

RANGELAND HEALTH ASSESSMENT

INCLUDING ALLOTMENTS:

900 FREMONT

909 BUTTON SPRINGS

Oregon Standards for Rangeland Health

Standard 1 - Upland Watershed -Upland soils exhibit infiltration and permeability rates, moisture storage, and stability that is appropriate to soil, climate, and landform.

Standard 2 - Riparian/Wetland-Riparian-wetland areas are in properly functioning physical condition appropriate to soil, climate, and landform.

Standard 3 -Ecological Processes-Healthy, productive, and diverse plant and animal populations and communities appropriate to soil, climate, and landform are supported by ecological processes of nutrient cycling, energy flow, and hydrologic cycle.

Standard 4 - Water Quality Standards- Surface water and groundwater quality, influenced by agency actions, complies with State water quality standards.

Standard 5 - Biological Diversity-Habitats support healthy, productive, and diverse populations and communities of native plants and animals (including special status species and species of local importance) appropriate to soil, climate, and landform.

Allotment Overviews

Locations: See attached maps

ESI Data and Vegetation Summaries: See attached tables

900 Allotment- Fremont

Public Acres: 26,362 **Other Acres:** 511

Category: M

7.5 Minute Topographic Maps: Fort Rock, McCarty Butte, Hole in the Ground, Cabin Lake, South Ice Caves, and Sixteen Butte

One permittee- Nelson

AUMs of authorized use: 1970 AUMs active

Season of use: Spring, Summer, Fall 4/1-9/30.

Grazing system: Rest rotation grazing, eight pastures.

Other: Several study plots were established in the Fremont Pastures to study two crop grazing systems. One large bitterbrush study plot is still present in the Butte pasture. The area is within mule deer winter range.

Vegetation: Vegetation on the allotment is a diversity of mountain big sagebrush, bitterbrush, rabbitbrush, juniper and ponderosa pine overstory with understory species including Idaho fescue, bluebunch wheatgrass, several needlegrasses, and crested wheatgrass.

909 Allotment- Button Springs

Public Acres: 8779 **Other Acres:** 1240

Category: M

7.5 Minute Topographic Map: Fox Butte, Walker Butte

One permittee- Scott & Jana Kittredge

AUMs of Authorized Use: 1068 AUMs

Season of Use: Spring, Summer, Fall

Grazing system: Deferred

Other: The area is within mule deer winter range.

Vegetation: Vegetation on the allotment is predominately mountain big sagebrush communities, with a few areas of juniper and pine expansion. The dominant grass is Idaho fescue, with some areas of bluebunch wheatgrass.

STANDARD 1 - Upland Watershed -Upland soils exhibit infiltration and permeability rates, moisture storage, and stability that are appropriate to soil, climate, and landform.

Overall the allotments in this assessment area including a total of 35,141 acres of BLM administered land, are functioning properly, and meeting the standard as indicated by the distribution and amount of ground cover, plant community composition, observed apparent trend (OAT), long-term trend studies, upland forage utilization surveys and SSF data compiled from ESI.

Indicators used to evaluate this standard are Soil Surface Factor (SSF) which documents erosion class and soil susceptibility to accelerated erosion; plant community composition which indicates the root capacity of the soil profile; grazing management, and existing vegetation monitoring (forage utilization and trend studies) which indicate plant and root health. Ecological Site Inventory (ESI) is preliminary and is used for estimation purposes only. Field surveys to determine ESI were done in 1999 and 2001. Please refer to allotment specific tables and the ESI summary for full vegetative information including plant species, soil surface factor, observed apparent trend and ecological status.

SSF data is available on 85% of the area. The acreage without data represents vegetative areas too small to be mapped, transition zones between vegetative communities and soil types, and rock outcrops. The majority of the area, 96% has an SSF rating of stable to slight, and 6% is moderate. Overall SSF data indicates the soils in 96% of the assessment area are not susceptible to wind or water erosion. Areas in the moderate erosion class are not related to current grazing practices as indicated by livestock utilization, distribution and grazing management. Grazing management systems have been followed.

The grazing systems are designed to maintain healthy perennial vegetative communities. The recommended grazing systems from the Lakeview Grazing EIS have basically been followed for the last 20 years throughout the assessment area. Livestock grazing levels have been at or below carrying capacities. Utilization levels for the past ten year period have been at the light to moderate level. The proper livestock management has assisted in maintaining perennial vegetation and the root systems of perennial vegetation which assist in holding soil in place. Perennial vegetation provides protective cover to reduce soil movement, decrease compaction and thus increase infiltration. Healthy perennial vegetation and surface litter improve the capture, storage and beneficial release of precipitation. This helps precipitation to safely reach and infiltrate the soil where it can be used by plants or travel underground to springs and seeps. Overall grazing management is maintaining a healthy perennial vegetative cover which assists in properly functioning soil properties.

Another indicator of Upland Watershed is plant composition and structure. There are at least 16 different vegetative communities in the assessment area with a diversity of grass, shrub, forb and tree species. Overall a diverse plant community exists to provide root systems throughout the soil profile, providing soil stability and water storage within the plant and soil systems.

Summary of ESI Data Allotment # 900														
Vegetation Community	Total Acres	% of total acres	SSF Acres					OAT Acres			Acres of Vegetative Community in Seral Stage			
			Stable	Slight	Moderate	Critical	Severe	Down	Static	Up	PNC	Late	Mid	Early
ARTRV/FEID Mountain big sagebrush/ Idaho fescue	7970	30%		7970						7970			7970	
ARTRV/STOC2 Mountain big sagebrush/ western needlegrass	5684	22%	2759	2925					5684				2884	2800
Total Mountain big sagebrush	13654	52%	2759	10895					13654				10854	2800
CHNA2/AGCR Gray rabbitbrush/ crested wheatgrass	251	1%	251						251		Introduced plant community rated in good condition			
CHNA2/STOC2 Gray rabbitbrush/ western needlegrass	4328	16%		4328					4328					4328
CHNA2/STTH2 Gray rabbitbrush/ Thurber's needlegrass	308	1%			308				308					308
TOTAL Gray Rabbitbrush	4887	18%	251	4328	308				4887					4636
CHVI8/STOC2 Green rabbitbrush/ western needlegrass	835	3%		835					835				835	
PUTR2/FEID Bitterbrush/ Idaho fescue	2861	11%	2861							2861			2861	
JUOC/RIVE/PSSPS Juniper/ currant/ bluebunch wheatgrass	10	<1%	10						10				10	
PIPO/ARTV/FEID Ponderosa pine/ mountain big sagebrush/ Idaho fescue	1335	5%	1021	314						1335			1335	
Rock outcrop, transitions unknown	2780	11%												
TOTALs ACRES	26362		6902	16372	308				18551	5031			15895	7436
PERCENT	100%	100%	29%	69%	1%				79%	21%			68%	32%

Summary of ESI Data Allotment # 909

Vegetation Community	Total Acres	% of total acres	SSF Acres					OAT Acres			Acres of Vegetative Community in Seral Stage			
			Stable	Slight	Moderate	Critical	Severe	Down	Static	Up	PNC	Late	Mid	Early
ARAR8/FEID Low sagebrush/ Idaho fescue	858	10%		614	244				858			747	11	
ARCA13/POSE3 Silver sagebrush/ Nevada bluegrass	3	<1%		3				3					3	
ARTRV/FEID Mountain big sagebrush/ Idaho fescue	2873	33%		2156	717				2556	317		2029	844	
CHV18/FEID Green rabbitbrush/ Idaho fescue	829	9%		829					829			729		
CHV12/FEID Hall yellow rabbitbrush/ Idaho fescue	244	3%		244					244			244		
PUTR2/FEID Bitterbrush/ Idaho fescue	11	<1%		11					29	11		11		
JUOC/ARAR8/FEID Juniper/ low sagebrush/ Idaho fescue	34	<1%			34					34		34		
JUOC/ARTRV/FEID Juniper/ mountain big sagebrush/ Idaho fescue	834	9%		806	28				33	805		834		
JUOC/ARTRV/PSSPS Juniper/ mountain big sagebrush/ bluebunch wheatgrass	33	<1%		31	2				403			18	15	
Total juniper communities	901	10%		837	64				436	805		886	15	
PIPO/ARTV/FEID Ponderosa pine/ mountain big sagebrush/ Idaho fescue	403	5%		403					403				403	
PIPO/ARTRV/PSSPS Ponderosa pine/ mountain big sagebrush/ bluebunch wheatgrass	2	<1%		2						2		2		
PIPO/ARPA6/FEID Ponderosa pine/ Greenleaf manzanita/ Idaho fescue	60	1%		60						60			60	
Total Ponderosa pine communities	465	5%		465					403	62		2	463	
UNKNOWN, TRANSITIONS, ROCK OUTCROP	2631	30%												
TOTALS ACRES	8815			5159	1025			3	4952	1229		4748	1436	
PERCENT		3		84%	17%				80%	20%		77%	23%	

STANDARD 2 - Riparian/Wetland-Riparian-wetland areas are in properly functioning physical condition appropriate to soil, climate, and landform.

This standard is not applicable to the assessment area because there are no streams or wetlands on public land.

STANDARD 3- Healthy productive and diverse plant and animal populations and communities appropriate to soil, climate, and landform are supported by ecological processes of nutrient cycling, energy flow and the hydrologic cycle.

Indicators used to evaluate this standard include animal populations, vegetative composition, presence of weed species, botanical reports, ecological status, OAT, current plant composition as compared to a defined Potential Natural Community (PNC) for the soil type and precipitation zone. SSF, OAT, Range Site, Seral Stage and PNC are from the Lake County ESI survey which is preliminary at this time. Field surveys for ESI were completed in 1999 & 2001. Data is currently being reviewed and updated and is used in this assessment for estimation purposes only. Please refer to the Tables presented in the Allotment Overview for summary of ESI data. The vegetation data presented in ESI tables and plants data base indicates that the diversity of plant species in the assessment area is appropriate for the soil, climate and landforms present.

The ESI survey compares the current plant composition to a defined Potential Natural Community for the identified soil type and precipitation zone. The 1999 & 2001 ESI data indicates that 70% of the native plant communities are in Late Seral and 30% are in Mid Seral. 251(1%) of the 35,177 acres in the assessment area have been seeded to crested wheatgrass, an introduced plant community. Crested wheatgrass communities are not expected to move toward a natural plant community. Areas of crested wheatgrass were rated in good overall condition. Within the crested wheatgrass seeding there are pockets of native vegetation as well as diversity of species on the borders of the seedings, creating healthy, productive and diverse overall plant communities.

Observed Apparent Trend (OAT) is a one time trend for the area determined in the 1997-2001 ESI survey. Totals for the surveyed acreage, show 21% had an OAT indicating upward trend, 79% had a Static trend and less than 1% had a downward trend.

- Long term trend studies at plots F1 and F4 on the Fremont Allotment, and BS 5 on the Button Springs Allotment have an upward trend, however, the majority of the assessment area has a stable trend. Study plot BS5 was installed to monitor changes from the 1992 burn. Cover studies show a 20% decrease in bare ground, a 10% increase in herbaceous grass species and a 30% decrease in mountain big sagebrush.

The plant community diversity could be hindered by juniper and ponderosa pine encroachment into sagebrush steppe on approximately 16% of the overall BLM acreage. Juniper expansion can reduce understory vegetation to the extent that soil is no longer protected. This is a reflection of, fire suppression and is not attributed to current livestock management.

Botany Report

Allotment: Fremont #00900

Bitterbrush has been planted in this allotment at the forest edge of the Mazama Provenience and in several places it has successfully survived. **Meets standard.**

Allotment: Button Springs #00909

The biodiversity of the prescribed burn area, in the East Pasture, has increased and a healthy, functioning ecosystem exists as determined by comparing the 1991 preburn botanical survey with the June 2005 survey. In 1995, three years after the burn, forbs and grasses increased while most of the brush and juniper decreased. The bunch grasses which were originally found in the 1991 baseline survey have increased in abundance as of June 2005: *Festuca idahoensis*, *Poa secunda*, *Pseudoroegneria spicata* (*Agropyron spicatum*), *Elymus elymoides* (*Sitanion hystrix*), *Koeleria macrantha* (*K. pyramidata*), *Leymus cinereus* (*Elymus cinereus*), *Leymus triticoides* (*Elymus triticoids*), and *Stipa thurberiana*. *Bromus tectorum* initially was prevalent, but it has decreased since 1995. Both species of rabbit brush have come back into the area, but grasses are still dominant. The juniper, sagebrush and bitterbrush have decreased except for a few islands where these plants did not burn. Outside of the burned area, there is a steady expansion of western juniper and Ponderosa pine into sagebrush-steppe plant communities. **Meets standard.**

Weed Report

No noxious weeds were noted on the tour of Dec. 2, 2004 and there are no confirmed reports of noxious weeds in the area. Inventories are conducted periodically along roads and disturbed areas such as water developments, dispersed recreation sites, and burned areas. If discovered, weeds are treated either chemically or manually depending on the species as appropriate

Wildlife Report

This area supports healthy diverse wildlife populations that are appropriate for the type of habitats available within these allotments. The majority of habitats are in good ecological condition, and are not heavily infested with non-native species or noxious weeds. This standard is currently being met from the aspect of wildlife populations and diversity.

STANDARD 4- Surface water and groundwater quality, influenced by agency actions, complies with State water quality standards.

This standard is not applicable to the assessment area. There are no listed streams or water sources which must comply with State water quality standards.

STANDARD 5- Native, T&E, and locally important species. Habitats support healthy, productive and diverse populations and communities of native plants and animals (including special status species and species of local importance) appropriate to soil, climate and landform.

Plant Species-Botanist Report

Allotment: Fremont #00900

This area has been surveyed for Bureau special status plants and no plants were found. At this point in time, there are no known Bureau special status plants found within the allotment

Special Status Plants: None found, none suspected. **Meets standard.**

Plant list for area:

(survey: 9 November 2004)

Shrubs/trees:

Pinus ponderosa

Juniperus occidentalis

Tetradymia canescens

Artemisia arbuscula

Artemisia tridentata

Purshia tridentata

Ericameria nauseosa

(*Chrysothamnus nauseosus*)

Forbs:

Sisymbrium altissimum

Astragalus lentiginosus

Lygodesmia spinosa

Balsamorhiza hookeri

Agoseris glauca

Antennaria dimorpha

Phlox hoodii

Erigeron linearis

Eriogonum heracleoides

E. strictum

E. umbellatum

E. viminum

Eriogonum lanatum v. *achillaeoides*

Erysimum sp.

Frasera albicaulis

Grasses:

Agropyron cristatum

Poa secunda

Achnatherum thuberianum

(*Stipa thurberiana*)

Pseudoroegneria spicatum

(*Agropyron spicatum*)

Leymus cinereus (*Elymus cinereus*)

Elymus elymoides (*Sitanion hystrix*)

Weeds/introduced:

Taeniatherum caput-medusae

Bromus tectorum

Centaurea sp.

Microbiotic Crusts:

Caloplaca sp

Tortula sp (small amount)

Fritillaria atropurpurea
Gayophytum decipiens.
Gilia sp.
Leucocrinum montanum
Linanthes sp.
Linum perenne
Lithospermum ruderales
Lomatium nevadense*
L. triternatum*
Lupinus caudatus

*denotes species used by sage-grouse

This area has been surveyed for Bureau special status plants and no plants were found. At this point in time, there are no known Bureau special status plants found within the allotment. Special Status Plants: None found, none suspected. **Meets standard.**

Allotment: Button springs #00909

2005 Plant list for area:

Grasses: see discussion in Standard 3.

Shrubs/trees: see discussion in text above

Juniperus occidentalis
Artemisia tridentata
Chrysothamnus viscidiflorus
Chrysothamnus nauseosus
Purshia tridentata
Amelanchier alnifolia (increase after fire)
Prunus virginiana (increase after fire)
Ribes cereum (increase after fire)
Symphoricarpos albus (increase after fire)
Leptodactylon pungens (sub-shrub)

Forbs:

Achillea millefolium*
Antennaria dimorpha*
A. microhylla*
Arabis sparsiflora
Astragalus curvicaulus*
A. lentiginosus *
A. filipes*
A. purshii*
Balsamorhiza sagittata
Calochortus macrocarpus

Mentzelia albicaulis
Microseris troximoides
Phlox gracilis* (Mocrosteris gracilis)
Mimulus nanus
Montia perfoliata
Nama densum
Phacelia hastata
Phacelia heterophylla
P. linearis

Castilleja pilosa
Chaenactis douglasii
Collinsia parviflora
Crepis sp. *
Cryptantha sp.
Delphinium andersonii
Descurainia sp.
Eriastrum sparsiflorum
Erigeron bloomeri

Phlox longifolia*
Senecio integrerrimus*
Silene menziesii
Townsendia florifer
Viola purpurea
Wyethia mollis
Zygadenus venosus

Animal Species

Special status wildlife species or their habitats present within these allotments include the bald eagle (*Haliaeetus leucocephalus*), ferruginous hawk (*Buteo regalis*), peregrine falcon (*Falco peregrinus*), burrowing owl (*Speotyto cunicularia*), Lewis' woodpecker (*Melanerpes lewis*), white-headed woodpecker (*Picoides albolarvatus*), black-backed woodpecker (*Picoides arcticus*), Townsends big-eared bat (*Corynorhinus townsendii*), and pygmy rabbit (*Brachylagus idahoensis*). There are also four species with high public interest. These include sage-grouse (*Centrocercus urophasianus*), mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*) and elk (*Cervus elaphus*).

No nesting habitat exists within these allotments for the peregrine falcon, although it is suspected that they may be an occasional visitor to the area. Some marginal nesting habitat occurs within the western portion of the Fremont allotment for the bald eagle. Bald eagle foraging does occur within the allotments, however it is probably restricted mostly to road killed deer adjacent to the major roadways and occasional carrion scattered through the allotments. There are no resource conflicts for peregrine falcons or bald eagles.

Habitat is present for ferruginous hawk, burrowing owl and pygmy rabbits, but no known locations exist within the allotments for these species. No specific inventories have been conducted to date for these species within these allotments, however there are sightings within the surrounding area and they are suspected to occur within the allotments. There are no resource conflicts for these species.

Ponderosa pine habitats occur over about 5% of the allotment area. Habitat for the three species of woodpeckers is very limited. These habitats are suitable, but marginal for black-backed and Lewis' woodpeckers. White-headed woodpeckers are known to occur within this area; however densities are probably low due to limited number of pine seeds as a food source. There are no resource conflicts for these species.

There are no known roost sites within these allotments for Townsend's big-eared bats, however it is likely that they occur in caves scattered throughout the allotments. There are no resource conflicts for this species.

Both allotments are within mule deer winter range. Bitterbrush is a key forage species for wintering mule deer. Potential conflicts exist within these allotments due to the timing of fall grazing and the presence of bitterbrush. Although timing of grazing is a potential conflict, bitterbrush abundance and browse use appears to be stable at this time. Generally, fall use is managed to protect the health needs of bitterbrush in portions of these allotments that have significant amounts of bitterbrush. The mule deer objective for this area is defined in the Lakeview RMP as; Livestock grazing use on browse species would not exceed 15% of the current year's growth for more than 1 out of every three years. This is probably sufficient to maintain current bitterbrush densities within the assessment area. Bitterbrush trends should be monitored within these areas and appropriate action taken if use by cattle is impacting the health of bitterbrush plants.

Pronghorn antelope are common, but occur at lower densities here than the adjacent allotments to the east. This is probably due to the higher number of agricultural lands east of the allotments. Use for this species is concentrated in areas without tall shrubs. Although elk are relatively uncommon within these allotments, they do use the allotments on a regular basis. No major resource conflicts exist for elk or pronghorn at this time.

Sage-grouse habitat exists within both allotments. There are 3 lek sites within the Fremont allotment. One is considered active and two are unknown status. There are also two active leks within 1.5 miles of the Fremont allotment. There is one active lek within the Button Springs allotment. Sage-grouse densities within these areas are low when compared to other similar areas to the east. These allotments are on the edge of the range for sage-grouse. Some habitats are marginal due to pine forests, juniper expansion and historic cultivation practices during the homesteading era.

Within the Fremont allotment (900), approximately 16% (4100 acres) is considered non-suitable for sage-grouse due to pine forests, expansion of western juniper and rock outcrops. Of the remaining 84%, about 32% (8500 acres) is non-suitable due to lack of sufficient sagebrush cover. This is mainly due to historic cultivation during the homesteading era when sagebrush habitats were converted to cultivated field and after abandonment, rabbit brush tends to dominate these sites and sage brush is very slow to reestablish. The remaining 52% (13500 acres) is mostly within nesting and brood rearing habitats (yearlong habitat) with some wintering habitats available. It is estimated that 84% (22100 acres) of the allotment has the potential to be suitable sage-grouse habitat. There are no major conflicts between livestock and sage-grouse within this allotment. Juniper expansion, although a small problem now, will become an increasing problem in the future if current trends continue.

Within the Button Springs allotment (909), approximately 58% (5000 acres) are considered non-suitable for sage-grouse due to reduced sagebrush cover after the 1992 prescribed burn, invasion of western juniper, ponderosa pine forest, or rock outcrops. The remaining 42% (3700 acres) is suitable sage-grouse habitat with most in nesting or brood rearing and some winter habitats. It is estimated that 65% (5700 acres) of the allotment has the potential to be suitable sage-grouse habitat. There are no major conflicts between livestock and sage-grouse within this allotment.

This standard is being met for wildlife species within these allotments. Past use from cultivation and control of wildland fire has made some portions of these allotments unsuitable for some species of wildlife. Some areas could benefit from restoration efforts, but it is unknown if these efforts would be effective on historically cultivated areas. Sage-grouse could benefit from treatment of western juniper in the Button Springs allotment. Much of the sage-grouse habitat in this area is mountain big sagebrush with native perennial understory grasses and would respond well to wildfire.

Potential conflicts exist between livestock grazing schedules and mule deer winter range. The exact impacts to bitterbrush from livestock are not known at this time. It is expected that these impacts are low due to timing of grazing in pastures with extensive bitterbrush and the rest rotation systems in place within these allotments. It is recommended that bitterbrush trends be monitored within these allotments and appropriate action taken if use by cattle is impacting the health of bitterbrush plants.

<u>Team Members</u>	<u>Title</u>
Todd Forbes	Wildlife Biologist
Erin McConnell	Natural Resource Specialist (NRS), Weeds
Alan Munhall	Fisheries Biologist
Lucile Housley	Botanist
Theresa Romasko	RMS
Robert Hopper	Supervisory NRS
Ken Kestner	Supervisory NRS

Determination

Existing grazing management practices or levels of grazing use on the Allotments promote achievement of significant progress towards the Oregon Standards and Guidelines for Rangeland Health and conform with the Guidelines for Livestock Grazing Management.

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

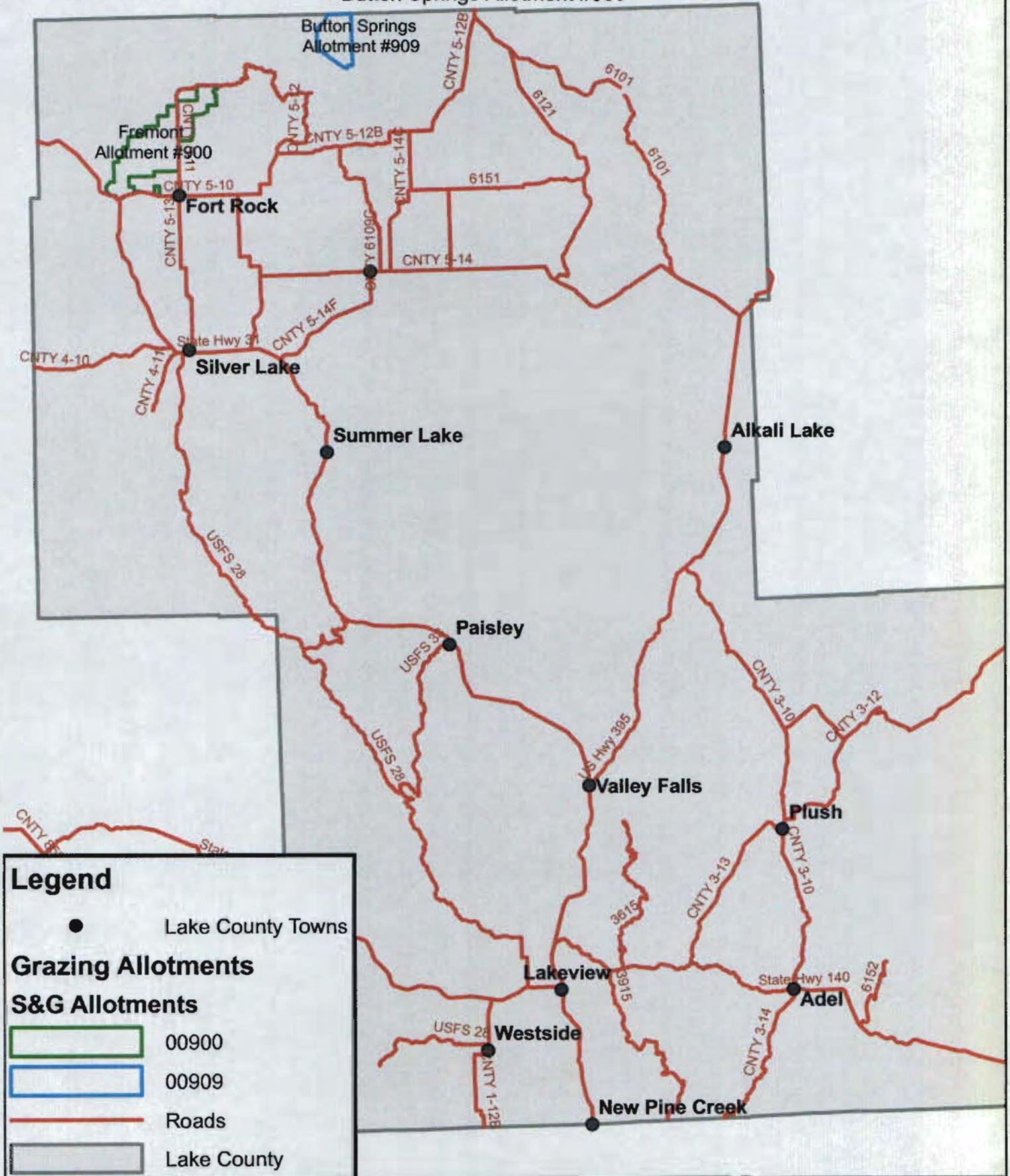


 Field Manager, Lakeview Resource Area



 Date

● Location Map
 Fremont Allotment #900
 and
 Button Springs Allotment #909



Legend

● Lake County Towns

Grazing Allotments

S&G Allotments

00900

00909

Roads

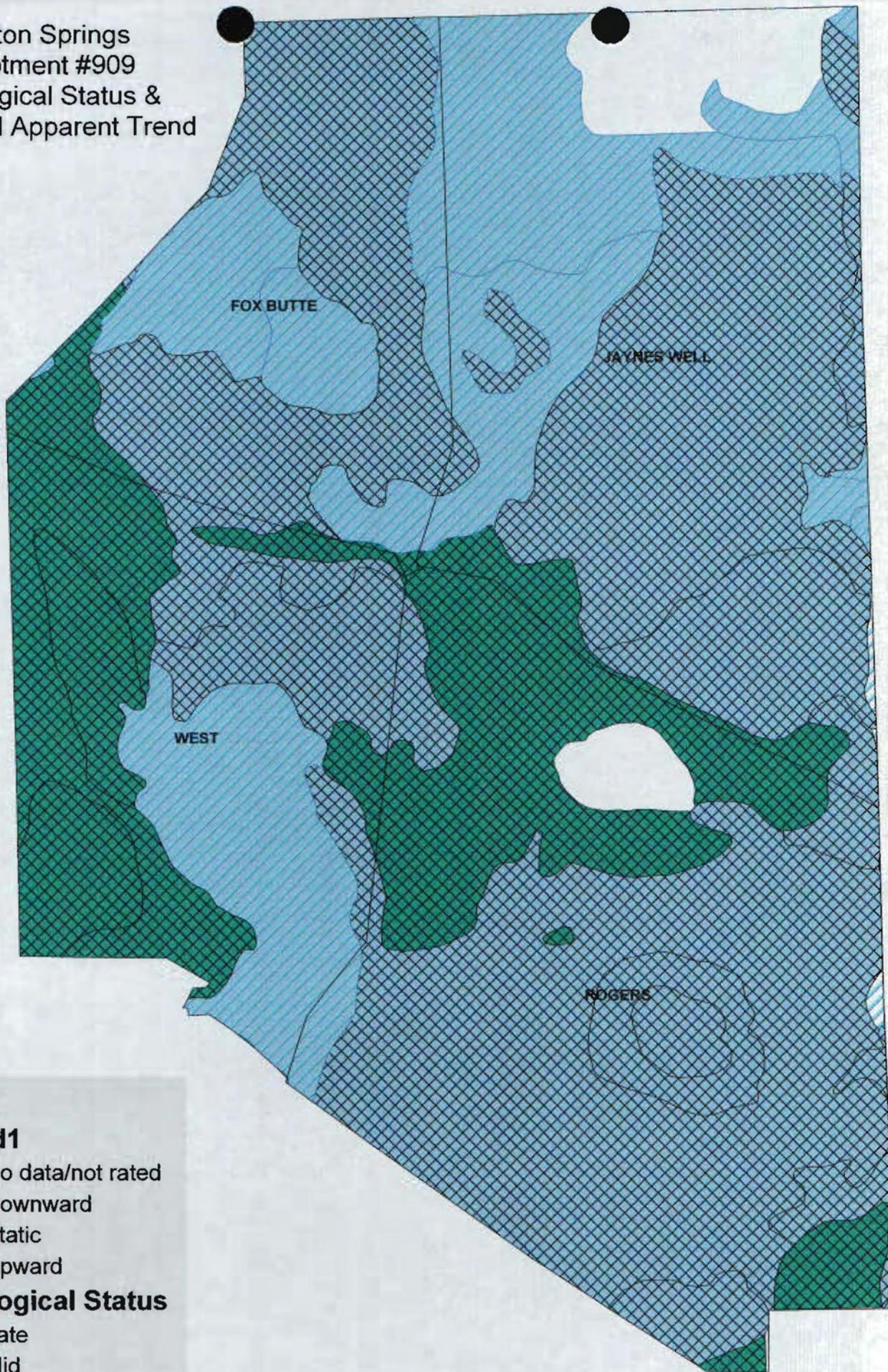
Lake County

Button Springs Allotment #909



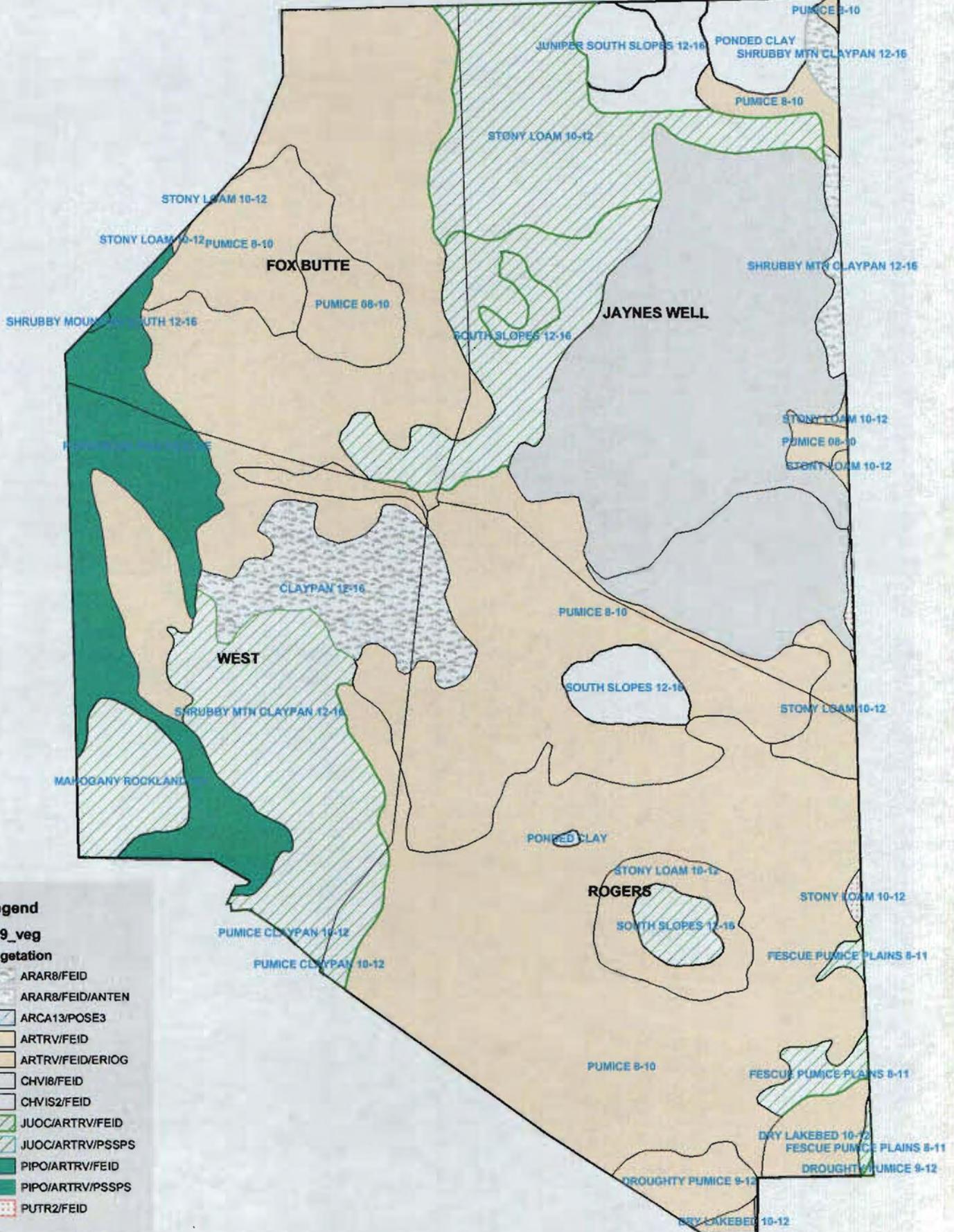
Legend

Button Springs
Allotment #909
Ecological Status &
Observed Apparent Trend

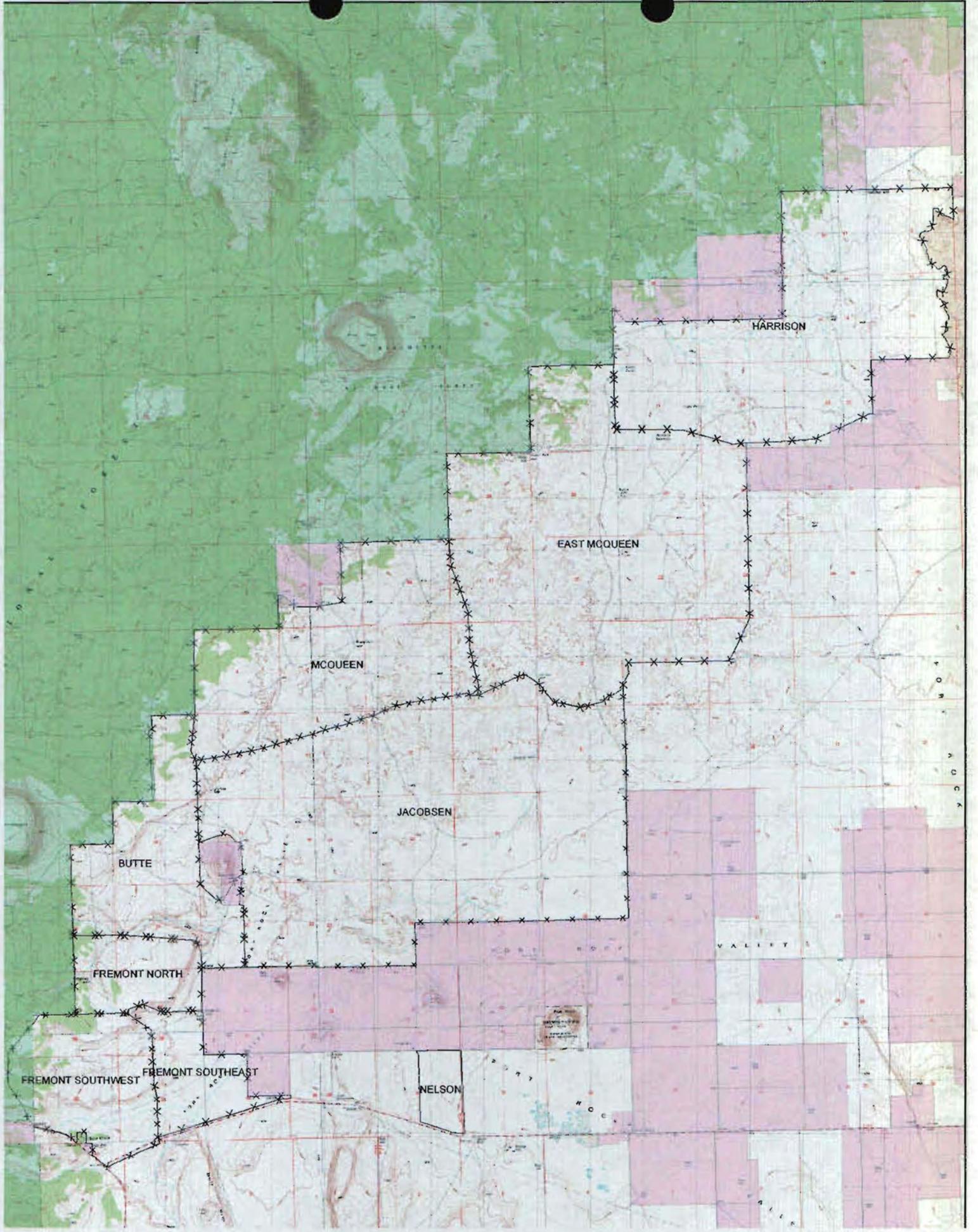


Button Springs Arotment #909

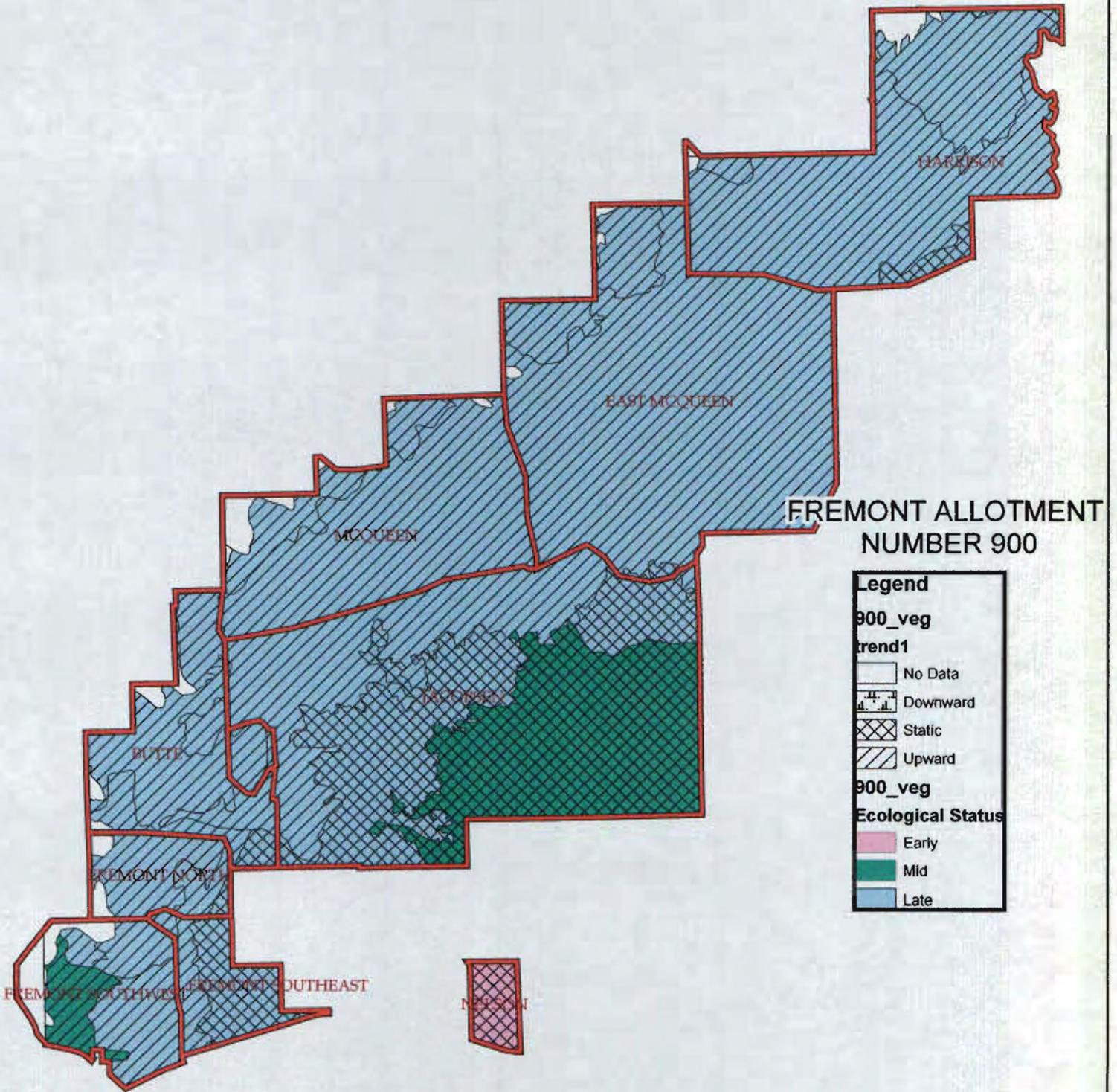
Vegetation and Range Site



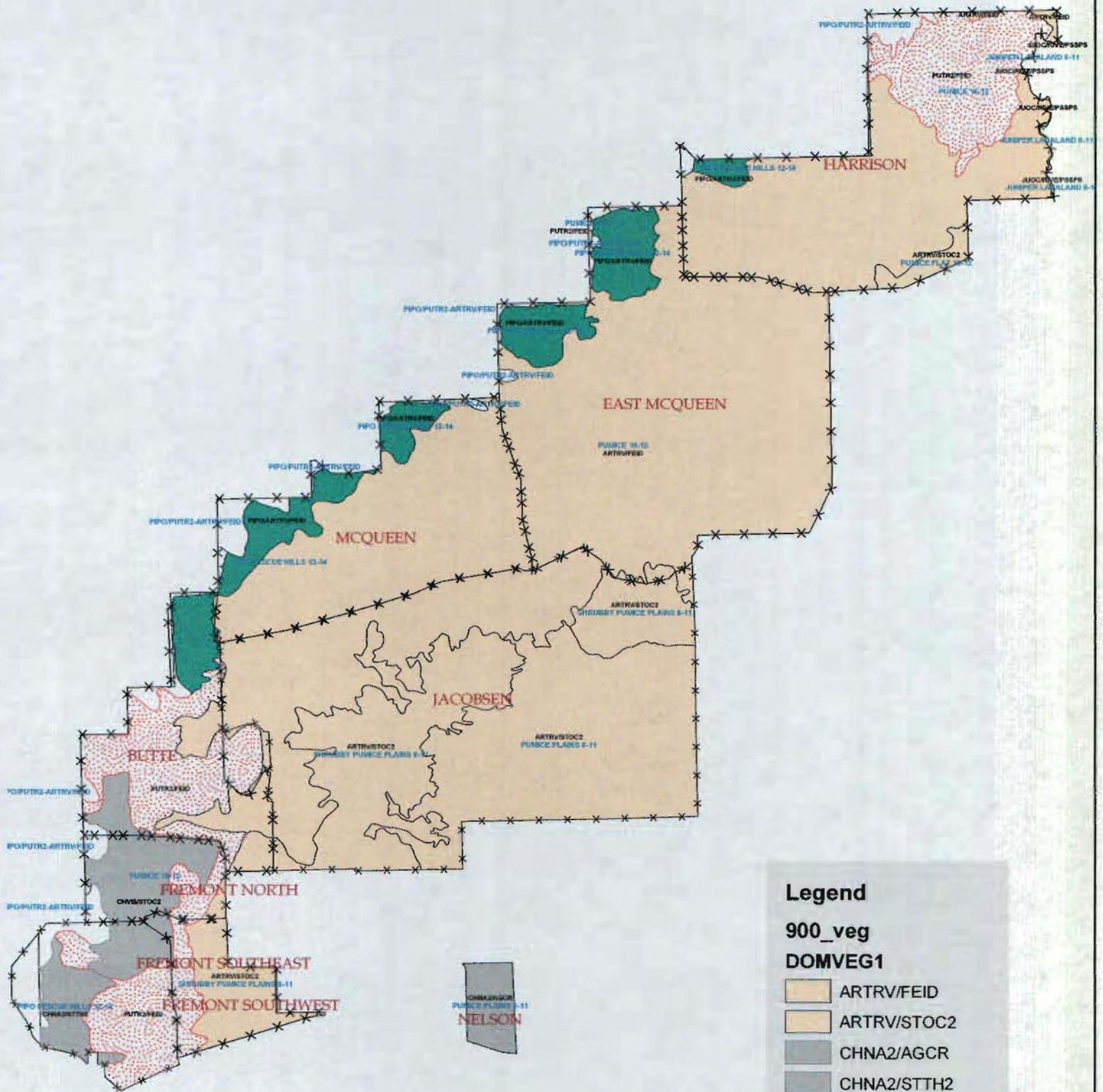
Fremont Allotment #900



Fremont Allotment #900 Ecological Status and Observed Apparent Trend (OAT)



Fremont Allotment #900 Vegetation and Range Site



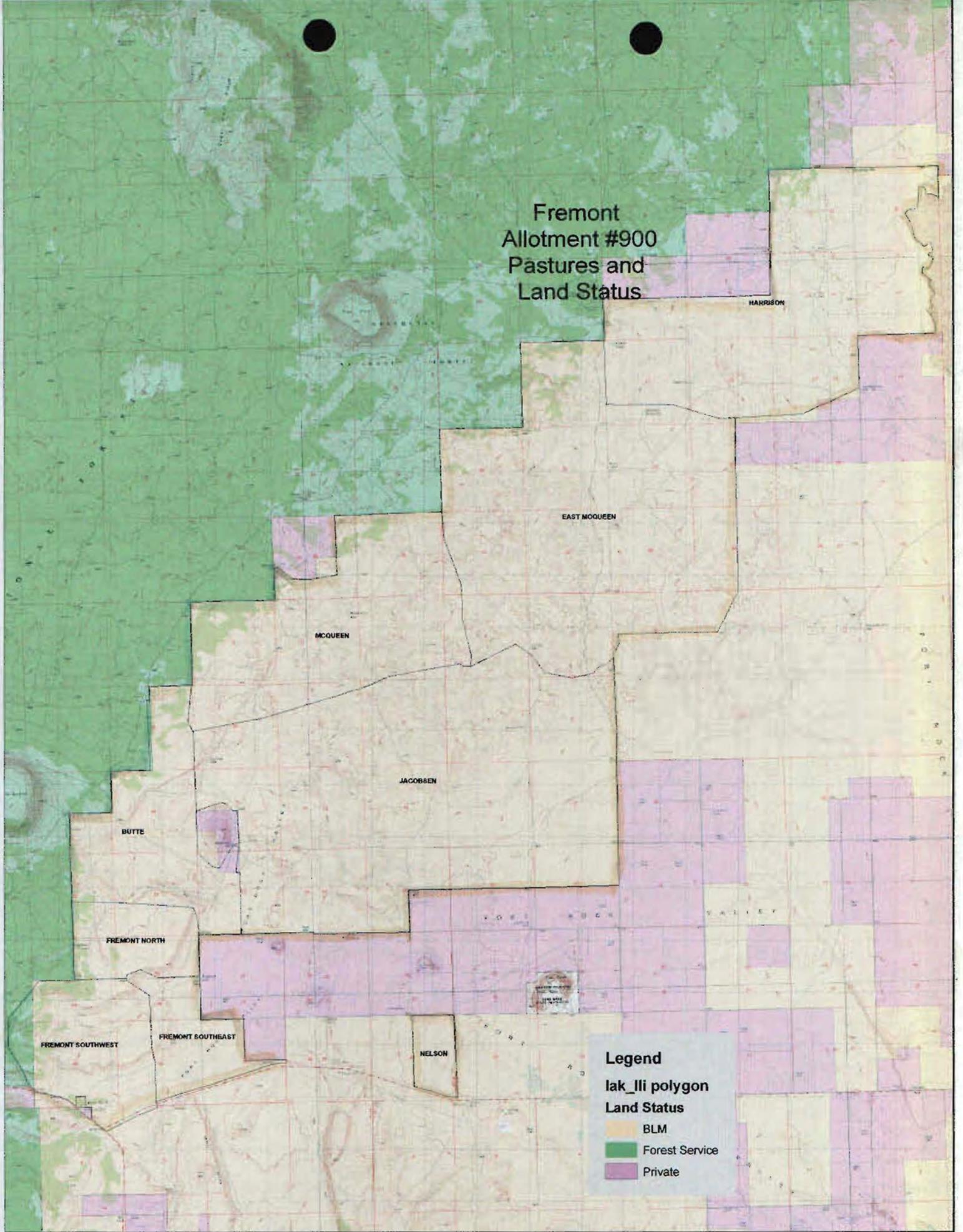
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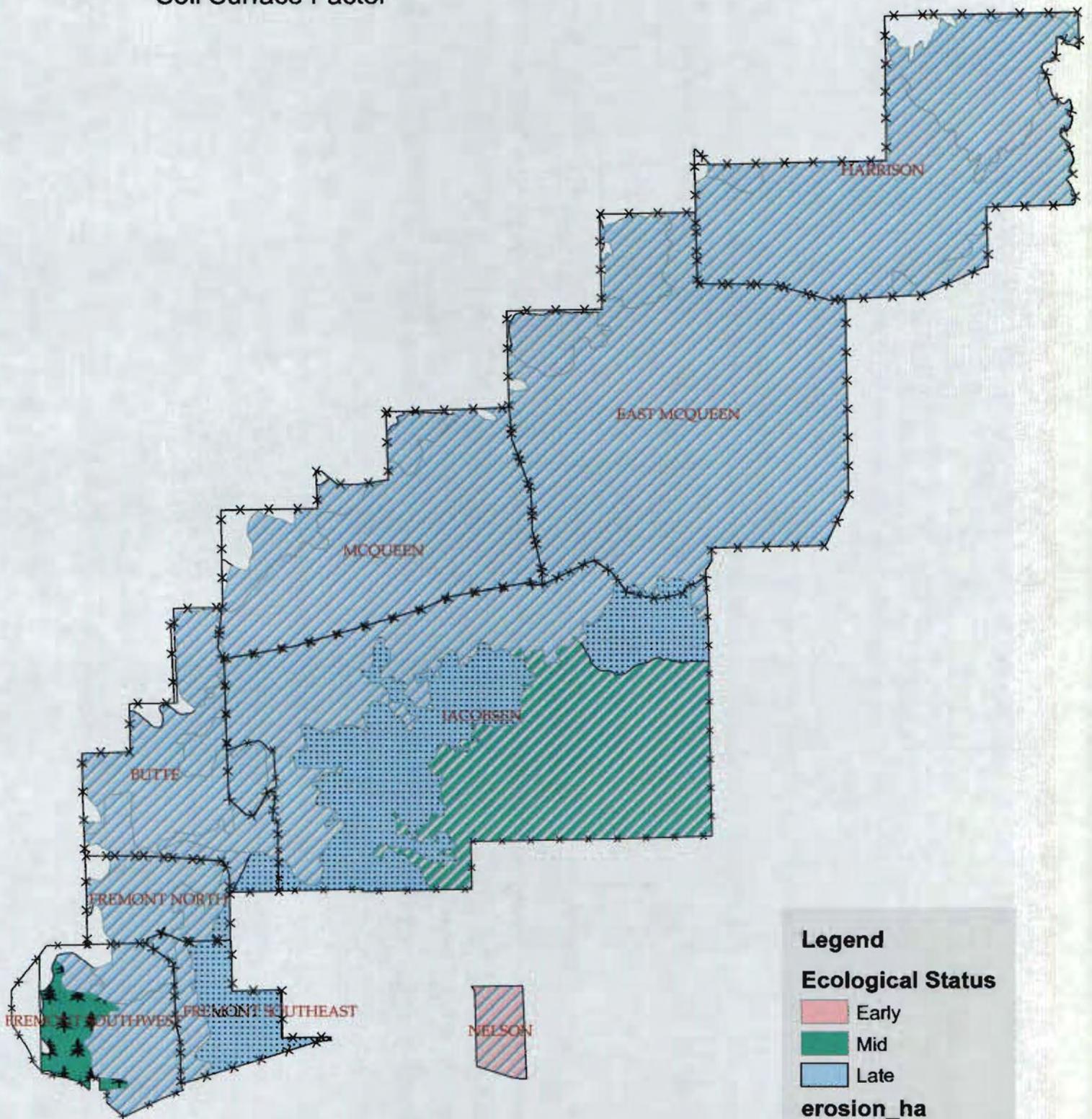
- ARTRV/FEID
- ARTRV/STOC2
- CHNA2/AGCR
- CHNA2/STTH2
- CHVI8/STOC2
- JUOC/RIVE/PSSPS
- PIPO/ARTRV/FEID
- PUTR2/FEID

Fremont Allotment #900 Pastures and Land Status



Legend
lak_lli polygon
Land Status
BLM
Forest Service
Private

Fremont Allotment #900 Ecological Status and Soil Surface Factor



Legend

Ecological Status

- Early
- Mid
- Late

erosion_ha

- no data
- stable
- slight
- moderate