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**Purbeck Local District Plan
Wool
Agricultural Land Classification**

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WOOL, DORSET
AGRICULTURAL LAND CLASSIFICATION

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WOOL, DORSET

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 Purbeck and District Local Plan. The fieldwork covered sites around the villages of Wool and east Burton and was completed in September 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 maps and summarised below. Information is correct at this scale but could be misleading if enlarged.

Distribution of ALC grades: Wool

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (38.5 ha)
2	23.3	59.0	60.5
3a	2.0	5.1	5.2
3b	13.2	33.4	34.3
Urban	1.0	2.5	0.0
TOTAL	39.5	100.0	100.0

Of the agricultural land surveyed 65 % was found to be "best and most versatile". The land mapped as Grade 2 has a minor drought limitation although the profiles were variable and include deep sandy profiles and a few profiles with weathered chalk in the lower subsoils. The small area of Subgrade 3a land has a moderate wetness limitation where the topsoils are slightly heavier than the rest of the site and the subsoils are slowly permeable and gleyed. The majority of the land mapped as Subgrade 3b has a moderate drought limitation. These profiles have both a higher sand content in the topsoils and a higher stone content in the subsoils than the droughty Grade 2 profiles. A small area of land to the north-west of Wool has a moderate wetness limitation where the topsoils have organic mineral textures and the subsoils are gleyed and slowly permeable.

1. INTRODUCTION

An Agricultural Land Classification (ALC) Survey was carried out in September 1995 at Wool, Dorset. The fieldwork covering 39.5 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 34 auger borings were examined and two soil profile pits used to assess subsoil conditions.

The published provisional one inch to the mile ALC map of this area (MAFF, 1974) shows the grade of the site at a reconnaissance scale to be Grade 3 for the areas to the east of Wool and Grade 4 for the area to the west of Wool. The two fields either side of the railway, near East Burton, were also surveyed in 1980 at a scale of 1:25,000. This mapped them as Grade 2 with sandy topsoils and well drained profiles.

This recent survey supersedes these maps 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: Wool

Grid Reference	SY 849 869	SY 835 861
Altitude (m)	15	45
Accumulated Temperature (day °)	1564	1531
Average Annual Rainfall (mm)	910	926
Overall Climatic Grade	1	1
Field Capacity Days	186	189
Moisture deficit (mm):		
Wheat	109	104
Potatoes	102	97

3. RELIEF AND LANDCOVER

The site occupies land on the flood plain of the River Frome between wool and East Burton, and some fields rising up out of the flood plain to the south of the A352. There is a small area of land to the north-east of Wool which was also surveyed. The site has north facing gentle slopes to the south of the A352 which flatten out on to the flood plain to the north of the main road. The altitude ranges from 15 m to 45 m above ordnance datum (AOD). At the time of the survey all of the land to the north of the A352 and the small area to the north-east of Wool was being used as pasture. The fields to the south of the A352 included ploughed land and Flax.

4. GEOLOGY AND SOILS

The geology of the site is shown on the published 1:50,000 scale drift geology map, Sheet 328 (Institute of Geological Sciences, 1981). This shows that the site is underlain by bands of different geology running approximately east to west. The small site to the north-east of Wool is underlain by alluvium in the north and valley gravel to the south. The main part of the survey area has a band of valley gravel either side of the railway line, then working south bands of London clay, Reading Beds to an area upper chalk along the south-east boundary of the site.

The soils were mapped by the Soil Survey of England and Wales in 1983 at a reconnaissance scale of 1:250,000. This shows that the land to the north-east of Wool and to the north of the A352 consists of soils from the Waterstock Association which are described as being deep, permeable mainly fine loamy soils variably affected by groundwater. Some deep well drained fine and coarse loamy soils also exist. The rest of the site has a narrow band of soils from the Fyfield 4 Association running along the southern side of the main road which are described as being deep, well drained often stoneless coarse loamy and sandy soils. There may be some fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging and some slowly permeable seasonally waterlogged fine loamy over clayey soils. The rest of this block of land contains soils from the Frilsham Association which are described as being well drained mainly fine loamy soils over chalk, some of which are calcareous. Shallow calcareous fine loamy and fine silty soils may also be found in places.

The soils found during the current survey had deep well drained sandy loams, loamy sands and sands some of which were stoneless, which are similar to the Waterstock Association, to the north of the A352. These also occurred to the south of the main road. There is an area of soils similar to those of the Fyfield 4 Association with sandy loam topsoils and clay subsoils showing signs of poor drainage to the south of the A352 and adjacent to the round-about. A small area of soils which had sandy and clay loam over chalk was found in the south-east of the site which are similar to those described by the Frilsham Association.

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: Wool

Grade	Area (ha)	% of Survey Area	% of Agricultural Land (38.5 ha)
2	23.3	59.0	60.5
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3b	13.2	33.4	34.3
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Grade 2

The land mapped as Grade 2 suffers from a minor drought limitation due in most cases to their coarse textures. The profiles typically have medium sandy loam topsoils and upper subsoils over medium sand lower subsoils. All of the horizons are virtually stoneless. Some of the profiles near Summerfield Farm have clay subsoils with up to 50% weathered chalk in them which also have a minor drought limitation. All of the profiles were well drained and were assessed as Wetness Class I (see Appendix 3). A small area of land in the south-west corner of the site had an impenetrable plough pan at 35 cm but this could be removed with deep ploughing and does not cause a long term limitation.

Subgrade 3a

The small area of land mapped as Subgrade 3a has a moderate wetness limitation. These profiles were also varied. Some had medium sandy loam topsoils and upper subsoils over gleyed, slowly permeable clay lower subsoils. The clay horizons started at 60 cm depth so the profiles were assessed as Wetness Class III. Other profiles had gleyed medium clay loam horizons from the surface to depth and these were assessed as Wetness Class II.

Subgrade 3b

A small area of land mapped as Subgrade 3b running along the lane to the north-east of Wool has a moderate wetness limitation. These profiles have peaty and organic mineral topsoils and upper subsoils which are gleyed over slowly permeable clay lower subsoils. They are gleyed above 40 cm and were assessed as Wetness Class IV.

The rest of this mapping unit has a moderate drought limitation. the profiles are similar to the droughty Grade 2 profiles except that they have coarser textures and higher stone contents. A typical profile has a loamy medium sand topsoil and upper subsoil over medium sand subsoils. Stone contents of 6%, 16% and 5% had rock by volume were measured in the upper subsoil and lower subsoils respectively. The profiles are deep and well drained so they were assessed as Wetness Class I.

Resource Planning Team
Taunton Statutory Unit
September 1995

APPENDIX 1

REFERENCES

INSTITUTE OF GEOLOGICAL SCIENCES (1981) Drift Edition, Sheet 328, Dorchester (1:50,000).

MAFF (1974) Agricultural Land Classification Map, Sheet 178, 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 (e.g. 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 (e.g. 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, e.g. 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).