

**BARROW BOROUGH LOCAL PLAN
REVIEW
Sowerby Lodge Farm**

**Agricultural Land Classification
ALC Map and Report
July 1998**

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**AGRICULTURAL LAND CLASSIFICATION REPORT
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INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey on 48.3 hectares of land. The results of this survey supersede any previous ALC information for this land. The land is located at Sowerby Lodge Farm to the north west of Barrow-in-Furness, Cumbria. The site is bordered to the west by the sea, to the east by a railway, to the north by woodland and to the south by a disused tip. The survey was in connection with the Barrow Borough Local Plan Review.
2. The survey was undertaken on behalf of the Ministry of Agriculture, Fisheries and Food (MAFF) in July 1998 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 and a fodder crop.

SUMMARY

5. The findings of the survey are shown on the enclosed ALC map. The map has been drawn at a scale of 1:10000 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
3b	33.1	87	68
4	5.1	13	11
Agricultural land not surveyed	3.7	N/A	8
Other land	6.4	N/A	13
Total surveyed area	38.2	100	-
Total site area	48.3	-	100

7. The agricultural land on this site has been classified as Subgrade 3b (moderate quality) and Grade 4 (poor quality). The key limitations to the agricultural use of this land are soil wetness and gradient.

8. Land of moderate quality covers the majority of the site. The soils typically comprise either a medium clay loam or sandy clay loam topsoil, overlying either a sandy clay loam, medium clay loam or heavy clay loam upper subsoil on to a clay lower subsoil. Some land in the north of the site is also classified as Subgrade 3b where gradients of between 7° and 11° occur.

9. Land of poor quality occurs mainly in the north of the site. The soils typically comprise a medium clay loam topsoil, over heavy clay loam and clay subsoils. In the south west corner of the site a small area of disturbed land has been mapped as Grade 4.

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 5 km grid datasets using standard interpolation procedures (Meteorological Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values	Values
Grid reference	N/A	SD 191 723	SD 192 726
Altitude	m, AOD	10	12
Accumulated Temperature	day°C (Jan-June)	1415	1413
Average Annual Rainfall	mm	996	1006
Field Capacity Days	days	225	227
Moisture Deficit, Wheat	mm	74	73
Moisture Deficit, Potatoes	mm	58	57
Overall climatic grade	N/A	Grade 2	Grade 2

12. 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 means that there is an overall climatic limitation of Grade 2 over the whole of the site.

15. The site straddles a field capacity day (FCD) boundary which influences the grading of the land according to its Wetness Class. This boundary divides the site into two halves along a line running roughly north west to south east, just north of Sowerby Lodge Farm and above the 10 metre contour. South of this line, the land has 223-225 FCD. North of this line the land has more than 225 FCD. Only soils in Wetness Class III were affected by this boundary: medium clay loam topsoils in Wetness Class III found in the south of the site would be classified as Subgrade 3a, whilst similar soils in the north of the site would be Subgrade 3b.

Site

16. The site lies at an altitude of 5 to 15 metres AOD. The topography is undulating in nature. The land generally rises inland from the coast. North west of the Industrial Waste Recovery Plant the land is at its lowest, and then it rises up towards the highest land in the north of the site.

17. The three site factors of gradient, microrelief and flooding are considered when classifying the land.

18. Gradient is limiting in several places where slopes of between 7° and 11° occur.

19. Microrelief and flooding do not impose any limitations on the agricultural use of this land.

Geology and Soils

20. The solid and drift geology maps for this area were unavailable at the time of the survey. However, the adjacent map to the south (close to the site) shows that the solid geology of the area is most likely to be comprised of St. Bees Sandstone (Sherwood Sandstone Group). This is probably overlain by a drift geology of boulder clay - British Geological Survey (1976).

21. The soils that have developed in the north of the site generally have either a sandy clay loam or medium clay loam topsoil texture, overlying heavy clay loam and clay subsoils.

Agricultural Land Classification

22. 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 3b

23. Land of moderate quality occupies 33.1 hectares (68 %) of the site area and is found over the majority of the site.

24. The soils commonly comprise either a medium clay loam or sandy clay loam topsoil, passing to either a medium clay loam, sandy clay loam or a heavy clay loam upper subsoil,

over a clay lower subsoil. There are few to no stones within the profile. Observations of the depths to gleying and the slowly permeable layer place these soils in Wetness Class IV.

25. Within this unit there are isolated borings of Subgrade 3a land (in the southern half of the site), where the slowly permeable layer is below 62 cm and the soils are placed in Wetness Class III. However it is not possible to show these at the scale of mapping.

26. In the northern half of the site slopes of between 7° and 11° occur over small areas, notably along the sides of a sunken trackway adjacent to the Industrial Waste Recovery Plant.

27. The main limitations to the agricultural use of this land are soil wetness and gradient.

Grade 4

28. Land of poor quality occupies 5.1 hectares (11 %) of the site area and is found mainly in the north of the site.

29. The soils typically comprise a medium clay loam topsoil, over a heavy clay loam and clay subsoil. There are few to no stones within the profile. Observations of the depths to gleying and the slowly permeable layer place these soils in Wetness Class V. In the south west corner of the site, a small area of disturbed land is also mapped as Grade 4.

30. The main limitation to the agricultural use of this land is soil wetness.

Agricultural Land Not Surveyed

31. Agricultural land not surveyed occupies 3.7 hectares (8 %) of the site area. It is located on two fields north and south of the Industrial Waste Recovery Plant. Access was not gained for this land. Both fields were of permanent pasture and on the basis of the adjacent, surveyed agricultural area it is unlikely that the land would be of best and most versatile quality.

Other Land

32. Other land occupies 6.4 hectares (13 %) of the site area and is found as farm buildings at Sowerby Lodge, farm tracks, a large drain, ponds and woodland.

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SOURCES OF REFERENCE

British Geological Survey (1976) Sheet 58, Barrow, Solid Edition.
1:50,000 Scale.
BGS: London.

British Geological Survey (1976) Sheet 58, Barrow Drift Edition.
1:50,000 Scale.
BGS: London

Ministry of Agriculture, Fisheries and Food (1988) Agricultural Land Classification of
England and Wales: Revised guidelines and criteria for grading the quality of agricultural
land.
MAFF: London.

Meteorological Office (1989) Climatological Data for Agricultural Land Classification.
Meteorological Office: Bracknell.

FILE NOTE: SOWERBY LODGE FARM

Exposure

Evidence of exposure was expected, given the site's coastal location. There was evidence of wind pruning of trees around the site (see photographs), but there were no signs of problems with the cattle on the farm, or any salt burn effects on the grass. Previous ALC surveys around Barrow (undertaken by the Leeds Office in 1989) had applied a climatic limitation of Subgrade 3a, when the Metdata indicated Grade 2, on the basis that exposure was likely to cause stress in cattle and lodging of cereal crops. No evidence was submitted for this other than 'local experience'. This resulted in some potentially very good quality land on light, sandy soils, being downgraded to Subgrade 3a due to exposure.

However, the Sowerby Lodge site contained no areas of Best and most Versatile Quality, so whilst exposure may be a factor it is not the most limiting. Therefore no reference has been made to it in the report.

Flooding

Part of the coastal boundary of the site had the remains of a hard coastal defence; large ramps of concrete that are now breaking apart. This protected the lowest lying part of the site, the field north west of the Industrial Waste Recovery Plant, from the sea at particularly high tides. However, the farmers said that flooding by the sea was not very common, and usually only occurred when the water level in the drain running through the field overspilled. Standing water was present in this field on the first day of our survey, after a night of heavy rain, but had mostly gone by the following day. This suggests a reasonable level of drainage and I saw no reason to grade the land lower than Subgrade 3b.

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