

LAND ADJACENT TO HILL BARTON FARM, PINHOE, EXETER, DEVON
AGRICULTURAL LAND CLASSIFICATION

Report of Survey

1. Introduction

In November and December 1988 members of the Resource Planning Group (South West Region) carried out a detailed Agricultural Land Classification (ALC) survey over 100 hectares around Monkerton on the north-eastern edge of Exeter, Devon. The survey was in response to a planning consultation from Exeter City Council.

Subsequently, a detailed planning application was made on approximately 5 hectares of agricultural land on the western fringe of the original survey area, on land adjacent to Hill Barton Farm. The original fieldwork was conducted at an approximate auger sampling density of one boring per hectare, and five auger sample points are located within the Hill Barton application area. One soil pit was also examined within this area, and is representative of the soils in that locality.

The enclosed ALC map shows the application area classified entirely as Grade 1 and also illustrates a substantial adjacent block of high quality land to the east. The ASP map shows the location of the five auger sample points and the soil pit.

Although the fieldwork was conducted in 1988, the classification has been assessed using MAFF's revised guidelines and criteria for grading the quality of agricultural land.

2. Climate

Estimates of important climatic variables for the original survey area were obtained at various locations by interpolation from a five kilometre grid database. One such interpolation point was sited just to the north of the Hill Barton site, north of Hollow Lane, at a similar altitude and is therefore representative of the climate prevailing at Hill Barton. The interpolation details are given below. The main parameters used in the assessment of overall climate are accumulated temperature (as a measure of the relative warmth of a locality) and average annual rainfall (as a measure of overall wetness). Together, these parameters suggest that overall climate is not a limiting factor. No evidence of any limiting local climatic factor, such as exposure, was found at the site.

Accumulated Temperature	:	1536° days
Average Annual Rainfall	:	822 mm
Moisture Deficit, Wheat	:	107 mm
Moisture Deficit, Potatoes	:	100 mm
Field Capacity Days	:	172 days
Altitude	:	55 m

3. **Soils and Agricultural Land Classification**

The soils have typically deep medium sandy loam topsoils which either extend to depth or change into loamy sand or sandy clay loam horizons in the lower subsoil. Stone contents are small throughout the profiles and good subsoil structural conditions prevail. As a result, the soils contain adequate available water in the profile to overcome any drought stress and therefore qualify for Grade 1.

Soil Profile Descriptions: Explanatory Note

Soil texture classes are denoted by the following abbreviations:

Sand S; Loamy Sand LS Sandy Loam SL; Sand Silt Loam SZL; Silt Loam ZL;
Medium Silty Clay Loam MZCL; Medium Clay Loam MCL; Sandy Clay Loam SCL;
Heavy Silty Clay Loam HZCL; Heavy Clay Loam HCL; Sandy Clay SC;
Silty Clay ZC; Clay C

For the sand, loamy sand, sandy loam and sandy silt loam classes the predominant size of sand fraction may be indicated by the use of prefixes, thus:

F fine (more than $\frac{2}{3}$ of sand less than 0.2 mm)
C coarse (more than $\frac{1}{3}$ of sand greater than 0.6 mm)
M medium (less than $\frac{2}{3}$ fine sand and less than $\frac{1}{3}$ coarse sand)

The sub-divisions of clay loam and silty clay loam classes according to clay content are indicated as follows:-

M medium (less than 27% clay); H heavy (27-35% clay)

Other possible texture classes include:

Peat P; Sandy Peat SP; Loamy Peat LP; Peaty Loam PL;
Peaty Sand PS; Marine Light Silts MZ

The prefix "Calc" is used to identify naturally calcareous soils containing more than 1% Calcium Carbonate.

For organic mineral soils, the texture of the mineral fraction is prefixed by "org".

Other notation:

st	stones (6 cm)
sst	small stones (2 cm - 6 cm)
vsst	very small stones (2 mm - 2 cm)
Mn	manganese
cdom/cfom	common distinct/feint ochreous mottles
mpom	many prominent ochreous mottles (VMPOM = very many ..)

Few = 1-5%; common = 6-15%; many = 16-35%; very many = +35%

SOIL PIT DESCRIPTION

Pit No 3

Location Top of crest site; flat to gently sloping
No evidence of exposure
Permanent Grass

Topsoil 0-20
Medium Sandy Loam
7.5YR44 (towards 5YR44)
1% stones <2 cm

Subsoil 1 20-90 cm
Sandy Clay Loam (towards Medium Sandy Loam)
5YR44 (becoming 2.5YR36 below 50 cm)
1-2% stones <2 cm
Fine to Medium Sub-angular Blocky; Weakly Developed; Friable
(ie Good Structural conditions)

Subsoil 2 90-120+ cm
Sandy Clay Loam (towards a Fine Sandy Loam at base of profile)
2.5YR48 (towards 10R48)
Good Structural conditions (see Subsoil 1)

No evidence of wetness throughout the profile

AP Wheat = 186 = +77

AP Potatoes = 127 = +25

= Grade 1 according to Droughtiness

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.