

**Devon Structure Plan: East Devon
AGRICULTURAL LAND CLASSIFICATION
REPORT OF SURVEY**

**Resource Planning Team
Taunton Statutory Unit**

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ADAS 

DEVON STRUCTURE PLAN : EAST DEVON

AGRICULTURAL LAND CLASSIFICATION

Report of Surveys

1. SUMMARY

Land in East Devon District in three locations close to Exeter was surveyed using the Agricultural Land Classification (ALC) System in December 1993 and January 1994. The surveys were carried out on behalf of MAFF as part of its statutory role in the preparation of the Devon Structure Plan. Land around Broadclyst Station, between Pinhoe and Poltimore, and at Sowton was surveyed.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000. The information is correct at the scale shown but any enlargement would be misleading.

The distribution of ALC grades and categories identified in the survey areas are detailed below and illustrated on the accompanying ALC maps.

Distribution of ALC grades: Broadclyst Station

| Grade | Area (ha) | % of Survey Area | % of Agricultural Land |
|------------|------------|------------------|------------------------|
| 2 | 84.0 | 21.3 | 24.2 |
| 3a | 87.7 | 22.2 | 25.3 |
| 3b | 175.4 | 44.4 | <u>50.5</u> |
| Urban | 29.3 | 7.4 | 100% |
| Non Agric | 15.7 | 4.0 | (347.1ha) |
| Agric Bdgs | <u>2.6</u> | <u>0.7</u> | |
| TOTAL | 394.7 | 100% | |

Nearly half of the land surveyed was found to be of best and most versatile quality. This land forms two blocks, one in the south and one in the north, and relates to the well drained coarse textured profiles which experience a slight drought limitation. The moderate quality land experiences a wetness limitation.

Distribution of ALC grades: Poltimore

| Grade | Area (ha) | % of Survey Area | % of Agricultural Land |
|------------|------------|------------------|------------------------|
| 1 | 52.0 | 22.3 | 27.0 |
| 2 | 36.2 | 15.5 | 18.9 |
| 3a | 6.4 | 2.7 | 3.3 |
| 3b | 92.1 | 39.4 | 47.9 |
| 4 | 5.6 | 2.4 | <u>2.9</u> |
| Urban | 17.3 | 7.4 | 100% |
| Non Agric | 21.0 | 9.0 | (192.3ha) |
| Agric Bdgs | <u>3.0</u> | <u>1.3</u> | |
| TOTAL | 233.6 | 100% | |

Over a fifth of the land surveyed has no or minor limitations and is mapped as Grade 1. The better quality land at this site corresponds to well drained sandy profiles, whilst the moderate quality land experiences wetness limitations of varying severity. There is some land in the south limited by steep gradients.

Distribution of ALC grades: Sowton

| Grade | Area (ha) | % of Survey Area | % of Agricultural Land |
|-----------|------------|------------------|------------------------|
| 1 | 1.0 | 0.9 | 1.0 |
| 2 | 56.0 | 47.8 | 56.5 |
| 3a | 39.1 | 33.5 | 39.4 |
| 3b | 3.1 | 2.6 | <u>3.1</u> |
| Urban | 12.7 | 10.9 | 100% |
| Non Agric | <u>5.0</u> | <u>4.3</u> | (99.2ha) |
| TOTAL | 116.9 | 100% | |

The majority of the agricultural land surveyed is of best and most versatile quality. The well drained sandy profiles experience droughtiness limitations. The degree of limitation depends upon the textures found within the soil profile.

2. INTRODUCTION

Land in East Devon District in three locations close to Exeter was surveyed using the Agricultural Land Classification (ALC) System in December 1993 and January 1994. The surveys were carried out on behalf of MAFF as part of its statutory role in the preparation of the Devon Structure Plan. Land around Broadclyst Station, between Pinhoe and Poltimore, and at Sowton was surveyed.

The fieldwork was carried out by ADAS (Resource Planning Team, Taunton Statutory Unit) at a scale of 1:10,000 (approximately one sample point every hectare). The information is correct at this scale but any enlargement would be misleading. The findings of the surveys and the distribution of the grades are detailed below for each area surveyed.

The recent surveys supersede any previous surveys and were undertaken to provide a more detailed representation of the agricultural land quality 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 120cm of the soil profile. A description of the grades used in the ALC System can be found in Appendix 2.

3. 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 obtained for each site by interpolation from the Agricultural Climate Dataset (Meteorological Office 1989). The data are shown in later sections.

The parameters used for assessing overall climatic conditions are accumulated temperature, (a measure of the relative warmth of a locality) and average annual rainfall, (a measure of overall wetness). Climatic data on Field Capacity Days (FCD) and Moisture Deficits for wheat (MDW) and potatoes (MDP) are also shown. These data are used in assessing the soil wetness and droughtiness limitations referred to in later sections. A description of the Wetness Classes used in quantifying the degree of wetness can be found in Appendix 3.

4. BROADCLYST STATION

4.1 Three hundred and ninety five hectares of land south of Broadclyst around Broadclyst Station were surveyed in January 1994. The only existing ALC information is from the one inch to the mile national ALC map series, sheet 176

(MAFF 1972). The scale of the map is considered inadequate for local plan purposes and the area has been resurveyed. The recent survey now supersedes any previous ALC information. A total of 350 auger borings and 16 soil profile pits were examined.

4.2 Climate

Climatic data for the site was interpolated as described in Section 3. The results are shown in Table 1 and indicate that there is no overall climatic limitation for the site.

Table 1 Climatic Interpolations: Broadclyst Station

| | | |
|-----------------------------------|------------|------------|
| Grid Reference | SX 982 961 | SX 985 941 |
| Altitude (m) | 30 | 10 |
| Accumulated Temperature (day deg) | 1563 | 1586 |
| Average Annual Rainfall (mm) | 801 | 780 |
| Overall Climatic Grade | 1 | 1 |
| Field Capacity Days | 169 | 166 |
| Moisture Deficit, Wheat (mm) | 112 | 114 |
| Moisture Deficit, Potatoes (mm) | 105 | 109 |

4.3 Relief and Landcover

The site occupies a gently undulating area of land in the Clyst Valley. The level valley floor lies at approximately 10m AOD and is used for permanent grazing. The surrounding higher land which rises to a maximum height of 30m AOD in the far north west of the site is used for a mixture of agricultural cropping, mostly winter cereals and grass leys.

4.4 Geology and Soils

The published 1:63,360 scale drift geology map, sheet 325 (Geological Survey of England and Wales 1971) shows the site consists of a varied geology. To the north there is a block of Lower Sandstone and a single pocket of Basalt and Trachyte (Exeter Traps). Lower Sandstone also occurs throughout the site in small areas. The valley floor consists mainly of alluvium with 2 small strips of valley gravels.

The Soil Survey of England and Wales mapped the soils in 1972 at a scale of 1:63,360. The site is mainly mapped as the Bridgnorth Series, described as well drained sandy soils and coarse loamy soils over soft sandstone. There is an area mapped as Mixed Bottomlands running through the centre of the site along the line of the railway. Clyst Complex is mapped along the line of the River Clyst and a small area of the Cutton Series in the east. The 1983 1:250,000 scale soils map (Soil Survey of England and Wales 1983) show much of the central area as the Compton Association, which is described as reddish clayey soil affected by groundwater.

The recent survey found similar soils to the mapped series. The valley floor comprises entirely clayey profiles with heavy clay loam or clayey topsoils. The slightly higher land in the north and along the western edge of the site comprises loamy medium sands over sands and sandy loams over loamy medium sands. These profiles are generally stonefree. The land to the south of Broadclyst Station comprises deep sandy loams and sandy silt loams which are moderately stony at depth. These soils occasionally go into clay at depth. Similar soils are found on the slightly higher land along the A30 with increasing subsoil stone contents.

4.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 2 and shown on the accompanying ALC map. The information is correct at the scale shown, but any enlargement would be misleading.

Table 2 Distribution of ALC grades: Broadclyst Station

| Grade | Area (ha) | % of Survey Area | % of Agricultural Land |
|------------|------------|------------------|------------------------|
| 2 | 84.0 | 21.3 | 24.2 |
| 3a | 87.7 | 22.2 | 25.3 |
| 3b | 175.4 | 44.4 | <u>50.5</u> |
| Urban | 29.3 | 7.4 | 100% |
| Non Agric | 15.7 | 4.0 | (347.1ha) |
| Agric Bdgs | <u>2.6</u> | <u>0.7</u> | |
| TOTAL | 394.7 | 100% | |

Grade 2

A total of 84 hectares of land was found to be Grade 2. Land to the east of Broadclyst Station, west of Hayes Farm, south of Mill Lane and at Mosshayne Lane comprises deep medium sandy loam profiles which are slightly stony below a depth of 60-70cm. The central block of Grade 2 south of the railway comprises much stonier lower subsoils (55% hard rock as measured by sieving and water displacement). These profiles experience a slight drought restriction due to the coarse textured and stony soils. The Grade 2 land in the northern part of the site experiences a wetness limitation. These profiles are gleyed and are slowly permeable from a depth of 50cm and have been assessed as Wetness Class III. The medium sandy loam topsoils allow good workability and so the soils experience only a slight wetness limitation.

Subgrade 3a

Land of this subgrade is also found on the sandy soils described above. Land shown as Subgrade 3a around Washford Farm comprises sandy loam topsoils over loamy medium sand upper subsoils and medium sand lower subsoils. These profiles experience a moderate drought limitation due to the reduced

water available for plant growth. Similarly the stony profiles on land bordering the A30 experience similar drought restrictions. Due to the variability of the stone quantities in these soils an occasional Grade 2 profile has been included in this mapping unit. An area of 3a with moderate wetness limitation has been identified along the railway north east of Broadclyst Station. These profiles comprise slowly permeable subsoils between 50 and 60cm (Wetness Class III) which under the prevailing FC days and with medium clay loam topsoils limits the soils to Subgrade 3a.

Subgrade 3b

There are two soil types in this subgrade. The level lying clayey soils in the valley floor comprise heavy clay loam and clay topsoils over deep slowly permeable clay. These soils are assessed as Wetness Class IV and thus experience a moderately severe wetness limitation. Two small areas of disturbed land have also been included in this grade where the soils are variable and comprise high topsoil stone contents. The north east corner of the site there are sandy profiles with occasional organic and peaty areas. These areas experience ground water gleying and high water tables for a much of the year and thus have been assessed as Subgrade 3b. Small very wet areas of Grade 4 have been included in this mapping unit. Land in the north western corner and in two small areas in the south west part of the site experiences a moderately severe drought limitation caused by loamy medium sand over medium sand.

Other Land

Areas of woodland, fen and derelict land have been shown as Non Agricultural. Lines of communication, residential and industrial area are shown on the map as urban.

5. POLTIMORE

5.1 Two hundred and thirty three hectares of land between Pinhoe and Poltimore were surveyed in December 1993. The only existing ALC information is from the one inch to the mile ALC map series, sheet 176 (MAFF 1972). The scale of this map is considered inadequate for local plan purposes and the area has been resurveyed. The recent survey now supersedes any previous ALC information. A total of 179 auger sample points and 9 soil profile pits were examined.

5.2 Climate

Climatic data for the site was interpolated as described in Section 3. The results are shown in Table 3 and indicate that there is no overall climatic limitation for the site.

Table 3 Climatic Interpolations: Poltimore

| | | |
|-----------------------------------|------------|------------|
| Grid Reference | SX 958 952 | SX 973 961 |
| Altitude (m) | 107 | 15 |
| Accumulated Temperature (day deg) | 1476 | 1580 |
| Average Annual Rainfall (mm) | 847 | 797 |
| Overall Climatic Grade | 1 | 1 |
| Field Capacity Days | 175 | 168 |
| Moisture Deficit, Wheat (mm) | 100 | 113 |
| Moisture Deficit, Potatoes (mm) | 91 | 108 |

5.3 Relief and Landcover

The area surveyed is gently undulating except in the south west where the land rises steeply. The lowest land in the east beside the M5 is at 15m AOD. The land gradually rises in a series of spurs to about 70m AOD before rising more steeply in the south west to a maximum height of 107m AOD at Beacon Rise.

At the time of survey the agricultural land was in a mix of arable and grass.

5.4 Geology and Soils

The published 1:63,360 scale drift geology map sheet 325 (Geological Survey of England and Wales 1971) shows the site to be underlain by a mix of geology. To the south west there is a large area of Grits and Shales (Culm Measures). Lower Sandstone is frequent throughout the eastern side of the site and there is also a small outcrop of Basalt and Trachyte (Exeter Traps) to the south east. Alluvium and a small area of Valley Gravels occur in the north east of the site.

The Soil Survey of England and Wales mapped the soils in 1972 at a scale of 1:63,360. Much of the area is mapped as the Bridgnorth Series, described as well drained sandy soils and coarse loamy soils. There is an area mapped in the south as the Halstow Series which are described as poorly drained clayey soils.

During the recent survey two broad types of soil were found. Much of the central area has poorly drained clayey soils, which have slowly permeable subsoils. The other main soil type found was a droughty sandy soil. The degree of droughtiness varied within this soil type.

5.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 4 and shown on the accompanying ALC map. The information is correct at the scale shown, but any enlargement would be misleading.

Table 4 Distribution of ALC Grades: Poltimore

| Grade | Area (ha) | % of Survey Area | % of Agricultural Land |
|------------|------------|------------------|------------------------|
| 1 | 52.0 | 22.3 | 27.0 |
| 2 | 36.2 | 15.5 | 18.9 |
| 3a | 6.4 | 2.7 | 3.3 |
| 3b | 92.1 | 39.4 | 47.9 |
| 4 | 5.6 | 2.4 | <u>2.9</u> |
| Urban | 17.3 | 7.4 | 100% |
| Non Agric | 21.0 | 9.0 | (192.3ha) |
| Agric Bdgs | <u>3.0</u> | <u>1.3</u> | |
| TOTAL | 233.6 | 100% | |

Grade 1

Several areas of Grade 1 land were identified within the survey area. These soils are well drained and are Wetness Class I. These soils have medium sandy loam topsoils and fine sandy loam and loamy fine sand subsoils. The soil profiles are able to hold sufficient water for versatile agricultural uses. The subsoil structure of these soils was assessed in three soil profile pits and was found to be either of moderate or good structural condition. The soils have very low stone contents. These soils have no or minor limitations to agricultural use.

Grade 2

Several areas of Grade 2 have also been mapped. These soils are slightly droughty, having medium sized sand particles, rather than fine particles. These do not allow the soil to hold as much water as fine sand particles. Some of the areas mapped as Grade 2 also experience a slight wetness limitation. The wetness is caused by groundwater rising up the profile for part of the year and in some areas by slowly permeable layers deep in the profile. The soils found are Wetness Class II with a medium clay loam topsoil or Wetness Class III with a sandy loam topsoil. The Wetness Class depends on the severity of the wetness.

Subgrade 3a

Two small areas of Subgrade 3a soils are mapped. In the south the soils are stony and have a more severe droughtiness limitation than those described above. The soils in the north have a wetness limitation caused by slowly

permeable subsoils. The soils are Wetness Class III and have medium clay loam topsoils. This imposes a moderate wetness limitation.

Subgrade 3b

There are areas in the south of the site where there is a slope limitation. Where the slope gradient was measured as between 7 and 11 degrees the land is downgraded to Subgrade 3b. The versatility of this land is reduced because not all types of agricultural machinery can be safely used on such slopes. The majority of the land mapped as Subgrade 3b experiences a wetness limitation. The soil profiles show evidence of being wet for long periods of the year caused by slowly permeable subsoils high in the profile. The soils are Wetness Class IV and for both medium clay loam and heavy clay loam topsoils these soils can be no better than Subgrade 3b. Two soil profile pits were examined to confirm the presence of slowly permeable layers in the subsoil.

Grade 4

The small areas of Grade 4 land in the south have a slope limitation. The gradients of these slopes were measured to be between 11 and 18 degrees. The versatility of these areas is greatly reduced because few types of agricultural machinery can be safely used here.

Other land

Residential areas, roads and buildings not associated with agriculture are shown as urban. There are several areas of scrub and woodland which are mapped as non agricultural. The buildings associated with agriculture are shown as agricultural buildings.

6. Sowton

6.1 One hundred and seventeen hectares of land north of Sowton were surveyed in December 1993. The only existing ALC information is from the one inch to the mile national ALC map series, sheet 176 (MAFF 1972). The scale of this map is considered inadequate for local plan purposes and the area has been resurveyed. The recent survey now supersedes any previous ALC information. A total of 96 auger sample points and 5 soil profile pits were examined.

6.2 Climate

Climatic data for the site was interpolated as described in Section 3. The results are shown in Table 5 and indicate that there is no overall climatic limitation for the site.

Table 5 Climatic Interpolations: Sowton

| | | |
|-----------------------------------|------------|------------|
| Grid Reference | SX 972 936 | SX 977 927 |
| Altitude (m) | 44 | 13 |
| Accumulated Temperature (day deg) | 1548 | 1584 |
| Average Annual Rainfall (mm) | 811 | 794 |
| Overall Climatic Grade | 1 | 1 |
| Field Capacity Days | 170 | 168 |
| Moisture Deficit, Wheat (mm) | 109 | 113 |
| Moisture Deficit, Potatoes (mm) | 102 | 108 |

6.3 Relief and Landcover

The site is on gently sloping land rising to a height of 46m AOD at Redhayes. The lowest point in the survey area is at 10m in the east of the area. The site has mainly gentle slopes to all aspects. Only in two small areas do the slopes exceed 7 degrees limiting the land to Subgrade 3b.

At the time of survey most of the agricultural land was being used for arable cropping, mainly winter cereals with some potatoes, maize and swedes.

6.4 Geology and Soils

The published 1:63,360 scale drift geology map, sheet 325 (Geological Survey of England and Wales 1971) shows the entire site to be underlain by Lower Sandstone.

The Soil Survey of England and Wales mapped the soils in 1972 at a scale of 1:63,360. The whole of the site has been mapped as the Bridgnorth Series, described as well drained sandy soils and coarse loamy soils. These soils are prone to water and wind erosion. There is a small area mapped in the south east as the Cutton Series, which is also described as a coarse loamy soil.

The soils found during the recent survey were well drained sandy soils typical of the mapped soil series. The Lower Sandstone gives rise to the brightly coloured loamy sand or sand in the lower subsoil at many of the borings examined. This material has limited capacity for holding soil water and its presence causes a droughtiness limitation. Evidence of water erosion near to Sowton Lane was observed.

6.5 Agricultural Land Classification

The distribution of ALC grades identified in the survey area is detailed in Table 6 and shown on the accompanying ALC map. The information is correct at the scale shown, but any enlargement would be misleading.

Table 6 Distribution of ALC grades: Sowton

| Grade | Area (ha) | % of Survey Area | % of Agricultural Land |
|-----------|------------|------------------|------------------------|
| 1 | 1.0 | 0.9 | 1.0 |
| 2 | 56.0 | 47.8 | 56.5 |
| 3a | 39.1 | 33.5 | 39.4 |
| 3b | 3.1 | 2.6 | <u>3.1</u> |
| Urban | 12.7 | 10.9 | 100% |
| Non Agric | <u>5.0</u> | <u>4.3</u> | (99.2ha) |
| TOTAL | 116.9 | 100% | |

Grade 1

There is small area in the north west where the soils experience no limitation. Here the soils are able to hold sufficient water for maximum versatility. The soils are stoneless sandy loams and are well drained Wetness Class I.

Grade 2

The Grade 2 soils experience a slight droughtiness limitation. The soils are well drained and are Wetness Class I. The medium clay loam topsoils overlie medium sandy loam and loamy medium sands. The stone content of these soils is low. Stone contents were measured in soil profile pits and were found to be typically less than 5% in the topsoil and decreasing with depth. The light textures and the stone contents slightly reduce the available water for crop growth. Soil pits dug in these areas showed the subsoil structural condition varied between good and moderate condition.

Subgrade 3a

The droughtiness limitation in these areas is greater than that described above. This areas has loamy medium sand from a shallow depth and in some cases the topsoil texture is also a loamy medium sand. This reduces the amount of water that can be held in the profile for crops to extract and this limits the versatility of these areas. These profiles are well drained and are Wetness Class I. Soil profile pits dug at the site showed that the upper horizons of loamy medium sand generally had good substructural conditions.

Subgrade 3b

The droughtiness limitation in some areas is worse than described above and the soils are downgraded to Subgrade 3b. The soils in these areas have loamy medium sand down the whole profile, occasionally with sand at depth. The water holding capacity of these soils is much reduced and the versatility of the soil is limited. The stone content of some of these soils is also higher and this further reduces the amount of water that can be held in the profile. Two small areas of land have slopes over 7 degrees which limits the versatility of the land because not all types of agricultural machinery can be safely used on such slopes:

Other Land

Gardens, roads and built land are shown as urban. Several areas of woodland, the disused allotments and larger areas of grass within domestic properties are shown as non agricultural.

APPENDIX 1

REFERENCES

GEOLOGICAL SURVEY OF ENGLAND AND WALES (1971) Drift edition.
Sheet 325, Exeter, 1:63,360 scale

MAFF (1972) Agricultural Land Classification Map sheet 176 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) Published climatic data extracted from
the agroclimatic dataset, compiled by the Meteorological Office

SOIL SURVEY OF ENGLAND AND WALES (1972) Sheet 325 and 339
1:63,360 scale

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

APPENDIX 2

DESCRIPTION OF THE 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 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.

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 70cm depth for more than 30 days in most years.

Wetness Class II

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

Wetness Class III

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

Wetness Class IV

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

Wetness Class V

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

Wetness Class VI

The soil profile is wet within 40cm 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).