

1601-120-92

AGRICULTURAL LAND CLASSIFICATION  
GURNARD  
ISLE OF WIGHT

December 1992

ADAS Ref: 1601/120/92

MAFF Ref: EL 6373

Resource Planning Team  
ADAS Statutory Group  
Reading

## AGRICULTURAL LAND CLASSIFICATION

### GURNARD, ISLE OF WIGHT

#### 1. INTRODUCTION

1.1 In October 1992, an Agricultural Land Classification (ALC) survey was carried out on approximately 40 hectares of land at Gurnard, Isle of Wight. ADAS was commissioned by MAFF to determine the quality of land affected by proposals for a change of land use to a golf course.

1.2 The survey work was carried out at a level of approximately one boring per hectare. A total of 34 auger borings and two soil inspection pits were described using MAFF's 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 its agricultural use.

At the time of the survey the land was in a variety of uses. Primarily permanent grassland and cereals with a smaller area remaining in a ploughed state.

1.3 The distribution of the grades and subgrades is shown on the attached ALC map and the areas are given in the table below. The map has been drawn to a scale of 1:10,000. Any enlargement of this scale would be misleading.

Table 1 : Distribution of Grades and Subgrades

	Area (ha)
Grade 3b	35.35
Woodland	4.05
Urban	0.4
Farm buildings	<u>0.05</u>
Total area of site	<u>39.85</u>

1.4 The site comprises moderate quality, subgrade 3b, land. Soils on the site have slowly permeable clay subsoils at shallow depths. This combined with topsoil textures and the climatic regime for the locality limits the land to subgrade 3b due to wetness/workability constraints.

#### 2. PHYSICAL FACTORS AFFECTING LAND QUALITY

##### Altitude and Relief

2.1 The site lies at an altitude of 10-45 m AOD and slopes gently to the north and east from a ridge south of the site. Gradient does not represent a limitation to ALC grade with the exception of a small area of land to the south of Hornhill Copse where slope exceeds 7° and limits this land to subgrade 3B.

## Climate

- 2.2 Estimates of climatic variables were obtained by interpolation from a 5 km grid database (Met. Office, 1989) for representative locations in the survey area:-

Table 2 : Climatic Interpolation

Grid Ref	SZ470951	SZ465947	SZ468940
Altitude (m)	10	30	45
Accumulated Temperature (day°)	1552	1530	1513
Annual Average Rainfall (mm)	786	805	820
Field Capacity Days	162	165	168
Moisture Deficit - wheat (mm)	118	114	111
Moisture Deficit - potatoes (mm)	114	109	105

- 2.3 The above data indicates that climate does not affect the land quality at this locality. However climate and soil factors do interact to affect soil wetness limitations.

## Geology and Soils

- 2.4 The published Geological Survey map 'Isle of Wight' (B.G.S., 1976) shows the area to be mapped as Recent and Pleistocene Plateau Gravel on the higher ground. Oligocene Hamstead Beds are mapped on land at intermediate altitude with the lower land mapped as Oligocene Bembridge Marls. The published 1:250,000 scale soils map sheet 6 'Soils of South East England', shows the site to comprise the Wickham IV Association 'loamy over clayey' soils (SSEW, 1983). Detailed inspection of the site indicates the presence of one soil type.

## 3. AGRICULTURAL LAND CLASSIFICATION

### Subgrade 3B

- 3.1 The entire site has been classed as subgrade 3B, moderate quality agricultural land. Soils typically consist of stoneless to slightly stony clay, heavy clay loam or medium clay loam topsoils which are non calcareous. Subsoils consist of non calcareous slowly permeable clay. These soils are commonly gleyed in and below the topsoil and slowly permeable from 25-35 cm to depth. Wetness class has been assessed as IV, consequently significant wetness and workability limitations limit the land to subgrade 3B.

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#### SOURCES OF REFERENCE

- British Geological Survey (1976) Special Sheet Isle of Wight 1:50,000 scale. Drift edition.
- MAFF (1988) Agricultural Land Classification of England and Wales, Revised guidelines and criteria for grading the quality of agricultural land.
- Meteorological Office (1989) Climate datasets for Agricultural Land Classification.
- Soil Survey of England and Wales (1983), Sheet 6 'Soils of South-East England' 1:250,000 scale.
- Soil Survey of England and Wales (1984) Bulletin 15. 'Soils and their use in South-East England'

## **DESCRIPTION OF THE GRADES AND SUBGRADES**

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

### **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 includes 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 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.

#### **Woodland**

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

#### **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.