

Technical Report No. 105
PRELIMINARY REPORT ON SAMPLING OF PRIMARY
PRODUCERS, INVERTEBRATES, AND DECOMPOSERS
ON THE JORNADA SITE, 1970

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TABLE OF CONTENTS

	Page
Title Page	i
Table of Contents	ii
Abstract	iii
Introduction	1
Primary Producer Studies	1
Methods	1
Results	2
Invertebrate Studies	7
Methods	7
Results	8
Decomposer Studies	8
Appendix I	13

Abstract

Sampling for aboveground and belowground biomass of primary producers, litter, invertebrates, and decomposers was conducted at 10-day intervals on a grazed and protected area on the Jornada site. During the 1970 growing season, precipitation was below-average for the season, and most of the biological activity occurred during the major rainy period in the last week of July. Peak standing crop of aboveground biomass of primary producers occurred in mid-August on the grazed area and early September on the ungrazed area.

Invertebrate populations peaked on both grazed and ungrazed areas in late July. Insect numbers were consistently higher on the grazed area than on the ungrazed area. The order Acarina contained the greatest numbers of individuals. Decomposer biomass also peaked following the rains in late July.

INTRODUCTION

Sampling for above- and belowground biomass of primary producers, litter, invertebrates, and decomposers was conducted on the Jornada Site during 1970. The basic design for the study was to compare an area grazed by cattle which was temporarily protected by a five-acre enclosure in 1970 with one which was completely protected from cattle grazing. The protected area would be classed in high, good, or excellent condition, based on the Soil Conservation Service System of range condition classification, while the grazed area would be in fair condition. The sampling design included two replications for each treatment. The temporary enclosure will be moved to another, similar area for the 1971 season.

PRIMARY PRODUCER STUDIES

Methods

The plot shape used for aboveground biomass sampling was a rectangle 6.655 m by 762.000 m. Plants were clipped at ground level, and all separations were made in the field. Each species was collected separately. Ten quadrats were clipped and ranked for each replication for each treatment, while 100 quadrats were ranked only according to procedures of the dry weight rank method. Litter was collected by hand from each of the clipped quadrats. All samples were dried at 70°C before being weighed. The litter samples were ashed to correct for soil contamination.

Belowground biomass was sampled using a core 7.62 cm in diameter. A soil core was taken at the end of each clipped quadrat. Soil cores were taken each time aboveground samples were collected. Cores were taken to the caliche layer, which was usually at about 30 cm. Each core was

divided into 10 cm segments. These samples were dried at 65°C for 24 hours, after which they were gently agitated on a 500 micron screen. The portion which remained on the screen was placed in a seed separation blower which was operated at two speeds to separate the fine root hairs and then the large ones. Any large roots remaining in the residue were easily visible and removed by hand. All belowground material was again dried at 65°C, and then weighed and ashed at 550°C for 40 hours. Crowns were included in belowground samples.

Results

Peak standing crop of aboveground material was 138 g/m² on the ungrazed area, compared to 78 g/m² on the grazed area (Tables 1 and 2). The peak occurred earlier on the grazed area than on the ungrazed area, possibly because of the ability of the annuals on the grazed area to respond more quickly to the one storm period in late July than the perennials on the ungrazed area. *Bouteloua eriopoda* and *Yucca elata* contributed most of the aboveground biomass on the ungrazed area, while *Salsola kali* and *Gutierrezia sarothrae* were the most important species on the grazed site (Table 3).

Belowground biomass varied considerably throughout the growing season from one sampling period to another (Table 4). During the early part of the growing season, there was no consistent difference between the grazed and ungrazed area, but later in the season, belowground biomass on the grazed area apparently exceeded that on the ungrazed area (Table 5). During most sampling periods, belowground biomass was higher in the 0-10 cm depth than for the other two depths.

The weight of litter samples was quite variable from one sampling period to the next, with the standard deviation often exceeding the mean (Table 5).

Table 1. Aboveground biomass (g/m^2) for the ungrazed area on the Jornada Site for 1970.

Date	Biomass	Standard Deviation
6-10-70	58.82	18.78
7-14-70	76.63	51.47
7-30-70	72.85	60.52
8-10-70	85.70	55.24
8-20-70	114.84	82.39
9- 1-70	138.41	127.00
9-24-70	110.61	50.38

Table 2. Aboveground biomass (g/m^2) for the grazed area on the Jornada Site for 1970.

Date	Biomass	Standard Deviation
6-10-70	34.36	30.86
7-14-70	18.40	10.90
7-30-70	37.33	32.41
8-10-70	74.07	79.31
8-20-70	77.88	41.27
9- 1-70	68.02	54.32
9-24-70	72.08	50.34

Table 3. Aboveground standing live biomass (g/m^2 , mean $\pm$ standard deviation) for important species on Jornada Site, 1970.

Species	Date						
	6-10	7-14	7-30	8-10	8-20	3-1	9-24
<i>Ungrazed</i>							
<i>Yucca elata</i>	27.2 $\pm$ 107.0	0.0 $\pm$ 0.0	11.2 $\pm$ 42.3	14.4 $\pm$ 47.4	13.6 $\pm$ 60.6	38.8 $\pm$ 111.0	20.8 $\pm$ 34.6
<i>Bouteloua eriopoda</i>	33.6 $\pm$ 18.6	29.2 $\pm$ 26.0	39.6 $\pm$ 36.0	37.7 $\pm$ 24.7	51.3 $\pm$ 41.8	48.9 $\pm$ 48.1	54.2 $\pm$ 51.6
<i>Gutierrezia sarothrae</i>	1.8 $\pm$ 4.4	9.7 $\pm$ 30.7	14.2 $\pm$ 30.1	13.7 $\pm$ 26.6	9.4 $\pm$ 23.8	18.2 $\pm$ 7.4	14.8 $\pm$ 30.8
<i>Sporobolus flexuosus</i>	8.6 $\pm$ 11.4	3.8 $\pm$ 7.4	5.0 $\pm$ 11.4	6.9 $\pm$ 10.3	19.4 $\pm$ 28.9	5.2 $\pm$ 2.2	7.6 $\pm$ 13.4
<i>Croton coymbulosus</i>	1.4 $\pm$ 5.4	1.6 $\pm$ 2.0	0.3 $\pm$ 0.7	0.9 $\pm$ 2.3	1.9 $\pm$ 4.0	1.8 $\pm$ 3.8	4.2 $\pm$ 11.2
<i>Salsola kali</i>	0.8 $\pm$ 0.8	2.1 $\pm$ 3.3	1.1 $\pm$ 1.3	2.5 $\pm$ 2.6	5.2 $\pm$ 5.9	7.6 $\pm$ 9.0	6.8 $\pm$ 6.8
<i>Erioneuron puchellum</i>	0.0 $\pm$ 0.0	1.9 $\pm$ 4.0	0.5 $\pm$ 0.2	0.2 $\pm$ 1.1	0.2 $\pm$ 1.1	0.0 $\pm$ 0.0	0.0 $\pm$ 0.0
<i>Grazed</i>							
<i>Yucca elata</i>	82.2 $\pm$ 36.8	0.4 $\pm$ 1.9	0.0 $\pm$ 0.0	19.5 $\pm$ 73.6	0.0 $\pm$ 0.0	10.0 $\pm$ 40.8	6.6 $\pm$ 20.8
<i>Bouteloua eriopoda</i>	1.8 $\pm$ 5.2	3.2 $\pm$ 8.8	2.4 $\pm$ 6.6	4.5 $\pm$ 10.8	2.0 $\pm$ 3.2	2.2 $\pm$ 5.2	1.2 $\pm$ 3.0
<i>Gutierrezia sarothrae</i>	6.9 $\pm$ 2.8	3.1 $\pm$ 6.7	20.8 $\pm$ 35.3	18.1 $\pm$ 35.0	34.6 $\pm$ 39.9	12.4 $\pm$ 38.4	31.2 $\pm$ 45.2
<i>Sporobolus flexuosus</i>	4.0 $\pm$ 6.0	3.0 $\pm$ 3.7	4.3 $\pm$ 5.9	9.4 $\pm$ 11.7	8.9 $\pm$ 19.6	8.4 $\pm$ 18.4	3.2 $\pm$ 6.2
<i>Croton coymbulosus</i>	2.2 $\pm$ 5.4	1.3 $\pm$ 2.6	0.6 $\pm$ 1.5	2.9 $\pm$ 4.3	2.8 $\pm$ 3.5	2.4 $\pm$ 3.0	1.6 $\pm$ 3.0
<i>Salsola kali</i>	2.1 $\pm$ 2.1	3.1 $\pm$ 2.2	4.8 $\pm$ 4.9	14.2 $\pm$ 9.3	19.4 $\pm$ 12.4	24.9 $\pm$ 17.6	18.8 $\pm$ 19.2
<i>Erioneuron puchellum</i>	0.0 $\pm$ 0.0	1.1 $\pm$ 1.3	1.3 $\pm$ 2.4	0.4 $\pm$ 1.0	0.3 $\pm$ 0.7	0.1 $\pm$ 0.1	1.6 $\pm$ 3.6

Table 4. Belowground biomass (g/m^2) means and standard deviations for three depths on Jornada Site, 1970.

Depth (cm)	Date											
	7-14		7-30		8-10		8-20		9-1		9-24	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
<i>Ungrazed Area</i>												
0-10	66.68	27.22	181.87	215.25	114.84	143.63	96.89	94.80	52.68	52.50	57.71	74.58
10-20	52.63	19.77	54.45	33.74	51.47	63.28	63.38	43.12	51.39	66.94	92.87	36.08
20-30	47.95	30.40	35.39	24.41	32.72	47.52	35.60	13.43	48.10	51.06	93.03	58.51
Total	167.26	52.07	271.34	256.82	197.61	194.09	195.86	127.17	152.17	154.59	243.41	124.77
<i>Grazed Area</i>												
0-10	88.70	61.73	65.47	33.02	105.81	102.97	60.40	47.26	66.58	39.76	85.04	48.35
10-20	46.03	27.16	43.98	19.36	62.06	49.53	40.78	28.91	73.97	26.08	102.14	91.82
20-30	72.62	129.58	37.03	15.53	61.50	66.87	24.25	11.80	72.35	34.61	70.87	43.26
Total	207.35	132.18	146.48	50.85	229.37	184.98	125.43	68.29	212.90	74.77	258.05	134.64

Table 5. Weight of litter samples (g/m^2) from the Jornada Site for 1970.

Date	Grazed Area		Ungrazed Area	
	Mean	Standard Deviation	Mean	Standard Deviation
6-10-70	4.41	3.95	48.55	67.76
6-23-70	40.31	29.41	47.04	79.31
7-14-70	61.06	63.71	80.96	92.05
7-30-70	27.03	16.36	37.98	19.13
8-10-70	61.06	151.84	58.72	95.97
8-20-70	46.51	81.04	41.34	34.85
9- 1-70	32.65	35.04	78.83	81.45

Litter weight on the ungrazed area probably exceeded that on the grazed area for the whole season.

INVERTEBRATE STUDIES

Methods

A grid was established on each replication of the ungrazed and grazed area, and the intersection of the grid lines was marked by a stake. Each stake was 25 ft from the nearest stake. At each sampling period, five stakes were randomly selected in each replication for sampling. Thus, there were 10 plots sampled at each sampling date per treatment.

The sampling method used was the standard quick trap utilized by investigators at the other comprehensive sites. The traps and tripods are set out over the randomly selected stake 24 hours before the samples are to be taken. The traps are released by a 30 ft rope, and litter and insects are removed with a D-vac. When all samples in a replication have been collected, they are stored in an ice chest. After the samples have been collected, they are brought to the lab at New Mexico State University and placed in Berlese units. Excess sand is separated from the sample by using a Kimwipe tissue paper on the screen as a baffle.

After separation, the insects are counted and classified to family, or to some lower category where possible, and dried for 24 hours at 60°C and weighed. All samples are being stored for further analysis.

Results

Peak numbers of insects occurred on both grazed and ungrazed area on July 30 (Table 6). At this time, there were nearly twice as many insects on the grazed area as on the ungrazed area. There were greater numbers of insects on the grazed area compared to the ungrazed area at all dates. Incomplete data on insect biomass indicate that differences between grazed and ungrazed areas may not be so clear cut, although peak biomass also occurred on July 30 on both areas (Table 7).

The order Acarina contained the greatest number of insects on both areas on most dates (Table 7). Other orders which were represented by fairly high numbers were the Hymenoptera, Homoptera, and the Coleoptera. There were surprisingly few grasshoppers (Orthoptera).

DECOMPOSER STUDIES

Soil samples were removed on a monthly basis from June through December 1970. The sampling times were coordinated as much as possible with the core sampling conducted by those involved with productivity studies. Procedures employed followed the recommendations for plate count studies as summarized by Dr. Francis Clark in his 19 November 1969 letter to Comprehensive Network microbiologists. One deviation from the recommended procedure had to be made, and that was the division of soil cores into profile intervals. Due to a caliche layer located just below 30 cm, sufficient soil was removed to test, and it was referred to as the 30 to 50 cm level instead of the 40 to 50 cm depth.

Early in June, cellulose and blue stem litter bags were constructed and buried. The information distributed on 20 November 1969, concerning the

Table 6. Insect density (number individuals/m²), biomass (g/m²) estimates, and standard deviations at the Jornada Site, 1970.

Date	Density	Standard Deviation	Biomass	Standard Deviation
<i>Ungrazed Area</i>				
7-14-70	6.54	7.60	0.00286	0.00426
7-30-70	42.00	25.52	0.01475	0.01060
8-10-70	27.80	28.10	0.00681	0.00759
8-20-70	25.20	34.20	Data not available	
9- 1-70	27.80	20.32	Data not available	
<i>Grazed Area</i>				
7-14-70	26.66	24.20	0.00742	0.00286
7-30-70	80.00	426.00	0.01158	0.00611
8-10-70	51.56	196.30	0.01634	0.00151
8-20-70	43.60	32.86	Data not available	
9- 1-70	40.00	36.82	Data not available	

Table 7. Density of insects (number/m²) by orders at the Jornada Site, 1970.

Order	Date				
	7-14	7-30	8-10	8-20	9-1
<i>Ungrazed Area</i>					
Acarina	5.20	31.40	16.00	13.80	15.60
Hymenoptera	0.80	2.80	0.80	1.60	3.80
Hemiptera	0.80	1.00	0.60	0.00	1.20
Coleoptera	0.80	0.80	2.20	1.20	0.20
Orthoptera	0.00	0.00	0.00	1.80	0.20
Homoptera	0.80	2.40	3.40	4.60	4.80
Thysanoptera	0.00	0.40	1.20	0.00	0.00
<i>Grazed Area</i>					
Acarina	5.80	19.00	24.00	27.80	23.60
Hymenoptera	1.40	43.40	5.80	0.80	0.40
Hemiptera	2.40	1.80	1.20	4.60	3.60
Coleoptera	4.00	5.00	2.00	1.00	0.60
Orthoptera	0.80	0.00	0.00	0.40	0.20
Homoptera	4.00	4.80	2.20	3.20	4.20
Thysanoptera	0.00	0.80	2.40	2.40	1.00

cellulose decomposition study at the Pawnee Site, was used as a guide for both types of litter to be buried.

The bacterial and fungal plate counts are summarized in Table 8. Bacterial numbers determined throughout the study period were basically the same. When a total was made of the numbers in the entire profile, a few more bacteria were observed in the July sampling. Similarly, the fungal numbers were generally the same during the seven months of examination. Again, a few more fungi were observed during the October examination than the other months, when the entire profile was totalled.

Due to a shortage of muffle furnaces, the cellulose and blue stem decomposition determinations have not been completed and cannot be included in this report.

Table 8. Bacterial and fungal plate count determinations made June through December, 1970 (propagules/g soil).

Depth (cm)	June '70	July '70	Aug. '70	Sept. '70	Oct. '70	Nov. '70	Dec. '70
<i>Bacteria</i>							
0-5	2.1×10^7	2.2×10^7	4.8×10^6	1.0×10^7	9.7×10^6	3.9×10^6	5.0×10^6
5-10	3.5×10^7	4.6×10^7	2.8×10^6	8.0×10^6	8.7×10^6	3.8×10^6	6.5×10^6
10-20	7.5×10^6	3.8×10^6	1.0×10^6	6.0×10^6	3.3×10^6	4.8×10^6	4.2×10^6
20-30	2.5×10^6	2.9×10^6	1.9×10^6	4.8×10^6	5.0×10^6	2.3×10^6	3.4×10^6
30-50	3.0×10^6	2.7×10^6	1.9×10^6	5.0×10^6	3.3×10^6	5.1×10^6	2.8×10^6
Total	69.0×10^6	77.4×10^6	12.4×10^6	33.8×10^6	30.0×10^6	19.9×10^6	21.9×10^6
<i>Fungi</i>							
0-5	6.5×10^4	2.0×10^4	1.1×10^4	4.7×10^4	1.4×10^5	4.0×10^4	3.0×10^4
5-10	1.0×10^4	1.0×10^4	4.0×10^3	2.5×10^4	1.9×10^5	4.5×10^4	2.4×10^4
10-20	1.5×10^3	1.0×10^4	1.5×10^4	4.0×10^4	1.0×10^5	1.0×10^4	0.5×10^4
20-30	1.0×10^3	0.5×10^4	0.5×10^4	1.0×10^4	1.0×10^5	5.0×10^4	1.3×10^4
30-50	1.5×10^3	1.0×10^4	1.0×10^3	1.3×10^4	0.5×10^4	0.5×10^4	1.2×10^4
Total	79.0×10^3	5.5×10^4	36.0×10^3	13.5×10^4	53.5×10^4	15.0×10^4	8.4×10^4

APPENDIX I

FIELD DATA

Litter Data

Litter data collected in 1970 at the Jornada Site is Grassland Biome data set A2U0018. Data were collected on form NREL-02. A sample data form and a listing of the field data follow.



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FIELD DATA SHEET - LITTER

[illegible]

0208JWR23067011.707	1	1	178.6212.10	14.93
	2	1	80.1212.75	40.82
	3	1	26.8012.45	3.19
	4	1	62.4320.83	26.62
	5	1	42.3521.10	6.04
	56	1	82.8321.43	21.02
	57	1	81.5820.58	35.01
	58	1	231.6521.20	19.36
	59	1	69.7023.40	9.82
	60	1	49.5812.10	22.64
0208JWR23067012.707	1	1	34.1320.85	5.29
	2	1	49.7020.90	28.80
	3	1	126.6021.50	105.10
	4	1	59.4420.85	38.59
	5	1	37.0223.92	13.10
	56	1	14.8811.65	3.23
	57	1	39.7712.30	21.47
	58	1	42.0412.25	29.79
	59	1	18.6412.05	6.59
	60	1	38.0524.02	14.03
0208JWR23067051.707	1	1	64.9912.04	16.52
	2	1	21.0712.10	2.65
	3	1	62.0212.10	17.37
	4	1	26.8911.80	6.88
	5	1	113.9011.90	26.68
	56	1	48.8512.00	7.37
	57	1	26.2311.88	6.51
	58	1	42.5812.08	10.37
	59	1	42.7312.12	12.61
	60	1	54.1912.40	11.70
0208JWR23067052.707	1	1	26.6412.23	2.91
	2	1	27.0512.15	2.32
	3	1	21.3912.05	1.31
	4	1	24.0411.80	2.47
	5	1	29.2512.05	3.78
	56	1	32.5612.22	4.96
	57	1	44.9312.18	9.96
	58	1	28.0212.23	1.33
	59	1	27.9112.10	1.30
	60	1	35.9211.92	7.82

0208JWR14077011.707	1 1	291.30	40.45	107.67
	2 1	127.44	37.28	74.47
	3 1	131.51	13.08	95.87
	4 1	60.50	12.99	31.38
	5 1	342.81	13.20	177.47
	56 1	223.25	13.49	137.15
	57 1	85.49	12.96	33.94
	58 1	88.19	12.99	56.40
	59 1	21.18	12.91	5.66
	60 1	81.97	12.85	52.89
0208JWR14077012.707	1 1	113.68	12.99	68.20
	2 1	117.01	13.24	83.58
	3 1	218.08	13.03	175.22
	4 1	135.67	13.17	111.42
	5 1	108.78	12.92	71.90
	56 1	171.91	13.89	123.45
	57 1	109.18	12.83	71.16
	58 1	63.33	13.02	27.87
	59 1	174.28	13.51	106.43
	60 1	40.69	12.98	11.23
0208JWR15077051.707	1 1	94.05	12.89	53.99
	2 1	82.11	12.92	51.66
	3 1	193.50	12.98	148.04
	4 1	146.20	13.21	108.86
	5 1	74.81	12.88	44.56
	56 1	109.63	13.19	83.19
	57 1	94.99	12.92	58.47
	58 1	60.75	13.32	28.84
	59 1	60.68	12.95	21.64
	60 1	71.91	13.02	43.78
0208JWR15077052.707	1 1	75.19	12.89	32.52
	2 1	111.51	13.09	59.40
	3 1	115.02	13.10	74.68
	4 1	104.37	12.99	48.68
	5 1	24.12	12.89	6.14
	56 1	252.90	51.10	39.84
	57 1	48.12	12.79	22.83
	58 1	39.96	12.78	9.84
	59 1	151.70	13.00	102.97
	60 1	72.70	13.18	35.77
0208JWR31077011.707	1 1	27.45	13.00	7.00
	2 1	53.27	13.00	28.37
	3 1	40.81	12.87	18.46
	4 1	56.80	13.03	30.89
	5 1	103.51	13.09	61.41
	56 1	50.63	13.01	24.04
	57 1	32.27	12.80	11.41
	58 1	54.52	12.85	20.64
	59 1	186.87	13.05	135.03
	60 1	39.37	12.97	15.09

0208JWR31077012.707	1 1	133.61	13.11	97.87
	2 1	106.32	12.87	68.19
	3 1	77.40	13.03	40.30
	4 1	44.93	12.81	19.84
	5 1	106.84	12.98	58.36
	56 1	55.24	13.10	29.92
	57 1	49.11	12.88	54.74
	58 1	87.70	12.81	58.72
	59 1	165.77	13.00	117.72
	60 1	77.59	13.00	53.08
0208JWR30077051.707	1 1	19.90	12.95	3.16
	2 1	30.60	12.88	10.99
	3 1	69.73	12.87	32.70
	4 1	37.53	13.00	15.31
	5 1	65.49	12.84	35.25
	56 1	34.39	13.04	7.53
	57 1	48.30	12.89	16.13
	58 1	65.41	13.05	20.64
	59 1	67.24	12.94	42.45
	60 1	27.30	12.93	98.48
0208JWR30077052.707	1 1	41.20	13.09	13.93
	2 1	38.92	13.11	13.52
	3 1	63.31	13.21	19.87
	4 1	32.51	12.88	8.38
	5 1	56.80	12.99	24.90
	56 1	31.93	12.94	8.91
	57 1	29.81	13.01	10.32
	58 1	25.04	12.90	7.13
	59 1	25.47	12.80	10.67
	60 1	57.34	12.89	20.61
0208JWR10 87011.707	1 1	41.26	13.63	20.96
	2 1	77.97	13.00	43.59
	3 1	32.42	12.97	10.99
	4 1	59.79	13.06	27.00
	5 1	133.11	13.18	98.22
	56 1	106.33	13.91	32.18
	57 1	39.08	13.07	19.11
	58 1	92.50	26.43	48.13
	59 1	46.60	13.03	18.32
	60 1	80.36	13.40	33.33
0208JWR10 87012.707	1 1	24.38	13.09	4.76
	2 1	340.41	27.00	90.72
	3 1	28.35	13.08	6.04
	4 1	57.10	13.21	29.38
	5 1	41.30	12.99	15.67
	56 1	49.62	13.03	17.14
	57 1	74.20	13.13	42.51
	58 1	67.70	13.30	40.86
	59 1	61.65	12.93	35.74
	60 1	113.09	13.05	55.02

0208JWR11 87051.707	1	1	28.08	13.30	7.91
	2	1	663.44	13.77	303.37
	3	1	18.20	13.32	1.32
	4	1	29.99	13.29	5.67
	5	1	25.62	13.38	6.68
	56	1	57.89	13.51	20.61
	57	1	23.43	13.31	4.18
	58	1	30.20	13.46	9.79
	59	1	32.63	13.55	5.52
	60	1	26.44	13.40	5.63
0208JWR11 87052.707	1	1	23.88	13.34	6.50
	2	1	52.53	13.15	34.59
	3	1	39.65	13.14	18.52
	4	1	24.34	13.37	4.48
	5	1	54.17	13.01	25.16
	56	1	96.15	13.24	46.86
	57	1	83.94	13.16	42.53
	58	1	65.67	13.11	31.72
	59	1	66.65	13.43	27.78
	60	1	94.08	13.20	51.28
0208JWR20087011.707	1	1	25.80	12.85	5.75
	2	1	20.64	12.98	2.10
	3	1	40.59	12.84	12.61
	4	1	31.11	12.82	7.62
	5	1	86.81	12.96	20.71
	56	1	43.77	12.81	14.14
	57	1	33.62	13.09	6.26
	58	1	39.52	12.81	9.92
	59	1	81.14	13.10	45.98
	60	1	120.35	12.82	35.15
0208JWR20087012.707	1	1	104.89	12.96	73.20
	2	1	59.71	12.90	28.51
	3	1	97.63	13.47	37.62
	4	1	92.13	13.10	53.64
	5	1	53.09	13.41	28.68
	56	1	38.82	13.60	8.71
	57	1	37.52	13.23	13.03
	58	1	25.10	13.10	4.72
	59	1	24.81	13.18	4.24
	60	1	49.98	13.10	20.00
0208JWR21087051.707	1	1	46.12	13.09	9.86
	2	1	155.53	13.19	58.23
	3	1	42.17	13.09	13.78
	4	1	23.14	13.08	4.94
	5	1	271.77	62.43	26.05
	56	1	21.13	13.25	2.94
	57	1	47.30	13.41	12.81
	58	1	21.17	13.08	2.15
	59	1	25.55	13.20	3.49
	60	1	24.65	13.20	5.37
0208JWR21087052.707	1	1	28.80	13.69	5.45
	2	1	20.73	13.11	2.53
	3	1	34.09	13.10	5.56
	4	1	30.01	13.15	3.53
	5	1	40.29	13.30	13.56
	56	1	54.08	13.20	20.06
	57	1	31.27	13.35	10.13
	58	1	17.73	13.09	1.56
	59	1	25.89	13.06	6.54
	60	1	43.71	13.21	18.39

Belowground Biomass Data

Belowground biomass data collected in 1970 at the Jornada Site is Grassland Biome data set A2U0028. Data were collected on form NREL-03. A sample data form and a listing of the field data follow.

FIELD DATA SHEET - BELOWGROUND BIOMASS

DATA TYPE	SITE	INITIALS	DATE			TREATMENT	REPLICATE	PLOT SIZE	QUADRAT	CORE DIAM.	HORIZON	TOP DEPTH	BOTTOM DEP.	LENGTH	WASH WT.	DRY WT.	ASH WT.	CROWN DRY WT.
			Day	Mo	Yr													
1-2	3-4	5-7	8-9	10-11	12-13	14	15	16-19	21-23	25-27	29	31-33	35-37	39-41	43-47	49-54	56-61	63-68
DATA TYPE 01 Aboveground Biomass 02 Litter 03 Belowground Biomass 10 Vertebrate - Live Trapping 11 Vertebrate - Snap Trapping 12 Vertebrate - Collection 20 Avian Flush Census 21 Avian Road Count 22 Avian Road Count Summary 23 Avian Collection - Internal 24 Avian Collection - External 25 Avian Collection - Plumage 30 Invertebrate 40 Microbiology - Decomposition 41 Microbiology - Nitrogen 42 Microbiology - Biomass 3 Microbiology - Root Decomposition 44 Microbiology - Respiration																		
SITE 01 Ale 02 Bison 03 Bridger 04 Cottonwood 05 Dickinson 06 Hays 07 Hopland 08 Jornada 09 Osage 10 Pantex 11 Pawnee																		
TREATMENT 1 Ungrazed 2 Lightly grazed 3 Moderately grazed 4 Heavily grazed 5 Grazed 1969, ungrazed 1970 6 7 8 9																		
HORIZON 1 AO 2 A 3 B 4 C																		

*** FIELD DATA ***

	1	2	3	4	5	6	7	8
	1234567890123456789012345678901234567890123456789012345678901234567890							
0308JWR14 77011.707	1	7.6	2	0	10	010		
	1	7.6	4	10	20	010	124.76	32.21
	1	7.6	4	20	30	010	124.92	59.44
	2	7.6	2	0	10	010	0.81	0.74
	2	7.6	4	10	20	010	8.51	7.49
	2	7.6	4	20	30	010	2.10	2.00
	3	7.6	2	0	10	010	10.52	7.11
	3	7.6	4	10	20	010	8.06	7.22
	3	7.6	4	20	30	010	2.12	1.78
	4	7.6	2	0	10	010	6.34	6.18
	4	7.6	4	10	20	010	1.91	1.61
	4	7.6	4	20	30	010	6.00	5.64
	5	7.6	2	0	10	010	1.09	0.99
	5	7.6	4	10	20	010	0.99	0.78
	5	7.6	4	20	30	010	2.91	2.78
	56	7.6	2	0	10	010	6.30	6.09
	56	7.6	4	10	20	010	19.39	16.63
	56	7.6	4	20	30	010	10.50	9.86
	57	7.6	2	0	10	010	1.20	1.15
	57	7.6	4	10	20	010	2.64	2.33
	57	7.6	4	20	30	010	7.68	7.34
	58	7.6	2	0	10	010	2.58	2.39
	58	7.6	4	10	20	010	6.22	4.89
	58	7.6	4	20	30	010	.	.
	59	7.6	2	0	10	010	11.88	11
	59	7.6	4	10	20	010	1.86	1.58
	59	7.6	4	20	30	010	1.18	0.92
	60	7.6	2	0	10	010	1.53	1.29
	60	7.6	4	10	20	010	1.56	1.39
	60	7.6	4	20	30	010	1.19	1.03
0308JWR14 77012.707	1	7.6	2	0	10	010	1.72	1.39
	1	7.6	4	10	20	010	1.31	1.11
	1	7.6	4	20	30	010	0.71	0.57
	2	7.6	2	0	10	010	3.93	3.53
	2	7.6	4	10	20	010	1.32	1.11
	2	7.6	4	20	30	010	5.13	4.91
	3	7.6	2	0	10	010	3.20	2.79
	3	7.6	4	10	20	010	2.88	2.37
	3	7.6	4	20	30	010	7.20	6.81
	4	7.6	2	0	10	010	5.19	4.89
	4	7.6	4	10	20	010	2.07	1.63
	4	7.6	4	20	30	010	1.45	1.19
	5	7.6	2	0	10	010	1.15	1.00
	5	7.6	4	10	20	010	2.32	2.08
	5	7.6	4	20	30	010	7.45	7.12
	5	7.6	4	20	30	010	2.41	2.19

	56	7.6	2	0	10	010	4.04	3.71
	56	7.6	4	10	20	010	1.62	1.40
	56	7.6	4	20	30	010	0.81	0.73
	57	7.6	2	0	10	010	1.48	1.32
	57	7.6	4	10	20	010	1.13	1.01
	57	7.6	4	20	30	010	1.09	1.00
	58	7.6	2	0	10	010	2.00	1.73
	58	7.6	4	10	20	010	.	.
	58	7.6	4	20	30	010	1.16	0.99
	59	7.6	2	0	10	010	2.80	2.47
	59	7.6	4	10	20	010	1.72	1.49
	59	7.6	4	20	30	010	0.90	0.81
	60	7.6	2	0	10	010	10.47	10.10
	60	7.6	4	10	20	010	.	.
	60	7.6	4	20	30	010	0.74	0.61
0308JWR15 77051.701	1	7.6	2	0	10	010	3.12	2.71
	1	7.6	4	10	20	010	1.77	1.58
	1	7.6	4	20	30	010	2.30	2.13
	2	7.6	2	0	10	010	2.83	2.30
	2	7.6	4	10	20	010	1.84	1.60
	2	7.6	4	20	30	010	2.51	2.30
	3	7.6	2	0	10	010	0.50	0.29
	3	7.6	4	10	20	010	4.00	3.84
	3	7.6	4	20	30	010	0.88	0.76
	4	7.6	2	0	10	010	3.43	2.28
	4	7.6	4	10	20	010	0.56	0.52
	4	7.6	4	20	30	010	2.70	2.60
	5	7.6	2	0	10	010	2.65	2.24
	5	7.6	4	10	20	010	12.95	12.61
	5	7.6	4	20	30	010	0.40	0.30
	56	7.6	2	0	10	010	4.77	4.52
	56	7.6	4	10	20	010	.	.
	56	7.6	4	20	30	010	1.33	1.20
	57	7.6	2	0	10	010	1.84	1.40
	57	7.6	4	10	20	010	3.98	3.48
	57	7.6	4	20	30	010	1.29	0.99
	58	7.6	2	0	10	010	.	.
	58	7.6	4	10	20	010	2.02	1.76
	58	7.6	4	20	30	010	2.06	1.55
	59	7.6	2	0	10	010	0.56	0.56
	59	7.6	4	10	20	010	1.35	1.19
	59	7.6	4	20	30	010	.	.
	60	7.6	2	0	10	010	3.02	2.89
	60	7.6	4	10	20	010	3.10	2.98
	60	7.6	4	20	30	010	0.79	0.68
0308JWR15 77052.701	1	7.6	2	0	10	010	5.28	5.07
	1	7.6	4	10	20	010	2.60	2.47
	1	7.6	4	20	30	010	3.62	3.41
	2	7.6	2	0	10	010	7.23	6.60
	2	7.6	4	10	20	010	1.36	1.20
	2	7.6	4	20	30	010	1.62	1.50
	3	7.6	2	0	10	010	1.60	1.23
	3	7.6	4	10	20	010	0.92	0.80
	3	7.6	4	20	30	010	3.90	3.72

4	7.6	2	0	10	010	1.14	0.47	
4	7.6	4	10	20	010	1.42	1.18	
4	7.6	4	20	30	010	0.96	0.70	
5	7.6	2	0	10	010	1.36	1.08	
5	7.6	4	10	20	010	5.11	4.71	
5	7.6	4	20	30	010	7.59	7.21	
56	7.6	2	0	10	010	0.65	0.54	
56	7.6	4	10	20	010	0.78	0.55	
56	7.6	4	20	30	010	0.63	0.49	
57	7.6	2	0	10	010	1.50	1.23	
57	7.6	4	10	20	010	0.58	0.53	
57	7.6	4	20	30	010	1.02	0.93	
58	7.6	2	0	10	010	0.65	0.51	
58	7.6	4	10	20	010	1.97	1.83	
58	7.6	4	20	30	010	3.60	0.99	
59	7.6	2	00	10	010	1.76	1.02	
59	7.6	4	10	20	010	1.61	1.37	
59	7.6	4	20	30	010	1.78	1.53	
60	7.6	2	0	10	010	2.11	1.97	
60	7.6	4	10	20	010	1.16	0.91	
60	7.6	4	20	30	010	1.22	0.97	
0308JWR30 77011.707	1	7.6	2	0	10	010	1.73	1.58
	1	7.6	4	10	20	010	0.41	0.31
	1	7.6	4	20	30	010	0.43	0.40
	2	7.6	2	0	10	010	1.50	0.94
	2	7.6	4	10	20	010	0.88	0.78
	2	7.6	4	20	30	010	3.61	3.40
	3	7.6	2	0	10	010	1.70	1.19
	3	7.6	4	10	20	010	1.72	1.36
	3	7.6	4	20	30	010	1.07	0.90
	4	7.6	2	0	10	010	12.89	11.76
	4	7.6	4	10	20	010	4.54	4.09
	4	7.6	4	20	30	010	0.87	0.74
	5	7.6	2	0	10	010	3.40	3.11
	5	7.6	4	10	20	010	1.68	1.41
	5	7.6	4	20	30	010	0.91	0.81
56	7.6	2	0	10	010	3.57	3.10	
56	7.6	4	10	20	010	1.30	1.13	
56	7.6	4	20	30	010	0.47	0.41	
57	7.6	2	0	10	010	4.74	3.87	
57	7.6	4	10	20	010	0.88	0.71	
57	7.6	4	20	30	010	1.65	1.39	
58	7.6	2	0	10	010	7.63	5.56	
58	7.6	4	10	20	010	2.57	2.15	
58	7.6	4	20	30	010	2.81	2.57	
59	7.6	2	0	10	010	7.55	6.52	
59	7.6	4	10	20	010	1.83	1.41	
59	7.6	4	20	30	010	5.36	4.80	
60	7.6	2	0	10	010	1.33	1.13	
60	7.6	4	10	20	010	0.66	0.55	
60	7.6	4	20	30	010	0.97	0.83	

0308JWR30 77012.707

1	7.6	2	0	10	010	1.66	1.50
1	7.6	4	10	20	010	4.04	3.85
1	7.6	4	20	30	010	4.24	4.10
2	7.6	2	0	10	010	2.54	2.25
2	7.6	4	10	20	010	3.67	3.50
2	7.6	4	20	30	010	2.84	2.71
3	7.6	2	0	10	010	7.07	5.82
3	7.6	4	10	20	010	3.32	3.13
3	7.6	4	20	30	010	2.36	2.23
4	7.6	2	0	10	010	2.63	2.36
4	7.6	4	10	20	010	2.12	1.99
4	7.6	4	20	30	010	3.32	3.19
5	7.6	2	0	10	010	1.89	1.51
5	7.6	4	10	20	010	5.07	4.80
5	7.6	4	20	30	010	3.51	3.41
56	7.6	2	0	10	010	6.48	4.51
56	7.6	4	10	20	010	4.99	4.59
56	7.6	4	20	30	010	3.32	3.20
57	7.6	2	0	10	010	2.02	1.75
57	7.6	4	10	20	010	1.00	0.88
57	7.6	4	20	30	010	0.41	0.31
58	7.6	2	0	10	010	1.29	1.02
58	7.6	4	10	20	010	2.70	2.50
58	7.6	4	20	30	010	0.60	0.50
59	7.6	2	0	10	010	15.76	11.68
59	7.6	4	10	20	010	7.30	6.68
59	7.6	4	20	30	010	0.69	0.49
60	7.6	2	0	10	010	1.10	0.82
60	7.6	4	20	30	010	0.39	0.31

0308JWR31 77051.707

1	7.6	2	0	10	010	2.39	2.15
1	7.6	4	10	20	010	5.45	5.21
1	7.6	4	20	30	010	2.29	2.12
2	7.6	2	0	10	010	4.47	4.25
2	7.6	4	10	20	010	2.20	1.92
2	7.6	4	20	30	010	3.49	3.31
3	7.6	2	0	10	010	3.63	3.38
3	7.6	4	10	20	010	4.42	4.17
3	7.6	4	20	30	010	3.14	3.01
4	7.6	2	0	10	010	1.27	0.97
4	7.6	4	10	20	010	8.38	8.13
4	7.6	4	20	30	010	5.39	5.16
5	7.6	2	0	10	010	9.08	8.79
5	7.6	4	10	20	010	1.26	1.16
5	7.6	4	20	30	010	1.05	0.95
56	7.6	2	0	10	010	7.34	6.74
56	7.6	4	10	20	010	10.53	10.16
56	7.6	4	20	30	010	10.61	10.29
57	7.6	2	0	10	010	5.58	5.25
57	7.6	4	10	20	010	11.55	11.27
57	7.6	4	20	30	010	9.10	8.83

0308JWR31 74052.707

58	7.6	2	0	10	010	4.00	3.79
58	7.6	4	10	20	010	7.19	6.99
58	7.6	4	20	30	010	12.51	12.22
59	7.6	2	0	10	010	11.36	11.06
59	7.6	4	10	20	010	13.18	13.04
59	7.6	4	20	30	010	11.44	11.11
60	7.6	2	0	10	010	4.59	4.41
60	7.6	4	10	20	010	4.27	4.10
60	7.6	4	20	30	010	5.95	5.79
1	7.6	2	0	10	010	4.00	3.60
1	7.6	4	10	20	010	5.93	5.73
1	7.6	4	20	30	010	9.22	9.01
2	7.6	2	0	10	010	4.32	4.01
2	7.6	4	10	20	010	9.42	9.25
2	7.6	4	20	30	010	5.21	5.09
3	7.6	2	0	10	010	4.10	3.79
3	7.6	4	10	20	010	3.77	3.61
3	7.6	4	20	30	010	3.36	3.23
4	7.6	2	0	10	010	6.85	6.47
4	7.6	4	10	20	010	1.80	1.60
4	7.6	4	20	30	010	1.37	1.22
5	7.6	2	0	10	010	0.73	0.56
5	7.6	4	10	20	010	0.83	0.64
5	7.6	4	20	30	010	1.00	0.91
56	7.6	2	0	10	010	1.62	1.49
56	7.6	4	10	20	010	6.90	6.50
56	7.6	4	20	30	010	2.76	2.56
57	7.6	2	0	10	010	1.48	1.21
57	7.6	4	10	20	010	0.43	0.35
57	7.6	4	20	30	010	0.48	0.41
58	7.6	2	0	10	010	0.52	0.32
58	7.6	4	10	20	010	0.54	0.43
58	7.6	4	20	30	010	0.99	0.92
59	7.6	2	0	10	010	0.43	0.30
59	7.6	4	10	20	010	0.63	0.59
59	7.6	4	20	30	010	0.61	0.58
60	7.6	2	0	10	010	2.13	1.41
60	7.6	4	10	20	010	0.95	0.79
60	7.6	4	20	30	010	0.51	0.40
1	7.6	2	0	10	010	3.16	2.93
1	7.6	4	10	20	010	4.48	4.36
1	7.6	4	20	30	010	1.67	1.59
2	7.6	2	0	10	010	7.89	6.60
2	7.6	4	10	20	010	3.04	2.74
2	7.6	4	20	30	010	1.66	1.51
3	7.6	2	0	10	010	1.81	1.49
3	7.6	4	10	20	010	3.83	3.67
3	7.6	4	20	29	009	1.62	1.53
4	7.6	2	0	10	010	1.96	1.70
4	7.6	4	10	20	010	2.59	2.40
4	7.6	4	20	30	010	2.59	2.42
5	7.6	2	0	10	010	0.77	0.67
5	7.6	4	10	20	010	2.20	2.10
5	7.6	4	20	30	010	2.43	2.32

0308JHC10 87011.707

	56	7.6	2	0	10	010	12.60	12.10
	56	7.6	4	10	20	010	0.60	0.48
	56	7.6	4	20	28	008	0.63	0.59
	57	7.6	2	0	10	010	2.87	2.45
	57	7.6	4	10	20	010	8.91	7.57
	57	7.6	4	20	30	010	9.40	8.38
	58	7.6	2	0	10	010	7.43	4.85
	58	7.6	4	10	20	010	2.12	1.94
	58	7.6	4	20	30	010	1.20	1.08
	59	7.6	2	0	10	010	1.24	1.04
	59	7.6	4	10	20	010	1.14	0.99
	59	7.6	4	20	30	010	0.48	0.41
	60	7.6	2	0	10	010	2.95	2.50
	60	7.6	4	10	20	010	1.54	1.41
	60	7.6	4	20	30	010	0.51	0.47
0308 JHC10 87012.707	1	7.6	2	0	10	010	1.07	0.94
	1	7.6	4	10	20	010	0.86	0.79
	1	7.6	4	20	30	010	1.26	1.23
	2	7.6	2	0	10	010	1.19	1.01
	2	7.6	4	10	20	010	2.08	2.00
	2	7.6	4	20	30	010	1.62	1.47
	3	7.6	2	0	10	010	1.64	1.45
	3	7.6	4	10	20	010	0.97	0.87
	3	7.6	4	20	30	010	1.21	1.13
	4	7.6	2	0	10	010	1.80	1.52
	4	7.6	4	10	20	010	1.93	1.73
	4	7.6	4	20	30	010	2.23	2.11
	5	7.6	2	0	10	010	3.06	2.30
	5	7.6	4	10	20	010	1.01	0.80
	5	7.6	4	20	30	010	1.09	1.00
	56	7.6	2	0	10	010	1.32	1.01
	56	7.6	4	10	20	010	1.15	0.97
	56	7.6	4	20	30	010	1.13	1.04
	57	7.6	2	0	10	010	2.03	1.72
	57	7.6	4	10	20	010	1.03	0.91
	57	7.6	4	20	30	010	1.03	0.93
	58	7.6	2	0	10	010	0.87	0.78
	58	7.6	4	10	20	010	1.63	1.50
	57	7.6	4	20	30	010	1.39	1.30
	59	7.6	2	0	10	010	1.65	1.33
	59	7.6	4	10	20	010	2.10	1.90
	59	7.6	4	20	30	010	1.34	1.20
	60	7.6	2	0	10	010	3.50	1.57
	60	7.6	4	10	20	010	2.48	1.89
	60	7.6	4	20	30	010	1.44	1.31
0308 JHC11087051.707	1	7.6	2	0	10	010	5.38	4.60
	1	7.6	4	10	20	010	3.03	2.73
	1	7.6	4	20	30	010	2.02	1.91
	2	7.6	2	0	10	010	2.81	2.17
	2	7.6	4	10	20	010	2.66	2.19
	2	7.6	4	20	30	010	1.48	1.37
	3	7.6	2	0	10	010	3.86	3.58
	3	7.6	4	10	20	010	2.76	2.59
	3	7.6	4	20	30	010	3.42	3.33

0308.JHC11087052.707

4	7.6	2	0	10	010	9.19	7.09
4	7.6	4	10	20	010	8.31	7.10
4	7.6	4	20	25	005	4.88	4.05
5	7.6	2	0	10	010	5.33	5.07
5	7.6	4	10	20	010	5.32	5.03
5	7.6	4	20	27	007	3.42	3.27
56	7.6	2	0	10	010	3.49	3.31
56	7.6	4	10	20	010	7.64	7.40
56	7.6	4	20	30	010	6.71	6.53
57	7.6	2	0	10	010	1.73	1.58
57	7.6	4	10	20	010	4.84	4.55
57	7.6	4	20	30	010	2.89	2.27
58	7.6	2	0	10	010	8.27	7.49
58	7.6	4	10	20	010	9.35	9.06
58	7.6	4	20	30	010	6.28	6.09
59	7.6	2	0	10	010	8.99	7.49
59	7.6	4	10	20	010	4.49	3.94
59	7.6	4	20	30	010	7.89	7.28
60	7.6	2	0	10	010	3.49	3.29
60	7.6	4	10	20	010	5.56	5.39
60	7.6	4	20	30	010	6.40	6.24
1	7.6	2	0	10	010	1.15	0.80
1	7.6	4	10	20	010	2.58	2.32
1	7.6	4	20	30	010	2.74	2.55
2	7.6	2	0	10	010	1.97	1.61
2	7.6	4	10	20	010	1.17	0.95
2	7.6	4	20	30	010	1.58	1.40
3	7.6	2	0	10	010	1.91	1.62
3	7.6	4	10	20	010	1.66	1.44
3	7.6	4	20	30	010	1.60	1.48
4	7.6	2	0	10	010	1.23	0.99
4	7.6	4	10	20	010	2.43	2.20
4	7.6	4	20	30	010	2.27	2.11
5	7.6	2	0	10	010	1.76	1.44
5	7.6	4	10	20	010	1.89	1.76
5	7.6	4	20	30	010	1.55	1.17
56	7.6	2	0	10	010	1.04	0.75
56	7.6	4	10	20	010	1.22	1.11
56	7.6	4	20	30	010	0.65	0.60
57	7.6	2	0	10	010	1.59	1.11
57	7.6	4	10	20	010	0.77	0.62
57	7.6	4	20	30	010	1.57	1.43
58	7.6	2	0	10	010	0.61	0.50
58	7.6	4	10	20	010	2.00	1.80
58	7.6	4	20	30	010	1.23	1.17
59	7.6	2	0	10	010	1.24	1.10
59	7.6	4	10	20	010	0.21	0.18
59	7.6	4	20	30	010	1.41	0.25
60	7.6	2	0	10	010	1.02	0.87
60	7.6	4	10	20	010	1.99	1.89
60	7.6	4	20	30	010	1.19	1.10

0308JHC20087011.707

1	7.6	2	0	10	10	2.08	1.62
1	7.6	4	10	20	10	1.89	1.59
1	7.6	4	20	30	10	1.31	1.19
2	7.6	2	0	10	10	1.42	1.21
2	7.6	4	10	20	10	2.49	1.70
2	7.6	4	20	30	10	1.50	1.37
3	7.6	2	0	10	10	1.28	1.09
3	7.6	4	10	20	10	3.10	2.61
3	7.6	4	20	30	10	2.18	2.05
4	7.6	2	0	10	10	2.08	1.65
4	7.6	4	10	20	10	1.40	0.81
4	7.6	4	20	30	10	1.98	1.70
5	7.6	2	0	10	10	2.55	2.04
5	7.6	4	10	20	10	4.72	4.40
5	7.6	4	20	30	10	3.39	3.20
56	7.6	2	0	10	10	4.40	3.84
56	7.6	4	10	20	10	1.31	1.10
56	7.6	4	20	30	10	0.90	0.74
57	7.6	2	0	10	10	1.99	1.54
57	7.6	4	10	20	10	1.96	1.75
57	7.6	4	20	30	10	3.20	3.05
58	7.6	2	0	10	10	1.86	1.48
58	7.6	4	10	20	10	2.49	2.21
58	7.6	4	20	30	10	1.09	1.00
59	7.6	2	0	10	10	1.09	0.81
59	7.6	4	10	20	10	1.73	1.60
59	7.6	4	20	30	10	2.47	2.31
60	7.6	2	0	10	10	2.21	1.98
60	7.6	4	10	20	10	3.10	3.00
60	7.6	4	20	30	10	5.20	5.08

0308JHC20087012.707

1	7.6	2	0	10	10	7.38	5.25
1	7.6	4	10	20	10	2.58	1.96
1	7.6	4	20	30	10	1.49	1.22
2	7.6	2	0	10	10	1.90	1.59
2	7.6	4	10	20	10	2.16	1.79
2	7.6	4	20	30	10	0.92	0.64
3	7.6	2	0	10	10	3.03	2.30
3	7.6	4	10	20	10	1.10	0.87
3	7.6	4	20	30	10	0.77	0.59
4	7.6	2	0	10	10	1.60	1.38
4	7.6	4	10	20	10	1.58	1.42
4	7.6	4	20	30	10	1.59	1.45
5	7.6	2	0	10	10	2.05	1.80
5	7.6	4	10	20	10	1.22	1.11
5	7.6	4	20	30	10	2.23	2.11
56	7.6	2	0	10	10	2.64	2.21
56	7.6	4	10	20	10	1.78	1.62
56	7.6	4	20	30	10	0.80	0.58
57	7.6	2	0	10	10	1.50	1.33
57	7.6	4	10	20	10	1.51	1.40
57	7.6	4	20	30	10	0.91	0.81

	58	7.6	2	0	10	10	1.32	0.90
	58	7.6	4	10	20	10	0.62	0.58
	58	7.6	4	20	30	10	1.32	1.23
	59	7.6	2	0	10	10	0.79	0.59
	59	7.6	4	10	20	10	1.41	1.07
	59	7.6	4	20	30	10	0.92	0.80
	60	7.6	2	0	10	10	1.01	0.78
	60	7.6	4	10	20	10	1.44	1.25
0308JHC21087051.707	60	7.6	4	20	30	10	1.40	1.22
	1	7.6	2	0	10	10	1.58	1.42
	1	7.6	4	10	20	10	4.69	4.55
	1	7.6	4	20	30	10	1.39	1.38
	2	7.6	2	0	10	10	3.27	2.59
	2	7.6	4	10	20	10	3.59	3.30
	2	7.6	4	20	30	10	4.19	4.00
	3	7.6	2	0	10	10	1.77	1.50
	3	7.6	4	10	20	10	1.94	1.87
	3	7.6	4	20	30	10	1.20	1.10
	4	7.6	2	0	10	10	2.18	1.90
	4	7.6	4	10	20	10	5.54	5.19
	4	7.6	4	20	30	10	3.00	2.90
	5	7.6	2	0	10	10	3.05	2.95
	5	7.6	4	10	20	10	7.39	7.20
	5	7.6	4	20	30	10	3.10	3.00
	56	7.6	2	0	10	10	1.76	1.67
	56	7.6	4	10	20	10	4.00	3.89
	56	7.6	4	20	30	10	2.65	2.58
	57	7.6	2	0	10	10	2.21	1.99
	57	7.6	4	10	20	10	2.89	2.62
	57	7.6	4	20	30	10	4.23	4.00
	58	7.6	2	0	10	10	1.99	1.81
	58	7.6	4	10	20	10	5.47	4.82
	58	7.6	4	20	30	10	1.48	1.38
	59	7.6	2	0	10	10	2.50	2.10
	59	7.6	4	10	20	10	1.63	1.48
	59	7.6	4	20	30	10	2.75	2.61
	60	7.6	2	0	10	10	2.70	2.53
	60	7.6	4	10	20	10	4.27	4.18
	60	7.6	4	20	30	10	3.54	3.47
0308JHC21087052.707	1	7.6	2	0	10	10	1.92	1.38
	1	7.6	4	10	20	10	2.41	2.29
	1	7.6	4	20	30	10	3.30	3.16
	2	7.6	2	0	10	10	1.23	1.09
	2	7.6	4	10	20	10	2.26	2.11
	2	7.6	4	20	30	10	2.12	2.03
	3	7.6	2	0	10	10	1.78	1.57
	3	7.6	4	10	20	10	3.97	3.83
	3	7.6	4	20	30	10	4.69	4.53
	4	7.6	2	0	10	10	2.07	1.48
	4	7.6	4	10	20	10	0.88	0.76
	4	7.6	4	20	30	10	0.97	0.88
	5	7.6	2	0	10	10	1.57	1.40
	5	7.6	4	10	20	10	1.77	1.61
	5	7.6	4	20	30	10	2.90	2.84

56	7.6	2	0	10	10	0.95	0.80
56	7.6	4	10	20	10	1.02	0.97
56	7.6	4	20	30	10	0.30	0.24
57	7.6	2	0	10	10	0.83	0.60
57	7.6	4	10	20	10	0.75	0.61
57	7.6	4	20	30	10	0.79	0.65
58	7.6	2	0	10	10	0.54	0.48
58	7.6	4	10	20	10	1.02	0.90
58	7.6	4	20	30	10	0.48	0.40
59	7.6	2	0	10	10	2.88	2.11
59	7.6	4	10	20	10	2.50	2.20
59	7.6	4	20	30	10	1.56	1.38
60	7.6	2	0	10	10	0.59	0.52
60	7.6	4	10	20	10	2.21	2.12
60	7.6	4	20	30	10	1.98	1.89

Microbiology-Decomposition Data

Microbiology-decomposition data collected in 1970 at the Jornada Site is Grassland Biome data set A2U4008. Data were collected on form NREL-40. A sample data form and a listing of the field data follow.



GRASSLAND BIOME

U.S. INTERNATIONAL BIOLOGICAL PROGRAM

FIELD DATA SHEET - MICROBIOLOGY - DECOMPOSITION

DATE TYPE	SITE	INITIALS	DATE			TREATMENT	REPLICATE	PLOT SIZE	MATERIAL	DEPTH	DATE BURIED			NO. DAYS	WT. ORIGINAL	WT. RETRIEV.	WT. IGNITION	SOIL WT.	SOIL, IGNIT.		
			Day	Mo	Yr						Day	Mo	Yr								
1-2	3-4	5-7	8-9	10-11	12-13	14	15	16-19	21	23-24	26-27	28-29	30-31	33-35	37-41	43-47	49-53	55-59	61-65		
DATA TYPE																					
01 Aboveground Biomass																					
02 Litter																					
03 Belowground Biomass																					
10 Vertebrate - Live Trapping																					
11 Vertebrate - Snap Trapping																					
12 Vertebrate - Collection																					
20 Avian Flush Census																					
21 Avian Road Count																					
22 Avian Road Count Summary																					
23 Avian Collection - Internal																					
24 Avian Collection - External																					
25 Avian Collection - Plumage																					
30 Invertebrate																					
40 Microbiology - Decomposition																					
41 Microbiology - Nitrogen																					
42 Microbiology - Biomass																					
43 Microbiology - Root Decomposition																					
44 Microbiology - Respiration																					
SITE																					
01 Ale																					
02 Bison																					
03 Bridger																					
04 Cottonwood																					
05 Dickinson																					
06 Hays																					
07 Hopland																					
08 Jornada																					
09 Osage																					
10 Pantex																					
11 Pawnee																					
TREATMENT																					
1 Ungrazed																					
2 Lightly grazed																					
3 Moderately grazed																					
4 Heavily grazed																					
5 Grazed 1969, ungrazed 1970																					
6																					
7																					
8																					
9																					
SAMPLE MATERIAL																					
1 Cellulose																					
2 Litter																					
3 Standing dead																					
4																					
5																					

*** FIELD DATA ***

	1	2	3	4	5	6	7	8
	12345678901234567890123456789012345678901234567890123456789012345678901234567890							
4008RP 22077011	2 05	220670	0309.640313.8875.06422.77372.7373					
	2 10	220670	0309.640310.7101.93363.49453.3408					
	2 20	220670	0309.640312.0603.34844.31734.2632					
	2 30	220670	0309.640312.9924.74324.88514.8271					
	2 50	220670	0309.640314.1355.74334.21814.1561					
4008RP 22077011	1 05	220670	0420.42849.99409.80252.77372.7373					
	1 05	220670	0420.42719.18578.51172.77372.7373					
4008RP 11087011	2 05	220670	0509.640398.04090.32527.65127.267					
	2 10	220670	0509.6403101.2293.42522.81722.499					
	2 20	220670	0509.640378.20770.68039.97438.443					
	2 30	220670	0509.640387.45779.45733.76033.166					
	2 50	220670	0509.640351.36843.88237.63536.773					
4008RP 11087012	2 05	220670	0509.640387.69980.14327.65127.267					
	2 10	220670	0509.6403122.71114.4122.81722.499					
	2 30	220670	0509.640391.53083.65833.76033.166					
	2 50	220670	0509.640357.18949.30737.63536.773					
4008RP 11087011	1 05	220770	0210.42027.88407.730117.05216.827					
	1 05	220770	0210.42721.86751.819317.05216.827					
	1 05	220770	0210.428610.32510.11317.05216.827					
4008RP 11087011	1 05	220670	0500.42715.30235.218017.05216.827					
	1 05	220670	0500.42916.50176.399817.05216.827					
	1 05	220670	0500.42868.10507.987417.05216.827					

Aboveground Biomass Data

Aboveground biomass data collected in 1970 at the Jornada Site is Grassland Biome data set A2U0008. Data were collected on form NREL-01. A sample data form and a sample of the data follow.

FIELD DATA SHEET - ABOVEGROUND BIOMASS

DATA TYPE	SITE	INITIALS	DATE			TREATMENT	REPLICATE	PLOT SIZE	QUADRAT	CLIP-RANK	GROWTH FM.	GENUS	SPECIES	SUBSPECIES	PHENOLOGY	RANK	SACK NO.	DRY WT.	SPECIAL	DRY WT. SP.
			Day	Mo	Yr															
1-2	3-4	5-7	8-9	10-11	12-13	14	15	16-19	21-23	25	27	29-30	31-32	34	36-37	39-40	42-45	47-52	54-57	59-64
DATA TYPE 01 Aboveground Biomass 02 Litter 03 Belowground Biomass 10 Vertebrate - Live Trapping 11 Vertebrate - Snap Trapping 12 Vertebrate - Collection 20 Avian Flush Census 21 Avian Road Count 22 Avian Road Count Summary 23 Avian Collection - Internal 24 Avian Collection - External 25 Avian Collection - Plumage 30 Invertebrate 40 Microbiology - Decomposition 41 Microbiology - Nitrogen 42 Microbiology - Biomass 43 Microbiology - Root Decomposition 44 Microbiology - Respiration																				
VE 01 Ale 02 Bison 03 Bridger 04 Cottonwood 05 Dickinson 06 Hays 07 Hopland 08 Jornada 09 Osage 10 Pantex 11 Pawnee																				
PHENOLOGY 01 Germinated or sprouted 02 Early vegetation 03 Prebud 04 Bud stage 05 Early bloom 06 Mid-bloom 07 Full bloom 08 Late bloom 09 Milk stage 10 Dough stage 11 Ripe seed 12 Past ripe 13 Stem cured 14 Vegetative regrowth 15 Regrowth flowering 16 Regrowth ripe seed 17 Standing dead 18 Winter dormant																				
TREATMENT 1 Ungrazed 2 Lightly grazed 3 Moderately grazed 4 Heavily grazed 5 Grazed 1969, ungrazed 1970																				
CLIP RANK 1 Harvested 2 Harvested and ranked 3 Ranked																				
GROWTH FORM 1 Perennial grass 2 Annual grass 3 Sedge, rush, etc. 4 Annual forb 5 Biennial forb 6 Perennial forb 7 Half-shrub 8 Shrub 9 Tree 0 Miscellaneous																				

+++ EXAMPLE OF DATA +++

1 2 3 4 5 6 7 8
1234567890123456789012345678901234567890123456789012345678901234567890

0108RJ830 77012.707

1	2	1	ROFR	14	1	1	29.90
1	2	4	CRCR	17	2	2A	5.76
1	2	4	CHTN	03	3	2	.19
1	2	4	APRA	17	4	2C	.15
1	2	4	SAKA	02	5	2D	.10
1	2	4	FRAR	12	6	2R	.01
2	2	7	GUJA	14	1	3	42.65
2	2	1	ROFR	14	2	4	58.61
2	2	4	CRCR	17	3	5A	2.82
2	2	4	SAKA	02	4	5C	.12
2	2	4	CHTN	03	5	5R	.06
3	2	1	ROFR	14	1	6	14.39
3	2	1	SPFI	14	2	7	.82
3	2	4	FRAR	12	3	7A	.42
3	2	4	CRCR	13	4	7D	.44
3	2	4	NAHT	17	5	7C	.30
3	2	4	SAKA	02	6	7R	.10
4	2	1	ROFR	14	1	8	4.89
4	2	4	FRAR	12	2	9	2.25
4	2	4	NAHT	13	3	10C	.21
4	2	4	CHTN	03	4	10R	.02
4	2	4	CRCR	17	5	10	.31
4	2	6	DIWT	03	6	10A	.51
5	2	8	YUFI	14	1	11	92.55
5	2	4	SPFI	14	2	12R	.74
5	2	4	DIWT	03	3	12	.30
5	2	4	NAHT	17	4	12D	.45
5	2	4	CHTN	03	5	12A	.13
5	2	4	CRCR	13	6	12F	.08
56	2	1	ROFR	14	1	13	34.39
56	2	4	LTAN	12	2	14	.80
56	2	4	HEIT	02	3	14A	.49
56	2	4	CRCR	17	4	14D	.32
56	2	6	CARA	16	5	14C	.07
56	2	4	NAHT	17	6	14R	.02
57	2	1	ROFR	14	1	15	29.21
57	2	1	SPFI	14	2	16A	2.43
57	2	4	SAKA	02	3	16	.89
57	2	4	CHTN	03	4	16R	1.01
57	2	4	NAHT	17	5	16C	.02

58	2	1	ROEP	14	1	17	11.61
58	2	4	CRCR	17	2	18D	3.48
58	2	4	SAKA	02	3	18A	.79
58	2	4	STEX	13	4	18F	.16
58	2	1	SPFI	14	5	18	.60
58	2	4	CHTN	03	6	18C	.29
58	2	4	NAHT	17	7	18B	.09
58	2	4	APPA	13	8	18F	.01
59	2	1	ROEP	14	1	19	33.93
59	2	1	SPFI	14	2	20F	7.71
59	2	4	CHTN	03	3	20A	1.17
59	2	4	CRCR	17	4	20D	.65
59	2	4	SPFI	03	5	20C	.33
59	2	4	APPA	16	6	20B	.19
59	2	4	NAHT	17	7	20	.10
60	2	1	SPFI	14	1	21	3.17
60	2	1	ROEP	14	2	22	4.07
60	2	4	CHTN	03	3	23	1.31
60	2	4	CRCR	17	4	24A	1.80
60	2	4	NAHT	17	5	24	.35
60	2	4	SAKA	02	6	24D	.38
60	2	4	STEX	13	7	24C	.09
60	2	4	FRAR	11	8	24D	.20
6	3	1	ROEP	14	1		
6	3	1	SPFI	14	2		
6	3	4	CRCR	13	3		
6	3	4	APPA	13	4		
6	3	4	FRRO	17	5		
6	3	6	CARA	14	6		
6	3	4	SAKA	02	7		
6	3	4	MTSC	1	02	8	
6	3	2	MTSC	4	02	9	
6	3	4	MTSC	2	02	10	
7	3	7	GUJA	14	1		
7	3	1	ROEP	14	2		
7	3	4	SAKA	02	3		
7	3	4	CHTN	02	4		
7	3	4	MTSC	1	02	5	
7	3	4	MTSC	2	02	6	
8	3	7	YUFI	14	1		
8	3	7	GUJA	14	2		
8	3	1	SPFI	14	3		
8	3	4	FRAR	02	5		
8	3	1	ROEP		4		
8	3	6	CARA		5		
8	3	4	CRCR	13	6		
8	3	4	MTSC	1	02	7	
8	3	4	MTSC	2	01	8	
8	3	4	MTSC	3	02	9	

Invertebrate Data

Invertebrate data collected in 1970 at the Jornada Site is Grassland Biome data set A2U3008. Data were collected on form NREL-30. A sample data form and a listing of the data follow.



GRASSLAND BIOME
U.S. INTERNATIONAL BIOLOGICAL PROGRAM
FIELD DATA SHEET - INVERTEBRATE

DA TYPE	SITE	INITIALS	DATE			TREATMENT	REPLICATE	PLOT SIZE	QUADRAT	TROPIC	HOST	ORDER	FAMILY	GENUS	SPECIES	SUBSPECIES	LIFE STAGE	TOTAL NO.	DRY WT.	NO. WEIGH
			Day	Mo	Yr															
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21
DATA TYPE 01 Aboveground Biomass 02 Litter 03 Belowground Biomass 10 Vertebrate - Live Trapping 11 Vertebrate - Snap Trapping 12 Vertebrate - Collection 20 Avian Flush Census 21 Avian Road Count 22 Avian Road Count Summary 23 Avian Collection - Internal 24 Avian Collection - External 25 Avian Collection - Plumage 30 Invertebrate 40 Microbiology - Decomposition 41 Microbiology - Nitrogen 42 Microbiology - Biomass 43 Microbiology - Root Decomposition 44 Microbiology - Respiration SITE 01 Ale 02 Bison 03 Bridger 04 Cottonwood 05 Dickinson 06 Hays 07 Hopland 08 Jornada 09 Osage 10 Pantex 11 Pawnee TROPIC 0 Unknown 1 Plant feeding (tissue) 2 Plant feeding (sap) 3 Plant feeding (pollen and nectar) 4 Plant feeding (seed) 5 Predator 6 Parasitoid 7 Parasite 8 Scavenger 9 Non-feeding stage TREATMENT 1 Ungrazed 2 Lightly grazed 3 Moderately grazed 4 Heavily grazed 5 Grazed 1969, ungrazed 1970 6 7 8 9 LIFE STAGE 00 Undetermined 10 Adult 20 Pupae 30 Egg 40 Nymph or Larva 41 Nymph or Larva, early 42 Nymph or Larva, middle 43 Nymph or Larva, late 50 Instar 51 Instar, 1st 52 Instar, 2nd 53 Instar, 3rd																				

+++ FIELD DATA +++

1		2		3		4		5		6		7		8	
1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890	1234567890
3008MC 14077011 0.5															
	1					ACAR3	10			4	.00028	10			
	2					ACAR3	10			2	.00028	10			
	2					HYME15	10			1	.00077	1			
	2 5					COLECICI	10			1	.00418	1			
	3					ACAR1	10			1					
	3					ACAR3	10			5	.00028	10			
	3					DIPT1	10			1	.00022	1			
	3 2					HEMIMIRI	10			1					
	3					LEPI1	10			1	.00031	1			
	3 2					THY2THRICHISIM	10			1					
	4					ACAR3	10			1	.00028	10			
	5 2					HOMOCICI	1 10			1	.00029	1			
	5					ACAR3	10			1	.00028	10			
3008MC 14077051 0.5															
	1					ACAR3	10			2	.00151	16			
	1					DIPT2	10			1	.00008	1			
	1 2					HOMOCOCC	10			1					
	1					HYMEFORM	1 10			2	.00021	4			
	2					ACAR3	10			3	.00151	16			
	2					HYME16	10			1	.00034				
	2					HOMOPSEU	10			1	.00017	1			
	3 2					HEMITING	10			3	.00122	7			
	3					DIPT3	10			1	.00063	1			
	3					DIPT4	10			3	.00131	1			
	4					HYMEFORM	1 10			2	.00021	4			
	4 2					HEMITING	10			4	.00122	7			
	4					ACAR3	10			8	.00151	16			
	4					ARAN1	1 10			1	.00027	1			
	4 2					COLECURC	2 10			4	.00062	4			
	5 2					HOMOCICI	1 10			1	.00029	1			
	5					DIPT7	10			1	.00036	1			
	5					DIPT5	10			1	.00061	1			
	5					ACAR3	10			4	.00151	16			
	5 1					ORTHACRI	10			1	.00054	1			
3008MC 14077052 0.5															
	1					LEPI2	10			1	.00062	1			
	2					ARAN2	10			1	.00258	1			
	2					HYMEFORM	1 10			2	.00012	2			
	2 2					HOMOCICI	1 10			11	.00212	11			
	2					HOMOCICI	3 10			1	.00033	1			
	2					HOMOCICI	4 10			1	.00048	1			
	2					HOMOCICI	1 40			4	.00097	4			
	2 2					HEMITING	10			2	.00081	4			
	2					ACAR1	10			4					
	2					ACAR3	10			5	.00083	25			
	2 2					COLECURC	2 10			9	.00246	13			
	2					COLE4	10			1	.00024	1			
	2					DIPT6	10			1	.00111	1			
	2					DIPT8	10			1	.00295	1			
	2 5					ARAN22	10			1					

	3	ACAR3	10	1 .00083	25
	4 5	ARAN4	10	1 .00013	1
	4	ACAR2	1 10	1 .00005	2
	4	ACAR3	10	19 .00083	25
	4 2	HEMITING	10	1 .00081	4
	4	LEPITOWI	40	1 .00149	1
	4	HEMILYGANYS	10	1	
	5 2	COLECURC	2 10	6 .00246	13
	5 2	HEMITING	10	1 .00081	4
3008MC 30077011 0.5	1	ACAR3	10	9 .00203	41
	1	HYMNFORM	1 10	1 .00008	4
	2 2	HEMITING	10	1 .00030	1
	2	ACAR3	10	2 .00203	41
	2	HYMNFORM	2 10	1 .00137	1
	2	HOMOCICI	1 10	1 .00051	1
	2	HOMOPSEU	10	1 .00009	1
	3	ACAR3	10	11 .00203	41
	3	HYMN7	10	1	
	3 5	ARAN	4 10	1 .00004	1
	4	ACAR3	10	0 .00203	1
	4	HYMN5	10	1 .00209	1
	4	HYMNFORM	7 10	1 .00102	1
	4 2	THY2PHLOHAP	10	1	
	4	HYMNFORM	3 10	1 .00002	1
	5	ACAR1	10	1	
	5	ACAR2	10	2 .00004	2
	5	HYMNFORM	1 10	3 .00008	4
	5 2	HOMOCICI	1 10	2 .00052	2
	5 2	HOMOCOCC	10	2 .00002	2
	5	ACAR3	10	15 .00203	41
	5	ARAN	5 10	1 .00011	1
	5	DIPT9	10	1 .00187	1
	5	HYMN4	10	1 .00051	1
	5	HOMOCICI	2 10	1 .00020	1
3008MC 30077012 0.5	1 2	HEMITING	10	2 .00030	1
	1	HYMEFORM	1 10	1 .00019	4
	1	ACAR3	10	20 .00281	109
	1 2	HEMI1	10	2 .00061	2
	1 2	HOMOCICI	1 10	2 .00080	4
	1	COLECHDY	10	1 .00025	1
	1 5	COLECOCC	10	1 .00052	1
	1	HYME1	10	1 .00860	2
	1	HYME2	10	1 .00044	1
	1 5	ARAN	6 10	1 .00079	1
	1 5	ARAN	10	1 .00006	1
	2 5	ARAN	8 10	1 .00003	1
	2	ACAR3	10	32 .00281	109
	2	COLE3	10	1 .00043	1
	2 2	HOMOCICI	1 10	1 .00080	4
	2	HYMEFORM	2 10	1 .00432	3
	2	HYME1	10	1 .00860	2
	3	ACAR3	10	3 .00281	109
	3	HYME5	10	1 .00349	1
	3	HYME6	10	1 .00406	1

	4	ACAR3	10	25	.00281	109
	4	HYMEFORM	2	10	2	.00432 3
	4 1	HYMEEURY	10	2	.00011	1
	4	COLENITI	10	1	.00009	1
	4	THYILEP2	10	1	.00016	1
	4	HOMOCERC	10	1	.00072	1
	5	ACAR3	10	29	.00281	109
	5	HYMEFORM	1	10	3	.00019 4
	5	HOMOCICI	1	10	1	.00080 4
3008MC 30077051 0.5	1	ACAR3	10	8	.00191	25
	1 5	ARAN	9	10	1	
	1	HYMEFORM	2	10	2	.00407 6
	2 2	HEMITING	10	8	.00197	8
	2	HOMOCICI	1	10	1	.00110 3
	2	HYMNFORM	5	10	1	
	2	HYMN3	10	1		
	2 5	THY2AELD	10	1		
	2	COLECHRY	10	1	.00023	1
	2	DIPICFCI	10	1		
	2	HOMOPSEU	10	1		
	3	ACAR3	10	6	.00191	25
	3 5	ARAN	1	10	1	
	3 5	ARAN	10	10	1	
	3 2	HOMOCICI	1	10	6	.00110 3
	3 5	HOMOCOCC	10	1		
	3 2	COLECURC	1	10	3	
	3	COLECHRY	10	1	.00023	1
	3	COLENITI	10	1	.00004	1
	3	COLL	1	10	1	
	3	HYMEFORM	1	10	9	.00043 9
	3	HYMEFORM	2	10	1	.00407 6
	4	COLEHIST	10	1		
	4	HYMEMUTI	10	1		
	4	HYMEFORM	1	10	7	.00043 9
	4	HYMEFOR4	2	10	3	.00407 6
	4	HEMICYDN	10	1		
	4	ACAR3	10	15	.00191	25
	5	COLECURC	2	10	9	
	5	COLENITI	10	1	.00004	1
	5	HYMEFORM	1	10	4	.00043 9
	5	LEPI3	40	1		
	5	THYILEP2	10	2		
	5	ACAR3	10	22	.00191	25
3008MC 30077052 0.5	1	ACAR3	10	6	.00187	40
	1 5	ARAN5	10	1		
	1 5	ARAN1	10	1	.00054	2
	1 2	HOMOCICI	1	10	6	.00202 6
	1 2	HOMOCICC	10	1		
	1 2	COLECURC	2	10	3	
	1	COLENITI	10	1	.00030	4
	1	HYMEFORM	1	10	9	.00366 100
	1	HOMOPSEU	10	1		
	1	COLL1	10	1		

2	ACAR3	10	3	.00187	40
2	HOMOCIC1	1 10	1	.00202	6
2	HYMEFORM	2 10	2	.00277	2
2	HYMEFORM	1 10	1	.00366	100
3	ACAR3	10	9	.00187	40
3	ARAN5	10	1		
3	HOMOCIC1	1 10	1	.00202	6
3	ACAR2	10	1		
4	ACAR3	10	22	.00187	40
4	ARAN1	10	1	.00054	2
4	HYMEFORM	1 10	196	.00366	100
4	HOMOCIC1	1 10	5	.00202	6
4	COLENTI	10	3	.00030	4
4 5	NEURMYRM	40	1		
4	HOMOCIC1	40	1	.00019	1
5	ACAR3	10	3	.00187	40
5	ACAR3	10	81	.00604	100
5	COLL1	10	6		
5 2	HOMOCIC1	1 10	2	.00079	3
5	HYMNFORM	1 10	2	.00102	17
5 2	HEMIMIRI	40	1	.00037	2
1	COLETENE	10	2	.00844	2
1	COLE1	10	1		
1	ACAR3	10	5	.00130	25
2	ACAR3	10	2	.00130	25
3	COLE4	10	1		
3	ACAR3	10	22	.00130	25
3 5	ARAN11	10	1		
3 2	THY2PHLOHAP	10	1		
3 1	LEPITORT	40	1		
4	COLETFNE	10	1		
4	ACAR3	10	1	.00130	25
5	ACAR3	10	1	.00130	25
5 5	ARAN12	10	1		
5 2	HOMOCIC1	1 10	1	.00039	1
5	HYMNFORM	1 10	1		
5	COLE2	10	1		
3008MC 10087012 0.5	HYMEFORM	3 10	1		
1	LEPI3	10	2		
1	HOMOCIC1	2 10	3	.00044	1
1	ORTHACRI	2 10	1		
2	HYME11	10	1		
2	ACAR3	10	13	.00130	20
2 5	ARAN13	10	1	.00024	1
2	COLETFNE	10	1	.00884	2
2 2	HOMOCIC12	40	2		
2	HOMOCIC11	10	1	.00044	1
2	THYMACH	10	1		
2	ACAR2	10	1		
2	HYMEFORM	1 10	1		
2	HEMIMIRI	10	1		
2	THY2PHLOHAP	10	1		
3	COLETFNE	10	1	.00884	2
3 1	COLECHRY	10	1	.00021	1
3	ACAR3	10	6	.00130	20
3 1	ORTHACRI	1 10	1		

	4	HEMII	10	1		
	4	ACAR3	10	23	.00130	20
	4	COLE2	10	1		
	4	COLE1	10	1		
	4 2	HOMOCICI	2 10	1		
	4 2	HOMOCICI	2 40	1		
	4 2	HOMOCOCC	10	1		
	4	HOMOCICI	1 40	1		
	4	HOMOFORM	1 10	1		
	4	HOMOFORM	2 10	2	.00254	2
	4	HOMOFORM	4 10	1		
	4 1	LEPITORT	40	1	.00079	1
	4	LEPITORT	42	1		
	4 2	THY2THRIBRA	10	1		
	4	HYME9	10	1		
	4	HEMIMIRI	10	1		
	4	ACAR1	10	1		
	5	ACAR3	10	5	.00130	20
	5	HOMOPSEU	10	1		
3008MC 10087051 0.5	1	ACAR3	10	5	.00066	12
	1 5	ARAN14	10	1		
	1 2	COLECURC	1 10	3		
	1	HYMEFORM	1 10	2		
	1 1	ORTHGRY2	10	1	.00014	1
	2 2	HOMOCICI	1 10	1	.00109	3
	2 2	HOMOCICI	2 10	1	.00123	1
	2	HYMNFORM	1 10	1		
	2 2	HEMITING	10	1		
	2	ACAR3	10	1	.00066	12
	2	COLEMELO	10	1		
	3	ACAR3	10	3	.00066	12
	4	ACAR3	10	1	.00066	12
	4	DIPT10	10	1		
	4	DIPTCFCI	10	1		
	5	ACAR3	10	9	.00066	12
	5	ARAN1	10	1	.00004	1
	5	LEPITORT	40	1	.00750	1
	5 1	COLECHRY	10	1		
	5 5	COLECOCC	10	1		
	5	COLENIPI	10	1		
	5	COLEMYLA	10	1		
	5	COLETENE	10	1	.00462	1
	5	HOMOCICI	1 10	2	.00103	3
	5	ISOP	10	1		
	5	ACAR2	3 10	1		
3008MC 10087052 0.5	1	DIPT11	10	1		
	1	ACAR3	10	32	.00604	100
	1	HYMEFORM	1 10	13	.00102	17
	1	HYMEFORM	2 10	4	.00687	5
	1	LEPITORT	40	1	.00625	1
	1	THYIMACH	10	1		
	1 2	HOMOCICI	1 10	1	.00079	3
	1	HOMOCICI	1 40	1		
	1	HOMOCICI	2 40	2	.00026	2

2	COLEMORD	10	1		
2	HYME12	10	1		
2	HYME13	10	1		
2	HYME14	10	1		
2	HYMEFORM	1 10	3	.00102	17
2	HEMI1	10	1		
2 2	HOMOCIC1	1 10	1	.00079	3
2	ACAR3	10	7	.00604	100
4 5	ARAN6	10	1	.00108	2
4	DIPT12	10	1		
4	HEMILYGAGEO	10	1		
4	HYMEFORM	1 10	1	.00102	17
4	HYMEFORM	2 10	1	.00687	5
4	HYME10	10	1		
4 2	HEMITING	10	1		
4 2	HEMIMIRI	10	1	.00037	2
4 2	HOMOCIC1	1 40	1		
4	HOMOCOCC	10	1		
4	COLLI	10	1		
4	THYMACH	10	1		
4	ACAR3	10	11	.00604	100
5 5	ARAN1	10	2	.00084	2
5 5	ARAN6	10	1	.00108	2
5	ACAR1	10	1		
5	ACAR2	2 10	1		
3008MC 20087011 0.5	ACAR3	10	4	.00136	8
2	ACAR3	10	1	.00136	8
2	ORTHACRI	3 10	1		
2	ORTHACRI	3 40	1		
2	HOMOPSEU	1 10	1		
3	ACAR3	10	1	.00136	8
4	ACAR3	10	1	.00136	8
4	ARAN1	10	1		
5	ACAR1	10	2		
5	ACAR2	10	1		
5	ACAR3	10	1	.00136	8
3008MC 20087012 0.5	ACAR3	10	6	.00850	50
1 5	ARAN6	10	1	.00324	3
1	ARAN15	10	1		
1	ARAN16	10	1		
1	ARAN17	10	1		
1 2	COLECURC	2 10	1	.00020	1
1	COLENTI	10	1	.00004	1
1	COLE6	10	1		
1 2	HOMOCIC1	2 10	2	.00010	1
1 2	HOMOCIC1	2 40	2	.00010	2
1 2	HOMOCIC1	1 10	11	.00195	10
1 2	HOMOCIC1	1 40	4	.00092	4
1 1	ORTHGRY2	10	4		
1	HYMEFORM	1 10	3		
1	HYMEMUTI	10	1		
1	HYME15	10	3		
1	LEPI3	10	2		
2	DIPT13	10	1		
2	ACAR3	10	3	.00850	50
2	COLETEVE	10	2	.00887	2

3008MC 20087051 U.S

3	ACAR3	10	8	.00850	50
3 1	ORTHACRI	3 10	1		
3 5	ARAN6	10	1	.00324	3
4	ACAR3	10	7	.00850	50
5	ACAR1	10	3		
5	ACAR2	10	3		
5	ACAR3	10	28	.00850	50
5	ARAN6	10	1	.00324	3
5	ARAN18	10	1		
5	ARAN1	10	2	.00044	2
5	COLECHRY	10	1		
5	COLL1	10	1		
5	ORTHGRY2		50	2	
5	THY2THRI	10	1		
5	HOMOCIC1	2 10	1	.00010	1
5	HEMIREDU	10	1		
1	ACAR3	10	5	.00180	50
1	ACAR2	2 10	1		
1 5	ARAN6	10	1	.00131	3
1 2	THY2PHLO	10	1		
1 2	HOMOCIC1	2 10	1	.00099	1
2	ACAR3	10	13	.00180	50
2 5	ARAN6	10	1	.00131	3
2	COLEMEL0	10	1		
2	COLL1	10	4		
2 2	THY2PHLOHAP	10	2		
2	THY1MACH	10	1		
2	HEMITING	10	1	.00154	9
3	ACAR3	10	14	.00180	50
3	COLL1	10	1		
3	DPT14	10	1		
3	HYMEFORM	2 10	2	.00463	3
3 2	HEMITING	10	1	.00154	9
4 2	HEMITING	10	1	.00154	9
4	HEMITING	40	4	.00032	7
4	ACAR3	10	6	.00180	50
4 5	ARAN20	10	1		
4	ARAN6	10	1	.00131	3
4	LEPITORT	40	2	.00043	1
4 2	HOMOCIC1	2 40	1		
4 2	THY2PHLOHAP	10	4		
4 2	THY2PHLOHAP	40	2		
4	HYMEFORM	2 10	1	.00463	3
5	ACAR1	10	1		
5	ACAR3	10	33	.00180	50
5	HEMITING	10	7	.00154	9
5	HEMITING	40	2	.00032	7
5	COLENTI	10	1	.00010	1
5	THY2PHLOHAP	10	2		
5	THY2PHLOHAP	40	2		
5	COLE7	10	1		
5	LEPIS	40	1		
5	HOMOCIC1	1 10	5	.00018	4

3008MC 20087052 0.5	1 2	HEMITING	10	2	.00082	7
	1	ACHR3	10	3	.00156	50
	2 1	ORTHACRI	4 10	1		
	2	HEM15	10	1		
	2	ACHR2	10	1		
	2	ACAR3	10	6	.00156	50
	2	LEPI4	10	1		
	3 2	HEMITING	10	3	.00082	7
	3	ACAR3	10	11	.00156	50
	4 2	HOMOCICI	2 40	2	.00014	5
	4	COLECHRY	10	1	.00549	1
	4	ACAR3	10	11	.00156	50
	4 2	HEMITING	10	2	.00082	7
	4	ORTHTETT	10	1		
	5	ACAR2	10	1		
	5	ACAR3	10	28	.00156	50
	5	ARAN23	10	1		
	5	ARAN24	10	1		
	5	ARAN25	10	1		
	5	COLETENE	10	1	.00757	1
	5	COLL1	10	1		
	5	HYMEFORM	2 10	1	.00157	1
	5	HOMOCICI	2 40	3	.00014	5
	5	HOMOCICI	1 10	2	.00047	2
	5	HOMOCICI	2 10	3	.00024	1
	5	HEMIREDU		10	1	
	5	ACHRI	10	3		