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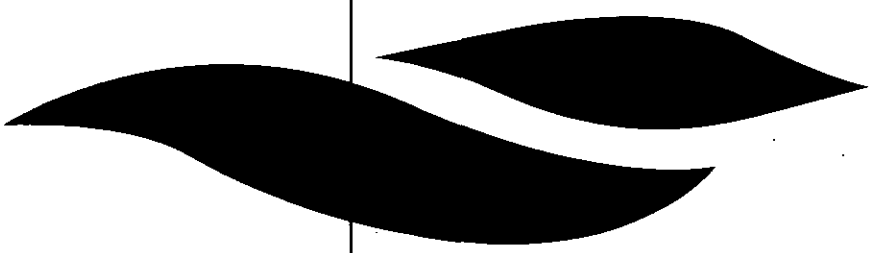

FARMING AND RURAL CONSERVATION AGENCY

An Executive Agency of the Ministry of Agriculture, Fisheries and Food and the Welsh Office

TYNEDALE DISTRICT LOCAL PLAN (SITE 44, OUTER SETTLEMENT, HORSLEY)

Agricultural Land Classification (ALC)
Map and Report

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Resource Planning Team
Northern Region
FRCA, Leeds

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AGRICULTURAL LAND CLASSIFICATION REPORT

TYNEDALE DISTRICT LOCAL PLAN
(SITE 44, OUTER SETTLEMENT, HORSLEY)

INTRODUCTION

1. This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 100 ha of land around the village of Horsley in Tynedale.

2. The survey was carried out by the Farming and Rural Conservation Agency (FRCA) for the Ministry of Agriculture, Fisheries and Food (MAFF), in connection with the proposal to include this area of land in the Tynedale District Local Plan. This ALC survey supersedes any previous ALC information for this land.

3. The work was conducted by members of the Resource Planning Team in the Northern Region of FRCA . The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF, 1988). A description of the ALC grades and subgrades is given in Appendix I.

4. At the time of survey the land on the site was mixed arable/grassland. Other, non-agricultural, land on the site consists mainly of the village of Horsley in the north-west and Horsley Water Treatment Works in the west.

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. It is accurate at this scale but 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	36.3	47.8	36.3
3b	39.7	52.2	39.6
4			
5			
Agricultural land not surveyed	3.1	N/A	3.1
Other land	21.0	N/A	21.0
Total surveyed area	76.0	100	-
Total site area	100.1	-	100

7. The fieldwork was conducted at an average density of one boring per hectare. A total of eighty borings and two soil pits were described.

8. Subgrade 3a, good quality agricultural land, covers 48% of the agricultural area. The soils vary between well and imperfectly drained, with light to medium-textured topsoils and upper subsoils overlying either weathering sandstone or gleyed and slowly permeable medium to heavy-textured lower subsoils. The ALC grade of this land is limited by soil droughtiness or soil wetness, and by a pattern limitation which prevents those soils which meet the criteria for Grade 2 being mapped as a separate unit.

9. Subgrade 3b, moderate quality agricultural land, covers the remainder of the agricultural area. Two main soil types occur. The first is poorly drained, with medium-textured topsoils and, in places, thin upper subsoils, overlying gleyed and slowly permeable heavy clay loam or clay. Soil wetness limits the ALC grade of this land. The second soil type is generally well drained and overlies weathering sandstone within 40cm depth. The ALC grade of this land is limited by soil droughtiness, soil depth and/or slopes of 8-11°.

10. Agricultural land not surveyed covers 3.1 ha in the west of the site.

11. Other land consists of the village of Horsley, the water treatment works, the B6528 road and some farm buildings.

FACTORS INFLUENCING ALC GRADE

Climate

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

13. 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 the standard interpolation procedures (Met. Office, 1989).

Table 2: Climatic and altitude data

Factor	Units	Values
Grid reference	N/A	*NZ 097 659*
Altitude	m, AOD	112
Accumulated Temperature	day°C (Jan-June)	237
Average Annual Rainfall	mm	690
Field Capacity Days	days	174
Moisture Deficit, Wheat	mm	85
Moisture Deficit, Potatoes	mm	70
Overall climatic grade	N/A	Grade 2

14. 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.

15. 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 (ATO, January to June), as a measure of the relative warmth of a locality.

16. The combination of rainfall and temperature at this site means that there is an overall climatic limitation of Grade 2. Although there is some variation in the climatic data with altitude and, to a lesser degree, latitude and longitude, these differences have no significant effect on the determination of land quality. All of the site is limited to Grade 2, and nowhere does the Field Capacity Days data exceed the critical 175 days.

Site

17. The land on this site varies between level and moderately steeply sloping (0-13°). Many areas in the east have slopes of between 7° and 11° and are limited by their gradient to Subgrade 3b. Two very small areas in the north-east have slopes of 13°, placing them in Grade 4, but the areas are too small to map separately from the Subgrade 3b land. Neither flood-risk nor micro-relief are grade-limiting factors on this site.

Geology and soils

18. The site is underlain by Carboniferous Millstone Grit in the centre and north and by Carboniferous Lower Coal Measures in the south (BGS, Sheet 20). Both consist of interbedded shales and sandstones/gritstones, and both weathering shale and weathering sandstone occur within one metre depth of the soil surface at a number of points on the site. Parts of the site, particularly in the east, are overlain by till deposits of variable depth.

19. The soils on the site are very variable in terms of both texture and drainage class, but have been mapped as belonging to the Brickfield 3 association (Soils of England and Wales, Sheet 1, Northern England).

AGRICULTURAL LAND CLASSIFICATION

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

Subgrade 3a

21. Subgrade 3a, good quality agricultural land, covers 36.3 ha. The soils vary between well and imperfectly drained, falling in Wetness Classes I to III. The well drained (Wetness Class I) soils consist of medium sandy loam, medium clay loam or sandy clay loam topsoils and subsoils which generally overlie weathering sandstone at between 45cm and 100cm depth. Where sandstone occurs within 65cm depth soil droughtiness is the grade-limiting factor and although some profiles meet the criteria for Grade 2, they form no apparent pattern and cannot be accurately mapped separately from the Subgrade 3a land. The moderately well and imperfectly drained (Wetness Classes II and III) soils typically consist of medium clay loam, sandy clay loam or medium sandy loam topsoils and upper subsoils overlying gleyed and slowly permeable sandy clay loam or heavy clay loam lower subsoils. Some profiles meet the requirements for Grade 2, but they cannot be accurately mapped out as a separate unit from the Subgrade 3a land, the ALC grade of which is limited by soil wetness.

Subgrade 3b

22. The remainder of the agricultural land is Subgrade 3b, moderate quality land. In most cases the soils are poorly drained (Wetness Class IV) and consist of medium clay loam topsoils and, in places, thin upper subsoils, overlying gleyed and slowly permeable heavy clay loam or clay. The subsoils are gleyed within 40cm depth and typically become slowly permeable at between 30cm and 45cm depth. Soil wetness is the factor which limits this land to Subgrade 3b. The remaining Subgrade 3b land is on slopes of 8 to 11° mainly in the east of the site, where sandstone outcrops and the soils are well drained but shallow. Slope and, in places, soil depth and soil droughtiness are the grade-limiting factors in the case of this land. Two very small areas in the north-east of the site have slopes of 13°, placing them in Grade 4, but they are too small to map separately from the Subgrade 3b land.

Agricultural land not surveyed

23. Three small blocks of permanent pasture around the Horsley Water Treatment Works and one grass paddock in the north-west of the site were left unsurveyed due to uncertainties over the ownership/tenancy of these areas.

Other land

24. Other, non-agricultural land, on this site covers 21 ha. It consists of the village of Horsley, Horsley Water Treatment Works, the B6528 road, and some farm buildings.

RPT File: 20,269
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SOURCES OF REFERENCE

British Geological Survey (1992) *Sheet No. 20, Newcastle-upon-Tyne (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.

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

Soil Survey of England and Wales (1983) *Sheet 1, Soils of Northern England, 1,:250,000 scale.* SSEW: Harpenden.

Soil Survey of England and Wales (1984) *Soils and their Use in Northern England* SSEW: Harpenden

APPENDIX I

DESCRIPTIONS OF THE GRADES AND SUBGRADES

Grade 1: Excellent Quality Agricultural Land

Land with no or very minor limitations to agricultural use. A very wide range of agricultural and horticultural crops can be grown and commonly includes top fruit, soft fruit, salad crops and winter harvested vegetables. Yields are high and less variable than on land of lower quality.

Grade 2: Very Good Quality Agricultural Land

Land with minor limitations which affect crop yield, cultivations or harvesting. A wide range of agricultural or horticultural crops can usually be grown but on some land of this grade there may be reduced flexibility due to difficulties with the production of the more demanding crops such as winter harvested vegetables and arable root crops. The level of yield is generally high but may be lower or more variable than Grade 1 land.

Grade 3: Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops, the timing and type of cultivation, harvesting or the level of yield. When more demanding crops are grown, yields are generally lower or more variable than on land in Grades 1 and 2.

Subgrade 3a: Good Quality Agricultural Land

Land capable of consistently producing moderate to high yields of a narrow range of arable crops, especially cereals, or moderate yields of a wide range of crops including cereals, grass, oilseed rape, potatoes, sugar beet and the less demanding horticultural crops.

Subgrade 3b: Moderate Quality Agricultural Land

Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass, or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

Grade 4: Poor Quality Agricultural Land

Land with severe limitations which significantly restrict the range of crops and/or the level of yields. It is mainly suited to grass with occasional arable crops (e.g. cereals and forage crops) the yields of which are variable. In moist climates, yields of grass may be moderate to high but there may be difficulties in utilisation. The grade also includes very droughty arable land.

Grade 5: Very Poor Quality Agricultural Land

Land with severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.