

U.S. Department of the Interior Bureau of Land Management

Standard Determination Document
November 25, 2008

Goshute Basin Allotment and Indian Creek Allotment



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STANDARDS DETERMINATION DOCUMENT
Goshute Basin Allotment (00403) and Indian Creek Allotment (00428)

Standards and Guidelines Assessment

The Standards and Guidelines for Nevada's Northeastern Great Basin Area were developed by the Northeastern Great Basin Area Resource Advisory Council (RAC) and approved in 1997. Standards and guidelines are likened to objectives for healthy watersheds, healthy native plant communities, and healthy rangelands. Standards are expressions of physical and biological conditions required for sustaining rangelands for multiple uses. Guidelines point to management actions related to livestock grazing for achieving the standards.

This Standards Determination Document evaluates and assesses livestock grazing management achievement of the Standards and conformance with the Guidelines for the Goshute Basin Allotment (#00402) and the Indian Creek Allotment (#00401) in the Ely BLM District. This document does not evaluate or assess achievement of the wild horse and burro or the off highway vehicle Standards or conformance to their respective Guidelines.

The Standards were assessed for the Goshute Basin Allotment and the Indian Creek Allotment by a BLM interdisciplinary team consisting of rangeland management specialists, wildlife biologist, weeds specialist, ecologist, and a hydrologist. Documents and publications used in the assessment process include the Soil Survey of Western White Pine Area, Nevada, Parts of White Pine and Eureka Counties, Ecological Site Descriptions for Major Land Resource Area 28B, Interpreting Indicators of Rangeland Health (USDI-BLM et al. 2000), Sampling Vegetation Attributes (USDI-BLM et al. 1996) and the National Range and Pasture Handbook (USDA-NRCS 1997). A complete list of references is included at the end of this document. All are available for public review in the Ely BLM District Office. The interdisciplinary team used rangeland monitoring data, professional observations, and photographs to assess achievement of the Standards and conformance with the Guidelines.

The Goshute Basin Allotment and the Indian Creek Allotment encompasses approximately 9,397 public land acres and 3,167 public land acres, respectively. Both of these allotments are common use allotments located approximately 40 miles north of Ely, Nevada within White Pine County. The Indian Creek Allotment borders with Elko County. The permit area occurs within the Steptoe B Watershed (040). Portions of the Triple B Complex Wild Horse Herd Management Area occur within these allotments. Both allotments are located within the Butte sage grouse population unit. The permit area occurs within the Nevada Department of Wildlife hunting management area #12. Goshute Basin Allotment has several riparian areas and Bonneville Cutthroat Trout occurs in Goshute Creek. Most of the Goshute Basin Allotment and the Indian Creek Allotment are within the Goshute Canyon Wilderness (Appendix II, Figure I. General Map).

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The Goshute Basin Allotment has two permittees, and the Indian Creek Allotment has two permittees. This Standards Determination Document evaluates and assesses livestock grazing management achievement of the Standards and conformance with the Guidelines for 2703222 (#2703222); and Double U Livestock LLC (#2700045) for the Goshute Basin Allotment. It also evaluates and assesses livestock grazing management achievement of the Standards and conformance with the Guidelines for 2703222, and 2704539(#2704539) for the Indian Creek Allotment. Based on this document and the Standards Determination Document previously completed for the Cherry Creek Allotment in 2008 new term grazing permits could be issued this year to 2703222, and 2704539 for a period up to ten years. Double U Livestock LLC permit for their north grazing allotments, including Goshute Basin Allotment, has been fully processed and is not due for renewal until 2014. Future term permit renewals for Goshute Basin Allotment and Indian Creek Allotment could be considered based on this determination along with future monitoring data.

A Final Multiple Use Decision (FMUD) was issued for the Goshute Basin, Indian Creek and Cherry Creek Allotments on July 20, 2001. This decision carried forth the management actions and adjustments to permitted use identified in the livestock grazing agreements on these allotments. The Final Multiple Use Decision was based upon the evaluation of monitoring data, recommendations from district staff, and input received through consultation, coordination, and cooperation from the permittee and public interest groups to determine progress in meeting management objectives for each allotment. Based on these decisions, range management actions were implemented to meet the land use plan objectives as stipulated in the Egan Resource Area Record of Decision. The permittees for the Goshute Basin Allotment and Indian Creek Allotment signed agreements to take voluntary nonuse to help progress in meeting management objectives.

Changes implemented through agreements in 2000 for the Goshute Basin Allotment included voluntary nonuse of AUMs with sheep AUMs reduced to 350 AUMs and cattle AUMs reduced to 0 AUMs for a period of four years (see Table 1). During this time the season of use for sheep was 07/01-10/15. For Indian Creek Allotment the agreements reduced the active AUMs to 45 AUMs for 2703222's permit and 30 AUMs for 2704539 and Mary K. 2704539 permit with the remaining AUMs held in voluntary nonuse (see Table 2). The season of use was adjusted to 07/01-08/31 with cattle gathered and removed from the allotment by 08/15 and all stragglers removed by 08/31. Even though these agreements ended in 2003 and 2004, the permittees have continued to be proactive in implementing these changes.

All of these documents were reviewed and taken in to consideration along with the analysis of current data. Most of the terms and conditions of these agreements are still pertinent based on this determination and are included in Part 4. Recommendations. While it is recommended to retain most of these terms and conditions with no adjustments, there are recommended changes regarding cattle grazing the Goshute Basin Allotment, and alternating annually cattle and sheep grazing in this allotment (see Part 4).

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Utilization objectives have also been recommended for both allotments. These changes are based on the findings of this determination.

Table 1. Permitted Use (AUMs) for Goshute Basin Allotment									
Permittee Livestock Kind	Prior to the Agreements and After the Agreements Expired				During the Agreements				
	Total Active	Voluntary Nonuse	Suspended Nonuse	Total AUMs	Total Active	Voluntary Nonuse	Suspended Nonuse	Total AUMs	Period of Agreement
2703222 Cattle	99	0	81	180	0	99	81	180	3/1/2000 to 2/28/2003
Double U Livestock LLC Sheep	528	0	257	785	350	178	257	785	3/1/2000 to 2/28/2004
Total:	627	0	338	965	350	277	338	965	

Table 2. Permitted Use (AUMs) for Indian Creek Allotment									
Permittee Livestock Kind	Prior to the Agreements and After the Agreements Expired				During the Agreements				
	Total Active	Voluntary Nonuse	Suspended Nonuse	Total AUMs	Total Active	Voluntary Nonuse	Suspended Nonuse	Total AUMs	Period of Agreement
2703222 Cattle	106	0	87	193	45	61	87	193	3/1/2001 to 2/28/2004
2704539 Cattle	71	0	0	71	30	41	0	71	3/1/2001 to 2/28/2004
Total:	177	0	87	264	75	102	87	264	

Three key areas have been established on the Goshute Basin Allotment and three key areas have been established for the Indian Creek Allotment. The establishment of key areas is based on accessibility and general use by livestock, vegetation, and ecological range sites. Key areas for the Goshute Basin Allotment and the Indian Creek Allotment were monitored and the data collected over the past several years. This was analyzed in this assessment. Four of these key areas were last monitored in 2008 (Appendix II, Figure II. ReGap Data and Key Areas Map). Native vegetation varies throughout the Goshute Basin Allotment and the Indian Creek Allotment and includes bluebunch wheatgrass, needlegrass, Thurber’s needlegrass, Sandberg’s bluegrass, muttongrass,

bottlebrush squirreltail, Canby's bluegrass, mountain big sagebrush, Utah serviceberry, snowberry, sedge, rush, Woods' rose, mat muhly, Indian ricegrass, needle and thread, basin wildrye, aspen, fir, singleleaf pinyon, lupine, Utah juniper and antelope bitterbrush. Also Goshute Basin Allotment has twenty four springs and Indian Creek Allotment has three springs (Appendix II, Figure III and IV. allotment riparian area maps). A summary of monitoring data for Goshute Basin Allotment and the Indian Creek Allotment is located in Appendix I.

PART 1. STANDARD CONFORMANCE REVIEW

Goshute Basin Allotment Standards Review

Standard 1. Upland Sites

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and land form.

As indicated by:

- Indicators are canopy and ground cover, including litter, live vegetation and rock, appropriate to potential of the site.

Determination:

X Achieving the Standard

- Not Achieving the Standard, but making significant progress towards achieving
- Not Achieving the Standard, and not making significant progress toward standard

Causal Factors

- Livestock are a contributing factor to not achieving the standard.
- Livestock are not a contributing factor to not achieving the standard
- Failure to meet the standard is related to other issues or conditions.

Guidelines Conformance:

X In conformance with the Guidelines

- Not in conformance with the Guidelines

Conclusion: Standard Achieved

UPLANDS Sites: Rangeland monitoring and professional observation indicates that overall soil condition is currently being maintained. Soils are stable and productive and the topsoil is holding in place.

Two of the key areas occur in soils that are a clay pan with a high percentage of gravels. No rill or sheet erosion has been observed. Line intercept cover studies conducted at key area GB-01 and GB-02 demonstrate that ground cover is within or greater than the appropriate range for the ecological site. Line intercept cover study at key area GB-03, which occurs in loamy soil, was 30% (Appendix I, Table 3-1). The ecological site description recommends a cover of 35% to 50%. Although cover is not appropriate to

the potential of the site, this is a loamy soil with infiltration and permeability rates appropriate to the slope and high precipitation of this site. Runoff is slow due to the loamy deep soils and professional observations revealed that no sheet or rill erosion has been detected at this area.

Standard 2. Riparian and Wetland Sites

Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

As indicated by:

- Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows. Elements indicating proper functioning condition such as avoiding accelerating erosion, capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:
 - Width/Depth ratio; Channel roughness; Sinuosity of stream channel; Bank stability; Vegetative cover (amount, spacing, life form); and other cover (large woody debris, rock).
 - Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.
 - Chemical, physical and biological water constituents are not exceeding the state water quality standards.

The above indicators shall be applied to the potential of the site.

Determination:

- Achieving the Standard
- Not Achieving the Standard, but making significant progress towards**
- Not Achieving the Standard, and not making significant progress toward standard

Causal Factors

- Livestock are a contributing factor to not achieving the standard.**
- Livestock are not a contributing factor to not achieving the standard
- Failure to meet the standard is related to other issues or conditions**

Guidelines Conformance:

- In conformance with the Guidelines**
- Not in conformance with the Guidelines

Conclusion: Not achieving the Standard, but making significant progress towards. Livestock are a contributing factor to not achieving the Standard, failure to meet the standard is related to other issues or conditions.

Riparian: Standard not met (not achieved). No lotic (stream) riparian areas were accessed. Goshute Creek and Paris Creek experience runoff from Goshute Basin, but these stream systems are surveyed and located outside of the Goshute Basin Allotment. There are twenty-four springs within the allotment. Twenty-one of the twenty-four springs were assessed in 2008. These riparian assessments were compared to past riparian assessments to analyze if these springs and associated riparian areas are at proper functioning condition. A comparison of past and present data revealed which areas were improving, declining or maintaining. Due to the number of springs and their locations for the purpose of this document the springs were broke into clusters (see Appendix II, Figure II. Goshute Basin Riparian Area Map).

The Final Multiple Use Decision for Goshute Basin carried forth management actions and adjustments to permitted use to improve riparian areas to properly functioning condition. Implementation of these management actions has helped to improve several riparian areas throughout the allotment. While several riparian areas have improved there are still riparian areas that are not improving toward proper functioning condition. This lack of improvement is attributed to livestock grazing as well as impacts from wildlife, mainly elk. Enclosure fences have also helped the riparian areas to progress toward achievement of the standard. A summary of the results of these studies is in Appendix I, Table 4-1.

For Cluster 1, five of the six springs access in 2008, were determined to be proper functioning condition. Two of these springs rated were accessed in 1995 as functional at risk. Both of these springs have shown improvement. One spring source 711 has shown a decline from proper functioning condition in 1995 to functional at risk in 2008. This decline is attributed to hoof action causing head cutting and erosion; and heavy trampling is allowing weeds and upland shrubs to move into the riparian area.

For Cluster 2, only one of the four springs assessed in 2008 was determined to be proper functioning condition. One of the springs, 681, was rated functional at risk in both 1995 and 2008 showing no improvement. The two remaining springs, 677 and 684, demonstrated a decline since they were both rated proper functioning condition in 1995, but were rated functional at risk in 2008. Heavy trampling and grazing by elk are attributed to the decline in these riparian areas.

For Cluster 3, all seven spring sources were assessed in 2008 as proper functioning condition. Although there are signs of sheep and elk use at two of the springs, these springs are not heavily trampled and diverse riparian vegetation is present. Enclosures around four of the springs and steep topography are attributed to these springs maintaining proper function.

For Cluster 4, all four springs were assessed in 1995 and again in 2008. One spring, 697, showed improvement from functional at risk in 1995 to proper functioning condition in 2008. One other spring, 696, demonstrated some improvement from nonfunctional in 1995 to functional at risk in 2008. Two of the springs, 694 and 695, showed no improvement with a functional at risk rating in 1995 and also in 2008. This lack of

improvement is attributed to heavy grazing by sheep, elk and mule deer. This excessive grazing and trampling is resulting in erosion.

Standard 3. Habitat:

Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species.

As indicated by:

- Vegetation composition (relative abundance of species);
- Vegetation structure (life forms, cover, height, or age class);
- Vegetation distribution (patchiness, corridors);
- Vegetation productivity; and
- Vegetation nutritional value.

Determination:

X Achieving the Standard

- Not Achieving the Standard, but making significant progress towards
- Not Achieving the Standard, not making significant progress toward standard

Causal Factors

- Livestock are a contributing factor to not achieving the standard.
- Livestock are not a contributing factor to not achieving the standard
- Failure to meet the standard is related to other issues or conditions.

Guidelines Conformance:

X In conformance with the Guidelines

- Not in conformance with the Guidelines

Conclusion: Standard Achieved

Rangeland monitoring (including professional observations, ecological condition, line intercept studies, and key forage plant utilization) show habitat conditions throughout a large portion of the allotment exhibit a healthy and productive plant community that is achieving suitable habitat for wildlife and maintaining ecological processes. Studies done at all three key areas indicate that plant diversity is appropriate to the sites. Utilization studies conducted on the allotment showed livestock grazing to be within proper use levels. Two of the key areas are in the late seral stage and one key area is in the mid seral stage (Appendix I, Table 3-1). Calculating the seral stage (similarity index) helps quantify if the vegetative composition and productivity are providing suitable forage for wildlife and livestock and maintaining ecological processes. Although none of the sites have reached the potential natural community for the appropriate ecological sites, it should be understood that vegetation objectives that are developed using successional status (seral status) categories are not always focused on achieving the reference condition(s). A discussion of the dominant vegetation areas follows.

Montane sagebrush steppe plant communities

Data collected indicates appropriate composition, and production in significant portions of these montane sagebrush steppe range sites. This area has a diverse understory of grasses with low sagebrush as the dominate shrub. Shrub composition is above the potential vegetative composition range for this site, however the ecological condition of this site is stable with a diverse grass component and the shrubs are not currently outcompeting grasses.

Alpine/Montane plant communities

Plant communities at this high elevation are composed of bunch grasses, alpine forbs, and low sage. Data collected indicates appropriate cover, composition, and production in significant portions of the low sagebrush range sites. This area has a diverse understory of grasses with a high production of forbs including wildflowers. Shrub composition is comparable to the potential vegetative composition range for these sites.

Montane meadow and riparian woodland communities

Although these plant communities make up only a very small portion of the allotment, they are important plant communities both in terms of forage production and wildlife habitat. The montane meadows are made up of various high elevation grasses and the montane riparian woodlands include aspen stands, along with a variety of shrubs and grasses. These plant communities are analyzed in the riparian standard and not part of the upland standard for habitat. The purpose for discussing these communities here is only to provide a brief description of these as part of the dominate plant communities in this allotment.

Indian Creek Allotment Standards Review

Standard 1. Upland Sites

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and land form.

As indicated by:

- Indicators are canopy and ground cover, including litter, live vegetation and rock, appropriate to potential of the site.

Determination:

X Achieving the Standard

- Not Achieving the Standard, but making significant progress towards achieving
- Not Achieving the Standard, and not making significant progress toward standard

Causal Factors

- Livestock are a contributing factor to not achieving the standard.
- Livestock are not a contributing factor to not achieving the standard
- Failure to meet the standard is related to other issues or conditions

Guidelines Conformance:

X In conformance with the Guidelines

Not in conformance with the Guidelines

Conclusion: Standard Achieved

UPLANDS Sites: Rangeland monitoring and professional observation indicates that overall soil condition is currently being maintained on the native range. Soils are stable and productive and the topsoil is holding in place.

Two of the key areas are located in silty clay loam soils and are dry mountain meadow sites. The third key area is located in a gravely clay soil. Professional observations at the two meadow sites indicate that cover is at 75% to 80% and appropriate to the ecological site. Since these sites are prone to gullying from overland flows having appropriate cover is essential in preventing erosion. At the third site the line intercept cover study shows 26% cover, which is just below the appropriate range of cover for this site of 30% to 40%. Since soils at this site are gravely clay they are more resilient to erosion and no rill or sheet erosion has been observed.

Standard 2. Riparian and Wetland Sites

Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria.

As indicated by:

- Stream side riparian areas are functioning properly when adequate vegetation, large woody debris, or rock is present to dissipate stream energy associated with high water flows. Elements indicating proper functioning condition such as avoiding accelerating erosion, capturing sediment, and providing for groundwater recharge and release are determined by the following measurements as appropriate to the site characteristics:
 - Width/Depth ratio; Channel roughness; Sinuosity of stream channel; Bank stability; Vegetative cover (amount, spacing, life form); and other cover (large woody debris, rock).
 - Natural springs, seeps, and marsh areas are functioning properly when adequate vegetation is present to facilitate water retention, filtering, and release as indicated by plant species and cover appropriate to the site characteristics.
 - Chemical, physical and biological water constituents are not exceeding the state water quality standards.

The above indicators shall be applied to the potential of the site.

Determination:

Achieving the Standard

X Not Achieving the Standard, but making significant progress towards

Not Achieving the Standard, and not making significant progress toward standard

Causal Factors

X Livestock are a contributing factor to not achieving the standard.

Livestock are not a contributing factor to not achieving the standard

X Failure to meet the standard is related to other issues or conditions

Guidelines Conformance:

X In conformance with the Guidelines

Not in conformance with the Guidelines

Conclusion: Not achieving the Standard, but making significant progress towards. Livestock are a contributing factor to not achieving the Standard, failure to meet the standard is related to other issues or conditions.

Riparian: No lotic (stream) riparian areas were assessed. Indian Creek does flow within the boundary of the Indian Creek Allotment, but the stream system is on private ground within this allotment. There are three springs on public land within this allotment (see Appendix II, Figure IV. Indian Creek Allotment Riparian Areas Map). All three springs were assessed in 2008. Dry Canyon Spring is the only spring on this allotment that had a riparian assessment done previously. A comparison of past and present data for Dry Canyon Spring revealed that this spring had improved from functional at risk in 1995 to proper functioning condition in 2008. Although there is hoof action present at the spring source, the riparian area shows recruitment of riparian vegetation including rosewood and aspen. The two other springs are unnamed. Spring source number 690 was determined to be proper functioning condition in 2008. Although there was heavy grazing by cattle and wildlife at this spring, the area is rocky providing protection from excessive grazing and trampling. Spring source number 689 was determined to be functional at risk with a downward trend in 2008. This spring is moderately to heavily grazed by wildlife and livestock. This riparian area improves gradually as it moves down stream and plant diversity is high a little further down from spring head. A summary of the results of these studies is in Table 4-2.

Standard 3. Habitat:

Habitats exhibit a healthy, productive, and diverse population of native and/or desirable plant species, appropriate to the site characteristics, to provide suitable feed, water, cover and living space for animal species and maintain ecological processes. Habitat conditions meet the life cycle requirements of threatened and endangered species.

As indicated by:

- Vegetation composition (relative abundance of species);
- Vegetation structure (life forms, cover, height, or age class);
- Vegetation distribution (patchiness, corridors);
- Vegetation productivity; and
- Vegetation nutritional value.

Determination:

X Achieving the Standard

- Not Achieving the Standard, but making significant progress towards
- Not Achieving the Standard, not making significant progress toward standard

Causal Factors

- Livestock are a contributing factor to not achieving the standard.
- Livestock are not a contributing factor to not achieving the standard
- Failure to meet the standard is related to other issues or conditions

Guidelines Conformance:

X In conformance with the Guidelines

- Not in conformance with the Guidelines

Conclusion: Standard Achieved.

Rangeland monitoring (including professional observations, ecological condition, line intercept studies, and key forage plant utilization) show habitat conditions throughout a large portion of the allotment exhibit a healthy, and productive plant community that is achieving suitable habitat for wildlife and maintaining ecological processes.

Studies done at all three key areas indicate that plant diversity is appropriate to the sites. Utilization studies conducted on the allotment showed livestock grazing to be within proper use levels. One key area is in the late seral stage and one key area is in the mid seral stage (Appendix I, Table 3-1). Calculating the seral stage (similarity index) helps quantify if the vegetative composition and productivity are providing suitable forage for wildlife and livestock and maintaining ecological processes. Although none of the sites have reached the potential natural community for the appropriate ecological sites, it should be understood that vegetation objectives that are developed using successional status (seral status) categories are not always focused on achieving the reference condition(s). Professional observations at all three sites determined that there is a diverse composition of grasses. Shrubs at key area IC-02 are above the potential vegetative composition for the ecological site, but photographs and professional observations show a healthy and diverse understory of grasses that are helping to maintain ecological processes. Dominate vegetative areas for this allotment is the same as for the Goshute Basin Allotment and was discussed previously.

PART 2. ARE LIVESTOCK A CONTRIBUTING FACTOR TO NOT MEETING THE STANDARDS? SUMMARY REVIEW:

Goshute Basin Allotment Standards Summary Review

Standard #1: Upland Sites

The Standard is being achieved.

Standard #2: Riparian and Wetlands

Not achieving the Standard, but making significant progress towards. Livestock are a contributing factor to not achieving the Standard, failure to meet the standard is also related to other issues or conditions.

Standard #3: Habitat

The Standard is being achieved.

Indian Creek Allotment Standards Summary Review

Standard #1: Upland Sites

The Standard is being achieved.

Standard #2: Riparian and Wetlands

Not achieving the Standard, but making significant progress towards. Livestock are a contributing factor to not achieving the Standard, failure to meet the standard is also related to other issues or conditions.

Standard #3: Habitat

The Standard is being achieved.

PART 3. GUIDELINE CONFORMANCE REVIEW AND SUMMARY

Goshute Basin Allotment Guideline Conformance Review and Summary

Grazing is in conformance with all applicable Guidelines as provided in the Northeastern Great Basin Standards and Guidelines. Based on a review of the monitoring data presented in this determination, current livestock grazing management practices in the Goshute Basin Allotment are largely in conformance with the Guidelines for Livestock Grazing Management. Permittees, through livestock grazing agreements, have voluntarily reduced AUMs and the allotment has only been grazed by sheep on alternating years resulting in moderate or less utilization of key forage plant species. Herding sheep away from riparian areas has also helped improve several riparian areas. Range improvement projects such as enclosure fences around riparian areas have helped minimize impacts by livestock. Maintenance of the boundary fence between this allotment and Indian Creek Allotment has prevented drift of cattle into this allotment. Additional range improvement projects including riparian protection fencing may be considered on a case by case basis to help continue progressing toward achieving Standard 2.

Indian Creek Allotment Guideline Conformance Review and Summary

Grazing is in conformance with all applicable Guidelines as provided in the Northeastern Great Basin Standards and Guidelines. Based on a review of the monitoring data presented in this determination, current livestock grazing management practices in the Indian Creek Allotment are in conformance with the Guidelines for Livestock Grazing Management. Permittees, through livestock grazing agreements, have voluntarily reduced AUMs and modified the season of use, resulting in moderate or less utilization of

key forage plant species and reduced impacts to riparian areas. Additional range improvement projects including riparian protection fencing may be considered on a case by case basis to help continue progressing toward achieving Standard 2.

PART 4. MANAGEMENT PRACTICES TO CONFORM WITH GUIDELINES AND ACHIEVE STANDARDS

Discussion:

Current management practices implemented since the Final Multiple Use Decision for the Goshute Basin Allotment and the Indian Creek Allotment and the implementation of agreements with permittees are helping these allotments to achieve Standard 1 and Standard 3 and progress toward achieving Standard 2.

Recommendations:

Since the agreements for Goshute Basin Allotment and the Indian Creek Allotment expired in 2003 and 2004, changes in livestock use and management are recommended. It should also be noted that under the past agreements to offset the loss of AUMs in the Goshute Basin Allotment, both permittees had the option to use additional AUMs in other allotments they were permitted for. For the Double U Livestock LLC permit (sheep) these additional AUMs would be authorized in the Medicine Butte Allotment and for the 2703222 permit (cattle) these additional AUMs would be authorized in the Cherry Creek Allotment. Although both permittees had this option, neither permittee exercised this option. **Given that these agreements have expired, this option is no longer being considered. Also, based on the Standard Determination Document completed for the Cherry Creek Allotment in 2008, no additional active AUMs were determined to be available at that time.**

For Goshute Basin Allotment, it is recommended to modify the terms and conditions. These changes include alternating sheep and cattle grazing annually with sheep grazing permitted on even years and cattle grazing permitted on odd years. The season of use would be 07/01-10/15 for sheep and 07/01-08/31 for cattle with cattle gathered and removed from the allotment by 08/15 and all stragglers removed by 08/31. The season of use for cattle is the same as the Indian Creek Allotment so the permittee can manage his livestock in conjunction with his permitted use on the Indian Creek Allotment. Due to the moderate utilization recorded, it is recommended that active AUMs be 350 AUMs for sheep and 99 AUMs for cattle with the remaining AUMs held in voluntary nonuse. It is also recommended that daily herding of livestock (sheep and cattle) away from riparian areas be required.

For Indian Creek Allotment, it is recommended to continue with the terms and conditions previously implemented through agreements. These include keeping the adjustment to the season of use to 07/01-08/31 with cattle gathered and removed from the allotment by 08/15 and all stragglers removed by 08/31. Due to the moderate utilization recorded for this allotment (see Appendix I, Table 6-1), it is also recommended keeping

the active AUMs at 45 for 2703222's permit and 30 for 2704539 and Mary K. 2704539 permit with the remaining AUMs held in voluntary nonuse.

Other recommendations include continue all desirable livestock management practices currently being implemented for both allotments. **Establish utilization levels for both allotments on key forage species.** Continue rangeland monitoring of these allotments for livestock compliance with proper allowable use levels for these allotments. **Maintain allotment boundary fence between these allotments and maintain current riparian enclosure fences for both allotments.** For both allotments, continue to evaluate riparian areas and determine if additional management actions such as enclosure fences are needed. Although it is outside the scope of this document, wildlife impacts to riparian areas need to be further evaluated and management alternatives considered if progress toward meeting Standard 2 (Riparian) is to continue.

Goshute Basin Allotment and Indian Creek Allotment

1. Establish utilization levels as follows:

- **Riparian vegetation including grasses, forbs and shrubs: 50% total current year's growth**

This use level is necessary to allow desirable key herbaceous species to 1) develop above ground biomass for protection of soils, 2) to contribute to litter cover, and 3) develop roots to improve carbohydrate storage for vigor, reproduction, and improve/increase desirable perennial cover.

- **Perennial grasses: 50% total current year's growth**

This use level is necessary to allow desirable key herbaceous species to 1) develop above ground biomass for protection of soils, 2) to contribute to litter cover, and 3) develop roots to improve carbohydrate storage for vigor, reproduction, and improve/increase desirable perennial cover.

- **Perennial shrubs and half-shrubs: 50% use on current annual production.**

This use level is necessary to allow desirable perennial key browse species to develop branchlets and woody stature able to withstand the pressure of grazing use.

- ##### 2. **Livestock will be moved to another authorized pasture or removed from the allotment before utilization objectives are met or no later than 2 days after meeting the utilization objectives. Any deviation in livestock movement will require authorization from the authorized officer.**

REFERENCES

Drews, Michael and Eric Ingbar. Technical Report: Cultural Resources Analysis and Probability Model for the Bureau of Land Management, Ely District. Carson City: Gnomon, Inc., 2004.

STANDARDS DETERMINATION DOCUMENT

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Prepared by:

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Date

Reviewed by:

Bonnie Million
Noxious and invasive non-native species

Date

Ruth Thompson
Wild horses and burros

Date

Marian Lichtler
Wildlife/migratory birds/special status

Date

STANDARDS DETERMINATION DOCUMENT

animals/plants

Dave Jacobson
Wilderness Values/ACEC/Special designations

Date

Gina Jones
Ecology

Date

Mark D'Aversa
Soil/Air/Water

Date

I concur:

Chris Mayer
Supervisory Rangeland Management Specialist
Egan Field Office

Date

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Date

APPENDIX I - DATA ANALYSIS FOR GOSHUTE BASIN ALLOTMENT AND
INDIAN CREEK ALLOTMENT

**APPENDIX I - DATA ANALYSIS FOR GOSHUTE BASIN ALLOTMENT AND
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1. Review of Final Multiple Use Decision/Management Action Selection Report

A Final Multiple Use Decision was issued for the Goshute Basin, Indian Creek and Cherry Creek Allotments on July 20, 2001. This document was reviewed during the analysis along with current data.

2. Key Areas and Location

A key area is a relatively small portion of a pasture or allotment selected because of its location, use, or grazing value as a monitoring point for grazing use. It is assumed that key areas, if properly selected, will reflect the current grazing management over the pasture or allotment as a whole (NRCS 1997). Key areas represent range conditions, trends, seasonal degrees of use, and resource production and values. Table 2-1 depicts key areas and their location within these allotments as well as the year established.

Table 2-1. Key Areas

Allotment	Key Area	Year Established	Location
Goshute Basin	GB-01	1993	T25N, R63E, Sec. 9 SE
	GB-02	1995	T26N, R63E, Sec. 26, SESW
	GB-03	1998	T25N, R63E, Sec. 4, NE
Indian Creek	IC-01	1995	T26N, R63E, Sec. 25, NWSW
	IC-02	1997	T26N, R63E, Sec. 26, SE
	IC-03	1997	T26N, R63E, Sec. 25, SW

3. Vegetative Cover and Composition

Ecological Sites are interpretive units into which landscapes of native vegetation are separated for study, evaluation, and management. An ecological site, as defined for rangeland, is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation (NRCS 1997). The ecological site of a key area is determined based on several factors including soil mapping unit, topography, and plant community.

The Line Intercept Cover Study is a commonly used method of estimating the relative percent live foliar cover of a range site by plant class (tree, shrub, grass, forb, or annual). The method also estimates the percent live foliar cover by plant species. The results are then compared to the appropriate cover for each range site as indicated by the Natural Resources Conservation Service (NRCS) range site guides. Results are also compared to what is known about healthy rangelands in general.

The Integrated Vegetation Management Handbook H-1740-2 describes the similarity index of Ecological Site Inventory to assess vegetation condition. The similarity index is a calculation based on a comparison of the plant species composition of a presently

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existing plant community to the plant species composition of a reference condition (potential natural community or climax). When the similarity index is computed, a successional status category is derived that signals how far away or how close the presently existing plant community is successional to the historic climax plant community or the potential natural community for that ecological site. A similarity index of 0 to 25% represents an early seral plant community. A similarity index of 26 to 50% represents a mid-seral plant community. A similarity index of 51 to 75% represents a late seral plant community. A similarity index of 76 to 100% represents the potential natural community.

It should be understood that vegetation objectives that are developed using successional status (seral status) categories are not always focused on achieving the reference condition(s). Another way of saying this is that the potential natural community or the historic climax plant community is not always the target endpoint of vegetation management. The target endpoint of vegetation management for these allotments is to sustain plant vigor and reproduction by maintaining plant carbohydrate storage and root biomass, while still providing forage for livestock and wildlife, habitat for wildlife, biomass ground cover for soil protection, and adequate root systems to stabilize both upland and riparian areas. The reference indicators are the range in production (pounds per acre) of each plant species' annual aboveground production (air-dry weight), or less frequently, cover, for the potential natural community or the historic climax plant community. Sometimes the range in production or range in cover is also converted to a range in percent of plant species composition. Existing plant species composition is compared against the reference indicators to estimate successional or seral status.

It should also be noted that BLM no longer links the seral status categories of potential natural community, late seral, mid-seral, and early seral, to range condition categories of excellent, good, fair, and poor. The range condition categories of excellent, good, fair, and poor were developed to connote forage condition of the rangeland for livestock types (for example cattle and sheep). Instead this technique in conjunction with other data ascertains livestock forage condition, assesses the relative value of vegetation communities for wildlife and their habitat, and ascertains the achievement of health standards in relation to vegetation.

Similarity index is calculated as a percent composition by air dry weight. The site is inventoried to determine the current percent composition by weight on an air dry basis. These numbers are then compared to the percent composition by weight on an air dry basis of the HCPC in the Rangeland Ecological Site Description for the site. To calculate the similarity index, current composition cannot exceed that of HCPC. This yields percent allowable. The sum of all allowable percentages equals the similarity index.

Listed below in Table 3-1 are descriptions of the ecological sites within the Goshute Basin Allotment and the Indian Creek Allotment where key areas have been established and monitored done using the line intercept cover study and double weight sampling method. Included in this list are the associated soil description, precipitation zone, and

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the plant community composition and cover. Data collected for each key area regarding vegetative cover and vegetative composition is summarized within each table.

Table 3-1. Ecological Sites Descriptions, Vegetative Cover and Composition Data, and Seral Stage

Goshute Basin Allotment - Ecological Site and description for 028BY029NV.				
Montane 16" P.Z. (precipitation zone)				
Soils are loamy with runoff from this site being slow and the potential for sheet and rill erosion is low to moderate depending on slope. <i>Approximate ground cover (basal and crown) is about 35–50 percent.</i> Plant community dominated by mountain brome and letterman needlegrass. The visual aspect is dominated by mountain big sagebrush in association with a variety of mountain browse shrubs. <i>Potential veg composition is about 55% grasses and grass-like, 10% forbs, and 35% shrubs.</i>				
Key Areas	Date Monitored	Cover (%)	Composition by weight (%)	Seral Stage
GB-03	7/23/2008	30%		
	9/16/1998	44%	Grasses 43% Forbs 0% Shrubs 57%	Late Seral (64)
GB-03B	7/23/2008	28%		

Goshute Basin Allotment - Ecological Site and description for 028BY037NV.				
Alpine/Montane 12-14" P.Z .				
Soils are clay pan and have a high percentage of gravels, cobbles, rocks or stones on the surface which occupy plant growing space, yet help to reduce evaporation and conserve soil moisture. <i>Approximate ground cover (basal and crown) is about 15–20 percent.</i> Plant community dominated by bluebunch wheatgrass, western needlegrass, and low sagebrush. <i>Potential veg composition is about 50% grasses and grass-like, 10% forbs, and 40% shrubs.</i>				
Key Areas	Date Monitored	Cover (%)	Composition by weight (%)	Seral Stage
GB-01	7/23/2008	18%		
	8/22/2002	43%		
	9/24/1998	31%	Grasses 60% Forbs <1% Shrubs 39%	Late Seral (72)
GB-02	7/24/2008	32%		
	9/16/1998	30%	Grasses 24% Forbs 30% Shrubs 46%	Mid Seral (59)

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Indian Creek Basin Allotment - Ecological Site and description for 028BY095NV.
 Dry Mountain Meadow 12-16" P.Z .
 Soils are silty clay loam with overland flow occurring as run-in from higher landscapes. Runoff is slow to medium and the potential for sheet and rill erosion is slight. These soils are susceptible to gulying which intercepts normal over-flow patterns and results in site degradation. *Approximate ground cover (basal and crown) is about 60–75 percent.* Plant community dominated by Nevada bluegrass, alpine timothy, sedges, and slender wheatgrass. *Potential veg composition is about 80% grasses and grass-likes, 15% forbs, and 5% shrubs.*

Key Areas	Date Monitored	Cover (%)	Composition by weight (%)	Seral Stage
IC-01	6/22/1999	n/a	Grasses 85% Forbs 15% Shrubs 0%	Late Seral (74)
	9/15/1998	75%*		
IC-03	9/15/1998	80%*	Comments: No information provided on plant composition at this site, some trampling and pedestalling impacting soil stability	

*Professional observations used to record cover instead of line intercept method due to meadow having almost complete cover. Also, no data was collected at either of these sites in 2008.

Indian Creek Basin Allotment - Ecological Site and description for 028BY087NV.
 Alpine/Montane 12-14" P.Z .
 Soils are gravelly clay and shallow to moderately deep and are well drained. *Approximate ground cover (basal and crown) is about 30–40 percent.* Plant community dominated by mountain big sagebrush, bluebunch wheatgrass and Thurber needlegrass. *Potential veg composition is about 55% grasses and grass-likes, 15% forbs, and 30% shrubs.*

Key Areas	Date Monitored	Cover (%)	Composition by weight (%)	Seral Stage
IC-02	9/15/1998	45%	Grasses 30% Forbs 7% Shrubs 63%	Mid Seral (50)
IC-02B	7/24/2008	26%	Comments: Study site near original key area IC-02.	

4. Analysis of Riparian Areas

Proper Functioning Condition (PFC) is the analysis method used by the BLM to assess riparian health and functionality. The process is completed by an interdisciplinary (ID) team. The team looks at hydrology, vegetation, and erosion/deposition characteristics of the site in order to determine if the riparian area is in proper functioning condition, functioning at risk, or nonfunctional.

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The following is a summary of the monitoring data collected for riparian areas of the Goshute Basin Allotment and the Indian Creek Allotment from 1995 to 2008. No lotic (stream) riparian areas were accessed. Goshute Creek and Paris Creek experience runoff from Goshute Basin, but these stream systems are surveyed and located outside of the Goshute Basin Allotment. Indian Creek does flow within the boundary of the Indian Creek Allotment, but the stream system is on private ground within this allotment.

Lentic (Spring) Riparian Areas

Goshute Basin Allotment Spring Sources

There are twenty-four springs within the allotment. Twenty-one of the twenty-four springs were assessed in 2008. These riparian assessments were compared to past riparian assessments to analyze if these springs and associated riparian areas are at proper functioning condition. A comparison of past and present data revealed which areas were improving, declining or maintaining. To summarize the twenty-one springs accessed in the Goshute Basin Allotment the springs are grouped into four clusters based on the springs proximity to each other (see map). Two spring sources (685 and 10406) were not access, these springs are not used by livestock due to the steep terrain. In 2008, two additional springs were discovered (NEW2008-01 and NEW2008-02) while collecting data. Clusters 1-3 are located near the main road within the Goshute Basin, while cluster 4 is located at the north end of the allotment. See Appendix II, Figure III for a map with the location of these springs by cluster.

Cluster 1 includes the spring sources 68, 678, 679, 682, 683, 711, 10426, and NEW2008-02. In August 1995, lentic (spring) proper functioning condition studies were completed by a riparian team for three of the eight sources, numbers 679, 682, and 711. Additional proper functioning condition studies were completed in September 2008 for 68, 679, 682, 711, 10426, and NEW2008-02. Of the six springs access in 2008, five of them were determined to be proper functioning condition. Two of these springs rated were accessed in 1995 as functional at risk. Both of these springs have shown improvement. One spring source 711 has shown a decline from proper functioning condition in 1995 to functional at risk in 2008. This decline is attributed to hoof action causing head cutting and erosion; and heavy trampling is allowing weeds and upland shrubs to move into the riparian area. A summary of the results of these studies is in Table 4-1.

Cluster 2 includes the spring sources 677, 681, 684, and NEW2008-01. In August 1995, studies were completed by a riparian team for three of the four sources, numbers 677, 681, and 684. Additional proper functioning condition studies were completed in September 2008 for all four springs. Of the four springs assessed in 2008, only one, NEW2008-01, was determined to be proper functioning condition. One of the springs, 681, was rated functional at risk in both 1995 and 2008 showing no improvement. The two remaining springs, 677 and 684, demonstrated a decline since they were both rated proper functioning condition in 1995, but were rated functional at risk in 2008. Heavy trampling and grazing by elk are attributed to the decline in these riparian areas. A summary of the results of these studies is in Table 4-1.

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Cluster 3 includes the spring sources 674, 675, 676, 691, 692, 693, and 10388. Three of these springs were accessed in August 1995 as proper functioning condition. All seven sources were assessed in 2008 as proper functioning condition. Although there are signs of sheep and elk use at two of the springs, these springs are not heavily trampled and diverse riparian vegetation is present. Enclosures around four of the springs and steep topography are attributed to these springs maintaining proper function. A summary of the results of these studies is in Table 4-1.

Cluster 4 includes the spring sources 694, 695, 696, and 697. All four of these springs were assessed in 1995 and again in 2008. One spring, 697, showed improvement from functional at risk in 1995 to proper functioning condition in 2008. One other spring, 696, demonstrated some improvement from nonfunctional in 1995 to functional at risk in 2008. Two of the springs, 694 and 695, showed no improvement with a functional at risk rating in 1995 and also in 2008. This lack of improvement is attributed to heavy grazing by sheep, elk and mule deer. This excessive grazing and trampling is resulting in erosion. A summary of the results of these studies is in Table 4-1.

Indian Creek Allotment Spring Sources

There are three springs on public land within this allotment. All three springs were assessed in 2008. Dry Canyon Spring is the only spring on this allotment that had a riparian assessment done previously. A comparison of past and present data for Dry Canyon Spring revealed that this spring had improved from functional at risk in 1995 to proper functioning condition in 2008. Although there is hoof action present at the spring source, the riparian area is recruitment of riparian vegetation including rose wood and aspen. The two other springs are unnamed. Spring source number 690 was determined to be proper functioning condition in 2008. Although there was heavy grazing by cattle and wildlife at this spring, the area is rocky providing protection from excessive grazing and trampling. Spring source number 689 was determined to be functional at risk with a downward trend in 2008. This riparian area improves gradually as it moves down stream and plant diversity is high a little further down from spring head. A summary of the results of these studies is in Table 4-2. See Appendix IV, Figures IV for a map with the location of these springs.

Table 4-1. Lentic (spring) Analysis Summary for Goshute Basin Allotment

<u>Name</u>	<u>Dates Analyzed</u>
<u>Source Number</u>	<u>Function</u>
<u>Pasture</u>	<u>Remarks</u>
<u>Location</u>	
unnamed spring 68	09/2008 Proper Functioning Condition
T. 25N., R. 63E., Sec. 7, SE	Very thick with willows, roses, and aspen. Lots of recruitment of young plants, area is very rocky. Wildlife and sheep use.

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unnamed spring 674 T. 25N., R. 63E., Sec. 4, NESE	09/2008 Proper Functioning Condition Convergence of channels. Very dense vegetation. Spring located at bottom of deep “v” shaped canyon. No trailing or other sign of animal use.
unnamed spring 675 T. 25N., R. 63E., Sec. 4, NENW	09/2008 Proper Functioning Condition Fence surrounds spring head but it is in disrepair and no longer functions. Some trampling.
	08/1995 Proper Functioning Condition
unnamed spring 676 T. 25N., R. 63E., Sec. 4, SWNW	09/2008 Proper Functioning Condition Spring is fenced, but fence is in disrepair. Some willows have been heavily grazed. Some hoof action. Pipe present- but is no longer functioning
	08/1995 Proper Functioning Condition
unnamed spring 677 T. 25N., R.63E., Sec. 5, SESE	09/2008 Functional at risk with downward trend Spring head is bare but otherwise vegetation cover is good. Some trailing and hoof action.
	08/1995 Proper Functioning Condition Spring within enclosure.
unnamed spring- developed 679 T. 25N., R. 63E., Sec. 7, NESE	09/2008 Proper Functioning Condition Hoof action present with bank shearing, but bank is starting to revegetate with a few shrubs present. There is moderate use by livestock and wildlife. Excellent ground coverage from grasses, rushes, and sedges.
	08/1995 Functional at risk trend not apparent Hoof action from cattle and sheep.
unnamed spring 681 T. 25N., R. 63E., Sec. 8, NENE	09/2008 Functional at risk with downward trend Road through wetland. Spring is developed with trough and pipeline. Extensive trampling and hoof action. There is excessive erosion.
	08/1995 Functional at risk with trend not apparent Hoof action from livestock and effects of livestock usage.
unnamed enclosed spring 682 T. 25N., R. 63E.,	09/2008 Proper Functioning Condition Spring is in good condition but there is musk thistle which puts the spring at risk.

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Sec. 8, SWNW	08/1995 Functional at risk with downward trend Upland species encroaching, not heavily grazed, hoof action present.
unnamed spring 684 T. 25N., R. 63E., Sec. 9, NWNW	09/2008 Functional at risk with a downward trend Hoof action (elk) excessive. No carex or juncus present, very few plants with good root masses. Spring is in white fir forest community with aspen. Excessive bare ground and aspen and prunus are heavily browsed, most likely caused by elk.
	08/1995 Proper functioning condition Spring within enclosure.
unnamed spring 691 T. 26N., R. 63E., Sec. 34, NWSW	09/2008 Proper functioning condition Not much surface water, but high topography very steep. Some trailing. Channel is sparsely vegetated in parts. Uplands are well vegetated. Only small areas have saturated soil—most is not hydric. Spring is on steep hillside and in good condition. Rocky ravine dissipates flow.
unnamed spring 692 T. 26N., R. 63E., Sec. 34, NESW	09/2008 Proper functioning condition Trailing and hoof action present, but not causing water to channelize Sign of elk. There are a few other seeps that flow into the system.
	08/1995 Proper functioning condition Some hummocking is occurring due to hoof action.
unnamed spring 693 T. 26N., R. 63E., Sec. 34, NWSW	09/2008 Proper functioning condition Trough and pipe present. Hoof action from elk and domestic sheep Several spring heads in the area. Elk sign.
unnamed spring 694 T. 26N., R. 63E., Section 35, SWNW	09/2008 Functional at risk with a downward trend Developed with water piped to trough. Very rocky, Elk, mule deer, and domestic sheep use. Heavily grazed in some areas, leading to bare ground. Water is overflowing from trough and creating a new riparian area downstream.
	8/1995 Functional at risk with a downward trend Moderately heavy grazing and trampling down the channel.
unnamed spring 695 T. 26N., R. 63E., Section 35, NWNE	09/2008 Functional at risk with a downward trend Extremely eroded and incised on south end. Rills present. Area is heavily to severely grazed. Lots of bare ground. Stream flow only in springhead area. Heavily eroded bank has no vegetation.
	08/1995 Functional at risk with a downward trend Severe trampling throughout the meadow.

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unnamed spring 696 T. 26N., R. 63E., Sec. 35, NENW	09/2008 Functional at risk with trend not apparent Cattle have trampled and severely grazed outside riparian area to the extent that bare ground is present. Livestock have heavily grazed sedges. Human disturbance –holes have been dug to increase ponding and berm was created to contain water.
	08/1995 Nonfunctional Heavy early season grazing and trampling contributed to sloughed banks, compacted soils and shrinking meadow.
unnamed spring 697 T. 26N., R. 63E., Section 35, NWNW	09/2008 Proper Functioning Condition Not very rocky. Spring doesn't flow into channel from riparian area. Moderate to heavy grazing by elk, mule deer, and domestic sheep.
	08/1995 Functional at risk with a downward trend Moderately heavy grazing contributed to potential washout of upper meadow and degradation of lower spring vegetation.
unnamed spring 711 T. 25N., R. 63E., Section 8, SW 1/4	09/2008 Functional at risk with a downward trend Hoof action is causing head cutting and erosion. There is enough soil moisture to accommodate aspen stand. Heavy trampling is encouraging weeds and shrubs to move into riparian area. However, riparian vegetation is still present and reproducing.
	08/1995 Proper Functioning Condition Spring enclosure with riparian vegetation.
unnamed spring 10388 T. 25N., R. 63E., Sec. 5, NENE	09/2008 Proper functioning condition Natural flow pattern with rose and willow. Steep gradient keeps water from ponding, but it is maintaining wet soils for some riparian vegetation. Sage grouse are numerous.
unnamed spring 10426 T. 25N., R. 63E., Section 17, NWNW	09/2008 Proper functioning condition Very few riparian species. Very small pools and damp spots caused by small seeps along channel. Riparian areas restricted by rocky soil and channel. Outflow from spring is very small. Rocky substrate would help protect soil from erosion, though there is bare soil along the banks. seeps are very small and riparian areas are mostly damp spots and very small pools of water. Located in rocky gully.
unnamed spring NEW 2008_01 T. 25N., R. 63E., Section 4, SWSW	09/2008 Proper functioning condition Basically standing water, no flow. Very close to road. some trailing

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unnamed spring NEW 2008_02 T. 25N., R. 63E., Section 8, SWSW	09/2008 Proper functioning condition Seep or spring is in excellent condition, lush dense vegetation that covers an east facing slope.
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Table 4-2. Lentic (spring) Analysis Summary for Indian Creek Allotment

<u>Name</u>	<u>Dates Analyzed</u>
<u>Source Number</u>	<u>Function</u>
<u>Pasture</u>	<u>Remarks</u>
<u>Location</u>	
unnamed spring 689 T. 26N., R. 63E., Sec. 26, NWNE	09/2008 Functional at risk with a downward trend Lots of hoof action. Plant diversity is high a little further down from spring head. There is pugging and hummocking caused by livestock. Soil is very rocky. Area is heavily to moderately grazed by livestock and wildlife. The spring improves gradually as it moves down stream.
unnamed spring 690 T. 26N., R. 63E., Sec. 26, SWNE	09/2008 Proper functioning condition Vegetation is heavily grazed by cattle and wildlife, which is causing some bare ground to appear.
Dry Canyon Spring T. 26N., R. 63E., Sec. 24, NENE	09/2008 Proper Functioning Condition Very thick with rose and aspen. Some areas have sedges, rushes, and perennial forbs. Hoof action present. There is a spring about 30 feet from this one. It looks very similar but the no grass. Lots of recruitment from rose and aspen.
	08/1995 Functional at risk with trend not apparent Livestock and some wildlife trampling in spring. Cattle trails and grazing along stream bed has reduced it to bare dirt likely to erode during high overland flow.

5. Licensed Livestock Use

Since the implementation of the Final Multiple Use Decision and permittee agreements, livestock licensed actual use on the two allotments has varied dependent on growing conditions, available forage, and management objectives of the permittees and the BLM. Table 3-1 includes licensed actual use and percentage of licensed actual use compared to total active AUMs permitted by allotment from 1999 to 2007. The total number of active AUMs for the Goshute Basin Allotment is 627. The total number of active AUMs for the Indian Creek Allotment is 177. Both of these allotments had agreements with the permittees for a portion of these AUMs to be held in voluntary non use (see Table 5-2 and Table 5-3).

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Table 5-1. Goshute Basin and Indian Creek Allotments Licensed Actual Use

Allotment Name	Livestock Kind	Grazing Year	Licensed Actual Use (AUMs)	% Licensed Actual Use of Total Permitted Use	Total Active Aums
Goshute Basin	Sheep	1999	230	44%	528
		2002	274	78%	350*
		2004	158	45%	350*
		2006	259	31%	528

Cattle have not grazed this allotment in the past ten years.

Indian Creek	Cattle	2000	71	40%	177
		2001	31	41%	75*
		2003	31	41%	75*
		2006	71	40%	177
		2008	72	41%	177

*This number delineates a portion of the total Active AUMs for these allotments. During this time the remaining balance of Active AUMs was held in voluntary nonuse through agreements with permittees from 2001 through 2004.

Permittee	Prior to the Agreements and After the Agreements Expired				During the Agreements				
	Total Active	Voluntary Nonuse	Suspended Nonuse	Total AUMs	Total Active	Voluntary Nonuse	Suspended Nonuse	Total AUMs	Period of Agreement
2703222 Cattle	99	0	81	180	0	99	81	180	3/1/2000 to 2/28/2003
Double U Livestock LLC Sheep	528	0	257	785	350	178	257	785	3/1/2000 to 2/28/2004
Total:	627	0	338	965	350	277	338	965	

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Table 5-3. Permitted Use (AUMs) for Indian Creek Allotment									
Permittee Livestock Kind	Prior to the Agreements and After the Agreements Expired				During the Agreements				
	Total Active	Voluntary Nonuse	Suspended Nonuse	Total AUMs	Total Active	Voluntary Nonuse	Suspended Nonuse	Total AUMs	Period of Agreement
2703222 Cattle	106	0	87	193	45	61	87	193	3/1/2001 to 2/28/2004
2704539 Cattle	71	0	0	71	30	41	0	71	3/1/2001 to 2/28/2004
Total:	177	0	87	264	75	102	87	264	

6. Utilization

The following is a summary of the utilization data collected on the Goshute Basin Allotment and the Indian Creek Allotment. The Final Multiple Use Decision for these allotments did not set maximum utilization on key forage species, however 50% utilization on perennial native grasses allows desirable key herbaceous species to develop above ground biomass for protection of soils, to contribute to litter cover, and to develop roots to improve carbohydrate storage for vigor, reproduction, and improve/increase desirable perennial cover.

Utilization is the estimation of the proportion of annual production consumed or destroyed by animals (Swanson 2006). Utilization for these allotments is determined by measuring the key forage consumed of current year’s growth, and does not differentiate use by livestock and wildlife. The general utilization objective for all allotments in the Ely BLM District according to the Ely District Record of Decision and Approved Resource Management Plan (ROD/RMP – August, 2008) is to “Manage livestock grazing on public lands to provide for a level of livestock grazing consistent with multiple use, sustained yield, and watershed function and health” (Ely RMP, p. 85). The Nevada Rangeland Monitoring Handbook gives guidelines to determine the proper use levels by plant category (grasses, forbs, and shrubs) and by grazing season (spring, summer, fall, winter, yearlong). Proper use levels for all allotments are also implied by the Standards and Guidelines for Rangeland Health and Grazing Administration (February 1997).

Key forage plant utilization method (KFPM) was used to collect utilization data at the key areas. Utilization data was collected at three key areas in the Goshute Basin Allotment and one key area in the Indian Creek Allotment. For the Goshute Basin Allotment utilization was moderate in 2002. In 2008, utilization ranged from no use to

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slight and moderate. For the Indian Creek Allotment utilization was moderate in 2002 and 2008.

Table 6-1. Utilization Summary

Allotment	Grazing Year	Key Area	Key Species	Percent Utilization	Utilization Range
Goshute Basin	2002	GB-01	bluebunch wheatgrass	46%	moderate
			low sagebrush	42%	moderate
		GB-03	bluebunch wheatgrass	52%	moderate
			common snowberry	42%	moderate
	2008	GB-01	bluebunch wheatgrass	16%	slight
			Sandberg bluegrass	12%	slight
		GB-02	mutton grass	42%	moderate
		GB-03	bluebunch wheatgrass	5%	no use
bluegrass	5%		no use		
	GB-03B	bluebunch wheatgrass	23%	light	
Indian Creek	2001	IC-02	bluegrass	56%	moderate
	2008	IC-02	bluegrass	47%	moderate

Use pattern mapping has also been completed for the areas used by cattle and sheep for both allotments. For the Goshute Basin Allotment (see Figure 6-1 below), the majority of utilization in the basin was moderate in 2002. There were two small areas that received heavy use that year. Neither of these areas were at riparian areas, however riparian areas do occur nearby. As slope increased up the west side of the basin utilization decreased to slight and light. On the east side of the basin the slope is steep and there was no use recorded. For the Indian Creek (see Figure 6-2 below), utilization in the southwest portion of the allotment ranged from light to moderate. This use decreased to slight as the slope increased. The remainder of the allotment has steep slopes and showed no use.

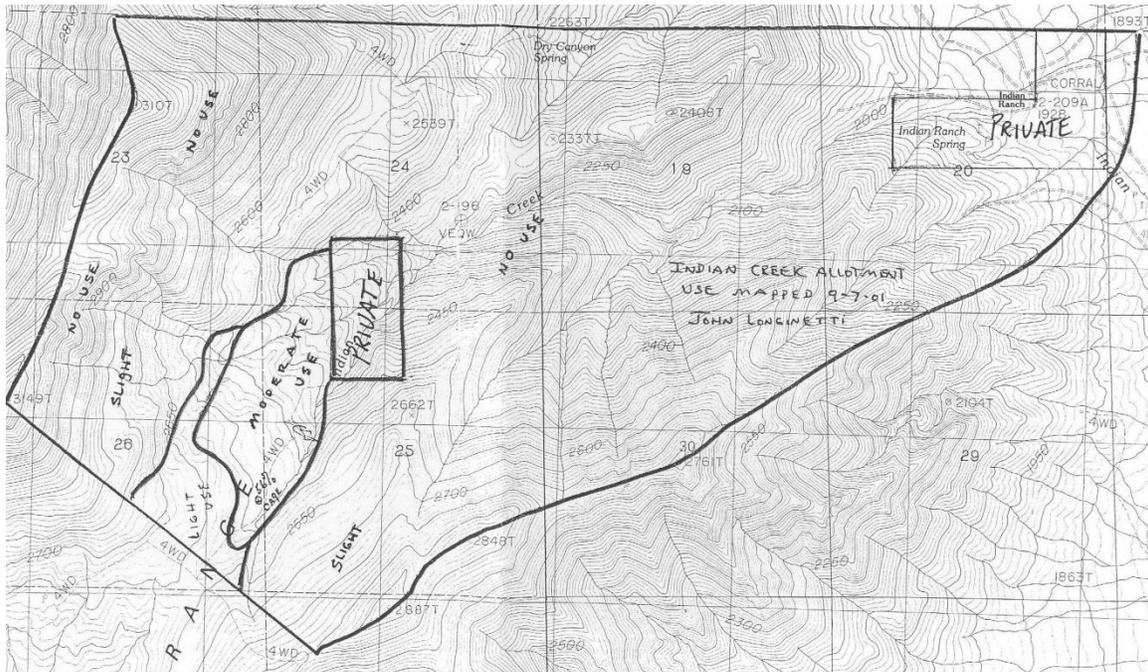
APPENDIX I - DATA ANALYSIS FOR GOSHUTE BASIN ALLOTMENT AND INDIAN CREEK ALLOTMENT

Figure 6-1. Goshute Basin Allotment Use Pattern Mapping August 2002.



APPENDIX I - DATA ANALYSIS FOR GOSHUTE BASIN ALLOTMENT AND INDIAN CREEK ALLOTMENT

Figure 6-2. Indian Creek Allotment Use Pattern Mapping September 2001



7. Precipitation data

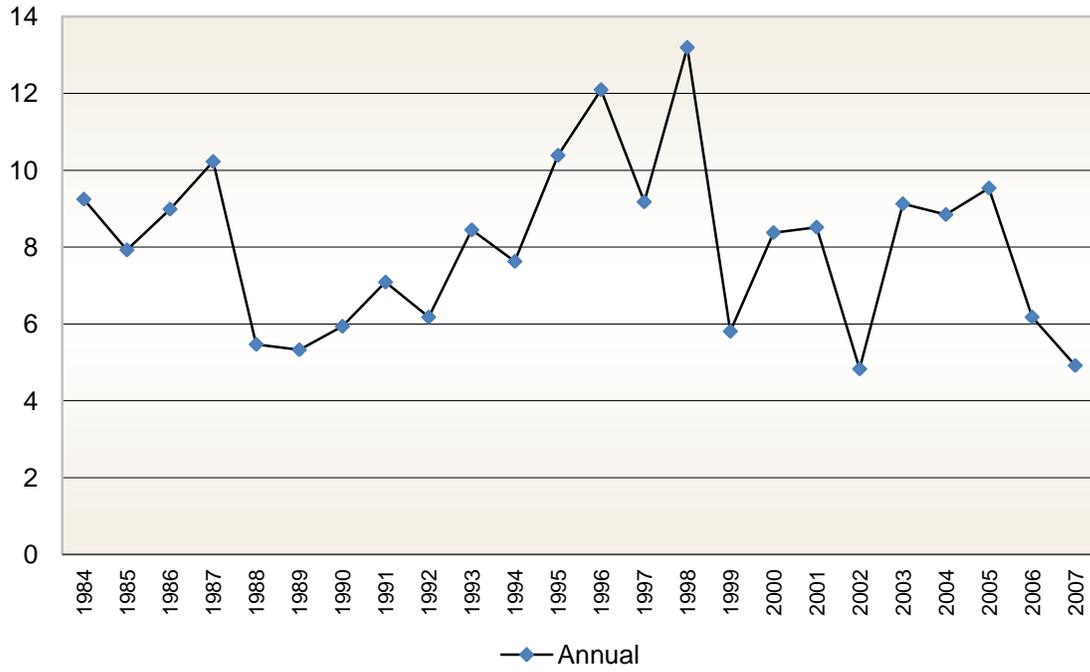
Annual precipitation greatly influences growing condition of forage species and is often correlated to available forage. Historical climate data from the Western Regional Climate Center for Lages, Nevada is being used for this assessment. The table below includes annual precipitation data collected since 1984. Chart 7-1 demonstrates the trend of annual precipitation since 1984.

Table 7-1. Annual Precipitation for Lages, Nevada

Year	Annual Precipitation	Year	Annual Precipitation	Year	Annual Precipitation
1984	9.25	1994	7.63	2004	8.85
1985	7.93	1995	10.39	2005	9.54
1986	8.99	1996	12.1	2006	6.18
1987	10.23	1997	9.18	2007	4.92
1988	5.47	1998	13.2		
1989	5.33	1999	5.81		
1990	5.94	2000	8.38		
1991	7.09	2001	8.52		
1992	6.18	2002	4.83		
1993	8.45	2003	9.13		

APPENDIX I - DATA ANALYSIS FOR GOSHUTE BASIN ALLOTMENT AND
INDIAN CREEK ALLOTMENT

Chart 7-1. Annual Precipitation Graphed From 1984 to 2007



APPENDIX II - MAPS

Figure I.

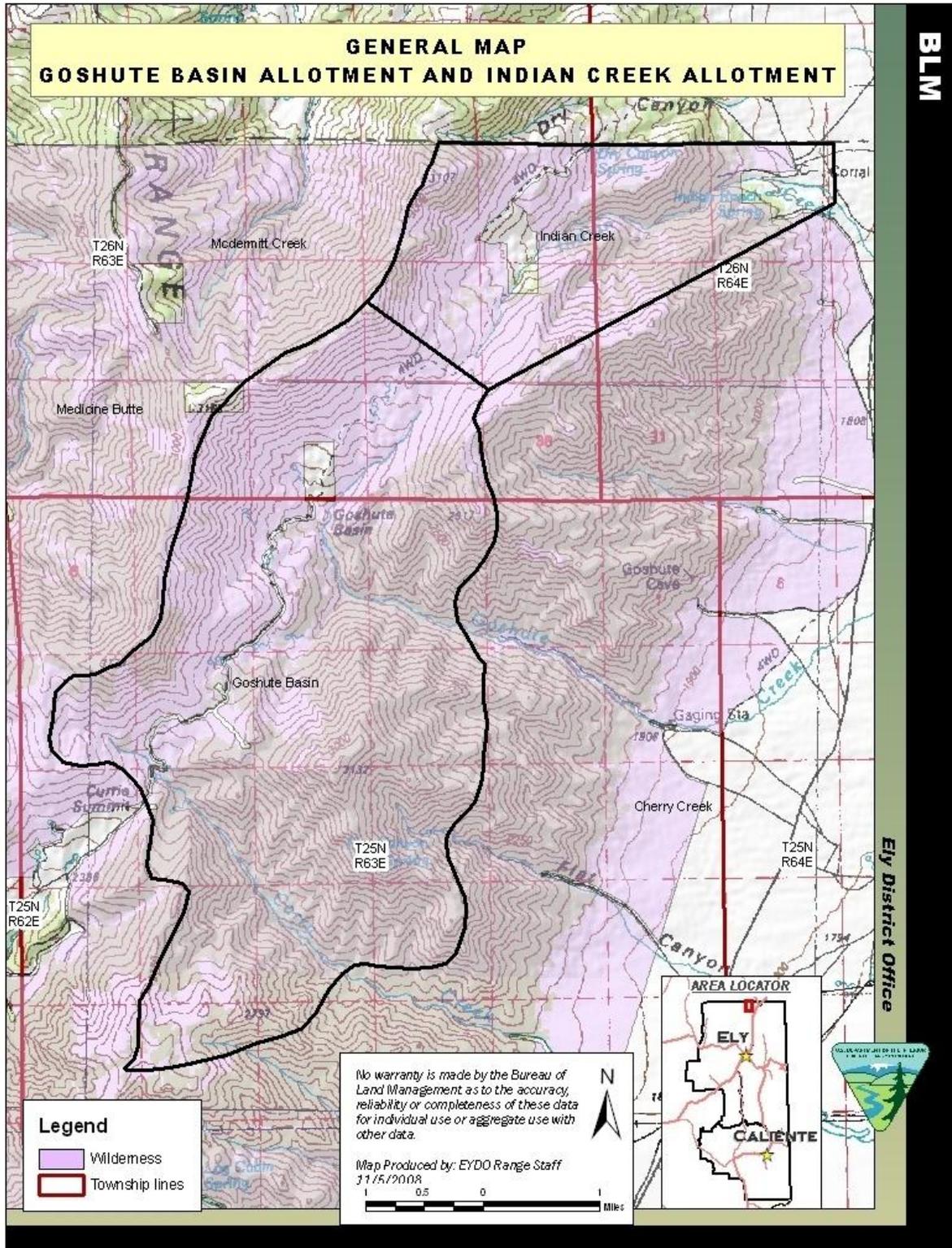


Figure II.

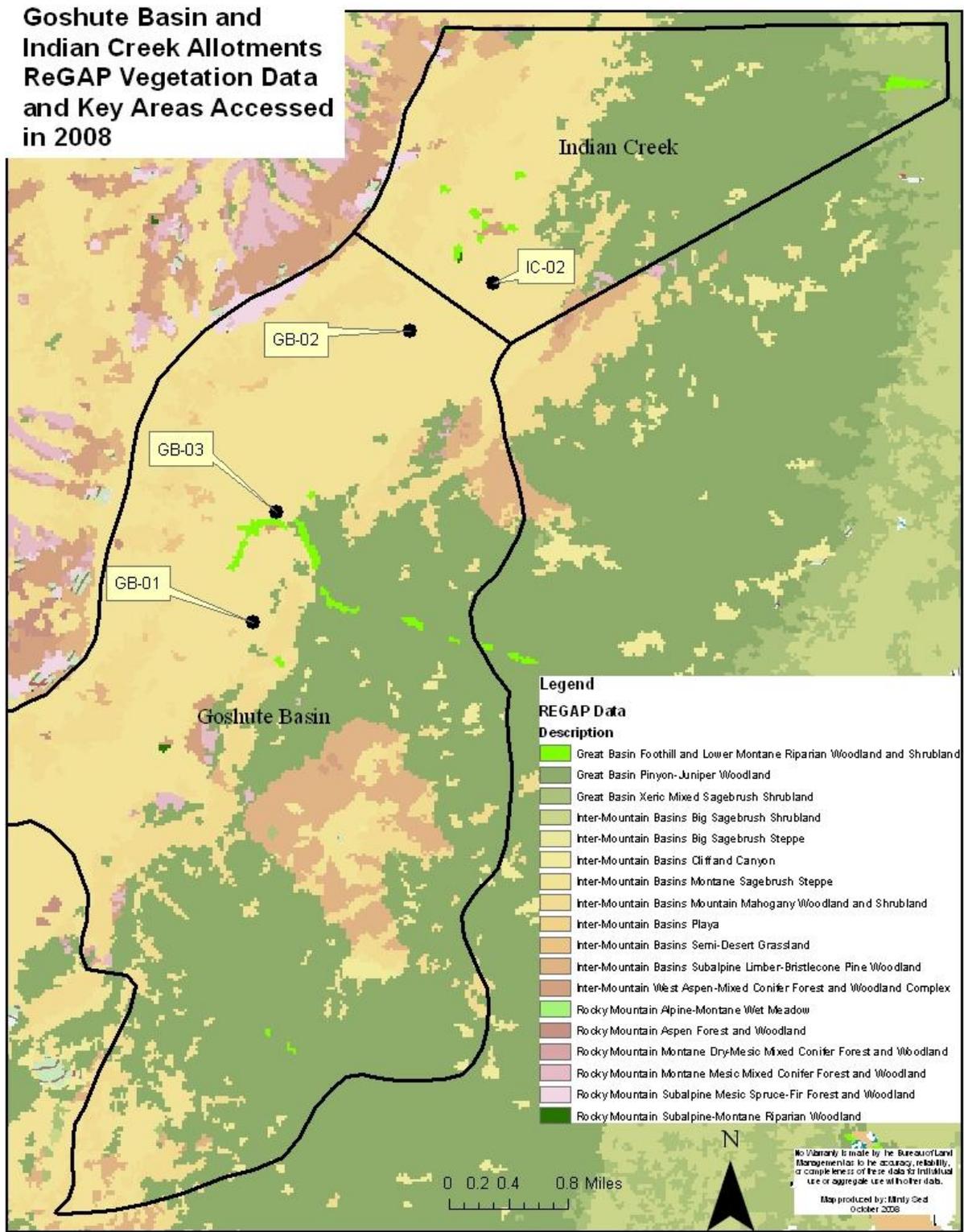


Figure III.

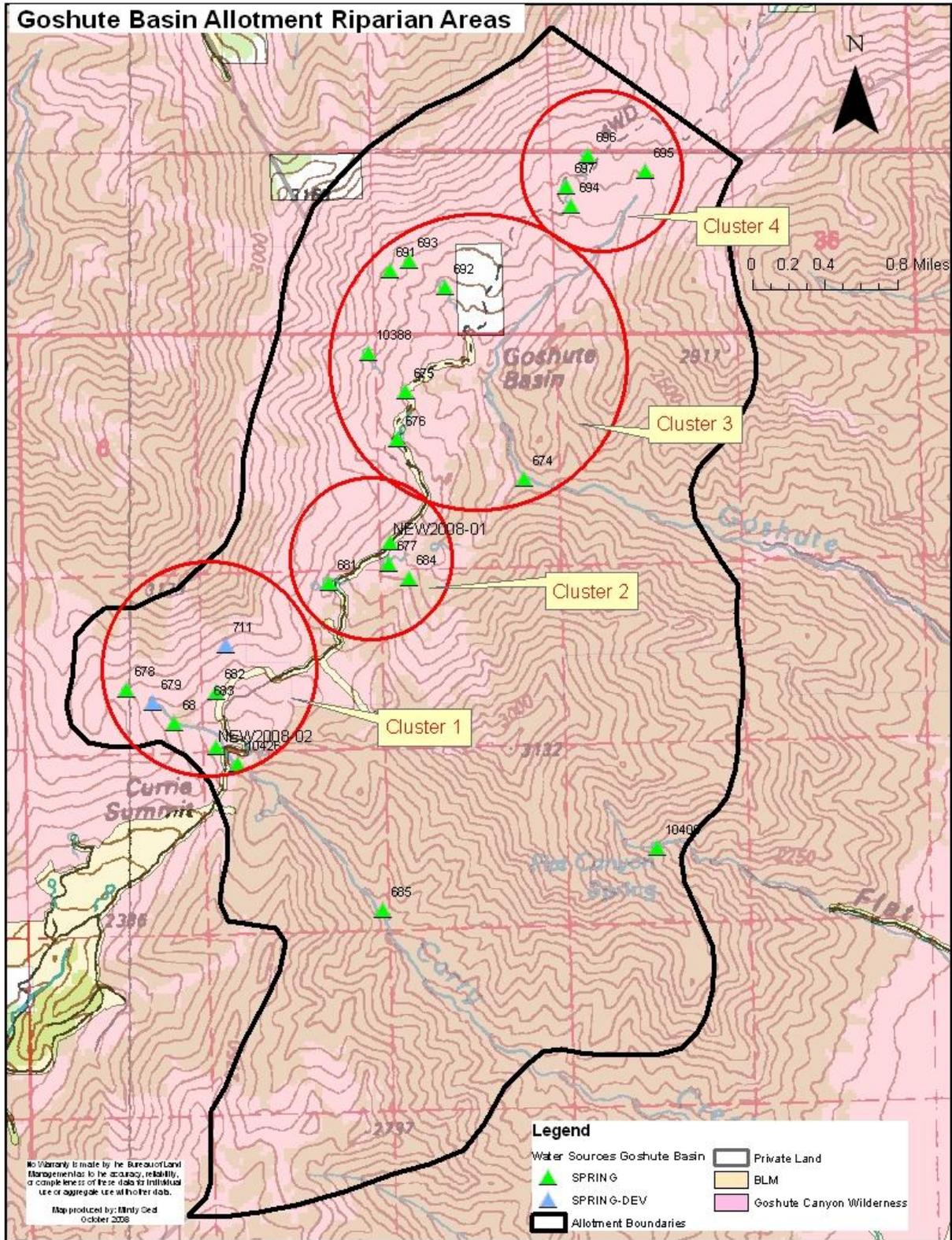


Figure IV.

