

STATEMENT OF PHYSICAL
CHARACTERISTICS
GOULD S GROVE EWELME
OXFORDSHIRE

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GOULD S GROVE, EWELME, OXFORDSHIRE

1 BACKGROUND

1 1 The 4.31 hectare site lies to the south of Ewelme Oxfordshire. The site is bounded to the west by a working quarry, the remaining boundaries have no obvious physical features.

1 2 The site was surveyed using 1.2 m Dutch soil augers with samples being taken at approximately 100 m intervals on a grid basis across the site. In addition soil inspection pits were examined in order to obtain more detailed soil information.

Land-use

1 3 At the time of survey the land was under barley.

2 PHYSICAL FACTORS AFFECTING LAND QUALITY

Relief

2 1 The site lies at approximately 100-110 m A O D, falling very gently towards the south and west. Nowhere on the site does gradient or altitude represent a significant limitation to agricultural land quality.

Climate

2 2 Estimates of climatic variables were obtained for a representative location in the survey area by interpolation from grid point datasets (Met Office 1989). Figures are adjusted for altitude.

Climatic Interpolation

Grid Reference	SU 647 903	SU 648 902
Altitude	100	110
Accumulated Temperature (days Jan-June)	1403	1392
Average Annual Rainfall (mm)	627	638
Field Capacity Days	138	138
Moisture Deficit Wheat (mm)	110	108
Moisture Deficit Potatoes (mm)	102	99

2 3 The important parameters in assessing and overall climatic limitation are average annual rainfall (a measure of overall wetness) and accumulated temperature (a measure of the relative warmth of a locality) At this locality an overall climatic limitation does not exist Climatic factors however do interact with soil factors to influence land quality principally by way of soil wetness and droughtiness limitations

Geology and Soils

2 4 British Geological Survey sheet 254 Henley-on-Thames (1980) shows the site to be underlain by Older Coombe Deposits (Wallingford Fan Gravels)

2 5 Soil Survey of England and Wales Sheet 6 Soils of South East England (1983) shows the site to comprise one mapping unit - the Marlow Association These soils are described as typical paleo-argillic brown earths which are flinty fine loamy over reddish clayey subsoils developed in Plateau and river terraced drift over chalk (SSEW 1984)

2 6 Detailed field examination of the soils indicates that there is one broad soil type

2 7 Profiles typically comprise non-calcareous medium sandy loam topsoils which are slightly to moderately stony (c 5-10% v/v

flints >2cm) overlying moderately stony subsoils (c 5-10% v/v flints) of sandy loam sandy clay loam or medium clay loam passing to clay Lower subsoil were found to be slight to moderately stony (c 8-30% v/v flints) becoming very stony with depth c 50 v/v flints

3 AGRICULTURAL LAND CLASSIFICATION

3 1 The ALC grading of the site is primarily determined by interactions between soil and climatic factors Droughtiness is the main limitation at this site ALC grade 3a has been mapped and a breakdown of the grade is given below

<u>Grade</u>	<u>Area (ha)</u>	<u>% of total agricultural land</u>
3a	3 78	100
Non agricultural	0 53	
Total Area of Site	4 31	

3 2 Appendix 1 gives a generalised description of the grades and subgrades identified in the survey

Grade 3a

Land of this quality occurs across the whole site Profiles typically comprise non-calcareous medium sandy loam topsoils which are slightly stony (c 5-7% v/v flints >2 cm) over subsoils of similar textures or sandy clay loam Subsoil stone content ranges from c 8-13% v/v flints Lower subsoils were found to comprise medium clay or sandy clay with c 30-50% v/v flints becoming impenetrable to soil auger due to gravelly horizons between about 40 and 70 cm

Land of this quality is limited by droughtiness as a result of moderate stone contents and relatively shallow depth over gravelly horizons

The land is capable of consistently producing moderate to high yields of a narrow range of crops or moderate yields of a wide range of crops

4 SOIL RESOURCES

Soil Units Consideration for Restoration

- 4 1 The distribution of soil resources on the site fall into one unit for both topsoil and subsoil. It should be emphasised that this is not a soil stripping plan but merely a descriptive illustration of soil resources available for restoration on the site. When considering these details it is important to remember that soils were sampled to a maximum depth of 70-100 cm during survey work. In some cases the soil resources will extend below this depth.
- 4 2 One topsoil unit was identified which typically comprises about 30 cm of brown (10 YR 4/3) non-calcareous medium sandy loam. Occasional clay loam topsoils were present. Topsoils were found to be moderately stony (c 5-7% v/v flints >2 cm).
- 4 3 One subsoil unit was identified which typically comprise 27 cm of dark yellowish brown (10 YR 4/6) sandy clay loam or medium clay loam over lower subsoils of yellowish brown (10 YR 5/4 10 YR 5/6) medium clay. These soils are moderate to very stony (c 8-13% >2 cm) (c 23-50% >2 cm).

Where described upper subsoil structure of sandy clay loam were found to be weakly to moderately developed subangular blocky peds of various sizes. The lower subsoil was too stony to assess the structure with any certainty.

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SOURCES OF REFERENCE

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MAFF (1988) Agricultural Land Classification of England and Wales
Revised guidelines and criteria for grading the quality of agricultural
land

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land classification

SOIL SURVEY OF ENGLAND AND WALES (1983) Sheet 6 Soils of South East
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SOIL SURVEY OF ENGLAND AND WALES (1984) Soils and their use in South
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