8FCS 4320 19/91

ROSELAND LOCAL PLAN, AGRICULTURAL LAND CLASSIFICATION

Report of Survey

1. Introduction

In August 1991, a detailed Agricultural Land Classification (ALC) survey was carried out around five settlements on the Roseland peninsula in Cornwall as part of MAFF's statutory input to the preparation of the Roseland Local Plan by Carrick District Council.

The areas affected included St Mawes, Veryan, St Just, Portscatho and Portloe. A total of 110 hectares was surveyed. Details of the land quality are given separately below for each settlement and illustrated on the accompanying ALC maps. The maps have been produced at 1:10,000 scale and are accurate at this scale, but any enlargement would be misleading. This mapped information supercedes previous ALC information at poorer scales, particularly the 1" series.

2. St Mawes

Land along the northern fringe of the village was surveyed (totalling 25 ha) and the ALC map illustrates a concentration of Sub-grade 3A on the north-western fringe with poorer Sub-grade 3B and Grade 4 land to the north-east.

Grade	Area (ha)	% of Survey Area	% of Agricultural Area
3A	13.1	51.6	53.9
3B	9.0	35.4	37.0
4	2.2	8.7	9.1
Non-Agric	0.4	1.6	
Urban	0.7	2.7	100% (24.3 ha)
	25.4 ha	100%	

The soils exhibit heavy clay loam (HCL) topsoil textures which overlie clay subsoils. The profiles show no evidence of soil wetness and are typically over 50 cm in depth, resting upon weathered slaty rocks. Soil workability and soil droughtiness are the key factors in grading the soils. Sub-grade 3A is the appropriate grade for the typical soils - the heavy clay loam topsoil texture creates a workability limitation at the prevailing field capacity levels (FC days), and the profile depth and stony subsoils restrict the available water in the profile and create a droughtiness limitation.

The Sub-grade 3B and Grade 4 land on the north-western fringe identify areas where gradients are locally limiting.

Climatic Interpolations

Grid Reference	SW843333	SW846336	SW851336	SW853335	SW843332
Altitude (m)	71	58	56	27	65
Average Annual Rainfall (mm)	1029	999	979	949	1024
Accumulated Temperature (° days)	1570	1584	1578	1620	1577
Field Capacity (days)	201	196	193	189	200
Moisture Deficit, Wheat (mm)	96	99	101	106	97
Moisture Deficit, Potatoes (mm)	86	90	93	99	87
Overall Climatic Grade	1	1	1	1	1

3. Veryan and Veryan Green

Both settlements are fringed by significant areas of high grade land (Grades 2 and 3A) with only minor areas of poorer quality.

Grade	Area (ha)	% of Survey Area	% of Agricultural Area
2	17.6	46.8	56.2
3A	8.5	22.5	27.2
3B	4.5	11.9	14.4
4	1.0	2.7	3.2
Non-Agric	1.3	3.5	
Agric Bdgs	0.9	2.3	100% (31.3 ha)
Urban	0.9	2.3	
Not surveyed	3.0	8.0	
	37.7 ha	100%	

Grade 2: Pit 1 is typical of these soils. Topsoil textures are medium clay loams (MCL), overlying an upper subsoil of similar texture and lower subsoil of clay with slaty rock. The soils are both free of wetness and droughtiness, and are only downgraded on the basis of the workability limitation related to the topsoil textures.

Sub-grade 3A: The 3A soils in the south-west of the survey area are similar to the adjacent Grade 2 profiles, but exhibit heavier topsoil textures (HCL) and therefore experience more restrictive workability limitation.

In the north-east, the 3A soils have light topsoil textures (MCL) but are affected by a significant exposure limitation on the west and south-west facing upper crest slopes.

Areas of Sub-grade 3B and Grade 4 represent those areas where gradients are locally limiting.

Climatic Interpolations

Grid Reference	SW922402	SW915397	SW912392
Altitude (m)	82	56	77
Average Annual Rainfall (mm)	1101	1073	1082
Accumulated Temperature (° days)	1552	1583	1559
Field Capacity (days)	214	210	211
Moisture Deficit, Wheat (mm)	91	96	93
Moisture Deficit, Potatoes (mm)	80	87	83
Overall Climatic Grade	1	1	1

4. St Just and St Just Lane

Sub-grade 3A is the predominant grade along the western and eastern fringe, with poorer land to the west.

Grade	Area (ha)	% of Survey Area	% of Agricultural Area
3A	8.2	59.0	66.7
3B	2.4	17.3	19.5
4	1.7	12.2	13.8
Non-Agric	0.6	4.3	
Agric Bdgs	0.4	2.9	100% (12.3 ha)
Urban	0.6	4.3	
	13.9 ha	100%	

The soils are similar to those described in para 2 above, with soil workability and soil droughtiness as the most limiting physical factors.

The Sub-grade 3B map units define areas of steep slopes, except for the area of 3B in the west which is downgraded due to the presence of spring lines. The areas of Grade 4 define areas where gradients are greater than 11°.

Climatic Interpolations

Grid Reference	SW854358	SW851357	SW851354
Altitude (m)	52	26	77
Average Annual Rainfall (mm)	968	936	995
Accumulated Temperature (° days)	1590	1620	1562
Field Capacity (days)	191	187	195
Moisture Deficit, Wheat (mm)	102	107	98
Moisture Deficit, Potatoes (mm)	94	100	88
Overall Climatic Grade	1	1	1

5. Portscatho and Gerrans

The flatter land adjacent to the urban edge is predominantly Sub-grade 3A, with minor areas of Sub-grade 3B.

Grade	Area (ha)	% of Survey Area	% of Agricultural Area
3A	11.6	58.0	80.6
3B	2.8	14.0	19.4
Non-Agric	1.6	8.0	
Agric Bdgs	0.2	1.0	100% (14.4 ha)
Urban	3.8	19.0	
	20.0 ha	100%	

Soils are similar to those described in para 2. The HCL texture imposes a workability limitation and the depths and stone contents impose a droughtiness limitation; Sub-grade 3A is the appropriate grade. Where the soils are developed on slopes greater than 7°, Sub-grade 3B is the final grade.

Climatic Interpolations

Grid Reference	SW871351	SW877351	SW874356
Altitude (m)	57	39	52
Average Annual Rainfall (mm)	978	966	977
Accumulated Temperature (° days)	1584	1605	1590
Field Capacity (days)	194	192	194
Moisture Deficit, Wheat (mm)	101	103	101
Moisture Deficit, Potatoes (mm)	92	96	93
Overall Climatic Grade	1	1	1

6. Portloe

Two distinct areas were surveyed, one on the south-western fringe, one on the north-eastern fringe. Land quality varies greatly across both areas.

Grade	Area (ha)	% of Survey Area	% of Agricultural Area
2	1.1	8.5	8.9
3A	3.1	23.9	25.0
3B	5.1	39.2	41.1
4	1.5	11.5	12.1
5	1.6	12.3	12.9
Urban	0.6	4.6	
	13.0 ha	100%	100% (12.4 ha)

South-Western Area:

Grade 2: These deep profiles (+60 cm) have MCL topsoil textures, which overlie HCL subsoils that are relatively stone-free. The soils show no evidence of wetness, and are not droughty. Soil workability, related to the topsoil texture, is the limiting factor.

The rest of the agricultural land is downgraded due to locally steep gradients.

North-Eastern Area:

Sub-grade 3A: These profiles are similar to the Grade 2 soils, but possess HCL topsoils that create a more significant workability limitation. They also occupy higher topographic locations and suffer from an exposure risk which further limits the land to 3A.

The remaining land is downgraded due to locally steep gradients.

Climatic Interpolations

Grid Reference	SW941399	SW939397	SW933396	SW933393
Altitude (m)	68	57	64	83
Average Annual Rainfall (mm)	1085	1081	1078	1081
Accumulated Temperature (° days)	1568	1581	1573	1551
Field Capacity (days)	212	211	211	211
Moisture Deficit, Wheat (mm)	94	95	94	92
Moisture Deficit, Potatoes (mm)	84	86	85	82
Overall Climatic Grade	1	1	1	1

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.

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.