

Kellison Allotment (#00834)

Rangeland Health Standards Assessment

Allotment Overview

The Kellison grazing allotment is located about 2.5 miles north of the town of Bonanza, Oregon. There are 335 acres in the allotment (see attached map). The grazing lease for the allotment authorizes 19 AUMs of cattle use from May 1 to June 13.

A search through the grazing file archive revealed grazing records back to 1974. The allotment had been used from 1951 to 1974 as indicated by a note on the history of past permit holders, but no records were found for this period. From 1974 through 1984, the season-of-use was April 15 to June 15 with 19 AUMs. It was changed to the current season in 1985. These records contained no information on vegetation conditions for the allotment. A review of the annual licenses and billings indicated that the allotment was being grazed at the 19 AUM level.

For management purposes, the Kellison allotment is considered a C category allotment. The C allotments have the lowest level of management attention. There have been no monitoring studies established on the allotment. During the development of the Resource Management Plan for the resource area in 1995, there were no identified resource conflicts/concerns identified for the allotment.

The lower 95 acres were treated to reduce juniper trees during 2001. Treatment was done with a mechanical shearer with the cut junipers being piled for later burning. Portions of this area had high levels of weedy grasses and forbs with a complete lack of shrubs or trees. This area was evidently subjected to some type of disturbance such as a wildfire or land clearing activities. No mention of these types of disturbances was found in the grazing files. The current conditions of this area will be discussed further under Standards 1, 3, and 5.

As shown on the map, portions of the allotment have been encroached upon and included in the adjacent private agricultural lands. In the juniper treatment area, shearing was done to the north of the existing fenceline, but on BLM-administered lands.

An Ecological Site Inventory (ESI) was completed on the allotment in the fall of 2002. This inventory provided data on the current vegetation on the allotment. A map of the area was produced that divided the allotment into units based upon distinct vegetation communities. These units are labeled as Site Write-up Areas or SWAs. For each of these SWAs, one or more Rangeland Inventory Ecological Status Worksheets was completed that provides information on vegetation, ground cover characteristics, production, erosion, and other site factors. During the ESI a general overview of an allotment is also done. This can include an inventory of any range improvements, indications of recent use by livestock and wildlife, and observations of riparian and wetland conditions.

Standard 1 - Watershed Function - Uplands

This standard focuses on the basic physical functions of upland soils that support plant growth, the maintenance or development of plant populations and communities, and promote dependable flows of quality water from the watershed.

The recent Ecological Site Inventory (ESI) completed on the allotment provides the best available information to determine if this Standard is being met. The ESI on the allotment shows 6 different ecological sites based upon the existing vegetation and soil surface factors. The current ecological status or condition of the various sites ranges from early seral to late seral.

SWA#	Ecological Site Name	Worksheet#	Condition
KE-1	Mahogany Rockland, 10-20"	DE02001	Mid Seral
KE-2	Juniper Claypan, 12-16"	DE02002	Mid Seral
KE-3	Stony Claypan, 14-20"	DE02003	Early Seral
KE-4	Claypan, 14-20"	DE02004	Early Seral
KE-5	Claypan, 14-20"	DE02005	Early Seral
KE-6	Loamy, 14-18"	DE02006	Mid Seral
KE-7	Juniper Claypan, 12-16"	DE02007	Late Seral
KE-8	Mahogany Rockland, 10-20"	DE02008	Late Seral
KE-9	Shallow Stony, 12-20"	DE02009	Late Seral
KE-10	Loamy, 14-18"	DE03023	Mid Seral

The overall condition of this allotment by condition class and weighted by approximate acres is as follows:

Late Seral	~197 acres
Mid Seral	~72 acres
Early Seral	~48 acres
Unmapped	~18 acres

All of the early seral sites are in the 95 acres in the southeast portion of the allotment. This area has been heavily impacted by the exotic annual grass species of medusahead (*Taeniatherum caput-medusae*) and cheatgrass (*Bromus tectorum*). There are several large, solid patches of medusahead in the Claypan ecological site (KE-4) with scattered smaller patches throughout the Juniper Claypan (KE-2) and Stony Claypan (KE-3) ecological sites (see Figure 1).



Figure 1 Claypan ecological site (KE-4) showing heavy medusahead and cheatgrass infestation.

The area shown in Figure 1 is the disturbed site mentioned above in the allotment overview. An unimproved road runs through this area and there is a lack of shrubs or trees. Large surface rocks are absent from most of this area which could lead to the conclusion that the area may have been cleared for cultivation at some point. There may have also been a wildfire, but no evidence of burned juniper stumps or other indicators were observed. As seen in the photo and in the ecological site write-up, the area is now almost completely dominated by weedy grasses and forbs, mainly medusahead and cheatgrass. This part of the allotment is surrounded on 3 sides by the base property for the allotment. There may have been instances of livestock use outside of the season-of-use due to fencing problems which may have exacerbated the spread of the weedy grasses. However, this is not documented in the grazing files. If the area was subjected to a major disturbance like a wildfire or land clearing, then grazing at authorized levels immediately following the disturbance could have allowed the weedy species to establish and spread.

Medusahead has the ability to out compete all other vegetation on a site due to its early germination time and the heavy layer of thatch that it produces. Cheatgrass is also found throughout all of these ecological sites. Both of these exotic species germinate earlier than the native perennials found in these ecological sites. This allows them to start growth earlier and use up soil moisture that could otherwise be used by the native grasses. The recent juniper treatments on these sites will likely result in an increase in both of these species. The soil disturbance and burning associated with the juniper

treatments will result in bare soil areas where these weedy species can readily establish and overwhelm the native species. These exotic species have a negative effect on the watershed function of the uplands. Their shallow-rooted nature provides less soil stability than a mixed stand of native species which could lead to increased soil loss and decreased water storage capacity in the upland soils.

The other 240 acres of the allotment is in better ecological condition. The majority of the area is in the Juniper Claypan (KE-7) or Shallow Stony (KE-9) ecological sites (see Figure 2). Both of these sites were rated as being in late seral condition. There is a moderate amount of invasive juniper in this part of the allotment which is beginning to decrease the overall production, but the sites are currently in good condition relative to upland watershed function.



Figure 2 Juniper Claypan ecological site (KE-7)

There are several small “islands” of the Loamy (KE-6) ecological site which support high densities of perennial native grasses (see Figure 3).



Figure 3 Loamy ecological site (KE-6)

These sites are also being invaded by juniper which has caused a significant decrease in the shrub components of mountain big sagebrush (*Artemisia vaseyana*) and antelope bitterbrush (*Purshia tridentata*). These sites were rated as being in mid seral condition due to the lack of these shrub species. With the high densities of perennial grasses, these sites are still providing good upland watershed functions.

This Standard is not currently being achieved on all of the allotment. The lower 95 acres is being negatively affected by exotic annual grasses. The exact cause of the current conditions is not fully known, but livestock grazing likely was a contributing factor. The remainder of the allotments 240 acres is currently meeting this standard.

Standard 2 - Watershed Function-Riparian/Wetland Areas

This Standard focuses on the properly functioning condition of riparian/wetland areas as appropriate to soil, climate, and landform.

On the Kellison allotment, riparian/wetland areas are mainly limited to ephemeral drainages with upland vegetation and small channels that are well armored by rocks and

gravels. In the very northeast corner of the lower 95 acre parcel there is a short constructed ditch that carries runoff water from the irrigated fields that are north of the allotment. This ditch is well vegetated and stable. The runoff from this ditch reenters the allotment in the southeast corner of this 95 acre parcel. The channel here is armored by rock and gravel and non-riparian vegetation. There is little evidence of erosion and this channel appears to be functioning adequately for the amount of runoff it carries.

This Standard is being met on the Kellison allotment.

Standard 3 - Ecological Processes

This Standard addresses the ecological processes of energy flow and nutrient cycling as influenced by existing and desired plant and animal communities.

As noted under Standard 1, invasive exotic grass species including medusahead and cheatgrass have been increasing and displacing the native perennial grasses in the southern 95 acres of the allotment. This is causing a change in the ecological process of nutrient cycling. These shallow rooted annuals utilize soil moisture at different times of the year (early winter through early spring) and at shallower soil depths than the natives they are displacing. They also reach maturity early in the growing season and then are not a source of nutrition for dependent vertebrate species. Medusahead also has a mechanical advantage to exclude other grass and forb species. High levels of silica in the stems of medusahead slows the decomposition process and results in a mat of litter that inhibits the germination of seeds other than its own. Both cheatgrass and medusahead tend to spread more rapidly onto disturbed areas, germinate in late fall/early winter when moisture is adequate, and then rapidly develop in early spring as soil temperatures warm. This allows them to utilize the available moisture and nutrients before native annuals and perennials begin active growth.

The majority of the northern 240 acres are currently functioning adequately to provide for the required ecological processes. However, there has been an increase in juniper in the Loamy ecological sites that has led to a shift in species composition. The loss of shrubs in these sites has likely had a negative affect on the species that utilize them for nutrients.

This Standard is not currently being achieved on all of the allotment. The lower 95 acres is being negatively affected by exotic annual grasses and the Loamy ecological sites are being negatively affected by an increase in junipers. The exact cause of the current conditions is not fully known, but livestock grazing likely was a contributing factor.

Standard 4 - Water Quality

This Standard addresses surface and groundwater quality as influenced by agency actions and whether it complies with State water quality standards.

As stated under Standard 2 above, the intermittent channels on the allotment are functioning adequately for the amount of runoff they carry. The channels are not

producing excess sediment that is affecting downstream water quality. There are also no constructed waterholes or developed springs on the allotment that could be affecting water quality.

This Standard is currently being met on the Kellison allotment.

Standard 5 - Native, T&E, and Locally Important Species

This Standard focuses on retaining and restoring native plant and animal (including fish) species, populations and communities (including threatened, endangered, and other special status species and species of local importance).

As noted above, the exotic species of cheatgrass and medusahead are displacing the native grasses and forbs. This is leading to a decrease in the diversity of the plant communities and is likely negatively impacting the native animal species that are dependent upon these communities. The increase in juniper is also causing a similar impact on the vegetation communities and the dependant animal species.

This allotment was systematically surveyed for special status vascular plants in 1994. No special status vascular plant species populations were found within this allotment. Several introduced, weedy species were noted to occur in the allotment. Only one noxious weed targeted for treatment, Canada thistle (*Cirsium arvense*), was noted to occur in the allotment, but the location(s) was not mapped.

No special status animal species are known to occur on the allotment. This area is considered important mule deer winter range.

This Standard is not currently being achieved on all of the allotment. The lower 95 acres is being negatively affected by exotic annual grasses and the Loamy ecological sites are being negatively affected by an increase in junipers. The exact cause of the current conditions is not fully known, but livestock grazing likely was a contributing factor.

Management Recommendations

The level of the exotic annual grasses medusahead and cheatgrass in the lower 95 acre parcel is having a negative impact on the achievement of Standards 1, 3, and 5. With the current level of medusahead in SWAs KE-3, KE-4, and KE-5, there is little chance of recovering these areas to a native vegetation community. Continued grazing on these areas could lead to the increased spread of the medusahead to the adjacent lands. This 95 acre parcel should be rested from livestock grazing or trailing for an indefinite amount of time to allow some of the less weedy areas to maintain or improve their native vegetation. The area should be rested for a minimum of 10 years and then be reevaluated.

With this parcel rested from grazing, there should be a reduction of 5 AUMs from the total active preference. The current season-of-use of 5/1 to 6/13 should be maintained on

the rest of the allotment. The fencing around this 95 acre area would need to be maintained or rebuilt in some stretches to successfully exclude livestock.

The level of juniper density on the “islands” of the Loamy ecological sites (KE-6 and KE-10) has caused a significant decrease in the amount of shrubs in these vegetation communities. Juniper reduction projects should be implemented on these sites while there are still some shrub species left to provide a seed source for recovery. Access into these sites needs to be carefully planned to avoid spreading medusahead into these areas.

The Mahogany Rockland ecological site should also be considered for juniper reduction. These sites provide a wide variety of shrub species for wildlife. There are a high number of junipers in all age classes on this site and they will have a significant negative impact on the habitat in the next 5-10 years (see Figure 4). The steepness of the site and the shrub density would require the use of manual thinning techniques.



Figure 4 Mahogany Rockland ecological site (KE-8).

This allotment is considered as Zone 3 land under the Land Tenure designations in the Klamath Falls Resource Area Record of Decision and Resource Management Plan and Rangeland Program Summary. This designation means these lands are suitable for disposal through sale if all criteria are met during disposal clearance reviews. This allotment should be considered for disposal if interested buyers are identified, particularly the lower 95 acres. This area has degraded resource conditions that would require high amounts of time and materials to restore to a better functioning state. However, the sale of only this 95 acres would severely limit public access to the remaining 240 acres. The sale of the total 335 acres allotment should be considered.

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Title

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Determination

- (X) Existing grazing management practices and/or levels of grazing use on the Kellison grazing allotment promotes achievement or significant progress toward the Oregon Standards for Rangeland Health and conforms with the Guidelines for Livestock Grazing Management.

- () Existing grazing management practices and/or levels of grazing use on the Kellison grazing allotment will require modification or change prior to the next grazing season to promote achievement of the Oregon Standards for Rangeland Health and conform with the Guidelines for Livestock Grazing Management.

/s/ Jon Raby
Manager, Klamath Falls Resource Area

1/30/04
Date