18FES 2749 174/88

TROWBRIDGE LOCAL PLAN REVIEW
AGRICULTURAL LAND CLASSIFICATION

REPORT OF SURVEY

1. Introduction

Following a statutory consultation in connection with the review of the Trowbridge Local Plan a detailed Agricultural Land Classification (ALC) survey was carried out over 360.7 hectares on the southern outskirts of the town. Fieldwork was conducted by members of the Resource Planning Group, South West Region, in order to assess the degree to which the physical characteristics of the land impose long-term limitations on its use for agriculture. The classification was carried out using the Ministry's Revised Guidelines for grading agricultural land and the findings are detailed below in Table 1 and illustrated in the accompanying ALC map.

Table 1: Distribution of Grades and Sub-grades

Grade	Area (ha)	% of Survey Area	% of Agricultural Area
3A	17.1	4.7	5.7
3B	280.8	77.8	94.3
Non-Ag	54.8	15.2	-
Urban	5.1	1.4	-
Farm Bldgs	2.9	0.9	-
	360.7 ha	100%	100%

The survey area occupies the relatively flat terrain between Paxcroft Brook in the north and the eastern floodplain of the River Biss in the west at approximately 45 m. This level central area is underlain predominantly by Oxford Clay, and the Clayey soils that have developed have soil wetness and workability as the major limitations in grading.

A significant geological boundary runs through the northern margin of the site and separates the lower lying Oxford Clay land from the slightly higher areas underlain by a mixture of limestone and sandstone deposits. This geological boundary is reflected in the ALC, as slightly better drained profiles are found in the north.

2. Climate

A representative estimate of the prevailing climate has been obtained by means of interpolation from a 5 km grid database, and important

parameters are indicated below in Table 2. The two key parameters in assessing an overall climatic limitation are average annual rainfall (as a measure of overall wetness) and accumulated temperature (as a measure of the relative warmth of a locality). Together, these parameters suggest that for the site as a whole, overall climate is not a limiting factor.

Table 2: Climatic Interpolations

Accumulated Temperature (ATO)	:	1498° Days
Average Annual Rainfall (AAR)	:	754 mm
Field Capacity Days (FCD)	:	168 Days

3. Agricultural Land Classification

Sub-grade 3A: 17.1 hectares of 3A land have been mapped in the north of the survey area. The soils are typically medium clay loam topsoils which gradually become heavier with depth and either directly overlie clay subsoils or grade into a clay through an upper subsoil of heavy clay loam. In detail, however, the soil profiles do differ, both in the depth to gleying and in the depth to a slowly permeable clay layer, and the map unit is as a result a mixture of Grade 2 and sub-grade 3A profiles

Those profiles without gleying in the top 40 cm and with a slowly permeable layer between 60-80 km are placed in Grade 2; those which do exhibit evidence of gleying in the top 40 cm and have a slowly permeable layer between 45-75 cm are placed in Grade 3A. Overall, sub-grade 3A is the most appropriate classification.

Sub-grade 3B: The majority of the site has been classified as 3B. Topsoils vary between heavy and medium clay loams, and overlie clay subsoils. Profiles exhibit evidence of gleying in the top 40 cms associated with a shallow slowly permeable layer. Appendix 2 provides detailed descriptions of three soil pits which are typical of the structural conditions found. The soils fell into Wetness Class III or IV which, when combined with the Field Capacity Day value and topsoil texture, makes Sub-grade 3B the most appropriate classification. Individual profiles with lighter topsoils and a deep slowly permeable layer would qualify for Sub-grade 3A, but no map units could be identified.

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%

Appendix II

Soil Pit Description

Pit No 1

Topsoil	0-17 cm Heavy Clay Loam 10YR42 Rusty Roots; cdom Medium to Coarse Sub-angular Blocky; Moderately developed; Firm
Subsoil 1	17-40 cm Clay 2.5Y64 vmpo & gm Coarse Sub-angular Blocky (tending to Angular Blocky); Moderately developed; Firm
Subsoil 2	40-80+ cm Clay 2.5Y64 Coarse Angular Blocky; Weakly developed; Firm
Wetness Class III;	for HCL and FCD = 168, Grade = 3B

Pit No 2

Topsoil	0-18 cm Medium Clay Loam (towards HCL) 10YR42 Rusty Roots; cdom Medium Sub-angular Blocky; Weakly Developed Non-Calcareous
Subsoil	18-45 cm Clay 2.5Y64 vmdo & gm Medium to Coarse Angular Blocky; Moderately developed; >0.5% biopores
Subsoil 2	Clay content increases and permeability decreases gradually with depth between 40-50 cm Structural change is therefore gradual and taken as 45 cm 45-80+ cm Clay 2.5Y64 vmdo & gm Coarse to very coarse Prismatic; Weakly developed; <0.5% biopores.

Wetness Class IV (just, at boundary with III); for MCL topsoil and FCD = 168, Grade = 3B.

Pit No 3

Topsoil	0-30 cm Medium Clay Loam 10YR33 No mottling Stone free
Subsoil 1	30-52 cm Medium/Heavy Clay Loam (slightly sandier than topsoil) Pale colour - 2.5Y54/64 Few Manganese concretions No mottling in top 40 cms but possible feint mottling at base of horizon Coarse to Medium Sub-angular Blocky; Moderately developed; >0.5% biopores.
Subsoil 2	52-71 cm Heavy Clay Loam Pale colour - 2.5YR64 mdom; common Mn Medium to Coarse Angular Blocky (just angular); moderately developed; >0.5% biopores
Subsoil 3	71-90 cm Sandy Clay Loam Intense ochreous and grey mottling together with abundant manganese obscure the matrix colour Medium to coarse Angular Blocky; Moderately developed >0.5% biopores

Augering below 90 cm revealed a heavy Clay horizon which is assumed to be the slowly permeable layer causing the evidence of wetness from below 50 cm.

Wetness Class I. However, the intensity of mottling observed in the subsoil may suggest that the profile is more appropriately placed in Wetness Class II; the soil profile is likely to be wet within 70 cm depth for more than 1 month.

Wetness Class II; for MCL topsoil and FCD = 168, Grade = 2.

Pit No 4

Topsoil	0-18 cm Heavy Clay Loam Pale Colour - 10YR53 vmpo & gm
Subsoil	18-80+ cm Clay vmpo & gm; common Mn 2.5Y64 Moderately developed coarse angular blocky Calcareous from 50 cm

Wetness Class IV; for HCL and FCD = 168, Grade = 3B