Glen Falloch Estate
grazing impact assessment

2017

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Summary

Field work was undertaken on Glen Falloch Estate during early summer 2015 to determine the impact red deer grazing was having on dwarf shrub heath and blanket bog habitat. The work was done in accordance with SNH best practice so that results could be analysed in the future and compared with studies undertaken on other estates, and in other deer management groups.

This work was repeated in early summer 2016 on plots on the west side of the A82. The results were compared to those from the same plots in 2015 and there appeared to be a trend showing decreased grazing pressure in all areas except those where sheep are farmed.

The work was then repeated in early summer 2017, across the whole estate, the results of which are included in this report. There appears to be a trend showing an increase in the number of plots showing low grazing pressure since 2015, as well as a decrease in plots showing high grazing pressure.

It is intended that this work will be repeated yearly on the west side of the A82, with the east side of the A82 (which is managed differently) being repeated every two to three years, so that the level of grazing impact on heather can be monitored to see whether there are any changes, and to enable deer management decisions to be made in the future.

Results

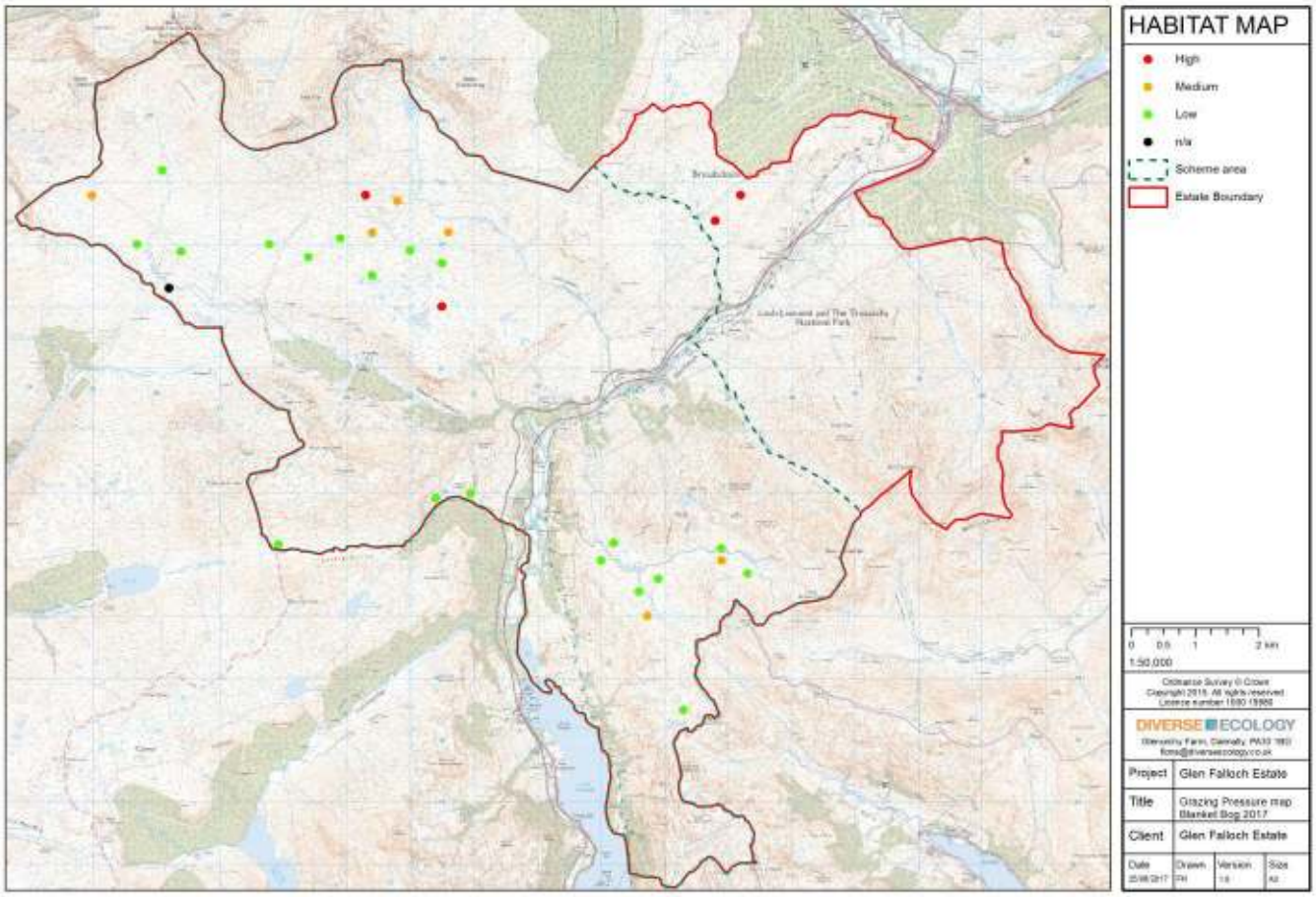

figure 1: showing plots for blanket bog habitat with colour representing level of browsing

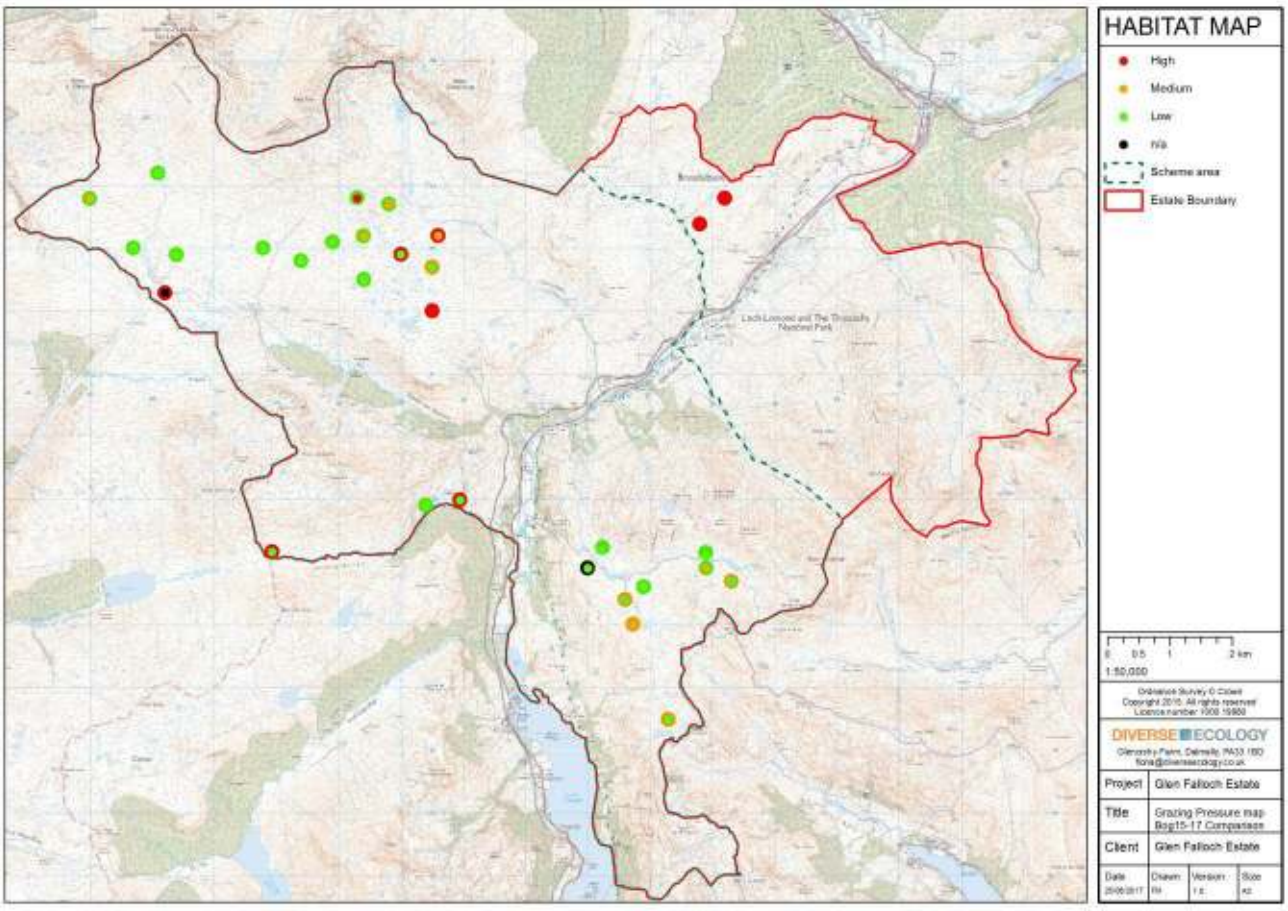

figure 2: showing blanket bog plots with larger coloured spot representing level of browsing in 2015 and smaller coloured spot representing level of browsing in 2017.

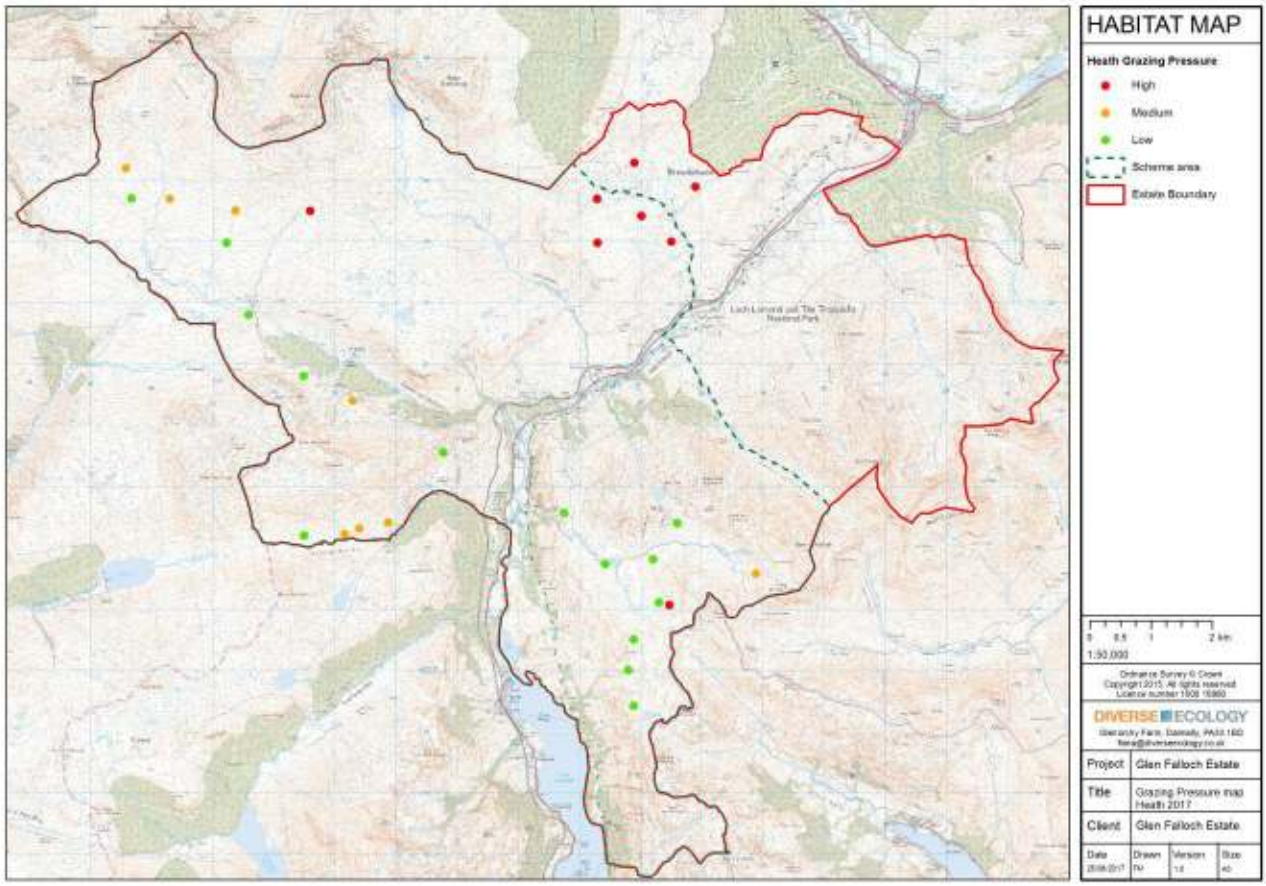

figure 3: showing dwarf shrub heath plots with colour representing level of browsing

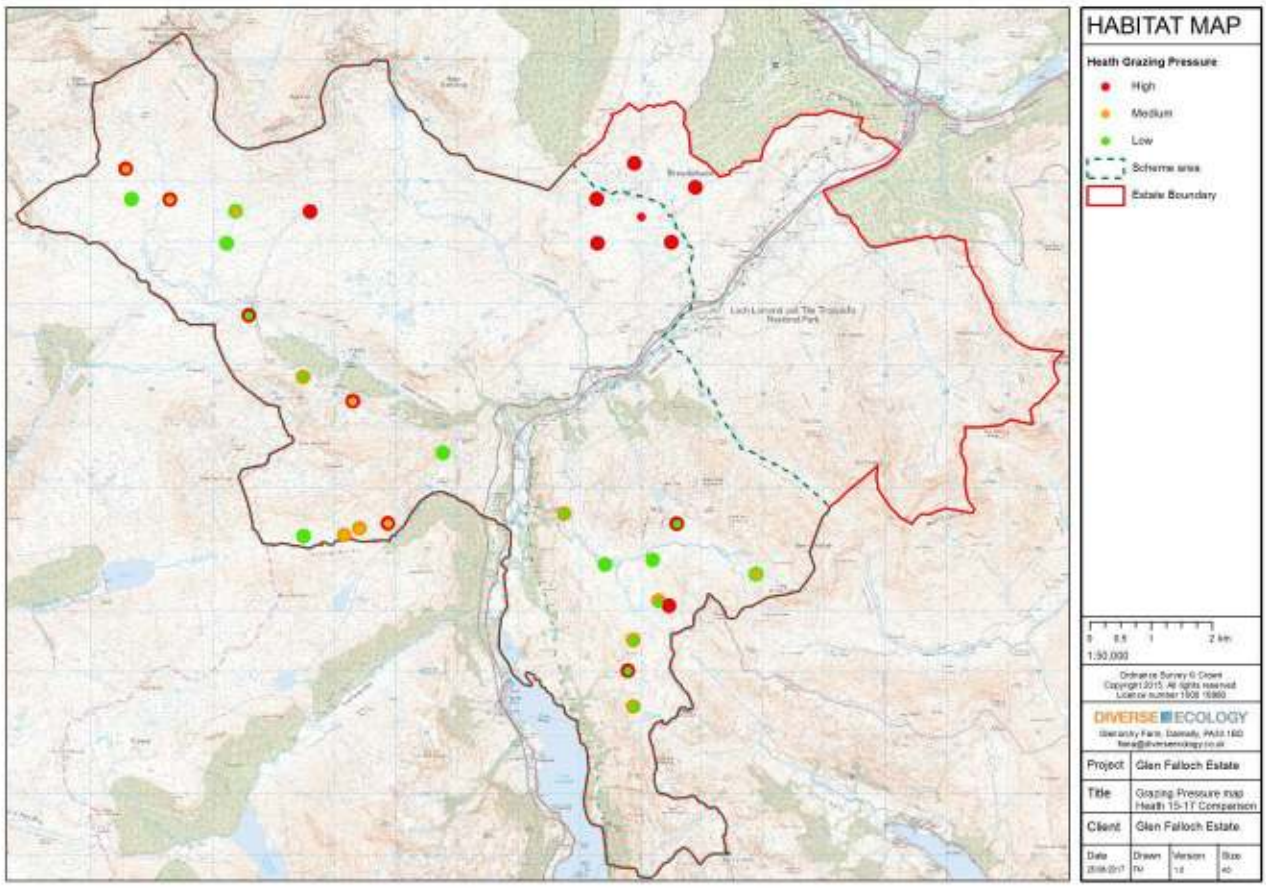

figure 4. showing dwarf shrub heath plots with larger coloured spot representing level of browsing in 2015 and smaller coloured spot representing level of browsing in 2017.

Habitat type	% plots with low grazing pressure	% plots with medium grazing pressure	% plots with high grazing pressure	% plots burnt
Dwarf shrub heath	50.0%	28.6%	21.4%	0.0%
Blanket bog	58.0%	19.4%	19.4%	3.2%
Both habitat types	54.2%	23.7%	20.4%	1.7%

Table 1. showing percentage of plots across the estate with low, medium and high grazing pressure.

Area	% plots with low grazing pressure	% plots with medium grazing pressure	% plots with high grazing pressure	% plots burnt
West of A82	42.5%	27.5%	27.5%	2.5%
East of A82	78.9%	15.8%	5.3%	0.0%

Table 2. showing percentage of plots in differently managed areas, with low, medium and high grazing pressure.

Area	Average % heather presence	Average vegetation height (cm)	% plots with heather stem breakage
Whole Estate	85.0%	13.3	3.6%
West of A82	90.2%	12.1	5.5%
East of A82	75.6%	15.6	0.0%

Table 3. showing average percentage heather presence, average vegetation height and percentage of plots showing heather stem breakage, in dwarf shrub heath plots.

Area	Average % bare peat	Average % bare peat with prints	Average % bog moss	Average % bog moss with prints	Average vegetation height (cm)	% plots with cross leaved browsing
Whole Estate	5.0%	1.4%	96.2%	7.9%	13.2	4.5%
West of A82	1.7%	1.4%	97.2%	11.1%	11.4	7.1%
East of A82	13.2%	1.4%	93.8%	0.0%	17.9	0.0%

Table 4. showing average percentage bare peat, bare peat with prints and average percentage bog moss and bog moss with prints. Also showing average vegetation height and percentage of plots showing evidence of browsing of cross leaved heath plants, in blanket bog plots.

Area	% plots containing deer dung
Whole Estate	39.0%
West of A82	50.0%
East of A82	15.8%

Table 5. showing percentage of plots in each area containing red deer dung. No hare dung was found in any of the plots.

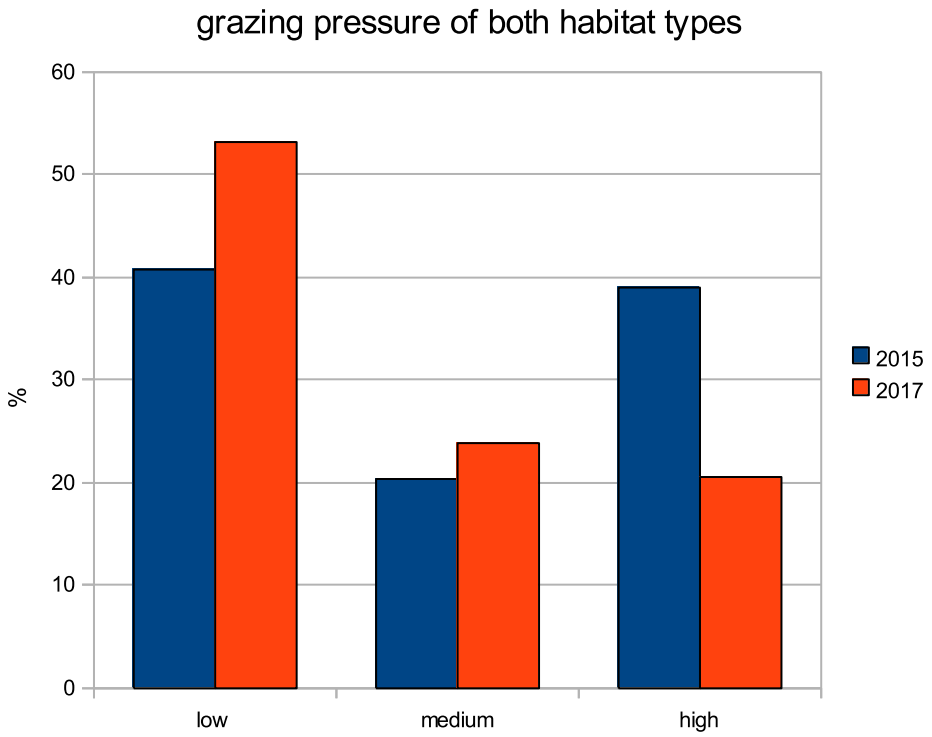

Figure 5. chart showing percentage grazing pressure of both habitat types in 2015 (blue) and 2017 (orange).

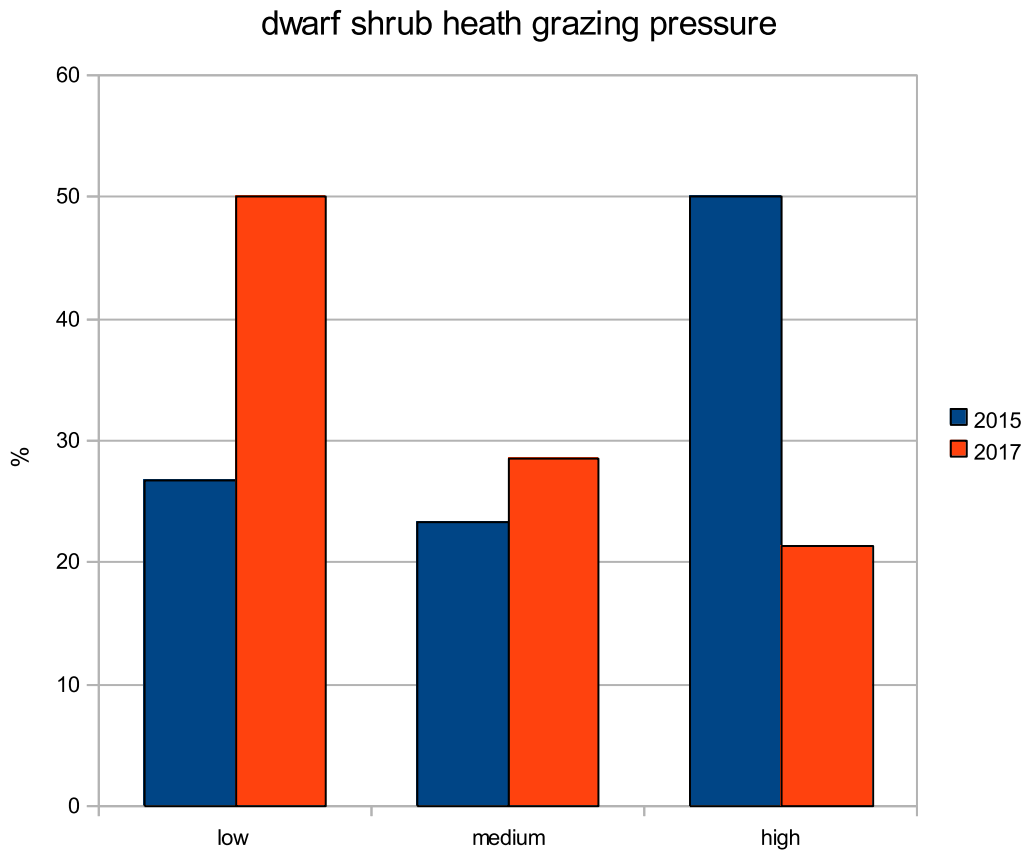

Figure 6: chart showing percentage grazing pressure of dwarf shrub heath in 2015 (blue) and 2017 (orange).

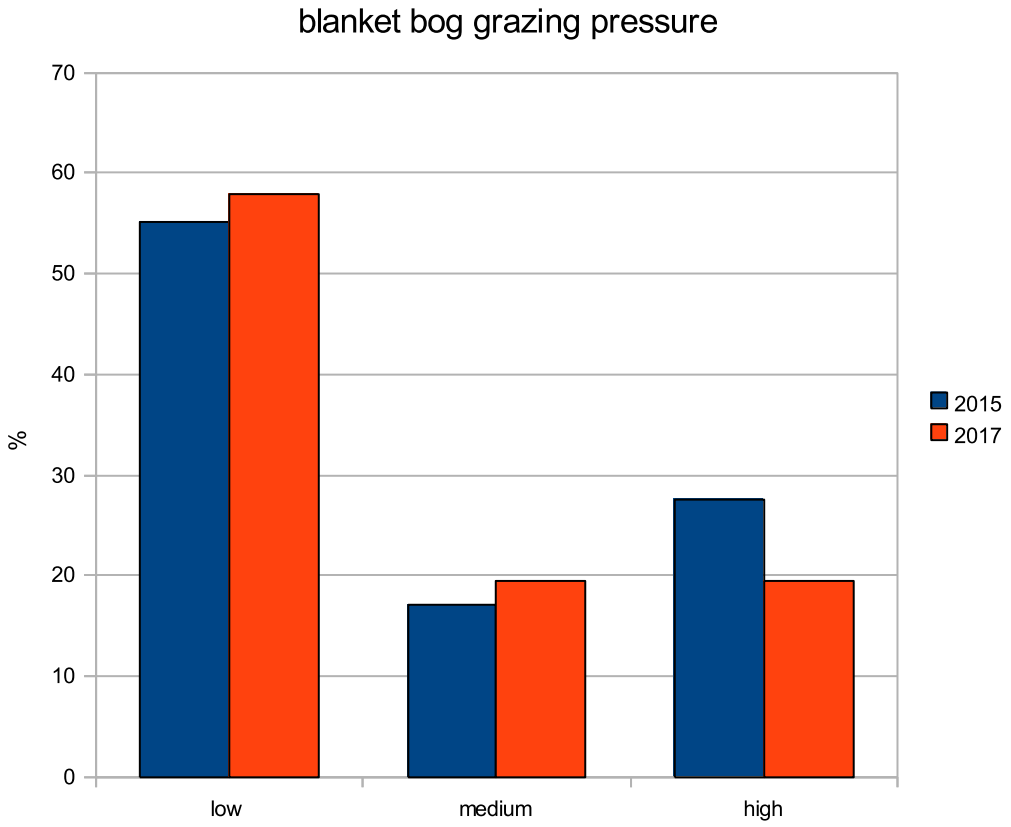

figure 7: chart showing percentage grazing pressure of blanket bog in 2015 (blue) and 2017 (orange).

Conclusions

Overall, the majority of plots on both habitats, across the estate, showed low grazing pressure. In comparison to the 2015 survey, the percentage of plots showing low grazing pressure had increased, while the percentage of those showing high grazing pressure had decreased. This was most apparent in dwarf shrub heath habitats. This would suggest that overall, grazing pressure has been reduced across the estate since 2015. The maps in figures 2 and 4 show us more clearly which plots have showed a decrease in grazing pressure, there would appear to be a more marked difference in the area east of the A82. There is some evidence of an increase in grazing pressure in five plots in the large area of blanket bog on the west side of the A82.

Blanket bog habitat seemed overall in good health, with a high percentage of bog moss present and very low evidence of trampling. There was more evidence of bare peat and a lower percentage of bog moss presence on the east side of the estate. The percentage of bare peat showing prints was very low on both sides, at 1.4%.
Cross leaved heath browsing was low on all plots surveyed that contained this species on the east side of the A82. Cross leaved heath is a less preferable food source for red deer and high browsing of this species would show that there is a limited food source available.

Heather presence was fairly high across the dwarf shrub heath plots, although much higher on the west side of the A82 at an average of 90.2%, while on the east side of the A82 the average percentage of plots containing heather is 75.6%. Stem breakage was very low across the whole estate, with none present on the east side.

The percentage of plots containing deer dung was very low at only 15.8% on the side of the estate east of the A82, which is much lower than it was in 2015 at 31.6%. Whilst it was much higher on the west side at 50%, this again is lower than it was in 2015 at 53.7%.

Average vegetation height has increased across both habitat types. Average vegetation height on blanket bog plots has increased from 10.8cm in 2015 to 13.2cm in 2017. Average vegetation height on dwarf shrub heath plots has increased from 11.8cm in 2015 to 13.3cm in 2017.

All the dwarf shrub heath and blanket bog plots in the north west area showed a trend of high grazing pressure but that was to be expected as there are a higher number of sheep here farmed by a tenant farmer.

These plots will be resurveyed in 2018 to see whether there is any difference in grazing pressure in another year's time.

Appendix

plot number	habitat type	coordinates
1	heath	NN2849718198
2	bog	NN2793118162
3	heath	NN2916518225
4	heath	NN2941018315
5	heath	NN2987618409
6	bog	NN3040218901
7	heath	NN2570323003
8	heath	NN2568323701
9	bog	NN2499623791
10	heath	NN2559024200
11	bog	NN2610024199
12	heath	NN2630923696
13	heath	NN2738423504
14	heath	NN2723722979
15	bog	NN2639522893
16	bog	NN2621022290
17	bog	NN3320218188
18	heath	NN3342417736
19	heath	NN3420617810
20	bog	NN3490217899
21	bog	NN3530717690
22	heath	NN3589217574
23	bog	NN3489118099
24	heath	NN3460018401
25	heath	NN3275618566
26	heath	NN3077819555
27	heath	NN2760121802
28	heath	NN2860323497
29	bog	NN2939923196
30	bog	NN2890223098
31	bog	NN2839622801
32	bog	NN2778423004
33	bog	NN2929923801
34	bog	NN2980223701
35	bog	NN3060023201
36	bog	NN3000122902
37	bog	NN3050122698
38	bog	NN3429515485
39	bog	NN3050121999
40	bog	NN2940222501
41	heath	NN2929920399
42	bog	NN3480023385
43	bog	NN3520023799
44	heath	NN3490123894
45	heath	NN3390524286
46	heath	NN3329023699
47	bog	NN3330022981
48	bog	NN3401423415
49	heath	NN3450822998
50	heath	NN3388915415
51	heath	NN3379916002
52	heath	NN3388916505
53	bog	NN3372917004
54	heath	NN3430417105
55	heath	NN3447117061
56	bog	NN3389917599
57	bog	NN3360017400
58	bog	NN3300017900
59	bog	NN3094918988
60	heath	NN2849220803

Table 6. coordinates of all plots surveyed in 2017, and the habitat type.