities described in the proposed action indicates that activities will have minimal effect on gray wolves and their habitat. Specifically, the activities that may have some effects can be categorized and described as follows:

1. Trailing, grazing, and camp tending activities could be considered an attractant to wolves. Sheep grazing within habitat that is occupied by deer and elk is likely to attract occasional wolves

opportunistically searching for food. Mitigations including the presence of full time sheep herders, guard dogs, and herd dogs provide consistent and effective methods of non-lethal control, which in-turn discourages most individual wolves and wolf packs from habituating to USSES sheep herds as a food source. Regular camp- tending is used to remove trash and sheep carcasses which could further attract wolves if left on site. As a result, the effect of attracting wolves to domestic sheep as a potential food source is mitigated by non-lethal methods of control, and thus, the overall direct and indirect effect to wolves from these activities is minimal. Effects of harassment (such as firing gun shots in the air, and other abatement tools) are discussed separately in number 3 below.

2. Activities that have the potential to affect daily or annual movements of wolf prey (deer, elk, and moose) also have the potential to indirectly effect gray wolf movements. Prescribed fire may improve range conditions such as increased vigor on the annual growth of shrubs and grasses, which correspondingly attracts more deer and elk. Thus, wolves could be indirectly attracted to areas with prescribed fire, in search of big game food sources concentrated near productive foraging habitats. Prescribed fire is occurring on the headquarters property, which is big game transitional range, it is covered in snow much of the winter season, its capacity to support deer and elk in large concentrations is minimal, and it's corresponding potential to affect gray wolf is even smaller and limited to a short duration as ungulates migrate through the area to different elevations. Maintenance of fire brakes and roads on the USSES lands can temporarily have small affects on deer and elk herd movements, where the ungulates avoid mechanized operating equipment; however these affects are limited to times during which heavy equipment operates in the area. With a lack of public motorized access to open roads on the USSES, big game can persist even with minimal disruption across the landscape, which translates to few or no corresponding impacts to wolves. Water developments that occur in the Big Mountain allotment may occasionally attract deer, elk or moose, but these occasions are rare since ungulates more likely use natural water sources. Fencing which occurs on USSES lands at lower elevations is constructed to specifications that do not limit travel for ungulates, and upper elevation fencing (horse coral) is temporary, small in size, and is not big enough to substantially affect big game movements. The one large fence present on USSES lands near the headquarters does eliminate big game access to forage on approximately 640 acres. Since the fence is within low elevation sagebrush that does not include any mapped wetlands or unique wildlife habitat features, and is surrounded by thousands of acres of similar habitat, the fence does not limit ungulate use across the landscape or their access to limiting habitats. As a result, effects are limited to the loss of a small amount of available forage for deer and elk, a change in daily movements of deer and elk around the one square mile exclosure, and ultimately, little or no corresponding effect to wolves.

3. Minimal effects to wolves are expected from predator control activities on USSES lands. Sheep herders are trained annually on predator control procedures. In order to protect the sheep herd and for safety purposes, herders are outfitted with rifles and all ammunition is inventoried. Fired ammunition is accounted for through an explanation to their supervisor, indicating that herders have an incentive to address problem carnivores in a manner consistent with USSES policy. Herders are instructed that they can harass but not kill a depredating wolf, and a full report must be given to their supervisor. The low incidence of past conflicts with wolves on USSES (only two documented interactions and no lethal control) indicates that effects on wolves from abatement have been and will continue to be minimal.

Gray Wolf - Cumulative Effects

There are no interrelated actions associated with this project. Interdependent actions include sheep grazing permits issued in Targhee National Forest Lands, past and proposed timber sales there, and recreational use such as use of the Continental divide scenic trail. Wolf populations continue to grow in the Northern Rocky Mountains and as such, the USFWS is seeking comments on a proposal to de-list.

Considering that the Northern Rocky Mountain Wolf population is recovering in both size and distribution, and few wolves have been or will be impacted by continued operations on the USSES, the project is not expected to add cumulative effects detrimental to wolf recovery.

Gray Wolf, Northern Rocky Mountain Distinct Population Segment - Biological Determination

The biologist has determined that the proposed project is "Not likely to jeopardize the continued existence of the gray wolf or adversely modify proposed critical habitat"

This determination is supported by rationale presented in the Biological Assessment including:

- Gray wolves in the project area are within the Northern Rocky Mountain Distinct Population Segment designated by the U.S. Fish and Wildlife Service and are managed as a non-essential experimental population.
- The effect of attracting wolves to domestic sheep as a potential food source is mitigated by non-lethal measures including full time herd dogs, guard dogs, and sheep herders.
- Proposed activities will have minimal effects to ungulate movements and thus, few, if any effects to wolves that depend on them as a food source.
- Control measures are used as a last resort, are implemented through APHIS Wildlife Services, target only offending animals, and are conducted under authority granted by state wildlife agencies and the US Fish and Wildlife Service consistent with the 10j. rule.
- There is a low incidence of past conflicts between domestic sheep and wolves on USSES lands.

The Northern Rocky Mountain Gray Wolf Population continues to expand in size and distribution, and exceeds original recovery goals.

Delisted

Grizzly Bear (*Ursus arctos horribills*)

Grizzly Bear Affected Environment

The Yellowstone Distinct Population Segment of grizzly bear was de-listed on March 22, 2007, because of an increasing population in and around Yellowstone National Park in the bear's Primary Conservation Area, and because grizzly bears are expanding their range to inhabit suitable habitat throughout the boundaries of the Distinct Population Segment, which includes Sheep Experiment Station lands. According the US Fish and Wildlife Service Grizzly Bear Recovery website (http://www.fws.gov/mountain%2Dprairie/species/mammals/grizzly/):

> The range of the Yellowstone grizzly bear population has increased dramatically as evidenced by the 48 percent increase in occupied habitat since the 1970s. Yellowstone grizzly bears continue to increase their range and distribution annually and grizzly bears in the Yellowstone area now occupy habitats they have been absent from for decades. Currently, roughly 84-90 percent of females with cubs occupy the PCA and about 10 percent of females with cubs have expanded out beyond the PCA within the Distinct Population Segment boundaries. Grizzly bears now occupy 68 percent of suitable habitat within the Distinct Population Segment boundaries and may soon occupy the remainder of the suitable habitat.

> The State and Federal agencies are committed to implementing the extensive Conservation Strategy and State management plans. They have formally incorporated the habitat and population standards described in the Conservation Strategy into the six affected National Forests' Land Management Plans and Yellowstone and Grand Tetons' National Park Compendiums. This commitment coupled with State wildlife agencies' approved grizzly bear management plans ensure that adequate regulatory mechanisms are in place and that the Yellowstone grizzly bear population will not become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Figure 5 displays a map of Yellowstone Grizzly Bear Distinct Population Segment, Suitable Habitat, and Primary Conservation Area.

USSES Location as related to Grizzly Bear Recovery

USSES lands are within the Yellowstone Distinct Population Segment boundary for grizzly bear, but outside of the Primary Conservation Area. None of the USSES lands reside within the PCA. Suitable habitat for grizzly bear is managed differently within the PCA verses outside of the PCA. As an example of this varying management strategy, The Forest Plan Amendment for the Grizzly Bear Habitat Conservation for the Greater Yellowstone Area National Forests (USDA Forest Service, 2006) states succinctly "Manage grizzly bear habitat Outside the Primary Conservation Area in areas identified in state grizzly bear management plans as biologically suitable and socially acceptable for grizzly bear occupancy, accommodate grizzly bear populations to the extent that accommodation is compatible with the goals and objectives of other uses." The USSES does have a permit with the Targhee National Forest for limited grazing on the Meyer's Creek allotment, which is inside the PCA. This grazing has been analyzed previously in a biological evaluation (Aber, 2007) prepared by the Forest Service Wildlife Biologist, which found that "Continuing grazing on the Allotment may impact individual grizzly bears or their habitat, but will not likely contribute to a trend towards federal listing or loss of viability to the population or species." They further note that "The permittees (USSES) have had an excellent record of avoiding conflicts with bears for many years." Based on a 2007 radio-telemetry data of grizzly bear activity and habitat types on USSES lands, the following assumptions can be inferred about grizzly bear habitat and occupancy on USSES lands.

- Two USSES parcels of land exist in Montana, in high elevation portions of the Centennial Range. These parcels contain suitable habitat that is occupied by grizzly bear. They include Odell Creek, Big Mountain, and Tom's Creek allotments. They are outside of the PCA.

- The Henninger Ranch is a small parcel of land in Idaho, at the base of the Centennial Range. Telemetry data indicates that on occasion, grizzly bear have been in the vicinity of this parcel. However, the presence of county roads, open sagebrush habitat, and lack of whitebark pine limit its value to grizzly bears. On rare occasion, this parcel could be temporarily occupied by a traveling grizzly bear.

- All other parcels of USSES lands are in Idaho and are likely unoccupied by grizzly bear. These parcels are dominated by sagebrush with frequent motorized activity on county roads. 2007 telemetry data indicated no grizzly bear observations on or adjacent to these lands. They include Humphrey Ranch and the Sheep Experiment Station Headquarters.

- The USSES grazes sheep by permit on additional federal agency lands. Similar to the above, these areas are dominated by sagebrush, do not support grizzly bear activity, and recent telemetry data showed no observations on or adjacent to these areas. They include the Snakey/Kelly allotment (USFS), East Beaver allotment (USFS), Bernice allotment (BLM), and the Department of Energy Feedlot.

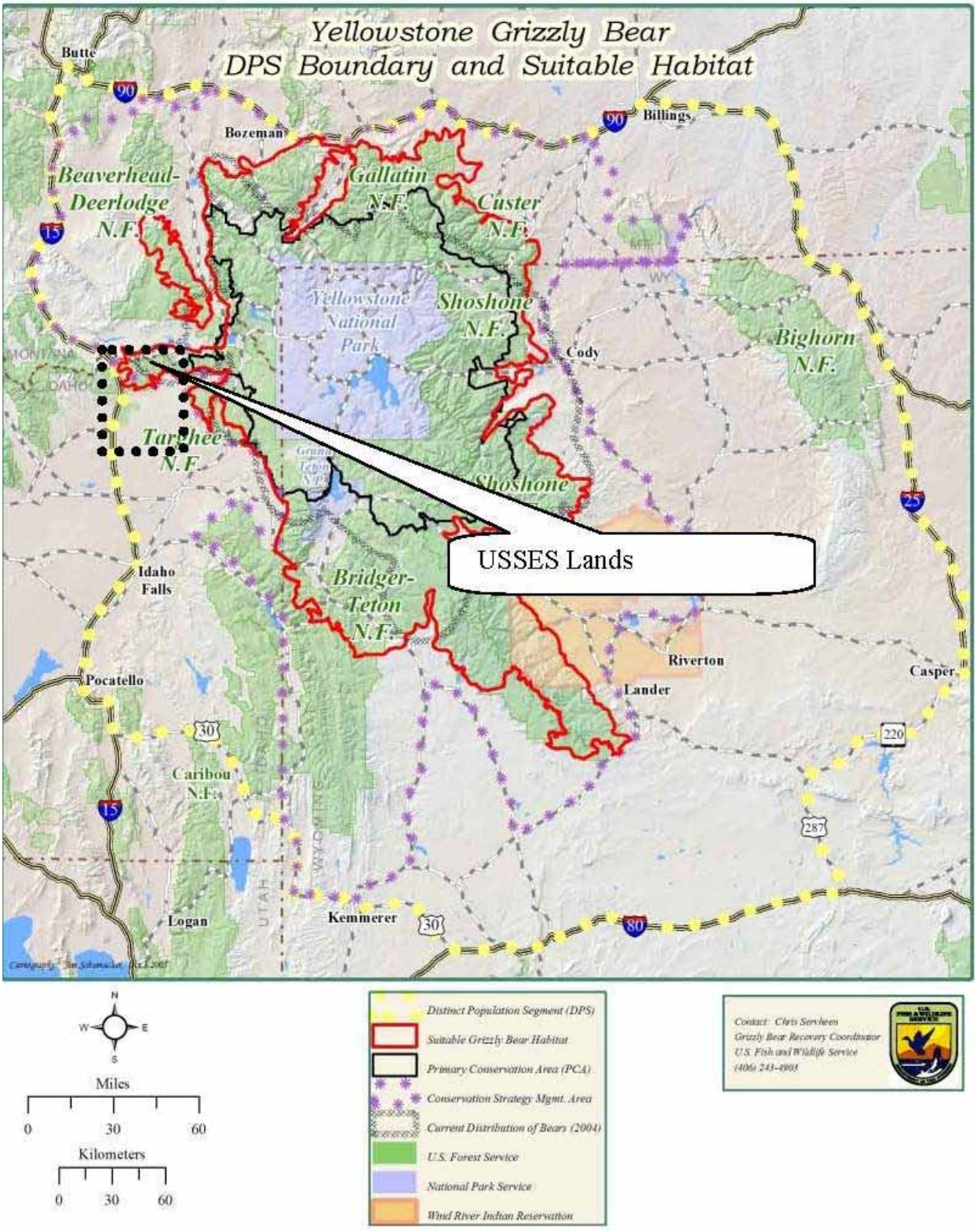


Figure 5: Vicinity Map of Yellowstone Grizzly Bear Distinct Population Segment, Suitable Habitat, and Primary Conservation Area

Figure 6 displays the USSES lands in relation to the grizzly bear Primary Conservation Area, and Figure 7 recent grizzly bear locations near the Centennials.

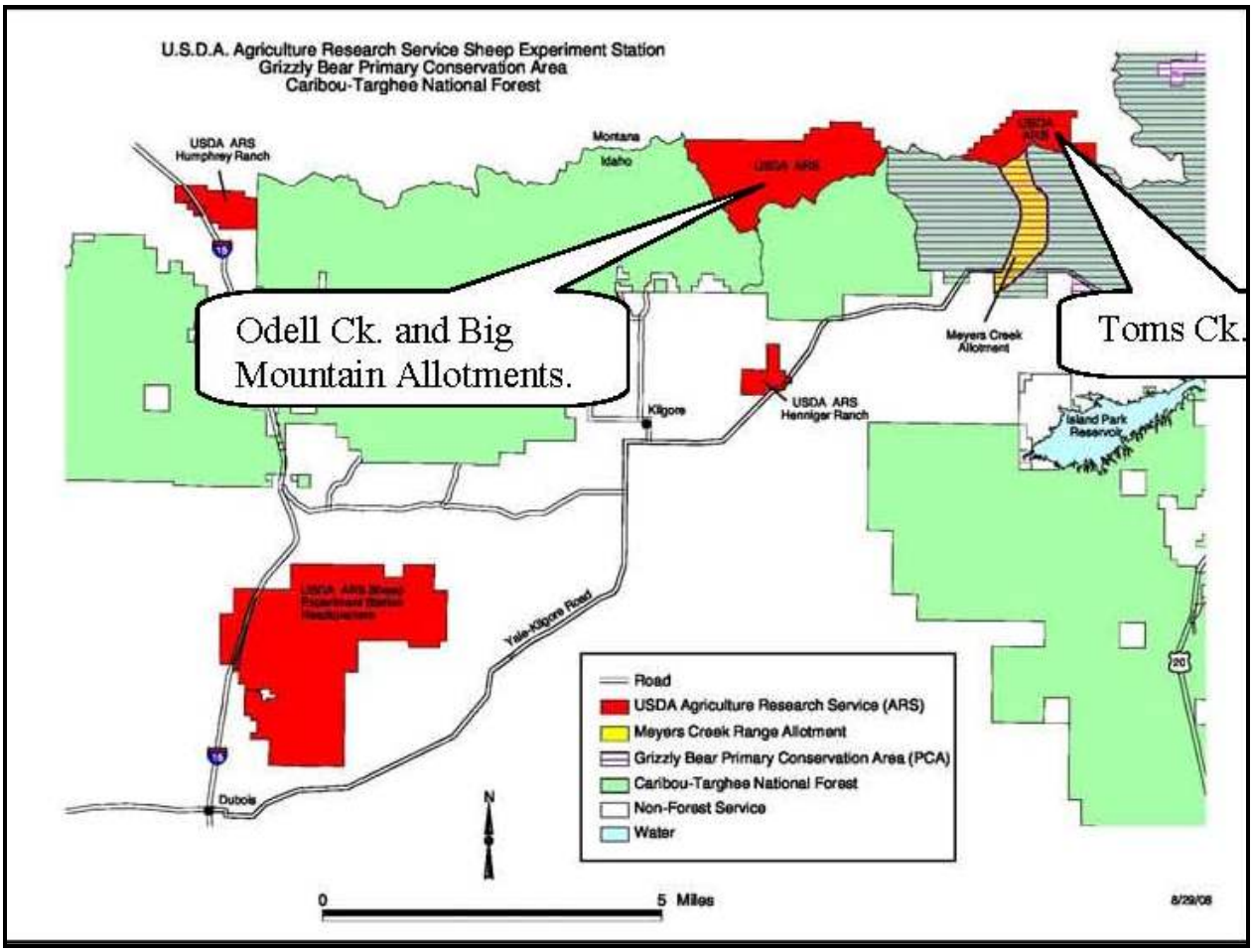


Figure 6: USSES Lands, all are located outside of the grizzly bear Primary Conservation Area.

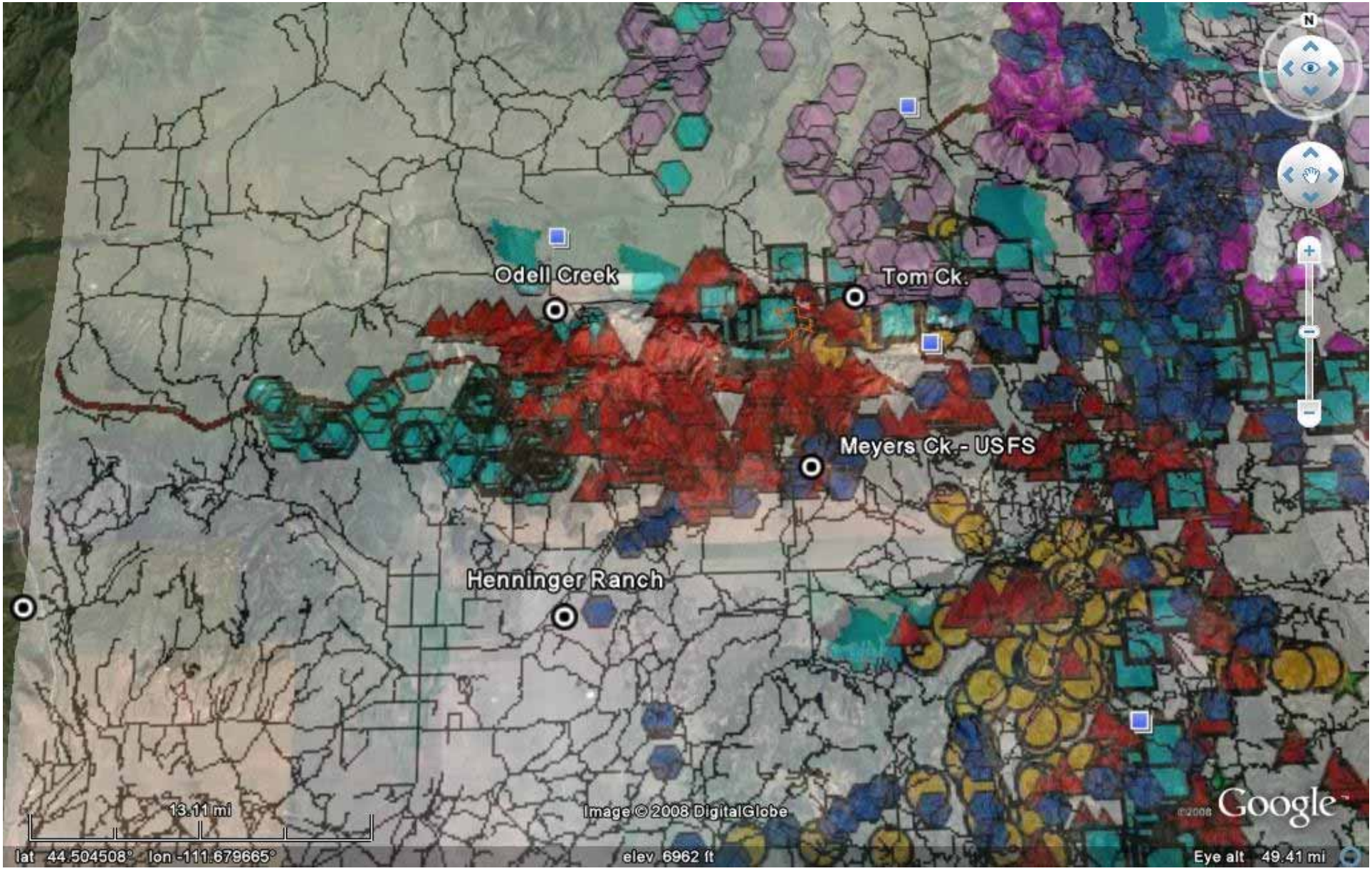


Figure 7: 2007 telemetry data showing grizzly bears observed near Montana portions of USSES

USSES Activities as related to reducing Grizzly Bear Conflicts

Protection measures are implemented to minimize potential depredations and conflicts between grizzly bears. These measures include:

- Sheep herders are in attendance with the sheep bands full time and have working dogs to assist in movement of animals. The primary responsibility of sheep herders employed by USSES is the care and welfare of the sheep. Each herder grazes an assigned band of sheep consistent with the grazing plan. Their charge includes insuring that sheep have access to good forage and plenty of water and salt. Their assignment also includes providing whatever protection they can for the sheep i.e. weather, fire, predation, etc. Sheep herders carry guns for safety and to scare off inquisitive animals. Instruction received by the herders relative to grizzly bear encounters are as follows:
    - Herders are instructed that upon seeing a grizzly they are to do everything possible to avoid an encounter.
    - They are to report the sighting to their supervisor as soon as possible. Moving the sheep is an option if the grizzly bear remains in the area.
    - If the grizzly bear has seen them and is threatening, they are to make loud noise and can discharge their rifle into the air if they think it would help frighten the bear.
    - As the sole guardian of the research animals while on the mountain, it is also critical that herders protect their own health so they can perform their animal care responsibilities.
    - Any grizzly encounter must be reported to their supervisor as soon as possible so Wildlife Services (and Forest Service if on forest lands) can be notified.
- Guard dogs are included within the bands, and are trained/bred to ward off predators. Animal and Plant Health Inspection Service Wildlife Services and others have published many articles on the effectiveness of guard dogs. Those are published and have been in the public domain for many years. The data indicate that guard dogs are very effective.
- Camp tenders and managers make periodic visits to remove trash and/or dead animal carcasses in order to eliminate potential bear attractants.
- Under Forest Service Agreement 07-1A-11041561-025, the USSES agrees they will comply with meeting grizzly bear management goals when grazing on the Meyers Creek and Beaver Creek allotments, including notifying appropriate personnel, and temporarily stopping or modifying grazing as necessary, should bear conflicts arise with humans or livestock. Regulations for food storage, handling, and disposal are incorporated into the agreement and followed by the USSES.
- USSES implements the following conservation measures on USSES lands.
    - Store all livestock feed, human food, and dog food in bear proof storage containers to prevent bears becoming habituated to these food sources.
    - Render dead sheep carcasses in close proximity to the Continental Divide Trail and other trails on USSES lands unavailable to bears.
    - Notify the Caribou-Targhee when conflicts, including trapping efforts, occur.

Known accounts of past interactions between domestic sheep, grizzly bears, and black bears (Ursus Americanus)

There have been three confirmed grizzly bear accounts from 1985, 1999, and 2008. In 2008, an occurrence on Odell creek was investigated by Wildlife Services, who determined probable cause of damage was grizzly bear (Farr, personal communications). No control actions were taken and sheep were moved off the allotment without further incident. Similarly, in the two additional previous cases, the sheep were moved without further incidents, or the grizzly bear left the USSES band of sheep without killing any of them, and no additional problems occurred. No grizzly bears have been killed, captured, or relocated on U.S. Sheep Experiment Station lands.

Black bear incidents occur annually, but most lead to no control action (Farr, Personal communication). Mr. Farr suspects that the sheep are moved to a new pasture, guard dogs discourage further incidents, and/or black bears lose interest in the domestic sheep as a food source. Figures provided by USSES employees and verified with Wildlife Services can be accurately summarized as removal of less than 10 black bears over the last decade. If a black bear kills sheep, USSES calls Wildlife Services who investigates the matter. Interviews of USSES employees indicate that no black bears have been relocated, employees have killed two black bears, and Wildlife Services killed 4 or 5 black bears during the period near the Yellowstone fire.

Grizzly Bear Direct/Indirect Effects

A review of the activities described in the proposed action indicates that minimal negative effects would occur to grizzly bear individuals or their habitat. Most of the activities would have no effect on grizzly bears or their habitat.

Activities that have minimal effects to grizzly bears can be categorized as follows:

- Trailing, grazing, and camp tending activities could be an attractant to grizzly bears. Sheep grazing within high elevation forests surrounding the grizzly bear Primary Conservation Area is likely to attract occasional bears opportunistically searching for food. However, mitigations including the presence of full-time sheep herders, guard dogs, and herd dogs provide consistent and effective methods of non-lethal control, which in-turn discourages most individual bears from habituating to sheep as a food source. Regular camp- tending is used to remove trash and sheep carcasses, which would further attract bears if left on site. As a result, the potential effect of attracting grizzly bears to domestic sheep as a food source is mitigated first; by minimizing additional attractants through food storage, trash removal, and sheep carcass disposal, second, by using non-lethal methods of control that harass and discourage bears to habituate to sheep, and third, by moving bands of sheep to other areas of an allotment in order to avoid problem grizzly bears before a persistent conflict develops. The overall direct and indirect effect to grizzly bears from these activities has been minimal.

- Minimal effects to grizzly bears are expected from predator control activities on USSES lands. Sheep herders are trained annually on predator control procedures. Fired ammunition is accounted for indicating that herders have an incentive to address problem carnivores in a manner consistent with USSES policy. Herders are instructed that they are to do everything possible to avoid an encounter. All grizzly encounters are reported immediately to the supervisor who contacts USDA Wildlife Services for additional investigation or abatement if needed. Through established MOUs, Wildlife Services contacts Idaho or Montana state wildlife agencies who have decision authority on whether control measures will be taken.

The low incidence of past conflicts with grizzly bears on USSES (only two documented interactions and no lethal control) indicates that effects on grizzly bears from abatement have been and would continue to be minimal.

The Yellowstone Distinct Population Segment of grizzly bears has recovered and continues to expand in both population size and distribution. Few grizzly bears have been or would be impacted by continued operations on the USSES. No change to current condition is anticipated and the project is not expected to be detrimental to grizzly bear recovery.

Grizzly Bear - Cumulative Effects

The existing operations are expected to continue through March 2010. The Yellowstone Distinct Population Segment of grizzly bears has recovered and continues to expand in both population size and distribution. Few grizzly bears have been or will be impacted by continued operations on the USSES. The project is not expected to add cumulative effects detrimental to grizzly bear recovery. No negative change to current condition is anticipated.

Grizzly Bear - Summary

Since the Yellowstone Distinct Population Segment of grizzly bear is no longer federally listed, a "biological determination" as it pertains to the Endangered Species Act is not provided. However a review of the affected environment as well as the direct, indirect, and cumulative effects indicate that individual grizzly bears may be impacted by the proposed activities. However, those impacts are minimal, will not contribute to a trend towards federal listing, and are consistent with state and federal conservation plans.

Other Wildlife Species

The following section includes additional species, or their habitats, that are located on the U.S. Sheep Experiment Station or are located adjacent to or downstream of the project, and have the potential to be affected by the project. A pre-field review was conducted of available information to assemble occurrence records, review habitat needs and ecological requirements, and determine what field reconnaissance is needed to complete the analysis. Sources of information for included Idaho and Montana Natural Heritage Program databases, Caribou-Targhee National Forest Species Lists, and Personal Communications with biologists from Idaho Department of Fish and Game, Montana Department of Fish and Game, biologists from the Caribou-Targhee National Forest, biologists from Bureau of Land Management Upper Snake Field Office, and from comments received during scoping.

While the pre-field review generated a more complete list of species that may occupy habitats on the USSES, this analysis is documenting effects only for those species where concerns were raised. Other species may be more thoroughly addressed in future analysis if additional concerns are raised or new information becomes available. The species listed below adequately address the intent of the settlement, and provide a thorough review of the effects to known biological resources and their habitats.

Greater Sage-grouse (*Centrocercus urophasianus*)

Sage-grouse are common on low elevation lands of the USSES, particularly the headquarters. Annual lek[13] route surveys indicate that sage-grouse habitat on the headquarters continues to attract numerous sage-grouse for breeding and nesting. The area falls within the Upper Snake Sage-grouse Planning Area identified by the Idaho Game and Fish.

Sage-grouse Affected Environment

Species Overview

A comprehensive review of greater sage-grouse life history and ecology as it pertains to habitat on the USSES can be found in the Conservation Plan for the Greater Sage-grouse in Idaho (Idaho Sage-grouse Advisory Committee, 2006). A summary of pertinent life history from that document is as follows. They state that: during the spring (normally early March to mid-May), males gather on traditional breeding areas, called leks, for displaying and mating. Females normally begin moving from winter breeding areas late February to early March. After breeding, females move away from the lek to establish nests. In Idaho, hens nest an average of 3-5 km (2-3 mi) from their lek of capture but may move more than 18 km (11 mi) to nest.

The Conservation Plan goes on to state that: The peak of egg-laying and incubation varies from late March through mid-June depending on weather, elevation, and plant phenology. Adult female (≥2 years old) sage-grouse nest about 80 percent of the time, while yearling females nest about 55 percent of the time. In Idaho, about 15 percent of sage-grouse hens that lose a nest will subsequently re-nest. Most sage-grouse select nest sites under sagebrush (Patterson 1952, Connelly et al. 1991). In general, sagebrush and perennial understory grasses and forb cover are key components of sage-grouse nesting and early brood-rearing habitat. If sagebrush is eliminated from a large area, sage-grouse populations will not be supported because nesting success and/or juvenile survival will be reduced. Research has shown that perennial herbaceous cover is particularly important for sage-grouse reproduction (Barnett and Crawford 1994, Gregg et al. 1994). Benefits provided by herbaceous understory include increased access to insects and forbs by hens before breeding and by chicks. Herbaceous understory also provides cover to hide nests, eggs and chicks from predators. Greater sage-grouse are dependent on large areas of sagebrush/grassland habitats with 15-25 percent sagebrush canopy cover for breeding habitat and 10-30 percent canopy cover for winter habitat. A healthy perennial grass and forb understory is also an important component of nesting and brood-rearing habitat. The greater sage-grouse has one of the lowest reproductive rates of any North American game bird, and its populations are not able to recover from low numbers as quickly as many other upland game bird species.

Upper Snake Planning Area Trends (According to the Conservation Plan) include:

- A long-term decrease in males observed at leks
- A substantial loss of habitat due to conversion to crops
- Wildfire has been a minor role in loss of habitat
- Major roads and power lines potentially influence a large amount of habitat

[13] Lek: A traditional place where males assemble during the mating season and engage in competitive displays that attract females.

Sage-grouse on the USSES

The USSES Headquarters and the other lower elevation USSES lands in Idaho are located in the Upper Snake Sage-grouse Planning Area. Habitat maps available in the state plan show that with current management, the Sheep Experiment Station contains "Key Habitat" and is a "Stronghold Population" area. USSES properties in Montana (Odell, Big Mountain and Tom's Creek.) are high elevation conifer forests and meadows that don't provide habitat for sage-grouse.

Based on interviews with USSES staff, sage-grouse occupying the USSES:

- Arrive on site in late March to early April for courtship and nesting.
- Leave USSES during late June into, July moving north and north east to the foothills of Centennial mountains, including Kilgore and Humphrey Ranch areas.
- Return to USSES lands from September through November.
- Move south approximately 25 miles from December through February.

According to the figures published in the Idaho Conservation Plan, the average maximum male sage-grouse counted on the lek routes on USSES show an increasing trend with 73 males for the period starting in 1991, and 208 males for the period ending in 2003. Data collected in 2004 through 2008 have not yet been summarized by Idaho Fish and Game, but raw data indicates that the total number counted during these years varies between 200 and 400 males.

Lek surveys have been collected on USSES headquarters regularly since 1978 through the present. Though a variety of observers and varying count methodology has been employed, a trend of improvement is indicated. An informal review of past count information shows that in 1966, 12 active leks were identified on the entire headquarter section of the USSES. In the period of 2003 through 2007, the number of active leks on the established routes summarized in the Conservation Plan varied between 12 and 14. Personnel on the USSES have been observing the location of potential leks since the start of surveys in the late 1970s, and annually make follow up visits to possible lek sites identified in previous years. Through this process, USSES has identified an approximate total of 20 active leks on the headquarters lands, and estimate that these make up most or all of the leks present.

Habitat on the USSES is mountain big sagebrush (*Artemesia tridentata vayseyana*) shrublands in a mosaic of early, mid, and late-seral stages. Wildfire and prescribed fire in past years on USSES indicate that within two years, *vayseyana* stands revegetate readily with a mix of shrubs and grasses; within 10 years mid-seral shrub conditions have developed; and after 30 years, sagebrush stands are approaching late-seral conditions. This re-establishment of *vayseyana* stands is much more rapid than in other areas in southeast Idaho dominated by Wyoming big sagebrush (*Artimesia tridentata wyomingensis*), which often takes six to twenty years before sagebrush seedlings are re-established.

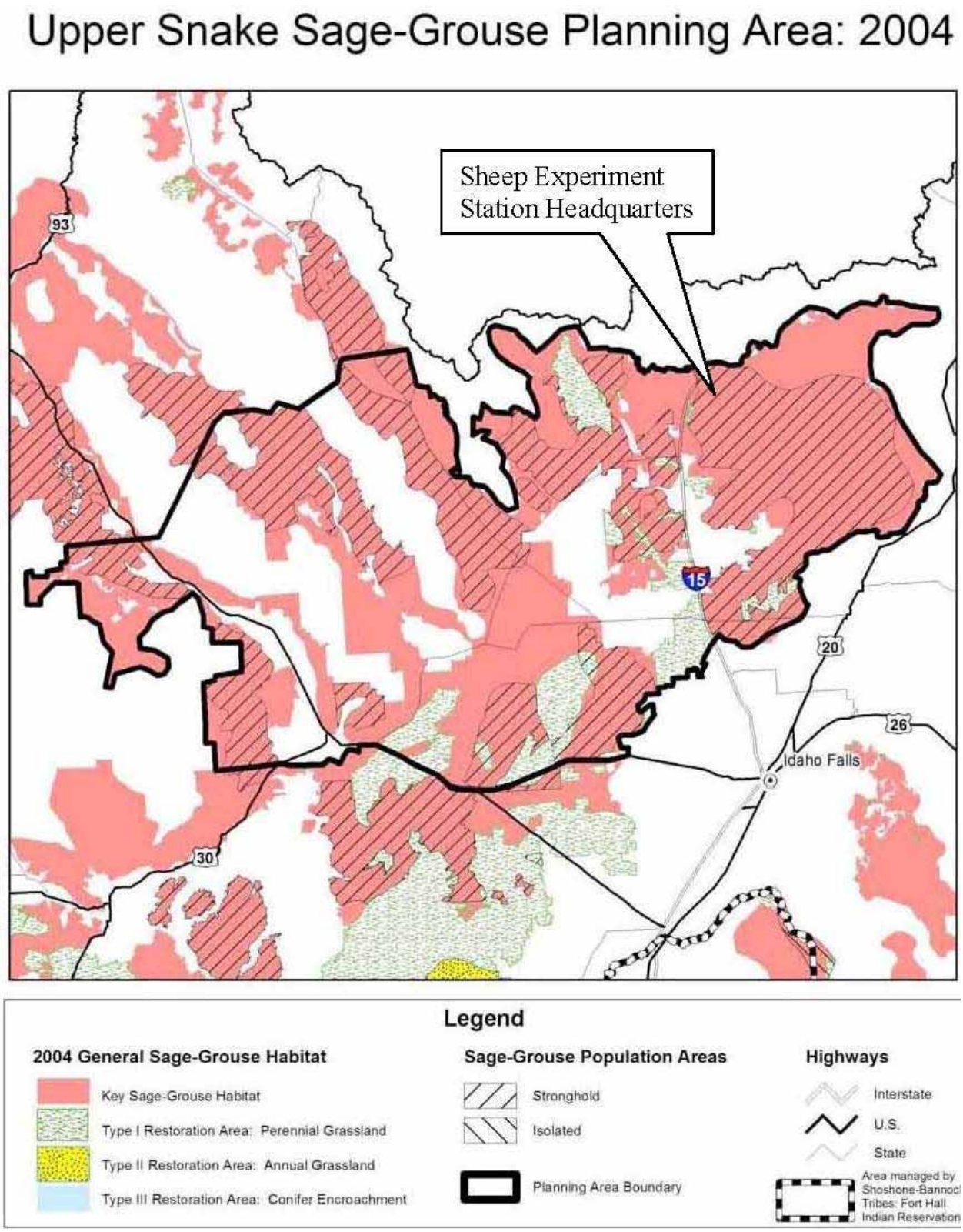


Figure 8: Upper Snake Sage Grouse Habitat Map.

Sage-grouse Direct/Indirect Effects

A number of USSES activities including spring grazing, camp tending by sheep herders at low elevations, trucking water to the sheep, and moving water troughs to various locations have the potential to affect sage-grouse leks, nesting areas, and brood rearing that occurs during the spring months. There are a number of grazing strategies employed by the USSES that ensure minimal impacts from these activities. They include the following:

- Most leks have been identified on the ground and are annually inventoried. As a result, USSES closely monitors sage-grouse breeding populations and submits data to Idaho Game and Fish personnel.
- USSES employs a grazing strategy that avoids using active lek sites during the courtship season. During the period when leks are active, temporary troughs for watering sheep are specifically placed in locations and pastures without leks, in order to avoid disturbance. Also, full time sheep herders manage the daily movements of sheep and, thus, are able to assist in keeping sheep away from active leks.
- After courtship season, the temporary water troughs are specifically placed in sites that had active leks earlier. Concentrated sheep activity during watering keeps shrub encroachment to a minimum, ensuring that leks persist annually and do not become overgrown with mountain big sagebrush.
- Sheep are moved rapidly through pastures which results in minimal disturbance to sage-grouse that might be in the area, and utilization on forbs and grasses remains light. Pasture sizes on the headquarters vary between approximately 640 acres to 1100 acres, and sheep are moved through a pasture in six or seven days.

Prescribed fire in sagebrush initially creates a temporary loss of feeding, nesting, and brood rearing cover for sage-grouse in patches approximately 100 to 200 acres in size. The project proposal has planned approximately 500 acres of total prescribed fire, to evaluate the recovery rate of vegetation compared to variable delayed grazing strategies. A small amount of sage-grouse habitat will be lost initially (500 acres), and sage-grouse using those areas will be displaced to other suitable habitats which are abundant across the USSES headquarters. The impacted acreages are expected to recover rapidly since mountain big sage brush re-establishes within a two to five period. Within five to ten years, an ideal mix of shrubs and perennial grasses will be achieved in burned habitat and provide quality interspersed cover and feeding areas for sage-grouse.

In summary, the activities described in the proposed action would have both positive and negative effects to sage-grouse and their habitat. Results of historic activities of a similar duration and intensity suggest that continuing these activities would maintain a substantial amount of quality habitat, continue to support a strong population, and sage-grouse population trends would remain stable or improving. Continued USSES activities will contribute to goals in both the Idaho Conservation Plan and the Upper Snake Local Working Group Conservation Plan.

Sage-grouse - Cumulative Effects

Past burning, grazing, and watering practices have produced an increase in the number of male grouse observed and the total number of active leks located. Continued activities on the USSES would have a neutral or positive effect, and, thus, are not likely to add to existing cumulative effects in the Upper Snake Planning Area. USSES lands would continue to provide key habitat and stronghold populations.

North American Wolverine (*Gulo gulo luscus*)

Wolverines are uncommon and wide ranging, but may use USSES lands for occasional foraging.

Wolverine Affected Environment

A summary of regional wolverine distribution, habitat, ecology, and issues can be found in Idaho Comprehensive Wildlife Conservation Strategy (CWCS), species accounts in appendix F (IDFG, 2005). Wolverines use large tracts of land ranging from 150 square miles to over 500 square miles, and talus slopes are important for denning. USSES station lands contain good summer wolverine habitat made up of sub-alpine forests and meadows, minimal roads, and minimal human disturbance on Odell Creek, Big Mountain, and Tom Creek allotments. Winter habitat may occur in the foothills including Humphrey Ranch and Henninger Ranch properties, in particular as it relates to ungulate use as a food source for wolverine. The Headquarters property is non-forested and outside of wolverine habitat. USSES lands are small in comparison to overall habitat needs, so occurrences of wolverines are expected to be uncommon. A petition to list wolverine was found not-warranted in March of 2008 by the US Fish and Wildlife Service (USFWS, 2008), because in the contiguous United States, a significant portion of its range is not represented, and it is not a distinct population segment. Idaho lists the species as imperiled (S2) and Montana lists the species as vulnerable (S3), noting that human disturbances (such as roads and motorized winter recreation) may create barriers to movement, reduce winter foraging opportunities, and may affect reproductive success. State heritage databases indicate a number of wolverine observations in the Centennial Mountain Range.

Wolverine Direct/Indirect Effects

Wolverines have not been known to take domestic sheep on USSES lands, and no abatement (such as trapping) is expected to occur for the species. The described activities do not create barriers to wolverine travel, do not alter forest vegetation or ungulate populations that might affect wolverine use, and do not concentrate activity on talus slopes that might be used for denning. USSES activities would have no effect on wolverine or their habitat, and potential habitat connections provided by the Centennial Mountain Range would not be altered.

Wolverine - Cumulative Effects

Activities are not creating negative effects to wolverine and, thus, do not contribute cumulative effects to wolverine populations or habitat that might be present.

American Black Bear (*Ursus americanus*)

Black Bears are common in USSES lands in the forested portions of the Centennial Range. Statewide, they are managed as game species and legally hunted.

Black Bear Affected Environment

The status of the American black bear in Idaho and Montana is secure (S5), the species is considered a game species, and is hunted in the spring and fall in both Montana and Idaho. The species has no federal status. Black bears are common in the foothills and the high elevation areas of the Centennial Mountain Range. Encounters can occur in suitable habitat in Odell, Big Mountain, and Tom's Creek allotments, Henninger Ranch, and Humphrey Ranch. Black bears generally do not occupy the Headquarters pasture, though individual bears may occasionally travel along the riparian areas of Beaver Creek, which has thick cover adjacent to the stream.

Sheep herders encounter black bears on an annual basis, but encounters do not necessarily lead to lethal control unless depredation is suspected. Since USSES does not keep records that aren't pertinent to ongoing research, the number of black bears observed versus the number of control actions is not documented. If a black bear is suspected of killing sheep, USSES staff contacts Wildlife Services to investigate the matter and determine if it was in fact a black bear. Interviews of USSES employees indicate that past black bear conflicts with sheep have resulted in employees killing two black bears, and Wildlife Services killing an estimated four or five black bears during the period of the Yellowstone fire (1988). No black bears have been trapped on USSES lands and then relocated. Mitigation measures to deter bears, as referenced in the grizzly bear section, are also effective against black bears. Please refer to the conservation measures described for grizzly bears that are used to minimize potential depredations and conflicts.

Black Bear Direct/Indirect Effects

The direct and indirect effects to black bears are the same as those described for grizzly bears. However, lethal control is implemented more frequently. Estimated figures for past lethal control of black bears on USSES lands indicates that only a small number of bears are removed over a period of years, and that this activity is minimal compared to legal game harvest in the spring and fall.

Black Bear - Cumulative Effects

None expected. The species is common in the Centennial Mountain Range despite legal hunting pressure and occasional abatement activities.

Rocky Mountain Bighorn Sheep (*Ovis canadensis canadensis*)

Rocky Mountain Bighorn sheep are not known or expected to be present on USSES lands. Small herds are present in nearby areas of the upper snake region wildlife region.

Rocky Mountain Bighorn Sheep Affected Environment

In the Rocky Mountain west, a primary issue regarding bighorn sheep and domestic sheep interaction revolves around die-offs within native or transplant bighorn sheep herds, after coming in contact with domestic sheep. Contrasting viewpoints exist. In examples such as occurred near Hell's canyon in Western Idaho, one or more bighorn sheep become infected with pneumonia (*Pasteurella* or *Manhiemmia*), the pneumonia spreads to other members within a bighorn sheep herd, and a portion of the bighorn sheep herd may die. In contrast, it isn't known if sufficient contact for a transmission event occurs under existing grazing conditions, and pneumonic disease in bighorn sheep has also been reported in the absence of detectable contact with small ruminants (Knowles, personal communication). Knowles describes the following events that must come together to infect bighorn sheep. (1) a domestic sheep must be infected with appropriate organisms; (2) the domestic sheep must be shedding these organisms in sufficient quantity for transmission; (3) due to the nature of the suspected organisms, mucusal contact must occur and match in time with the dose being shed for transmission and infection, and (4) the bighorn sheep must become infected and replicate the organism(s) in sufficient quantity to both transmit and to reach other organ systems to cause disease. Each of these steps has a probability associated with them, and it is in question whether these events would occur in a quantity high enough to lead to disease and/or a further transmission event. A detailed discussion of disease transmission and associated conflicts between bighorn sheep and domestic livestock can be found in A Review of Disease Related Conflicts Between Domestic Sheep and Goats and Bighorn Sheep (Schommer et al. 2008).

Bighorn Sheep are not known or expected to occupy any of the Sheep Experiment Station lands. One bighorn sheep herd in the vicinity of USSES lands is located in the Lionshead area near West

Yellowstone. This area is approximately 20 miles Northwest of Odell Creek, Big Mountain, Tom Creek, Henninger Ranch, and Humphrey Ranch USSES properties. According to the Idaho Fish and Game (IDFG) Bighorn Sheep Progress Report (IDFG, 2007), 12-15 sheep are seen in Idaho during the summer months, Montana offers occasional hunting permits then lets the herd rebuild, and Idaho does not allow hunting on the herd but recognizes it as having important non-consumptive values. The herd is separated from USSES lands by approximately 20 miles distance, Henry's Lake basin, and substantial geographic topography along the continental divide. There is no indication that the herd uses USSES lands, and the IDFG report does not suggest any known interaction or specific concerns for interaction with domestic sheep regarding this herd. Remaining USSES lands are in low elevation, flat topography sagebrush steppe habitat that is not occupied by bighorn sheep.

On the Lemhi Mountain Range and Beaverhead Mountains, which are west of the project area and do not contain USSES lands, additional bighorn sheep have been observed. Bighorn sheep on these ranges are part of transplants conducted by Idaho Fish and Game Department between 1976 and 1984. The bighorn sheep progress report noted observations of thirty bighorn sheep in the Lemhi range and nine bighorn sheep in the Beaverhead range. USSES grazes domestic sheep on federal lands near these areas including the Bureau of Land Management's Bernice Allotment, and the U.S. Forest Service's Snakey/Kelley allotment. Those federal agencies issue a permit or Memorandum of Understanding (MOU) to administer sheep grazing on the allotments. In personal communications with the Dubois Ranger District wildlife biologist (Keetch, 2008), he indicated that on the Beaverhead range, domestic sheep are grazed on the east side of the range during winter months, while bighorn sheep use the opposite side (west side) of the range during that time period. Therefore, domestic sheep and bighorn sheep conflicts do not occur on the Kelly Canyon allotment because of geographic and temporal separation. There is no documented interaction/contact between domestic sheep and bighorn sheep on the USFS Kelly Canyon allotments. However there was one incident where a stray domestic sheep from USSES was observed three linear miles from bighorn sheep and a USSES employee subsequently removed the domestic sheep.

According to the bighorn sheep progress report (IDFG, 2007), IDFG will continue to work with BLM and USFS to identify areas of range overlap between bighorn sheep and domestic sheep use on the Lemhi and Beaverhead ranges, and develop contingency action plans with the respective agencies and domestic sheep permittees to minimize the potential of bighorn-domestic sheep interaction. Action plans would be designed to quickly remove bighorn sheep that have come into contact with domestic sheep in order to prevent the potential spread of diseases discussed earlier. In the MOU prepared between the Bureau of Land Management (BLM) and the USSES for grazing on the Bernice allotment (USDI Bureau of Land Management, 2007), a "Bighorn Sheep Action Plan" is included. The action plan describes five action items that will be taken in order to minimize potential contact between bighorn and domestic sheep. These action items are consistent with Idaho's Interim Strategy for Managing Separation Between Bighorn Sheep and Domestic Sheep in Idaho (IDFG, 2007).

Rocky Mountain Bighorn Sheep Direct/Indirect Effects

Continued grazing activities on the Sheep Experiment Station Lands will not affect bighorn sheep. Bighorn sheep are not known or expected to occupy USSES lands. Permitted grazing on Forest Service and BLM federal lands has only a minimal risk of contact between bighorn sheep and domestic sheep because of geographic and temporal separation on the Beaverhead and Lemhi Mountain ranges, as well as the existence of a defined action plan which would be implemented on the rare or unlikely chance of interaction occurring. The presence of guard dogs and full-time sheep herders affords additional protection measures to reduce the possibility of actual contact between bighorn and domestic sheep, and ability to immediately remove infected bighorn or domestic sheep should contact be suspected.

Rocky Mountain Bighorn Sheep - Cumulative Effects

Activities are not creating negative effects, and thus do not contribute to cumulative effects to bighorn sheep populations or habitat.

Fish and Amphibians

Fish and Amphibians Affected Environment

Aquatic Habitat

Fish habitat on USSES lands is limited to just a few perennial streams and lakes. In Idaho, Beaver Creek intersects Humphrey Ranch for about 1.5 miles and the Headquarters property for approximately 0.75 miles. It has substantial flow during spring run-off, and in areas supports stocked rainbow trout, brown trout and brook trout. During summer periods, the stream becomes a dry channel along lower sections near the headquarters property because of decreased summer water flows and the geology of the area. Thus, it does not support a year-round fishery there. The Management Plan for Conservation of Yellowstone Cutthroat Trout in Idaho (IDFG, 2007) indicates that Yellowstone cutthroat trout are found in a few isolated tributaries to Beaver Creek, but none are on or immediately adjacent to USSES lands. Henninger Ranch has two intermittent streams, Dry Creek and Moose Creek, neither of which support a fishery. The Montana portions of USSES include several drainages: Odell Creek allotment contains two branches of Odell Creek and the headwaters of Corral Creek. Big Mountain Allotment contains Spring Creek. The Tom's Creek allotment contains Hell Roaring Fork and 3 headwater branches of Tom's Creek. Odell Creek was observed to be fish bearing on USSES lands during 2008 field surveys conducted by the project biologist who observed a population of brook trout in the west branch of Odell Creek. Montana Heritage database records indicate that Odell Creek and Hell Roaring Fork Creek have westslope cutthroat trout populations. Four lakes are within the Montana portions of USSES lands including Big Odell Lake, Little Odell Lake, Blair Lake, and Lillian Lake. Montana Fish Wildlife and Parks informed us during scoping that stocked sport fisheries are currently managed in Blair, Lillian, and Odell Lakes within the project area and could be desirable for stocked westslope cutthroat trout. During those field surveys, the wildlife biologist also identified spotted frogs and confirmed breeding populations in the west fork of Odell Creek, little Odell Lake, and on Blair Lake.

Arctic grayling use spawning habitats in lower reaches of Red Rock, Odell, and Corral Creeks downstream of the USSES lands. This downstream population is one of two confirmed native Arctic grayling populations in the 48 contiguous states

Fish and Amphibians Direct/Indirect Effects

Activities that have the potential to directly or indirectly affect fisheries and amphibians include: grazing of livestock along terraces of Beaver Creek and its tributaries; grazing and watering of livestock along banks of perennial streams and lakes in the Montana portion of USSES, and trailing sheep across active streams. Field surveys were conducted in July by the project biologist and August by the project hydrologist. These surveys indicated that grazing along the streambanks of Beaver Creek is limited to infrequent occasions when cattle and horse grazing is implemented. Sheep specifically avoid wet areas for grazing unless watering. Effects along Beaver Creek are minimal since the area where cattle and horses are occasionally grazed is confined to a relatively steep canyon and is avoided in favor of more level terrain in the area. Woody shrubs, tall grasses, and dense willows indicate that impacts from grazing are minimal along Beaver Creek, which is also confirmed in the hydrologist report.

Surveys of lakes and streams in the Montana portions of USSES indicated that livestock use is not exacerbating erosion. Sheep are mostly grazing high elevation meadows. Forage observed on grazed hillsides and meadows is dense and without obvious signs of gully erosion from past grazing. Stream crossings and lakeside watering areas were visited and effects such as stream widening, or compaction of wet areas was negligible. Boggy moss mats present on the banks of Odell Creek, Little Odell Lake, and Blair Lake had adult spotted frogs, with tadpoles and juveniles found in adjacent still-water areas. These conditions indicated that grazing activities are light, and are not negatively affecting streamside.

Fish and Amphibians - Cumulative Effects

Activities are not creating negative effects, and thus do not contribute cumulative effects to fisheries or amphibians present on USSES lands or in downstream portions of the drainages.

Connectivity

In 2007, a workshop was conducted with numerous biologists in attendance, to examine connectivity issues between the Greater Yellowstone Ecosystem and the Northern Rocky Mountains. The summary notes for this workshop, (Beckman and others, 2008) indicated:

- There is a need or desire to provide linkage habitats for wildlife, particularly wide ranging carnivores, between the Greater Yellowstone Ecosystem and the Northern Rocky Mountains.
- General agreement among the group that that loss of linkage is due to rapid loss of valley bottom habitats due to human population expansion and associated infrastructure.
- Themes emerged regarding issues related to livestock grazing and carnivore conservation including mistrust, lack of information sharing, ineffective compensation programs, and economic shifts (such as changes in livestock industry and housing development in open spaces).
- The group is planning to reconvene to 2009 to identify and prioritize specific connectivity issues in the Centennial region. (Beckman, 2008).

A review of the information discussed previously for individual species indicates that USSES activities are unlikely to affect connectivity in the Centennial Range. USSES lands have a minimal infrastructure on the Montana parcels, and the infrastructure on Idaho parcels is limited to its current facilities. Roads are minimal and closed to public use, so motorized traffic is kept to a minimum. Large carnivores can travel through and/or occupy habitat on USSES lands mostly without disturbance. At times, harassment from full time sheep herders and/or guard dogs may cause individual animals to temporarily avoid a particular pasture when occupied by sheep. Wildlife control actions related to livestock depredation and large carnivores has been limited over the past decade. There have been three grizzly bear encounters and no grizzly bears have been removed. There have been two wolf depredation incidents; one resulted in radio-collaring and transport to another area, the other ended without further incident. Less than 10 black bears have been removed over the past decade. There have been no incidents regarding wolverine or Canada lynx. Habitat on USSES lands, particularly in the Montana parcels remains relatively undisturbed, human activity is low, and sheep grazing activities are of short duration during the summer months, and move through pastures quickly.

Additional Information

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Maps

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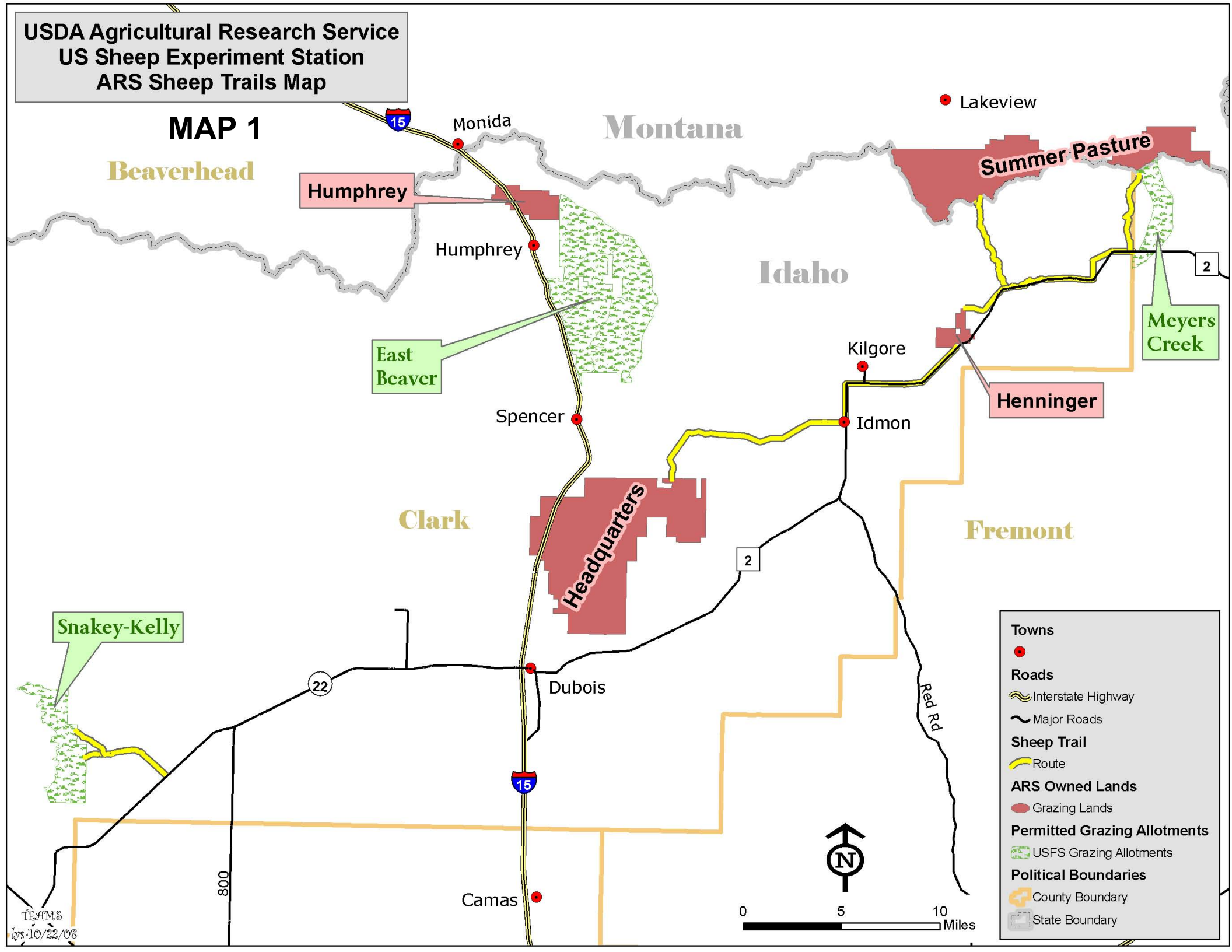
USDA Agricultural Research Service
US Sheep Experiment Station
ARS Sheep Trails Map
MAP 1
Beaverhead
Montana
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Humphrey
Summer Pasture
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Meyers Creek
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Henninger
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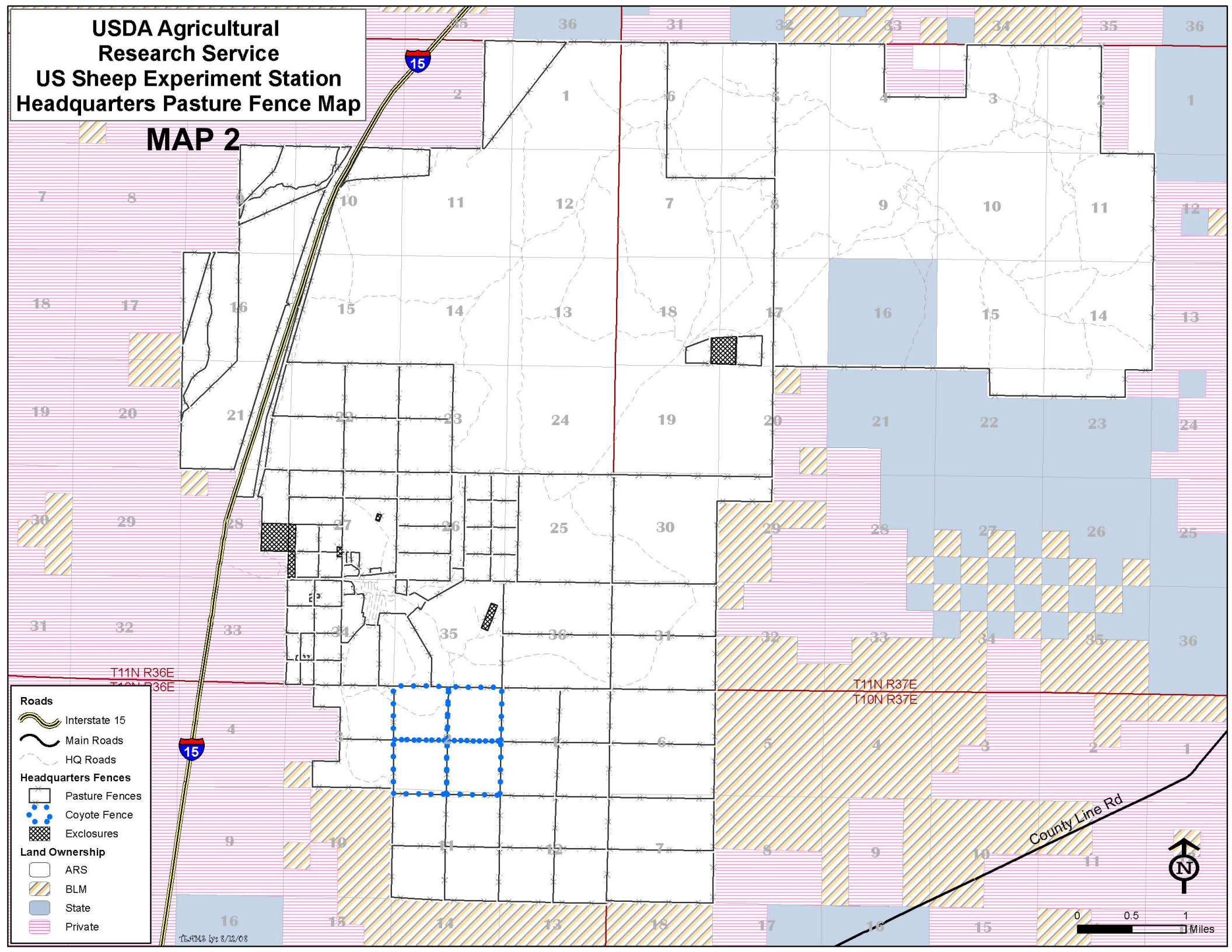
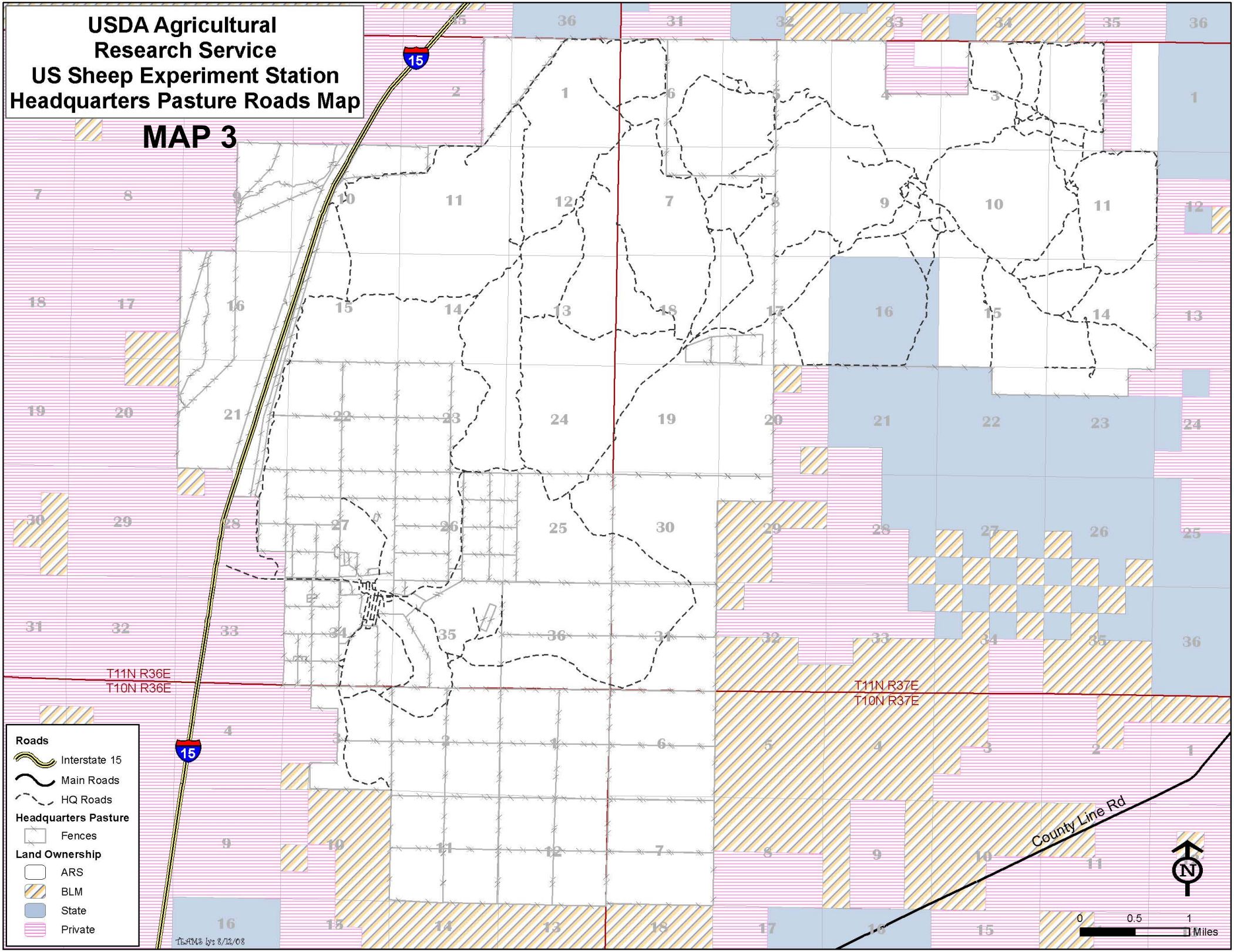
USDA Agricultural Research Service
US Sheep Experiment Station
Headquarters Pasture Fence Map

MAP 2




USDA Agricultural
Research Service
US Sheep Experiment Station
Headquarters Pasture Roads Map
MAP 3
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T11N R37E
T10N R37E
County Line Rd
Roads
Interstate 15
Main Roads
HQ Roads
Headquarters Pasture
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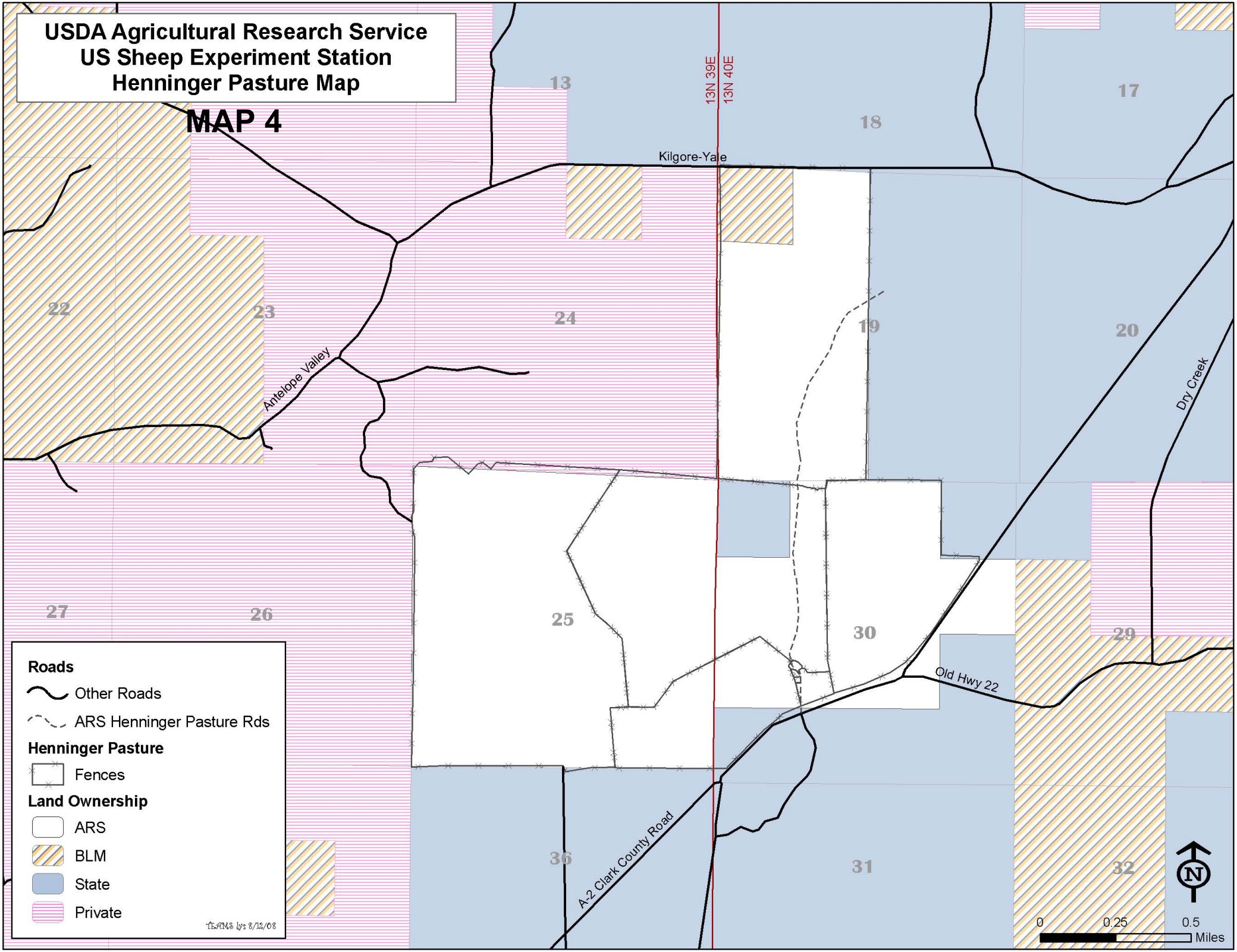
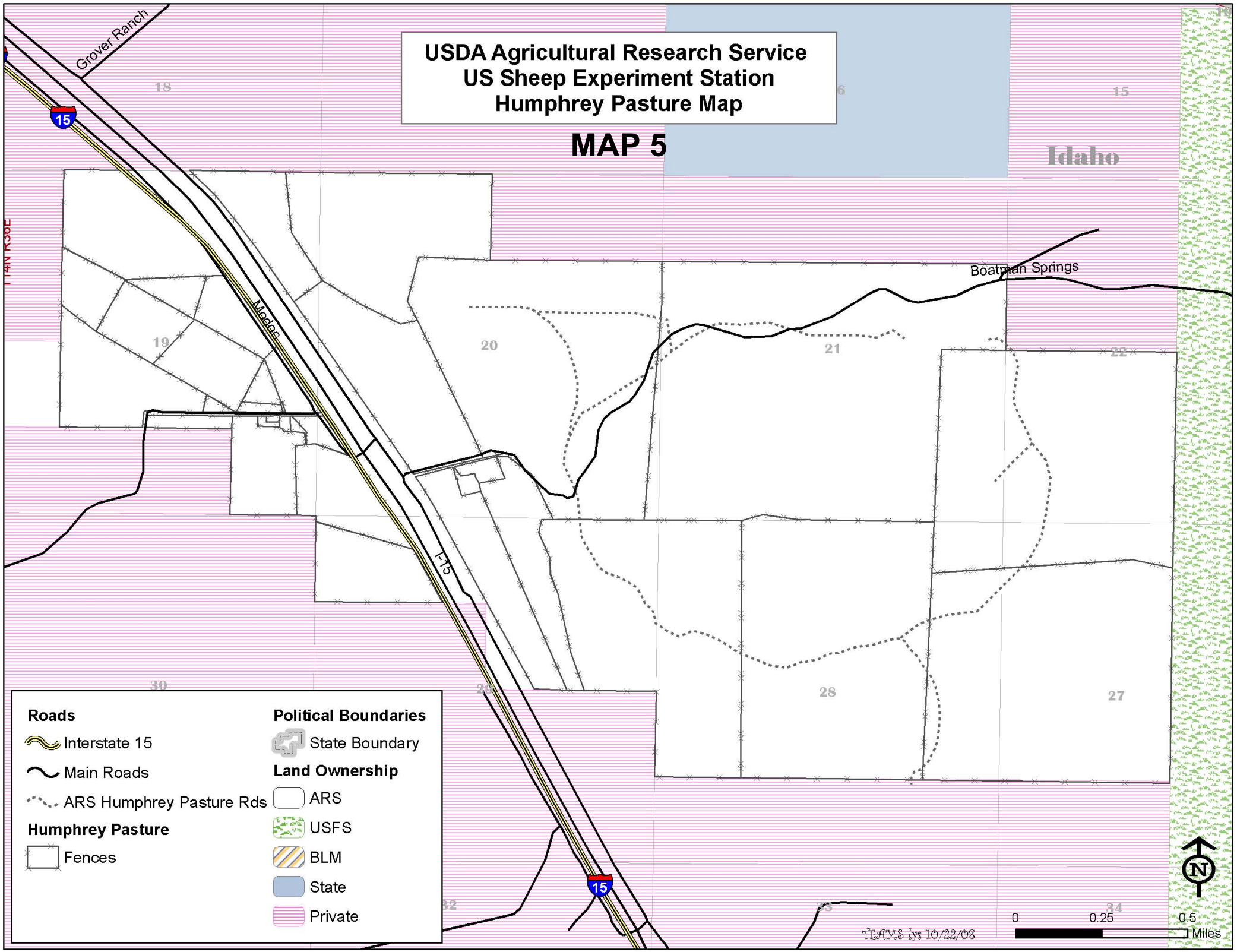
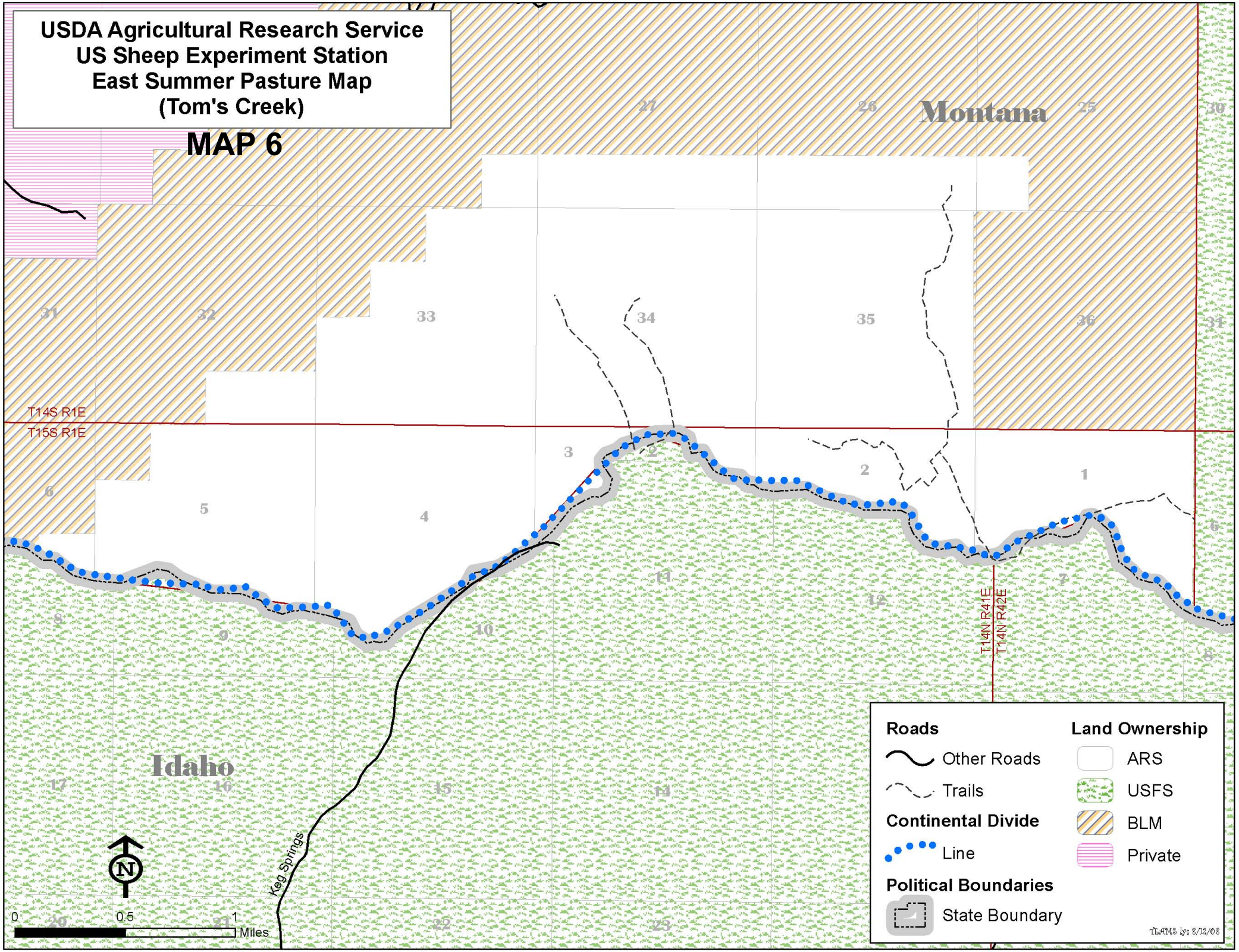
Miles

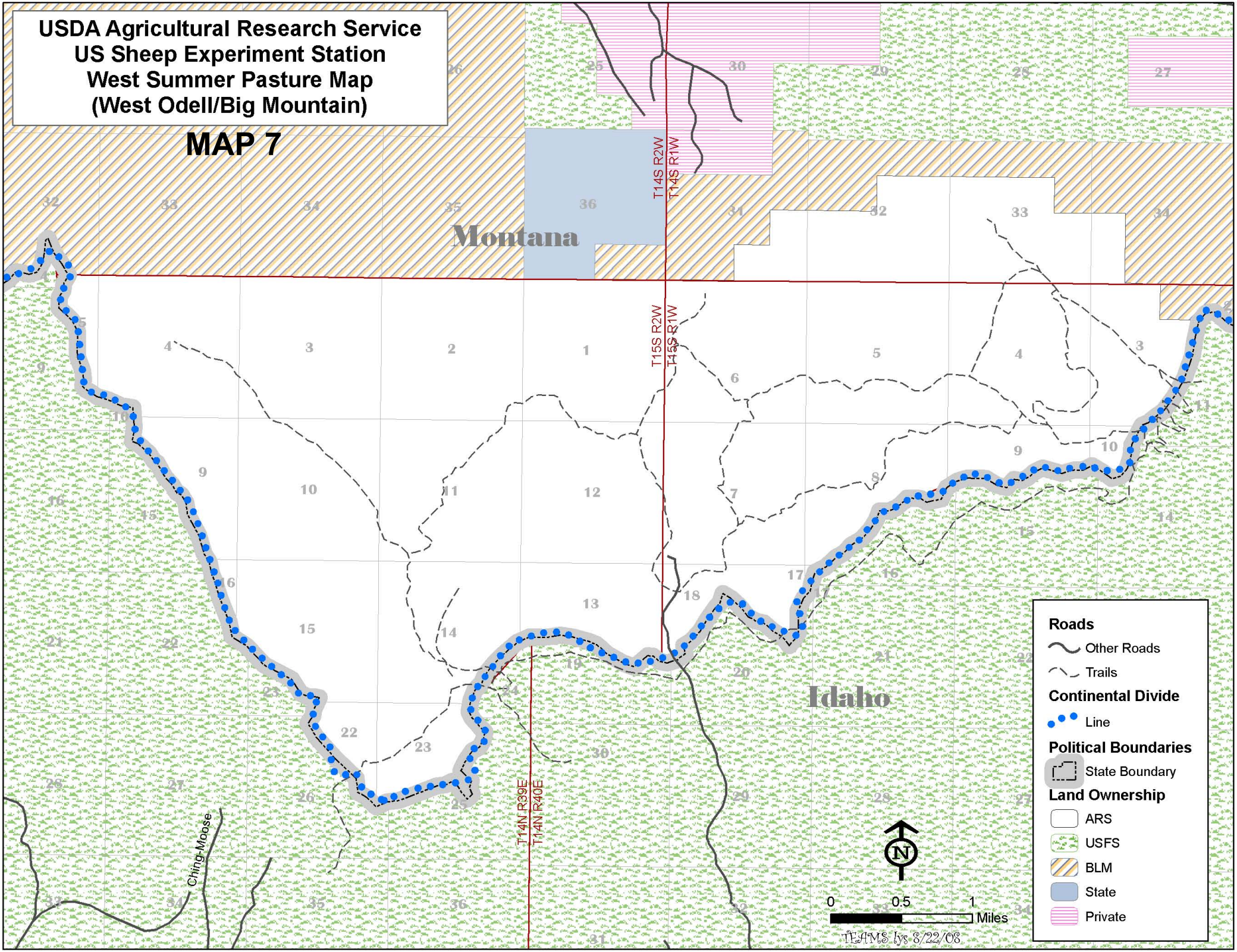
USDA Agricultural Research Service
US Sheep Experiment Station
Henninger Pasture Map

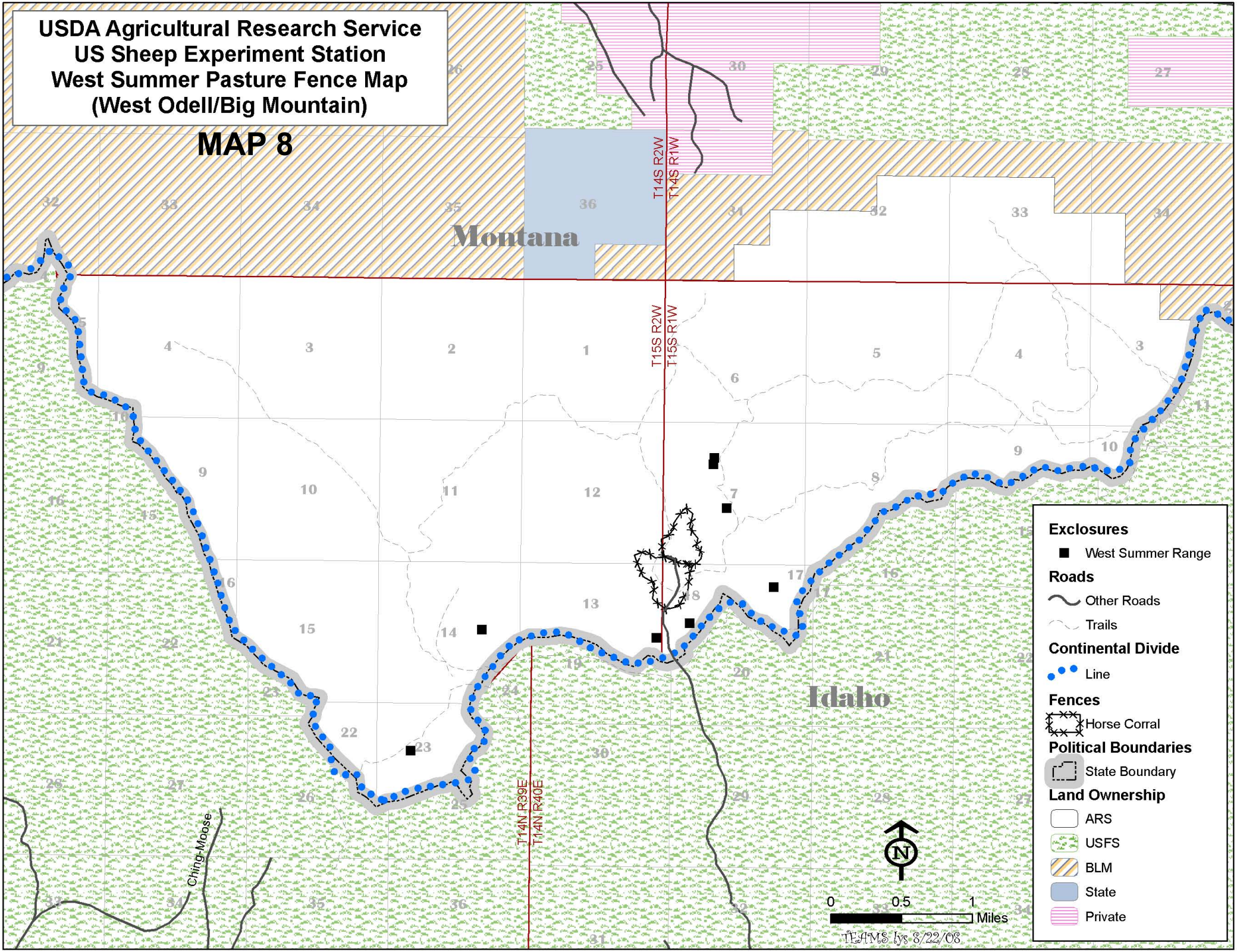
MAP 4

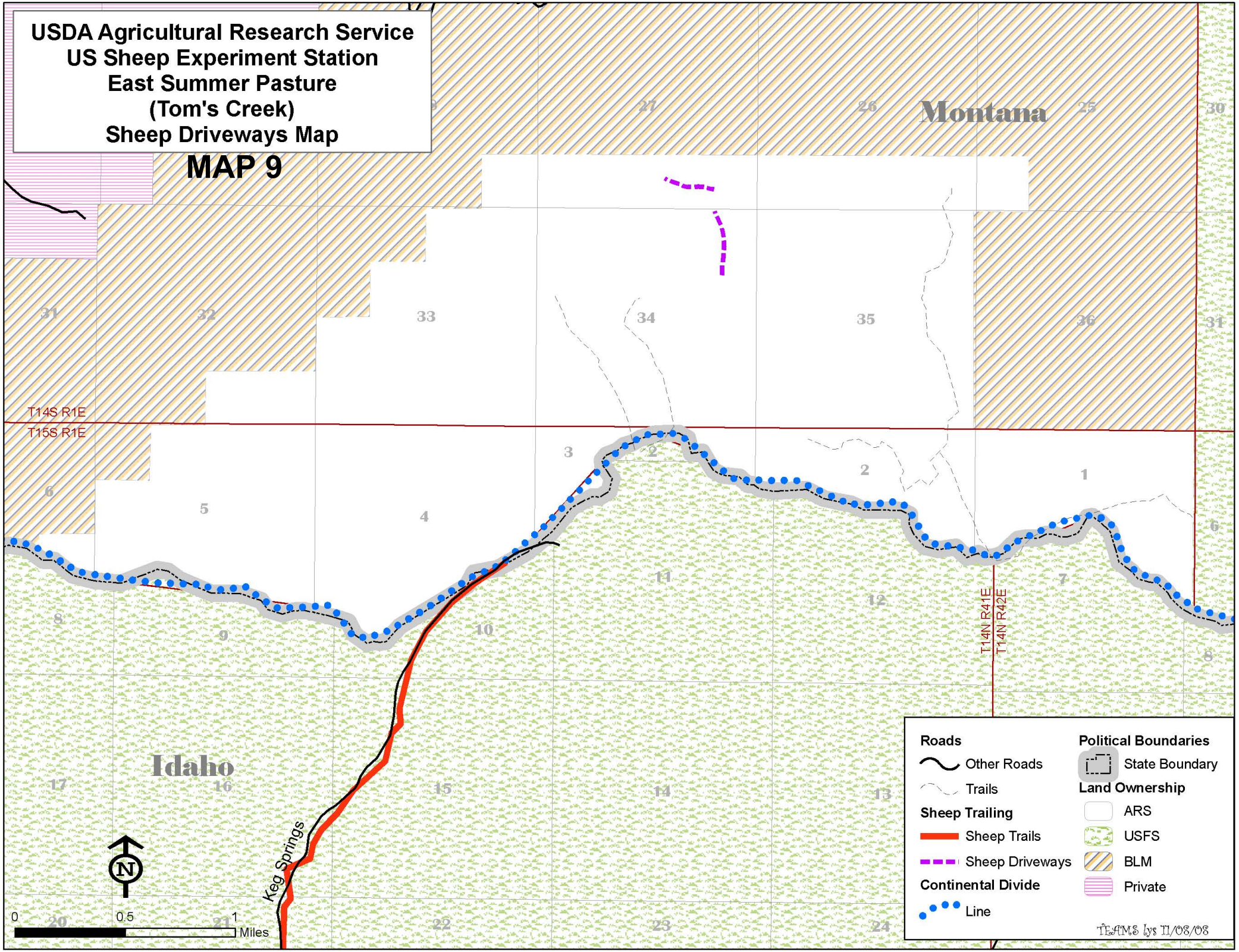


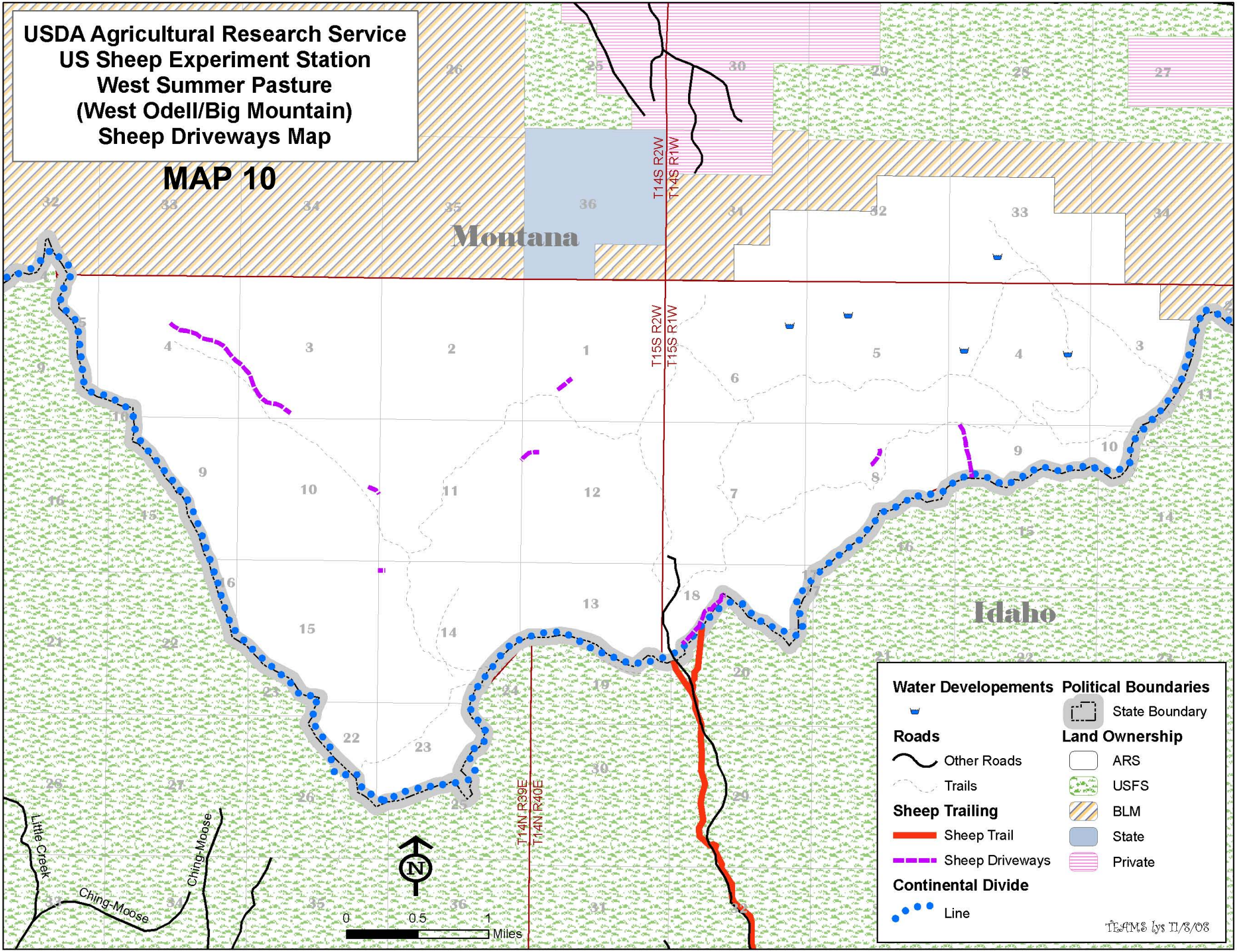

USDA Agricultural Research Service
US Sheep Experiment Station
Humphrey Pasture Map
MAP 5
Idaho
Grover Ranch
Boatman Springs
Malad
I-15
15
18
19
20
21
22
28
27
30
32
33
34
T14N R36E
Roads
Interstate 15
Main Roads
ARS Humphrey Pasture Rds
Humphrey Pasture
Fences
Political Boundaries
State Boundary
Land Ownership
ARS
USFS
BLM
State
Private
N
0
0.25
0.5
Miles
TERMS by 10/22/08

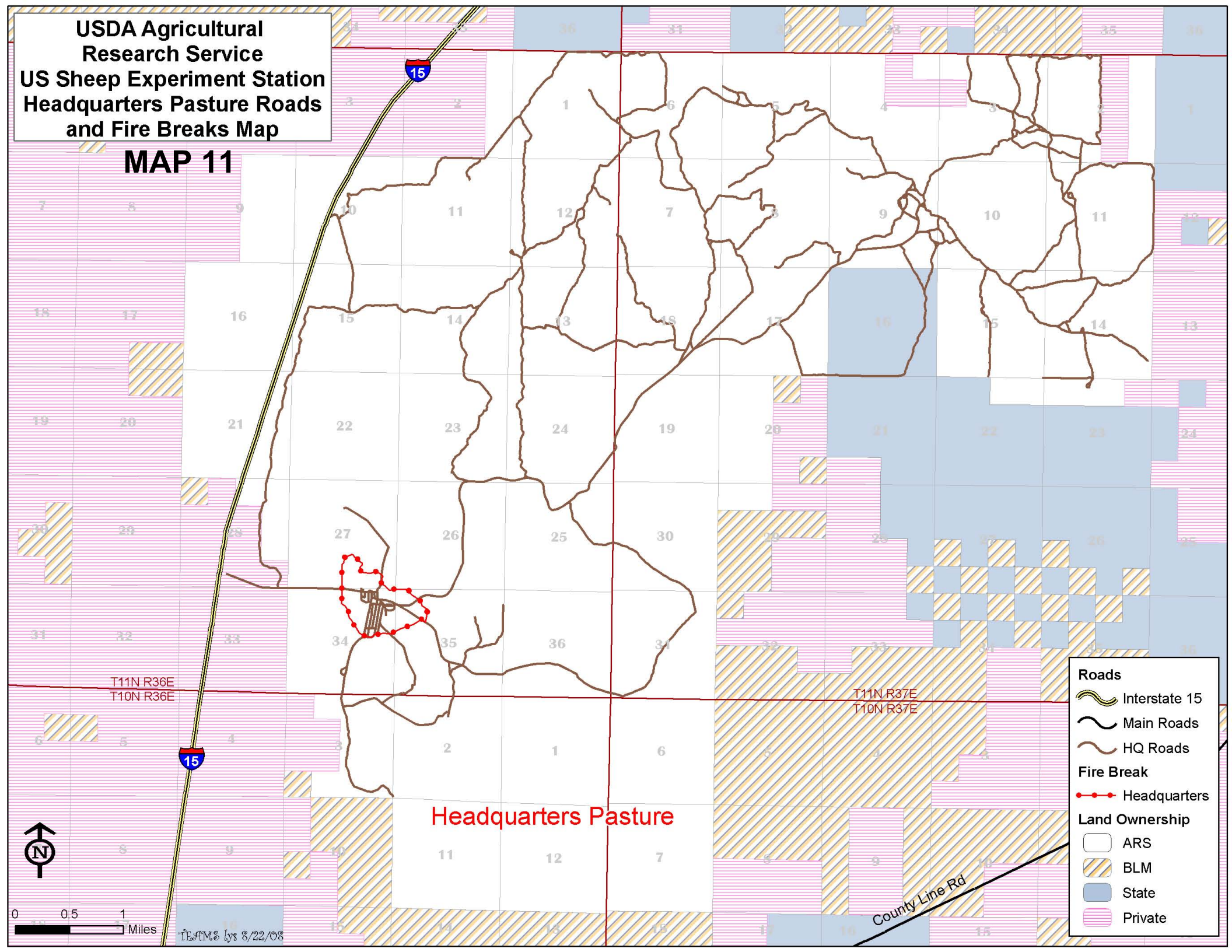

USDA Agricultural Research Service
US Sheep Experiment Station
East Summer Pasture Map
(Tom's Creek)
MAP 6
Montana
Idaho
T14S R1E
T15S R1E
T14N R41E
T14N R42E
Keg Springs
N
0
0.5
1
Miles
Roads
Other Roads
Trails
Continental Divide
Line
Political Boundaries
State Boundary
Land Ownership
ARS
USFS
BLM
Private
TEAMS by: 8/12/08

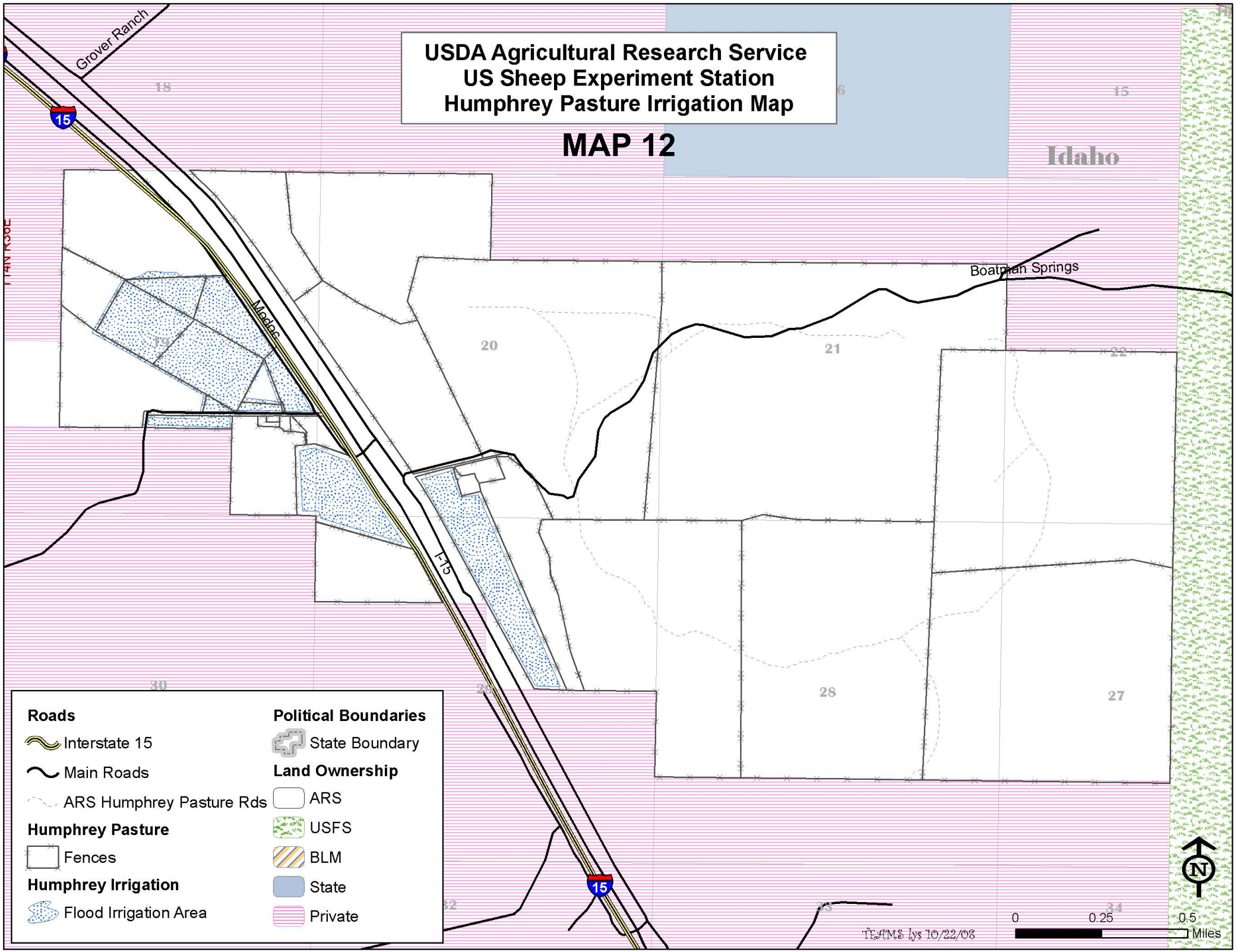

USDA Agricultural Research Service
US Sheep Experiment Station
West Summer Pasture Map
(West Odell/Big Mountain)
MAP 7
Montana
Idaho
T14S R2W
T14S R1W
T15S R2W
T15S R1W
T14N R39E
T14N R40E
Ching-Moose
Roads
Other Roads
Trails
Continental Divide
Line
Political Boundaries
State Boundary
Land Ownership
ARS
USFS
BLM
State
Private
N
0
0.5
1
Miles
TWMS lys 8/22/08

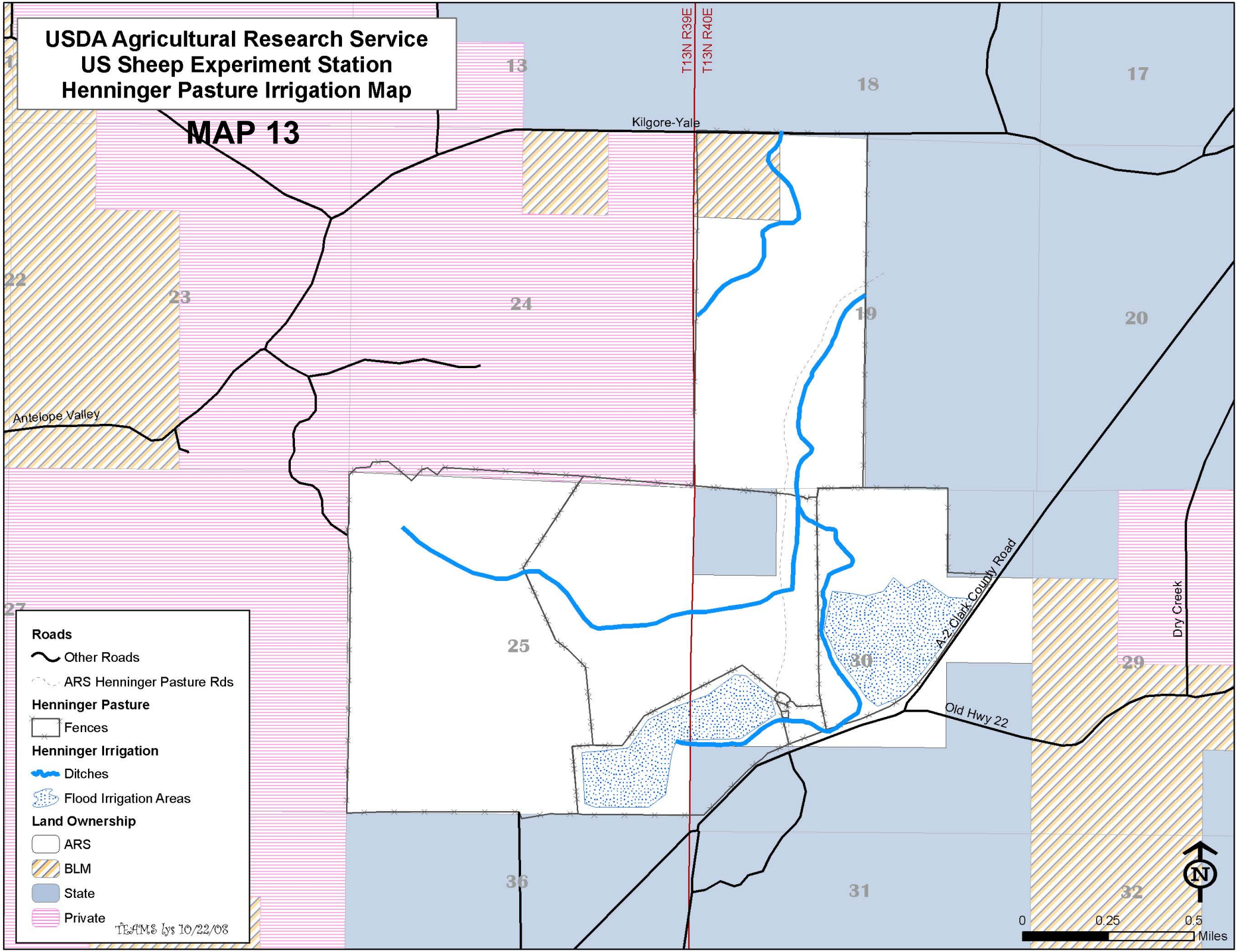

USDA Agricultural Research Service
US Sheep Experiment Station
West Summer Pasture Fence Map
(West Odell/Big Mountain)
MAP 8
Montana
Idaho
T14S R2W
T14S R1W
T15S R2W
T15S R1W
T14N R39E
T14N R40E
Ching-Moose
Exclosures
West Summer Range
Roads
Other Roads
Trails
Continental Divide
Line
Fences
Horse Corral
Political Boundaries
State Boundary
Land Ownership
ARS
USFS
BLM
State
Private
N
0
0.5
1
Miles
TWMS lys 8/22/08


USDA Agricultural Research Service
US Sheep Experiment Station
East Summer Pasture
(Tom's Creek)
Sheep Driveways Map
MAP 9
Montana
Idaho
T14S R1E
T15S R1E
T14N R41E
T14N R42E
Keg Springs
N
0
0.5
1
Miles
Roads
Other Roads
Trails
Sheep Trailing
Sheep Trails
Sheep Driveways
Continental Divide
Line
Political Boundaries
State Boundary
Land Ownership
ARS
USFS
BLM
Private
TEAMS lys 11/08/08


USDA Agricultural Research Service
US Sheep Experiment Station
West Summer Pasture
(West Odell/Big Mountain)
Sheep Driveways Map
MAP 10
Montana
Idaho
T14S R2W
T14S R1W
T15S R2W
T15S R1W
T14N R39E
T14N R40E
Little Creek
Ching-Moose
Ching-Moose
N
0
0.5
1
Miles
Water Developements
Roads
Other Roads
Trails
Sheep Trailing
Sheep Trail
Sheep Driveways
Continental Divide
Line
Political Boundaries
State Boundary
Land Ownership
ARS
USFS
BLM
State
Private
TEAMS lys 11/8/08


USDA Agricultural
Research Service
US Sheep Experiment Station
Headquarters Pasture Roads
and Fire Breaks Map
MAP 11
15
15
T11N R36E
T10N R36E
T11N R37E
T10N R37E
Headquarters Pasture
County Line Rd
N
0
0.5
1
Miles
TEAMS lys 8/22/08
Roads
Interstate 15
Main Roads
HQ Roads
Fire Break
Headquarters
Land Ownership
ARS
BLM
State
Private


USDA Agricultural Research Service
US Sheep Experiment Station
Humphrey Pasture Irrigation Map
MAP 12
Idaho
Grover Ranch
Boatman Springs
Medicine
I-15
15
T14N R39E
18
19
20
21
22
28
27
30
Roads
Interstate 15
Main Roads
ARS Humphrey Pasture Rds
Humphrey Pasture
Fences
Humphrey Irrigation
Flood Irrigation Area
Political Boundaries
State Boundary
Land Ownership
ARS
USFS
BLM
State
Private
N
0
0.25
0.5
Miles
TERMS lys 10/22/08


USDA Agricultural Research Service
US Sheep Experiment Station
Henninger Pasture Irrigation Map
MAP 13
T13N R39E
T13N R40E
Kilgore-Yale
Antelope Valley
A-2 Clark County Road
Old Hwy 22
Dry Creek
Roads
Other Roads
ARS Henninger Pasture Rds
Henninger Pasture
Fences
Henninger Irrigation
Ditches
Flood Irrigation Areas
Land Ownership
ARS
BLM
State
Private
TEAMS lys 10/22/08
0
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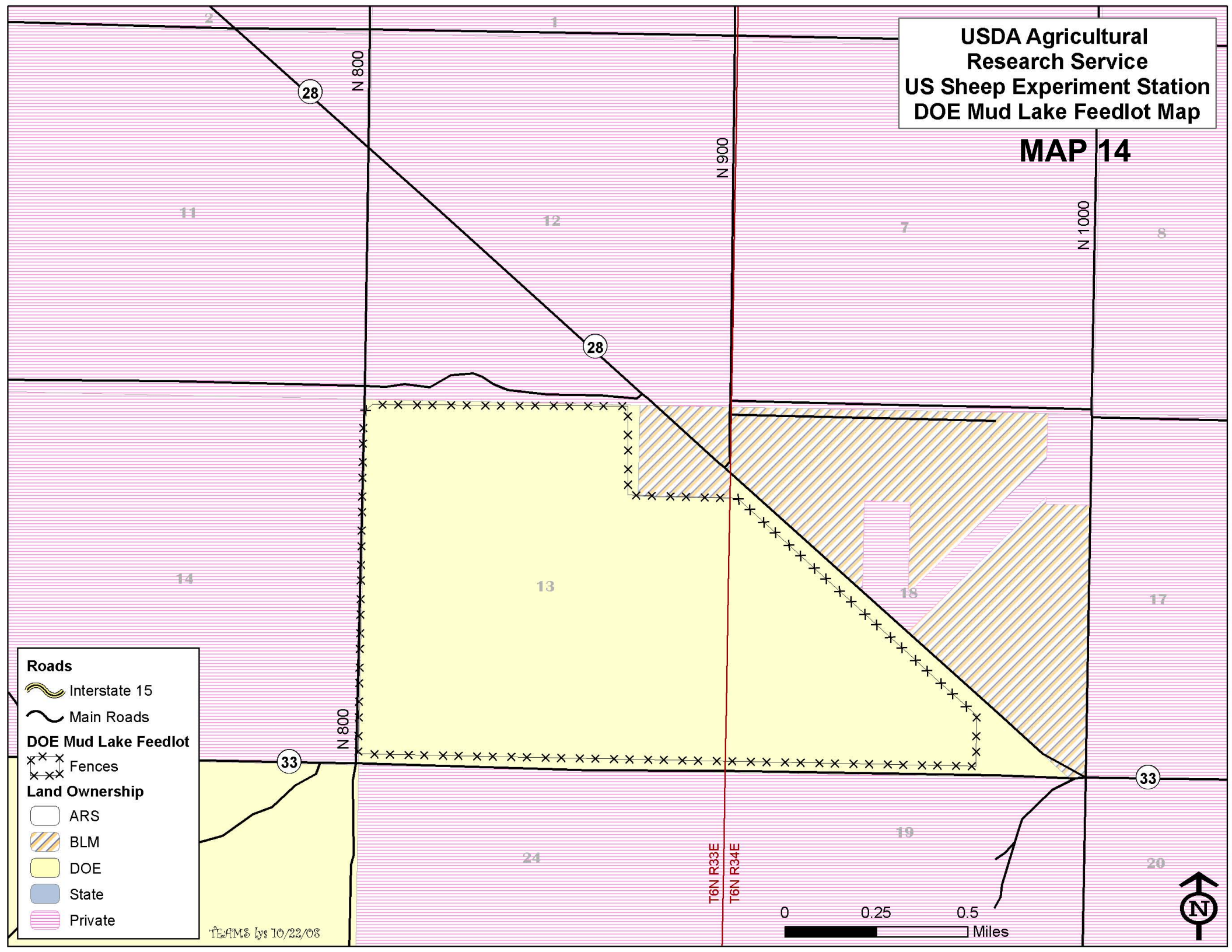
0.5
Miles


USDA Agricultural
Research Service
US Sheep Experiment Station
DOE Mud Lake Feedlot Map
MAP 14
N 800
N 900
N 1000
28
33
T6N R33E
T6N R34E
Roads
Interstate 15
Main Roads
DOE Mud Lake Feedlot
Fences
Land Ownership
ARS
BLM
DOE
State
Private
TEAMS lys 10/22/08
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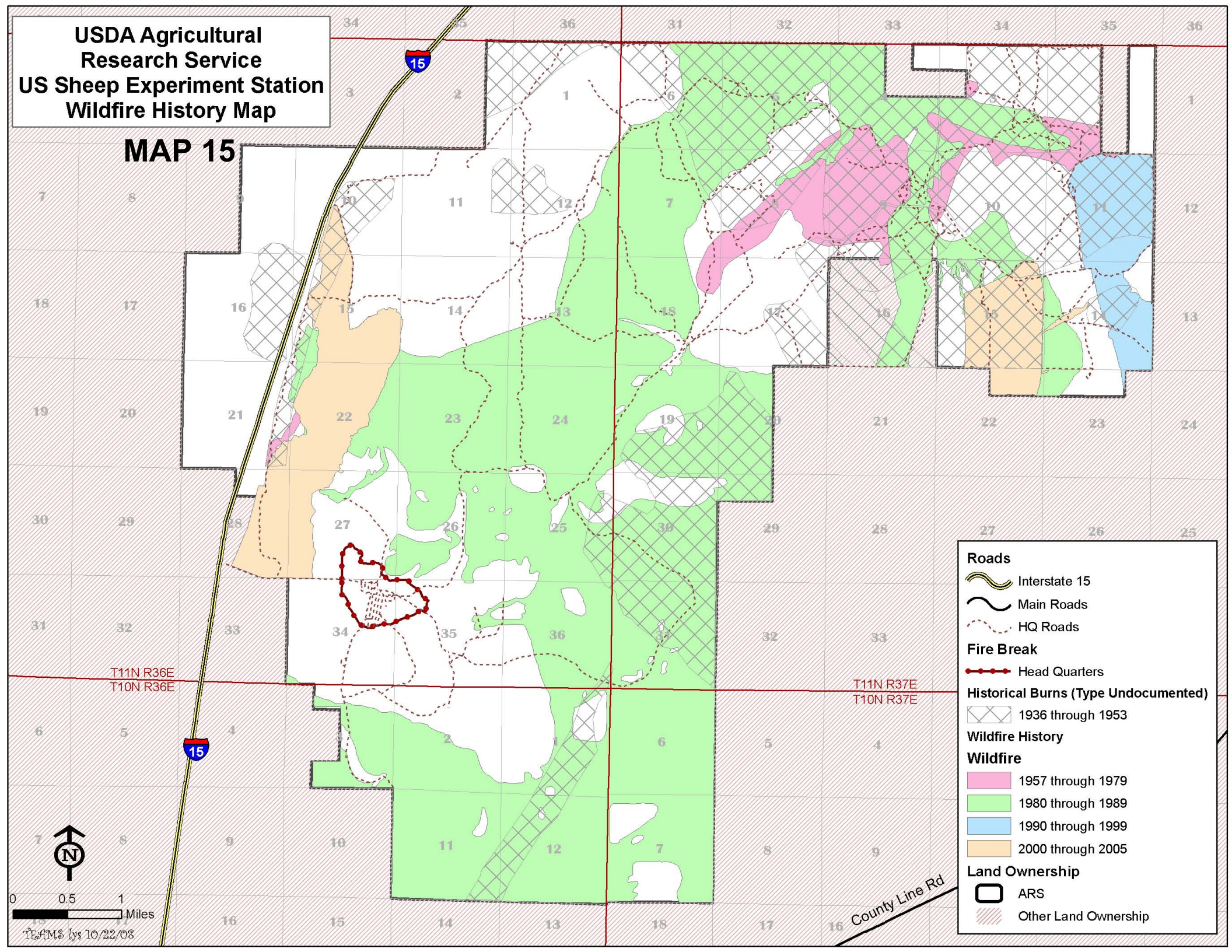
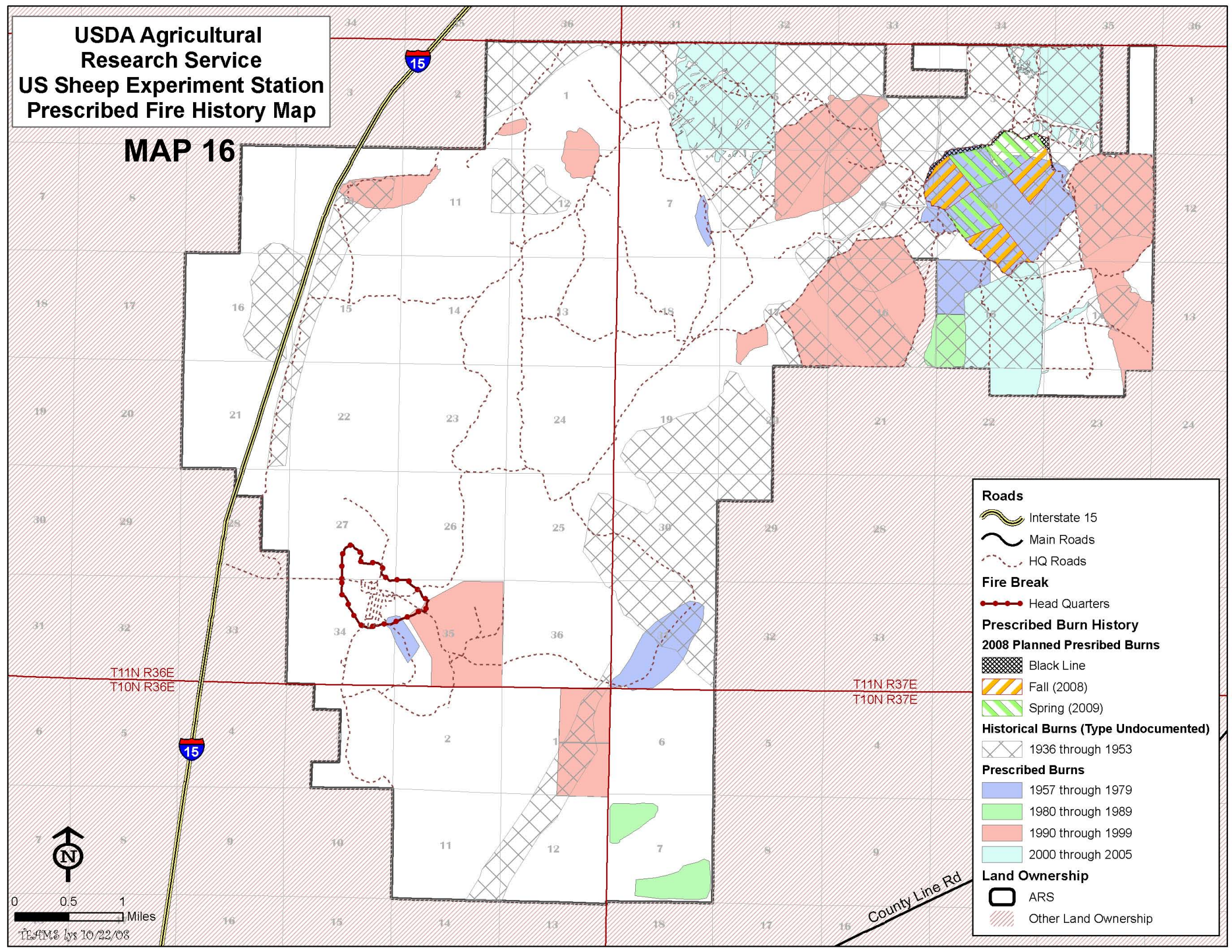
0.25
0.5
Miles
N


USDA Agricultural
Research Service
US Sheep Experiment Station
Wildfire History Map
MAP 15
T11N R36E
T10N R36E
T11N R37E
T10N R37E
County Line Rd
Roads
Interstate 15
Main Roads
HQ Roads
Fire Break
Head Quarters
Historical Burns (Type Undocumented)
1936 through 1953
Wildfire History
Wildfire
1957 through 1979
1980 through 1989
1990 through 1999
2000 through 2005
Land Ownership
ARS
Other Land Ownership
0 0.5 1
Miles
TEMS lys 10/22/08

USDA Agricultural Research Service
US Sheep Experiment Station
Prescribed Fire History Map

MAP 16



Appendix 1: USSES Response to Scoping Comments

On August 12, 2008, a Scoping package explaining the purpose and need for action, as well as the location and types of proposed activities, was mailed to approximately 100 interested parties. These included individuals and organizations who expressed interest in the project, adjacent landowners, public legislators (federal, state and township supervisors), and plaintiffs in *Center For Biological Diversity, and Western Watersheds Project v. U.S. Sheep Experiment Station; U.S. Department Of Agriculture; Agricultural Research Service; and U.S. Forest Service*.

Nineteen (19) responses to Scoping were received. Original responses received can be viewed in the project file located at the USSES, Dubois, Idaho. The following is a list of individuals, organizations, and agencies that responded to the Scoping document.

1.	Damon Murdo	Cultural Records Manager, Montana Cultural Department	dmurdo@mt.gov
2.	Montana Wool Growers Assn.		Helena, Montana
3.	Lynn M. Herrmann-Hoesing, Ph.D.	Research Microbiologist, USDA/ARS/ADRU, Washington State University	Pullman, WA
4.	John Beckman	Associate Conservation Scientist, WCS North America Program	Bozeman, Montana
5.	Patricia Dowd	Montana Conservation Coordinator, Greater Yellowstone Coalition	Bozeman, Montana
6.	Dr. Donald G. Ely	University of Kentucky	Lexington, KY
7.	Marc D. Fink	Center for Biological Diversity	Duluth, Minnesota
8.	Jim Hagenbarth	Hagenbarth Livestock	Dillon, MT
9.	Richard Oswald	Area Fisheries Mgmt. Biologist, Montana Fish, Wildlife & Parks	Dillon, Montana

10. Kreg Leymaster	Research Geneticist, USDA Research, Education, and Economics ARS, Northern Plains Area. U.S. Meat Animal Research Center	Clay Center, Nebraska
11. John Helle	Helle Livestock, Southwest Montana Range Sheep Rancher, President; Montana Wool Growers Association	Dillon, Montana
12. Lisa Upson	Wildlife Advocate, Natural Resources Defense Council	Livingston, Montana
13. Robbert Mickelsen	For Lawrence. Timchak, Forest Supervisor, Caribou-Targhee National Forest	Idaho Falls, ID
14. Tim Bozorth	Field Manager, Bureau Of Land Management Dillon Field Office	Dillon, Montana
15. Patrick Flowers	Region Supervisor, Montana Fish, Wildlife & Parks	Bozeman, Montana
16. Burdell Johnson	President, American Sheep Industry Association	www.sheepusa.com
17. Dr. Marie Bulgin	President, Idaho Wool Growers Association	Home, Montana
18. Michael L. Thonney, Ph.D.	Professor of Animal Science, Cornell University	Ithaca, NY
19. Steve Schmidt	Regional Supervisor, Idaho Department Of Fish And Game	Idaho Falls, Idaho
20. Jon Marvel[14]	Western Watersheds	<jon@westerwatersheds.org>

[14] Mr. Marvel, who did not comment at any time during Scoping or during project analysis, provided email comments on Sunday, 11/21/2008. concerning Q fever. In emails and phone conversations on Tuesday, 11/25/2008, Mr. Marvel expressed concerns about a warning on an "Interagency Visitor/Travel Map, Southwest Montana, East Half (1996) that he purchased in September. See response to comments on pp. 95-100 Mr. Marvel posed this same question concerning the warning on the map in September 2004. Dr Gregory Lewis, Research Leader at the USSES responded at that time. Please see project file for the question and response (Marvel, J Q-fever response 9-3-04.doc)

Comments in *italics* are as received, and other comments may have been paraphrased. The following is the USSES response to comments received during the scoping period. Comments have been grouped by category. Numbers in parentheses at the end of the comment indicate the commenter.

Alternatives

Comments

1. *On public lands in occupied grizzly bear habitat within the Greater Yellowstone Ecosystem, domestic sheep grazing has been phased out. GYC supports livestock grazing on our public lands, but due to continued conflicts between livestock and wildlife, we feel it is appropriate to phase out domestic sheep grazing in the Centennial Mountains*. (5)

2. *Another alternative to consider in your environmental assessment is to focus your research on grazing options or other tools to eliminate or mitigate inherent conflicts between grizzly bears, and domestic sheep grazing. If depredation by grizzly bears occurs during the course of this experimentation, then you should make a commitment to not call for the removal of the associated bear(s) since their activity may be the result of an ineffective tool that is the subject of the research.* (15)

3. *The Wildlife Conservation Society respectfully suggests that the USFS and the ARS USSES begin to design an extensive research program that addresses ways to reduce and eliminate sheep-carnivore conflicts*. (4)

Response

Several Commenters requested or suggested alternatives to the proposed action. Please see the Alternatives Eliminated from Detailed Study section (pp. 28-30 for responses to these comments.

Carnivores

Comments

1. *The USSES lands in the Centennials provide a significant amount of ³high quality´ habitat (defined by WCS as any area with > 87 percent probability of use by all four carnivore species [grizzly bears, wolves, black bears, and cougars}) for large carnivores. In fact, the USSES lands in the Centennials contain 43.3 km2 of high quality habitat under this definition. In the literature, the most common definition of ³high quality´ habitat is set at a cutoff value of areas with approximately >70-75 percent probability of use. Here, our definition of high quality habitat is much more restrictive and thus more conservative than those typically found in the literature.*

   Because our data suggest that the Centennial Mountain region, including USSES lands, is important for carnivores, we are concerned about the effects that continuing sheep grazing, specifically related to large carnivore management and removal, will have on levels of connectivity. Such removal could decrease connectivity potential and even ultimately create a sink habitat. Most of our concerns and comments address the ³predator avoidance and abatement´ and ³wildlife monitoring to follow trends in numbers and habitat selection´ proposed activities.

   The grazing of sheep on these USSES lands has an increasing probability of creating conflicts between sheep and these large carnivores (two of which are federally listed species under the Endangered Species Act). The grizzly bear population has now begun to expand outside the core

areas of Yellowstone National Park, and grizzlies are now present in the Centennials for the first time in many decades. Due to the centralized location of USSES lands within the Centennials, management decisions on these lands likely will have disproportionate impacts on carnivore connectivity.

One question that remains to be addressed is whether sheep grazing, associated human activities, and the removal of large carnivores for protection of sheep on USSES lands are contributing to the creation of a bottleneck that inhibits movement across, and residence in, these lands by carnivores in the Centennials. WCS recommends that if sheep grazing is to continue on USSES lands in the region, that the ARS establish an extensive research program to examine these issues. (4)

2. *Ongoing research, monitoring, and observations by the Wildlife Conservation Society, USDA Wildlife Services, BLM Dillon Field Office, Red Rock Lakes National Wildlife Refuge and Caribou~ Targhee National Forest all document that the Centennial Mountains provide habitat that is occupied by grizzly bear, black bear, wolves and mountain lions. Domestic sheep grazing in the same habitats in the Centennial Mountains represents a significant potential for livestock depredations and a resulting mortality risk to large carnivores, particularly bears and wolves. In turn, this potentially fragments habitat connectivity and hinders carnivore dispersal.* (5)

3. *It is well-known that ARS-USSES activities take place within an area that is important to the dispersal, expansion and existence of predator species such as grizzly bears and gray wolves. The presence of domestic sheep in the action area impacts lynx as well. Far too many of these species are killed in predator control activities for the benefit of ARS-USSES research, when such research could take place in other less sensitive areas.*(12)

Response

See Resolved Issues (pp. 22-27); Range, p. 37; Wildlife: Lynx, pp. 38-42, Gray Wolf, pp. 43-47, and Grizzly Bear, pp. 47-54, Black Bear, p. 59-60; Project File: USSES Grazing Project Biological Assessment.

Consider Comments in Analysis

Comment

1. *Specific issues that should be addressed in the Sheep Experiment Station Environmental Assessment include*: (5)

   - *A clear description of past interactions between domestic sheep and grizzly bear, black bear, wolf, or mountain lion in the project area;*
   - *A full analysis of where and how often have grazing plans been modified to avoid predator use (avoidance) and how many management actions (abatement) have resulted in bears, wolves, or mountain lions being removed;*

Response

See Range, p. 46; Wildlife: Lynx, pp. 38-42, Gray Wolf, pp. 43-47, and Grizzly Bear, pp. 47-54, Black Bear, p. 59-60.

Comment

- *A description of what the actual domestic sheep grazing strategies are on summer pastures? It appears that two bands of sheep are on summer pasture at the same time.*

Comment

- *Are there forage utilization standards?*

Response

See Range, pp. 10, 40, 41, 42.

Comment

- *What protection measures are implemented to minimize potential depredations (herder attendance, dogs, fladry, propane guns, range riders, etc.)?*
- *Has research been conducted to evaluate the effectiveness of these depredation deterrents and how are "offending" carnivores dealt with?*

Response

For the only means of predator control used by the USSES see: Proposed Action item #5, p. 2; Range, p. 14; Wildlife: Lynx, pp. 38-42, Gray Wolf, pp. 43-47, and Grizzly Bear, pp. 47-54, Black Bear, p. . 59-60. Fladry is not used.

Comment

- *A clear description of objectives and results of wildlife monitoring for ungulates (elk, mule deer, antelope, moose) and large carnivores (bears, wolves, mountain lion).*

Response

Wildlife monitoring is not a part of the USSES mission. For information on ungulates and large carnivores see Wildlife: Gray Wolf, p. 44).

- *A full analysis of where barrier fences are inhibiting migratory wildlife movements (mule deer, moose, elk and antelope), and where might cooperative partnerships modify those fences to accommodate wildlife passage? Barrier fences are net wire fences, or fences with bottom wires lower than 18" or higher than 40".*

Response

See Proposed Action Item #5, p. 2; Resolved Issues, Fencing, p. 25; Alternatives Eliminated from Detailed Study, Fencing, p. 30 Wildlife, Gray Wolf, pp. 43-47.

Cultural Resources

Comments

1. *We, therefore, feel that a recommendation for a cultural resource inventory is unwarranted at this time.* (1)

2. *In addition all new and existing livestock facilities should be inventoried for impacts to cultural resources on ARS managed federal lands in compliance with the federal requirements.* (14)

Response

Cultural resources are known to occur within or adjacent to lands under the USSES grazing management program.

The USSES grazing program is considered an undertaking on federal lands as defined in 36 CFR 800.

Associated activities such as prescribed fires, maintenance of buildings, improvements and facilities, rehabilitation of trails and stock driveways, and other ground-disturbing activities could potentially affect cultural resources. These activities should be reviewed by the State Historic Preservation Officers for compliance with Section 106, prior to implementation.

A survey strategy and facilities management plan and schedule should be developed during the second stage of the NEPA analysis, beginning in 2009. For details, see Heritage Resources Report in the project file

Fencing

Comment

1. *Fences associated with domestic sheep grazing pose problems for antelope, mule deer and elk. Significant numbers of elk, moose, antelope and mule deer travel north and south across the Continental Divide to Idaho and Montana. For the past 4 years, GYC has worked with landowners in the Madison Valley to take down fence that inhibits wildlife migration. Removing barrier fencing, not creating new ones, serves a great opportunity for improving wildlife habitat.* (5)

Response

See: Proposed Action, maintenance and repair of existing permanent fence, pp. 11; Resolved Issues, Fencing, p. 25; Wildlife, Gray Wolf, pp. 43-47

Fish

Comment

1. *Potential aquatic resource issues for your consideration could include, but not be limited to, the following:* (9)

   - *Genetically pure and near pure westslope cutthroat trout (wct), a native Species of Concern (S1) are known to occupy Odell Creek and some of its tributaries. Pure WCT are also found in Bear, Bean, and price Creeks in the Centennial Range. The status of wct in upper Hell Roaring and Tom Creeks is unknown at this time.*

   - *Adfluvial Arctic grayling occupy and use critical spawning habitats in Red Rock, Odell, and Corral Creeks. This is one of 2 confirmed native Arctic grayling populations in the 48 contiguous states and is currently a candidate for listing under ESA. While the grayling are not known to occupy the project areas, their downstream habitats are directly affected from sediment delivery through Odell and Hell Roaring Creeks.*

- *Significant sedimentation issues have been documented in Hell Roaring, Red Rock, and Odell Creeks as well as Upper Red Rock Lake. Projects have been engaged to improve water quality and sediment delivery within those systems and a major habitat improvement project is currently in the planning stages under Nature Conservancy direction and funding.*
- *Stocked sport fisheries are currently managed in Blair, Lillian, and Odell Lakes within the project area. These lakes have the potential to produce trophy sized fish and recent management has shifted to wct plants to be more in line with native species management within the mountain range.*
- *Aquatic habitats in the Centennial Range are known to support populations of tiger salamander.*

Response

See Wildlife, Fish and Amphibians, pp. 62-63.

Grizzly Bear

Comment

1. *USSES lands in Montana are adjacent to areas of the Caribou-Targhee that are occupied by grizzly bears and therefore, grizzly bears are likely to frequent USSES lands. In order to minimize conflicts both on and off USSES lands. I recommend the following:* (13)

   - *Store all livestock feed, human food, and dog food in bear proof storage containers to prevent bears becoming habituated to these food sources.*
   - *Render dead sheep carcasses in close proximity to the Continental Divide Trail and other trails on USSES lands unavailable to bears.*
   - *Notify the Caribou-Targhee when conflicts, including trapping efforts, occur so that users of the Caribou-Targhee can be notified if necessary.*

Response

These mitigations are followed per Forest Service Agreement 07-1A-11041561-025.[15] See Continental Divide National Scenic Trail scoping issue and resolution, p. 26.

Comments

2. *ARS-USSES activities are in direct conflict with the Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (CS) as well as Grizzly Bear Management Plan for Southwestern Montana. As a federal agency within the USDA, ARS should strive to be consistent with other federal agency plans and commitments.*

   The USDA Forest Service (FS) and the U.S. Department of the Interior's Bureau of Land Management (BLM) made commitments in the CS to evaluate, monitor, and phase out existing sheep grazing activities on federal land as opportunities arise to do so. Since ARS is the operator on federal lands, USSES has the ability to discontinue sheep grazing in the action area and be consistent with grizzly bear management goals. ARS-USSES activities are squarely placed within an area that has

[15] USDA, Forest Service/Agricultural Research Service, USSES. Forest Service Agreement 07-IA-11041561-025

been identified as biologically feasible and socially acceptable as grizzly bear habitat and to accommodate the expansion and dispersal of Yellowstone area bears. The area and corridor are crucial to the species. USSES operations threaten management goals committed to by federal agencies. ARS-USSES should consider other less sensitive areas to conduct its research.

The Revised Targhee Forest Plan (RFP) identified nine sheep allotments within grizzly bear management units, at that time, and now referred to as the Primary Conservation Area. These allotments were to be phased out on an opportunity basis. Eight of these allotments have been phased out, Meyers Creek is the last of these allotments still being grazed by sheep. The RFP goes on to state that if opportunities don't arise then efforts would be made to relocate or accommodate sheep to other areas. Based upon this direction in the RFP, grazing on the Meyers Creek Allotment should be limited to that required for trailing to the ARS lands in Montana, which are not located within the Primary Conservation Area (see enclosed map). We will work cooperatively with you to determine a solution to any additional grazing capacity needs of the USSES in order to conduct it's [sic]]research mission. (12)

3. *From the mid 1980s to present two known conflicts between sheep and grizzly bears have occurred on the Meyers Creek Allotment, neither of these conflicts resulted in the mortality, trapping or relocation of a grizzly bear*. (14)

4. *The USDA Forest Service and USDI BLM made commitments in the Final Conservation Strategy for Grizzly Bears in the Greater Yellowstone Area to evaluate, monitor and phase out existing sheep grazing allotments on federal land as opportunities arose with willing permittees. As an agency of USDA, ARS should be consistent with the USDA Forest Service and other federal agencies in eliminating sheep grazing in occupied grizzly bear habitat. Since the federal government (ARS) is the operator on federal lands, in this case, the ARS, USSES has the ability to discontinue sheep grazing and eliminate this potential threat to grizzly bear survival in this critical habitat.*

   The Bureau of Land Management (BLM) thinks that the ARS, USSES should be consistent with USDA Forest Service policy and requests that the ARSIUSSES permanently cease grazing sheep in the East and West summer pastures as well as in the Humphrey pasture.

   For a federal agency such as ARS to graze sheep in these areas is in direct conflict with the Final Conservation Strategy for Grizzly Bears in the Greater Yellowstone Area.

   The continued grazing of sheep in the East, West and Humphrey Pastures is also inconsistent with the Goal 3 for the Grizzly Bear identified in the Grizzly Bear Management Plan for Southwestern Montana October 2002. (15)

5. *The USDA Forest Service and the USDI BLM made a commitment in the Final Conservation Strategy for Grizzly Bears in the Greater Yellowstone Area to evaluate, monitor and phase out existing sheep allotments as the opportunity arises with willing permittees (e.g. excerpts from pages 43 and 45 of CS are attached). As a sister federal agency in the USDA it seems that the ARS should explore your options to manage your property in a manner that is consistent with that same commitment. In this case the federal government is the lessee and has the opportunity to discontinue sheep grazing and eliminate this potential threat to grizzly bear survival in this critical habitat. Please evaluate this as an alternative*. (16)

Response

See Resolved Issues, Grizzly Bear, pp. 23-25; Proposed Action, Predator avoidance and abatement, pp. 14; Wildlife, Grizzly Bear, pp. 47-54.

Q Fever (*Coxiella burnetii*)

Comment

The following comment is found on the 1996 Interagency Visitor/Travel Map, Southwest Montana, East Half (20).

> Access to Agricultural Research Service (ARS) administered lands in Montana is across lands administered by the Targhee National Forest. For information, call the Sheep Experiment Station headquarters in Dubois, Idaho, (208) 374-5307, or the Island Park (Idaho) Ranger District office at (208) 558-7301.
>
> ARS sheep flocks carry a disease organism that can be passed to humans using the area. The Q-Fever disease can be serious for persons with heart conditions and women of childbearing age.
>
> The ARS Sheep Experiment Station has trained dogs guarding the sheep and these dogs are trained to protect the sheep from anything they perceive as a threat to the flock. They can cause harm to people or their pets.

Response

Zoonotic diseases are defined as infectious diseases that are communicable from nonhuman animals (e.g., livestock, poultry, wildlife, and pets) to humans under natural conditions. The U.S. Centers for Disease Control and Prevention lists a number of zoonotic diseases, some of which are notifiable diseases. A partial list of zoonotic diseases and a current list of notifiable diseases, including Q-fever (*Coxiella burnetii* infection), may be obtained from the U.S. Centers for Disease Control and Prevention (http://www.cdc.gov/).

At the USDA, ARS, U.S. Sheep Experiment Station, zoonotic diseases, the risk of acquiring zoonotic diseases and how to reduce the likelihood of acquiring a zoonotic disease are explained annually to employees. The transmission of many zoonotic diseases is greatest when people are attending animals before, during, and after parturition[16]. The risk of transmission during other portions of the animal-production cycle is considerably less. Thus, USDA, ARS, U.S. Sheep Experiment Station standard operating procedures to avoid the transmission of zoonotic diseases focus on the lambing period and include the provisions listed below. In addition, except for housing located on the headquarters property of the U.S. Sheep Experiment Station, the nearest residences are approximately 7.2 km (4.5 miles) from lambing areas at the U.S. Sheep Experiment Station. Only U.S. Sheep Experiment Station employees may rent housing at the U.S. Sheep Experiment Station.

- Visitors are not permitted in lambing areas during the lambing season.
- A visitor is someone who is not an ARS employee or someone who is not working at the U.S. Sheep Experiment Station under a Specific Cooperative Agreement, Memorandum of Understanding, or as a contractor.
- People without official work-related business are not permitted in lambing areas during lambing season.

[16] The act or process of giving birth

- Employees who work in lambing areas during lambing season are instructed to wear "street" clothes, including boots or shoes, from home and then change into work clothes before they enter lambing areas.
- Employees are instructed to change from work clothes to street clothes before returning home.
- A clothes washer, detergent, and dryer are provided so that employees can wash and disinfect work clothes at the U.S. Sheep Experiment Station. This and the previous items reduce the risk of disease organisms being transported to or from the U.S. Sheep Experiment Station.
- Employees working in lambing areas during lambing season must wear boots and water-proof chaps that can be washed and disinfected at the end of each work day or when they leave the lambing area and go to another work area.
- Wash stations are located in strategic areas where boots and chaps can be washed and disinfected.
- Disposable rubber gloves are provided for employees who work in lambing areas during lambing season. Employees are instructed how to use and properly dispose of the gloves.
- Employees are instructed to use protective (i.e., rubber) gloves to perform certain tasks.
- Food and beverages are not permitted in lambing areas.
- Employees are trained how to reduce the risk of oral and inhalation contamination.
- A break room, located in a building approximately 50 meters (164 feet) from the nearest lambing area, is approved for consuming food and beverages. Employees are instructed to wash and disinfect boots, chaps, and hands before entering this building.
- Lambing areas are cleaned daily during the lambing season, and buildings used to house ewes and lambs are cleaned and disinfected before the beginning and after the end of each lambing period.
- Outdoor pens are cleaned before and after the lambing period.
- After lambing season and after the areas have been cleaned and disinfected, authorized personnel may escort small groups of visitors through the lambing areas, but not until after the visitors understand that these areas are considered biohazard areas during lambing season and that zoonotic disease organisms may persist in the environment for quite some time.
- These provisions are consistent with information and suggestions from the U.S. Centers for Disease Control and Prevention and other sources, which can be found with the following URL.
- http://www.bt.cdc.gov/agent/qfever/clinicians/epidemiology.asp
- http://www.cdc.gov/ncidod/dvrd/qfever/
- http://www.cfsph.iastate.edu/Factsheets/pdfs/Q_Fever.pdf
- The following brochure was issued to help explain a zoonotic disease to employees, interns, collaborators, contractors, and visitors.

REDUCE YOUR RISK

1. Do not drink, smoke or store food in areas used for animal activities (labs, barns).

2. Wash hands frequently and clean exposed clothing as soon as practical.

3. Dispose of contaminated animal material as quickly as practical.

PERSONS WHO SHOULD AVOID CONTACT WITH INFECTED ANIMALS

1. Individuals with valvular heart disease or prosthetic heart valves.

2. Women who are pregnant.

3. Individuals who are immunodeficient or immunosuppressed.

4. Individuals with pre-existing hepatitis.

5. Infants and children under 3 years of age.

Q FEVER

INFORMATION

BULLETIN

U.S. Department of Agriculture
Agriculture Research Service

U.S. Sheep Experiment Station

HC 62 Box 2010

Dubois, Idaho 83423

(208) 374-5306

FAX: (208) 374-5582

OVERVIEW

Q fever is a disease carried by animals that can cause illness in humans. However, taking certain precautions when working with livestock can reduce your risk. The organism causing Q fever is often passed through the air so exposure is difficult to control.
People can develop a natural immunity to Q fever after exposure. Often this immunity is acquired without developing symptoms.

BACKGROUND

Q fever is a rickettsial disease that was originally described among slaughter-house workers in Australia in 1937. The disease is known to occur throughout the world. Livestock and wildlife carry the organism that causes the disease. The organism does not usually cause ill effects for the animal but can be passed to humans and cause disease.

CAUSES

Q fever is caused by the organism Coxiella burnetii. This micro-organism is carried by deer, elk, rodents, ticks, sheep, cattle and other animals. Coxiella burnetii can survive outside an animal host for a considerable length of time.

The organism can become airborne, so humans can be exposed even it they are many miles away from carrier animals. People can contract the disease after having contact with contaminated materials (dust, straw, manure, blood or placental fluids). Lambing is a time when exposure to Coxiella burnetii can be extremely high, because the organism is present in placental fluids in large quantities. Therefore, by handling newborn lambs a person's risk of contracting the disease can be increased.

Coxiella burnetii is also present in milk, therefore, under no circumstances should unpasteurized sheep, goat or cows milk be consumed. No vaccines are available to the general public in the U.S.

SYMPTOMS

The majority of Q fever cases are mild and sub-clinical (no symptoms). However, when symptoms are present, they include: fever, headache, muscle pain, joint pain (arthralgia), and dry cough (non-productive). Chest pain, abdominal pain, or jaundice may also occur. These symptoms may reappear or persist over an extended period. In more severe cases of Q fever, the person may develop hepatitis or pneumonia. When persons with pre-existing heart valve problems contact Q fever, it can aggravate their condition and worsen their endocarditis.

Incubation period is 2-4 weeks. Untreated, the illness usually lasts 1-2 weeks but it may persist longer in some cases.

Due to Q fever's mild manifestation, it is often misdiagnosed by physicians unless they are aware that you may have been exposed to Coxiella burnetii.

Coxiella burnetii seems to be part of microbial ecosystems worldwide, except perhaps in New Zealand. *Coxiella burnetii* has been isolated worldwide from ticks, domestic and wild ruminants[17], domestic and wild canids[18], cats, domestic and wild lagomorphs[19], rodents, skunks, raccoons, and birds, and *C. burnetii* seems to be enzootic[20] in domestic and wild ruminants and various wildlife species. Even though *C. burnetii* and Q fever are considered panglobal[21], the scientific literature indicates that the true incidence (i.e., clinically verifiable disease) of Q fever, and thus *C. burnetii* infection, have not been firmly established anywhere.

According to the Centers for Disease Control and Prevention and McQuiston et al. (2006)[22], there are 50 to 60 reported cases of Q fever in the United States annually, and the average annual reported incidence in the United States is 0.28 cases per one-million people. By contrast, 19,931 cases of Lyme disease were reported in the United States in 2006, or 90 cases annually per one-million people (see, http://www.textbookofbacteriology.net/Lyme.html). Between 1978 and 2004, there were seven reported cases of Q fever in Idaho and seven reported cases of Q fever in Montana (McQuiston et al., 2006). Based on the data, there is no evidence that Q fever is a significant risk to human health in Idaho and Montana.

To the best of our knowledge, the warning on recreation maps, "ARS sheep flocks carry a disease organism that can be passed to humans using the area," is not based on data describing the presence of *C. burnetii* on USDA, ARS, U.S. Sheep Experiment Station lands or in U.S. Sheep Experiment Station animals, nor was it based on the diagnosis of Q fever in USDA, ARS, U.S. Sheep Experiment Station employees or family, or on the diagnosis of Q fever in Idaho or Montana. In fact, we know of no survey data that would include any USDA, ARS, U.S. Sheep Experiment Station lands, animals, or employees.

The warning seems to have been added originally in the 1980s, although we are not able to determine the exact date. We have not been able to determine who authorized the original statement or who authorized Harvey D. Blackburn to sign the 1996 revision of the map on behalf of the USDA, Agricultural Research Service. Because little background and supporting information accompanies this warning, the warning has created the unintended impression that people who enter Agricultural Research Service lands are at a greater risk of developing Q fever than are people who do not enter Agricultural Research Service lands, even though there are no data or any evidence to support the warning or the impression that it creates. Because it is an unfounded warning, the Forest Service and Bureau of Land Management have been asked to remove it when the map is revised again (Lewis, G. 2008. Personal communication).

[17] Ruminants: Any of various hoofed, even-toed, usually horned mammals of the suborder Ruminantia, such as cattle, sheep, goats, deer, and giraffes, characteristically having a stomach divided into four compartments and chewing a cud consisting of regurgitated, partially digested food.
[18] Canid: Any of various widely distributed carnivorous mammals of the family Canidae, which includes the foxes, wolves, dogs, jackals, and coyotes
[19] Lagomorph: Any of various plant-eating mammals having fully furred feet and two pairs of upper incisors and belonging to the order Lagomorpha, which includes the rabbits, hares, and pikas.
[20] Enzootic: A disease that is constantly present in an animal community but only occurs in a small number of cases
[21] Panglobal: Prevalent throughout the world
[22] McQuiston, J. H. R. C. Holman, C. l. McCall, J. E. Childs, D. L. Swerdlow, and H. A. Thompson. 2006. National surveillance and the epidemiology of human Q fever in the United States, 1978-2004. Am. J. Trop. Med. Hyg. 75:36-40.

Recreation

Comment

1. *The Continental Divide National Scenic Trail passes through USSES lands that adjoin the Caribou-Targhee NF. Due to the importance of this trail the Caribou-Targhee and USSES have entered into Interagency Agreement No. 58-5364-6-142N, in order to coordinate trail condition and maintenance activities on the portion of the trail on USSES lands.*

   The proposed continuation of grazing and associated activities should take into account the importance of the Continental Divide Trail and negative impacts to either the trail or trail users should be mitigated or minimized. One example would be the notification of trail users about the guard dogs for the sheep and the potential risk to trail users from them. (14)

Response

These mitigations are followed per Forest Service Agreement 07-1A-11041561-025.[23] See Continental Divide National Scenic Trail scoping issue and resolution, pp. 27.

Wolf

Comment

1. *Northern Rockies gray wolves, currently listed as an endangered species, also utilize the ARS-USSES area as critical habitat and a dispersal corridor. Wolves have been killed in predator control actions in the area. Again, ARS-USSES activities threaten the ability of the species to successfully expand and disperse into and through the action area. In a July court order, Federal District Judge Donald Molloy ordered gray wolves back on the endangered species list for two primary reasons: lack of connectivity between sub-populations and unregulated killing allowed in state management plans. The ARS-USSES proposal directly impacts connectivity of the Greater Yellowstone and Central Idaho wolf populations (possibly connectivity with Northwestern Montana as well). As Judge Molloy pointed out in his well-reasoned and clear opinion, connectivity is essential for the health of the gray wolf population. It is also a specific federal recovery requirement. The ARS-USSES grazing and related activities should be immediately halted and moved elsewhere to allow the area to serve as an important corridor for both wolves and grizzly bears.* (13)

Response

See Wildlife, Gray Wolf, pp. 43-47

NEPA

Comment

1. *ARS and USSES Are Failing to Allow for Sufficient Public Participation and Involvement Regarding the NEPA Analysis for its Sheep Grazing Proposal: Due to the mailing of the August 12, 2008, proposal and September 2, 2008, deadline for submitting comments, the public has less than 20 days*

[23] USDA, Forest Service/Agricultural Research Service, USSES. Forest Service Agreement 07-IA-11041561-025

to review the proposal and submit comments, which is unprecedented for an action of this size and magnitude being analyzed within an environmental assessment.

Response

This environmental analysis is prepared under *Code of Federal Regulations, Title 7—Agriculture Chapter V--Agricultural Research Service, Department Of Agriculture Part 520--Procedures For Implementing National Environmental Policy Act* and in response to the Settlement Agreement (December, 2007) reached in the lawsuit Center For Biological Diversity, and Western Watersheds Project v. U.S. Sheep Experiment Station; U.S. Department Of Agriculture; Agricultural Research Service; and U.S. Forest Service.

1. The timeframe for this project was determined by the settlement agreement.

2. The ARS is happy to receive public input at any time and comments received outside of the scoping period have been considered.

3. The scoping period yielded more than a dozen substantive responses. As a result, there is no evidence that the public was unable to comment.

Comment

2. *ARS and USSES Improperly Predetermined the Outcome of the NEPA Analysis: Even before preparing the EA, however, ARS and USSES have pre-determined that an EIS is not required, in violation of NEPA.*

Response

USSES and the interdisciplinary team did not predetermine whether an environmental assessment or an environmental impact statement was necessary for this project. The initial analysis conducted was an environmental assessment, the purpose of which is to determine whether there are significant environmental effects from the proposed activities. As a result of that analysis it was determined that there would be no significant impacts resulting from this proposal (see Finding of No Significant Impact, pp. 3-3). Therefore, the preparation of an environmental impact statement is unnecessary.

Comment

3. *ARS and USSES Have Improperly Limited the Scope of their NEPA Analysis: ARS and USSES acknowledge that throughout the year, the sheep grazed on USSES lands are also grazed on BLM, Forest Service, and Department of Energy Lands.*

Response

See response to #1 above. Effects of grazing USSES sheep on Forest service and Bureau of Land Management lands have been covered in the development of agreements and memoranda of understanding with those agencies (pp.19-21). Therefore, the direct effects of grazing and associated activities by USSES sheep are not analyzed here. The indirect effects of the proposed activities on these lands are analyzed as appropriate in this project (see individual specialist reports in the project file).

Comment

4. *ARS and USSES Must Adequately Analyze and Disclose the Potential Adverse Environmental Impacts to All Affected Resources: In preparing the EA for the proposed action, ARS and USSES must*

sufficiently analyze and disclose the environmental impacts of all sheep grazing and related activities on all affected resources within the action area.

Response

In addition to the information presented in this document and appendices, see individual specialist reports in the project file.

Comment

5. *ARS and USSES Must Adequately Consider Cumulative Impacts*

Response

Cumulative effects have been analyzed for all resources. See information presented in this document and appendices. See individual specialist reports in the project file

Comment

6. *ARS and USSES Must Adequately Consider the CEQ Significance Factors*

Response

See the Finding of No Significant Impact (pp. 3-3).

Comment

7. *The EA Must Provide the Public With Objective, Hard Data and Analysis*

Response

In addition to the information presented in this document and appendices, see individual specialist reports in the project file.

Comment

8. *ARS and USSES Must Consult with the U.S. Fish and Wildlife Service Pursuant to Section 7 of the Endangered Species Act.*

Response

See Consultation, pp. 22.

Conditional Support

Comment

1. *The Wildlife Conservation Society could potentially support sheep grazing activities by the ARS on USSES and USFS lands in the Centennials that:* (4)

   - *Enhance and protect functioning large carnivore populations, migration routes, linkage zones and landscape connectivity for large carnivore populations in the northern Rockies; Establishes a comprehensive research program with multiple projects to move towards making sheep grazing and large carnivores more commensurate with one another on the landscape (e.g. non-lethal*

deterrent research projects, research on best animal husbandry practices for maintaining large carnivores on the ground in regions containing sheep grazing, etc)

- *Eliminate the lethal removal of carnivores except in very isolated and well-defined cases on USSES land;*
- *Where the USFS and USSES sets quantifiable thresholds for impacts to wildlife.*

Response

These concerns have been addressed throughout the document: Issues, pp. 22-27; Proposed Action, pp. 3-15; Alternatives Eliminated from Detailed Study, pp. 28-30; Wildlife, pp. 37-63; and this appendix.

Support

The following comments were in support of the proposed action.

1. *Collection of environmental research data, under the umbrella of the enumerated activities, can be valuable for public awareness. However, the data may be more important to livestock producers who depend on these grazing lands for their livelihood. Demonstrations, such as those described in this proposal, can provide environmental guidelines for survival as livestock producers.*

   Specifically, I support the research efforts for predator control, prescribed burning, and integrated pest and weed control. This research can have much wider implications than just to geographic location of the U.S. Sheep Station. (7)

2. *The Station manages their summer flocks on the Centennial Mountains which is just west of Yellowstone Park. This has presented the opportunity to study non lethal predator management and is very valuable for other producers that have predator problems, either in pastures or on the range.*

   This resource is a tall plant forb community and very unique. It is some of the best sheep range in the world. The Station in cooperation with the University of Idaho has done comprehensive ecological studies to understand the relationship between grazing and the health of the resource. This information is priceless. The same can be said of their sagebrush rangelands and their management for health and diversity. There is no better sage-grouse habitat in the State of Idaho and this land has been managed over 80 years for diversity, sustainability and production. (9)

3. *Research to develop integrated systems that increase sheep production efficiency and concurrently improve sustainability of grazing-land ecosystems is vitally important to producers and the general public. Scientists at the U.S. Sheep Experiment Station have provided objective information to address these complex issues. Experimental results and advice are disseminated to the private sector to more effectively and responsibly manage animal and natural resources.* (11)

4. *The sheep station is a unique system that encompasses a variety of rangeland types from desert sagebrush winter range to sagebrush steppe and high altitude forest park. This system is typical of ranching in the intermountain West. Conducting research in this rangeland ecosystem is vital to providing information for the sheep industry and land management agencies involved in decision making. Past research has provided valuable information for improving the production efficiency of sheep operations while sustaining the health of rangeland ecosystems.*

The Sheep Station has a long history in the area providing valuable resources for ranchers and land managers. In Montana the Targhee and Columbia breeds of sheep are prominent and numerous Scientists have been involved from time to time at the station. Other tools such as textbooks and research documents provide valuable tools to the industry and the support that works with it. It is critical that the station continue in it's entirety for the betterment of the ranching industry and the continuation of healthy ecosystems in the region. (12)

5. *The work that is being done at the USSES is a great benefit to the sheep industry in Idaho and we support the proposed Dubois Interim Grazing Project and the continued grazing and associated activities that have been occurring in conjunction with ARS research at the USSES.* (18)

6. *In review of the proposed action, all activities listed are appropriate and necessary for proper care of the animals and the agricultural production of the land. The grazing and movement of the sheep is fully appropriate as proposed. Additionally, the fence, trail and water maintenance actions are supported in our view and necessary for the sheep and conduct of the research. We recognize all the practices from herding and camp tending, to trucking and watering of the sheep, fencing and trail repair, pest management and fire control to the lot feeding proposed as necessary and appropriate to the operation of the station and health and care of the sheep.* (3)

7. *Preserving the movement of grazing sheep following long-standing traditional patterns in the Dubois, ID vicinity will aid and enhance future collaborative research projects between the ARS-USSES and the ARS Animal Disease Research Unit (ADRU). ARS-USSES currently manages over 3000 head of mature ewes and can continue to manage these numbers of ewes and their lambs due to the movement of grazing sheep in the surrounding vicinity. Large populations with many breeds are statistically necessary to fully evaluate persistent disease phenotypes, pathogen and/or host genotypes, and to determine whether these phenotypes or genotypes compromise production traits. Our past and present research collaborations with ARS-USSES have contributed significantly in the areas of quantifying a variety of specific pathogens, characterizing host and pathogen genotypes, and understanding mechanisms and transmission of persistent disease in large populations of multiple breeds (see list of peer-reviewed literature from the ARS-ADRU and ARS-USSES collaboration below). The authors in bold letters represent collaborating scientists at USSES. Without high numbers of sheep, these research projects would not have been completed with statistical power.*

   One of our current research projects is to evaluate whether increased host immunogenetic diversity associates with decreased ovine progressive pneumonia virus (OPPV) levels and decreased OPPV strain diversity amongst the different sheep breeds. In July 2008, this temporal research study was started whereby 1358 breeding ewes (535 Polypay, 462 Rambouillet, 261 Columbia, and 95 Targhee) were bled, and this study will continue for 5 more years, bleeding once or twice a year. Without these numbers of sheep, our research results would not be statistically significant.

   Please consider the long-term ARS research collaborative value of preserving long-standing traditional patterns of sheep grazing in the Dubois, ID vicinity. (4)

Appendix 2: USSES Integrated Invasive Plant /Weed Control

For range weed infestations: ARS personnel report potential exotic weed infestations to the operation supervisor. Range and(or) animal scientists inspect the site, and if the presence of exotic weeds are confirmed, the scientist documents the location (GPS), weed species, and size/density of infestation; prescribes appropriate grazing strategies to mitigate the weed presence; and schedules seasonal and annual monitoring measures (on-ground sample and/or aerial imagery).

For roadside, working facility, dry-lot and corral, and small pasture weed infestations: ARS personnel report potential exotic weed infestations to the operation supervisor. The technician assigned to noxious weed management investigates the site. If presence of exotic weeds is confirmed, the technician documents the location (traditional name and/or GPS), weed species, and size/density of infestation, and treats the weed(s) with appropriate herbicide(s). The technician records this information in the "Pesticide Records: Noxious Weed Control" log.

Herbicide Hazard Quotients and Effects to Human Health

An inventory of herbicides is maintained. Herbicides are stored according to the manufacture label, which is displayed in the storage room. All human health and environmental related issues are managed according to the most current MSDS, which is displayed in the storage room.

CHEMICAL HYGIENE PLAN

Requirements for use of Caustics, Corrosive, Flammable, Pesticide Materials

INTRODUCTION

The intent of the Dubois, Idaho, Research Unit Chemical Hygiene Plan (CHP) is to:

1. Protect laboratory employees from health hazards associated with the use of various chemicals found in the laboratory.

2. Aid in assuring that our laboratory employees are not exposed to substances in excess of the permissible exposure limits as defined by OSHA in 29 CFR 1910 subpart Z.

This plan is part of the Dubois, Idaho ARS Safety Manual which is readily available to all employees and it is their responsibility to be aware of its contents.

The location research leaders are to immediately notify their chemical hygiene officer if there are any changes in procedures or chemicals used within their employees workplace. It is then the responsibility of the chemical hygiene officers and the location safety committee to make corrections to the CHP.

The name of the Chemical Hygiene Officer for each research unit can be found in the appropriate Appendix in this manual.

Standard operating procedures (SOPs) address the safety concerns of the research leader in charge of that work area. A compilation of workplace SOPs can be found in appropriate appendix of this manual. Work specific SOP may be found at the respective worksite.

The following information covers the general chemical hygiene policy for ARS Dubois, Idaho.

Training sessions on laboratory safety are held at designated intervals. Annual safety and occupational health training is also provided by the ARS Northern Cluster Environmental Protection Specialist.

All employees will be required to read and become familiar with safety guidelines and procedures established in this manual (each employee is required to sign a document stating that they have read and understand those requirements specified within the safety manual). This document is kept on file in the Main ARS Office.

Reading of MSDS

As there is no standard procedure for writing material data sheets the employee may find several different formats available. It is imperative that all employees familiarize themselves with the MSDSs used in their laboratory. For additional training and information contact the Chemical Hygiene Officer, or consult with the NCEPS.

Labeling/Secondary Labels

All chemical shipments will be inspected by the person who submitted the requisition for the chemical purchase to determine that all containers in the shipment are properly labeled. Any container that is not properly labeled as required will be refused and returned to the supplier by the Administrative Officer.

All containers received in chemical shipments that are properly labeled will not have the label removed or defaced.

Existing containers of hazardous chemicals, excluding containers present for use in laboratory work areas or stored for use in laboratory operations, that are not properly labeled will have an in-house label prepared and affixed to the container by the Chemist.

Secondary labeling must contain:

The name of the product
The hazard of the product, such as, irritant, respiratory toxicant
A source to contact for further information about the product
Secondary labeling is required on all containers holding products which will not be completely used by the end of the work day.

LOCATION

Action must begin immediately following an accident. Therefore, it is important that everyone at the location be familiar with hazards that may accompany their work and with the emergency plan developed as a safeguard in case of an accident. Supervisors are responsible for notifying employees accordingly.

Additional personnel should be designated in each research unit to accompany medics and/or paramedic and patient (s) being transported to the first aid station/emergency room.

LABORATORY

Each laboratory at this location will develop a contingency plan that will cover emergencies that may arise from use of hazardous materials. This information can be found in the appropriate Appendix in this manual.

Each laboratory supervisor is responsible for the safety of all individuals present in their laboratory; employees and visitors and building service personnel. When work is hazardous, employees must be well trained in carrying out the emergency plan, visitors must be assured that the laboratory is safe for them to enter and do their work. If the laboratory is not safe at the end of each day, signs must be posted prohibiting entry. If needed protective equipment will be provided i.e. safety goggles etc..

PROCEDURE

Because a detailed course of action cannot be developed that is applicable in all situations, the Safety Manual and the Chemical Hygiene Plan are general and provide a foundation for each laboratory to develop specific operating procedures (**SOP**). Specific SOP are found in individual laboratories and by Laboratory room number in the Appendix of this manual. Each individual is responsible for being familiar with the location of the SOP, MSDS, and hazards in any given lab.

If assistance or additional information is needed, the project leader/scientist or members of the safety Committee may be contacted.

If accidents occur that may contaminate an area with dangerous chemicals or infectious agents, it is important that the following be done:

1. Get everyone out of the affected area; do not reenter until the extent of the hazard is determined
2. Obtain immediate help.
3. Determine the necessity for treating persons exposed to the dangerous agents.

a. Everyone must KEEP OUT of the affected area until there is no doubt concerning the safety to reenter. The employee must immediately notify the supervisor of the problem.

b. If infectious agents are involved, at least one hour should be allowed for aerosols to be carried away and heavier particles to settle.

c. Chemical spills may evaporate and be swept away rapidly, or remain for a long time. Probability of fire or explosion is high when flammable solvents are spilled and ignition sources are present.

4. In addition to the usual first aid/emergency measures:

a. Post warning signs as needed.

b. Limit the damage due to chemicals or to terminate exposure to pathogenic organisms.

c. Decontaminate exposed personnel.

d. Restrict contamination to the smallest area.

5. Supervisors are responsible for referring persons exposed to a pathogen (s) to a medical facility, or to another appropriate medical authority. The immediate supervisor of the person being treated is responsible for submitting appropriate forms and for ensuring that all information regarding the specific agent or isolate involved in the exposure is made available to the physician when the patient is admitted to the medical facility.

6. Decontaminate the affected area. This may be carried out by the laboratory staff, or it may require special equipment and personnel. The laboratory supervisor is responsible for requesting needed assistance. The supervisor must request assistance if there is any doubt regarding the extent of the hazard or if there is any reason to believe that those persons doing the decontamination and clean-up will be placed in a hazardous situation.

Standard Operating Procedures:

The Standard Operating Procedures (SOP) for each work area are found in the appropriate Appendix of this manual. A compilation of all SOP for this location can be found in the Main ARS Office.

Requirements for use of Caustics, Corrosives, Flammables

Transportation

All caustic, corrosive (strong acids and bases), or flammable chemicals are to be stored and transported in suitable, approved carrying devices. When transporting caustic or corrosive chemicals by cart, all material must be placed in approved carrying devices; furthermore, all carts used to transport these materials must have sides high enough to retain the containers and wheels large enough to prevent the carts from being caught in cracks and crevices.

Storage

The following items will be stored in approved solvent storage cabinets:

1. All containers of flammable solvents larger than half gallon.

2. All flammable solvent supplies, when cumulative amounts greater than two gallons are kept in one laboratory room.

3. Working surfaces of hoods are not to be used as storage areas.

4. Long term storage (2 weeks or longer) is not allowed in the laboratory. If it is necessary to store large amounts of solvents which are not frequently used, it must be done in the chemical storage room.

5. All chemicals (reagents, solvents, acids, bases, pesticides, etc.) are to show a receipt date.

6. A chemical-spill clean-up kit is available in the chemical storage room and is to be used where there is spillage of combustible chemicals, volatile liquids, mercury globules, acids, and bases.

7. Requirements for use of Carcinogens, Mutagens and Teratogens

    a. Policy

        Users of carcinogens/mutagens/teratogens, are referred to the ARS Safety Manual 230.0. This document states policy, authority, and responsibilities for use of potentially carcinogenic chemical agents which are too numerous to list.

8. Each laboratory identifies and compiles a list of all highly toxic and hazardous compounds in their possession. These compounds are appropriately labeled and in suitable containers. A running inventory of compounds and quantities is kept at all times.

9. Removal and transport of any compound within the research facilities is done by placing glass vials or bottles in unbreakable containers. Under no circumstances are individuals to transport highly hazardous chemicals in glass containers only. Distribution of chemicals from one laboratory to personnel of another laboratory is to be made only to qualified, responsible personnel and these distributors must be noted on the inventory.

10. **Knowledge of safety precautions, medical treatment and/or literature will be available and distributed to all personnel who are or who will be using the toxic or hazardous chemicals in a research laboratory**. This will assure that correct and immediate medial treatment of individuals in emergency situations is possible. This also dictates that individuals working with toxic compounds inform their immediate supervisor or some other predesignated individual prior to the obtainment and/or use of toxic substances in the laboratory. This guideline becomes a mandate with those toxic compounds not covered in the current research protocols. **Investigators must review the appropriate SOP and MSDS prior to using all chemicals.**

11. Before work is begun on toxic, potentially toxic, or hazardous materials, clean-up and disposal procedures will be defined in case of spills or contamination. This will include designated trained personnel, protective clothing, and disposal systems for contaminated materials.

12. In the event a spill should occur, immediate notification of proper personnel is required by the supervisor in the area. Clean up is to be initiated by authorized persons. Analytical monitoring of spills should be implemented to assure that clean up procedures have reduced contaminants to safe levels.

Use and care of fume hoods and other laboratory equipment:

1. Fume hoods will be inspected annually by the ARS Northern Cluster Environmental Protection Specialist.

2. Research staff is required to maintain other laboratory equipment functioning properly and safely as determined in the SOP or manufactures operation manual.

Medical Surveillance:

1. By law individuals working around or with certain chemicals must be placed in a medical surveillance program. This program consists of a physical exam performed by a qualified physician (The qualification may vary with the type of chemical to which an individual is exposed; i.e. a "B" reader is required to interpret chest X-rays of Asbestos workers.)

    a. A volunteer program has been provided by this location for all qualified ARS employees.

    b. Qualification of an employee is determined by an evaluation of his or her work area by their supervisor, the location coordinator and the Northern Cluster Environmental Protection Specialist.

2. A guide to medical surveillance is available from the ARS Northern Cluster Environmental Protection Specialist.

3. Arrangements for a physical exam can be made through the location Administrative Office.

Workplace Monitoring

1. Industrial Hygiene/Environmental Health monitoring is provided by the ARS Northern Cluster Environmental Protection Specialist.

    a. Monitoring is done:

        i. When requested by the location. Any employee may request an evaluation of their workplace. The type of monitoring and procedure to use will be determined in conference with the ARS Northern Cluster Environmental Protection Specialist.

        ii. As requested by the Environmental Protection Specialist.

        iii. When requested by the Area Office or Headquarters.

2. Records of all safety inspections and workplace monitoring activities can be found in this facilities Safety Manual located in the Main ARS Office.

    b. Identification of chemical hazards

        iv. Labeling

            a. Primary Labeling: All chemicals entering this facility are examined for proper labeling. The label must contain the following information:

                The Name of the Product
                The Name of the Manufacture
                The Known Hazards of the Product

An Emergency Phone Number, usually of the manufacture where further information can be obtained about the chemical (This phone must be answered 24 hours a day.).

b. Secondary Labeling: All chemicals that are removed from their original package and placed in another container must have the same labeling information as required on the primary labels.

c. All non-labeled chemicals shall be chemically classified and appropriately destroyed/discarded.

Appendix 3: Statement of Work – Prescribed Burns – Dubois, Idaho

The USDA/Agricultural Research Service (ARS), U. S. Sheep Experiment Station has a need to contract prescribed burns for research purposes at the Headquarters Location, 4 miles north of Dubois, Idaho, at Exit 172 of Interstate 15.

Following is a general description of existing conditions (see Maps 1 and 2):

- Approximately 503 acres will be burned in a sagebrush steppe study area located within the boundaries of the USDA/ARS lands during the fall of 2008 and spring of 2009 (see attached Map 1). The area is dominated by mountain big sagebrush, bluebunch wheatgrass, and Sandberg bluegrass. The land elevation is from 5,900 to 6,040 feet and average annual precipitation is 18 inches per year. Soils are deep rocky loams and rocky sandy clay loams on 0 to 12 percent slopes. Basalt rock outcrops are frequent. The climate is semiarid.

- An existing graded dirt road (12 ft wide) surrounds the 726 acre study area (see attached Map 2). Additional dozed breaks, separating burn units, are within the study boundary. Nine experimental areas exist within the study boundary: 3 fall burn areas, 3 spring burn areas, and 3 unburned areas (see attached Maps 1 and 2).

- Following is a general description of the work to be performed (see Maps 1 and 2):

- Containment black lines (29 acres): Before burning the experimental areas, backfire will need to be ignited to establish a burned out line (black line) between graded breaks and existing roads along the North and East boundaries of the study area to inhibit fire transfer out of study area (see Map 2).

- Fall burns (248 acres): The goal is to burn greater than 95 percent of the area within each burn unit. The Contractor will ignite each burn unit separately. For burn units with a north or east boundary not adjacent to the containment black line, the Contractor will use strip headfire to establish a black line approximately 200 feet wide inside of the dozed break for each of the boundaries not adjacent to a black line. The Contractor will use a wetline to keep the fire from backing more than 200 feet inside of the dozed line. After a burn unit's black lines are established, the Contractor will headfire the remaining area in each burn unit.

- Spring burns (226 acres): The goal is to burn greater than 95 percent of the area within each burn unit. The Contractor will ignite each burn unit separately. For burn units with a north or east boundary not adjacent to the containment black line, the Contractor will use strip headfire to establish a black line approximately 200 feet wide inside of the dozed break for each of the boundaries not adjacent to a black line. The Contractor will use a wetline to keep the fire from backing more than 200 feet inside of the dozed line. After a burn unit's black lines are established, the Contractor will headfire the remaining area in each burn unit.

Proposed time frame of the fall burns: September 8 to October 10, 2008. Proposed time frame of the spring burns: March 23 to April 24, 2009. If weather permits, the fall burns should be completed within five (5) consecutive days, preferably Monday through Friday. Likewise, if weather permits, the spring burns should be completed within five (5) consecutive days, preferably Monday through Friday. Contract is somewhat flexible due to weather conditions around the time of the burns. The spring burn in particular, as it must be conducted after the snow has melted but before the plants become too green to burn.

Contractor shall prepare a Burn Plan that fully describes all aspects of the prescribed burning activity and submit to ARS personnel for review and signature, at least one week before the proposed burn date. The Contractor and the ARS representative shall review the plan to ensure validity of plan, adequacy of assigned resources, and timely completion of work. The Burn Plan should be consistent with USDA-Forest Service standards.

Contractor will be responsible for verifying weather conditions for optimum burning activity and assuring that the fire is controlled to ensure protection of areas not designated to be burned. Contractor is responsible for relocation of manpower and equipment to facilitate safe and controlled burning of described areas. Contractor is responsible for recognizing the need for and making such relocations, dependent upon on-site weather and fire conditions. Contractor is responsible for extinguishing any fire outside the fire line of the study area or ARS boundary (slop-overs); such incidence must be promptly reported to the ARS supervisor. Contractor will be responsible and liable for all costs in the event the fire becomes uncontrolled and burns private ground or crosses to other state or federal property.

Contractor will be responsible for patrolling the burned areas which includes checking previously burned units for visible smokes, hot-spots, or slop-overs and taking mop-up actions as described in the approved Burn Plan. Patrolling and mop-up shall begin immediately after completion of ignition on any portion or whole of each designated burn. The patrolling activity must ensure all burning material is controlled that threatens: 1) achievement of mop-up objectives or the mop-up standards outlined in the Burn Plan; and 2) fire escape outside the study area and ARS boundaries and (or) re-burn within the study area boundary. Contractor must notify the ARS, within 30 minutes after discovery, of any slop-overs or hot-spots that are not contained with patrol resources and continue to take action to contain or control the fire.

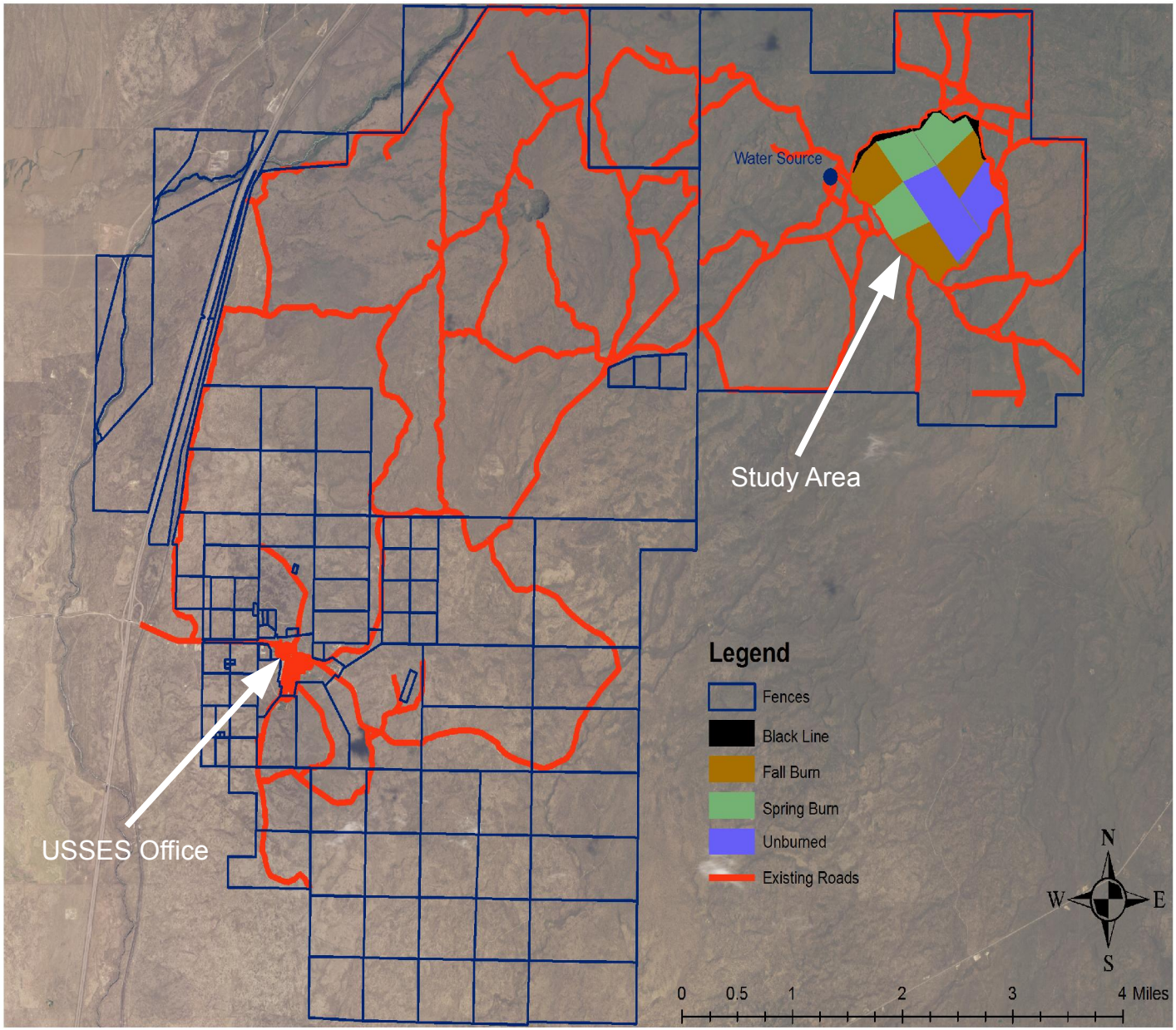
Contractor will provide all labor, supervision, transportation supplies, materials, and equipment necessary to conduct the burn during the contract period. Contractor must provide proof of liability insurance before execution of project.

A Site Conference will be conducted in August so that potential contractors can review the existing site conditions.

Map 17
2008 Burn Plan
Overview

Location
- USSES Headquarters
  - From Dubois, ID: 4 miles N on Interstate 15, then 1 mile East of Exit 172

Burn Site description
- Area
  - Total = 726 acres
  - Burned = 503 acres
    - Black lines = 29 acres
    - Fall = 248 acres
    - Spring = 226 acres
  - Unburned = 223 acres
- Estimated fuel = 1.5 ton/acre
- Vegetation (dominant)
  - Mountain big sagebrush
  - Bluebunch wheatgrass
  - Sandberg bluegrass
- Grazing history
  - Historical light spring/fall sheep grazing
  - Fall cattle in 2007
  - None in 2008
- Historical direction of burn NNE



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