

HENDRA PARK
AGRICULTURAL LAND CLASSIFICATION

CONTENTS

	Page
SUMMARY	1
1. INTRODUCTION	2
2. CLIMATE	2
3. RELIEF AND LANDCOVER	2
4. GEOLOGY AND SOILS	3
5. AGRICULTURAL LAND CLASSIFICATION	3
APPENDIX 1 References	4
APPENDIX 2 Description of the grades and subgrades	5
APPENDIX 3 Definition of Soil Wetness Classes	7
MAP	

HENDRA PARK

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 Restormel Borough Council Local Plan. The fieldwork north of Hendra Park formed part of a larger survey and was completed in September 1993 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: Hendra Park

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	2.5	13.2	13.2
3a	16.5	86.8	86.8
TOTAL	19.0	100	100

The soils found at the site were all similar with medium clay loam topsoils over heavier soils. The soils are well drained but experience a slight workability limitation which restricts the soils to Grade 2. However, the majority of the site experiences risk from exposure which downgrades this land to Subgrade 3a.

1. INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out in September 1993 north of Hendra Park as part of a larger survey east of Newquay on behalf of MAFF as part of its statutory role in the preparation of the Restormel Borough Council Local Plan. The fieldwork covering 19 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 17 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 to be Grade 3.

The area was also surveyed in 1986 at a scale of 1:10,000 for the North Restormel Local Plan which shows the site to be Subgrade 3a.

The recent survey supersedes these maps having been carried out 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: Hendra Park

Grid Reference	SW834605
Altitude (m)	65
Accumulated Temperature (day °)	1565
Average Annual Rainfall (mm)	1002
Overall Climatic Grade	1
Field Capacity Days	198
Moisture deficit (mm):	
Wheat	93
Potatoes	84

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 slopes down towards the railway line from an altitude of 75 m AOD at the road to 45 m AOD at the railway. At the time of survey the fields were being used for potatoes and cereals.

4. GEOLOGY AND SOILS

The geology of the site is shown on the published 1:50,000 scale Solid and Drift geology map, Sheet 346, Institute of Geological Sciences 1981. The area is underlain by Lower Devonian Meadfoot Beds which comprise grey calcareous slates with thin limestones.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. This maps the site as the Denbigh 2 Association. These soils are described as well drained fine loamy soils over late or slate rubble.

The soils found during the recent survey are typical of Denbigh 2 soils with clay loams over slaty clays.

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: Hendra Park

Grade	Area (ha)	% of Survey Area	% of Agricultural Land
2	2.5	13.2	13.2
3a	16.5	86.8	86.8
TOTAL	19.0	100	100

Grade 2

The Grade 2 land experiences a workability limitation. The soils are well drained and are Wetness Class I. The topsoil texture is medium clay loam which in combination with the high Field Capacity Days imposes a Grade 2 workability limitation. The subsoils are heavier with slate stones.

Subgrade 3a

The Subgrade 3a land has similar soils to that described above. However, this area experiences a moderate exposure limitation. Wind pruning is evident in vegetation surrounding the fields in the area. The risks associated with exposure limit the versatility of the land.

Resource Planning Team
Taunton Statutory Unit
January 1995

APPENDIX 1

REFERENCES

INSTITUTE OF GEOLOGICAL SCIENCES (1981) Solid and Drift Edition, Sheet 346, Newquay (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).