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North Cornwall Local Plan
Trecerus, Padstow

Agricultural Land Classification

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Land Use Planning Unit

MAFF

NORTH CORNWALL LOCAL PLAN

TRECERUS, PADSTOW

AGRICULTURAL LAND CLASSIFICATION

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NORTH CORNWALL LOCAL PLAN TRECERUS, PADSTOW

AGRICULTURAL LAND CLASSIFICATION SURVEY

SUMMARY

The survey was carried out by ADAS on behalf of MAFF as part of its statutory role in the preparation of the North Cornwall Local Plan. The fieldwork at Trecerus, Padstow was completed in August, 1995 at a scale of 1:10,000. Data on climate, soils, geology and from previous Agricultural Land Classification (ALC) Surveys was used and is presented in the report. The distribution of grades is shown on the accompanying ALC map and summarised below. Information is correct at this scale but could be misleading if enlarged.

Distribution of ALC grades: Trecerus Padstow

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (3.4 ha)
2	2.7	79.4	79.4
3a	0.7	20.6	20.8
TOTAL	3.4	100.0	100.0

All of the site was mapped as 'best and most versatile'. Most of the site was mapped as Grade 2 with minor workability and drought limitations where the topsoil was a heavy clay loam and the profiles were over slate rubble. A small area, mapped as Subgrade 3a, has a moderate wetness limitation due to poorly drained clay subsoils.

1. INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out in August 1995 at Trecerus, Padstow on behalf of MAFF as part of its statutory role in the preparation of the North Cornwall Local Plan. The fieldwork covering 3.4 ha of land was conducted by ADAS at a scale of 1:10,000 with approximately one boring per hectare of agricultural land. A total of four auger borings were examined and one soil profile pit used to assess subsoil conditions.

The published provisional one inch to the mile ALC map of this area (MAFF 1961) shows the grades of the site at a reconnaissance scale. The whole of the site was mapped as Grade 3 land.

The recent survey supersedes this map having been carried out at a more detailed level and using the Revised Guidelines and Criteria for grading the quality of agricultural land (MAFF 1988). These guidelines provide 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 120 cm of the soil profile. A description of the grades used in the ALC system can be found in Appendix 2.

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 a lower grade despite other favourable conditions.

Estimates of climatic variables were interpolated from the published agricultural climate dataset (Meteorological Office 1989). The parameters used for assessing overall 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 1 indicate there is no overall climatic limitation.

Table 1: Climatic Interpolations: Trecerus, Padstow

Grid Reference		SW 907 750
Altitude (m)		50
Accumulated Temperature (day °)		1574
Average Annual Rainfall (mm)		872
Overall Climatic Grade		1
Field Capacity Days		174
Moisture deficit (mm):	Wheat	100
	Potatoes	91

Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat and potatoes are also shown. These data are used in assessing the soil wetness and droughtiness limitations referred to in later sections.

3. RELIEF AND LANDCOVER

The site consists of one field to the north of the Trecerus Industrial Estate. It is gently sloping, with all gradients less than 7° and has a westerly aspect at an altitude of between 45 and 55m AOD. At the time of suvey it was under permanent pasture.

4. GEOLOGY AND SOILS

The geology of the site is shown on the published 1:50,000 scale solid and drift geology maps, sheets 335/336 Institute of Geological Sciences 1976. This shows the whole site to be underlain by grey slates of the Upper Devonian Era.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000 which shows the whole site to consist of soils from the Denbigh 2 Association. These are described as being well drained fine loamy soils over slate or slate rubble. Some fine loamy soils may be variably affected by groundwater.

The soils found during the recent survey generally consisted of well drained heavy clay loams over slate and slate rubble. The southern end of the field suffered from drainage problems where there was a less stony clay subsoil.

5. AGRICULTURAL LAND CLASSIFICATION

The distribution of ALC grades is shown in Table 2 and on the accompanying ALC map. This information could be misleading if shown at a larger scale.

Table 2: Distribution of ALC grades: Trecerus, Padstow

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (3.4 ha)
2	2.7	79.4	79.4
3a	0.7	20.6	20.6
TOTAL	3.4	100.0	100.0

Grade 2

The area mapped as Grade 2 has minor workability and drought limitations. The profiles consist of well drained heavy clay loam topsoils and subsoils which were assessed as Wetness Class I (See Appendix 3). Stone contents by percentage volume of 18%, 37% and 55% were found in the topsoil, and upper and lower subsoil respectively.

Subgrade 3a

A small area of land has a moderate wetness limitation and has been mapped as Subgrade 3a. Here the profiles have heavy clay loam topsoils over a gleyed clay subsoil. The gleying starts above 40 cm so the profiles were assessed as Wetness Class II.

Resource Planning Team
Taunton Statutory Unit
September 1995

APPENDIX 1

REFERENCES

INSTITUTE OF GEOLOGICAL SCIENCES (1976) Solid and Drift Edition, Sheets 335/336, Trevose Head and Camelford 1:50,000.

MAFF (1961) Agricultural Land Classification Map, Sheet 185, Provisional 1:63,360 scale.

MAFF (1988) Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for grading the quality of agricultural land), Alnwick.

METEOROLOGICAL OFFICE (1989) Climatological Data for Agricultural Land Classification.

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 5, Soils of South West England, 1:250,000 scale.

APPENDIX 2

DESCRIPTION OF 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 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 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 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 most 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: private park land, 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 landcover types, eg buildings in large grounds, and where may be shown separately. Otherwise, the most extensive cover type will usually be shown.

Source: MAFF (1988) Agricultural Land Classification of England and Wales (Revised Guidelines and Criteria for Grading the Quality of Agricultural Land), Alnwick.

APPENDIX 3

DEFINITION OF SOIL WETNESS CLASSES

Wetness Class I

The soil profile is not wet within 70 cm depth for more than 30 days in most years.

Wetness Class II

The soil profile is wet within 70 cm depth for 31-90 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 90 days, but not wet within 40 cm depth for more than 30 days in most years.

Wetness Class III

The soil profile is wet within 70 cm depth for 91-180 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 70 cm for more than 180 days, but only wet within 40 cm depth for between 31 and 90 days in most years.

Wetness Class IV

The soil profile is wet within 70 cm depth for more than 180 days but not within 40 cm depth for more than 210 days in most years or, if there is no slowly permeable layer within 80 cm depth, it is wet within 40 cm depth for 91-210 days in most years.

Wetness Class V

The soil profile is wet within 40 cm depth for 211-335 days in most years.

Wetness Class VI

The soil profile is wet within 40 cm depth for more than 335 days in most years.

Notes: The number of days specified is not necessarily a continuous period. 'In most years' is defined as more than 10 out of 20 years.

Source: Hodgson, J M (in preparation), Soil Survey Field Handbook (revised edition).

SITE NAME	PROFILE NO.	SLOPE AND ASPECT	LAND USE		PARENT MATERIAL
Trecerus, Padstow	Pit 1	3° west	Permanent Grass	Av Rainfall: 872 mm ATO: 1574 day °C	Grey slates
JOB NO.	DATE	GRID REFERENCE	DESCRIBED BY	FC Days: 174 Climatic Grade: 1	SOIL SAMPLE REFERENCES
56/95	22/8/95	SW 907 750	HLJ	Exposure Grade: 2	RPT/HLJ/178

Horizon No.	Lowest Av. Depth (cm)	Texture	Matrix (Ped Face) Colours	Stoniness: Size,Type, and Field Method	Mottling Abundance, Contrast, Size and Colour	Mangan Concs	Structure: Ped Development Size and Shape	Consistence	Structural Condition	Pores (Fissures)	Roots: Abundance and Size	Calcium Carbonate Content	Horizon Boundary: Distinctness and form
1	28	HCL	10YR42	<1%HR>2cm(s) 18%HR<2cm(S & D) 18% HR TOTAL	None	None	-	-	-	Good	MVF	-	Clear Smooth
2	58	HCL	10YR43	1%HR>2cm (s) 36% HR<2cm (S&D) 37% HR TOTAL	None	None	WFSAB	Friable	Good	Good	CVF	_	Clear Smooth
3	85+	HCL	10YR44	25%HR>2cm(s) 30%HR<2cm (S&D) 55% HR TOTAL	None	None	WFSAB	Friable	Good	Good	FVF	-	-

Profile Gleyed From: Not gleyed

Depth to Slowly Permeable Horizon: No SPL

Wetness Class: I

Wetness Grade: 2

Available Water Wheat: 120 mm

Potatoes: 95 mm

Moisture Deficit Wheat: 100 mm

Potatoes: 91 mm

Moisture Balance Wheat: 20 mm

Potatoes: 4 mm

Droughtiness Grade: 2 (Calculated to 120 cm)

Final ALC Grade: 2

Main Limiting Factor(s): Drought and Workability

Remarks:

Downgrading due to exposure would be no worse than Grade 2.