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New Forest District Local Plan
Objector Site 57
Land South of Hounsdown, Hampshire

Agricultural Land Classification Survey
ALC Map and Report

February 1997

Resource Planning Team
Eastern Region
FRCA Reading

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AGRICULTURAL LAND CLASSIFICATION REPORT

NEW FOREST DISTRICT LOCAL PLAN
OBJECTOR SITE 57
LAND SOUTH OF HOUNSDOWN, HAMPSHIRE

INTRODUCTION

1 This report presents the findings of a detailed Agricultural Land Classification (ALC) survey of approximately 8 ha of land to the south of Houndsdown Hampshire The survey was carried out during February 1997

2 The survey was commissioned by the Ministry of Agriculture Fisheries and Food (MAFF) from its Land Use Planning Unit in Reading in connection with the New Forest District Local Plan This site is one of a number of objector sites This survey supersedes any previous ALC surveys on this land

3 Prior to 1 April 1997 the work was conducted by members of the Resource Planning Team in the Guildford Statutory Group in ADAS After this date the work was completed by the same team as part of the Farming and Rural Conservation Agency (FRCA) Reading The land has been graded in accordance with the published MAFF ALC guidelines and criteria (MAFF 1988) A description of the ALC grades and subgrades is given in Appendix I

4 At the time of survey the agricultural land on this site was either in arable crops or grass The areas of the site shown as Other Land consist of woodland residential dwellings and a football pitch

SUMMARY

5 The findings of the survey are shown on the enclosed ALC map The map has been drawn at a scale of 1 10 000 It is accurate at this scale but any enlargement would be misleading

6 The area and proportions of the ALC grades and subgrades on the surveyed land are summarised in Table 1 below

Table 1 Area of grades and other land

Grade/Other land	Area (hectares)	% site area
3b	5 0	64 1
Other land	2 8	35 9
Total site area	7 8	100

7 The fieldwork was conducted at an average density of 1 boring per hectare A total of 7 borings and 1 soil pit were described

8 The land at this site has been classified as Subgrade 3b (moderate quality) on the basis of soil wetness

9 The majority of profiles are poorly drained comprising clay loam topsoils and occasionally upper subsoils which directly overlie poorly structured clay These clayey soils cause drainage to be impeded so that land utilisation is restricted The nature of the underlying geological deposits further restricts the drainage of water which has led to an additional problem of surface seepage at the site

10 Occassional better quality profiles occur at the site but these were too limited in number and extent to map seperately at this scale

FACTORS INFLUENCING ALC GRADE

Climate

11 Climate affects the grading of land through the assessment of an overall climatic limitation and also through interactions with soil characteristics

12 The key climatic variables used for grading this site are given in Table 2 and were obtained from the published 5km grid datasets using the standard interpolation procedures (Met Office 1989)

Table 2 Climatic and altitude data

Factor	Units	Values	
Grid reference	N/A	SU 354 117	SU 356 116
Altitude	m AOD	10	5
Accumulated Temperature	day°C (Jan June)	1547	1553
Average Annual Rainfall	mm	823	815
Field Capacity Days	days	172	171
Moisture Deficit Wheat	mm	110	111
Moisture Deficit Potatoes	mm	105	106
Overall climatic grade	N/A	Grade 1	Grade 1

13 The climatic criteria are considered first when classifying land as climate can be overriding in the sense that severe limitations will restrict land to low grades irrespective of favourable site or soil conditions

14 The main parameters used in the assessment of an overall climatic limitation are average annual rainfall (AAR) as a measure of overall wetness and accumulated temperature (ATO January to June) as a measure of the relative warmth of a locality

15 The combination of rainfall and temperature at this site mean that the site is classified as Climatic Grade 1 as nationally the annual rainfall is moderately low and the accumulated temperature is moderately high However for this region due to the coastal location of the site the climate shows a seasonal trend of high rainfall in the winter and low rainfall in the summer Overall the climate is warm and moist

Site

16 The site slopes from the east and west towards the drainage channel in the centre of the site by 1 2 degrees Around part of the drainage channel there were areas of sedges indicating that the land is very poorly drained Nowhere on the site do gradient or microrelief affect the land quality

Geology and soils

17 The relevant published geological information for the site (BGS 1973) shows the site as Barton Clay a Palaeogene deposit of sandy clays of the Barton group

18 The published soils information for the site (SSEW 1983) indicates the soils to be those of the Wickham 3 association which are described as slowly permeable seasonally waterlogged fine loamy over clayey and coarse loamy over clayey soils and similar more permeable soils with slight waterlogging Some deep coarse loamy soils affected by groundwater (SSEW 1983) This description reflects the soils which were found on site

AGRICULTURAL LAND CLASSIFICATION

19 The details of the classification of the site are shown on the attached ALC map and the area statistics of each grade are given in Table 1 page 1

20 The location of the auger borings and pits is shown on the attached sample location map and the details of the soils data are presented in Appendix II

Subgrade 3b

21 The site was classified as Subgrade 3b (moderate quality) due to a significant soil wetness limitation Profiles typically comprise non-calcareous medium clay loam topsoils containing 2-8% total flints by volume (1-3% >2cm in size) overlying heavy clay loam sandy clay loam or directly passing to clay in the subsoil Soils are gleyed from shallow depth often from the topsoil The profiles are poorly drained due to a slowly permeable clay horizon limiting the movement of water downwards through the profile The depth to this clay horizon determines the severity of the drainage limitation In this climatic region this causes the soils to be placed in Wetness Class IV and Subgrade 3b In some profiles the slowly permeable clay is found at a lower depth and these soils can be placed within Wetness Class III However these better quality profiles were too limited in extent to be mapped seperately

22 The interbedded nature of the underlying geology causes seepage to occur on site particularly around the drainage channel This is indicated by rushes and sedges growing in these areas This will further restrict the utilisation of the land

23 The soil wetness limitation reduces the flexibility of the land due to the reduction in the number of days when the soil is in a suitable condition for cultivation trafficking by

machinery or grazing by livestock Excessive soil wetness also restricts crop growth and development

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SOURCES OF REFERENCE

British Geological Survey (1973) *Sheet No 315 Southampton* BGS London

Ministry of Agriculture Fisheries and Food (1988) *Agricultural Land Classification of England and Wales Revised guidelines and criteria for grading the quality of agricultural land* MAFF London

Met Office (1989) *Climatological Data for Agricultural Land Classification* Met Office Bracknell

Soil Survey of England and Wales (1983) *Sheet 6 South East England* SSEW Harpenden

Soil Survey of England and Wales (1984) *Soils and their Use in South East England* SSEW Harpenden

APPENDIX I

DESCRIPTIONS 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 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 or horticultural crops can usually be grown but on some land of this 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 land

Grade 3 Good to Moderate Quality Land

Land with moderate limitations which affect the choice of crops the timing and type of cultivation harvesting or the level of yield When 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 the 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 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 severe limitations which restrict use to permanent pasture or rough grazing except for occasional pioneer forage crops

APPENDIX II

SOIL DATA

Contents

SOIL PROFILE DESCRIPTIONS EXPLANATORY NOTE

Soil pit and auger boring information collected during ALC fieldwork is held on a computer database This uses notations and abbreviations as set out below

Boring Header Information

1 **GRID REF** national 100 km grid square and 8 figure grid reference

2 **USE** Land use at the time of survey The following abbreviations are used

ARA	Arable	**WHT**	Wheat	**BAR**	Barley
CER	Cereals	**OAT**	Oats	**MZE**	Maize
OSR	Oilseed rape	**BEN**	Field beans	**BRA**	Brassicae
POT	Potatoes	**SBT**	Sugar beet	**FCD**	Fodder crops
LIN	Linseed	**FRT**	Soft and top fruit	**FLW**	Fallow
PGR	Permanent pasture	**LEY**	Ley grass	**RGR**	Rough grazing
SCR	Scrub	**CFW**	Coniferous woodland	**OTH**	Other
DCW	Deciduous woodland	**BOG**	Bog or marsh	**SAS**	Set Aside
HTH	Heathland	**HRT**	Horticultural crops	**PLO**	Ploughed

3 **GRDNT** Gradient as estimated or measured by a hand held optical clinometer

4 **GLEY/SPL** Depth in centimetres (cm) to gleying and/or slowly permeable layers

5 **AP (WHEAT/POTS)** Crop adjusted available water capacity

6 **MB (WHEAT/POTS)** Moisture Balance (Crop adjusted AP crop adjusted MD)

7 **DRT** Best grade according to soil droughtiness

8 If any of the following factors are considered significant 'Y' will be entered in the relevant column

MREL	Microrelief limitation	**FLOOD**	Flood risk	**EROSN**	Soil erosion risk
EXP	Exposure limitation	**FROST**	Frost prone	**DIST**	Disturbed land
CHEM	Chemical limitation				

9 **LIMIT** The main limitation to land quality The following abbreviations are used

OC	Overall Climate	**AE**	Aspect	**ST**	Topsoil Stoniness
FR	Frost Risk	**GR**	Gradient	**MR**	Microrelief
FL	Flood Risk	**TX**	Topsoil Texture	**DP**	Soil Depth
CH	Chemical	**WE**	Wetness	**WK**	Workability
DR	Drought	**ER**	Erosion Risk	**WD**	Soil Wetness/Droughtiness
EX	Exposure				

Soil Pits and Auger Borings

1 **TEXTURE** soil texture classes are denoted by the following abbreviations

S	Sand	**LS**	Loamy Sand	**SL**	Sandy Loam
SZL	Sandy Silt Loam	**CL**	Clay Loam	**ZCL**	Silty Clay Loam
ZL	Silt Loam	**SCL**	Sandy Clay Loam	**C**	Clay
SC	Sandy Clay	**ZC**	Silty Clay	**OL**	Organic Loam
P	Peat	**SP**	Sandy Peat	**LP**	Loamy Peat
PL	Peaty Loam	**PS**	Peaty Sand	**MZ**	Marine Light Silts

For the sand loamy sand sandy loam and sandy silt loam classes the predominant size of sand fraction will be indicated by the use of the following prefixes

F Fine (more than 66% of the sand less than 0 2mm)
M Medium (less than 66% fine sand and less than 33% coarse sand)
C Coarse (more than 33% of the sand larger than 0 6mm)

The clay loam and silty clay loam classes will be sub-divided according to the clay content
M Medium (<27% clay) **H** Heavy (27 35% clay)

2 ***MOTTLE COL*** *Mottle colour using Munsell notation*

3 **MOTTLE ABUN** Mottle abundance expressed as a percentage of the matrix or surface described

F few <2% **C** common 2 20% **M** many 20-40% **VM** very many 40% +

4 **MOTTLE CONT** Mottle contrast

F faint indistinct mottles evident only on close inspection
D distinct mottles are readily seen
P prominent mottling is conspicuous and one of the outstanding features of the horizon

5 **PED COL** Ped face colour using Munsell notation

6 **GLEY** If the soil horizon is gleyed a Y will appear in this column If slightly gleyed an S will appear

7 **STONE LITH** Stone Lithology one of the following is used

HR	all hard rocks and stones	**FSST**	soft fine grained sandstone
ZR	soft argillaceous or silty rocks	**CH**	chalk
MSST	soft medium grained sandstone	**GS**	gravel with porous (soft) stones
SI	soft weathered igneous/metamorphic rock	**GH**	gravel with non porous (hard) stones

Stone contents (>2cm >6cm and total) are given in percentages (by volume)

8 **STRUCT** the degree of development size and shape of soil peds are described using the following notation

Degree of development	**WK**	weakly developed	**MD**	moderately developed
	ST	strongly developed		
Ped size	**F**	fine	**M**	medium
	C	coarse		
Ped shape	**S**	single grain	**M**	massive
	GR	granular	**AB**	angular blocky
	SAB	sub angular blocky	**PR**	prismatic
	PL	platy		

9 **CONSIST** Soil consistence is described using the following notation

L loose **VF** very friable **FR** friable **FM** firm **VM** very firm
EM extremely firm **EH** extremely hard

10 **SUBS STR** Subsoil structural condition recorded for the purpose of calculating profile droughtiness **G** good **M** moderate **P** poor

11 **POR** Soil porosity If a soil horizon has less than 0 5% biopores >0 5 mm a 'Y will appear in this column

12 **IMP** If the profile is impenetrable to rooting a 'Y' will appear in this column at the appropriate horizon

13 **SPL** Slowly permeable layer If the soil horizon is slowly permeable a 'Y will appear in this column

14 **CALC** If the soil horizon is calcareous a 'Y will appear in this column

15 Other notations

APW	available water capacity (in mm) adjusted for wheat
APP	available water capacity (in mm) adjusted for potatoes
MBW	moisture balance wheat
MBP	moisture balance potatoes

SOIL PIT DESCRIPTION

Site Name NEW FOREST LP SITE 57 Pit Number 1P

Grid Reference SU35401170

Average Annual Rainfall	823 mm
Accumulated Temperature	1547 degree days
Field Capacity Level	172 days
Land Use	Permanent Grass
Slope and Aspect	01 degrees E

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 25	MCL	10YR51 00	0	2	HR	C				
25- 38	HCL	25 Y61 00	0	0		M	MDCOAB	FR	M	
38- 60	C	25 Y71 00	0	2	HR	M	MASSVE	FM	P	

Wetness Grade 3B

Wetness Class	IV
Gleying	0 cm
SPL	038 cm

Drought Grade

APW	000mm	MBW	0 mm
APP	000mm	MBP	0 mm

FINAL ALC GRADE 3B
MAIN LIMITATION Wetness

SAMPLE NO	GRID REF	ASPECT USE		GRDNT	--WETNESS-- GLEY	SPL	CLASS	-WHEAT- GRADE	AP	MB	-POTS- AP	MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT		ALC	COMMENTS
1P	SU35401170	PGR	E	01	0	038	4	3B	000	0	000	0					WE		3B	
3	SU35301170	PGR	E	02	0	055	3	3A	000	0	000	0					WE		3A	SEEPAGE
4	SU35401170	PGR	E	01	0	038	4	3B	000	0	000	0					WE		3B	IMP 60
5	SU35501170	CER	W	01	0	038	4	3B	000	0	000	0					WE		3B	WT45
6	SU35401160	CER	W	02	030	030	4	3B	000	0	000	0					WE		3B	WT 15
7	SU35501160	CER	E	01	0	040	4	3B	000	0	000	0					WE		3B	WT25
8	SU35601160	CER	E	02	032	047	3	3A	000	0	000	0					WE		3A	V WET
9	SU35701150	CER	E	02	0	025	4	3B	000	0	000	0					WE		3B	WT25

SAMPLE	DEPTH	TEXTURE	COLOUR	MOTTLES COL	MOTTLES ABUN	MOTTLES CONT	PED COL	GLEY	STONES >2	STONES >6	STONES LITH	STONES TOT	STRUCT/ CONSIST	SUBS STR	SUBS POR	SUBS IMP	SUBS SPL	SUBS CALC	
1P	0-25	mcl	10YR51 00	75YR56 00	C			Y	0	0	HR	2							
	25-38	hcl	25 Y61 00	75YR58 00	M			Y	0	0		0	MDCOAB	FR	M				
	38-60	c	25 Y71 00	75YR68 00	M			Y	0	0	HR	2	MASSVE	FM	P	Y		Y	
3	0-30	mcl	25 Y52 62	75YR44 46	C			Y	0	0		0							
	30-55	scl	25 Y62 72	10YR68 00	C			Y	0	0		0			M				
	55-80	c	25 Y71 00	75YR68 00	M			Y	0	0		0			P			Y	
4	0-25	mcl	10YR51 00	75YR56 00	C			Y	0	0	HR	2							
	25-38	hcl	25 Y61 00	75YR58 68	M			Y	0	0		0			M				
	38-60	c	25 Y61 00	75YR68 00	M			Y	0	0	HR	2			P			Y	Imp Flints
5	0-38	mcl	10YR42 00	75YR46 00	C			Y	3	0	HR	5							
	38-70	c	25 Y52 53	75YR58 00	M			Y	0	0		0			P			Y	
6	0-30	mcl	10YR42 00	10YR56 00	F				0	0	HR	2							
	30-60	c	05Y 52 62	75YR58 00	M	00MN00	00	Y	0	0		0			P			Y	
7	0-40	mcl	10YR42 00	75YR58 00	C			Y	1	0	HR	5							
	40-60	c	25 Y52 53	10YR58 00	M			Y	0	0		0			P			Y	
8	0-32	mcl	10YR42 00	10YR56 00	F				3	0	HR	8							
	32-47	hcl	10YR51 00	10YR56 00	C	00MN00	00	Y	0	0	HR	2			M				
	47-65	c	05Y 52 62	75YR58 00	M	00MN00	00	Y	0	0	HR	2			P			Y	
9	0-25	mcl	10YR42 00	10YR56 00	C			Y	0	0	HR	2							
	25-60	c	05Y 52 62	75YR58 00	M	00MN00	00	Y	0	0		0			P			Y	