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PENWITH DISTRICT PLAN LUDGVAN AND CROWLAS

Agricultural Land Classification, Report of Survey

1 Summary

As part of MAFF's statutory input to the preparation of the Penwith District Plan, a detailed Agricultural Land Classification (ALC) survey was carried out around Ludgvan and Crowlas in Cornwall A total of 50 hectares was surveyed around the urban area to provide information on the type of land quality to be affected by future development

The summary ALC table below provides the details of the ALC statistics by grade, and the attached map shows the distribution of the grades

Much of the land affected is high quality agricultural land (Grade 2 and Sub-grade 3A) with only minor areas of lower land quality (Sub-grade 3B and Grade 4) associated with steeply sloping valley sides Soil workability and local exposure are the key limiting factors on the higher quality land

The fieldwork was carried out by members of the Resource Planning Group (South West Region) at a scale of 1 10,000 (ie approximately one soil observation per hectare) The information is also mapped at 1 10,000 and is accurate at this scale but any enlargement may be misleading This ALC map supercedes any previous ALC information for this area

Survey work was conducted using MAFF's "Revised Guidelines and Criteria for Grading the Quality of Agricultural Land" (MAFF 1989) These guidelines provide the framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use A description of the general grades used in the ALC system is attached

Distribution of Grades and Sub-grades Ludgvan and Crowlas

Grade	Area (ha)	% of Agricultural Area
2	29 7	64 0
3A	10 1	21 8
3B	4 7	10 1
4	1 9	4 1
Non Agric	1 1	—
Urban	2 0	Agricultural 46 4 ha
Agric Bldgs	0 5	
Total	50 0 ha	

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2 Climate

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

A detailed estimate of the prevailing climate has been made by interpolation from a 5-km dataset

The parameters used in assessing the impact of overall climate are accumulated temperature (a measure of the relative warmth of a locality) and average annual rainfall (a measure of overall wetness)

Three interpolations were made for the survey area, the details of which are attached The area is climatically Grade 1, is moderately droughty and has a high field capacity range (199-205 days)

Exposure is locally significant and has been assessed with a site visit by a Horticultural Adviser The higher slopes that face west, south-west and south are open to strong salt-laden winds which restrict the choice of sensitive horticultural crops such as raspberries, lettuce and runner beans

3 Agricultural Land Classification

Grade 2 Pit 1 is typical of these soils (details attached) and describes deep medium clay loams which show no evidence of wetness and are not droughty Soil workability is the main limitation, related to the topsoil texture and the field capacity range PSD analysis has shown that the soils have clay contents just below the cut-off for MCL/MSZL (ie approximately 17%) Given this situation, the soils have been classified as they felt in the field, ie medium clay loams The higher areas of Grade 2 also experience an exposure limitation

Sub-grade 3A The survey area includes several valley floor locations The soils in these areas are groundwater gleys The evidence of shallow wetness suggests that Wetness Class III is appropriate (ie wet within 40cm for 1-3 months) The topsoil textures vary between medium clay loam and medium sandy silt loam, for both these textures the wetness limitation restricts the grade of the land to 3A

Sub-grade 3B and Grade 4 These map units delineate areas of locally steep gradients (3B, 7-11 degrees, 4, greater than 11 degrees)

SOIL PIT DESCRIPTION

Site Name CROWLAS/LUDGVAN,CORNWALL Pit Number 1P

Grid Reference SW50873300

Average Annual Rainfall	1038 mm
Accumulated Temperature	1607 degree days
Field Capacity Level	205 days
Land Use	Field Vegetables
Slope and Aspect	02 degrees SE

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	MOTTLES	STRUCTURE
0- 25	MCL	10YR43 00	1	3		
25- 42	MCL	10YR54 00	0	10		WMSAB
42- 80	MCL	75YR56 00	0	2		WCSAB
80- 85	MCL	75YR56 00	0	20		WCSAB

Wetness Grade 2

Wetnesss Class	I
Gleying	000 cm
SPL	No SPL

Drought Grade 2

APW	122 mm	MBW	25 mm
APP	120 mm	MBP	31 mm

FINAL ALC GRADE 2
MAIN LIMITATION Workability

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