

2013

Available Edible Fodder Survey



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Field survey 2013

1.0 Introduction

As part of the monitoring program at Knepp Estate three field surveys were conducted in June, August and October 2013 after a ragwort risk assessment was created for the grazing livestock in the southern block. This document required an assessment in June to survey the southern block and as part of the monitoring program at Knepp this survey was repeated in August and October. The aim of these surveys was to establish the coverage of available edible fodder in the southern block of the estate and to monitor the grazing livestock units (LSUs). All grasses, clover and forbs were classed as available edible fodder. Ragwort, fleabane, thorny scrub and leafy scrub were not classed as edible fodder. The total area of the southern block covers 450 hectares.

2.0 Methodology

The surveys were carried out by one person to avoid any discrepancies of opinions. As each field was entered two photographs were taken. Fields with low vegetation were surveyed by walking through the middle. Fields with higher vegetation such as scrub and trees required travelling along the perimeter accompanied with a walk through the middle, as far into the scrub as possible, in order to achieve a clear picture of the ground cover. The figures were assumed to be 70% for the lags as these tended to be grassy areas surrounding water. These may have been difficult to access.

Woodland areas were not included in the survey and this will cause the total area figures to be lower than those originally included in the ragwort risk assessments. In each field the total cover of ragwort, fleabane, thorny scrub and leafy scrub were recorded and then a guestimate of the total available edible fodder was noted. Ragwort and fleabane were recorded due to their high levels of dominance in the fields. Thorny scrub included blackthorn (*prunus spinosa*), common hawthorn (*crataegus monogyna*), midland hawthorn (*crataegus laevigata*) some of which are hybrids, dog rose (*rosa canina*) and brambles (*rubus fruticosus*). The leafy scrub was mostly willow (*salix cinerea*). The fields were assessed by recording the main herb cover, ragwort or fleabane and scrub cover, which was awarded a 1-3 for little to none present, 4 – 6 suggested a moderate coverage and 7 -10 was given for dominant coverage. The available edible fodder was recorded as a percentage cover of the whole field. Bare ground was also taken into account when recording the percentage cover of available edible fodder.

The results were collected in the field and entered onto a spreadsheet which was then imported into ArcGIS 10.0.

3.0 Results

In total 76 fields were included in the survey this covered 381.8Ha of which 200.9Ha was classed as available fodder in June, 145.9Ha in August and 211.98 in October.

3.1 June Survey Results

Of the 76 fields only 5 fields were dominated by ragwort. 39 fields were dominated by fleabane. 8 fields were thorny scrub dominant and 13 fields were leafy scrub dominant. 53 fields had very little ragwort present and 27 had very little fleabane in (0-3). Out of the 76 fields, 40 fields were recorded as having 70% or more available edible fodder (92.82Ha). 13 fields had 30% or less available fodder which totalled 14Ha.

3.2 August Survey Results

The results from the august survey show a decline in the available fodder. The available fodder estimated in the southern block covers 145.1Ha. 15 fields were classed as having above 70% available fodder this came to 48.45Ha. 31 fields had 30% or less available fodder totalling 31.5Ha.

12 fields were dominated by ragwort, 45 were dominated by fleabane, 8 by thorny scrub and 16 by leafy scrub. 18 fields had very little fleabane in (0-3) and 37 fields had very little ragwort in.

3.3 October Survey Results

The results from the October survey show an increase in the percentage of available fodder. The estimated area of available fodder covers 211.98 hectares. 45 fields had very little ragwort whilst only 2 fields were dominated. 35 fields (169 hectares) were dominated by fleabane and only 7 fields had very little sign of fleabane. By October the fleabane had died but was still present and effecting the late autumn grass growth.

3.4 Changes

An overall comparison between the results gathered from August and June show a loss of 55.9Ha of available grazing. 32 fields became dominated by fleabane between June and August and the number of fields with 70% or more available fodder decreased from 40 to 29 whilst the number of fields with 30% or less grazing more than doubled from 13 fields to 31, 14Ha to 31.5Ha.

From these results the livestock units of the cattle, horses and pigs were calculated using data from John Nix's definitions (Nix, J. 2009). Nix's definitions did not include the livestock units for any of the three deer species present; this was found from the National farm survey carried out by the University College of Dublin (ucd.ie, 2007). With these figures the grazing livestock unit was calculated by totalling the livestock units and dividing by the area. This produced the result of 0.64LSUs for the whole area. The results for the livestock density of 'farmed' livestock only, that is, excluding rabbits and roe deer is 0.7LSU in June, 0.64 in August and 0.4 in October.

The results from October show the area of available fodder increased by 66.88Ha during September and October.

Table 1. The number of animals present and their livestock unit

Animal	Numbers in June	Numbers in August	Numbers in October	Livestock Unit
Cattle				
0-12 months	37	30	34	0.34
12-24 months	35	30	14	0.65
Over 24 months	87	36	41	0.8
Horses	20	20	9	0.8
Pigs	10	4	31	0.18
Red deer	9	9	9	0.25
Fallow deer	120	120	120	0.13
Roe deer	80	80	80	0.7
Rabbits	3800	3800	3800	0.02
Totals (excl rabbits and roe)	140.58	93.07	84.09	
(incl rabbits and roe)	272.58	225.07	216.09	

The reduction in the area of available fodder changes the grazing units from 1.2LSU in June to 1.7LSU in August. These results are also altered by the presence of estimated rabbits and roe deer numbers. If these figures are excluded from the survey it causes the grazing livestock units drop to 0.7 LSU in June and 1 LSU in August.

Table 2. Table showing the results of the June, August and October surveys

	June Survey	August Survey	October
The total available area (hectares)	387.7	387.7	387.7
Available grazing (hectares)	200.94	145.09	211.95
Grazing Livestock units for all	272.58	225.07	216.09
Grazing Livestock Units (livestock only)	140.58	93.07	84.09
Total LSU /Ha	0.7	0.58	0.56
Available LSU /Ha	1.36	1.55	1.02
Total LSU /Ha (livestock only)	0.36	0.24	0.22
Available LSU /Ha (livestock only)	0.7	0.64	0.4

Discussion

The original concern before this survey was the amount of ragwort on the site. The results show that the ragwort should not be a cause for concern this year and only needs to be controlled under the injurious weeds act 1959. Fleabane appears to be the dominant 'weed' in the southern block this year. The action of controlling the ragwort has had an effect on the density of fleabane. It was noted that the fleabane had started growing in the field margins that were topped within the 3 weeks prior to the August survey.

The results from the LSU calculations are higher than expected. These figures are not higher than the HLS scheme requirements of being below 0.75. The number of livestock grazing units on the area has doubled since the ragwort risk assessment document was produced. A new risk assessment can be created to include these new figures.

The figures for the rabbit and roe deer numbers are estimated by the gamekeeper by assuming 50 rabbits per field, this population needs to be controlled as they have a high input into the LSU figures and this impact could be affecting the available food source for the livestock. The rabbit and the roe deer could be included in the species list sold from the estate for meat.

With the information provided by this report and information from the gamekeepers and stockman the risk of ragwort poisoning remains at a low level. There is at least 50% available fodder in the southern block for livestock

There is a 15% drop in the available fodder between June and August. The cause of this drop is the increase in fleabane and ragwort density.

Fleabane is a common native plant in England and is not thought of as an injurious weed like ragwort, though it grows fast and dominates like the aforementioned. It would seem in the situation on the southern block it is thriving and dominating the fields. A difference was noted between the plant structure seen in June and August. In June the plant grew tall and branchless, by August the plant was branching out providing a more dense covering from this plant. The reduction in grazing was due to both the expansion of the plant itself and the expansion of its distribution across the site.

References

Nix, J. 2009. *Farm Management Pocketbook*. 39th Ed. Corby: The Andersons Centre.

Table 3. Field results of June survey

Field name	Ha	Acres	SP5 net area	Ragwort	Fleabane	Thorny Scrub	Leafy Scrub	Available fodder	Available fodder area
27 Acres	10.987	27.15	9.50	2	7	6	6	50%	4.75
Barn field	2.918	7.21	2.86	8	0	3	3	35%	1.001
Bentons	1.796	4.44	1.85	2	6	1	1	60%	1.11
Bentons Lane 1	15.242	37.66	15.16	0	5	7	5	70%	10.612
Bentons Lane 3	4.041	9.99	3.75	1	7	4	8	50%	1.875
Bentons Place	2.562	6.33	2.48	3	0	0	0	75%	1.86
BH 10	4.289	10.60	4.26	1	10	1	1	30%	1.278
BH 11 (N)	3.665	9.06	2.66	1	9	1	4	20%	0.532
BH 12	2.041	5.04	1.50	1	7	1	10	65%	0.975
BH 13	5.765	14.25	5.76	2	7	1	0	50%	2.88
BH 4	6.507	16.08	6.30	4	7	8	3	40%	2.52
BH 5	3.978	9.83	3.92	10	0	1	0	60%	2.352
BH 6	6.840	16.90	6.75	4	5	5	1	80%	5.4
BH 7	2.177	5.38	2.21	5	1	3	6	70%	1.547
BH 8	9.414	23.26	9.05	1	8	2	10	25%	2.2625
BH 9	6.438	15.91	6.23	1	8	2	10	40%	2.492
BH B	2.981	7.37	3.03	3	0	0	0	85%	2.5755
BH C	3.286	8.12	3.28	3	1	1	0	80%	2.624
BH D	2.287	5.65	2.30	0	6	5	0	60%	1.38
BH E	5.732	14.16	5.69	3	7	4	3	65%	3.6985
BH F	2.097	5.18	2.09	0	4	4	0	80%	1.672
BH 11 (S)			0.50	1	9	1	7	15%	0.075

Blacksmiths	5.798	14.33	5.50	0	8	8	1	75%	4.125
Broomers Corner	16.386	40.49	16.33	1	7	3	7	50%	8.165
Bull Field	3.153	7.79	3.16	5	7	2	0	40%	1.264
Crabtree & Newbarn 7	10.025	24.77	9.97	4	7	7	1	50%	4.985
Dial Post 1	4.670	11.54	4.49	2	8	4	0	35%	1.5715
Dial Post 2	4.620	11.42	4.40	0	8	1	1	35%	1.54
Fresco East	5.791	14.31	5.50	5	7	2	1	50%	2.75
Fresco West	4.920	12.16	4.70	3	5	1	1	50%	2.35
Hammer	4.064	10.04	4.03	2	7	3	8	35%	1.4105
Hampshires 1	7.108	17.56	7.02	1	7	7	1	50%	3.51
Hampshires 2	5.749	14.21	5.69	0	7	6	5	25%	1.4225
Hampshires Buildings Big	4.211	10.41	3.85	4	1	0	0	90%	3.465
Hampshires Buildings small	2.860	7.07	2.79	3	1	0	0	90%	2.511
Honeypools Barn	9.657	23.86	8.50	1	9	5	2	10%	0.85
Honeypools Barn North	5.523	13.65	5.47	1	7	5	5	60%	3.282
Honeypools House	3.571	8.82	3.40	1	7	1	10	30%	1.02
Keen's Field	1.553	3.84	1.44	1	8	2	1	40%	0.576
Lashmere	4.621	11.42	4.52	4	0	0	0	75%	3.39
Lucas	3.523	8.71	3.53	4	0	0	0	90%	3.177
Middle Link	2.555	6.31	2.56	4	0	1	0	80%	2.048
NB 1	8.010	19.79	7.88	3	9	3	0	40%	3.152
NB 2	7.255	17.93	6.75	4	4	4	0	50%	3.375
NB 3	5.675	14.02	5.67	4	7	5	1	50%	2.835
NB 4	4.770	11.79	4.77	1	7	5	7	40%	4.0545
NB 5	4.400	10.87	4.45	3	2	3	0	85%	3.7825
NB 6	3.237	8.00	3.25	7	1	7	1	65%	2.1125
NB Lane 1	3.641	9.00	3.63	3	0	0	0	80%	2.904
Oak Field	2.403	5.94	2.10	2	7	2	4	25%	0.525
Oaklands 1	4.826	11.92	4.72	1	7	5	6	40%	1.888

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Table Field results of August Survey

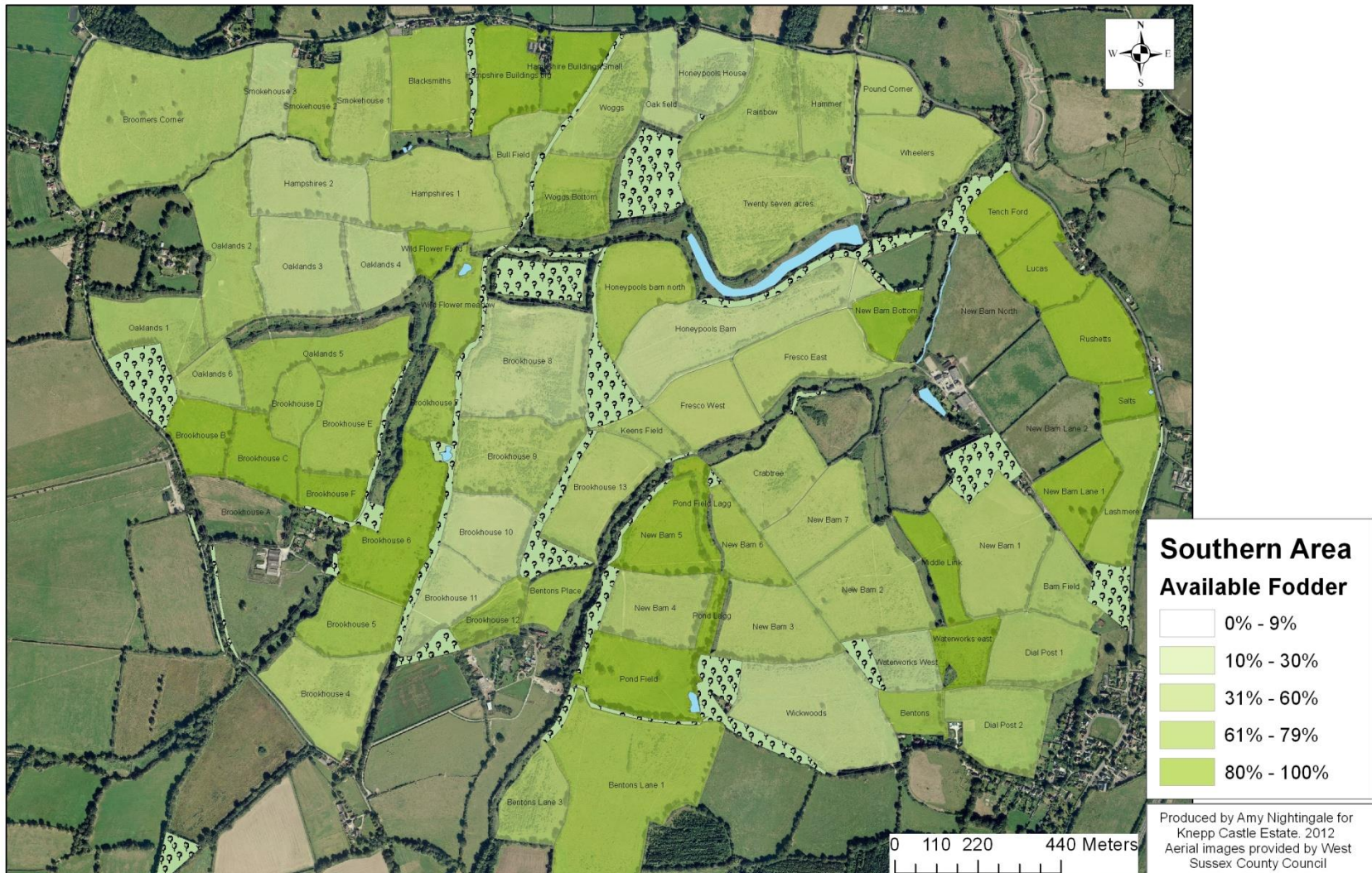
Field name	Ha	Acres	SP5 net area	Ragwort	Fleabane	Thorny Scrub	Leafy Scrub	Available fodder	Available fodder area
27 Acres	10.987	27.15	9.50	1	10	8	5	25%	2.375
8880 (East of Hammer Pond)			0.00						0
Barn field	2.918	7.21	2.86					85%	2.431
Bentons	1.796	4.44	1.85	3	1	4	0	20%	0.37
Benton's Lagg	0.975	2.41	0.88					90%	0.792
Bentons Lane 1	15.242	37.66	15.16	7	7	2	0	35%	5.306
Bentons Lane 3	4.041	9.99	3.75					30%	1.125
Bentons Place	2.562	6.33	2.48	4	9	9	6	90%	2.232
Bentons Place lag	1.151	2.84	0.79	1	9	2	10	90%	0.711
BH 10	4.289	10.60	4.26	6	1	3	0	30%	1.278
BH 11 (N)	3.665	9.06	2.66	6	0	4	4	30%	0.798
BH 11 (S)			0.50	4	9	0	0	30%	0.15
BH 12	2.041	5.04	1.50	1	10	0	7	35%	0.525
BH 13	5.765	14.25	5.76	2	7	0	10	30%	1.728
BH 4	6.507	16.08	6.30	4	10	5	0	35%	2.205
BH 5	3.978	9.83	3.92	10	7	7	7	40%	1.568
BH 6	6.840	16.90	6.75	5	5	2	2	45%	3.0375
BH 7	2.177	5.38	2.21	3	4	3	5	60%	1.326
BH 8	9.414	23.26	9.05	3	10	1	10	15%	1.3575
BH 9	6.438	15.91	6.23	1	8	2	10	40%	2.492
BH B	2.981	7.37	3.03	6	4	0	0	70%	2.121
BH C	3.286	8.12	3.28	6	6	0	0	60%	1.968
BH D	2.287	5.65	2.30	6	2	2	6	50%	1.15
BH E	5.732	14.16	5.69	5	5	2	2	45%	2.5605

BH F	2.097	5.18	2.09	2	7	2	2	50%	1.045
Blacksmiths	5.798	14.33	5.50					20%	1.1
Brookhouse Buildings	5.203	12.86	4.33	1	10	3	1	90%	3.897
Brookhouse Lagg	0.552	1.36	0.56					90%	0.504
Brookhouse Lagg			0.52					90%	0.468
Broomers Corner	16.386	40.49	16.33					40%	6.532
Bull Field	3.153	7.79	3.16	0	9	8	2	35%	1.106
Clappers	2.848	7.04	2.83	6	8	3	0	50%	1.415
Crabtree & Newbarn 7	10.025	24.77	9.97	10	6	7	8	50%	4.985
Dial Post 1	4.670	11.54	4.49	5	9	5	0	35%	1.5715
Dial Post 2	4.620	11.42	4.40	0	10	0	0	10%	0.44
Footpath between Waterworks west & Bentons - currently unregistered								90%	0
Fresco East	5.791	14.31	5.50	8	8	2	1	10%	0.55
Fresco West	4.920	12.16	4.70	9	8	0	0	20%	0.94
Hammer	4.064	10.04	4.03					90%	3.627
Hammer Lag			1.11					90%	0.999
Hammer lag (Flood wood)	2.163	5.34	0.00					90%	0
Hammer Pond & Lagg	4.225	10.44	4.94					90%	4.446
Hampshires 1	7.108	17.56	7.02	5	8	7	4	40%	2.808
Hampshires 2	5.749	14.21	5.69	2	10	6	0	15%	0.8535
Hampshires Buildings Big	4.211	10.41	3.85	5	8	0	0	50%	1.925
Hampshires Buildings small	2.860	7.07	2.79	4	2	0	0	80%	2.232
Honeypools Barn	9.657	23.86	8.50	1	10	6	7	15%	1.275
Honeypools Barn North	5.523	13.65	5.47	1	9	5	2	40%	2.188
Honeypools House	3.571	8.82	3.40	1	8	2	10	20%	0.68
Keen's Field	1.553	3.84	1.44	8	0	0	0	70%	1.008
Lashmere	4.621	11.42	4.52	3	1	0	0	70%	3.164
Lindfield Barn field	1.388	3.43	1.09					90%	0.981

Lucas	3.523	8.71	3.53	1	6	0	0	80%	2.824
Middle Link	2.555	6.31	2.56	8	0	0	0	60%	1.536
Middle Link Lagg	1.408	3.48	1.14	1	1	4	6	80%	0.912
NB 1	8.010	19.79	7.88	2	10	3	0	25%	1.97
NB 2	7.255	17.93	6.75	9	6	8	6	30%	2.025
NB 2 Lagg	0.785	1.94	0.82					90	73.8
NB 3	5.675	14.02	5.67					30%	1.701
NB 4	4.770	11.79	4.77	2	8	4	8	30%	1.431
NB 5	4.400	10.87	4.45	7	7	3	3	35%	1.5575
NB 6	3.237	8.00	3.25	8	1	4	3	35%	1.1375
NB Lane 1	3.641	9.00	3.63	6	4	0	0	40%	1.452
New Barn Lagg	0.912	2.25	0.83					90%	0.747
New Barn Lagg 2	1.187	2.93	1.24					90%	1.116
New Barn River	1.819	4.49	1.71					90%	1.539
Oak Field	2.403	5.94	2.10	1	10	4	1	10%	0.21
Oaklands 1	4.826	11.92	4.72	2	8	5	6	40%	1.888
Oaklands 2	6.950	17.17	6.86	2	8	6	1	20%	1.372
Oaklands 3	6.111	15.10	6.17	1	10	3	1	15%	0.9255
Oaklands 4	3.171	7.84	3.27	3	10	2	1	10%	0.327
Oaklands 5	6.154	15.21	6.07	3	5	4	4	40%	2.428
Oaklands 6	2.177	5.38	2.17	1	10	1	3	30%	0.651
Oaklands lag	2.898	7.16	2.67	5	1	0	5	10%	0.267
Pond Field	5.601	13.84	5.49	5	1	0	0	70%	3.843
Pond Field Lagg	1.974	4.88	1.89					90%	1.701
Pond Lagg	0.884	2.18	0.88					90%	0.792
Pound Corner	2.159	5.33	2.23	0	10	0	0	30%	0.669
Rainbow	5.933	14.66	5.50	4	10	2	10	30%	1.65
Rushetts	5.111	12.63	5.00	1	5	0	0	80%	4
Salts	1.510	3.73	1.47	4	0	0	1	80%	1.176

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Map showing the percentage of available fodder in the Southern Block in June 2013



Map showing the percentage of available fodder in the Southern Block in August 2013



Map showing the fields with more than 60% available fodder in June



Map showing the fields with more than 60% available fodder in August

