DESCRIPTION OF THE GRADES AND SUB-GRADES

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 include 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 and horticultural crops can usually be grown but on some land in the 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.

Grade 3 - good to moderate quality agricultural land

Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where 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 an 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 level of yields. It is mainly suited to grass with occasional arable crops (eg 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 very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.

RPG 4710

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Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.

TRETHORNE FARM
AGRICULTURAL LAND CLASSIFICATION
Report of survey

1. INTRODUCTION

Thirty two hectares of land around Trethorne Farm, Pipers Pool, Launceston were graded under the Agricultural Land Classification (ALC) System in April 1992. The survey was carried out for MAFF as part of its statutory role in response to an ad hoc planning application made to North Cornwall District Council.

The fieldwork was carried out by ADAS's Resource Planning Team (Wessex Region) at a scale of 1:10,000 (approximately one sample point every hectare). The information is correct at the scale shown but any enlargement would be misleading. This survey supercedes the previous survey of this area at 1" being at a more detailed level and carried out under the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1989). A total of 21 borings and 1 soil pit were examined.

The ALC provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. The grading takes account of the top 120cm of the soil profile. A description of the grades used in the ALC System can be found in the appendix.

The distribution of ALC grades identified in the survey area is detailed below and illustrated on the accompanying map.

Table 1 Distribution of ALC grades: Trethorne Farm

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
3A	3.3	10.4	10.6
3B	24.5	77.0	78.5
4	2.1	6.6	6.7
5	1.3	4.1	4.2
Water	0.6	1.9	100% (31.2ha)
TOTAL	31.8	100%	

2. CLIMATE

The grade of the land is determined by the most limiting factor present. The overall climate is considered first because it can have an overriding influence on restricting land to lower grades despite other favourable conditions.

To assess any overall climatic limitation, estimates of important climatic variables were obtained for the site by interpolation from the 5km grid Met Office/Maff Database (Met Office/MAFF/SSLRC 1989). The parameters used for assessing climate are accumulated temperature, (a measure of the relative warmth of a locality) and average annual rainfall, (a measure of overall wetness). The results shown in Table 2 reveal that there is a climatic limitation across the survey area. Below 165m the area can be classified no better than grade 3A, and above this the land is restricted to grade 3B at best.

No local climatic factors such as exposure were noted in the survey area. Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat (MDW) and potatoes (MDP) are also shown. This data is used in assessing the soil wetness and droughtiness limitations referred to in Section 4.

Table 2 Climatic Interpolations: Trethorne Farm

Grid Reference	SX281831	SX285837	SX287834
Height (m)	190	150	165
Accumulated Temperature (° days)	1402	1447	1430
Average Annual Rainfall (mm)	1430	1336	1374
Overall Climatic Grade	3B	3A	3A/B
Field Capacity (Days)	273	259	264
Moisture Deficit, Wheat (mm)	48	58	54
Potatoes (mm)	28	41	36

3. RELIEF

The survey area comprises two tributary valleys which join in the north east corner of the area. the valleys rise from 140m to 190m. There are some steep slopes on the valley sides.

4. GEOLOGY AND SOILS

The majority of the survey area is underlain by shale of the Culm Measures. A small area in the south west has chert.

The soils across the survey area become heavier with depth. Topsoils of medium clay loams and medium silty clay loams give way to heavy clay loams and clays in the subsoil. The soils are free draining on the higher land but in the valley

bottoms there is evidence of inhibited drainage. The stone content of the soils also increases with depth to about 15%.

5. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades identified in the survey area is detailed in Section 1 and shown on the accompanying ALC map. The information is correct at the scale shown but any enlargement would be misleading

Subgrade 3A

The small area of subgrade 3A in the east of the survey area represents soils which are restricted by climatic conditions and their workability under those conditions. As indicated in Section 2 the parts of the survey area below 165m experience an overall climatic limitation under which the land could be graded no better than subgrade 3A. The soils here are free draining and show no evidence of wetness. They can therefore be asigned to wetness class I. In addition to the overall climatic limitation the topsoil in the area is a medium clay loam or medium silty clay loam and with the prevailing FCD level these soils can be graded no better than subgrade 3A. A soil pit was dug showing the soil type across the survey area. This revealed that the stone content of the soil increased with depth from about 1% in the topsoil to 15 % by 50cm. The stone content does not restrict the available water to crops.

Subgrade 3B

The majority of the survey area has been classified as subgrade 3B. Although the soils are similar to those in the area of 3A there are three reasons why these soils have been down graded. Parts of the survey area have gradients between 7 and 11 degrees which restrict the types of machinery which can be safely used and so the land is downgraded. The parts of the survey area over 165m have a more severe climatic limitation as explained in Section 2 and can be graded no better than 3B. The remaining areas of 3B have a impeded drainage. These are in the wetter valley bottom. The poorer drainage here has resulted in gleying of the soil from the surface and so the soils are placed into wetness class III. With the medium clay loam topsoils these areas are downgraded to 3B.

Grades 4 and 5

The small areas of grades 4 and 5 have greater limiting slopes and the risk of soil erosion if cultivated is increased. The slopes exclude the safe use of a greater range of machinery. The grade 5 land is suitable only for grazing.

TRETHORNE FARM Pit Number : 1P

Grid Reference : SX28208318

Average Annual Rainfall : 1430 mm
Accumulated Temperature : 1402 degree days
Field Capacity Level : 273 days
Land Use : Ley
Slope and Aspect : 03 degrees N

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 29	MCL	10YR44 00	0	1		
29- 44	MCL	10YR54 00	0	5		MDMSAB
44- 75	HCL	10YR53 00	0	15		MDCSAB

Wetness Grade : 3A

Wetnesss Class : I
Gleying : 000 cm
SPL : No SPL

Drought Grade : 1

APW : 114 mm MBW : 56 mm
APP : 121 mm MBP : 80 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Overall Climate