

Upper Green River

2017 Cooperative Monitoring Report



Prepared For:

Upper Green River Cattlemen's Association

Prepared By:



PO Box 647 * 1625 W. Pine Street *
Pinedale, WY 82941

2017 Ungrazed Idaho Fescue

Site#	Ungrazed in "	% Utilization
8	6.43	5.1
2	4.69	5.08
4	6.34	1.48
17U	7.63	16.24
18	4.91	13.06
13	3.87	13.38
23	5.72	15.16
28	6.23	0
27	8.95	0
MLE 3	8.5	10.18
MLE 2	4.7	12.94
MLW 2	4.14	0
MLW 4	5.86	2.6
FC 2	5.2	0
Gy 11U	4.4	17.62
Average	5.8	7.5
Median	5.7	

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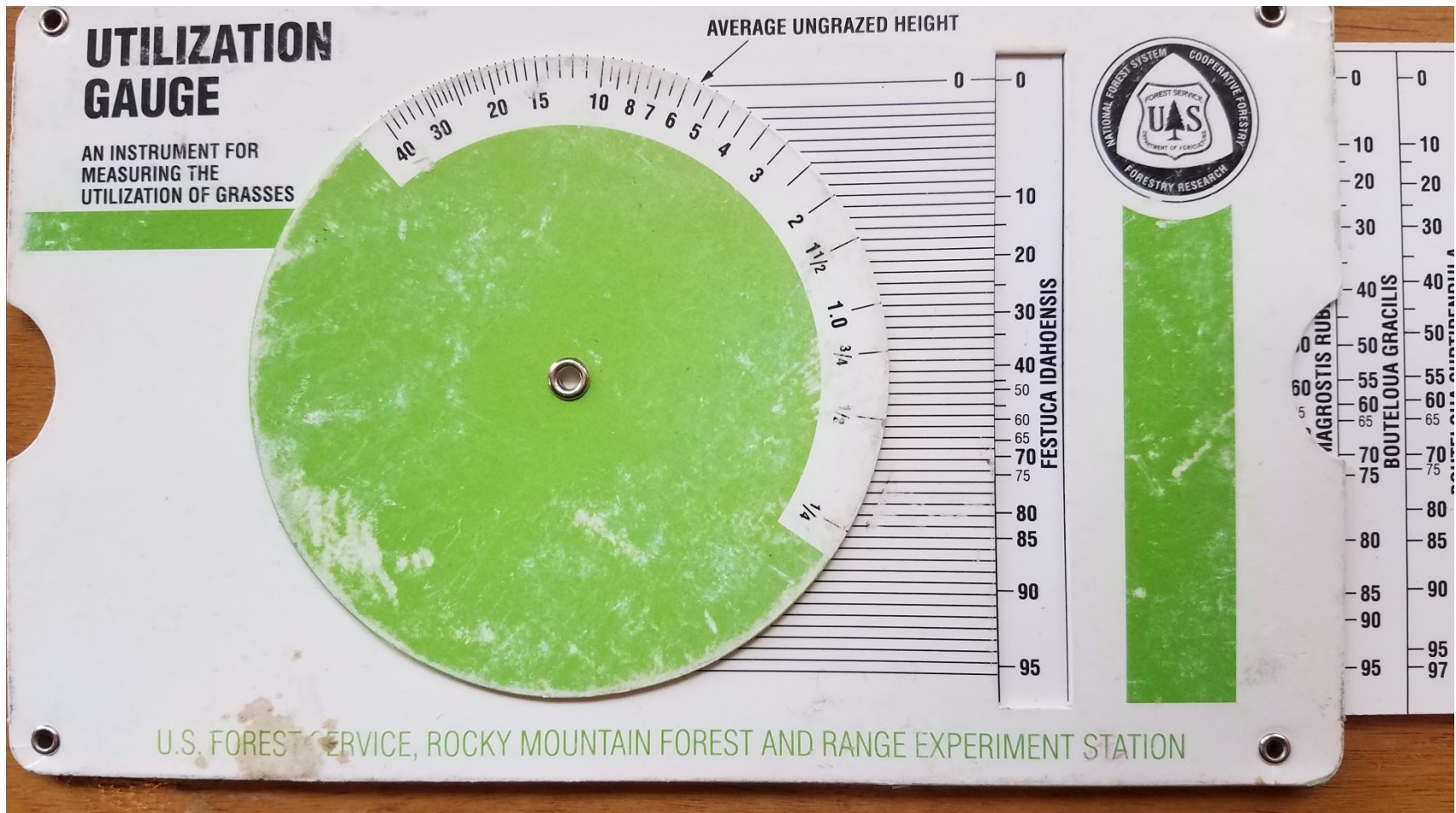


PO Box 647 * 217 Country Club Lane *
Pinedale, WY 82941

2019 Ungrazed Idaho Fescue

Site#	Ungrazed in "	% Utilization
MLSE	4.8	17.5
MLNE 17	6.9	17
MLNE 18	6	13.7
MLNW 13	3.4	19
MLNW 10	6.4	7.3
TP 23	4.6	14
T Moose	4.8	14.9
T Red Cr	6.9	11.4
MLE 1	5.2	0.4
MLE 2	5.2	4
MLE 3	4.6	16.6
MLE 3	6	14.4
MLE 3	5.2	4.4
MLW 2	8.7	0
MLW 4	6.6	9.3
FC 2	4.7	2.6
FC 6	5.9	6.7
GYP 14	4.6	11.6
Gyp 11U	3.9	13.2
Gyp 11U	3.5	11.9
Average	5.4	10.5
Median	5.2	

The Wheel



University of California – ARN Pub# 8524

ANR Publication 8524 | UNDERSTANDING WORKING RANGELANDS – Cattle, Sheep, Goats, and Horses: What's the Difference for Working Rangelands | July 2015 | 3

Differences in how much and what is consumed by each animal species depend on each species' digestive system, the composition of rumen microbes, forage quality, and the animals' ability to handle tannins and other secondary compounds. These compounds can reduce plant palatability by causing negative digestive impacts and

Table 1. Dietary preferences, digestive systems, mouth parts, and adaptations for grazing and browsing of selected livestock species

Species	Dietary preferences	Digestive system	Mouth parts and adaptations for grazing or browsing
cattle	Grazers. Prefer grass to a greater extent than do sheep or goats. Some seasonal use of forbs and woody plants, but cannot thrive on strictly woody plants. Coarse and dried tall grass is best grazed by cattle.	ruminant	Large muzzle and relatively immobile upper lip limits their ability to select among plants and plant parts. Large rumen allows them to consume and digest low-quality forage. Use mobile tongue to grasp taller grass clumps then pull them off, usually not closer than 2 inches from ground unless forced to do so to obtain forage. Back molars shred vegetation into small, digestible pieces.
sheep	Intermediate feeders. Readily graze forbs but also graze grass and browse woody plants.	ruminant	Cleft upper lip permits close grazing. Small mouthparts and narrow muzzle permit them to be more selective of plant species and plant parts and allow them to graze prostrate plants. Large rumen relative to body mass allows them to utilize low-quality forage. Will consume a grass-dominated diet, especially if grasses are succulent, but consume more forbs when forbs are available.
goats	Browser to intermediate feeders. Readily graze forbs, but also graze large amounts of woody plants and grass; highly versatile.	ruminant	Narrow muzzle, strong mouth, mobile upper lips and prehensile tongue are designed for eating tiny leaves off of shrubs, avoiding spines, and chewing woody plants. Large liver relative to body weight and special saliva enables them to more effectively process plants that contain secondary compounds like tannins.
horses	Grazers: Mostly graze grass, with some grazing on forbs and browsing on woody plants.	pseudo-ruminant (Cecum)	Upper and lower incisors allow them to bite close to the ground; they crop grass with incisors (foreteeth) and grind with back teeth.

Source: Adapted from Vallentine 1990, Launchbaugh 2006, Krysl et al. 1984, and Ménard et al. 2002.

may be poisonous. Although livestock digestive systems vary by species, all depend on fermentation, which is driven by microbes that live in the animals' rumen or cecum. Cattle, sheep, and goats are ruminants, or foregut fermenters; horses are pseudoruminants, or hindgut fermenters, and have a cecum (see below). Cattle, and to a lesser extent sheep, have large rumens that allow them to consume and digest fibrous, low-quality forage. Goats, on the other hand, are adapted to consuming woody plants. Their mouth structure allows them to select the high-quality parts of woody plants, and they can also effectively detoxify secondary compounds, such as tannins and terpenes.

Ruminants

Cattle, sheep and goats have a four-chambered stomach consisting of the rumen, reticulum, omasum, and abomasum (fig. 1). The rumen, the first chamber of the stomach, comes before the gut. When ruminants eat, they ingest large amounts of vegetation that is initially softened and broken down in the rumen by microbes, mostly bacteria. They regurgitate the semidigested plant matter, chew (called "chewing the cud"), and swallow it again. This fermentation and regurgitation process efficiently extracts nutrients such as cellulose from plant materials.

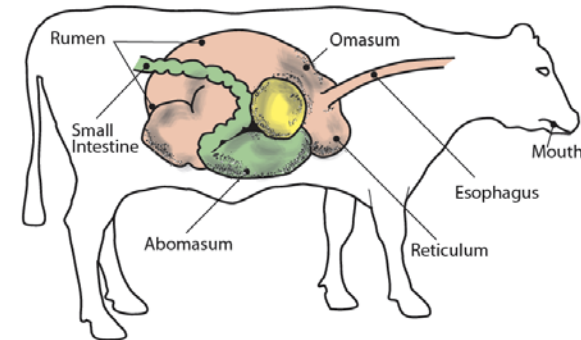


Figure 1. Digestive system of a ruminant.

Table 1. Dietary preferences, digestive systems, mouth parts, and adaptations for grazing and browsing of selected livestock species

Species	Dietary preferences	Digestive system	Mouth parts and adaptations for grazing or browsing
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United States
Department of
Agriculture

Forest Service

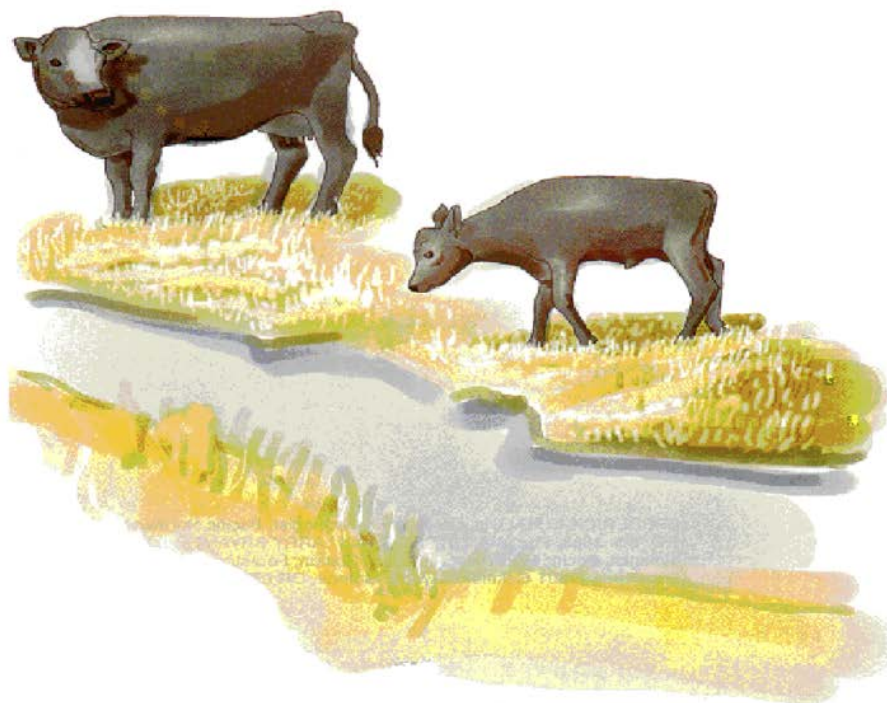
Pacific Northwest
Research Station

General
Technical Report
PNW-GTR-362
September 1995



Herbaceous Stubble Height as a Warning of Impending Cattle Grazing Damage to Riparian Areas

Frederick C. Hall, and Larry Bryant



“preference begins to change as stubble heights are lowered to 3 inches because the vegetation is too short to be pulled in by the tongue.

At this time, cattle must begin eating in bites (like a horse), which takes up to twice the effort and time.”

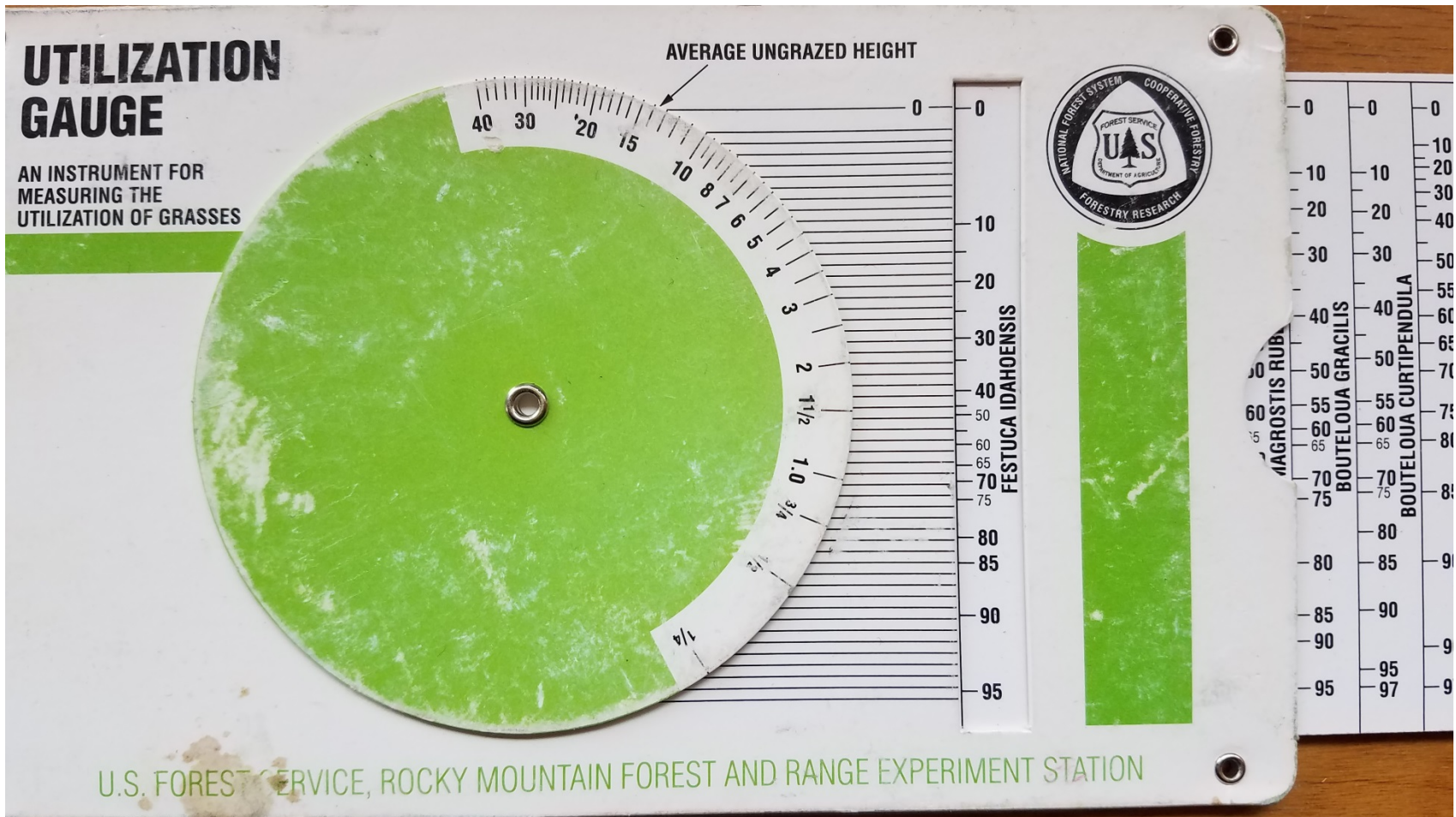
OSU - National Forage & Grasslands Curriculum

“Due to the design of the cow's lips, teeth, and jaw a cow can't easily get closer than 2 inches (5 centimeters) from the soil.”

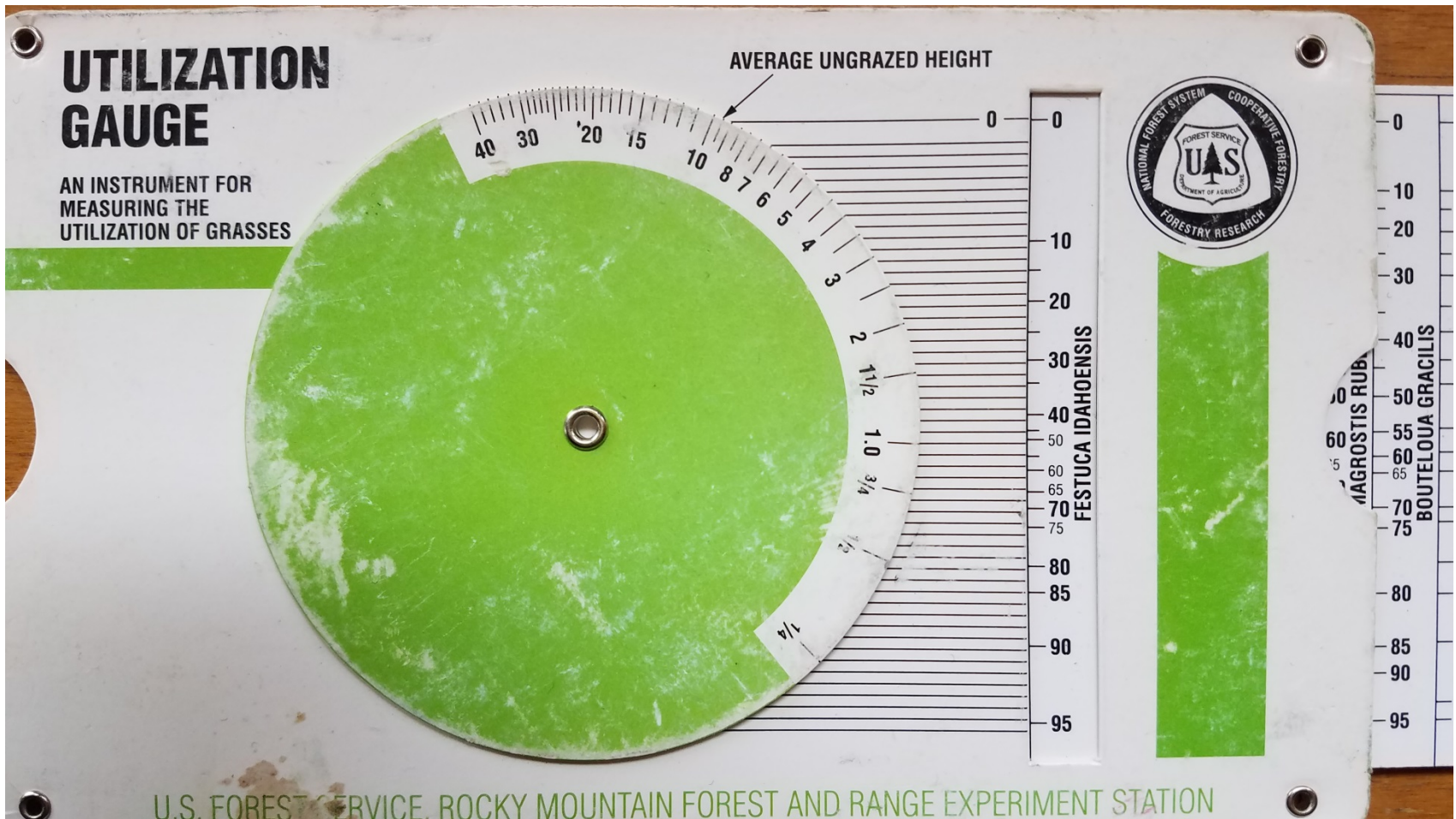
50% use at 2" requires nearly
quadruple ungrazed plant height



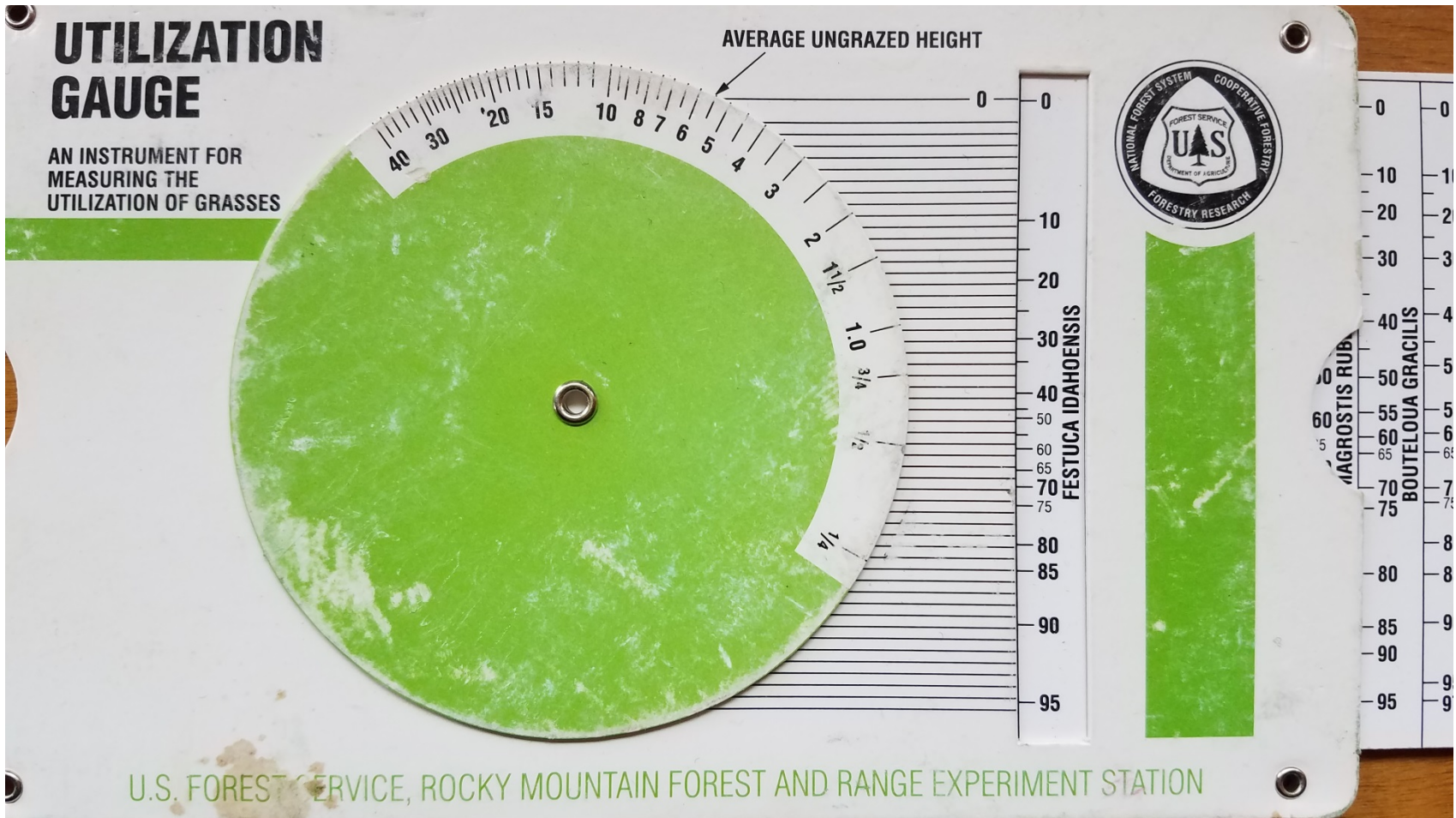
50% use at 1 1/2" requires nearly triple
ungrazed plant height



50% use at 1" requires nearly double
ungrazed plant height



At Average Ungrazed, 5/8" to reach
50%

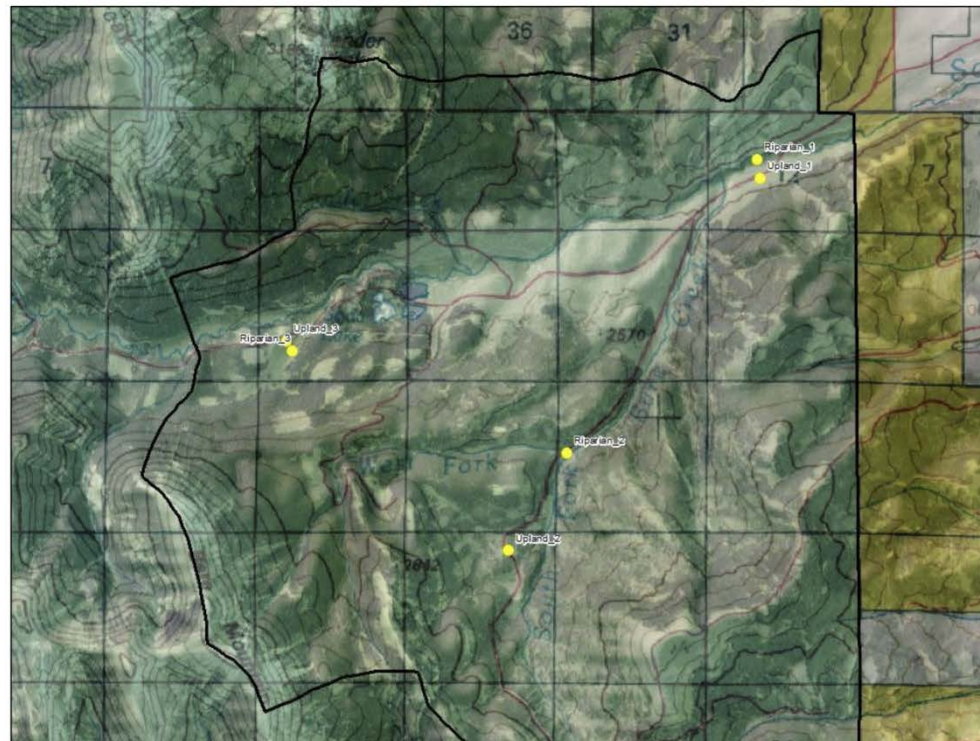


South Cottonwood Allotment

United States Forest Service
Compliance Utilization Studies
October 8, 2019

South Cottonwood Allotment was permitted for use by the Barney Ranches during the 2019 grazing season as a mitigation tool to offer rest on the Beaver-Horse Allotment which was affected by the Roosevelt Fire in 2018. As a result, utilization was measured on October 8 by Sublette County Conservation District and the United States Forest Service. Permittees were invited, but unable to attend.

The following is the documentation of measured utilization on both upland and riparian areas throughout the allotment. Random locations were measured in the South Cottonwood drainage, South Fork Bare Creek drainage, and the Trailer Creek drainage of the South Cottonwood allotment.



Cottonwood 2019

- 2019 Average Ungrazed 6.7"
- Would have to be grazed to 5/8"+ to get to 50% utilization

- researchers in an area similar to the Upper Green found that 50% of the sampled FEID plants weight was in the lower 0.78”
- This is nearly identical to the Forest Service Utilization Wheel

Forest Service Range Plant Handbook 1988

- “Idaho fescue excels many of its associated forage species in ability to withstand heavy grazing and trampling, although it will succumb to continued grazing abuse.”
- What this translates to is that it is an increaser species but is not the last species to get eliminated under severe livestock use.

Rancher's Guide to Key Range Grasses

Discussion: Idaho fescue has fair to good palatability and will withstand excessive grazing.

It will commonly replace rough fescue or bluebunch wheatgrass on overgrazed ranges.

FSH 2209.21

Key Species.

1. Forage species whose use serves as an indicator to the degree of use of associated species.
2. Those species which must, because of their importance, be considered in the management program.

Why Key Species?

- FSH 2209 - Proper Use Criteria. The limiting factor or factors which will be measured on a particular site to determine if the site has been properly used.
- It could be residual forage, impact on other resources or uses, or any other measurable factor on a particular site.

Other Common Key Species On the B-T

Page ____ of ____

Key Species

Study Number 7-53A				Date 9-10-72		Examiner B. J. ...	
Allotment Name & Number North Salt						Pasture Water Canyon	
Kind and/or Class of Animal						Period of Use	

Class Interval	Int Mid (M)	Key Species			Key Species			
		Dot Count	No. By Class (C)	No. X Midpt. (C)(M)	Dot Count	No. By Class (C)	No. X Midpt. (C)(M)	
0-5%	2.5	7	6	15				(a) (0-5%). The key species show no evidence of grazing use or negligible use.
6-20%	13	25	25	325				(b) (6-20%). The key species has the appearance of very light grazing. Plants may be topped or slightly used. Current seedstalks and young plants are little disturbed.
21-40%	30		1	30				(c) (21-40%). The key species may be topped, skimmed, or grazed in patches. Between 60 and 80 percent of current seedstalks remain intact. Most young plants are undamaged.
41-60%	50							(d) (41-60%). Half of the available forage (by weight) on key species appears to have been utilized. Fifteen to 25 percent of current seedstalks remain intact.
61-80%	70							(e) (61-80%). More than half of the available forage on key species appears to have been utilized. Less than 10 percent of the current seedstalks remain. Shoots of rhizomatous grasses are missing.
81-94%	88							(f) (81-94%). The key species appear to have been heavily utilized and there are indications of repeated use. There is no evidence of reproduction or current seedstalks.
95-100%	97.5							(g) (95-100%). The key species appears to have been completely utilized. The remaining stubble is utilized to the soil surface.
		Totals	32	370	Totals			
Avg. Util. = $\frac{\sum(CM)}{\sum C}$		370 / 32		= 11.6				

K-17

Table 1 - 2017 K-17 Utilization by Study Area and Method

Study	Utilization	Method	Community Type	Other
3-25A1	2.5%	LS	WYAM	*not key species method.
3-25A2	7%	LS	WYAM	*not key species method
8-41A	7%	LS	WYAM	*not key species method
13-3A	13%	KS	Tall Forb	
13-3B	10%	KS	WYAM (Exclosure)	
13-3C	10%	KS	WYAM	
13-4H	4%	KS	Mtn. Sagebrush/Forb	
13-11A	9%	KS	WYAM	
13-30K	25	KS	Snowfield Sagebrush/grass-forb	*recommend using as a key area
13-30K2	7%	KS	WYAM	
13-60B	32%	KS	Tall Forb	*recommend using as a key area
13-61A	28%	KS	Aspen/Tall Forb	
16-1A	4%	KS	WYAM	
16-1B	12%	KS	Tall Forb	
16-12P	9%		Mtn. Sagebrush/grass-forb	
16-16C	36%	KS	Mtn. Sagebrush/grass-forb	*majority use a function of unauthorized use by cattle. S. boundary fence project currently addressing this
16-16G2	10%	KS	Mtn. Sagebrush/grass-forb	
16-16K	32%	KS	Silver sagebrush/grass-forb	*majority use a function of unauthorized use by cattle. S. boundary fence project currently addressing this
16-16L	15%	KS	Mtn. Sagebrush/forb	
16-18C1	31%	KS	Mtn. Sagebrush/grass-forb meadow	
16-18C2	37%	HW	Mesic MDW	*most heavily observed area within the Basin Creek allotment (app 2 acres)
16-25A	37%	KS	Snowfield sagebrush/grass-forb	*recommend using as a key area
16-25B	20%	KS	Tall Forb	*recommend using as a key area
16-30A	14%	KS	WYAM	
16-30B	13%	HW	Mtn. Sagebrush-grass	
16-41A	27%	KS	Mixed shrub/grass-forb	*recommend using as a key area

<https://www.fs.fed.us/database/feis/plants/forb/wyeamp/all.html>

- Sheep forage new leaves in spring and early summer. Mature foliage is coarse and harsh, and plants dry out by mid-summer, so it is little used after early summer.
- Mule-ears is generally unpalatable
- These stands are poor livestock range and poor wildlife habitat because of a lack of structural and species diversity

Greys River RD

- In reviewing the recent FOIA, the range con had used Swamp milkweed as a key species
- USDA Plants - *Livestock*: The bitter leaves of swamp milkweed do not appeal to livestock; sheep are especially susceptible to the poisonous compounds in swamp milkweed, and sheep fatalities have been reported after consuming the plant.

FSH 2209..21 R4 Supplement

A desired future condition can specify use of a key species or vegetative community to achieve desired plant cover, density, or population composition which then will be a limiting factor determining the amount of allowable use.

When allowable use is reached on a key species proper use has been achieved on the area and use should be terminated for the season, even though allowable use has not been reached on non-key species.



South Salt River Allotment. Unit 1. Effective ground cover measured at 94% (n=100). Bare ground measured at 6% (USDA, 2003; Herrick *et al.*, 2005). Canopy cover of Mules Ear (*Wyethia amplexicaulis*) was estimated at 85%, Onion grass (*Melica spectabilis*) at 3%, Mountain Brome at 4%. Effective ground cover at or near potential (Goodrich, 2011; USDA, 2018; USDA, 2003b). See associated data sheets for additional information.
View 1 of 5 at 1 degrees





North Salt Allotment- Water Canyon unit. Post Grazing Utilization estimated using the Herbaceous Removal-Key Species (Mules Ear- *Wyethia amplexicaulis*) was 13% (n= 32). Proper Use Criteria was met $\leq 50\%$. See associated data sheets for additional information as they relate to species composition. View 1 of 4 at 65 degrees.



View 2 of 4 at 158 degrees.

Post Grazing Utilization estimated using the Herbaceous Removal-Key Species (Mules Ear-*Wyethia amplexicaulis*) was 13% (n= 32). Proper Use Criteria was met $\leq$ 50%.



Smiths Fork (Unit 3) – Postgrazing. Drought year. Use of key species using BAMA4 (n=35) and DEOC (n=12) is 9% and 17% respectively via the Key Species Method (USDA, 2003; USDA *et. al.*, 1996). Samples collected once every other pace in views shown. Typical dieback and subsequent desiccation of forbs has occurred with the onset of fall. Pocket gopher activity continues to be the primary driver of ground cover conditions. Minimal ground disturbance as a result of sheep use including trailing has occurred. Smudge on camera is reflected at edge of photos. Belt @ 72 degrees. Vertical Pan 1 of 2.



Vertical Pan 2 of 2.

Key
Species
BAMA
(Cutleaf)
DEOC
(larkspur)

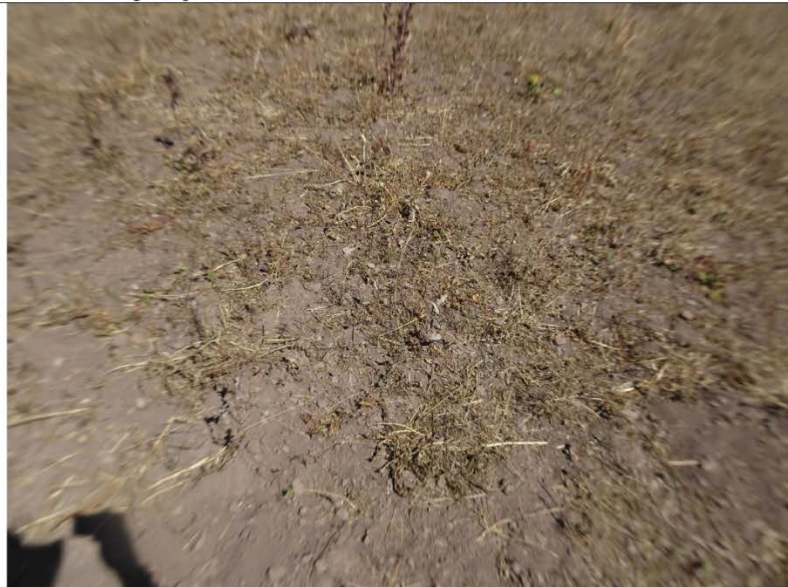
BAMA4 (cutleaf)

USDA Plants - It is moderately palatable to grazing animals during the spring and early summer but has low protein content (Walter, 2007). Leaves are grazed lightly and flowers are often eaten. The plant becomes dry and worthless as forage by midsummer (Forest Service, 1937;

GEVI2 (sticky geranium)



Smiths Fork (Unit 4) – Postgrazing. Drought year. Use of key species using BAMA4 (n=36) and GEVI2 (=33) is 24% and 16% respectively via the Key Species Method (USDA, 2003; USDA *et. al.*, 1996). Samples collected once every other pace in views shown. Proper Use Criteria met. Typical dieback and subsequent desiccation of forbs has occurred with the onset of fall. Pocket gopher activity continues to be the primary driver of ground cover conditions. Minimal ground disturbance as a result of sheep use including trailing has occurred. Smudge on camera is reflected at edge of photos. Belt 1. Vertical Pan 1 of 2.



Vertical Pan 2 of 2.





Smiths Fork (Unit 3) – Postgrazing. Drought year. Use of key species using BAMA4 (n=32) is 19% via the Key Species Method (USDA, 2003; USDA *et. al.*, 1996). Samples collected once every other pace in the views shown. Proper Use Criteria met. Typical dieback and subsequent desiccation of forbs has occurred with the onset of fall. Pocket gopher activity continues to be the primary driver of ground cover conditions. Minimal ground disturbance as a result of sheep use including trailing has occurred. Smudge on camera is reflected at edge of photos. Belt @ 53 degrees.



Belt @ 257 degrees. Vertical Pan 1 of 2.