DRAFT U. S. Sheep Experiment Station Grazing and Associated Activities Project 2009 Biological Assessment and Wildlife Report[1]

Dubois, Idaho

November 19, 2009

Biological Assessment and Wildlife Report Completed by:

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[1] Meets the standards for a Biological Assessment (50 CFR 402.12(f)).

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Introduction

The purpose of this biological assessment is to analyze and determine the likely effects of the alternatives on federally listed species (endangered, threatened, and proposed).

This Biological Assessment (BA) conforms to legal requirements set forth under section 7 of the Endangered Species Act (ESA) (19 U.S.C. 1536 (c), 50 CFR 402.12 (f) and 402.14). Section 7(a) (1) of the ESA requires federal agencies to use their authorities to further the conservation of listed species. Section 7(a) (2) requires that federal agencies ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of federally-listed species, or destroy or adversely modify designated critical habitat.

Under the ESA, a Biological Assessment (BA) must be prepared for federal actions that are "major construction activities" to evaluate the potential effects of the proposal on listed or proposed species. The contents of the BA are at the discretion of the federal agency, and will depend on the nature of the federal action (50 CFR 402.12(f)).

Description of the Project Proposal (Proposed Action, Alternative 1)

The Agricultural Research Services (ARS) United States Sheep Experiment Station (USSES) proposes to continue sheep grazing and associated activities that have been historically grazed (approximately 86 years) in conjunction with ARS USSES research. Research efforts have been focused on developing integrated methods for increasing production efficiency of sheep while simultaneously improving the sustainability of rangeland ecosystems at the USSES. Maps of the affected lands are included in Appendix A. Detailed descriptions of the individual activities are included in the environmental assessment.

Operations

The USSES currently has approximately 3,000 mature sheep, plus attendant young sheep of various ages. Including mature ewes and ewe lambs, lambing rates are approximately 170 percent, and weaning rates are approximately 145 percent. 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. Sheep obtain most of their feed through grazing. Sheep numbers are kept below range carrying capacity to maintain favorable range conditions.

Operations include traditional and on-going activities associated with sheep grazing research. In addition to ARS lands, a number of lands under ownership by other federal agencies are used for sheep research and grazing including National Forest's, Snakey – Kelly, East Beaver, and Meyers Creek Allotments: Bureau of Land Management's Bernice Allotment, and Department of Energy's Mud Lake Feedlot. When not being grazed, the sheep are maintained at the Mud Lake feedlot facility and in the feedlot facilities at USSES headquarters. 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 coproducts) are used to formulate balanced diets to feed the sheep when they are in the Mud Lake feedlot.

Sheep Grazing

Sheep graze across the landscape on a seasonal basis. Table 1 - Proposed action general sheep movement schedule displays the approximate grazing locations utilized by sheep throughout a typical season. Table 2 - Proposed action: Annual AUMs utilized per property shows the percent of

vegetation utilized on average. Utilization calculations use the best available estimates of plant productivity and demonstrate the expected distribution of AUM utilization (sheep only) for the past 10 years, present, and future use.

Table 1 - Proposed action general sheep movement schedule

Dates	Activity (Grazing dates are approximate depending on range readiness)	Agricultural Research Service lands
Mid-Late January - Late April to Early May	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
	3,300 sheep	
Late April to Early May	Sheep are turned out onto USSES headquarters lands in Idaho	Yes
	3,300 sheep	
Late April to Early May - Late June	Grazing on USSES headquarters lands in Idaho – 3,300 sheep	Yes
	3,300 sheep	
Early June - Early Sept	2000 sheep are moved from USSES headquarters lands in Idaho to Agricultural Research Service lands at the Henninger Ranch property in Idaho (this move is a transition between the spring and summer feeding grounds)	Yes
	2,000 sheep [a]	
	650 sheep are moved from USSES headquarters lands in Idaho to Agricultural Research Service lands at the Humphrey Ranch property in Idaho (this move is a transition between the spring and summer feeding grounds)	
	250- ewes w/lambs and 400 rams	
Early July to Early Sept	650 sheep are moved from USSES headquarters lands in Idaho to East Beaver Forest Service allotment	
Late June – Early July	2000 sheep moved to/graze on Henninger	Yes
Early July - Early Sept	One group of sheep herded across the Forest Service Meyers Creek allotment to summer grazing on Tom's Creek, Agricultural Research Service lands in Montana -	Yes / No
	600 sheep to Meyers and E. Summer 2 out of three years	
	Another group of sheep herded from the Henninger Ranch to summer grazing in the Odell Creek and Big Mountain areas of Agricultural Research Service lands in Montana. Each year two of the three following scenarios are followed: 1) One group of sheep herded across Forest Service Meyers Creek Allotment to summer graze in Toms Creek, Agricultural Research Service lands in Montana. 2) Another group of sheep herded from Henninger Ranch to summer graze in Odell Creek area. 3) A group of sheep herded from Henninger Ranch are summer grazed in Big Mountain area of the West Summer Range. -	
	1,400 sheep either at Odell or Big Mt, 2 out of three years, third year 2,000 sheep to Odell and W Summer; 0 sheep to Meyers and E Summer	
	650 Sheep are moved from HEADQUARTERS to East Beaver	
Early Sept – Mid Sept	2000 sheep from E and W Summer Range/Meyers move to Henninger	
Mid Sept – Mid Oct	2000 sheep move from Henninger to Headquarters	
	650 sheep from E. Beaver; 250 from Humphrey, (400 rams remain at Humphrey) move to Headquarters	
Mid Sept	2000 sheep from Henninger moved to Headquarters	
Mid Oct - Late Oct	400 rams moved from Humphrey to Headquarters	
Mid-October - Mid Nov	3300 Sheep are maintained at the Mud Lake feedlot facility leased from DOE (this is when the ewes are mated)	
Mid Nov	210 sheep are moved from Mud Lake to Snakey and Kelly allotments. 400 Rams and 800 ewe lambs are retained at Mud Lake. [e]	No
Early November - Mid-Jan (based on allotment dates and or	2100 Sheep graze on Forest Service allotments	No
	1100 sheep graze on Snakey [b]	

Dates	Activity (Grazing dates are approximate depending on range readiness)	Agricultural Research Service lands
weather conditions)	1000 sheep graze on Kelly [c]	
Late Nov - Early February (based on allotment dates and weather conditions)	2100 Sheep are moved from Snakey and Kelly allotments to Bernice to graze on Bureau of Land Management allotment [d]	No
Late Nov - Early February -	2100 sheep graze on Bernice allotment	No
Late Jan – Early Feb [f]	2100 sheep are moved to Mud Lake from Bernice	No

Table 2 - Proposed action: Annual AUMs utilized per property

Properties	AUM [a] Available	AUM [a] Utilized	Utilization Percent	Approximate [b] Grazing Dates
Agricultural Research Service (ARS)	**48,667**	**3,311**	**6.8 %**	
Headquarters	28,353	1,598	5.6 %	April 23 – June 25; September 1 – November 1
Humphrey	4,476	603	13.5 %	June 1 – October 20
Henninger	1,914	455	23.8 %	June 25 – July 9; August 31 – September 15
East Summer (Tom's Creek)	4,043	155	3.8 %	July 23 – August 31
West Summer (Odell Creek/ Big Mountain)	9,881	500	5.1 %	July 9 – August 31
Leased (DOE, USDA- Forest Service, DOI-Bureau of Land Management)	**26,087**	**1,516**	**5.8 %**	
Mud Lake	560	160	28.6 %	April 1 – June 1
Snakey-Kelly	1,756	421	24.0 %	November 8 – December 15
East Beaver	17,877	213	1.2 %	July 3 – September 1
Meyers Creek	3,076	71	2.3 %	July 5 – July 23
Bernice	2,808	650	23.2 %	December 15 – February 5

Forage used by sheep grazing is well below total available forage. Surveys indicate summer range forage use is very low, averaging 4.5 percent, with 95.5 percent available for elk, deer, moose and other wildlife food and cover. Unused forage provides soil and water protection.

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 Ranch, and to Forest Service and Bureau of Land Management allotments.

Table 3 - The number of sheep trucked in and out each year for each range area and allotment

Property	Sheep
Humphrey	300 ewes
Winter Range (FS & BLM Allotments)	850 ewes (± 100 depending on year)
Henninger	200 rams
Mud Lake (DOE)	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.

Sheep are trailed along existing roads to move sheep from Headquarters and Henninger properties to other grazing areas. 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.

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 fewer sheep are grazed. There are 80 watering sites at the headquarters. 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 thus have crested wheatgrass cover surrounded by sagebrush. Henninger and Humphrey pastures have surface water available for watering sheep, while summer pastures have surface water and natural springs available for sheep and horses with several small developed springs on the Big Mountain pasture.

Camp Tending

Herder camps on Headquarters, Humphrey and Henninger are equipped with a 12-foot long by 7-foot wide, four-wheel living quarters trailer (Figure 1) and a tow-behind camp commissary to transport dog food, oats, saddles, and other gear. 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 small or is a negligible percent of the total pasture area.

Figure 1. Camp herder trailer (sw 05/08)

Camps on East and West Summer Pastures (Tom's, Odell, and Big Mountain) 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 7 shows the number of camps in each summer pasture and season used.

Table 4 - 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	
East Summer Range	Tom's Creek	6	

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.

An eight foot high coyote proof fence is maintained at Headquarters around, and subdividing, section 2, T10N, R36E. The eight-foot-high fence was constructed circa 1976 for coyote-sheep interaction research; the research project ended circa 1987, and the fence is maintained to provide a safe location for certain ewe-lamb studies.

A 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. All of the corral fencing on Odell pasture is let-down type, which allows the fence to be dropped down to ground level each season after grazing operations are complete.

Exclosures at Headquarters are sheep proof, 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 feet 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.

Eleven miles of existing fence is planned for replacement on various properties over the next five years.

Maintenance and repair of existing roads and fire breaks

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.

The firebreak around the headquarters area is maintained annually with a motor grader to provide a mineral soil break about 20 feet wide. Firebreaks for prescribed fire units are constructed with a dozer and motor grader in a similar manner. However, they are not maintained after initial use and are left to revegetate naturally with native species. Windrowed shrubs, grass, litter, and top soil are pulled back and spread over the firebreak with a motor grader.

Prescribed Burning

To conduct research on forage production, delayed grazing strategies and to achieve secondary benefits to sage-grouse and other wildlife species, USSES proposes to burn Headquarters pasture areas on a rotation of 30 years. An 11,803 acre landscape area has been identified for future burn

opportunities, with an average of 400 acres per year, and a total of 2000 acres in the next five years (see Appendix C. Fire History Maps). Individual burn plans would be prepared to include specific location and design of burn units in order to meet research objectives. It is expected that many burn units would not reach complete combustion, thereby leaving unburned areas within a given burn unit perimeter.

Seeding

The following seeding activities are proposed for the Headquarters and Humphrey properties within the next five years:

- Revegetate a gravel pit in Pasture 4U/1U - 2011 - Entire area (~52 acres) will be seeded to a mix of antelope bitterbrush (Purshia tridentata), forage kochia (Kochia prostrata (L.) Schrad), and crested wheatgrass (Agropyron cristatum).
- Revegetation after fire in pastures 6, 7, and 8 - 2014 - A portion of the burned area (~120 acres) will be seed to different varieties of forage kochia (Kochia prostrata (L.) Schrad).
- Various forage kochia varieties are planned for planting on 240 acres in 2014.
- Eight (8) acres are planned for seeding at Humphrey in 2010 and nine acres are planned for 2011.

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.

Predator Avoidance and Abatement

Records indicate that conflicts between large predators (bears, wolves, mountain lions) and sheep grazing have not been a substantial or recurring problem on Agricultural Research Service lands, even though those species have inhabited Agricultural Research Service lands for a number of years. It can be expected that a limited number of encounters with carnivores will continue to occur. The primary methods of limiting encounters with predators include;

- Avoidance over a large-sized land base grazed with relatively few livestock;
- The presence of full time sheep herders, guard dogs, and herd dogs; and
- The removal of associated trash and/or carcasses that might attract predators.

To date, these practices have proven effective in keeping the number of conflicts with large carnivores to a minimum. When encounters or conflicts do occur, they are addressed differently depending on the species present, and the level of threat to the livestock or herder. Most encounters end without lethal removal.

For black bears, herders are instructed to harass (by shooting into the air) a depredating black bear. If problems persist, the appropriate State wildlife service is contacted to investigate and follow up with control actions if warranted.

For gray wolves, (currently de-listed), herders are instructed to harass gray wolves if observed in the vicinity of livestock. If research livestock are being maimed or killed, then shooting a depredating

wolf is permitted. If the wolves become listed (currently under litigation, presumably could return to status as an experimental non-essential population), herders can harass but not kill a depredating wolf. Animal and Plant Health Inspection Services (APHIS) Wildlife Services would be contacted to investigate wolf depredation/conflicts, and then contact state wildlife agencies (and or U.S. Fish and Wildlife Service) for authorization to implement control actions such as trapping, collaring, or lethal removal if necessary.

For grizzly bears, herders are instructed to do everything possible to avoid an encounter. Moving the sheep to other areas of the pasture may occur, and moving sheep to other pastures/locations is an option if problems persist. If a grizzly bear is threatening sheep, herders may discharge their rifle into the air if they think it will help frighten the bear (hazing). A herder may shoot directly at a grizzly bear only if his personal safety is threatened. However, this situation has not occurred with U.S. Sheep Experiment Station grazing and is not expected to occur.

- The proposed action (and alternatives) would not include options to trap and transport grizzly bears or to lethally control problem grizzly bears because:
- The species is currently federally listed as threatened,
- There have been only three encounters in the past, and
- None of those encounters required removal.

Grizzly bear trapping, transportation, or lethal removal is outside the scope of this project and thus, if needed, would require the U.S. Sheep Experiment Station to re-initiate consultation or conduct an emergency consultation, in order to consider the probability of incidental take.

Noxious Weeds Control

There are few weed problems on ARS pasture lands. The minimal weed infestations that are present are located in sheep pens, along roads, and near adjacent private lands. 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 using appropriate sheep grazing techniques or managed with hand application of herbicides.

Conservation Measures for Wildlife

Grizzly Bears and Habitat Connectivity

The U. S. Sheep Experiment Station implements a number of conservation measures to reduce the likelihood of potential conflicts with grizzly bear (as well as other predators) and domestic sheep or other livestock. These measures include:

1. When creating research plans that include a sheep grazing component, they consider potential livestock-bear conflicts and avoid areas where problems can be anticipated.
2. Use good husbandry practices so that sheep are as healthy as possible, are suitable for research, and the number of sick/stray animals is kept to a minimum. An Institutional Animal Care and Use Committee evaluates research protocols and livestock management practices to ensure they are consistent with good animal husbandry, and comply with Federal laws that govern the use of agricultural animals in research. Protocols and practices that do not comply are not approved.
3. Sheep herders, working dogs, and guard dogs are kept with the sheep full-time when on rangelands to reduce the likelihood of encounters, and to assist in efficient and prompt movement of animals when necessary.
4. All unnatural attractants to bears are minimized. This includes treatment or removal of livestock carcasses, and proper storage of human foods, garbage, and dog food. Approved "bear-proof"

containers are used and damaged containers are repaired or replaced so that they work as designed. Camp tenders and managers make periodic visits to remove trash and/or dead animal carcasses in order to eliminate potential bear attractants.

5. At least two formal training-orientation meetings are conducted annually with USSES employees and herders to make sure they can identify grizzly bear, black bear, bighorn sheep, Canada lynx, mountain lions, sage-grouse, and other species they might encounter. In addition, they discuss USSES sanitation and garbage removal practices, nonlethal procedures to address livestock-wildlife encounters, and who to contact should encounters occur. Training and education are ongoing and not limited to formal meetings.
6. Regarding grizzly bears, herders are instructed to do everything possible to avoid an encounter. Moving the sheep to other areas of the pasture may occur, and moving sheep to other pastures/locations is an option if problems persist. They are to report the sighting to their supervisor as soon as possible. Sheep herders carry guns for safety and to scare off inquisitive animals. If a grizzly bear is threatening sheep, herders may discharge their rifle into the air if they think it would help frighten the bear (hazing). A herder may shoot directly at a grizzly bear only if his personal safety is threatened, however this situation has not occurred with USSES grazing, and is not expected to occur.
7. When on Agricultural Research Service land, all existing and suspected bear activity and/or conflicts are reported directly to USDA Wildlife Services. Wildlife Services then contacts state and federal agencies as necessary.
8. When grazing on lands owned by USDA Forest Service or USDI Bureau of Land Management, all existing and suspected bear activity and/or conflicts are reported directly to the Forest Service or Bureau of Land Management, respectively, as well as Wildlife Services.
9. In an interagency agreement with the US Forest Service (USDA Forest Service, 2007), the USSES agrees they would comply with meeting grizzly bear management goals on the Myers Creek and East Beaver Allotments including notifying appropriate personnel of encounters, and temporarily stopping or modifying grazing as necessary, should bear conflicts arise with humans or livestock. Refer to the specific interagency agreement for details.
10. Grizzly bear trapping, transportation, or lethal removal is outside the scope of this project and thus, if needed, would require the USSES to re-initiate consultation or conduct an emergency consultation, in order to consider the probability of incidental take.
11. US Sheep Experiment Station and the Wildlife Conservation Society met to draft research questions for consideration pertaining to the use of USSES lands by carnivores, carnivore migration patterns in the Centennial Mountains, and effects of non-lethal control measures (such as moving sheep to avoid conflicts) on sheep production. Rigorous experimental design would be used to obtain statistically solid answers to these questions, and thus improve knowledge of how to maintain large carnivores on the landscape while maintaining sheep production in those same landscapes. Once drafted, research proposals would be submitted into the outyear budgeting process, and potentially become part of the approved USSES research plan.

Bighorn Sheep

In the MOU prepared between the Bureau of Land Management 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. They include:

1. On- site supervision of the domestic sheep bands as well accompaniment by guard dogs to prevent interaction.
2. Keeping domestic sheep below the 5,600 foot contour and off of mountain foothills and canyons.
3. If funding is available, cooperation regarding data collection for bighorn sheep surveys.
4. Maintaining a three-mile buffer of separation between domestic sheep and bighorn sheep.
5. Notifying a list of individuals if contact occurs or becomes imminent.

Greater Sage-grouse

There are a number of conservation measures employed by the USSES to minimize effects of sheep grazing and proposed activities. They include the following:

1. 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.

2. 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.

3. After courtship season, the temporary water troughs are specifically placed in sites that previously had active leks. Concentrated sheep activity keeps shrub encroachment to a minimum, ensuring that leks persist annually and do not become overgrown with mountain big sagebrush.

4. 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.

Description of Alternatives

Alternative 1 - Proposed Action – No New Federal Action

The proposed action is also the no new federal action alternative, because no new federal actions are proposed, merely a continuation of the historic and existing activities already occurring on the U.S. Sheep Experiment Station properties based out of Dubois, Idaho. The proposed action would continue ongoing sheep grazing and associated activities (as described above) that have been historically occurring in conjunction with U.S. Sheep Experiment Station research to develop integrated methods for increasing production efficiency of sheep and to simultaneously improve the sustainability of rangeland ecosystems. These activities enable the U.S. Sheep Experiment Station to carry out the mission for which it was established by executive order and public law.

Alternative 2 – No Grazing

Alternative 2 is considered a ‘no grazing’ alternative.

There would be 1,166 sheep retained at Mud Lake. Only 158 AUMs are grazed there. Remaining needs are met in the feedlot. Alternative 2 was developed to respond to the public suggestion that sheep grazing be eliminated completely from the U.S. Sheep Experiment Station operation. Animal

units are based on a 65 percent reduction from Alternative 1 sheep inventory, which resulted in 1,166 head retained for research purposes. Until new grazing lands are obtained, all sheep would be maintained at the Mud Lake Feedlot where harvested feeds would be fed daily to meet the nutrient needs of the sheep. The reduction in sheep inventory was necessary to remain within available funds for purchasing harvested feeds and maintaining a feedlot facility. There are a few grazeable acres at the Mud Lake facility. A small contingent of sheep (~130 head) would graze the lands surrounding Mud Lake Feedlot from April to September.

Alternative 3 – No Grazing in Centennial Mountain Range

Alternative 3 was developed in response to the public suggestion that grazing be eliminated in the Centennial Mountains. Animal units are based on a 20 percent reduction from Alternative 1 sheep inventory, which resulted in 2,640 head retained for research purposes. According to Alternative 3, U.S. Sheep Experiment Station properties Humphrey, East Summer, and West Summer, and USDA-Forest Service allotments Meyers Creek and East Beaver would not be grazed. The majority of AUMs that are needed would be taken from U.S. Sheep Experiment Station Headquarters property. Because of lower water availably and reduced forage quality of this property, the sheep inventory was reduced.

Alternative 4 - No Grazing Adjacent to the Grizzly Bear Primary Conservation Area

Alternative 4 was developed in response to the public suggestion that grazing be eliminated adjacent and within in the grizzly bear primary conservation area (PCA) (Note: Agricultural Research Service lands are not within the grizzly bear primary conservation area.). Animal units are based on a 10-year sheep inventory high of 3,331 head. No reduction in sheep inventory would be required. According to Alternative 4, USSES East Summer Range property (Tom's Creek) and USDA-Forest Service Meyers Creek allotment would not be grazed. The majority AUMs needed during summer months would be taken from U.S. Sheep Experiment Station West Summer Range (Odell and Big Mountain Pastures).

Alternative 5 – No Grazing Near Bighorn Sheep Populations

Alternative 5 was developed in response to the public suggestion that grazing be eliminated to protect bighorn sheep populations. Animal units are based on a 30 percent reduction from Alternative 1 sheep inventory, which resulted in 2,332 head retained for research purposes. According to Alternative 5, USDA-Forest Service and DOI-Bureau of Land Management properties Snakey-Kelly and Bernice, respectively, would not be grazed. Until new winter grazing lands are obtained, domestic sheep would be maintained at Mud Lake Feedlot where harvested feeds would be fed daily to meet the nutrient needs of the sheep. The reduction in sheep inventory was necessary to remain within available funds for purchasing harvested feeds and maintaining a feedlot facility.

Table 5 - Activities in Alternatives 2-5 in comparison to Proposed Action

Activity	Alternative 2 **No grazing would occur on the Headquarters, East Summer, West Summer, Henninger, and Humphrey Pastures as well as on the following allotments: Snakey Kelly, East Beaver, Bernice, and Meyers Creek allotment**	Alternative 3 **No grazing would occur on the East Summer, West Summer, and Humphrey Pastures as well as on the following allotments: East Beaver and Meyers Creek allotments.**	Alternative 4 **No grazing would occur on the East Summer Range as well as on the Meyers Creek allotment**	Alternative 5 **No grazing would occur on Snakey Kelly and Bernice Allotments**
Sheep Trail and Driveway Use and Maintenance				
Trails	None used	No trailing to Humphrey and East Beaver	No trail beyond the Dry Creek road to the Meyers Creek allotment or back off East Summer range.	No trailing to Snakey Kelly
Driveways	None used	None used	Tom's units 5-7 not used	Same as Alternative 1
Stock Water Operations - Water Developments				
Headquarters, Humphrey and Henninger	None used	No water troughs used on Humphrey No water diversion on Humphrey	Same as Alternative 1	
West Summer Range		Would not use		
Camp Tending - Sheep Herding Camps				
Headquarters, Humphrey and Henninger Camps	None Used	No camps at Humphrey	Same as Alternative 1	
		No camps	No camps on East Summer	Same as Alternative 1
Fences				
Pasture Fences		None on West Summer	Same as Alternative 1	
Horse Corral				
Exclosures				
Maintenance and repair of existing roads and fire breaks				
Roads	None created or maintained	No road maintained in West Summer	Same as Alternative 1	
Firebreaks				
Range Improvement				
Prescribed Burning	No activities	Same as Alternative 1		
Seeding		No seeding on Humphrey	Same as Alternative 1	
Cattle and Horse Grazing	None	No supplemental grazing on Humphrey	Same as Alternative 1	
Predator Avoidance and Abatement	Same as Alternative 1 as needed			
Integrated Pest Management – Noxious weeds	Ability to monitor is severely limited on properties where herders, camp tenders, etc. are not riding over the land.			
Grizzly Bear	Not needed	Same as Alternative 1		
Sheep Driveway	Not needed		No Driveways On East Summer	Same as Alternative 1
Heritage	Same as Alternative 1			

Threatened, Endangered, and Proposed Species and Designated Critical Habitat Considered and Analyzed.

On May 6, 2008, and again on August 14, 2009 a list of threatened, endangered, and proposed species that may be present in the action area was discussed with the U.S. Fish and Wildlife Service (Arena, personal communications). Results of these discussions concluded that only Canada lynx, Yellowstone Distinct Population of grizzly bear, and Northern Rocky Mountain gray wolf (currently delisted, but undergoing challenges in court) have the potential to occur in or near the project area. Other species have no federal listing status, or do not occur in the area. No critical habitats occur in the area.

A review was conducted of available information to assemble occurrence records, describe habitat needs and ecological requirements, and determine whether additional field reconnaissance is needed to complete the analysis. Sources of information included interviews with USSES staff, interviews with Forest Service biologists on the Caribou-Targhee National Forest, interviews with state wildlife agency employees, review of Idaho and Montana State Natural Heritage Program databases, and published research. An independent wildlife biologist (employed by the USDA Forest Service – TEAMS Enterprise Unit) visited the sites on four separate occasions including May 6th through 8th, 2008; July 6th through 14th, 2008; June 21 through 26, 2009, and August 17th through 21st, 2009 in order to verify wildlife habitat types, observe resource conditions, review details of proposed activities, gather additional site information, and contact local biologists from state and federal agencies.

Other than Canada lynx, grizzly bear, and gray wolf, no further analysis is needed for TEP species because they are not known or suspected to occur in the project area, and no suitable habitat is present. Effects to species without federal listing status (e.g. that were identified in the original lawsuit or those brought up during scoping with potential concerns) will be reviewed in the "Analysis of Other Species" section of this wildlife report.

Consultation to Date

2008 – Interim U.S. Sheep Experiment Station and Associated Grazing Activities. The project biologist met informally several times with United States Fish and Wildlife Service (FWS) staff in Chubbuck, Idaho (personal communication, Arena). The initial meeting conducted on May 6, 2008 familiarized the FWS biologist with the project location and description of proposed activities. At that time, the project biologist and FWS biologist reviewed a list of species in or near the project area having federal status. A preliminary discussion of species occurrences in the area and potential project effects indicated that Canada lynx was the only federally-listed species and that effects are unlikely or minimal. Ute's Ladies'-tresses (*Spiranthes diluvialis*) was also reviewed and found that habitat was not present. 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. Additional phone calls and email exchanges occurred in September and October, 2008 to review potential effects to species, clarify procedural questions, and agree that USSES would work with the Chubbuck, ID FWS office as the lead contact. On December 9, 2008, the Fish and Wildlife Service concluded the consultation process for the interim grazing activities by providing written concurrence with the biologists determination of effects on listed species which included "Not Likely to Adversely Affect" Canada lynx (USDI Fish and Wildlife Service, 2008). Similarly, they acknowledged the biologists determination that the project was "Not Likely to Jeopardize the Continued Existence of Gray Wolf".

On August 14, 2009, the biologist met with the Fish and Wildlife Service in Chubbuck, ID to again start the process of consultation pertaining to **U.S. Sheep Experiment Station and Associated Grazing Activities, 2009** (USDI Fish and Wildlife Service, 2009(a))**.** This phase of the project is

essentially the same as the interim phase, but activities and effects are considered over a longer time period, and with more extensive scoping and public review. At the time of this meeting, Canada lynx was the only listed species in the project area. Subsequently, in September, 2009, grizzly bears in the Yellowstone DPS were restored to a status of federally listed as a threatened species. In addition, litigation is underway regarding Northern Rocky Mountain DPS of gray wolf, which could change it's current status from delisted, and return it to its previous status as a nonessential experimental population. Other points of discussion included:

In 2008, the mortality threshold for grizzly bears was exceeded in the Greater Yellowstone Ecosystem (GYE) largely because of hunting and safety conflicts. Multiple years of exceedance can be a cause for concern. Therefore, lethal control of grizzly bears on USSES property would be a concern. Also, grizzly bears traveling though USSES area could be contributing to genetic exchange between the Bitteroot and Yellowstone ecosystems; so that is an additional concern if grizzly bears are lethally removed.

Gray wolf, sage grouse, pygmy rabbit, and wolverine are not listed species. Status of these species could change depending on the results of pending litigation and/or ongoing status reviews.

On October 1, 2009 the biologist contacted the USFWS to discuss the recent court order relisting the Yellowstone DPS of grizzly bear. Discussions included possible determinations and consultation process for control actions including hazing, trap and transport, lethal control, and personal safety if a herder is threatened by a bear. Similarly, the USSES expressed their desire to participate in any upcoming Level 1 streamlined consultation meetings that occur between the USFWS ad the Caribou-Targhee National Forest, which also are likely to include discussions regarding previously analyzed projects in grizzly bear habitat. Based on the results of these discussions and a minimal history of encounters with grizzly bears (none with lethal control), the USSES made a preliminary decision that the proposed actions and alternatives would not include trap and transport or lethal control. These activities have not occurred with USSES activities in the past and are not expected to occur in the future.

Based on pending litigation and/or status reviews for Greater sage-grouse, pygmy rabbit, and northern Rocky Mountain gray wolf, there is a possibility that one or all the species could become federally listed in the near future. Each of the species is known to occur on USSES properties and would be affected by the project proposal. If listed, the USSES would need to promptly initiate (or reinitiate) consultation for whichever species becomes listed.

In the meantime, the analysis included in the wildlife report for these species demonstrates that the USSES would be able to continue operating without making any irreversible or irretrievable commitment of resources.

For the wolf, USSES activities were analyzed in the 2008 WL report when the wolf was designated as a nonessential experimental population. The biologist's analysis and "No Jeopardy" determination was reviewed and recognized by the USFWS. Since the activities and effects of the current project are essentially the same as analyzed in 2008, the previous determination would be applicable until the need to reinitiate consultation is considered and/or completed.

Should sage-grouse or pygmy rabbit become listed or critical habitat designated within the project area, prescribed burning activities would be deferred until consultation is completed. The current project proposal would not hinder or prevent (foreclose) the USSES from implementing reasonable and prudent alternatives to protect those species (such as delaying prescribed fire treatments or modifying grazing strategies) until the consultation process is completed.

Existing condition

Canada Lynx Lynx canadensis

Affected Environment

A comprehensive review of Canada lynx life history can be found in Lynx Conservation Assessment and Strategy (LCAS) (Ruediger et al., 2000). A condensed version of life history from the Lynx Recovery Outline (USDI FWS, 2005(a)) 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 a federally-listed threatened species and historically resided within the Centennial Mountain Range portions of the USSES, which includes the West Summer Range (Odell Creek and Big Mountain) and the East Summer Range (Tom's Creek). These areas are outside of, but adjacent to Lynx Analysis Units established on the Targhee National Forest in 2005. There is no Canada lynx critical habitat 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 TEAMS wildlife biologist has discussed occurrences of Canada lynx with US Fish and Wildlife Service in Chubbuck, ID (Arena, 2008, 2009), 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 occurrences, 1874-1998

Negative findings during hair snare surveys in 1999 – 2001, and

Limited observations from winter track surveys conducted from 1996 – 2004.

A summary of lynx habitat and observation data compiled for the Caribou-Targhee National Forest (adjacent to USSES lands) is presented in a Forest report prepared by Orme, 2005. In a biological

assessment (Aber, 2007) completed for sheep grazing on the USFS Meyers Creek Allotment, which is 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 Lynx Conservation Assessment and Strategy. According to maps prepared for the Lynx Conservation Agreement between the US Forest Service and the US Fish and Wildlife Service (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 (Headquarters, Henninger Ranch). Higher elevation lands (West Summer Range, East Summer Range, and Humphrey Ranch) are potential lynx habitat but are of lower quality, because the lands 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, there is potential for an occasional lynx to use the area traveling through high-elevation USSES lands in the Centennial Mountain Range, while temporarily foraging or moving between larger expanses of quality habitat in northwest Wyoming and Central Idaho. However, the area is unlikely to be currently occupied by a resident lynx population considering the lack recent observations in the Centennial Range and the status of adjacent habitat on USFS lands as unoccupied according to the Lynx Conservation Agreement (USDA Forest Service, 2006).

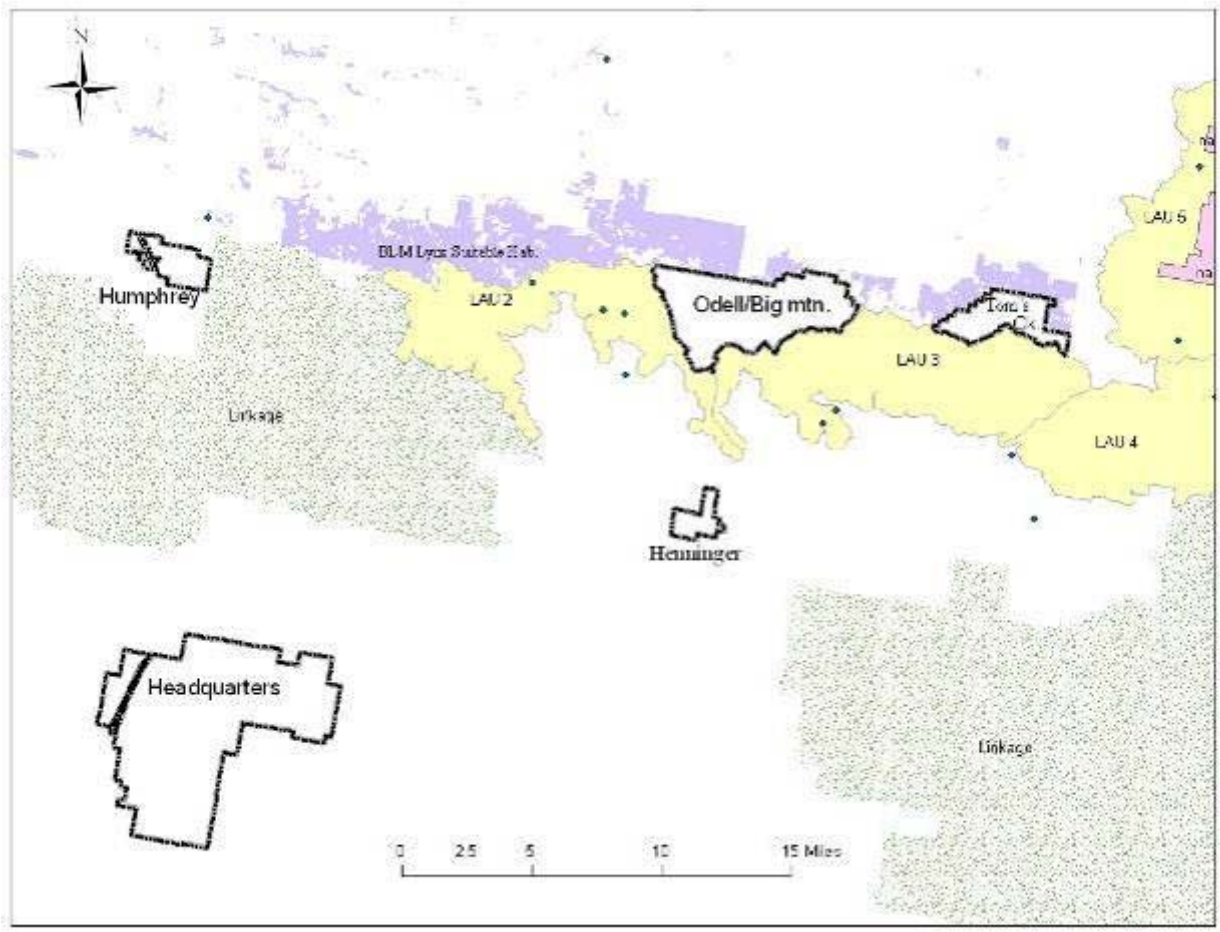


Figure 2 - Sheep Station Lands adjacent to LAUs established in 2005 on the Caribou-Targhee NF.

Grizzly Bear Ursus arctos horribilis

On September 21st, 2009, grizzly bears in the Yellowstone DPS returned to their previous status listed as a threatened species. The US Fish and Wildlife Service (USFWS) decision to remove the Yellowstone Distinct Population Segment of grizzly bear from the list of threatened species (USDI FWS, 2007(a)) was vacated by order of the United States District Court (2009(b)) in Missoula, Montana, based on two (of four) court findings.

- The court found that the Conservation Strategy, Forest Plan Amendment, and State Plans are not adequate regulatory mechanisms because they are minimally enforceable, particularly outside of the PCA, and rely on good faith and future promises of action. In addition, the final rule to delist didn't adequately analyze how various laws will protect the species.

- The court found that the FWS did not articulate a good rationale regarding expected declines in whitebark pine and a lack of a threat grizzly bears.

In contrast, the court found in favor of the plaintiffs (USFWS) regarding the other two points of the complaint.

- The court found that the USFWS analysis adequately demonstrated that maintaining a population size of 500 animals is sufficient for genetic diversity. Similarly, that translocation from other populations is an adequate method to address genetic diversity shortfalls over the long term, and that there is not a short-term issue with genetics. The population does not need to be "self-sustaining" to be delisted.

- The court found that the USFWS analysis and the final rule to delist provided good rationale that the Distinct Population Segment /Primary Conservation Area (PCA)constitutes a significant portion of the Yellowstone grizzly bears' range. The USFWS did not need to identify migration corridors, because grizzlies, outside of the Distinct Population Segment boundary, are still protected under Endangered Species Act.

The Yellowstone Distinct Population Segment of grizzly bear was de-listed in 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). Though the species has since been relisted, both of these factors are still applicable in evaluating the context of potential effects of the project. The US Fish and Wildlife Service (FWS) Grizzly Bear Recovery website (http://www.fws.gov/mountain%2Dprairie/species/mammals/grizzly/yellowstone.htm) summarizes information from the Final Rule to Delist (USDI FWS, 2007) stating that,

> 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 DPS boundaries. Grizzly bears now occupy 68 percent of suitable habitat within the DPS boundaries and may soon occupy the remainder of the suitable habitat.

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 Primary Conservation Area. Suitable habitat for grizzly bear is managed differently within the Primary Conservation Area verses outside of the it. 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 has an Interagency Agreement (USDA Forest Service, 2007) with the Caribou-Targhee National Forest for grazing on the Meyers Creek allotment, which is inside the Primary Conservation Area. 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." This finding was based on:

- The USSES sheep grazing in the Meyers Creek allotment for decades with minimal conflicts,
- Standards and guidelines from the Grizzly Bear Forest Plan Amendment are being met, and
- "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 the USSES lands (seen in the figures below), the following 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 the East Summer Range (Tom's Creek) and West Summer Range (Odell Creek and Big Mountain). All are outside of the grizzly bear Primary Conservation Area.

The Henninger Ranch is a small USSES 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 white bark 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 unlikely to be occupied 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 on additional federal agency lands. Similar to the above, these areas do not support grizzly bear activity, are dominated by sagebrush, and recent telemetry data showed no observations on or adjacent to these areas. They include the Snakey/Kelly allotment (US Forest Service), East Beaver allotment (US Forest Service), Bernice allotment (Bureau of Land Management), and the Mud Lake Feedlot (Department of Energy).

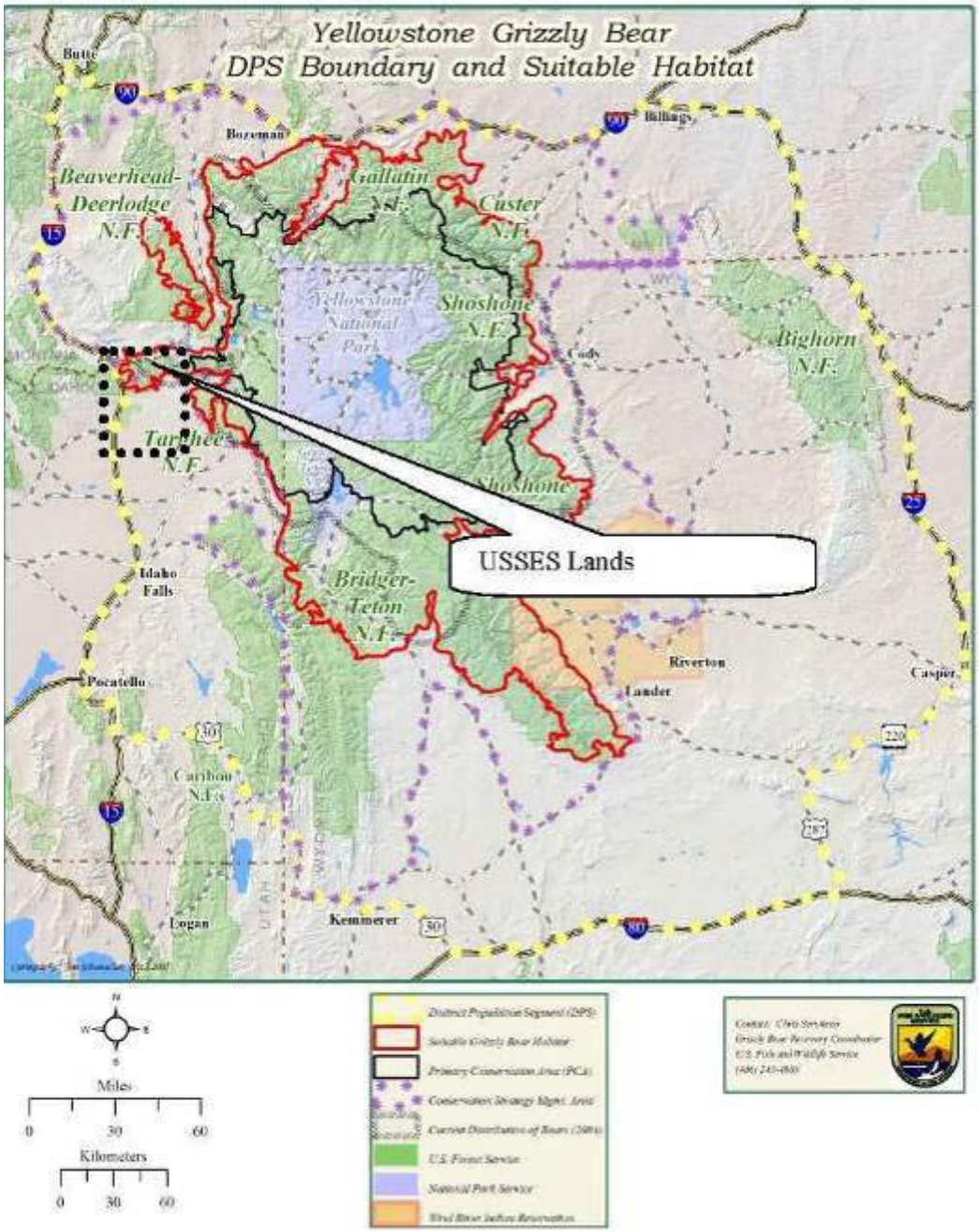


Figure 3 - Vicinity, Yellowstone Grizzly DPS

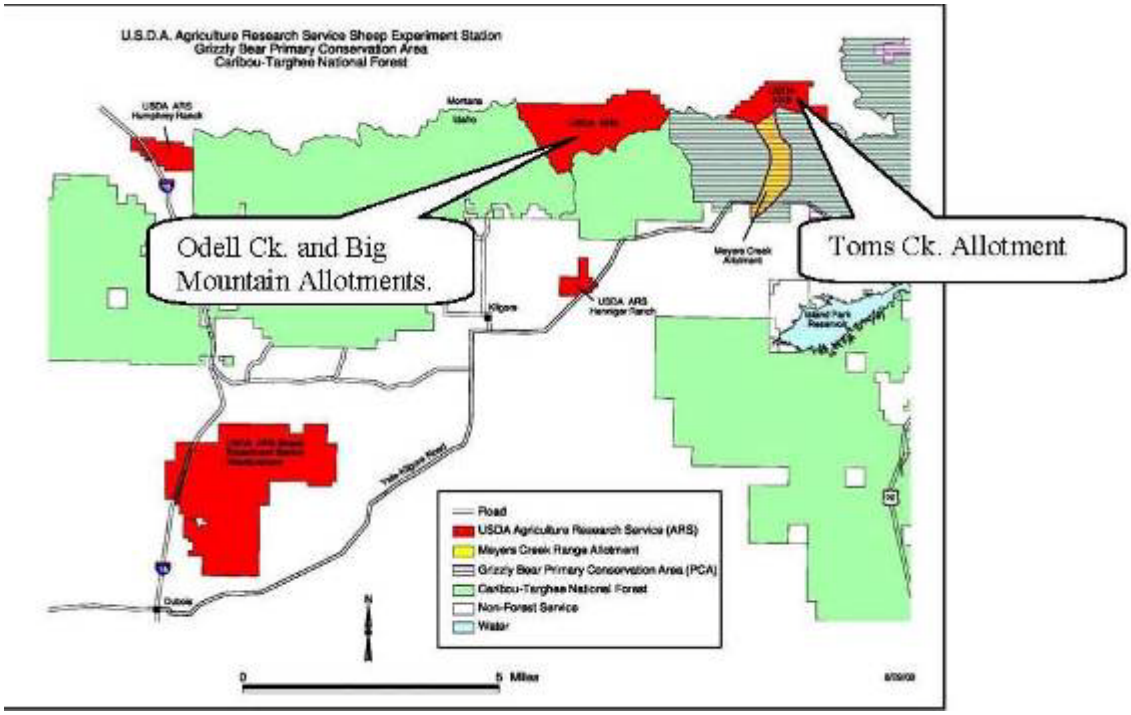


Figure 4 - USSES Lands, Odell, Big Mountain, and Tom's Ck, Outside of PCA

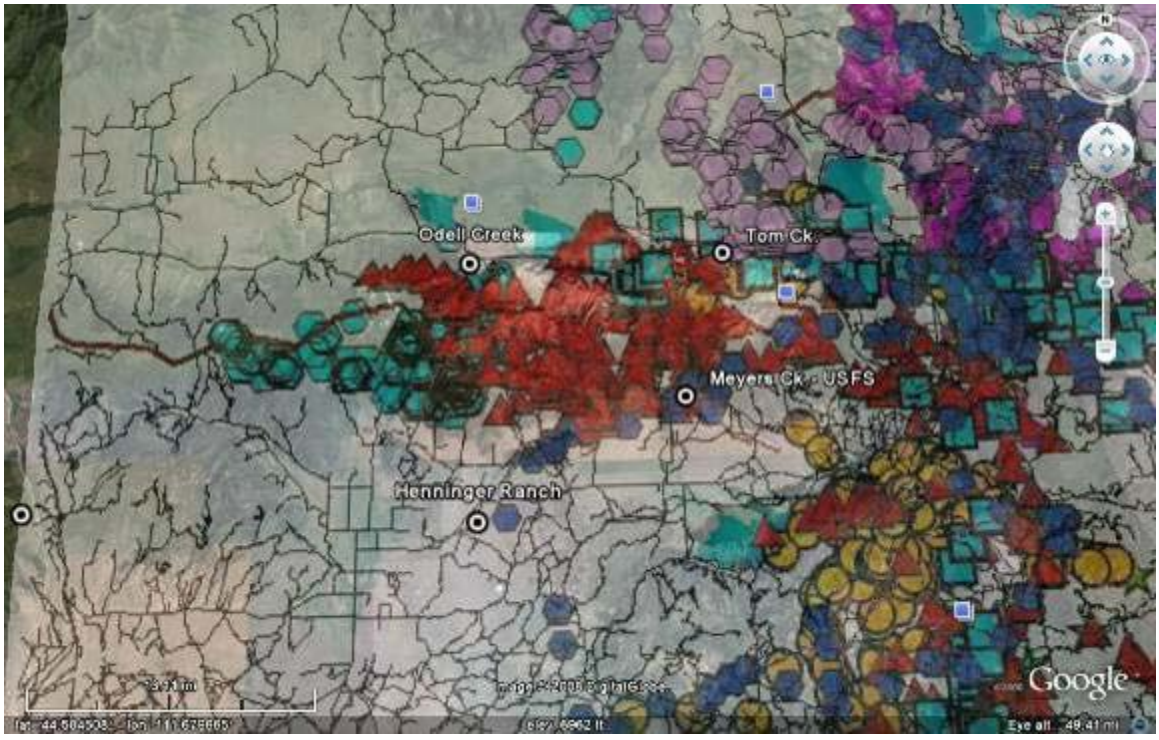


Figure 5 - 2007 telemetry data showing grizzly bears observed near Montana portions of USSES

A summary of key information from the Annual Report of the Interagency Grizzly Bear Study Team (Schwartz et al., 2008) includes the following information pertinent to the USSES:

There have been no grizzly bear conflicts on the Meyers Creek Sheep allotment of the Caribou-Targhee National Forest in the last five years. The Icehouse sheep allotment was permanently closed in 2008.

Small reductions in grizzly bear secure habitat in the Centennial Bear Analysis Unit, which includes the USSES lands, are related to updated mapping efforts on the Caribou-Targhee National Forest, and no actual decrease in security occurred. *(2009 Grizzly Bear Habitat Monitoring Report, prepared by the Greater Yellowstone Area National Forests and National Parks, Yellowstone Grizzly Coordinating Committee Habitat Modeling Team, and included in annual report)*

The Grizzly Bear Habitat Conservation Guideline for Livestock Grazing states - Outside the Primary Conservation Area in areas identified in State (Idaho and Montana) Management plans as biologically suitable and socially acceptable for grizzly bear occupancy, livestock allotments or portions with recurring conflicts that cannot be resolved through modification of grazing practices may be retired as opportunities arise with willing permittees.

There were 48 known and probable grizzly bear mortalities in 2008. In 2009, there have been 22 known and probable grizzly bear mortalities as of October 10 (IGBST Website, 2009)

Haroldson and Frey (included in the Annual Report) indicated that mortality thresholds were exceeded for the first time in 2008 for independent female and independent male grizzly bears in the Greater Yellowstone Ecosystem. Exceeding the mortality threshold for two consecutive years (females) or three consecutive years (males) triggers a biology and management review under the Final Rule to delist the Yellowstone Grizzly Bear DPS (USDI FWS 2007(a)).

Thirty-seven (37) of the 2008 mortalities were human caused (77percent). Of the 37 human caused mortalities, 20 were related to black bear and other hunting incidents, 10 were management removals, two were malicious killings, two were in defense of residences, two were related to handling of animals, and one was a road kill.

Effects to migration corridors and genetic diversity regarding the Yellowstone Distinct Population Segment of grizzly bears were brought up as a concern during public scoping. In order to review the pertinence of this concern to USSES activities, summarized below is the current science regarding genetic diversity from the Final Rule to delist (USDI FWS, 2007(a)). Key points include:

Current levels of genetic diversity are consistent with known historic levels and do not threaten the long-term viability of the species.

The Final Conservation Strategy (2007) includes the transplant of one to two effective migrants per generation if no movement or genetic exchange is documented by 2020.

‘‘the viability of the Yellowstone grizzly bear population is unlikely to be compromised by genetic factors in the near future…’’ and that ‘‘…one to two effective migrants per generation from the Northern Continental Divide Ecosystem (NCDE) to the Yellowstone ecosystem is an appropriate level of gene flow.’’

Indicators of fitness in the Yellowstone population demonstrate that the current levels of genetic heterozygosity[2] are adequate, as evidenced by measures such as litter size, little evidence of disease,

[2] Heterozygosity : having dissimilar pairs of genes for any hereditary characteristic.

high survivorship, an equal sex ratio, normal body size and physical characteristics, and an increasing population.

Yellowstone grizzly bear populations are not as low as previously feared, and the need for novel genetic material is not urgent.

In addition to monitoring for gene flow and movements, interagency efforts will continue toward completing the linkage zone task in the Recovery Plan (U.S. Fish and Wildlife Service 1993, pp. 24–26) to provide and maintain movement opportunities for grizzly bears, and reestablish natural connectivity and gene flow between the Yellowstone grizzly bear Distinct Population Segment and other grizzly bear populations.

Linkage work not directly associated with the Yellowstone grizzly population is being completed in the northern Rockies, to address ways to improve cooperation and affect management on public lands, private lands, and highways in linkage areas across the northern Rockies.

The recent court challenges to relist the grizzly bear included genetic diversity concerns, and their merit was reviewed by the court (U.S. District Court, 2009(b)). The court found that in the Final Rule to delist the grizzly bear, the USFWS provided adequate evidence to support that maintaining a population size of 500 animals is sufficient for genetic diversity, there is not a short term issue with genetics, and that translocation from other populations is an adequate method to address genetic diversity shortfalls over the long term.

USSES Activities to reduce Grizzly Bear Conflicts

The U. S. Sheep Experiment Station implements a number of conservation measures to reduce the likelihood of potential conflicts with grizzly bear (as well as other predators) and domestic sheep or other livestock. These measures include:

1. When creating research plans that include a sheep grazing component, they consider potential livestock-bear conflicts and avoid areas where problems can be anticipated.
2. Use good husbandry practices so that sheep are as healthy as possible, are suitable for research, and the number of sick/stray animals is kept to a minimum. An Institutional Animal Care and Use Committee evaluates research protocols and livestock management practices to ensure they are consistent with good animal husbandry, and comply with Federal laws that govern the use of agricultural animals in research. Protocols and practices that do not comply are not approved.
3. Sheep herders, working dogs, and guard dogs are kept with the sheep full-time when on rangelands to reduce the likelihood of encounters, and to assist in efficient and prompt movement of animals when necessary.
4. All unnatural attractants to bears are minimized. This includes treatment or removal of livestock carcasses, and proper storage of human foods, garbage, and dog food. Approved "bear-proof" containers are used and damaged containers are repaired or replaced so that they work as designed. Camp tenders and managers make periodic visits to remove trash and/or dead animal carcasses in order to eliminate potential bear attractants.
5. At least two formal training-orientation meetings are conducted annually with USSES employees and herders to make sure they can identify grizzly bear, black bear, bighorn sheep, Canada lynx, mountain lions, sage-grouse, and other species they might encounter. In addition, they discuss USSES sanitation and garbage removal practices, nonlethal procedures

to address livestock-wildlife encounters, and who to contact should encounters occur. Training and education are ongoing and not limited to formal meetings.

6. Regarding grizzly bears, herders are instructed to do everything possible to avoid an encounter. Moving the sheep to other areas of the pasture may occur, and moving sheep to other pastures/locations is an option if problems persist. They are to report the sighting to their supervisor as soon as possible. Sheep herders carry guns for safety and to scare off inquisitive animals. If a grizzly bear is threatening sheep, herders may discharge their rifle into the air if they think it would help frighten the bear (hazing). A herder may shoot directly at a grizzly bear only if his personal safety is threatened, however this situation has not occurred with USSES grazing, and is not expected to occur.
7. When on Agricultural Research Service land, all existing and suspected bear activity and/or conflicts are reported directly to USDA Wildlife Services. Wildlife Services then contacts state and federal agencies as necessary.
8. When grazing on lands owned by USDA Forest Service or USDI Bureau of Land Management, all existing and suspected bear activity and/or conflicts are reported directly to the Forest Service or Bureau of Land Management, respectively, as well as Wildlife Services.
9. In an interagency agreement with the US Forest Service (USDA Forest Service, 2007), the USSES agrees they would comply with meeting grizzly bear management goals on the Myers Creek and East Beaver Allotments including notifying appropriate personnel of encounters, and temporarily stopping or modifying grazing as necessary, should bear conflicts arise with humans or livestock. Refer to the specific interagency agreement for details.
10. Grizzly bear trapping, transportation, or lethal removal is outside the scope of this project and thus, if needed, would require the USSES to re-initiate consultation or conduct an emergency consultation, in order to consider the probability of incidental take.

Known accounts of past interactions between domestic sheep and grizzly bears

In the past five years, there have been no grizzly bear conflicts on the Meyers Creek Sheep allotment of the Caribou-Targhee National Forest (Schwartz et al., 2008 in habitat monitoring report section). There have been three confirmed grizzly bear accounts on USSES lands, 1985, 1999, and 2008, all which ended without grizzly bear mortality or attempting lethal control actions. In 2008, an encounter 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 without further incident. Similarly, in the two additional previous cases, the sheep were moved without further incidents (1999), or the grizzly bear left the USSES band of sheep without killing any of them (1985), and no additional problems occurred. No grizzly bears have been killed, captured, or relocated on U.S. Sheep Experiment Station lands or on Forest Service/Bureau of Land Management allotments in response to USSES activities.

Gray Wolf Canis lupus

The delisting of the northern Rocky Mountain gray wolf distinct population segment (DPS) took effect on May 4, 2009. On June 2nd, a coalition of 13 groups challenged the USFWS delisting decision in Federal District Court in Missoula (9th Circuit). On September 8th, 2009, the Court ordered that a motion for preliminary injunction be denied, indicating that the species will currently remain delisted but that a separate order will follow to establish a dispositive briefing schedule and set a hearing on the merits of the complaint. The order to deny preliminary injunction is based largely on supporting evidence that the DPS will not suffer irreparable harm from the 2009 wolf hunting seasons in Idaho and Montana, and that hunting will not impact genetic connectivity of the DPS, assuming hunters manage to kill up to 330 wolves allowed in the quotas.

Because renewed legal challenges to gray wolf status are expected and may be lengthy, it should be noted that this project analysis is applicable to wolves as de-listed, or if returned to previous status of a nonessential experimental population. Nonessential experimental population status (as previously designated) would apply to all wolves in the southern half of Montana, all of Idaho south of Interstate 90, and all of Wyoming. The 2005 and 2008 Endangered Species Act nonessential experimental population regulations 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.

As summarized in the Montana Fish, Wildlife, and Parks Fact Sheet on Wolves (2009), "The northern Rocky Mountain gray wolf population first met biological recovery goals in 2002. The Northern Rockies "metapopulation" is comprised of wolf populations in Montana, Idaho, and Wyoming. About 1,600 wolves live in the region, where wolves can travel about freely to join existing packs or form new packs. This, combined with wolf populations in Canada and Alaska, assures genetic diversity. The decision to remove the wolf from the Federal Endangered Species List took effect May 4, 2009." Federal rules require Montana and Idaho to maintain at least 100 wolves and 10 breeding pairs in each state (as well as Wyoming). About 497 wolves inhabited Montana in 2008 in about 84 packs, 34 of which were breeding pairs." Similarly, about 846 wolves inhabited Idaho in 2008 in about 88 packs, 39 of which were documented breeding pairs (Nadeau et.al, 2008).

The wolf is reclassified under Montana law as a "species in need of management" statewide. Montana laws and administrative rules protect wolves. Wolves can only be legally killed: during an official hunting season authorized by the FWP Commission, if the wolf is seen attacking or killing or threatening to kill dogs or livestock, to protect human life, or as authorized by FWP to resolve wolf-livestock conflicts.

In Idaho wolves are being managed as a big game animal. They are protected by state laws already approved by the U.S. Fish and Wildlife Service, the Idaho legislature, and Idaho Fish and Game Commission. The Fish and Game Commission approved 2009 wolf hunting season dates in March and on August 17, 2009 set a statewide harvest limit of 220 wolves. The Nez Perce Tribe may take up to 35 additional wolves within the Tribal Treaty Area.

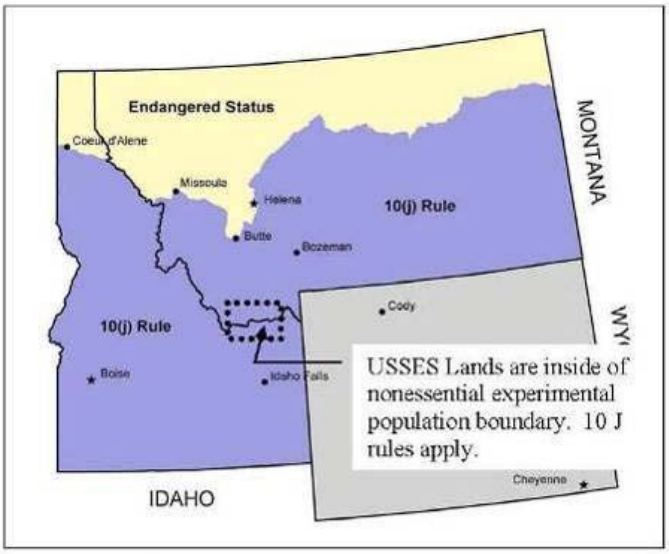


Figure 2. Management areas established by the U.S. Fish and Wildlife Service under the 10(j) Rule to restore gray wolf populations in the northern Rocky Mountains of Idaho, Montana, and Wyoming.

Figure 6. USSES within Area Previously Designated as Nonessential Experimental Population.

Wolf Pack Locations near the USSES

Three gray wolf pack's territories are in the vicinity of, but not centered on, USSES properties including the West Summer Range (Odell/Big Mountain), East Summer Range (Tom's Creek), Henninger Ranch property, and Humphrey Ranch property, which are all part of the USSES ownership in the Centennial Range. These three wolf packs may occasionally occupy USSES lands in search of food, but denning or rendezvous areas are not known to occur there. In 2009, two of the wolf packs denned in southwestern Montana near the Interstate 15 corridor in the vicinity of

Humphrey Ranch property. They included the two border packs called the Sage Creek pack, and wolf group B394 (shown in Idaho, 2008). The Bishop Mountain Pack resides in Idaho nearest to the Henninger Ranch property and East Summer Range. In addition to the three packs discussed above, the Horn Mountain pack, Centennial, pack, and Henry's Lake suspected pack use areas in the Centennial Mountains, though they are substantially further removed from USSES properties.

Figure 7 - Wolf Pack Locations Near USSES Lands, based on 2008 Annual Wolf Reports for Montana and Idaho.

The following summary of activity was synthesized from several sources including the 2007 and 2008 gray wolf conservation and management annual reports (Sime et. al 2009, Nadeau et. al, 2009, USDI Fish and Wildlife Service, 2008), Idaho Wolf Management Progress Report (2009), Montana Wolf Weekly Reports (2009), and personal communications with Idaho Fish and Game staff (Meintz, 2009).

Sage Creek Pack and B394 Group

Until 2009, lethal control actions in response to wolf depredation on USSES lands has been uncommon, since most encounters are avoided through regular movement of sheep, and the full-time presence of guard dogs and sheep herders. On USSES, no trapping for wolves had occurred for several years preceding 2008 other than an incident three years prior. In that incident, encounters discontinued before any wolves were trapped.

In 2008 two wolf packs denned in Montana, but occurred on the border of Idaho/Montana near the Humphrey Ranch property, Interstate 15 corridor. They included the Sage Creek Pack (East of Interstate 15) and B394 group (west of Interstate 15). The Sage Creek Pack is a border pack between Montana and Idaho that formed in 2007. In 2008, based on livestock depredations on cattle from private landowners, three wolves were lethally removed from the area. In 2008, wolf B394 (Idaho) was trapped and radio collared in response to depredations at the USSES that resulted in 16 confirmed dead sheep. In January 2009, the B394 wolf was affiliated with an adult black wolf. In June/July/and August of 2009, numerous depredations occurred along the Interstate 15 corridor on livestock belonging to private producers as well as the USSES. After investigation by APHIS Wildlife Services, the Idaho and Montana state wildlife agencies incrementally authorized removal of depredating wolves from the Sage Creek pack and wolves associated with the B394 group. Eventually, to address numerous and continuing depredations on private livestock as well USSES livestock, all known members of the packs were removed. Control efforts were completed with the lethal removal of approximately ten adult wolves from the Sage Creek pack as well as wolf B394 and six pups. At the time of this report, it is probable that both the Sage Creek pack and the group associated with B394 have been entirely removed.

Bishop Mountain Pack

The Bishop Mountain pack was an uncollared, suspected pack in 2007. Pack status was verified in February of 2008, when two wolves were darted from a helicopter and radio collared.

Three lethal control actions occurred in 2008, none were associated with USSES activities. The Bishop Mountain pack was counted as a breeding pair in 2008 after four pups were verified in this pack, and aerial flights determined that the pack was comprised of at least five wolves. In 2009, the wolves with radio-collars could not be located, so the status of this pack is unclear.

Other Packs in Surrounding Areas

Three additional wolf packs are known to occur in the vicinity of the Centennial Mountains but are typically found well outside of the USSES properties. Since wolves are known to have wide ranging habits, the status of these packs was briefly reviewed. Control actions have been implemented on these packs, to a varying extent, but none involved USSES activities. The Centennial Pack (Montana) was a new pack in 2008 with six wolves including a breeding pair, and occupied a portion of the 2007 Freezeout pack's old territory. The pack consists of two collared adults and a litter of pups of the year. The Horn Mountain pack, also in Montana, was a new pack identified in 2007. Five wolves remained in the pack after 2008. The Henrys Lake suspected pack (Idaho) was identified during the 2008 season, which indicated the likely presence of a new pack of 7 wolves. While tracks of these wolves have been verified by agency personnel, reproductive status has not.

Wolf Control Procedure

Radio collars, leghold traps, and/or aerial control are methods used on private and federal lands to track problem wolves/wolf packs and, if conflicts persist, implement lethal removal, which is usually targeted at offending animals (Farr, Meintz, personal communications). APHIS Wildlife Services acts on the behalf of USSES to verify livestock damage before any control actions are taken. If wolf damage is verified, APHIS Wildlife Services contacts his supervisor as well as the state wildlife agency to request authorization if it is necessary to pursue direct control. Authority for control actions are granted through state wildlife agencies (Arena, Farr, personal communications).

The following text describes the typical methodology of "Incremental Control Measures" referred to in other portions of this document. Effects to wolves involved in depredation scenarios generally occur in three categories. First, if an individual wolf is involved in limited depredation such as while traveling through habitat to a new or different territory and no further incidents occur, non-lethal control measures (such as the presence of herders and guard dogs) are deemed adequate. Second, if offending wolves are part of a group, breeding pair, or pack and remain active in the vicinity, individual wolves may be radio-collared so activities can be monitored and tracked. If depredations continue, one to three animals are lethally removed, with the intention to target specific offending animals. If possible, the pack is left intact with a breeding pair. Third, if depredation is a recurrent problem and there are substantial livestock losses from a specific pack or group of wolves (including losses on private producers as well as USSES livestock), authorization may be given to remove all or most pack members. This may involve individual trapping and/or aerial targeting (at the discretion of APHIS Wildlife Services and state agencies) to achieve removal of the breeding pair, pups, and other associated wolves.

Effects of The Alternatives on Threatened, Endangered, or Proposed Species

Canada Lynx Lynx canadensis

Canada Lynx Direct/Indirect Effects

Alternatives 1 (Proposed Action), 4, and 5.

Effects from activities in these three alternatives are the same as each proposes similar livestock grazing and associated activities in suitable lynx habitat in the summer range (Centennial Mountains). Alternative 1 proposes grazing in both the East and West Summer Ranges; Alternative 4 does not propose grazing in the East summer range or US Forest Service Meyers allotment but continues grazing in the West Summer Range; Alternative 5 removes grazing from Snakey/Kelly and Bernice allotments, but continues grazing in both the East and West summer ranges. As such, potential effects to Canada lynx remain the same throughout each alternatives as described below.

A review of the activities for each of these alternatives indicates that minimal, if any, effects would occur with regard to Canada lynx, both to individuals as well as to habitat. No effects would 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 would 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 Mud Lake Feedlot facility,

Prescribed fire, Integrated 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 would 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 grazing season and are within or adjacent to suitable habitat. These activities include sheep grazing and trailing and camp tending activities in the West Summer Range (O'Dell Creek and Big Mountain) and the East Summer Range (Tom's Creek). 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 (2005) 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 East and West Summer Range area for a short duration during the summer, generally from start of July through the first week of September. This period is not critical to denning, and any Canada lynx that might be in the area could continue to forage across the landscape. Human disturbances may result in an occasional incident where lynx temporarily avoid 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 possible indirect effect to lynx is that associated with competition for browse between livestock and snowshoe hare (Ruediger and others, 2000). On-the-ground conditions quantified in the Range Report (2009) indicate that sheep grazing in the Centennial properties is of low intensity with a high amount of available forage. Light stocking and a rotation schedule that rests areas one year in three have allowed for highly productive range conditions with a stable or upward trend. Appropriate diversity of forbs, shrubs, and grasses is present, and in 2009, forb production was double or triple that expected. Utilization was light. Visual comparison of plants inside exclosures that have not been grazed in over 30 years to those outside the enclosures showed no difference in vegetative composition. Forested understory that provides winter cover and browse for snowshoe hares is present, and remains unaltered by the sheep grazing activities except where down logs are occasionally bucked into pieces to allow sheep passage along established trails. Near pristine on-the-ground conditions in the Summer Range are a result of many previous years in which the proposed activities have been occurring, and indicate that long-term habitat changes that might be of concern (described in the Lynx Conservation Assessment and Strategy (Ruediger and others, 2000) would not occur from the proposed activities.

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*). Instructions are issued in semi-annual trainings that herders should not fire weapons at bobcat or lynx since they are difficult to identify, and the Canada lynx is a federally protected species. Ruediger et al. (2000) describes the risk of lynx mortality from predator control activities targeted for other carnivores as low because trapping efforts are reduced from historical levels, trapping efforts target 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 in leghold traps.

The lower elevation USSES lands are not suitable lynx habitat.

There have been no depredations by felines in the Summer Range properties, so trapping for felines 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.

When trapping, Wildlife Services uses lures specifically targeted for canines and thus, greatly reduces potential of inadvertently capturing felines such as Canada lynx.

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 as discussed previously.

Alternatives 2 and 3

Elimination of all grazing and associated activities (Alternative 2), or all grazing activities in the Centennial Range (Alternative 3) would eliminate the potential effects discussed in other alternatives. Human disturbances from USSES activities would not occur which otherwise may result in uncommon occasions where lynx avoid 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 not have to temporarily adjust their travel and foraging locations to avoid direct encounters. There would be no competition for browse between livestock and snowshoe hare.

Canada Lynx Summary of Direct/Indirect Effects

Disturbances to Canada lynx are unlikely in the proposed action as well as Alternatives 4 and 5, 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.

Alternatives 2 and 3 would have no effect on Canada lynx, since grazing and associated activities would not occur in the Centennial Range. The small potential for lynx to encounter herders or guard dogs would not occur, and there would be no competition for browse between domestic livestock and snowshoe hare.

Canada Lynx Cumulative Effects

The spatial boundary for the discussion of cumulative effects for Canada lynx is the Centennial Mountain Range, because this landscape incorporates multiple Lynx Analysis Units established by the USFS (2005) in cooperation with the USFWS, and is large enough in size to support a resident population of several lynx. The temporal boundary is from present day through the next 10 years because projections beyond that timeframe are similar to that being described, but with reduced accuracy.

As stated in the affected environment section of the report, the official status of adjacent habitat on US Forest Service lands is unoccupied according to the Canada Lynx Conservation Agreement (USDA Forest Service, 2006). There is potential for occasional lynx to use the Centennial Mountains while temporarily foraging or moving between larger expanses of quality habitat in northwest Wyoming and Central Idaho. The proposed project and alternatives do not reduce available habitat, will not add additional effects which would render potentially occupiable habitat as unsuitable, nor would it deter from the Centennial mountains ability to provide temporary Canada lynx travel and foraging between higher quality habitat in Yellowstone or Central Idaho. As such, the project and alternatives do not contribute to additional cumulative effects.

There are no interrelated actions associated with this project. Interdependent actions include livestock grazing permits issued in Targhee National Forest lands, as well as past and proposed timber sales there. Existing habitat on USFS lands is managed in compliance with the Lynx Conservation Assessment and Strategy, the Lynx Conservation Agreement, as well as Northern Rockies Lynx Management Direction (2007) and thus, will maintain conditions that provide for continued protection and recovery of Canada lynx. Considering that 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 from the project proposal or its alternatives.

Grizzly Bear Ursus arctos horribilis

Alternative 1 and 5 - Direct/Indirect Effects

Effects from activities in these two alternatives are essentially the same as each proposes similar livestock grazing and associated activities in grizzly bear habitat in the summer range (Centennial Mountains). Alternatives 1 and 5 propose grazing in both the East and West Summer Ranges; including the Meyers Creek Allotment on US Forest Service which is inside the grizzly bear Primary Conservation Area. Alternative 5 removes grazing in Snakey/Kelly (US Forest Service) and Bernice (Bureau of Land Management) allotments, which does not affect suitable grizzly bear habitat. As such, potential effects to grizzly bear remain the same throughout the two alternatives as described below. Grizzly bear trapping, transportation, or lethal removal is outside the scope of this project and thus, if needed, would require the USSES to re-initiate consultation or conduct an emergency consultation with the USFWS, in order to consider the probability of incidental take.

A review of the activities described in the proposed action indicates that most of the activities would have no effect on grizzly bears or their habitat. Activities that may have minimal effects to grizzly bears can be categorized as follows:

Trailing, grazing, and camp tending activities in the Centennial Range could be an attractant to grizzly bears. Sheep grazing within high-elevation forests surrounding the grizzly bear Primary Conservation Area could be likely to attract occasional bears opportunistically searching for food. However, conservation measures including the presence of full-time sheep herders, guard dogs, and herd dogs provide consistent and effective methods of non-lethal control that, in-turn, discourages bears from habituating to sheep as a food source. Regular camp-tending would be used to remove trash and remove or treat sheep carcasses that would otherwise attract bears if left untreated on site. As a result, the potential effect of attracting grizzly bears to domestic sheep as a food source would be substantially reduced :

First: by minimizing additional attractants through food storage, trash removal, and sheep carcass disposal,

Second: by using non-lethal methods of control that discourage bears to habituate to sheep, and

Third: by moving bands of sheep to other areas of a grazing location in order to avoid problem grizzly bears before a persistent conflict develops.

The number of previous encounters has been minimal, and the direct and indirect effect to grizzly bears was inconsequential as incidents ended promptly without lethal removal or disruption of the bears activities or habitat. This trend would be expected to continue. As discussed under affected environment, there have been no grizzly bear/livestock conflicts on the Meyers Creek allotment in the last five years, the only three confirmed grizzly bear encounters on USSES lands are separated by numerous years, and ended when sheep were moved to a new location. Based on this history, it would be expected that grizzly bear and domestic sheep encounters could occasionally occur on USSES

lands as well as the Meyers Creek Allotment. However, the proactive nature of the conservation measures described previously would prevent the habituation of grizzly bears to domestic sheep, trash, and food associated with camp tending activities.

Effects to grizzly bears from predator control activities are non-lethal and limited to occasional harassment of bears before they habituate to domestic sheep. As mentioned previously, herders are instructed to avoid all encounters if possible, move sheep within the pasture, and move sheep to other pastures if problems persist within a given area. On rare occasion, if sheep are being directly threatened, herders may fire rounds into the air in order to scare a grizzly bear away from the herd. There is no evidence to suggest that rare occurrence of this hazing would affect the grizzly bears ability to inhabit the landscape or raise cubs. If encounters continue, sheep would be moved out of the pasture or grazing unit to prevent continued losses to livestock and to prevent the need for lethal control measures. Herder's ammunition is accounted for, indicating that they have an incentive to address problem carnivores in a manner consistent with USSES policy. All grizzly encounters are reported immediately to the herder's supervisor who contacts USDA Wildlife Services for additional investigation if needed. Through established Memoranda of Understanding, Wildlife Services contacts Idaho/Montana state wildlife agencies and/or USFWS.

Effects to grizzly bear genetic diversity would not occur as demonstrated by several key points.

- First, as stated in the Final Rule to delist, current levels of genetic diversity are consistent with known historic levels and do not threaten the long-term viability of the species.
- Second, The Final Conservation Strategy (USDI FWS, 2007(b)) includes the transplant of one to two effective migrants per generation if no movement or genetic exchange is documented by 2020.
- Third, grizzly bear mortality or change in habitat use would not occur from USSES activities based on the history of only a few encounters that ended without incident, and conservation measures in place to reduce the potential of conflicts.

Considering these factors, it is expected that grizzly bear movement through the Centennial Mountains would not be limited by USSES activities, and thus would not limit genetic exchange with other grizzly bear populations.

Grizzly Bear Alternatives 2, 3, and 4 Direct/Indirect Effects

Alternative 4 was developed specifically to address public scoping comments related to sheep grazing within and adjacent to the grizzly bear Primary Conservation Area. In this alternative, USSES grazing and associated activities would not occur on the East Summer Pasture (Tom's Creek) or on the Meyers Creek allotment of the US Forest Service. The intent of habitat standards in the Forest Plan Amendment for Grizzly Bear Habitat Conservation for the Greater Yellowstone Area Forests (USDA Forest Service, 2006) would be fully implemented by eliminating sheep grazing on the last occupied sheep allotment (Meyers Creek) within the Primary Conservation Area. Presumably, the Meyers Creek allotment would become vacant and permanently close. Similarly, sheep grazing would be eliminated on the East Summer Pasture (Tom's Creek), which is immediately adjacent to the Primary Conservation Area. The area is likely biologically suitable and socially acceptable to grizzly bear occupancy according to the Grizzly Bear Management Plan for Southwestern Montana (Montana Fish Wildlife and Parks, 2002), though boundaries for such designation have not been formally identified in Montana. The potential for livestock/grizzly bear conflicts would be nearly eliminated, since the predominant grizzly bear population is located within the Primary Conservation Area, and USSES grazing would not occur within five miles of the Primary Conservation Area. Grizzly bear mortality from USSES activities would not occur.

Alternatives 2 and 3 affect grizzly bears in a manner similar to alternative 4 except that the potential for USSES livestock/grizzly bear conflicts would be completely eliminated. In Alternative 2, no USSES

grazing would occur, and in Alternative 3, no USSES grazing would occur in the Centennial Mountains, which is identified as biologically suitable and socially acceptable to grizzly bear occupancy (Schwartz et al., 2009 in the Habitat Monitoring Report section).

Cumulative Effects to Grizzly Bear

The spatial boundary for the discussion of cumulative effects for grizzly bears is the Greater Yellowstone Ecosystem, because it is the boundary for the Yellowstone Distinct Population Segment of grizzly bears, and, therefore, puts the potential effects in the context of grizzly bear recovery for the designated population. The temporal boundary is 10 years because projections beyond this time period are less likely to be accurate. The expected level of the effects for the project would not contribute to overall cumulative effects in a way which is detrimental to grizzly bear recovery considering the following points:

The Yellowstone Distinct Population Segment of grizzly bears continues to expand in both population size and distribution.

No grizzly bear mortality is expected from USSES activities, nor is there an expected loss of habitat or loss of use in existing suitable habitat. Effects would be limited to rare occasions when a lone bear or sow with cubs is temporarily harassed to stop an immediate threat to sheep or human safety.

Occasional harassment of a bear and implementation of other conservation measures described previously would not increase annual mortality or cause exceedence of mortality threshold described in the Final Conservation Strategy. Although mortality thresholds were exceeded in 2008 for the Distinct Population Segment, none of these mortalities were attributed to USSES activities, and most were attributed to hunting related incidents (many related to black bear hunting). It is reasonable to conclude that management actions that reduce mortalities related to hunting incidents are a likely tool to minimize grizzly bear mortality and keep it below established thresholds.

USSES activities are not expected to limit grizzly bear movement or occupancy in the Centennial Mountains, and similarly would not limit genetic exchange with other grizzly bear populations. This finding is based on a limited number of documented encounters, no previous control actions on USSES lands or Meyers Creek, no projected mortality as a result of USSES activities, and large expanses of suitable habitat in the Centennial Mountains.

“Interrelated actions” are those that are part of a larger action and depend on the larger action for their justification. The removal and closure of sheep grazing permits on Forest Lands inside the PCA, is an interrelated action, part of the Forest Plan Amendment for grizzly bear. Under this interrelated action, all domestic sheep grazing on National Forests inside the PCA has been subsequently vacated and/or closed except for that occurring on the Meyers Creek allotment by the USSES. Under the proposed action, this allotment would continue to be grazed in its current fashion. It remains consistent with the Forest Plan Amendment because the standard applies to permittees voluntarily withdrawing their grazing. Since grazing on Meyers Creek allotment is instrumental to the grazing rotation schedule and movement of sheep, the US Sheep Experiment Station would not currently be considered a “willing” permittee.

Gray Wolf

Alternative 1, 4, 5 Direct/Indirect Effects

Effects from activities in these three alternatives are essentially the same since each proposes similar livestock grazing in the Centennial Mountains where wolves are known and expected to occur. Alternative 1 proposes grazing in both the East and West Summer Ranges. Alternative 4 proposes

grazing in the West Summer Range while discontinuing grazing in the East summer range and US Forest Service Meyers Allotment. Alternative 5 continues grazing in both the East and West summer ranges while discontinuing grazing from Snakey/Kelly and Bernice allotments. Potential effects to wolves remain the same throughout each alternative, because each alternative continues grazing in occupied wolf habitat.

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

1. Trailing, grazing, and camp tending activities in the Centennial mountains has previously, and would continue to result in occasional encounters with wolves. The habitat is occupied by deer and elk (a natural food source for wolves), and the addition of sheep bands would, on occasion, attract wolves opportunistically searching for food, or wolves habituated to sheep as an easy food source. 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. In addition, on a daily basis, herders keep a daily count on sheep, and ride trails to gather strays. Dead or injured sheep are removed from the field when possible, or treated with lime and/or buried to render the carcass unavailable as a food source. As a result, the effect of attracting wolves to domestic sheep as a potential food source is substantially reduced because of continual human presence, guard dog presence, and by reducing the number of stray sheep, or dead sheep available as a food source. The overall direct and indirect effect to wolves from these activities is minimal. Effects of harassment and predator control activities (such as firing gun shots in the air and other abatement tools) are discussed separately in number 3 below.
2. Activities that could 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 ungulates. 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. Since this area 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 breaks and roads on the USSES lands could temporarily have small effects on deer and elk herd movements, where the ungulates avoid mechanized operating equipment. However, these effects are limited to times when heavy equipment is operating in the area. With a lack of public motorized access to roads on the USSES, big game persists 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 on USSES lands at lower elevations is constructed to specifications that do not limit travel for 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 (coyote fence) 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 limited habitats. As a result, effects would be limited to the loss of a small amount of available forage for deer and elk, a local change in daily movements of deer and elk around the one square mile exclosure, and ultimately, little or no corresponding effect to wolves.

3. Effects to wolves are expected from predator control activities on USSES lands including non-lethal measures such as hazing, lethal removal of individual animals, and in some cases, particularly when depredation to private livestock is also occurring, removal of entire packs and/or breeding pairs. The history of minimal conflicts with wolves on USSES before 2008, and the incremental control measures that resulted in the removal of two packs in 2009 near Humphrey Ranch, indicate that control measures are likely to vary from year to year. In most years, such as occurred in 2005 through 2008, non-lethal activities including having sheep herders and guard dogs with sheep, hazing individual wolves during encounters, and trapping/radio collaring individual wolves would be adequate to address depredation on USSES. Despite proactive conservation measures to reduce conflicts, in some years packs would establish and/or expand in or near the Centennial Mountains, and depredate more heavily on livestock from USSES as well as adjacent private producers. In these cases, lethal control measures would be necessary to curtail depredation on USSES sheep and/or prevent a pack from habituating to domestic sheep. Lethal removal would be implemented on one to three wolves. In uncommon circumstances such as occurred in 2009, when numerous depredations continue on private and USSES livestock, control actions could continue in an incremental fashion until an entire offending pack is removed, varying between three and ten animals. At the legal discretion of USFWS, Idaho/Montana Wildlife Agencies, and APHIS Wildlife Services (depending on current listing status), incremental control measures would continue to be authorized, to a varying degree, resulting in the removal of individual wolves, breeding pairs, and on occasion, established packs.

Alternatives 2, 3 Direct/Indirect Effects

Elimination of all USSES grazing and associated activities (Alternative 2), or all USSES grazing activities in the Centennial Range (Alternative 3) would eliminate the USSES role in potential effects on wolves discussed in the earlier alternatives. Livestock grazing on USSES lands which otherwise may have resulted in lethal control actions to remove a few individual wolves annually, or in some years, up to two wolf packs or groups that are establishing, would not occur. However, control actions related to private livestock owners and US Forest Service/Bureau of Land Management Permittees in and adjacent to the Centennial Range would continue in its current fashion. It is unknown if new resident wolf packs would naturally reestablish, or if other control actions related to private/permitted producers would limit pack establishment on the Centennial Range.

Gray Wolf Cumulative Effects

The spatial boundary for the discussion of cumulative effects for wolves is the Centennial Mountain Range because this area is

Large enough to sustain one or more wolf packs,

Is influenced by (or influences) wolf management on adjacent lands under other ownership, and

Is an important piece of undeveloped habitat between the GYE and Central Idaho.

The temporal boundary is 10 years because projections beyond that point are similar to those being discussed, but become less accurate over time.

The project is not expected to add cumulative effects detrimental to wolf recovery based on the following information:

Hunt season quotas for 2009 in identified hunt units that contain USSES lands are five wolves in the Upper Snake Wolf Hunt Zone of Idaho and 12 wolves in the Wolf Management Unit 3 of Montana. Hunting seasons are managed on an annual quota basis by state wildlife agencies, who point to evidence that such management will not detract from sustaining the current population, and that

genetic connectivity will not be impacted, even if the maximum quota of 330 animals is reached. On September 8, 2009, Judge Molloy (Missoula) denied a request for a preliminary injunction based on a lack of evidence of irreparable harm to the wolf from the 2009 wolf hunting season in Idaho and Montana.

The Northern Rocky Mountain Wolf population is expanding in both size and distribution, and a limited number of wolves or packs have been or will be impacted by continued operations on the USSES.

State wildlife agencies have the authority to authorize or deny lethal control actions on private or agency lands, thus procedures are in place to balance lethal control actions with larger population/pack management goals in the Centennial Mountain Range.

Determinations of Effects and Rationale

Canada Lynx Biological Determination

This determination is preliminary. It will be finalized by the project wildlife biologist prior to implementation of the project decision. As described previously in detail, consultation with the USFWS is underway. Discussions between the USFWS and the wildlife biologist have occurred on numerous occasions and will continue. Consultation would conclude after the biological assessment is finalized and signed, submitted to the USFWS for their consideration and (if/when) concurrence is provided.

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 having a low potential for year-round occupancy, and recent observations of Canada lynx in the area are rare.

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 predator control activities.

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.

Grizzly Bear Biological Determination

This determination is preliminary. It will be finalized by the project wildlife biologist prior to implementation of the project decision. As described previously in detail, consultation with the USFWS is underway. Discussions between the USFWS and the wildlife biologist have occurred on numerous occasions and will continue. Consultation would conclude after the biological assessment is finalized and signed, submitted to the USFWS for their consideration and (if/when) concurrence is provided.

The project biologist has determined that U. S. Sheep Experiment Station Grazing and Associated Activities Project - 2009, may affect, but are not likely to adversely affect the Yellowstone Distinct Population of grizzly bear. This determination is applicable to the Proposed Action (Alternative 1) as well as Alternatives 4, and 5. Effects are similar in these alternatives, however the potential encounters are further reduced in Alternative 4. This determination is supported by rationale presented in the Biological Assessment and summarized below.

No grizzly bear mortality is expected. Neither lethal control or trap and transport will be implemented or requested under this proposal. Should the need arise for these abatement techniques related to grizzly bear, consultation would be reinitiated.

Effects are limited to rare occasions when a lone bear or sow with cubs is temporarily harassed to stop an immediate threat to sheep or human safety.

The project will not limit grizzly bear occupancy or movement through the Centennial Mountains because grizzly bear habitat will not be reduced, and USSES grazing practices include light utilization, for short duration, over a large landscape, with Summer Pastures rested one out of every three years. This grazing method prevents frequent and recurring encounters with grizzly bears which might otherwise alter bear behavior or necessitate the need for lethal control.

Potential opportunities for genetic exchange with other grizzly bear populations would not be affected since occupancy or movement through the Centennial range would not be limited. In addition, recent evidence demonstrates that genetic diversity is not limiting Yellowstone DPS grizzly bear populations in the short term, and that translocation from other populations is an adequate method to address genetic diversity shortfalls over the long term.

10 conservation measures (described previously) are in place to ensure that USSES activities continue to operate in a manner that minimizes the potential for encounters and effects to grizzly bears. These conservation measures include proactive measures to avoid conflicts (research design criteria, guard dogs, sheep herders, and storage/removal of attractants), annual training, policy to address encounters non-lethally (move sheep, haze only if necessary), and established communication processes with other agencies.

There have been only a few encounters with grizzly bears in the past decade relative to USSES activities. No grizzly bears have been killed, captured, or relocated from U.S. Sheep Experiment Station lands or on Forest Service/BLM allotments in response to USSES activities. It is expected this trend will continue.

USSES sheep grazing in the Meyers Creek Allotment was analyzed previously by the USDA Forest Service who found that the grazing has occurred there for decades with minimal conflicts, meets the standards and guidelines from the Grizzly Bear Forest Plan Amendment, and noted that “The permittees (USSES) have had an excellent record of avoiding conflicts with bears for many years.”

The potential for livestock/grizzly bear encounters would be further reduced in Alternative 4, since the predominant grizzly bear population is located within the PCA, and USSES grazing would not occur within 5 miles of the PCA.

- The expected level of effects for the project are minimal, and would not contribute to overall cumulative effects in a way which is detrimental to grizzly bear recovery.

- The biologist has also determined that Alternatives 2 and 3 would have "No Effect" on the Yellowstone DPS of grizzly bears since USSES sheep grazing activities would not occur in occupied grizzly bear habitat or alter habitat conditions.

Gray Wolf Biological Determination

The northern Rocky Mountain Distinct Population Segment of gray wolf is currently not listed. This determination is preliminary and is applicable if the wolf is returned to it's previous status as a nonessential experimental population. It will be finalized by the project wildlife biologist prior to implementation of the project decision. As described previously in detail, consultation with the USFWS is underway. Discussions between the USFWS and the wildlife biologist have occurred on numerous occasions and will continue.

The project 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:

- There are no known wolf packs residing on USSES lands.

- 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 would have minimal effects to ungulate movements and thus, few, if any effects to wolves that depend on them as a food source.

- Control measures would be used as a last resort, would be implemented through APHIS Wildlife Services, would target only offending animals, and would be 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.

Biological Assessment Completed by:

Steven Kozlowski
Wildlife Biologist

Name Date

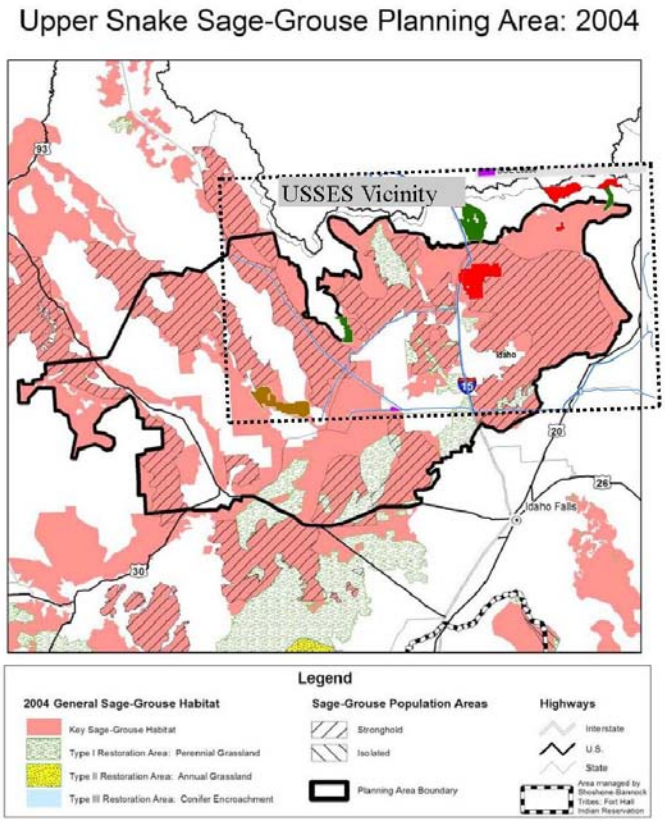
Analysis of Other species

The following section includes additional species, or their habitats, that are located on the U.S. Sheep Experiment Station, or that are located adjacent to or downstream of the project, and could be negatively affected by the project. A pre-field review of available information was conducted to assemble occurrence records, review habitat needs and ecological requirements, and determine what field reconnaissance was needed to complete the analysis. Sources of information 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. The wildlife biologist visited the sites on May 6th through 8th , 2008 to conduct interviews and cursory field review. The biologist conducted an extensive field visit July 6th through 14th, 2008 verifying habitat types, habitat conditions, observing proposed activities, and gathering additional site information.

While the pre-field review generated an extensive list of species that may occupy habitats on the USSES, this analysis narrows the focus to those species where concerns were raised during litigation, scoping, and pre-field/field review. 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 provides 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 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 Department of Fish and Game. This analysis synthesizes information pertinent to the local area including a review of the Conservation Plan for the Greater Sage-grouse in Idaho (2006), Plan for Increasing Sage Grouse Populations Developed by the Upper Snake Sage Grouse Local Working Group (2004), the Greater Sage-grouse Habitat and Population Trends in Southern Idaho Progress Report (2008), and sage-grouse lek survey data collected on USSES lands. Field visits were conducted in 2008 and 2009 to gather additional information regarding vegetation conditions (summarized in the range resource report), fire disturbance history, and to review habitat conditions and issues with area biologists.



The greater sage-grouse is considered imperiled by the Idaho Conservation Data Center, range-wide imperiled by the Bureau of Land Management, sensitive in Region 4 of the U.S. Forest Service, and is under a 12-month status review for federal listing by the U.S. Fish and Wildlife Service (Idaho Comprehensive Wildlife Conservation Strategy February 2006). A review of greater sage-grouse life history can be found in the 2004 Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats (Connelly et al. 2004). A condensed version of life history specific to Idaho from the Idaho Fish and Game Comprehensive Wildlife Conservation Strategy (Idaho Comprehensive Wildlife Conservation Strategy February 2006) is summarized below.

The greater sage-grouse occurs in 11 states and 2 Canadian provinces including: Alberta, California, Colorado, Idaho, Montana, Nevada, North Dakota, Oregon, Saskatchewan, South Dakota, Utah, Washington, and Wyoming. This bird is widely distributed throughout sagebrush dominated habitats of southern Idaho (Schroeder et al. 1999).

Recent analysis of breeding population data indicates that 11 of 13 (85%) states and provinces showed significant long-term declines in size of active leks. Greater sage-grouse populations declined at an overall rate of 2.0% per year from 1965-2003. From 1965-1985, the sage-grouse population declined at an average of 3.5% per year. However, from 1986-2003 the population declined at a much lower overall rate of 0.4%. In Idaho, sage-grouse populations declined at an overall rate of 1.5% per year from 1965-2003. From 1965-1984, the population declined an average of 3.0% per year but from 1985-2003 the population had an annual change of only 0.1% per year (Connelly et al. 2004).

Greater sage-grouse are totally dependent on sagebrush-dominated habitats. Breeding habitat (areas used for breeding, nesting, and early brood rearing) is characterized by sagebrush canopy coverage of 15-25% with a healthy grass and forb understory (Connelly et al. 2000). During summer, sage-grouse may use a variety of habitats but are generally found in areas with succulent forbs and insects. Winter habitat consists of relatively large areas of taller sagebrush with 10-25% canopy cover. During the winter sage-grouse consume 99% sagebrush in their diet. In early spring the diet consists largely of sagebrush and some forbs. During later spring and summer, the bird's diet includes insects and forbs. Clutch size varies from 6-9 eggs and incubation time ranges from 25-29 days. Chicks are precocial and grow rapidly. Breeding is common for yearling hens and yearlings often have smaller clutches than adults (Schroeder et al.1999). Sage-grouse are typically long-lived (4-5 years is not uncommon) with low reproductive rates compared to other game birds. Survival differs among age and gender groups and adult females tend to have higher survival rates than males or juvenile females.

In general, the loss, degradation, and fragmentation of sagebrush habitat are the major threats to the greater sage-grouse in Idaho (Connelly et al. 2004). Factors contributing to habitat degradation include alteration of historical fire regimes, conversion of land to farming or intensive livestock forage production, water developments, use of herbicides and pesticides, establishment of invasive species, urbanization, energy development, mineral extraction, and recreation (Connelly et al. 2004).

Sage-grouse have used the habitat in, on, and around the sheep station prior to settlement of the area. Sage-grouse research on the USSES shows that they use the Headquarters area for breeding, nesting, and early brood-rearing activities. In late summer many of the grouse move further North towards Henninger and the foothills of the Centennial mountain range. They spend the late summer and early fall there before returning to the USSES on a gradual migration to the south and lower elevations (such as areas around Bernice allotment and the Idaho National Laboratory). Some sage-grouse stay on the Headquarters property year-round, but most use it seasonally. It plays an important role in population growth and stability as it provides key habitat for pre-nesting, breeding, nesting, and early brood-rearing.

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 on USSES (personal communications, USDA Sheep Experiment Station) shows that in 1966, 12 active leks were identified on the entire headquarter section of the USSES. In the period of 2003 through 2009, the number of active leks on established routes varied between 12 and 14. USSES has identified an approximate total of 20 active leks on the headquarters lands, but not all are included in the annual Upper Snake annual monitoring protocol. Overall the sheep station has seen fluctuations in the number of leks and the number of males strutting on each lek. Nevertheless, numbers have increased since 1978. In 1978 there were 167 males on 10 active leks; in 2009 there were 351 males on 12 active leks. Hulet et al. (1986) studied movements and habitat selection of greater sage-grouse at the USSES and found that some birds made very long seasonal migratory movements between the USSES and winter range towards INL (DOE property) to the south. Greater sage-grouse exist on USSES lands and leased lands to the north and south and may be affected by the proposed action or one of the alternatives.

According to figures in the Idaho Sage-grouse Local Working Group's Statewide Annual Report, (2008), sage-grouse productivity in the upper snake has typically been similar to or higher than the statewide average. Based on analysis of prior lek data, IDFG increased the season and bag limits for sage-grouse in the Upper Snake Planning Area partly because lek counts exceeded 150% of the 1996–2000 average. Evidence of this high productivity is shown by the substantial number of sage-grouse harvested in the Upper Snake Planning Area varying between 1,700 birds (2004) and 4,698 birds (2008). These figures represent some of the highest numbers in Idaho. The Conservation Plan For Greater Sage-grouse in Idaho (2006) attributes habitat threats in the Upper Snake Planning area primarily to a conversion to croplands and influences from roads and power lines, while wildfire has played only a minor role in habitat loss.

There are a number of conservation measures employed by the USSES to minimize effects of sheep grazing and proposed 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 previously had active leks. Concentrated sheep activity 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.

Fire History in Sage-grouse Habitat

Both wildfire and prescribed fire to improve range land has occurred on ARS land with records dating back to 1936. Burn records show that approximately 19,000 acres have burned in the past 30 years and approximately 4,000 acres have burned in the last 10 years. These figures represent total acreages burned, areas that have burned more than once, and a mosaic of burned and unburned

patches within burn polygons. Prescribed fire has occurred in previous years at a rate of approximately 670 acres annually. Appendix D contains maps of past wildfire, past prescribed fire, and the larger landscape where future burns would be considered.

To conduct research on forage production, delayed grazing strategies and to achieve secondary benefits to sage-grouse and other wildlife species, USSES proposes to burn Headquarters pasture areas on a rotation of 30 years. An 11,803 acre landscape area has been identified for future burn opportunities, with an average of 400 acres per year, and a total of 2000 acres in the next five years (2015). Individual burn plans would be prepared to include specific location and design of burn units in order to meet research objectives. It is expected that many burn units would not reach complete combustion, thereby leaving unburned areas within a given burn unit perimeter.

Greater Sage-grouse Direct and Indirect Effects

Effects Summary: The effects to sage-grouse in alternatives 1, 4, and 5 are similar. Benefits to habitat would be derived from grazing activities that increase a mosaic of shrubs, forbs, grasses, and maintain lek sites. There would be less desireable effects from temporary displacement of grouse by grazing bands of sheep or seasonal dietary overlap between grouse and sheep. Given the conservation measures in place, the overall balance between positive and negative effects would be neutral. Alternative 3 differs from Alternative 1, 4, and 5, because it would leave a large number of sheep for a longer duration at Headquarters, the area of greatest importance to sage-grouse. The effects of that alternative would be a longer temporal disturbance and displacement of sage-grouse, as well as higher utilization of forbs which are preferred by sage-grouse at all life history stages when they are available. Each of the action alternatives is similar in that they use treatments of prescribed fire (400 acres/yr implemented), which would be a long-term benefit to sage-grouse and their habitats if burn units are kept small and the juxtaposition of those fires does not create large expanses of open habitat. Results of historic activities of a similar duration and intensity suggest that continuing these activities would maintain a substantial amount of quality habitat and continue to support a strong population.

Alternative 2 eliminates direct disturbance and displacement of grouse, but it would also eliminate the possible benefit of seasonal grazing by sheep to maintain the open nature of leks and manipulate and improve sage-grouse habitat.

In all alternatives, sage-grouse population trends in the project areas would continue to mimic statewide trends (often based on annual weather variation), or improve on those trends through maintenance of quality habitat and strong productivity. USSES activities would maintain conditions that contribute positively towards both the Idaho Conservation Plan and the Upper Snake Local Working Group Conservation Plan.

Detailed Description of Effects

Alternative 1 – Proposed Action

This alternative would continue grazing practices as currently constituted. From mid January to mid April there would be no effect to sage-grouse, because all sheep will be on the Headquarters feedlots. From mid April through mid June 3300+ sheep will be grazing the Headquarters pastures. Although this could affect sage-grouse breeding, nesting, and early brood-rearing activity, conservation measures are in place that would minimize impacts and interactions of sheep with sage-grouse by avoiding leks, known nesting areas, and known early brood-rearing areas. Therefore, the negative effects to sage-grouse during this period would be minimal and would not greatly reduce productivity. From late June to early July (2 weeks) about 2000 sheep would be moved north to graze on the Henninger ranch property. Local data shows that some sage-grouse move toward this area as early as late June. There would be some displacement of sage-grouse on this 1,100 acre property during this

two week period, but effects to the population as a whole would be minimal due to the small proportion that the Henninger ranch comprises of the total available habitat. The remaining 1300 sheep not on Henninger would be split between two areas: Humphrey ranch and East Beaver (which contains very little productive sage-grouse habitat). There would be minimal negative effects of displacement of grouse in the Humphrey ranch area and overall effects to productivity, movements, or migrations would be minor.

From September to November all of the 3300 sheep return to the Headquarters pastures. This coincides with the movement and flocking of the grouse to the Headquarters range in their normal movements to lower elevations preparatory to winter. Some displacement would occur as grouse avoid sheep herds. However, during the autumn season sage-grouse diets are rapidly changing to almost 100% utilization of sagebrush, so any dietary overlap with sheep would be minimal. Very few sage-grouse utilize the winter habitat near where sheep would be grazing on Snakey, Kelly, or Bernice, because it is suboptimal with salt desert shrub habitat being more dominant, and therefore the effects would be negligible.

Prescribed fire will initially create a temporary loss of nesting, brood-rearing, fall, and winter habitat for sage-grouse in approximately 100 to 200 acres patches (within the 400 acres burned per year). This small loss of habitat would temporarily displace grouse for a 5-10 year period until shrubs begin to reestablish and the areas return to use by brood-rearing grouse. It would take a total of 30-40 years for each burned area to return to a later mid-seral or pre-burn state. This may cause grouse to shift use of traditional areas until the area has recovered or provides optimal herbaceous requirements during each specific season of use. Given that the proposed acreage is minimal, these small scale fires would not have a major effect on sage-grouse.

Benefits to habitat overall would be derived from grazing activities that increase a mosaic of shrubs, forbs, grasses, and maintain lek sites. There would be less desireable effects from temporary displacement of grouse and seasonal dietary overlap of grouse and sheep. Given the conservation measures in place, the overall balance between positive and negative effects to grouse are neutral. Sage-grouse populations and habitat on the USSES would be maintained in a healthy condition.

Alternative 2 – No action alternative

Alternative 2 represents the no action alternative because of a proposed 65% reduction in the total number of sheep grazed in Alternative 1. In addition, these sheep are maintained in feed lots. The direct and indirect effects to sage-grouse could be both positive and negative in nature. A study performed on the USSES (Bork et al. 1998) showed that areas of fall sheep grazing exhibited significantly greater live forb and herb cover than at control plots, and areas of spring sheep grazing exhibited significantly greater live shrub cover than control plots. Each of these components of sage-grouse habitat would be largely reduced, and the mosaic across the landscape would decrease. Displacement of sage-grouse from habitat and associated behavioral disturbances would be reduced, however these potential benefits would likely be offset by the loss of a mosaic among forb, grass, and shrub cover no longer created through USSES activities.

Alternative 3

The effects of Alternative 3 differ from those of the proposed action. The differences are in the details of the temporal grazing in Henninger and at Headquarters and the 20% reduction of total numbers of sheep from Alternative 1. Instead of high intensity short duration grazing on Henninger, this alternative would result in low intensity long duration grazing. It would allow 340 sheep to graze from early June to sometime in mid September when they would bring about 200 head back to Headquarters. The effects of longer duration grazing, even with fewer sheep, could cause long-term avoidance of that area during the season of sheep use. The direct effects of displacement on

Henninger would be more pronounced than a 2 week high intensity use of the area. The indirect effects of having low intensity and long duration grazing would be decreased forb availability and abundance for sage-grouse. Sheep would have a longer duration to select for and thereby reduce succulent forbs important to post-nesting hens and new chicks. This alternative would place a large number of sheep (2,300-2,640) on the Headquarters pastures for a longer period of time causing additional detrimental effects to sage-grouse productivity during the nesting and brood-rearing seasons. It would be more difficult to implement avoidance conservation measures prescribed in those areas because of the increased duration of grazing in occupied habitat. The direct impacts could include disruption of nesting and brood-rearing activities, as well as seasonal (rather than short term temporary) displacement to suboptimal habitats. In addition, indirect impacts of long-term grazing plus prescribed fire would result in decreased forb abundance and diversity.

Alternative 4

The effects of Alternative 4 are the same as those of the proposed action (Alt. 1) until early July through September. During that time, to minimize potential conflicts with grizzly bears, 2000 sheep would not graze the Summer Pasture (Tom's) creek or Meyers Ck. (USFS land), but would instead be placed in the West Pasture (Odell and Big creek) on the Centennial range. Due to the fact that very few sage-grouse use the area and the habitat found throughout the Centennial range is interspersed with conifers, the direct and indirect effects to sage-grouse of this alternative are negligible.

Alternative 5

The effects of Alternative 5 are similar to the proposed action. However due to the 30% reduction in total sheep numbers (from 3330 to 2330), less disturbance would occur during the breeding and brood-rearing season. The conservation measures in place would largely neutralize these effects. In addition the sheep would not be grazed southwest of Headquarters at Snakey, Kelly, or Bernice, but would instead be put in the feed lot from October into April. This change in winter grazing would have negligible effects on sage-grouse or their habitat.

Sage-grouse Cumulative Effects

The spatial boundary for the discussion of cumulative effects for sage-grouse is the Upper Snake Sage Grouse Planning Area because it is the population boundary as managed by the Idaho Department of Fish and Game. The temporal boundary is 10 years because projections beyond this time period are similar to those being described but with decreased precision. The expected level of effects from this project would not combine with overall cumulative effects in a way that is detrimental maintaining healthy sage-grouse populations and habitat in the Upper Snake Planning Area, considering the following points:

- Idaho Fish and Game assessed overall lek productivity in the Upper Snake Planning Area and found that counts were greater than 150% of the average 1996-2000 counts. Because of this increased productivity, daily hunting bag limits were increased and the length of the hunting season was expanded (Idaho sage-grouse Local Working Group Statewide Annual Report, 2008).

- The 2008 sage-grouse harvest in the Upper Snake Planning Area represents nearly double the average number of birds harvested annually the four years prior (Idaho sage-grouse Local Working Group Statewide Annual Report, 2008). This increase demonstrates the IDFG position that sage-grouse habitat and productivity in the Upper Snake Planning Area is stable.

- There has been an upward trend of males counted on leks during the past five years, indicating that habitat has not been limiting survival and productivity.

- The Mountain States Transmission Intertie is a regional project which would bisect sage-grouse habitat on the Headquarters property as well as other habitat in cumulative effects area. Increased effects to sage-grouse from this transmission line (if permitted) would include higher rates of predation along the corridor and corresponding avoidance of adjacent habitat. Although the precise effects of the transmission line would be analyzed separately, it is not expected that the disturbance would limit sage-grouse ability to inhabit USSES or the Upper Snake Planning Area because of large expanses of available habitat nearby.

Pygmy Rabbit Brachylagus idahoensis

The pygmy rabbit is considered imperiled by the Idaho Conservation Data Center, range-wide imperiled by the Bureau of Land Management, sensitive in Region 4 of the U.S. Forest Service, and is under a 12-month status review for federal listing by the U.S. Fish and Wildlife Service (appendix B; Idaho Comprehensive Wildlife Conservation Strategy February 2006). A comprehensive review of pygmy rabbit life history can be found in the Federal Register (May 20, 2005; 70 FR 29253). A condensed version of life history specific to Idaho from the Idaho Fish and Game Comprehensive Wildlife Conservation Strategy (2006) is summarized below.

The pygmy rabbit is a sagebrush obligate inhabiting areas characterized by cold winters, warm summers, and scant precipitation. Elevations range from 900-2380 m (2800-7800 ft). Habitat comprises dense, tall stands of big sagebrush growing on deep, friable soils that allow the rabbits to dig rather extensive burrow systems (Janson 2002). Landscape features includes alluvial fans and hillsides, swales within rolling topography, floodplains, brushy draws, riparian channels, edges of rock and lava outcroppings, and mima mounds (low, circular mounds of loose, unstratified soils that support distinctly taller patches of sagebrush). Sagebrush is the primary food item of pygmy rabbits and may comprise up to 99% of the winter diet (Green and Flinders 1980). Native forbs and grasses comprise a larger proportion of the diet (30-40%) in spring and summer. Under deep snow conditions, dense and structurally diverse stands of big sagebrush facilitate subnivean burrowing, providing access to forage and protection from predators and thermal extremes (Katzner and Parker 1997).

This species occurs in the Great Basin and adjoining intermountain regions. Populations are widely scattered across this landscape in association with tall, dense sagebrush aggregations with deep, loose soils of alluvial origin that allow burrowing. In Idaho, pygmy rabbits occur across the southern half of the state. The species is considered rare in Idaho, though data on abundance and population trends are generally lacking. Recent surveys for presence of pygmy rabbits have augmented statewide distribution data and documented relatively abundant populations in localized areas.

Loss, alteration, and fragmentation of sagebrush-steppe habitat and apparent declines in pygmy rabbit populations have elevated concern for this species (Knick and Rotenberry 1995). Since settlement by Europeans, sagebrush-steppe landscapes in Idaho and across the sagebrush biome have been greatly altered, resulting in loss and fragmentation of habitat for many sagebrush obligate species, including the pygmy rabbit. Agents of habitat loss and degradation include agricultural conversion, urbanization (and related infrastructure networks), prescribed and wildland fire, invasive plants (e.g., cheatgrass), conifer encroachment, vegetation treatments that remove sagebrush, and unsustainable livestock grazing (Connelly et al. 2004). Fragmentation of pygmy rabbit habitat has implications for this small mammal with limited dispersal capabilities, including reducing overall population size, isolating disjunct populations, increasing susceptibility to disease and other localized threats, and reducing gene flow among populations (Gilpin 1991).

Although extensive data on population numbers and the current distribution are somewhat lacking, research in the late 1970s showed that pygmy rabbits occurred on USSES lands and they were abundant (Flinders pers. comm. 2009). Limited data obtained from IDFG showed four different point locations for pygmy rabbits on USSES lands and many locations on lands adjacent to the USSES. Suitable habitat exists not only on USSES lands, but on adjacent BLM, USFS, INL (DOE) and private lands. The range assessment on USSES lands (July 2009) showed that two of the seven sites measured on USSES lands have similar shrub cover components to those measured on USSES lands in the late 1970s where pygmy rabbits occurred.

Pygmy Rabbit Direct and Indirect Effects

Effects Summary - The effects to pygmy rabbits due to alternatives 1, 4, and 5 are similar. Temporary displacement of pygmy rabbits would occur in these alternatives. Pygmy rabbits would persist with population numbers and trends similar to the current condition, considering that they still exist in the same areas they were found in the 1950s, despite the last 50 years of grazing and land management in the area. In mid-March through mid-May, conservation measures taken to avoid sheep/grouse interactions on leks could create increased disturbance to rabbits. As areas close to leks are avoided, thicker more dense patches of sagebrush habitat may be used. This could directly impact feeding and/or breeding activities of rabbits. Only minimal dietary overlap between sheep and rabbits would occur, so the effects would be negligible. Because pygmy rabbits live in older, taller, more dense stands of sagebrush and mixed shrubs, prescribed or wildland fires can eliminate, fragment, or degrade portions of pygmy rabbit habitat until shrub cover returns to a mature state. A study in Utah at similar elevations showed that pygmy rabbits would only venture 50 meters from the edge of mechanical treatments (Larsen pers. comm. 2009). Prescribed fire research in occupied pygmy rabbit habitat should consider design features that include narrow burn strips or an unburned sagebrush matrix to allow for continued occupancy by pygmy rabbit. Alternative 3 grazes a larger number of sheep at Headquarters for a longer duration. The effects of that alternative would be a longer temporal disturbance with additional displacement of pygmy rabbits. Alternative 2 would eliminate any interaction with or displacement of rabbits because all of the sheep would be on feedlots.

Detailed Description of Effects

Alternative 1 – Proposed Action

This alternative would continue grazing practices as currently constituted. From mid January to mid April there would be no effect to pygmy rabbits, because all sheep will be on the Headquarters feedlot. Temporary displacement of rabbits will begin as sheep are released to graze in the Headquarters pastures in mid-April. This disturbance may be exacerbated when sheep are moved to avoid interactions with grouse on leks. This may move sheep into areas of thicker more dense patches of sagebrush habitat, which, if occupied, are key to pygmy rabbit survival. This could also have small direct impacts on feeding and/or breeding activities of rabbits. There is very little dietary overlap between sheep and pygmy rabbits, so effects of grazing to the vegetation needed by pygmy rabbits would be negligible. From June through mid-September sheep will be grazing on the Henninger, Humphrey, and East Beaver pastures to the north. Pygmy rabbits are not expected to occur in these areas because of the habitat changes associated with higher elevations and soil types. No effect to pygmy rabbits is expected from activities in these pastures. During mid-September through mid-October, while all 3300 sheep are back on the Headquarters pastures there would be some displacement of pygmy rabbits or disruption of normal behaviors, but the effects would be minor. Late fall/winter grazing to the south would affect pygmy rabbits. Dietary preference of pygmy rabbits switches from a mixture of shrubs, grasses and forbs, to about 99% sagebrush during the winter months. Grazing sheep on the Bernice, Kelly, and Snakey pastures to the south could temporarily affect rabbits in that area. Effects would be minimal due to the fact that two thirds of the total number

of sheep grazed will be spread out over multiple pastures for about a month and a half each. More rabbits would be affected by winter grazing, but the disturbance will last for a shorter period of time, over a larger area.

The proposed prescribed burning (400 acres per year in approximately 100 or 200 acre patches) would have the largest effect of all the proposed activities on pygmy rabbits. Habitat has the potential to be eliminated, fragmented, and degraded to a varying extent dependent upon the burn design and location. Pygmy rabbits select areas of dense mature sagebrush and ideally at a very late seral stage. The highest quality habitat may take 50 or more years to return to pre-burn conditions. Thus, late-seral sagebrush habitat could become a limiting factor if the combined effects of this action and other natural or unnatural disturbances do not retain adequate cover. Since pygmy rabbit home ranges are small, and they don't venture far from a habitat edge into open habitat, the location, size and juxtaposition of prescribed burns would be important in minimizing long-term degradation of pygmy rabbit habitat.

Alternative 2

The direct and indirect effects to pygmy rabbits could be both positive and negative in nature. A study performed on the USSES (Bork et al. 1998) showed that areas grazed in the spring by sheep exhibited significantly greater live shrub cover than in control plots. The same study showed that areas grazed in the fall by sheep exhibited significantly greater live forb and herb cover than at control plots. This shows that in the absence of spring grazing and other activities, shrub cover will decrease in some areas and thus result in small reductions in pygmy rabbit habitat. Although displacement and behavioral disturbances to pygmy rabbit would be reduced, potential benefits would be offset by the change in forb, grass, and shrub cover no longer created through USSES activities.

Alternative 3

The differences of Alternative 3 compared to the proposed action are in the details of the temporal grazing in Henninger and at Headquarters and the 20% reduction of total numbers of sheep. This alternative would place a larger number of sheep (2300-2640) on the Headquarters pastures for a longer period of time causing additional potential for displacement and disruption of pygmy rabbit daily activities. Increased utilization by sheep would result in further reductions in shrub cover important to pygmy rabbits. On Henninger, the change is unlikely to affect pygmy rabbits because they aren't known or expected to occur in that pasture.

Alternative 4

The effects of Alternative 4 are the same as those of the proposed action. To minimize potential conflicts with grizzly bears, 2000 sheep would not graze the Summer Pasture (Tom's) creek or Meyers Ck. (USFS land) July through September. Instead, sheep would be placed in the West Pasture (Odell and Big creek) on the Centennial range. Pygmy rabbits are not expected to occupy these areas of the Centennial range because habitat is naturally fragmented and interspersed with conifers.

Alternative 5

The effects of Alternative 5 are similar to the proposed action. However due to the 30% reduction in total sheep numbers (from 3330 to 2330), less disturbance would occur during the spring and early summer. In addition, sheep would not be grazed southwest in Snakey, Kelly, or Bernice, but would instead be put in the feed lot from October into April. This change in winter grazing would have a small positive effect on pygmy rabbits and their habitat.

Pygmy Rabbit Cumulative Effects

The spatial boundary for the discussion of cumulative effects for pygmy rabbits is the Upper Snake Sage Grouse Planning Area because pygmy rabbit distribution is similar to sage-grouse distribution, and landscape conditions and threats for that area are described in the sage-grouse Conservation Plan. The temporal boundary is 10 years because projections beyond this time period are similar to those being described but with decreased precision. The combined effects from this project and other planned projects in the cumulative area boundary would be unlikely to reduce pygmy rabbit populations or habitat beyond a critical threshold for the following reasons:

- Observational data incidates that pygmy rabbits are persisting in the same areas they were found in the 1950s, despite the last 50 years of grazing and land management.
- Fire in the Upper Snake Planning Area has played only a minor role in loss of sagebrush habitat.
- The Mountain States Transmission Intertie is a regional project which would bisect pygmy rabbit habitat on the Headquarters property. Effects from the power line would be limited to minor losses of sagebrush habitat within the proposed powerline corridor, but would occur on a scale that is not likely to limit pygmy rabbit distribution across the area.

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 O'Dell 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 and Indirect Effects

Wolverines have not been known to depredate domestic sheep on USSES lands. No control actions have occurred, and none are expected to occur for the species. The described activities for all alternatives 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. Potential habitat connections provided by the Centennial Range between the Greater Yellowstone Ecosystem and Central Idaho would not be altered.

Wolverine Cumulative Effects

Activities would not have negative effects to wolverine and, thus, would 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 O'Dell, 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 most encounters do not lead to lethal control (Farr, personal communication). More often, sheep are moved to a new area, guard dogs discourage further incidents, or black bears discontinue interest in the domestic sheep as a food source. A review of known black bear control actions on USSES lands indicates that past black bear conflicts with sheep have resulted in 11 black bears being killed in 1988 in the Odell Creek pasture during the period of the Yellowstone fire, and employees killing two black bears related to other incidents. No black bears have been trapped and relocated from USSES lands. If a black bear is suspected of killing sheep, USSES staff contacts Wildlife Services to investigate the matter and implement control actions if necessary. Mitigation measures to deter bears were discussed previously in the grizzly bear section. The use of guard dogs, full time sheep herders, and trash removal are instrumental in minimizing potential depredations, conflicts, and control actions.

Black Bear Direct/Indirect Effects

The direct and indirect effects to black bears are the similar to those described for grizzly bears. However, encounters are more likely to occur annually and lethal control would be implemented on occassion. Estimated figures for past lethal control of black bears on USSES lands indicates that only a small number of black bears (less than 15) have been removed over the last 11 years, and that most conflicts end without lethal control. It is estimated that black bear removals would occur at a similar rate in the alternatives that graze sheep in the Centennial Range (Alternatives 1, 4, and 5). Most years, no black bears would be killed. However in drought years with poor food production, more bears would be taken. These figures amount to an average of one bear being killed per year. In alternatives 2 and 3, control actions for black bear are likely to be unnecessary since sheep would not be grazed in typical suitable habitat. As a result, it is likely that no black bears would be killed from USSES activities under these alternatives. In all alternatives, black bear populations are estimated to remain secure. The proposed action and it's alternatives are not expected to limit habitat connectivity as is discussed in more detail in the "Connectivity" section of the wildlife report.

Black Bear - Cumulative Effects

None expected. The species is common in the Centennial Mountain Range despite legal hunting pressure and occasional control actions. Spring and fall hunting seasons that occur in Idaho and Montana are most likely to determine local black bear population statistics.

Rocky Mountain Bighorn Sheep Ovis canadensis canadensis

Rocky Mountain bighorn sheep are not known or expected to be present on USSES lands. Bighorn sheep in Idaho and Montana portions of the project area have no federal listing status, and are managed as game species with controlled hunting allowed in certain areas. Bighorn sheep herds nearest to USSES lands are in Montana, considerably far removed from all USSES activities such that interactions are not a concern with these herds. Two small herds from prior bighorn sheep reintroductions are present in the Upper Snake region of Idaho near the Snakey/Kelly allotment (USFS) and the Bernice allotment (Bureau of Land Management). The specified actions included in the Bighorn sheep Action Plan section of the BLM/USSES Memorandum of Understanding are reasonable measures put in place to minimize the potential for interactions between domestic sheep and bighorn sheep in these areas.

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. The issue has been largely polarized by evidence that domestic sheep diseases threaten the persistence of bighorn sheep populations, economic and social consequences of restricting domestic sheep grazing are substantial, and the effectiveness of maintaining separation between domestic sheep and bighorn sheep is debated. 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. The majority of documented bighorn sheep die-offs follow contact with domestic sheep (Clifford et al., 2009). 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, mucosal 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.

USSES lands in Idaho are within Idaho Game Management Unit 61 of the Upper Snake Region. A small population of bighorn sheep occurs on the Idaho-Montana border in the Lionhead area of Idaho Game Management Unit 61. In Montana, this bighorn herd is known as The Hilgard herd, Montana Hunting District 302, with an estimated population of 105 animals, and a population goal of 100. The herd has limited available winter range, thus the Montana Fish Wildlife and Parks goal is to manage the herd at current levels. The herd is separated from USSES East/West Summer Pastures which

include Odell Creek, Big Mountain, and Tom's Creek lands by a distance of approximately 20 miles, Henry's Lake basin, and substantial geographic topography along the continental divide. There is no indication that the herd uses USSES lands. Neither the Idaho Fish and Game Bighorn Sheep Progress Report (2008) nor the Montana Draft Bighorn Sheep Strategy (2009) suggests any known interaction or concerns between this herd and USSES grazing activities. According to the Idaho Fish and Game Bighorn Sheep Progress Report, 12-15 sheep are seen in Idaho during the summer months.

Bighorn sheep populations in other adjacent areas of Montana, which are also outside of USSES properties, include the Tendoy Mountain herd, over 20 miles to the northwest of the Humphrey property. The herd is in Montana Hunting District 315, with an estimated population of 59, and a population goal of 200. It is currently closed to hunting until objectives are achieved.

USSES also grazes sheep on US Forest Service and Bureau of Land Management allotments (Snakey/Kelly and Bernice respectively). A review of the 2008 Idaho Progress Report indicates that

In the Lemhi Range, the Bernice BLM domestic sheep allotment on the Little Lost River side of the range overlaps with bighorn sheep range within Idaho Game Management Unit 51.

In the Beaverhead Range, the Snakey Canyon domestic sheep allotment (USFS) overlaps with bighorn sheep range in Idaho Game Management Unit 59a.

Observations of 30 bighorn sheep in the Lemhi range and nine bighorn sheep in the Beaverhead range occurred in 2007.

There is no documented interaction/contact between domestic sheep and bighorn sheep on these allotments. However, there was one incident where a stray domestic sheep was observed three linear miles from bighorn sheep and a USSES employee subsequently removed the domestic sheep.

According to the bighorn sheep progress report (2007(a)), Idaho Fish and Game will continue to work with the Bureau of Land Management and the US Forest Service 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 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. They include:

On- site supervision of the domestic sheep bands as well accompaniment by guard dogs to prevent interaction.

Keeping domestic sheep below the 5,600 foot contour and off of mountain foothills and canyons.

If funding is available, cooperation regarding data collection for bighorn sheep surveys.

Maintaining a three-mile buffer of separation between domestic sheep and bighorn sheep.

Notifying a list of individuals if contact occurs or becomes imminent.

These action items are consistent with Idaho's Interim Strategy for Managing Separation Between Bighorn Sheep and Domestic Sheep in Idaho (IDFG, 2007(b)).

Additional discussions have occurred between USSES and IDFG regarding the commitment to a number of Best Management Practices (Draft BMPs) for Separation between Domestic Sheep and

Bighorn Sheep, which was presented to the USSES in July, 2009 by the IDFG. The first five Draft BMPs are already included in the MOU between USSES and BLM for the Bernice Grazing allotment. The remaining Draft BMPs (not described here since only in draft form) are typically implemented within current operating procedures. Some of the individual details are implemented on the ground less precisely than is worded in the Draft BMPs to account for variability in weather, sheep herder duties, and remote access. A formal agreement has not been reached regarding the Draft BMPs, because questions have surfaced regarding the authority by which the agreement is made, and how to rectify complexities such as that BLM and USFS are the landowners, USSES has agreements with those agencies, and IDFG seeks the agreement being discussed. Overall, USSES grazing activities are consistent with the 20 BMPs that were presented.

Bighorn Sheep Direct/Indirect Effects

Alternatives 1 (Proposed Action), 3, and 4

Effects from activities in these three alternatives are the same since each proposes similar livestock grazing and associated activities in occupied bighorn sheep habitat. Bighorn sheep are not directly affected by grazing on any of the USSES properties, because bighorn sheep do not occur there. The Hilgard bighorn herd in Montana is over 17 miles away from the nearest USSES property (Summer East pasture), and the Tendoy bighorn herd also in Montana is over 23 miles away from the Humphrey property. Interaction between domestic sheep on USSES properties and existing bighorn sheep herds is not known or expected to occur.

USSES sheep grazing on BLM (Bernice allotment) and USFS (Snakey/Kelly allotments) has the potential to negatively affect the Idaho bighorn herds reintroduced into the Lemhi range and the Beaverhead range, however the measures in place are appropriate methods to minimize potential contacts, and consistent with Idaho direction. The Idaho Progress Report (2008) indicates that bighorn sheep range does overlap with these allotments, therefore the potential for interaction, and resulting mortality in the bighorn herds is plausible. Based on a review of parameters modeled in Clifford et al., 2009, bighorn sheep herds that occupy the southern portion of the Lemhi range and to a lesser extent the Beaverhead range have a moderate probability of coming into contact with domestic sheep, over a period of several decades, and potentially leading to a respiratory outbreak and subsequent bighorn mortality. This contact could occur from USSES grazing on these BLM/USFS allotments or from contact with domestic sheep grazing in other nearby areas. Precise research on the movements of this bighorn sheep herd (such as radio-telemetry data collected over a period of years) is expensive and has not yet been established. Idaho progress reports, the BLM MOU and communications between various agency personnel express a desire and willingness to collect additional site specific data if funds become available.

Several factors are in place to minimize potential of direct contact and subsequent bighorn herd mortality. Bighorn sheep are thought to be geographically and temporally separated from areas grazed by USSES domestic sheep on the Snakey/Kelly allotments, by an approximate distance of three miles or more of rough terrain and heavy snow loads during winter months (Personal communication, Keetch, 2008). Bighorn sheep typically occupy the west side of the Beaverhead Mountains in the winter months, while the USSES grazes domestic sheep on the east side of Beaverheads (Snakey/Kelly allotments) November 6 – January 3rd. Similarly, on the Lemhi range, bighorn sheep typically occupy higher elevations in the foothills and mountains while domestic sheep remain in the lower elevations. Although it is unknown how far south individual sheep may wander in high snow years, bighorn sheep typically stay north of North creek, (Personal communication, Lowe, 2009). The Bernice allotment (which is grazed by USSES between November 23 – February 5) is south of the North Creek geographic boundary. In addition to the relative geographic and temporal separation described above, implementation of the “Specified Actions” included in Bighorn

Sheep Action Plan portion of the BLM/USSES MOU further reduces the possibility of potential contact in the following ways:

On site supervision of the domestic sheep bands as well accompaniment by guard dogs will assist in preventing direct contact and interaction between domestic sheep and bighorn.

Active herding to keep domestic sheep below the 5,600 foot contour and off of mountain foothills and canyons will assist in maintaining geographic separation between bighorns and domestics.

Scouting for bighorns and maintaining a 3-mile or larger buffer of separation between known bighorn sheep herds and domestic sheep bands will minimize the probability of direct contact.

Promptly notifying designated Idaho Fish and Game personnel if contact is suspected or becomes imminent would allow for the option of management removal of individual bighorn sheep to prevent infection spreading to the remainder of the bighorn herd.

Conclusion: There is a possibility that contact could occur between bighorn sheep herds and domestic sheep herds using southern portions of the Lemhi and Beaverhead mountain ranges. This contact could occur from USSES winter grazing on Bureau of Land Management /US Forest Service allotments, or from contact with other domestic sheep grazing activities in this portion of the range (such as private lands or other permitted grazing on federal lands) during any season of the year. Bighorn sheep mortality and overall suppressed health of a bighorn herd may or may not occur as result of contact with domestic sheep, but the degree of negative effects to the herd, and the primary source of infection are speculative. Grazing practices that are already in place by the USSES, implementation of the specified actions of the Bighorn Sheep Action Plan, and geographic factors that naturally separate USSES grazing and bighorn sheep winter ranges appear to adequately minimize the potential of interaction between USSES domestic sheep and bighorn sheep, and allow for appropriate control/removal of sheep should contact occur or become imminent.

Alternatives 2 and 5

Effects from activities in these two alternatives are nearly the same as each proposes that the USSES would not graze livestock in occupied bighorn sheep habitat.

- Alternative 2 eliminates all domestic sheep grazing by the USSES. Grazing activities on USSES properties are not known or expected to affect the existing Tendoy and Hilgard bighorn sheep herds in Montana, so the portion of the alternative that eliminates grazing on USSES lands would not change the condition of these bighorn sheep herds.

Removal of USSES sheep grazing on Bernice and Snakey/Kelly allotment would occur in both Alternatives 2 and 5.

Removal of USSES sheep grazing on Bernice and Snakey/Kelly allotments would eliminate one potential source of infection to bighorn sheep in the Southern Lemhi and Beaverhead mountains. However, removal of this potential vector for disease spread is unlikely to eliminate or even largely reduce respiratory disease in the existing bighorn herds for the following reasons.

- There is no evidence, documentation, or anecdotal report among local biologists that domestic sheep grazing on Bernice and Snakey/Kelly allotments is the primary source of contact, respiratory infection, or decline of these bighorn sheep populations. Grazing on these allotments occurs outside of the suspected core winter range areas for these bighorn, and the bighorn summer ranges include a much larger landscape.

- The small size and condition of the reintroduced bighorn sheep herds in this portion of Idaho may have many plausible explanations and is as likely to be a result of factors not associated with USSES activities. They include respiratory diseases naturally circulating within the bighorn sheep population, limiting habitat conditions such as nutritional value of forage, fragmented seasonal migration routes, limited winter range capability, and other livestock operations.

Conclusion: Removal of USSES grazing on the Bernice and Snakey/Kelly allotments would reduce one potential vector of respiratory disease transmission. It is speculative that these alternatives would result in an observable change in the existing bighorn sheep herds' condition, health, or population. More likely, bighorn sheep herds would remain unaffected by these alternatives, and continue in their current condition.

Bighorn Sheep Cumulative Effects

The spatial boundary for the discussion of cumulative effects for bighorn sheep is the upper Snake River Region in Idaho as well as the Montana portion of the Centennial Mountain Range because this area encompasses all USSES grazing activities that occur in occupied and potential bighorn sheep habitat, and considers state management objectives for known bighorn herds in the area. The temporal boundary is 10 years because projections beyond this time period are less likely to be accurate.

The expected level of the effects for the project would not to contribute to overall cumulative effects in a way which is detrimental to bighorn sheep management in this portion of Idaho and Montana considering the following points:

- Grazing of USSES sheep 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.
- Grazing of USSES sheep near occupied bighorn sheep habitat includes the presence of guard dogs and full-time sheep herders, which affords additional protection measures to reduce the possibility of actual contact between bighorn and domestic sheep.
- USSES follows the specified actions listed in the Bighorn Sheep Action Plan which includes procedures to manage separation between bighorn sheep and domestic sheep, and initiate a communication plan to allowing prompt removal of infected bighorn or domestic sheep should contact be suspected.
- Although the risk of contact from USSES activities can only be completely eliminated in alternative two, additional sources for spread of respiratory disease occur throughout known or suspected bighorn sheep range. Thus, bighorn populations are expected to continue in their current condition and trend, regardless of which alternative is selected.
- There are no known or foreseeable planned bighorn sheep reintroductions in areas grazed by USSES.

Fish and Amphibians

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: O'Dell Creek allotment contains two branches of Odell Ck and the headwaters of Corral Ck. Big Mountain Allotment contains Spring Creek. The Tom's Creek allotment contains Hell Roaring Fork and 3 headwater branches of Tom's Creek. O'Dell 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 O'Dell Creek. Montana Heritage database records indicate that O'Dell Creek and Hell Roaring Fork Creek have westslope cutthroat trout populations. Four lakes are within the Montana portions of USSES lands including Big O'Dell Lake, Little O'Dell 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 O'Dell Lakes within the project area and could be desirable for stocked westslope cutthroat trout. During field surveys conducted in 2008 and 2009, the wildlife biologist identified the following amphibians: spotted frogs and confirmed breeding populations in the west fork of O'Dell Creek, Big O'Dell Lake, Little O'Dell Lake, and Blair Lake; Boreal Western Toads on Big O'Dell Lake; Western chorus frog on stock watering pond on Humphrey property. Arctic grayling use spawning habitats in lower reaches of Red Rock, O'Dell, 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.

Interdisciplinary review of current aquatic conditions found that sheep grazing and associated activities are having minimal effects to streams and that healthy aquatic and riparian habitat conditions are being maintained for perennial streams and lakes. Most channel segments were rated as "Proper Functioning Condition" by the interdisciplinary team, and the concerns in those segments rated otherwise are attributed to historical and other uses such as an old gravel pit (lower Beaver Creek, Headquarters), an old mining road (Spring Creek), and irrigation ditches associated with intermittent streams on Humphrey and Henninger Ranch. Stable stream channels, non-erosive banks, functioning flood plains, dense willows, and the vigor of riparian vegetation are characteristic in all of the fish-bearing streams and lakes and where amphibians are expected to occur (Summer Range). Field observation on Blair Lake, little Odell Lake, Big Odell Lake, Odell Creek and other areas indicate that quality amphibian habitat is abundant, remains occupied with breeding individuals, and effects to habitat are minimal.

Fish and Amphibians Direct, Indirect, and Cumulative Effects

Observed conditions indicate that all of the alternatives would have negligible effects to stream hydrology and associated fish habitat, as well as riparian habitats and associated amphibian populations. There would not be a change in fisheries or amphibian habitat between the Proposed Action (Alternative 1) and those areas of Alternatives 2-5 where grazing no longer would occur. In those areas, vegetative conditions and soil compaction immediately at vacated stream crossings and watering areas would rehabilitate naturally. Downstream effects to fisheries and amphibian habitats from U.S. Sheep Experiment Station activities would remain negligible. No cumulative effects would occur.

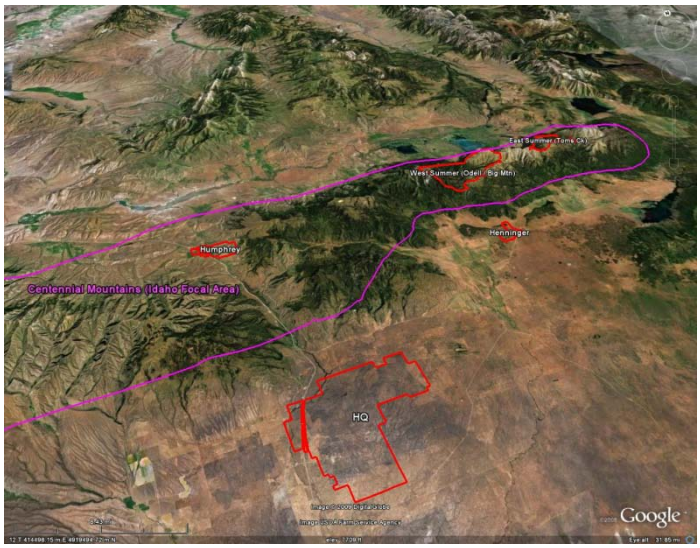
Effects to fisheries and amphibian and associated aquatic resources are minimal, and would maintain the current condition in the Proposed Action (Alternative 1), as well as in Alternatives 3, 4, and 5. Areas of bare soil would occur at stream crossings. However, these effects are limited to the narrow trail width approaching the streams, which varies between five feet (typical) and 15 feet (atypical). No effects would occur to arctic grayling or westslope cutthroat trout because they occur well downstream of the project, and proposed activities would not degrade downstream habitats. No effects would occur to Yellowstone cutthroat trout because they occur in tributaries outside of and

unaffected by U.S. Sheep Experiment Station properties. No effect would occur to sport fisheries that occur in the larger lakes. Effects to spotted frogs, boreal western toads, chorus frogs, and other amphibians would be rare and limited to the loss of a few individual animals (adult amphibians or larvae) in localized areas associated with watering activities in springs and lakes. Although the location of effects may differ among alternatives because of varying locations grazed, the overall health of aquatic resources would continue similar to the current condition without threat to fish, amphibians or associated habitat.

Connectivity

Numerous scoping comments were received indicating the importance of the Centennial Mountain Range as a component of contiguous habitat for carnivores, providing linkage between the Greater Yellowstone ecosystem, Central Idaho, and the Northern Continental Divide Ecosystem. The area is relatively free of human disturbances and provides varying amounts of suitable habitat for wide-ranging carnivores including grizzly bears, wolves, black bears, wolverines, mountain lions and Canada lynx. The area's east west juxtaposition between the relatively intact ecosystems of Greater Yellowstone and Central Idaho identifies it as a logical pathway for wide-ranging carnivores to migrate between populations and habitats in those ecosystems. Alternative 5 was developed to evaluate these comments brought up during public scoping and to provide a venue for comparing the effects between alternatives.

Background



The Western Governor's Association developed the Wildlife Corridors Initiative Report (2007) and established the Western Wildlife Habitat Council to identify key wildlife corridors in the west, and coordinate implementation of needed policy options and tools for preserving those landscapes. Primary drivers for this initiative are to address changes in land use, transportation, energy development, oil and gas, and climate change while preserving sensitive wildlife habitats. Statewide maps prepared for the corridors are depicted as large polygons or arrows that indicate where more detailed corridor mapping is needed. The Idaho Comprehensive Wildlife Conservation Strategy (CWCS) incorporated these key wildlife corridors through the delineation of "focal areas" which include the Centennial Mountains as an area of core grizzly bear habitat.

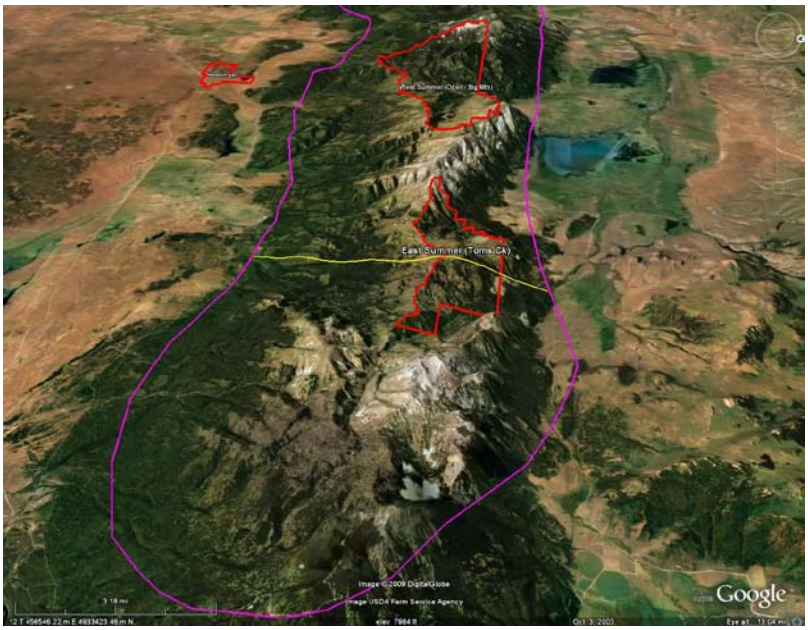
In 2007, a workshop was conducted with numerous biologists in attendance, to examine connectivity issues between the Greater Yellowstone Ecosystem and the Northern Rocky Mountains. The summary notes for this workshop, (Beckman and others, 2008) indicated:

There is a need or desire to provide linkage habitats for wildlife, particularly wide ranging carnivores, between the Greater Yellowstone Ecosystem, Central Idaho, and the Northern Rocky Mountains.

General agreement among the group that loss of linkage is due to rapid loss of valley bottom habitats from 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 coupled with housing development in open spaces).

The group is planning to reconvene in the future to identify and prioritize specific connectivity issues in the Centennial region.



The extent to which the Centennial Mountains are used by various carnivores is described previously in the individual species analyses (i.e. Canada lynx/wolf/grizzly bear existing condition sections). Beckman (scoping letter, 2009) suggests that habitat quality is high, and various mapping exercises indicate that the area is an important connection between Greater Yellowstone Ecosystem and Central Idaho, particularly important for grizzly bears over the long term.

USSES activities use only a small proportion of that habitat, and very few conflicts (none lethal) have occurred between USSES activities and grizzly bears, the species for which the corridor would be most important. Lethal control actions have occurred for wolves, black bears, and mountain lions, however these species are also legally hunted in the area, which suggests that USSES activities do not limit populations and are compatible with management objectives. In a proactive approach to further investigate the situation, an informal meeting occurred between the USSES and Wildlife Conservation Society (WCS). The parties agreed to draft research questions for consideration pertaining to the use of USSES lands by carnivores, carnivore migration patterns in the Centennial Mountains, and effects of non-lethal control measures (such as moving sheep to avoid conflicts) on sheep production. Rigorous experimental design would be used to obtain statistically solid answers to these questions, and thus improve knowledge of how to maintain large carnivores on the landscape while at the same time maintaining sheep production in those same landscapes. Once drafted, research proposals would be submitted into the outyear budgeting process, and potentially become part of the approved USSES research plan.

Connectivity Direct and Indirect Effects

Alternatives 1, 4, and 5.

A review of the information discussed previously for individual carnivores indicates that USSES activities are unlikely to reduce connectivity in the Centennial Range. USSES lands have minimal infrastructure on both Montana and Idaho parcels. Roads are few and closed to public use, so motorized traffic is kept to a minimum. Large carnivores can travel through and occupy habitat on USSES lands mostly without disturbance because of the large scale of available habitat, and sheep bands occupy only a small acreage at any given time in comparison to available habitat. Similarly, sheep are in the Centennial Mountain Landscape for a relatively short duration (July/August), with limited stay in any one area, and absent from each pasture one out of every three years. The range assessment demonstrates that utilization of available forage is light, particularly in the Centennial

Range, which indicates that competition for available forage between sheep and the potential prey base (deer, elk, other species) is not a concern. At times, harassment from full time sheep herders and/or guard dogs may cause individual carnivores to temporarily avoid a particular location when occupied by sheep. This avoidance would last only a few days as sheep are moved rapidly through the meadows, hillsides, and other forage areas throughout the high mountain pastures. Should encounters occur that threaten livestock on USSES properties, lethal control actions would occur for wolves, black bears and mountain lions, presumably at levels similar to past actions. Wildlife control actions related to livestock depredation and large carnivores has been limited over the past decade (see individual species write-ups for details). Should the need for lethal control increase for wolves beyond past levels (based on an increasing population or pack expansion), removal would only occur within approved management thresholds because authorization would be granted or denied to APHIS Wildlife Services by the State wildlife agencies commensurate with their responsibilities for overall pack/population management. Lethal control of grizzly bears is not part of this proposal and would not occur without re-initiating consultation with the USFWS. There have been three grizzly bear encounters involving USSES activities in the last decade, and no grizzly bears have been removed as a result.

Conclusion: In summary, the connectivity of carnivore habitat on USSES and surrounding lands in the Centennial Range remains relatively undisturbed because human activity is low and sheep grazing activities are of short duration during the summer months while moving through pastures quickly. Sheep station policy is to proactively avoid encounters with carnivores, implemented through full time herders, guard dogs, movement of sheep, and harassment of individual carnivores. Lethal control is implemented on the wide-ranging carnivores only when livestock is being killed or repeatedly threatened, and would not occur for grizzly bears. USSES is pursuing research proposals which would describe and quantify carnivore movements in the Centennial Range, evaluate the effects of current grazing practices on carnivores, and address the effects of avoidance and other non-lethal control measures on sheep production and animal husbandry practices.

The effects of alternatives 4 and 5 are essentially the same as the proposed action. Lethal control actions on carnivores other than grizzly bears would occur on a limited basis when livestock are being killed. The varying numbers or concentrations of sheep relative to each alternative would not substantially change habitat conditions or carnivore movements within the corridor in comparison to the proposed action. The Centennial Range would continue to function as high quality habitat for wide-ranging carnivores, and would not be limited as a migration corridor or linkage.

Alternatives 2 and 3

In these alternatives, carnivore use of the Centennial Mountain range would continue similar to the current condition, with additional potential for certain species (or individuals) to more fully utilize the current habitat within a given homerange. Changes in the effectiveness of the Centennial Range as a wildlife migration corridor remain speculative, but are unlikely since evidence suggests that USSES activities have a minimal effect to wide ranging carnivore use of the habitat. Grizzly bear would continue to occupy the range, but the already rare potential for encounters with USSES activities would be eliminated. Long-ranging movements of grizzly bear in search of food sources would continue without potential of harassment from USSES activities. Wolf conflicts which typically occur near the Humphrey Ranch property would no longer involve USSES activities, however livestock conflicts on adjacent allotments and private lands would still occur, and warrant lethal control actions on a case by case basis. Black bears would continue to occupy the habitat without the need for lethal control. Mortality would continue based on black bear hunting season quotas which maintain sustainable populations. There would be no effect on wolverine movements since conflicts do not occur with USSES activities and wolverine habitat will not change. Effects to mountain lion use of the Centennial Range are minimal since conflicts have only rarely occurred with domestic

sheep, and lions predominately use the lower elevation areas, Henninger/Humphrey, which represent a small fraction of the overall corridor.

The Direct and Indirect effects of alternative 2 would be the same as alternative 3. Centennial Range would continue to function as a wildlife corridor similar to its current condition, however removal of individual wide-ranging carnivores would be limited to encounters on private and other federal lands, and not as a result of USSES activities.

Wildlife Report Completed by:

Steven Kozlowski
Wildlife Biologist
NAME Date

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Appendix A. Maps of the Project Proposal

Figure 8 - Vicinity Map Showing USSES Ownership

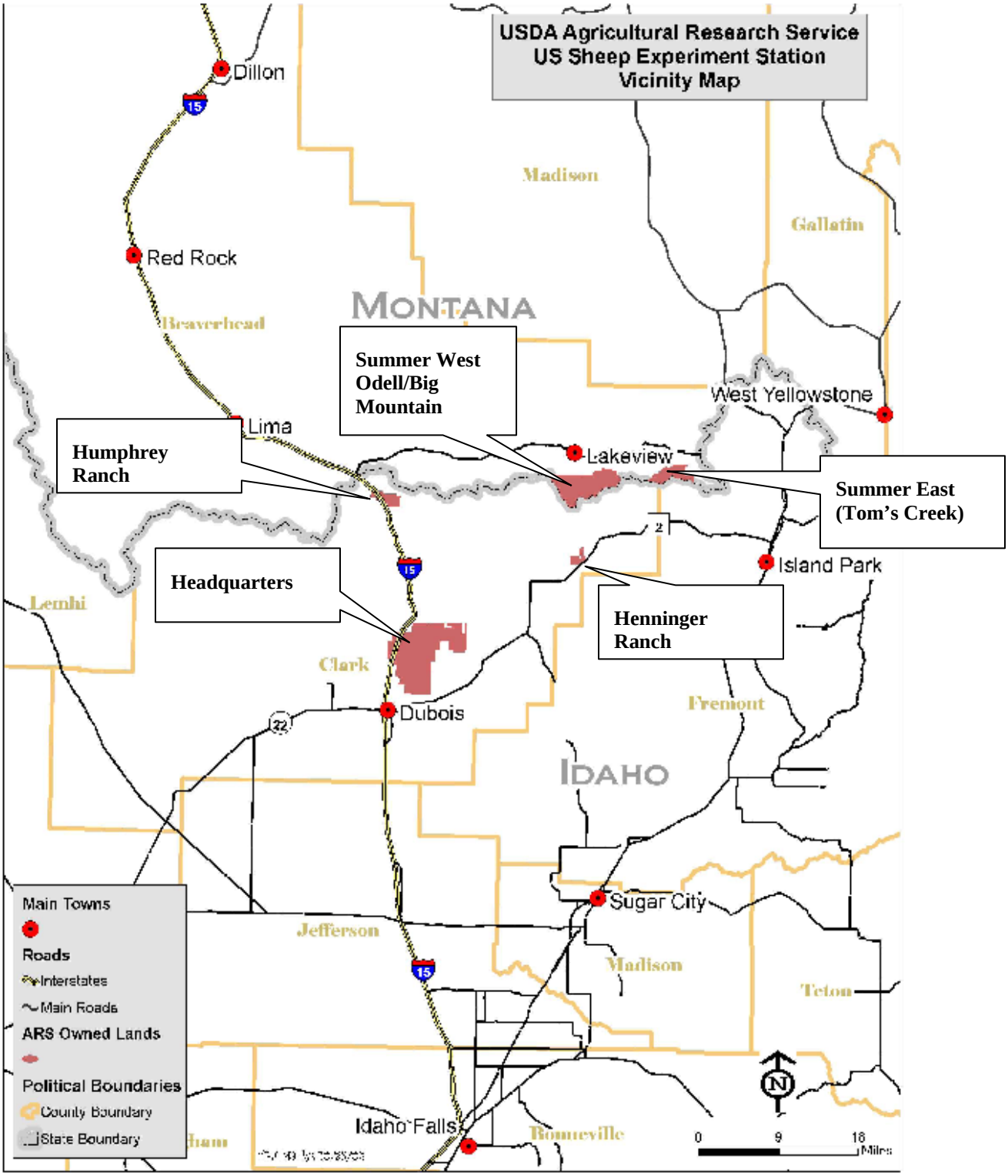


Figure 9 - Map of USSES Lands and Other Federal Properties

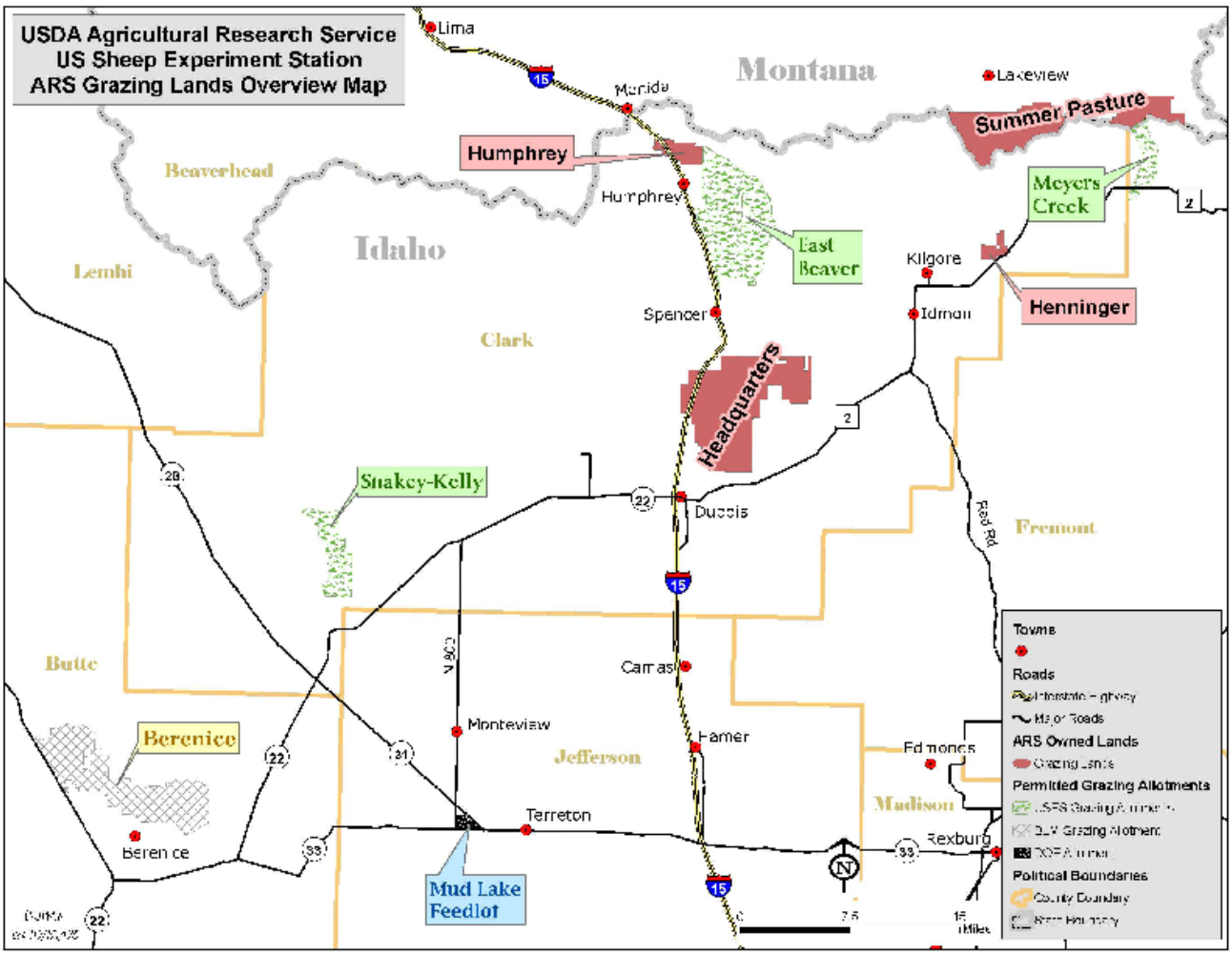


Figure 10 - Headquarters Property with Fences

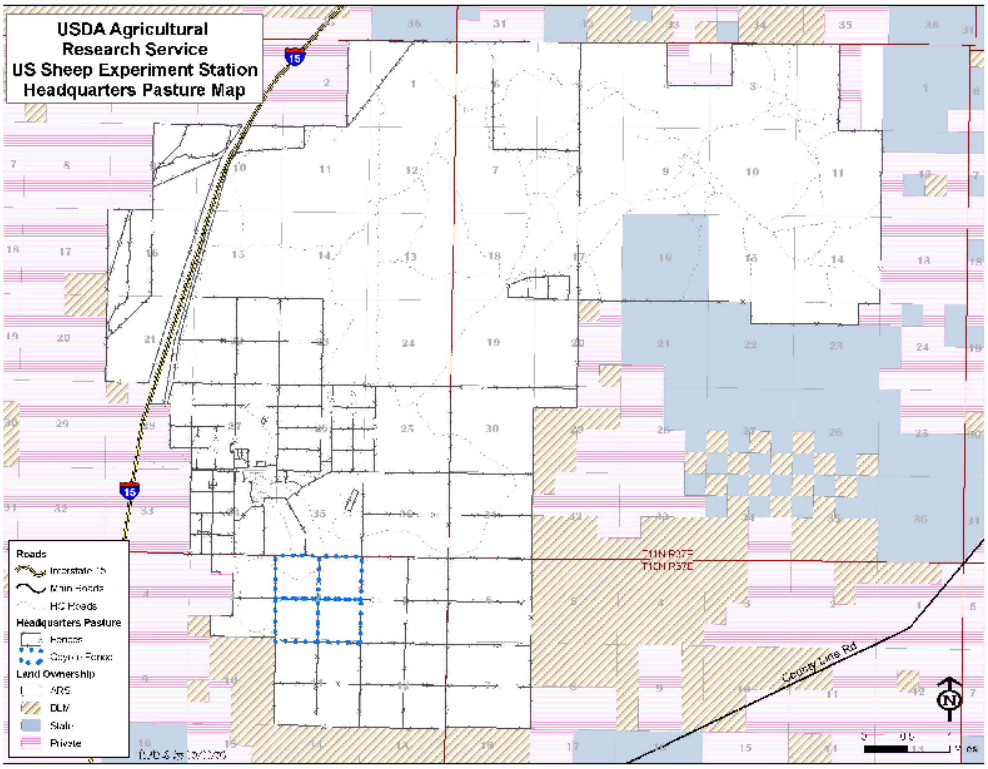


Figure 11 - Headquarters Property with Roads

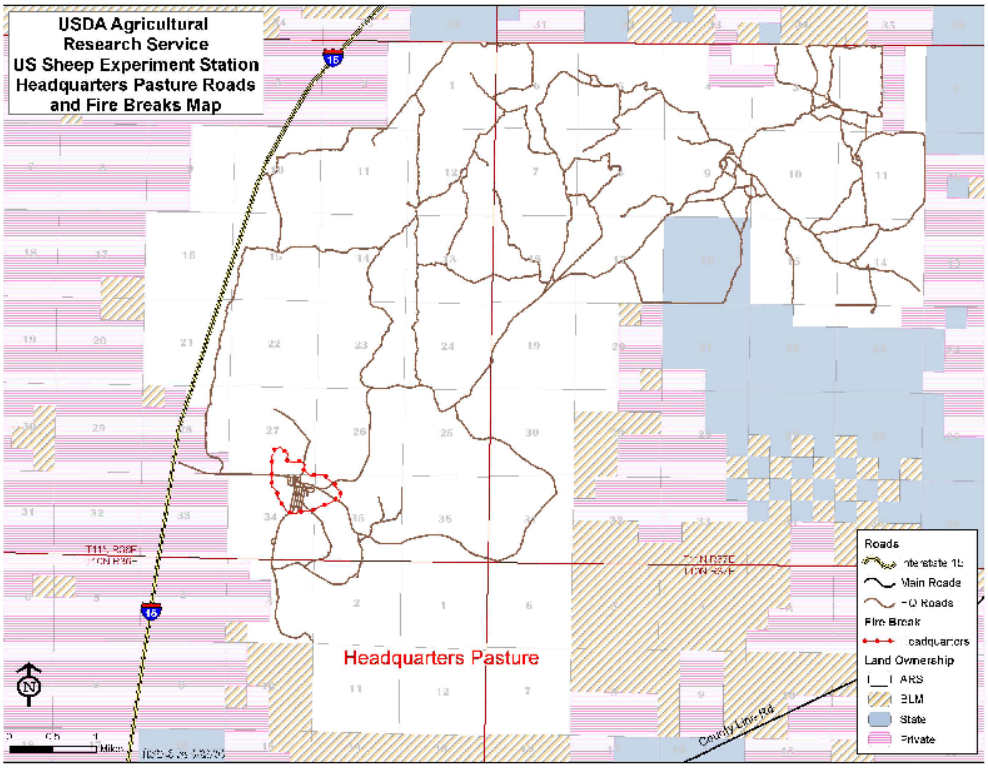


Figure 12 - Henninger Property

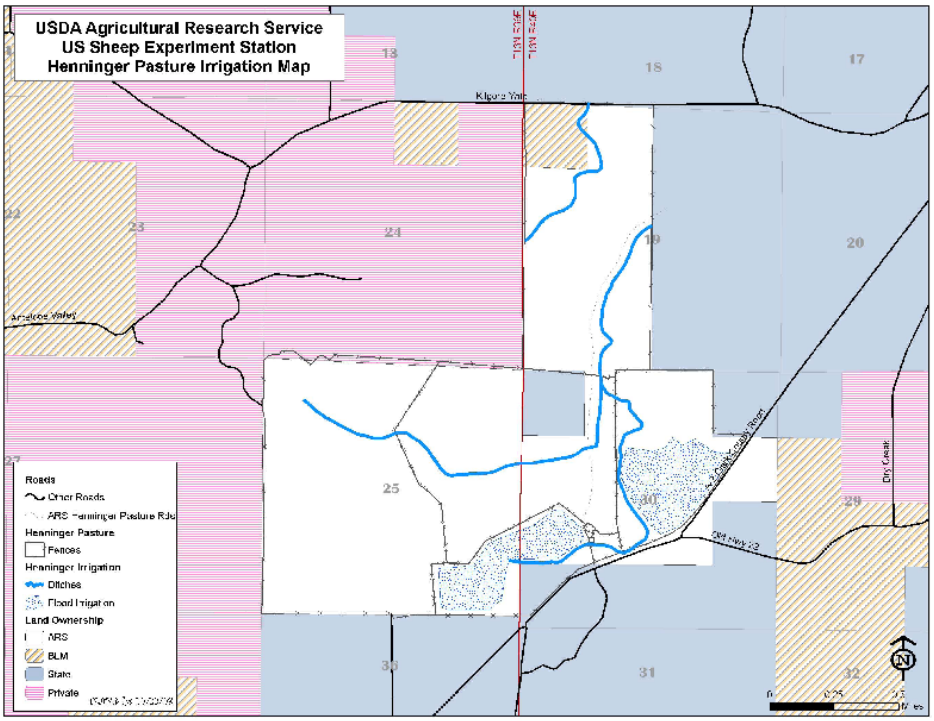


Figure 13 - Humphrey Property

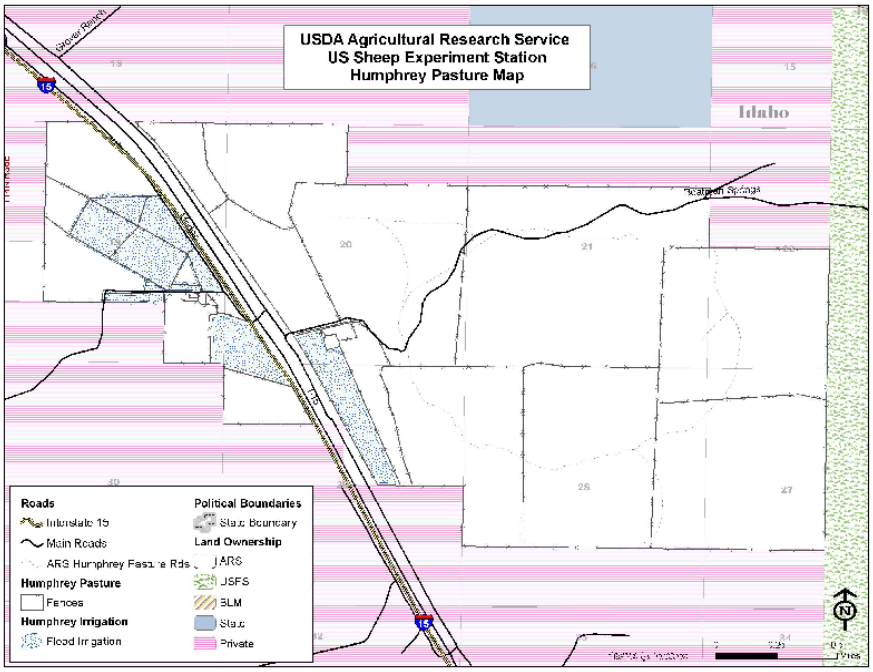


Figure 14 - Odell and Big Mountain Allotments, USSES

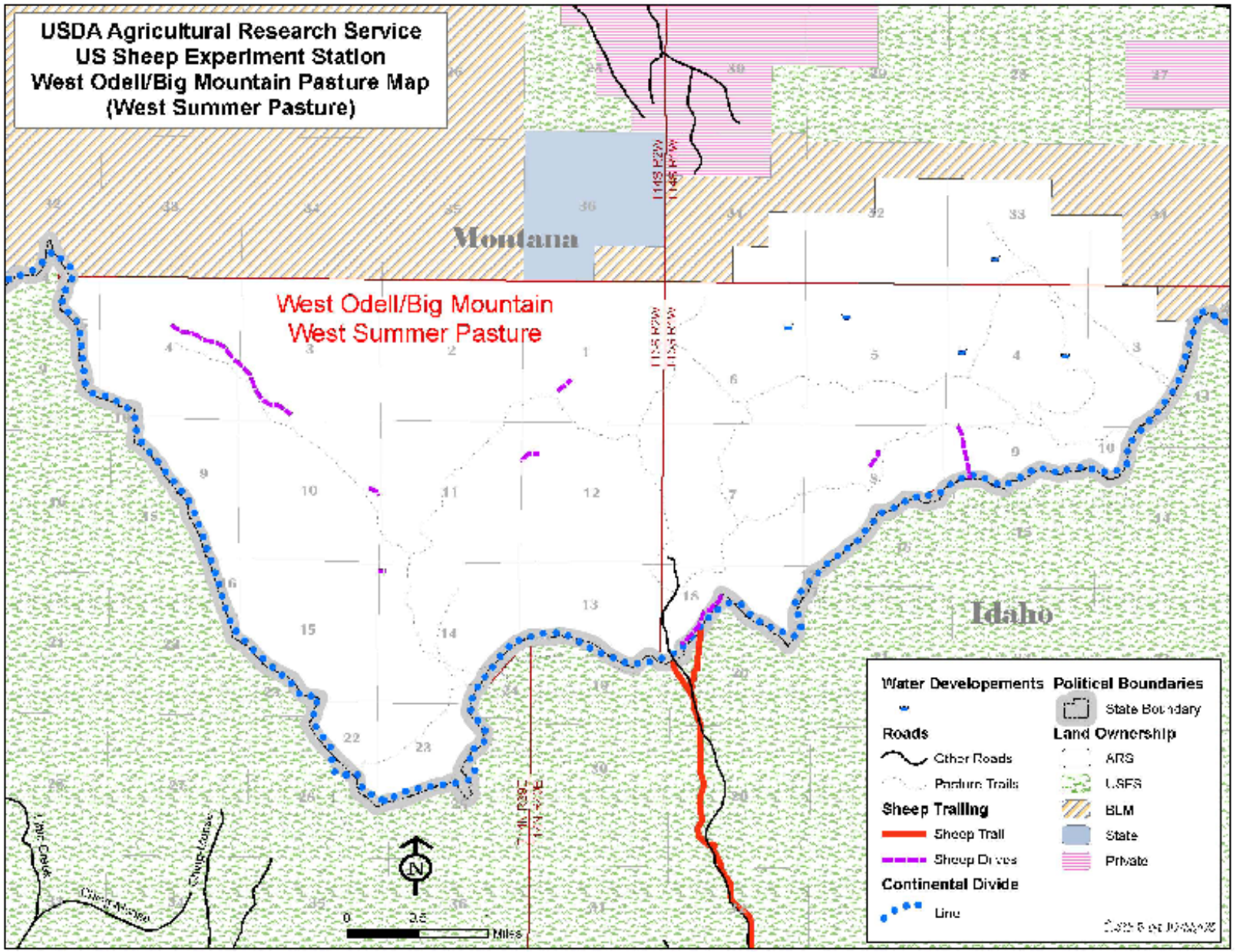


Figure 15 - Air Photo, Odell/Big Mountain Allotments

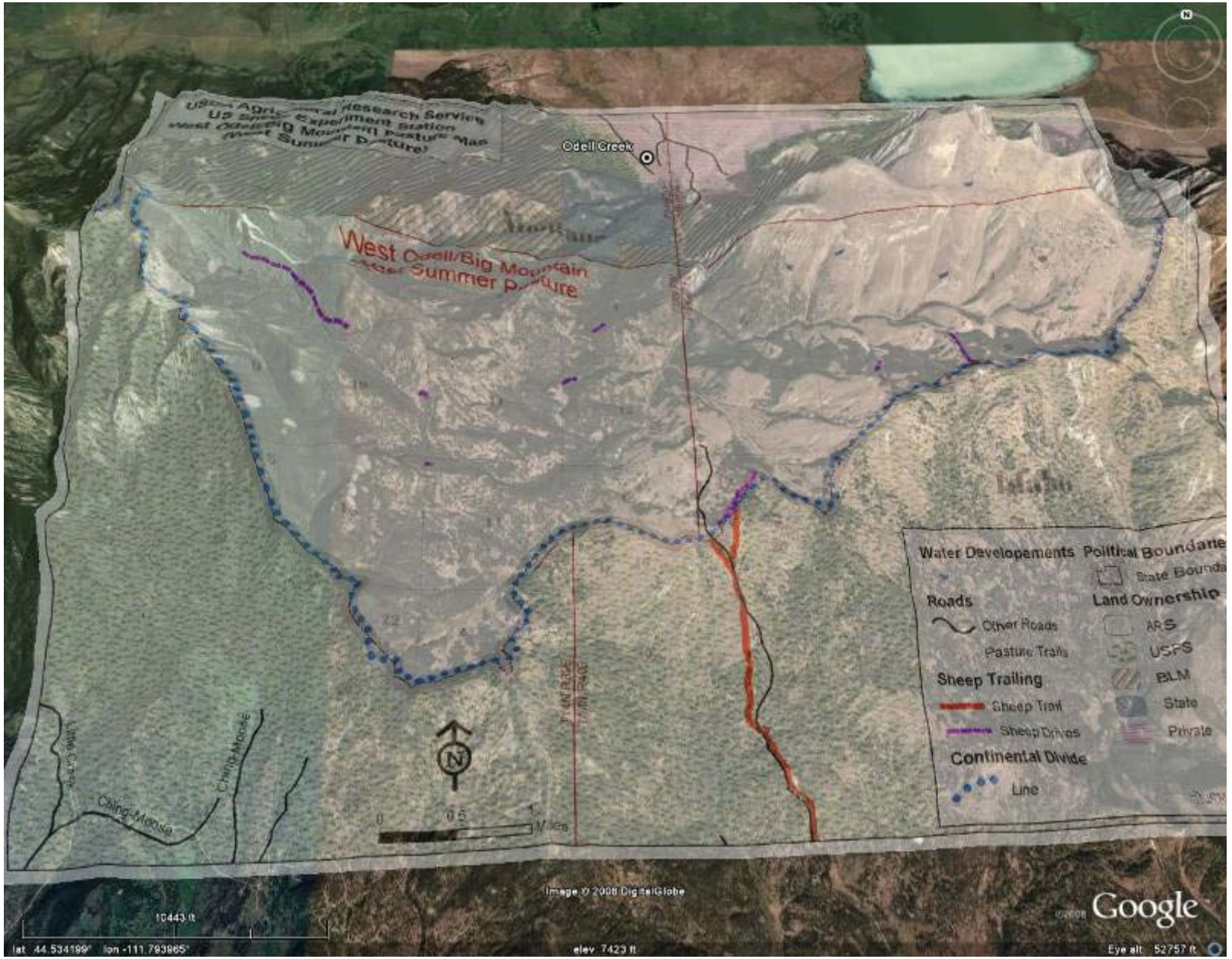


Figure 16 - Odell/Big Mountain Topography

Figure 17 - Tom's Creek Allotment

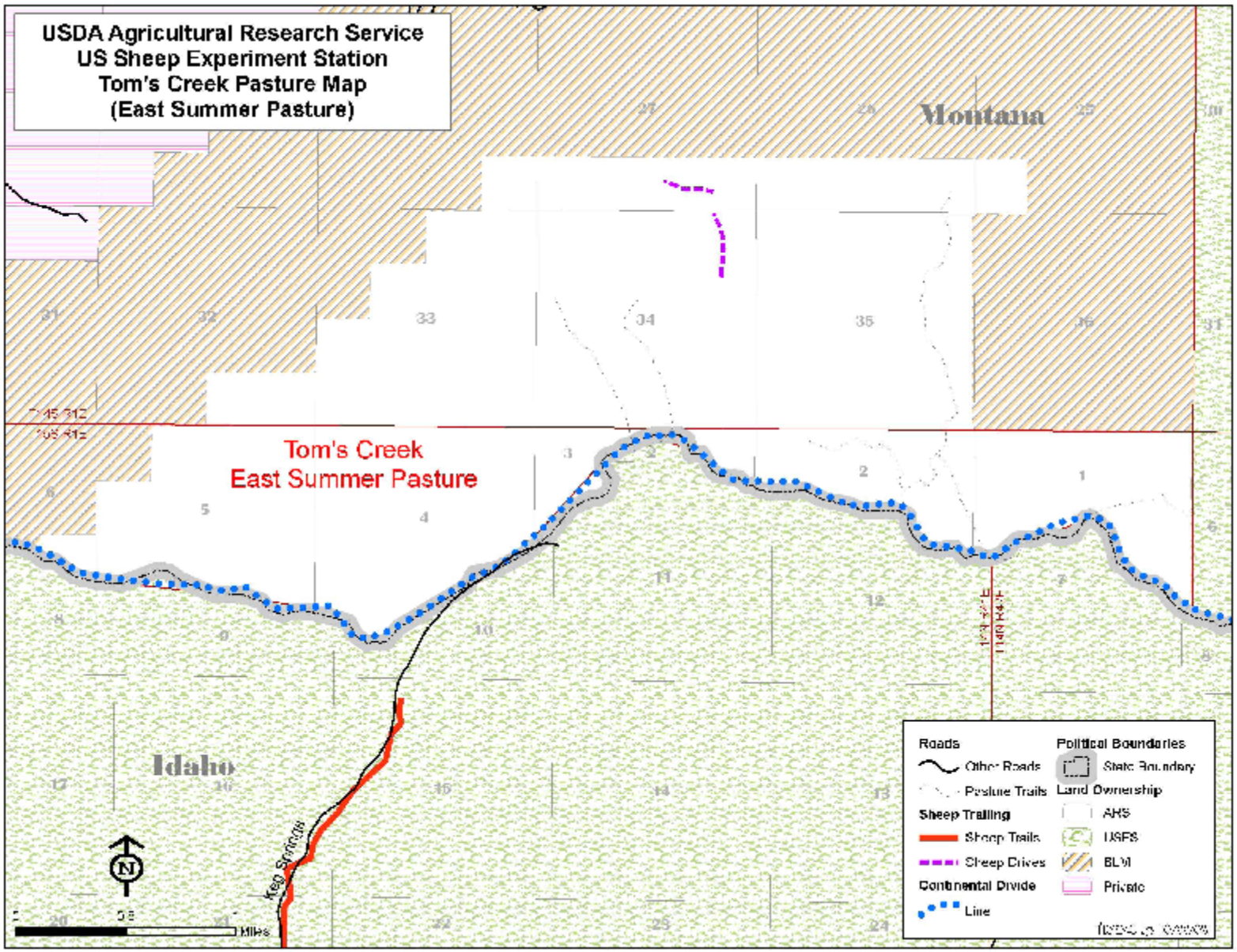


Figure 18 – Air photo Photo, Tom's Creek

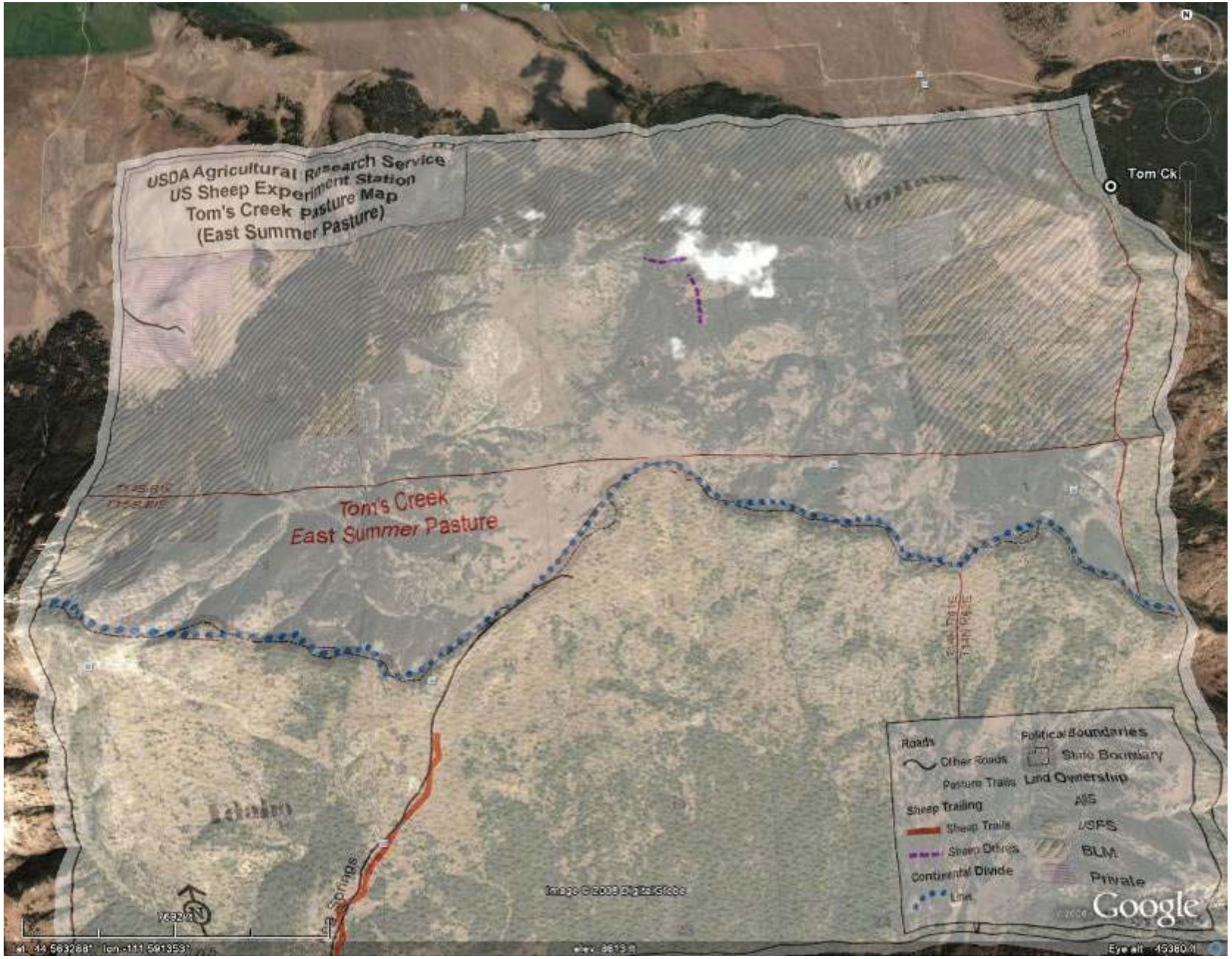
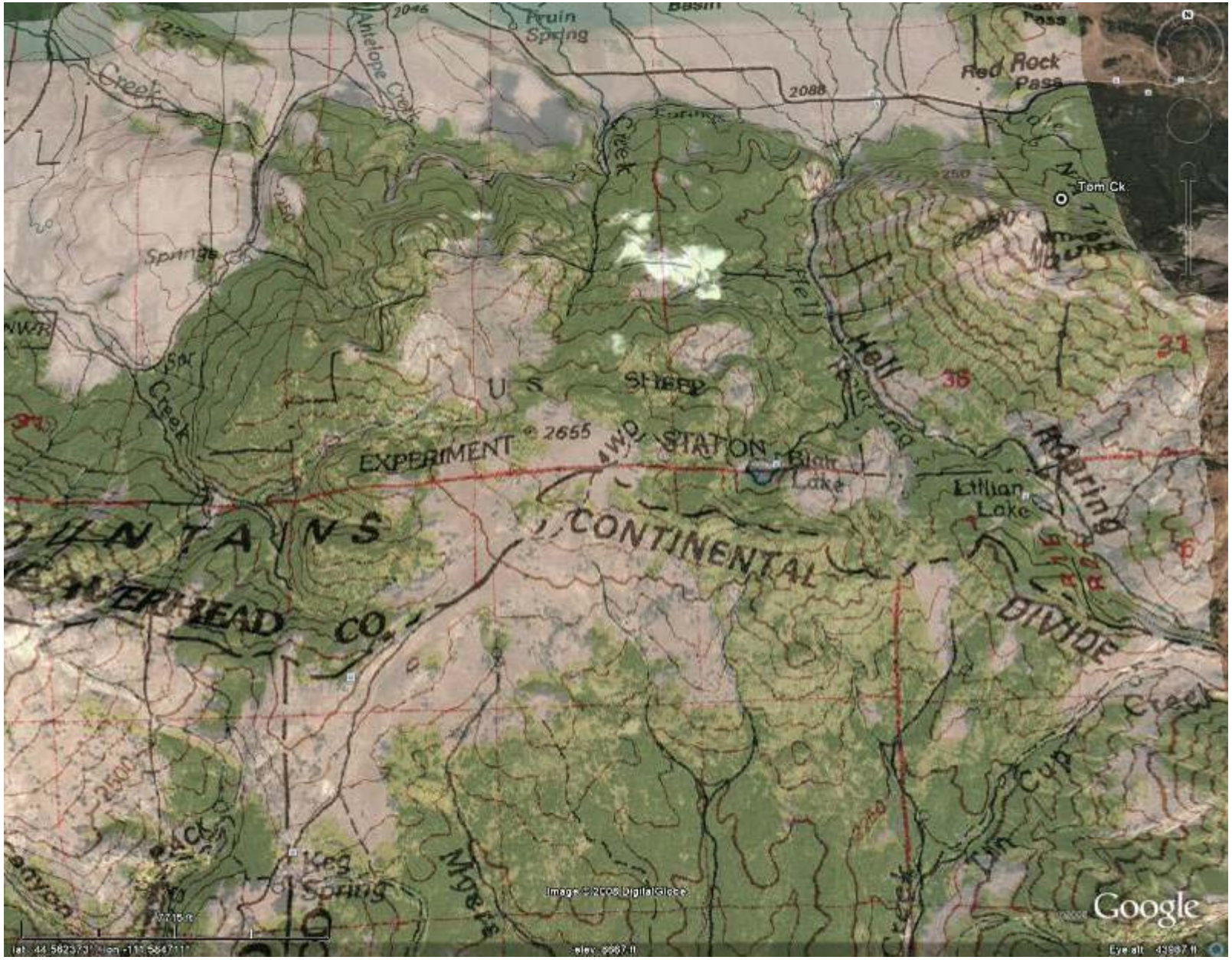


Figure 19 - Topographic Map, Tom's Creek



Appendix B. Botany Assessment for Federally Listed Plants

Letter to the File for Interim USSES Grazing and Associated Activities Project Decision Notice, Finding of No Significant Impact, and Environmental Assessment

Re: Federally Listed Plants

Purpose and Need of the Project

In summary, the purpose of this project is to respond to the Settlement Agreement (date) 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:

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 U.S. 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 U.S. 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.

Because of the length of time to collect data for analysis and limited time frame in which to meet the court ordered date for a decision, it was deemed necessary to use a two-staged approach to the environmental analysis of grazing and associated activities on the USSES. The first environmental assessment (Interim USSES Grazing and Associated Activities Project) is limited to:

- The 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 to consider the long-term effects of 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 grazing and associated activities on the USSES lands that have historically occurred and are ongoing in support of research projects.

Proposed Action:

The proposed action is to continue ongoing 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 at the USSES. For a complete overview of the proposed action and maps see the EA.

Federally Listed Species

There are four Federally listed Plants in the State of Idaho and only one specie Ute's Ladies'-tresses (*Spiranthes diluvialis*) has been documented or has potential habitat in the same geographic area of the USSES area (http://ecos.fws.gov/tess_public//pub/stateListing.jsp?status=listed&state=ID accessed 10/08, Fertig et al. 2005). Ute ladies'-tresses is a perennial herb with erect, glandular-pubescent stems 12-60 cm tall arising from tuberous-thickened roots. Basal leaves are narrowly linear, up to 1 cm wide and 28 cm long, and persist at the time of flowering. Leaves become progressively smaller up the stem and are alternate. The inflorescence is a sparsely pubescent 3-15 cm long spike of numerous small white or ivory-colored flowers arranged in a gradual spiral. Individual flowers are 7.5-15 mm long and faintly fragrant (with a vanilla-like scent). (Fertig et al. 2005).

Photo of *Spiranthes diluvialis* from Deer Creek, Utah, by Elaine Kneller

Geographic Range: When it was first listed under the Endangered Species Act in 1992, Ute's ladies-tresses was known only from north-central Colorado, northern and south-central Utah, and southeastern Nevada. Since 1993, Ute ladies'-tresses has been discovered in southeastern Wyoming, southwestern Montana, western Nebraska eastern Idaho and north-central Washington and new populations have been documented in northwestern Colorado and northern Utah.

Specific to Idaho, Ute's ladies tresses was first discovered in Idaho by Mabel Jones in 1996 along the South Fork of the Snake River (Fertig et al. 2005). The species is now known from Bonneville, Fremont, Jefferson, and Madison counties along the Snake River and from wetland sites along the Henry's Fork River (Mancuso 2004, Moseley 1998a, 1998b, 1999a, Murphy 2001a). Idaho populations occur in the Idaho Falls, Palisades, and Lower Henrys watersheds within the Columbia Plateau and Utah Wyoming Rocky Mountains ecoregions (Fertig et al 2005)

All of the locations identified in Idaho are between 4,800 and 5,300 feet in elevation. All occurrences have been associated with either flood plain areas, ditches, sub irrigated wet moist areas, wet river terraces and or very wet meadows.

Existing Conditions of the Proposed Action Area at the USSES Sheep Experiment Station:

A compete historical description of the vegetative condition of the station as well as current conditions based on sheep grazing is documented in the report by Klement (1997). These reports indicate that range condition in the areas where sheep are commonly grazed are in an upward trend or good to excellent condition (Klement 1997). Locations and maps of the pasture areas are fully described within the EA. Upon prefield analysis of the elevation of the area, topographic maps, and consultation with nearby forest botanists and USFWS (Sandy Arena) at the Pocatello, ID office, none of the consulted persons felt that habitat for Ute's Lady Tresses was present on the USSES.

Determination: Therefore it is my determination that since no habitat exists for this federally listed species no direct, indirect or cumulative impacts will occur from the proposed action.

Other species of Interest

Presently there are no land management objectives at the sheep experiment station that direct the conservation and or preservation of state listed species. Additionally, no surveys for state listed species have been conducted at the station over the past years. It is possible that habitat exists for many of the rare species listed in the state of Idaho. Due to time constraints related to this project no surveys were conducted for these species. It is assumed that the short duration, high intensity type of grazing conducted at the station may impact some state listed species that have the potential to occur in the areas where sheep are commonly grazed. However, due to the fact that much of this land is not impacted in any other ways such as recreations use, hiking, and that the range condition has been ranked as being in excellent to good condition, it is likely that a considerable amount of available habitat exists for these species if they occur on these lands.

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Signed: _____ **Date:** 10/26/08

Appendix C. Fire History Maps