United States Department of Agriculture | Forest Service | Lolo National Forest (406)329-3750 | Building 24 Fort Missoula Missoula, MT 59801

File Code: 2520/2210 Date: April 1, 1997
Route To: Andy Kulla, D-3

Subject: South Fork - East Fork Lolo Range Allotment

To: District Ranger, Missoula RD

On September 1, 1994, this range allotment was visited to determine the existing situation and effects of cattle grazing. It was agreed that where the cattle were able to gain access to the riparian zone, severe compaction was noted. This was determined by visual observation. During the review five locations were visited with similar observations.

After the day in the field it was agreed that actual compaction readings would be taken to determine if the compaction observed was within or outside of the Forest Plan Monitoring Item 4-3 on page V-10 of "The Lolo National Forest Plan".

On September 7, 1994, equipped with a SOILTEST INC., CL-700 pocket penetrometer the sites in question were visited to determine the actual compaction that existed at these sites. The readings are as follows and are in "Unconfined Strength" (Tons per Square Foot) or (Kilograms per Square Centimeter).

On October 11, 1996, the second follow-up set of readings were taken and the results are as follows:

Location:	1		2		3		4		5	
*	Cont.	Comp.	Cont.	Comp.	Cont.	Comp.	Cont.	Comp.	Cont.	Comp.
A.	1.0	3.6	0.8	3.2	0.8	3.3	0.5	2.8	0.8	2.3
B.		3.0		3.0		3.1		3.2		2.8
C.		3.5		2.4		2.6		2.8		2.4
D.		3.0		3.3		3.0		3.4		2.5
average		3.28		2.98		3.0		3.05		2.5

* Cont.- Control This was an area that cattle could not access.
Comp.- Compaction This was an area that the cattle could access.

The locations of the sample sites are noted on the initial map of the area that was sent with the September 21, 1994, letter.

It should be noted that the actual compacted areas range from approximately 1.5 to 2.55 times as much compaction as the control areas. When a soil becomes compacted by 50 percent or more it will reduce the productivity of a site. The readings at the examined locations are at least 2 times as compacted. Therefore, these sites are compacted beyond the Forest Plan Standards. It will be important to begin to affect improving conditions in these riparian zones so that the present trend is reversed.

As can be seen by the 1996 numbers the trend seems to continue a slow improvement. The readings for 1996 may be a result of wetter conditions then those that were present at the time of monitoring in 1994. The Forest Soil Scientist will continue to monitor these sites to assure that the existing compaction continues to dissipate. This can be determined by seeing rooting changes, continued reductions in compaction readings and further observations.

If there are additional questions, please contact me.

/s/ Skip Barndt
SKIP BARNDT
Soil Scientist

cc:
Barndt
Bessler-Hackett, D-3

SOIL QUALITY MONITORING STANDARDIZED REPORT FORM – REGION 1, NATIONAL FOREST SYSTEM – VERSION 1.0 - JULY 1997

SITE CHARACTERISTICS

SITE NAME	TYPE	FOREST	DISTRICT
S-EF LOLO RANGE ALLOT	RANGE ALLOTMENT	LOLO	MISSOULA

LOCATION	Latitude / Longitude	UTM Northing / UTM Easting	COUNTY	STATE
Sec. 20, 26, 28, 30 T. 39 N R. 22, 23 W			MISSOULA	MT

SLOPE	ASPECT	ELEVATION	POSITION ON LANDFORM / TOPOGRAPHY
0-10 %	FLAT deg.	☒ Feet ☐ Meters	Riparian Stream Bottoms

SUBSECTION	HABITAT TYPE - & SYSTEM	WATERSHED NAME & 4TH CODE HUC
	ABLA/CLUN+CACA, PICEA/EQAR Shrub Field	LEE CREEK, EAST FORK LOLO CREEK 17-01-02-05

MLRA	PARENT MATERIAL (Surficial / Geologic setting)	SOIL CLASSIFICATION (FAMILY)
10	Alluvial Granitics	Cryochrepts + Aquepts

PLANTTYPE	REMARKS: ABLA/CLUN + CACA, PICEA/EQAR; Cryochrepts and Aquepts
PNC, 130B	

ACTIVITY MONITORED

		REMARKS (disturbance history; conditions during this occurrence; cumulative effects; equipment/system used):
	FIRE	This activity has been going on for decades
	HARVEST	Numbers have been reduced in the
	SITE PREP	recient past - We are looking for
	ROADING	improvement.
X	GRAZING Grazing	
	MINING	
	RECREATION	
	NONENTRY	

MONITORING CONCERN

		REMARKS (reasons for concern; actions performed; methodology; results; mitigation applied; etc.):
X	COMPACTION	Using a pocket penetrometer, there is 4 yrs
	DISPLACEMENT	of data that shows Compaction is 3 to 4
	PUDDLING	time that of a non Compacted area
	BURNED SOIL	(see back for actual data)
X	GROUND COVER	
X	SURFACE ORGANICS	
	NUTRIENT CYCLING	Compaction, Ground Cover, Surface Organics
	REGENERATION	

CONCLUSIONS / RECOMMENDATIONS

Contiue to reduce cattle numbers To allow soil resource recovery. Activity does not meet Lolo Nation Forest Plan Standards.

ADMINISTRATIVE

SUBMITTED BY:	TITLE:	DATES:
Wayne D. Barnett	Soil Scientist	Monitored: 1994-1997 Reported:

TITLE AND LOCATION OF DETAILED REPORT
South Fork-East Fork Lolo Range Allotment, S.O. LOLO N.F. MISSOULA, M

1994-1997

Location 1	1994		1995		1996		1997	
	Control	Compaction	Cont	Comp	Cont	Comp	Cont	Comp
A	1.5	3.25	1.5	3.4	1.0	3.6	0.9	2.5
B		4.0		3.2		3.0		2.8
C		4.0		3.7		3.5		3.0
D		3.5		3.4		3.0		2.8
Location 2								
A	1.0	4.0	1.0	3.2	0.8	3.2	0.8	3.0
B		3.5		3.1		3.0		2.8
C		3.0		2.75		2.4		2.6
D		4.0		3.5		3.3		3.0
Location 3								
A	1.0	3.75	1.0	3.15	0.8	3.3	0.7	2.9
B		4.0		3.75		3.1		3.0
C		3.5		3.0		2.6		2.7
D		4.0		3.4		3.0		2.9
Location 4								
A	>1.0	2.75	>1.0	2.6	0.5	2.8	0.6	2.6
B		3.5		3.0		3.2		2.9
C		3.5		3.1		2.8		2.5
D		2.25		3.0		3.4		3.0
Location 5								
A	>1.0	3.0	>1.0	2.5	0.8	2.3	0.6	2.0
B		3.5		2.75		2.8		2.4
C		3.0		2.6		2.4		1.8
D		3.0		2.5		2.5		2.2

It is important to note that even though the data shows that compaction levels are decreasing slightly. The annual precipitation for the areas has increased, which should give better readings.