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New Forest District Local Plan
Objector Site 41
Land North of King's Copse Road
Blackfield, Hampshire

Agricultural Land Classification
ALC map report
February 1997

MAFF Ministry of Agriculture Fisheries and Food

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Resource Planning Team
Guildford Statutory Group
ADAS Reading

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AGRICULTURAL LAND CLASSIFICATION SUMMARY REPORT

NEW FOREST DISTRICT LOCAL PLAN, OBJECTOR SITE 41
LAND NORTH OF KING'S COPSE ROAD, BLACKFIELD, HAMPSHIRE

INTRODUCTION

1 This summary report presents the findings of a detailed Agricultural Land Classification (ALC) survey of 6 2 hectares of land on the north-western edge of Blackfield in Hampshire The survey was carried out during February 1997

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

3 The work was conducted by members of the Resource Planning Team in the Guildford Statutory Group in ADAS 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 land use on the site was all permanent grassland

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 All of the site (6 2 ha) is in agricultural use and has been classified as Subgrade 3a

7 The fieldwork was conducted at an average density of 1 boring per hectare A total of 6 borings and 1 soil pit was described

8 Soils across the site show evidence of soil droughtiness and soil wetness as the main limiting factors Some subsoils are poorly structured and stony which inhibits the penetration of roots and the amount of water that is available for extraction In other instances the poorly structured subsoils or a possibly fluctuating groundwater table restrict drainage through the soils This type of limitation will act to restrict the flexibility of the land (related to the number of days when the soils can be cultivated or grazed by livestock without damage occurring) and the types of crop that are suitable to such conditions

FACTORS INFLUENCING ALC GRADE

Climate

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

10 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 438 022
Altitude	m, AOD	27
Accumulated Temperature	day°C (Jan June)	1530
Average Annual Rainfall	mm	807
Field Capacity Days	days	165
Moisture Deficit, Wheat	mm	114
Moisture Deficit, Potatoes	mm	109
Overall climatic grade	N/A	1

11 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

12 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

13 The combination of rainfall and temperature at this site mean that there is no overall climatic limitation There are also no significant local factors such as exposure or frost risk affecting the area the site is climatically Grade 1

Site

14 The site lies at approximately 27 m and is flat or gently sloping throughout In the north-east there is a minor valley feature Nowhere on the site do gradient microrelief or flooding affect the classification

Geology and soils

15 The most detailed published geological information for the site (BGS 1975) shows the whole area to be underlain by Plateau Gravels

16 The most detailed published soils information for the site (SSEW 1983 and 1984) shows the area to comprise soils of the Bolderwood Association, described as acid coarse loamy over clayey soils with slowly permeable subsoils and slight seasonal waterlogging During fieldwork, deep silty clay loams were described with some evidence of stony and poorly structured lower subsoils

AGRICULTURAL LAND CLASSIFICATION

17 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
18 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 3a

19 All of the site has been placed in this subgrade and is described as good quality agricultural land There is a mixture of soil droughtiness and soil wetness as the main physical limitations to land quality The pit for example (1P) reveals a profile containing a medium silty clay loam topsoil and upper subsoil that changes into a heavy silty clay loam lower subsoil Part of the subsoil is poorly structured (moderately developed coarse platy) and gleyed but not thick enough to be described as slowly permeable This sits above another poorly structured layer this time with approximately 20% stone This particular profile is placed in Wetness Class II (and may qualify for Grade 2 on the basis of wetness) Soil droughtiness is the main limitation that restricts the classification to Subgrade 3a The pit was only examined to 80 cm the soil resource is presumed to extend further but even if the roots are able to penetrate to 100 cm (through a poorly structured and stony horizon) there is still insufficient reserves of water to qualify for a higher grade

20 Other borings are either stony at shallower depths or have clearer evidence of a thicker subsoil that should be slowly permeable thus underlining Subgrade 3a as the appropriate grade for this site

21 In the north east of the site where there is a minor valley feature the wetness status of the soils is worse than elsewhere on the site There was some standing water during the survey and there was evidence of a water table at approximately 40 cm, making Wetness Class III (and Subgrade 3a) appropriate

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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				

SOURCES OF REFERENCE

British Geological Survey (1975) *Sheet No 330 Lymington*
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

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

SAMPLE NO	GRID REF	USE	ASPECT	GRDNT	GLEY	SPL	--WETNESS-- CLASS	GRADE	-WHEAT- AP	MB	-POTS- AP	MB	M REL DRT	FLOOD	EROSN EXP	FROST DIST	CHEM LIMIT		ALC	COMMENTS
1	SU43900230	PGR		030			3	3A	84	-29	84	-24	3B				WE		3A	WET AT40 POSSW
1P	SU43800220	PGR		037			2	2	106	-7	112	4	3A				DR		3A	NOSPL
2	SU43700220	PGR		045			2	2	160	47	124	16	1				WE		2	NOSPL POSSGWAT
3	SU43800220	PGR		043			2	2	104	-9	115	7	3A				DR		3A	NOSPLQWC
4	SU43900220	PGR		000			1	1	72	-41	72	-36	3B				DR		3A	IMPSTONY QDR
5	SU43800210	PGR		042			2	2	114	1	121	13	3A				DR		2	IMPSTONY QDR
6	SU43900210	PGR		052	052		3	3A	104	-9	112	4	3A				WE		3A	POSS SPL

SOIL PIT DESCRIPTION

Site Name NEW FOREST LP OBJECT 41 Pit Number 1P

Grid Reference SU43800220

Average Annual Rainfall	807 mm
Accumulated Temperature	1530 degree days
Field Capacity Level	165 days
Land Use	Permanent Grass
Slope and Aspect	degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT STONE	LITH	MOTTLES	STRUCTURE	CONSIST	SUBSTRUCTURE	CALC
0- 28	MZCL	10YR42 00	0	2	HR					
28- 37	MZCL	10YR53 00	0	1	HR		MDCSAB	FR	M	
37- 52	MZCL	10YR53 00	0	1	HR	C	MDCSAB	FR	M	
52- 65	HZCL	10YR63 00	0	5	HR	M	MCPL	FR	P	
65- 80	HZCL	10YR63 00	0	20	HR	M			P	

Wetness Grade 2

Wetness Class	II
Gleying	037 cm
SPL	cm

Drought Grade 3A

APW	106mm	MBW	-7 mm
APP	112mm	MBP	4 mm

FINAL ALC GRADE 3A
MAIN LIMITATION Droughtiness

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
1	0-30	mzcl	10YR31 00						0	0	HR	2						
	30-40	hzcl	10YR52 00	000C00	00	C		Y	0	0	HR	10		M				
	40-50	hzcl	10YR52 00	000C00	00	C		Y	0	0	HR	30		M				
1P	0-28	mzcl	10YR42 00						0	0	HR	2						
	28-37	mzcl	10YR53 00						0	0	HR	1	MDCSAB	FR M				
	37-52	mzcl	10YR53 00	75YR58	00	C		Y	0	0	HR	1	MDCSAB	FR M				
	52-65	hzcl	10YR63 00	75YR58	00	M		Y	0	0	HR	5	MCPL	FR P				
	65-80	hzcl	10YR63 00	75YR58	00	M		Y	0	0	HR	20		P				
2	0-28	mzcl	10YR43 00						0	0	HR	1						
	28-45	mzcl	10YR54 63						0	0		0		M				
	45-120	hzcl	10YR72 64	75YR56	00	C		Y	0	0		0		M				
3	0-28	mzcl	10YR42 00						0	0	HR	1						
	28-43	mzcl	10YR54 00						0	0	HR	1		M				
	43-70	hzcl	10YR53 62	75YR58	00	C		Y	0	0	HR	20		M				
4	0-30	mzcl	10YR43 00						0	0	HR	5						
	30-45	hcl	10YR54 00						0	0	HR	30		M				
5	0-30	mzcl	10YR43 00						0	0	HR	5						
	30-42	mzcl	10YR54 00						0	0	HR	2		M				
	42-70	hzcl	75YR54 00	000C00	00	C		S	0	0	HR	2		M				
	70-80	hzcl	75YR53 00	000C00	00	C		Y	0	0	HR	30		M				
6	0-28	mzcl	10YR43 00						0	0	HR	5						
	28-52	mzcl	10YR54 00						0	0	HR	5		M				
	52-75	c	10YR64 00	000C00	00	C		Y	0	0	HR	5		P	Y		Y	