

UTC Soils

Post harvest soil monitoring was performed on harvested units within the South Fork Default timber sale area. Harvested units within the UTC timber sale area were measured for compaction using 9 transects (each transect approximately 400 meters long). An average of 20 samples were collected for each transect to determine compaction and soil structure. Representative samples of the primary capability areas present in the harvest units were sampled to determine the degree of compaction present in the soils. As shown in table 1, the primary capability areas within the timber sale units are 4, 6, 9 and 10. In the Fremont Land and Resource Management Plan (1989), capability areas 4 and 6 are rated as a high risk for compaction, 9 is rated as low and 10 is rated as moderate. A low amount of adverse compaction was found within the harvested units.

Detrimental compaction (vegetation limiting compaction) was encountered on only a single sample in a single transect. This sample point was located on a Forest System road that intersected the sampling transect. This means that a single transect produced a result of 5% detrimental compaction, while the other 8 transects produced 0% detrimental compaction. The results of the compaction sampling are presented in Table 2.

The Fremont National Forest Soil Productivity Guide (Fremont National Forest, 2000) states the maximum allowable detrimental soil conditions in an activity area are 20 percent. The soil compaction survey described above determined that one unit of the 9 surveyed within the project area had detrimentally compacted soils. This unit was 5% detrimentally compacted, which is below the 20% maximum allowable by the Fremont National Forest Soil Productivity Guide (Fremont National Forest, 2000).

Soils in the UTC timber sale units are of the following types as listed in Table 1.

Table 1: Soil types in harvest units

Unit Number	Land Type Wenzel 1979	Soil Capability (Fremont LRMP 1989)
1	40B	9
2	40B, 41B	9
3	41B, 503	9, 3
4	74B	9
5	376, 676	6, 4
6	676	4
7	648	10
8	648	10
9	623	10
10	648	10
11	623	10
12	376	6
13	648	10
14	376	6
15	648	10

16	67B	10
17	67B, 623	10
18	67B	10
19	67B, 66	10
20	30A	2
21	37B	6
22	37B	6
23	37B, 37A	6, 4
24	37A	4
25	34B, 37A	6, 4
26	37B	6
27	67B	10
28	74B	9
29	342	10
30	37B, 342	6, 10
31	37B, 37A	6, 4
32	37A	4
33	368	4
34	37B	6
35	342	10
36	342	10
37	376	6
38	376	6
39	37B	6
40	37B	6
41	376	6
42	37B	6
43	74B	9
44	74B	9
45	74B, 376	9, 6
46	41B	9
47	648, 40B	10, 9
50	37A, 37B	4, 6
51	648	10
52	26, 648	4, 10
53	66, 648	10
54	66	10
55	648	10
56	50, 41B	3, 9
57	376	6
58	376	6
59	648, 676	10, 4

Table 2: Measured Compaction

Unit Number	Soil Type (Wenzel 1979)	Soil Capability (Fremont LRMP, 1989)	Detrimental Compaction
4	74B	9	0%
6	676	4	0%
7	648	10	0%
9	623	10	0%
32	37A	4	0%
33	368	4	0%
42	37B	6	0%
52	26, 648	4, 10	5%
54	66	10	0%

In cases where detrimental compaction has occurred, subsoiling can benefit the soils by shattering compacted layers and loosening the soil allowing for vegetative recovery. Subsoiling can also cause soil mixing and destroy soil structure. In soils that are not detrimentally compacted (vegetative limiting compaction), subsoiling has the potential to damage rather than benefit the resource. Due to the low degree of adverse compaction in the soils of the harvest units at UTC and the high occurrence of rocky soils, it is my recommendation to not subsoil the skid trails in the harvested units. In addition, visual examination of the soil disturbance on the skid trails does not seem sufficient to warrant seeding and fertilization for erosion control.

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 S. Zone Hydrologist
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Date

I concur with the recommendations presented in this report.

Terry Sodorff
 Lakeview District Ranger
 Fremont-Winema National Forest

Date

I approve the recommendations presented in this report

Karen Shimamoto
 Forest Supervisor
 Fremont-Winema National Forest

Date

