

BEAR CREEK WATERSHED ANALYSIS**RANGE AND LIVESTOCK****CHARACTERIZATION**Existing Vegetation

The creek bottoms tend to be lined with willow, and with a variety of grasses, sedges and forbs. The brush (snowberry, serviceberry, and chokecherry) component is very heavy on the north and east slopes of the analysis area while sagebrush is common on the west and south aspects. Some areas have Curlleaf Mt. Mahogany as the dominate shrub. Many of the more mesic shrub dominated areas are being encroached by conifers and moving towards a timber type. There is often a wide transitional area between the timber stands and shrub dominated areas which has varying amounts of shrubs and trees growing in it. Aspen stands can be found in varying condition throughout the watershed. Some have been encroached by conifers while others show new recruitment and a variety of age classes.

Noxious weeds in the Bear Creek watershed include Canada thistle, musk thistle and knapweed. These weeds are currently being treated using an integrated approach. The Bureau of Reclamation funds a portion of the treatment for this area. Canada thistle is found throughout the watershed and receives very little treatment. Musk thistle and knapweed are aggressively treated. Most of the weeds except for Canada thistle are found along the road right of ways in the watershed. The Forest Service is a member of the Upper Snake River Cooperative Weed Management Area (CWMA) whose goals are to control noxious weeds in the CWMA. The Bear Creek watershed is part of this CWMA.

Grazing Allotments

Currently four sheep allotments lie entirely with in the Bear Creek watershed. They are Camp Creek-White Springs, Current-Deadman, Elk Mountain, and South Fork of Bear Creek sheep allotments. Portions of the Corral-Lava, Golden Gate, Home Ridge-Red Peak, Lone Pine, Poker Peak, and Russell-Van sheep allotments also lie with in the watershed.

Allotment	Number and class of livestock permitted	Season of use	Percent within the Bear Creek watershed (estimated)
Camp Cr.-White Springs	1000 ewe/lamb	6/10 to 9/1	100
Current-Deadman	1000 ewe/lamb	7/1 to 9/10	100
Elk Mountain	1800 ewes	9/1 to 9/10	100
South Fork of Bear Creek	1127 ewe/lamb	7/1 to 9/20	95
Corral-Lava	1150 ewe/lamb	6/16 to 9/9	5

Golden Gate	1000 ewe/lamb	7/6 to 9/15	90
Home Ridge-Red Peak	1200 ewe/lamb	6/26 to 9/9	35
Allotment	Number and class of livestock permitted	Season of use	Percent within the Bear Creek Watershed (estimated)
Lone Pine	2980 ewes total (1500) (1980)	9/1 to 10/1 9/10 to 10/1	5
Poker Peak	1000 ewe/lamb	7/1 to 8/31	45
Russell-Van	1000 ewe/lamb	6/1 to 8/31	35

The current stocking levels of these allotments allow the permittees to run the full number of permitted livestock for the permitted season. Due to past reductions on all of the allotments and improved management, the vegetation is on an upward trend throughout the watershed. There are isolated areas where vegetation is on downward trend or in a degraded condition. These areas tend to be heavily used watering and bedding spots. Permittees and the range staff are working to improve these areas through improved management of livestock.

The Elk Mountain and Lone Pine allotments are used only late in the season and do not have systems that rest portions of the allotment. All of the other allotments have some type of rest system put into practice. All of the allotments follow the proper uses standards in the Revised Forest Plan.

Upland Forage Utilization.

The following utilizations are the standard maximum utilization level on each allotment regardless of which species of animal uses the forage or browse. These utilization levels apply to native and desirable nonnative vegetation at the end of the grazing period. Use on grasses and herbaceous species do not exceed 55% on range in satisfactory condition and do not exceed 45% on range in unsatisfactory condition. Use on shrubs does not exceed 35% of the current years growth.

Riparian Forage Utilization

Not more than 30% of the current years growth is used on riparian woody plants. At the hydric green line at least 4 inches of stubble height is left remaining on key species at the end of the grazing period. This standard applies to key species of native and desirable nonnative hydric vegetation. Away from the hydric green line, at least 3 inches of stubble height is left on the remainder of the key riparian species at the end of the grazing period.

Sheep Driveway

The Bear Creek Sheep Driveway runs from the Brockman Guard Station to Fourth of July Ridge where it split and one fork went to Red Ridge along the Bear Creek/Fall Creek divide and the other fork goes around Chaparral Hollow to White Springs then down

Bear Creek to the mouth of Elk Creek. Seven bands of sheep used the driveway during the spring and fall and the other six used it only during the fall. Currently five bands of sheep use the driveway. Four bands make the trip both ways and one band uses the driveway only in the fall. In 1982 a driveway restoration project was implemented. An alternate route was developed to move the driveway off of the main Bear Creek along Skyline Ridge Road. The original drive way was seeded with smooth brome along the Skyline Ridge and Commissary Ridge roads. Fences were built on Commissary Ridge and Fourth of July Ridge to exclude sheep from badly gullied areas of the driveway. Gully plugs were installed at Commissary Ridge and Fourth of July Ridge. Once perennial grasses became established on the original driveway a rotation was developed in 1989 where the original driveway is used for two years and the rerouted driveway is used for the next two years. The gullied areas on Commissary Ridge and Fourth of July Ridge remain closed to livestock grazing and are fenced.

ISSUES AND KEY QUESTIONS

1. Is the vegetation component meeting the desired condition or at least moving toward improvement?
2. Are disturbance effects, whether it be caused by animal or human actions, within limits to maintain or enhance the range of natural variability?
3. Are areas that are being rested to rehabilitate them moving towards the desired conditions?
4. Are livestock numbers and grazing strategies adequate to provide proper management of riparian and uplands of the analysis area?
5. The formal range analysis is quite old on many of these allotments. Range managers are using the old range analysis along with their personal observations and professional judgment to make management decisions. Should the range analysis be updated?
6. Some environmental groups have questioned our suitability ratings for some of the rangeland areas on the forest. Does suitability need to be addressed at a more site-specific level?

CURRENT CONDITIONS

The Bear Creek watershed is part of the Caribou Range Mountains Subsection, which is described in the 1997 Revised Forest Plan Targhee National Forest (RFP) as being 60 % forested and 40 % non forested. The RFP also states that most of the shrublands and conifer forests are in later seral stages.

The Revised Forest Plan management prescription for most of the Bear Creek watershed is 6.1(b) Range Management. The purpose of this management prescription is to achieve and maintain healthy nonforested rangelands for livestock production and good watershed conditions. (RFP)

There are a variety of shrublands in the watershed. Mountain Big Sage Brush (*Artemisia tridentata vasseynana*) is the dominant shrub on many of the dryer sites with a grass and forb understory. As sites become more mesic Snow Berry (*Symphoricarpos oreophilus*) will be found with increasing frequency before shrublands give way to forest types. On some of the harsher sites Curlleaf Mountain Mahogany (*Cercocarpus ledifolius*) is well established. Aspen is found throughout the watershed with many clones in the shrub lands showing good reproduction while conifers are encroaching many stands in the forested areas.

Canada Thistle (*Cirsium arvense*) can be found throughout the watershed. Scattered small patches receive very little attention. Biological control agents were released on some larger infestations with limited follow up to record response to the control agents. Musk thistle (*Carduus nutans*) is found mainly along roadways in the watershed although some infestations have been found along trail corridors. Musk thistle infestations in the Bear Creek watershed are being treated mechanically and with herbicides. Knapweed (*Centaurea sp.*) is found along the roadways in Elk Creek and Bear Creek. The knapweed is being treated with herbicide. Black Henbane (*Hyoscyamus niger*) has been treated near the mouth of Bear Creek in the past but none has been found there in recent years.

Four sheep allotments, Camp Creek-White Springs, Currant-Deadman, Elk Mountain, and South Fork of Bear Creek lie almost entirely within the Bear Creek watershed and portions of six more sheep allotments, Corral-Lava, Golden Gate, Home Ridge-Red Peak, Lone Pine, Poker Peak, and Russell-Van, lie partially within the watershed. About 12 miles of the Bear Creek Sheep Driveway is located in the watershed. One now unusable sheep bridge that crosses Bear Creek is located in the watershed. One corral for shipping lambs and one corral for herder and camp manager horses are located in the Bear Creek watershed. While sheep grazing allotments cover the entire watershed, large areas in the watershed are not grazed by domestic sheep.

The practice of prescribed fire has occurred in the analysis area. The species targeted have been sagebrush, mountain brush and aspen. Some of the areas burned during the 1980s are still visible along the main stem of Bear Creek.

PAST CONDITIONS

Early records of domestic livestock grazing before the 1930s are not very clear. Cattle and sheep have grazed the Bear Creek drainage since the late 1800s. Cattle were removed from the forest when the Palisades Dam was built. Until the Palisades Dam was built, both cattle and sheep grazed in common along Bear Creek.

The **Camp Creek -White Springs** Allotment has undergone many boundary changes and reductions. During the early 1920s the White Springs allotment was grazed with 1300 sheep from 7/1-9/15, allotment #14 was grazed by 3103 sheep from 7/1-9/15, and the Small Creek allotment was grazed by 1200 sheep from 7/1-9/15. The 1942 allotment management plans (AMP) for the White Springs and Camp Creek allotments stated that the driveway, which passes through the allotment, is in very poor condition and appears to be spreading. The allotment has been badly damaged by long-continued extremely heavy over use. The 1966 AMP says that in the old days when sheep numbers were higher herders had to cover every inch of the allotment. Since 1982 the allotment has been used as one allotment. The season was changed to June 10 to September 1 and permitted numbers are 1000. This is an 87% reduction in sheep use from what occurred in the 1920s.

The **Currant-Deadman** Allotment has had many boundary changes and sheep numbers over the years. The 1962 AMP for the Deadman Sheep allotment says that it is difficult to tell just what has happened on the allotment due to boundary changes. The best records indicated that in the late '30s the Deadman allotment allocated 5395 sheep months and the 1962 permit allowed 1039 sheep from 7/1-8/31 or 2078 sheep months. This is a 62% reduction on the Deadman allotment from the late '30s to the early '60s. The Currant Creek 1964 AMP stated that it was formerly two allotments. In 1921 allotment #82 was permitted 1354 sheep allotment from 7/1-9/15 and allotment #60 was permitted 1420 sheep from 7/1-9/15. In 1940 these two allotments were combined into one allotment. The 1964 AMP says that in 1921 6935 sheep months were allocated and in 1964 2200 sheep months were allocated on the Currant Creek Sheep allotment. This was a 68% reduction from 1921 to 1964. It appears that the total allocation for what is now the Currant-Deadman Sheep allotment was 12330 sheep months. The current permit is for 1000 sheep from July 1st to September 10th. This equates to 2333 sheep months. This is 18% of what was allocated there in the early 20th century. In 2000 a rotation for the Currant-Deadman allotment was implemented where the allotment would be used for two years then rested for one year. The portion of the allotment west of Deadman Creek was closed to sheep grazing to aid in the recovery of poorly vegetated and gullied areas near the top of Little Elk Mountain. During 2001 and 2002 these areas in poor condition were seeded and gully plugged.

The **Elk Mountain** Allotment was permitted 2400 sheep from 7/1-9/15 from 1922-1935. By 1964 the allotment had been enlarged by 700 acres and 1000 sheep were permitted from 7/1-9/5. Today 1800 dry ewes are permitted from 9/1 to 9/10. In the 1920s, 6000 sheep months were permitted and today about 600 sheep months are permitted for a 90% reduction of permitted use. Much of this allotment is not grazed as it is not suitable for

grazing or it had watershed problems associated with the extensive over use in the past. A contour-trenching project was implemented on this allotment to improve watershed conditions in 1958, 1959 and 1961. The area was also seeded with smooth brome, intermediate wheatgrass, timothy, tall oatgrass, and yellow sweet clover. This area remains closed to grazing.

The **South Fork of Bear Creek** Allotment has an AMP dated 1965 which says that sheep numbers have been reduced by 57% since 1920. At that time 1000 sheep were permitted from 7/1-8/31. Missing from the files is information on the Bear Creek allotment which was combined with the South Fork of Bear Creek Allotment around 1980. This doubled the size of the allotment. A permit issued to J.W. Vanderford shows that 1000 ewes with lambs were permitted from 7/1-8/31 on the Bear Creek allotment. So in 1980 2000 sheep were permitted for 2 months on what is currently the South Fork of Bear Creek allotment. Currently 1127 sheep are permitted from 7/1-9/20. In 1980 there were 4000 sheep months permitted on this allotment now 3005 sheep months are permitted. Without the information about the history of the Bear Creek allotment it is impossible to determine the total reduction for this area.

The **Golden Gate, Home Ridge-Red Peak, Russell-Van, and Poker Peak** Allotments also lie partly within the Bear Creek watershed. Similar reductions have taken place on all of these allotments.

All of the AMPs from the 1960s seem to repeat that past management was poor. Allotment boundaries were frequently changed, permittees were sometimes moved from allotment to allotment, and there were no grazing standards prior to the 1930s. Permittees had no tenure on their allotments and had no incentive to improve them. The records say that in the 1930s a clause was stamped on the back of the permits that specified the use of bedgrounds for more than three nights was prohibited. After 1935 the frequent changes were eliminated. "Individual allotment responsibility" came into being and each permittee was made responsible for the condition of the range on his allotment. AMPs were formulated and "once over grazing was specified. These AMPs from the '60s also state that herding is the weak link in management. The following is stated in most of the AMPs from the 1960s. Some are worded slightly different but they are all basically the same.

The aspect of management which has not improved over the years is the herding, or the actual handling of the sheep while they are upon the allotment. Herders have established camps on this allotment and coyotes and other predators are not near the problem they used to be. These factors allow herders to spend more time in their sheep camps and less time with their sheep. Herders constantly change and new herders are employed. Very few "tepee" out with their sheep, and therefore, they no longer do as good a job of caring for the sheep or the range.

In the old days when numbers of sheep grazing the range were much greater than now, the herder had to herd the sheep over every inch of the allotment and take advantage of all the feed available. Now with numbers greatly reduced and relatively large allotments, the herders have, in many cases, ceased to herd the sheep into timbered and heavy brushy areas—the "hard to herd" areas. They have continued to graze the same old "easy to herd" areas and have taken the course of least

resistance. Thus, we have made reduction after reduction of grazing use upon these allotments without benefiting the range which needs benefiting. The herders have reduced feeding the timbered and brushy areas and have continued right on grazing the "open" nontimbered areas at the same old rate. These open areas—the sagebrush, grass and weed type areas—are the areas in poor condition and the areas needing relief from grazing use. The timbered and brushy areas are the areas which have almost universally gotten the relief and these are the areas which could and should be grazed heavier than they are currently grazed.

The 1960s AMPs also mentioned is succession on timber types. As some of these types move to later successional stages forage for domestic sheep decreases. Since these AMPs were written most of the allotments have been combined again. So that one band now grazes the same area where two bands grazed in the 1960s. This has allowed lighter use on the easy to herd areas mentioned above.

The **Bear Creek Sheep Driveway** runs from the Brockman Guard Station to Fourth of July Ridge where it split and one fork went to Red Ridge along the Bear Creek/Fall Creek divide and the other fork goes around Chaparral Hollow to White Springs then down Bear Creek to the mouth of Elk Creek. Historically most of the sheep grazing this area used the driveway to access the allotments and to return to the corral at Brockman. Many people who were around during the days when the sheep numbers were high said you could count the number of bands of sheep on the driveway by the dust clouds they made as they trailed to and from their allotments. Throughout the 2210 files for the allotments that border the driveway there are references as to the poor condition of the driveway. Range managers were concerned with the erosion, and in some areas gullying, along the driveway. Notes from 1979 in the 2520 file for the Bear Creek Driveway by Edward Noble state that at the head of Chaparral Hollow has had 6-8 inches of topsoil loss as evidenced by hummocks remaining under some surviving perennial plants. Erosion pavement is still evident along some of the driveway. Good records of how many bands of sheep used the driveway in the early days are not available. By 1982 use on the driveway was down to 13 bands of sheep. Seven bands of sheep used the driveway during the spring and fall and the other six used it only during the fall. Currently five bands of sheep use the driveway. Four bands make the trip both ways and one band uses the driveway only in the fall. In 1982 a driveway restoration project was implemented. An alternate route was developed to move the driveway off of the main Bear Creek along Skyline Ridge Road. The original driveway was seeded with a mix including smooth brome and intermediate wheatgrass along the Skyline Ridge and Commissary Ridge roads. Fences were built on Commissary Ridge and Fourth of July Ridge to exclude sheep from badly gullied areas of the driveway. Gully plugs were installed at Commissary Ridge and Fourth of July Ridge. Once perennial grasses became established on the original driveway, a rotation was developed in 1989 where the original driveway is used for two years and the rerouted driveway is used for the next two years. The gullied areas on Commissary Ridge and Fourth of July Ridge remain closed to livestock grazing and are fenced.

It can be assumed that prior to the introduction of domestic livestock ground cover was good and erosion minimal throughout the Bear Creek watershed. With the introduction of large numbers of domestic livestock, range conditions deteriorated rapidly early in the

twentieth century. Numerous cuts were made and range management practices were implemented throughout the 1900s.

TRENDS

Noxious weed control is in effect through the watershed. Most infestations are adjacent to travel routes such as roads and trails. Weed species found in the area are Canadian thistle (common across the area), musk thistle (isolated plants) and knapweed (along roadways). The invasion of exotic species is a threat but with the present weed program of inventory, monitoring and treatment the weed problem is being controlled. Much of the rangeland in the Bear Creek watershed has improved since the early 1900s when large numbers of domestic livestock grazed the areas.

The present range management system has large enough allotments for the sheep to use the better rangeland with a once over grazing system. Many of the allotments have a rest rotation system. These grazing systems are allowing the range to improve while sustaining a livestock grazing program. The riparian areas are in good condition.

There are some areas in the watershed where wyethia (mules ear) is the dominant ground cover. These are typically areas that received heavy grazing in the past. Wyethia is often an increaser with disturbance. The wyethia is helping to hold the soil in place and prevent erosion.

The Little Elk Mountain area has not shown much improvement with the exclusion of livestock. This area was seeded and gully plugged in 2001 and 2002.

The Bear Creek Sheep driveway conditions have improved. Due to the heavy past use and poor conditions in some areas, the improvement has been slow. Areas such as the head of Chaparral Hollow and the exclosure on Commissary Ridge have not shown large improvements even with the total exclusion of livestock. The head of Chaparral Hollow and Commissary Ridge areas of the sheep driveway have been fenced since 1982 and some gully plugs were installed. Most of the gully plugs have filled in. Only four bands of sheep use the driveway to get to and return from their allotments and one additional band of sheep uses the driveway to leave the forest after lambs are shipped. The band of sheep that uses the driveway in the fall is the only one who uses the stretch of the driveway between Palisades Reservoir and Fourth of July Ridge. The other four bands of sheep access the Golden Gate, Home Ridge-Red Peak and Lone Pine allotments from the Brockman Corral. Although many areas along the driveway are in poor condition, they are improving. Other areas of the driveway have been seeded and have well-established stands of grass. Although some of the grass is non-native it is reducing erosion and improving the condition along the driveway.

Range and Livestock



1976 View of the driveway along Skyline Road near the head waters of Bear Creek.



1987 View of the same area. Smooth brome and intermediate wheat grass are well established.

Range and Livestock



1976 View of the driveway along Skyline Road and Bear Creek looking to the south.



1987 View of the driveway along Skyline Road and Bear Creek looking to the south.

RECOMMENDATIONS

Recommendations for the Bear Creek watershed are to:

Restoration/Protection

- Continue a sustainable livestock grazing program while improving range conditions.
- Modify any grazing related actions displaying negative impact to natural resources.
- Actively try to control existing noxious weeds using an integrated pest management system.
- Prevent new invasive species from becoming established in the watershed.
- Continue to maintain watershed protection fences on Bear Creek Driveway.
- Improve and maintain gully plugs, as needed on Little Elk Mountain and the Bear Creek Driveway protection areas.
- Continue the system of using the original and rerouted driveway for getting sheep to their allotments.
- Improve the Commissary Ridge and Fourth of July Ridge exclosures on the driveway by ripping, incorporating organic matter into the soil and revegetating.
- Continue rest rotation systems on the sheep allotments in the watershed.

Inventory/Monitoring

- Continue an active role in the local Coordinated Weed Management Area Group, consisting of private, local, state and federal land management agencies in control of noxious weed.
- Revise allotment management plans for sheep allotments in the analysis area to bring them in compliance with standards and guides specified in the Targhee Forest Plan.
- Monitor all grazing allotments to insure compliance with standards and guides specified in the Revised Targhee Forest Plan, grazing permits, allotment management plans and annual operating instructions.
- Monitor areas rangeland areas to determine long-term trend of range conditions.

LITERATURE CITED OR REFERENCES

USDA Forest Service. 2003. Range Allotment Files 2210 Open and Closed, Palisades Ranger District, Caribou-Targhee National Forest

USDA Forest Service. 2003. 2520 Bear Creek Sheep Driveway file, Palisades Ranger District, Caribou-Targhee National Forest

1997 Revised Forest Plan Targhee National Forest

USDA Forest Service. 2003. 1950 NEPA file Little Elk Mountain Watershed project, Palisades Ranger District, Caribou-Targhee National Forest

