TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE Boise, Idaho SOIL CONSERVATION SERVICE

TN - RANGE NO. 4 April 21, 1975

TABLES SHOWING CONVERSION OF OUNCES AND GRAMS TO POUNDS OF VEGETATION PER ACRE, POUNDS OF USABLE FORAGE TO ACRES PER ANIMAL UNIT MONTH AND CONVERTING CLASS OF ANIMALS TO ANIMAL UNIT EQUIVALENT

The following table (1) shows that when using a 9.6 square foot plot, ounces and its equivalent in grams can be converted to pounds per acre by multiplying the grams by 10. Therefore, the total yield of 10 plots in grams equals pounds per acre.

For other size plots:

4.8	square	foot	plot	in	grams	x 2 x 10 =	pounds	per	acre
2.4	"	"	"	"	"	x 4 x 10 =	"	"	"
1.2	"	"	"	"	"	x 8 x 10 =	"	"	"

TABLE 1 - CONVERTING OUNCES AND THE EQUIVALENT IN GRAMS OF CLIPPED VEGETATION TO POUNDS YIELD PER ACRE

For 9.6 Square Foot Plots

Ounces	Grams	Pounds Yield Per Acre
0.5	14.17	141.7
1.0	28.35	283.5
1.5	42.52	425.2
2.0	56.70	567.0
2.5	70.87	708.7
3.0	85.05	850.5
3.5	99.22	992.2
4.0	113.40	1134.0
4.5	127.57	1275.7
5.0	141.75	1417.5
5.5	155.92	1559.2
6.0	170.10	1701.0
6.5	184.27	1842.7
7.0	198.45	1984.5
7.5	212.62	2126.2
8.0	226.80	2268.0
8.5	240.97	2409.7
9.0	255.15	2551.5
9.5	269.32	2693.2
10.0	283.50	2835.0
10.5	297.67	2976.7
11.0	311.85	3118.5
11.5	326.02	3260.2

TABLE 1 -- (Cont.)

Ounces	Grams	Pounds Yield Per Acre
12.0	340.20	3402.0
12.5	354.37	3543.7
13.0	368.55	3685.5
13.5	382.72	3827.2
14.0	396.90	3969.0
14.5	411.07	4110.7
15.0	425.25	4252.5
15.5	439.42	4394.2
1 lb	453.60	4536.0
2 lbs	907.20	9072.0
3 lbs	1360.80	13608.0
4 lbs	1814.40	18144.0

TABLE 2 - USEABLE FORAGE IN AIR DRY POUNDS PER ACRE IS INTERPRETED TO ACRES REQUIRED TO SUPPLY ADEQUATE FEED FOR ONE COW OR EQUIVALENT FOR ONE MONTH. THIS IS BASED ON THE ASSUMPTION THAT 800 POUNDS OF AIR DRY USABLE FORAGE IS REQUIRED TO SUPPORT AN AUM

Usable Forage Lbs/A	A/AUM	Usable Forage Lbs/A	A/AUM	Usable Forage Lbs/A	A/AUM
20	40.0	125	6.4	230	3.5
25	32.0	130	6.2	235	3.4
30	27.0	135	5.9	240	3.3
35	23.0	140	5.7	245	3.3
40	20.0	145	5.5	250	3.2
45	18.0	150	5.3	255	3.1
50	16.0	155	5.2	260	3.0
55	14.5	160	5.0	265	3.0
60	13.3	165	4.8	270	3.0
65	12.3	170	4.7	275	2.9
70	11.4	175	4.6	280	2.8
75	10.7	180	4.4	290	2.7
80	10.0	185	4.3	300	2.7
85	9.4	190	4.2	310	2.6
90	8.9	195	4.1	325	2.5
95	8.4	200	4.0	335	2.4
100	8.0	205	3.9	350	2.3
105	7.6	210	3.8	360	2.2
110	7.3	215	3.7	375	2.1
115	7.0	220	3.6	400	2.0
120	6.7	225	3.6	425	1.9

TABLE 2 -- (Cont.)

Usable Forage Lbs/A	A/AUM	Usable Forage Lbs/A	A/AUM	Usable Forage Lbs/A	A/AUM
450	1.8	750	1.1	1600	.50
475	1.7	775	1.0	1700	.47
500	1.6	800	1.0	1800	.44
525	1.5	850	.94	1900	.42
550	1.5	900	.88	2000	.40
575	1.4	950	.84	2250	.36
600	1.3	1000	.80	2500	.32
625	1.3	1100	.73	2750	.29
650	1.2	1200	.67	3000	.27
675	1.2	1300	.62	3500	.23
700	1.1	1400	.57	4000	.20
725	1.1	1500	.53	5000	.16

TABLE 3 -- TABLE FOR CONVERTING CLASS OF ANIMALS TO ANIMAL UNIT EQUIVALENTS

Animal Classes	Animal Units 1/	Animal Classes	Animal Units 1/
1. Cow - Dry	1.00	16. Heifer-2 yr. old	0.85
2. Cow with calf	1.30	17. Heifer-3 yr. old	1.00
3. Cow - Unbred	1.00	18. Horse - Grown	1.25
4. Cow - Cull	1.00	19. Ewe 0.20	0.20
5. Bull - Mature	1.40	20. Ewe with lamb	0.27
6. Bull - Yearling	0.67	21. Ram (Buck)	0.25
7. Bull - Cull	1.40	22. Deer-White tailed	0.20
8. Heifer - Nursing	1.00	23. Deer - Mule	0.25
9. Heifer - Unbred	0.67	24. Antelope	0.20
10. Calf - Weaned	0.50	25. Bison	1.20
11. Calf - Suckling	0.25	26. Sheep - Bighorn	0.18
12. Steer - 1 yr. old	0.67	27. Goat - Mountain	0.14
13. Steer-2 yr. old	0.85	28. Goat - with kid	0.18
14. Steer-3 yr. old	1.05	29. Heifer - Pregnant	1.00
15. Heifer-1 yr. old	0.67	30. Elk - Mature	0.65

1/ National Research Council - National Academy of Science (Animal Unit Values - Estimates based on Feed Requirements)

DETERMINING USABLE FORAGE

Usable forage is not easily determined. Class of grazing animal, the range site, its present condition and season and intensity of use (management) determine how well each plant species will be utilized.

Two examples are used here to determine an initial stocking rate or acres per animal unit month.

Soil - Portneuf Silt Loam
Range Site - Loamy 8-12" P.Z.

GOOD CONDITION
GRAZED BY CATTLE IN THE SPRING

	#/Ac Air Dry	% That Can Be Utilized For Proper Use	Usable Forage #/Ac
Bluebunch wheatgrass	300	40	120
Thurber needlegrass	200	50	100
Bottlebrush squirreltail	50	30	15
Big sagebrush	250	5	13
Other	50	20	10
	850		258 or rounded to 260

Using Table 2, 3 acres will be required to provide adequate forage for 1 cow for 1 month grazing and maintain or improve the vegetation. Using the same soil and grazed by cattle in the spring but the site is in fair condition.

	#/Ac Air Dry	% That Can Be Utilized For Proper Use	Usable Forage #/Ac
Bluebunch wheatgrass	100	40	40
Thurber needlegrass	50	50	25
Bottlebrush squirreltail	50	30	15
Big sagebrush	450	5	23
Other	100	20	20
	750		123 or rounded to 125

Using Table 2, 6.4 acres will be required to provide adequate forage for 1 cow for one month grazing and maintain or improve the vegetation.

It must be emphasized that the A/AUM determined by this method is only an initial stocking rate and must be adjusted depending on the grazing system used, the plant growing season, other uses etc.