

**Land at Leacet Hill, Whinfell Forest
Agricultural Land Classification
ALC Map and Report
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AGRICULTURAL LAND CLASSIFICATION REPORT LAND AT LEACET HILL, WHINFELL FOREST

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on 37.5 hectares of land. The results of this survey supersede any previous ALC information for this land. The land is located at Leacet Hill, east of Penrith and south of the A66(T) Penrith to Barnard Castle road. The survey was in connection with the proposed change of use of the land to a recreation ground and golf course.
2. The survey was undertaken on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF) in October 1997 by the Resource Planning Team of the Farming and Rural Conservation Agency (FRCA)- Northern region of FRCA.
3. The land has been graded in accordance with the publication "Agricultural Land Classification of England and Wales - Revised guidelines and criteria for grading the quality of agricultural land" (MAFF 1988) .
4. At the time of survey the agricultural land on this site was under grass.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10 000 with an average auger boring density of 1 per hectare. The ALC map is only accurate at this base map scale and any enlargement would be misleading.
6. The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1.

Table 1: Area of grades and other land

Grade/Other land	Area (hectares)	% surveyed area	% site area
1	-	-	-
2	-	-	-
3a	5.4	20	14
3b	22.0	80	59
4	-	-	-
5	-	-	-
Agricultural land not surveyed	-	N/A	-
Other land	10.1	N/A	27
Total surveyed area	27.4	100	
Total site area	37.5		100

7. The agricultural land on this site has been classified as Subgrade 3a (good quality) and Subgrade 3b (moderate quality). The key limitations to the agricultural use of this land are climate, topsoil texture and soil droughtiness.

8. The area of good quality land is located on the lower lying land to the north and east of the site. The soils commonly comprise a loamy sand topsoil overlying loamy sand or sand passing to a weathered sandstone containing bands of differentially textured soil.

9. The area of moderate quality land is mapped towards the north east of the site. The soils in this area comprise a loamy sand or sand topsoil overlying loamy sand or sand passing to a weathered sandstone containing bands of differentially textured soil.

FACTORS INFLUENCING ALC GRADE

Climate

10. Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics.

11. The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using standard interpolation procedures (Meteorological Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	NY 568267	NY 568265
Altitude	m, AOD	170	180
Accumulated Temperature	day°C (Jan-June)	1200	1189
Average Annual Rainfall	mm	963	983
Field Capacity Days	days	234	237
Moisture Deficit, Wheat	mm	68	62
Moisture Deficit, Potatoes	mm	47	41
Overall climatic grade	N/A	Subgrade 3a	Subgrade 3b

12. The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions.

13. The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR), as a measure of overall wetness, and accumulated temperature (AT0, January to June), as a measure of the relative warmth of a locality.

14. The combination of rainfall and temperature at this site results in a climatic limitation. The lower part of the site, corresponding roughly to land below the 175 m contour is restricted to Subgrade 3a. Land above the 175 m contour is restricted to Subgrade 3b.

Site

15. The site lies at an altitude of 155 to 200 metres AOD. The land rises from the north east of the site towards the south west.
16. The three site factors of gradient, microrelief and flooding are considered when classifying the land.
17. In a small area in the centre of the site the gradient exceeds 7°, restricting this area to Subgrade 3b.
18. Microrelief and flooding do not impose any limitations on the agricultural use of this land.

Geology and Soils

19. The solid geology of the area is comprised of Penrith Sandstone, which acts as the major soil parent material.- Soil Survey of England and Wales, Bulletin No 10 (1984).
20. The soils that have developed on this geology are generally of a sandy texture over sandstone.

Agricultural Land Classification

21. The details of the classification of the site are shown on the enclosed ALC map and the area statistics of each grade are given in Table 1, page 1.

Subgrade 3a

22. Land of good quality occupies 5.4 hectares (14 %) of the site area and is found in the north and centre of the site.
23. The soil has a loamy sand texture over loamy sand and sand with few stones within the profile. The moisture balance places these soils in Subgrade 3a.
24. The main limitation to the agricultural use of this land includes climate and soil droughtiness.

Subgrade 3b

25. Land of moderate quality occupies 22 hectares (59 %) of the site area and extends across most of the site in a single unit.
26. The soil has a sand or loamy sand texture which lies over sand or loamy sand.
27. The main limitation to the agricultural use of this land is either the topsoil texture or, above the 175 m contour, climate.

Other Land

28. Other land occupies 10.1 hectares (27 %) of the site area and is found as a recreation area and tip in the east of the site, where large quantities of soil material have been dumped or stored.

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SOURCES OF REFERENCE

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