# Agricultural Land Classification Report Land West of Watling Street, Park Street, St Albans

#### **Prepared for:**

M Scott Properties Ltd

Oyster House

Severalls Lane

Colchester

Essex

CO4 9PD

### **Report prepared by:**

Charles Garrard BSc (Hons) MBPR (Agri. Fert) Ceres Rural LLP Suits 11 – 12 Council Offices London Road Saffron Walden CB11 4ER

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# 1. Background

We are instructed by M Scott Properties Ltd to determine the Agricultural Land Classification (ALC) of the land situated west of Watling Street, Park Street, St Albans. The site is centred on the grid reference TL1456 0450 and covers approximately 4.35 hectares. The site is currently in arable production, currently cropped with winter wheat.

The consultant undertaking this work is Charles Garrard of Ceres Rural LLP. Charles is a BASIS & FACTS Qualified Adviser and holds a 1<sup>st</sup> class BSc (Hons) degree in Agronomy from the University of Newcastle. He has attended the two-day training course "Working with Soil" run by the Institute of Professional Soil Scientists in association with the British Society of Soil Science, and has had considerable experience producing Agricultural Land Classification reports across the south and east of the country.

# 2. Methodology

Before the site visit, a desktop study of the location and climatological data associated with the land was undertaken. The climate data was obtained from the Met Office publication; Climatological Data for Agricultural Land Classification and was used to determine the overriding site limitation and interaction with soil parameters.

The site visit took place on 19<sup>th</sup> May 2022 where three auger borings were excavated, and a single soil pit dug in order to make a detailed assessment of the soil profile and sub-soil structure.

Soil texture was assessed by the consultant carrying out the survey, and samples were also sent for laboratory analysis to support the assessment. The results of this analysis are detailed in Appendix D. The location of the soil pit is shown in Appendix F.

# 3. Land Classification Report

The ALC assessment is undertaken in accordance with the Agricultural Land Classification for England and Wales; Revised Guidelines on Criteria for Grading the Quality of Agricultural Land 1988 and the final grade is determined by the most limiting factor present.

The main limiting factors used in the ALC system, which influence the grade of land are:

- Climatic limitations
- Site limitations
- Soil limitations
- Interactive limitations

# 3.1 Climatic Limitations

The climatological data for the site has been interpolated from Meteorological Office (1989) data and is shown below in Table 1, the full workings are detailed in Appendix A. It shows the interpolated adjustment for altitude, average annual rainfall, accumulated temperature, field capacity days and the moisture deficit for wheat and potatoes.

TABLE 1 – CLIMATOLOGICAL DATA FOR LAND AT WATLING STREET										
Climatological Factor	Units	Value								
Altitude	m	77								
Average Annual Rainfall (AAR)	mm	683								
Accumulated Temperature (AT0)	day ° C (Jan – Jun)	1411								
Field Capacity Days	day	142								
Moisture Deficit – Wheat	mm	109								
Moisture Deficit - Potatoes	mm	101								

Based on the Average Annual Rainfall and Accumulated Temperature, the grade according to climate at this site should be no less than **ALC Grade 1**.

# 3.2 Site Limitations

The assessment of site factors is primarily concerned with the way in which the topography influences the use of agricultural machinery and hence the potential cropping of the land.



### 3.2.1 Gradient

Image 1 – View of gradient and microrelief of the site at Watling Street, St Albans

The slope gradient can influence the ALC of a site, due to it affecting the type of machinery which can be safely and efficiently operated. Grades 1 to 3a have a gradient limit of 7 degrees. Grade 3b has a limit of 11 degrees. The gradient of the land at Watling Street does not exceed 7 degrees (Image 1 above) and therefore, based on gradient, this area should be classified no less than **ALC Grade 1**.

### 3.2.2 Microrelief

Microrelief can be defined as slight irregularities of a land surface causing variations in elevation amounting to no more than a few feet. Complex changes to slope angle and direction over short distances, or the presence of boulders or rock considerably limits the use of agricultural machinery. The microrelief found across the site is not a limiting factor in assessing the ALC of this site.

# 3.2.4 Flooding

The risk of flooding is minor and therefore is not a limiting factor when assessing the ALC of this site.

# 3.3 Soil Limitations

The underlying parent material geology of the site is predominantly flinty and chalky drift over chalk. According to the National Soil Resources Institute (2022), the predominant soil association found on the site is Charity 2 (571m). Charity 2 is described as well drained flinty fine silty soils in valley bottoms. These soils are expected to be suited to growing cereals, grassland rotation and permanent grassland (NSRI, 2022).

The topsoil texture found on the site was found to be a dark greyish brown or dark brown, stony, silty clay loam. This is consistent with the Charity 2 (571m) component profile identified by the National Soil Resources Institute (2022). These topsoil textures were later confirmed by laboratory analysis, shown in Appendix D.

The subsoil texture found on the site was a yellowish brown, stony, silty clay loam over a yellowish brown, stony silty clay loam, extending to a silty clay loam or clay in some cases. The recorded rootable depths of the soils varied across the site. Boring 1 to the north of the site revealed a deep, free draining soil to 120cm (Image 2), whereas Boring 2 and 3 showed a slightly shallower overall depth. Boring 3 to the south of the holding revealed higher levels of flint in the subsoil and a shallower overall soil depth (Image 3), which is more consistent with the Frome (812a) soil series. The soil pit revealed a shallow depth of around 70cm before the soil became impenetrable below this depth. Again, a high stone content was clearly visible.



Image 2 – Boring 1 showing a stony silty clay loam, extending to a freely draining silty clay loam soils subsoil, extending to 120cm



Image 3 – Boring 3 showing a very stony silty clay loam soil in the top horizon, extending to a very flinty and gravelly silty clay loam subsoil. Soil profile is approximately 100cm deep



Image 4 – Pit 1 showing a very stony medium silty clay loam topsoil transition to a medium silty clay loam to clay subsoil. The substantial flint and gravel content is clearly visible

Soil depth is an important factor in determining the available water capacity and nutrient status of a soil, as well as influencing the range and type of cultivations which can be carried out. The depth of soil can therefore be a limiting factor within ALC. The land at Watling Street had a soil depth of at least 60cm or greater, which means the land may be classified no less than **ALC Grade 1**.

Another limiting factor is soil stoniness, which can impede cultivation, harvesting, crop growth and cause a reduction in the available water capacity of a soil. Calculating the soil grade according to stoniness requires an assessment of the percentage (volume) of hard stones in the top 25cm of soil. The soil pit at Watling Street revealed that 35% flint stones larger than 2cm and approximately 10% of those were larger than 6cm. The high topsoil stone content (Images 4 & 5) is likely to increase production costs by causing extra wear and tear on implements and reduce crop establishment as well as the aforementioned factors. As such, the land cannot be graded higher than **ALC Grade 3b**. Boring 2 and 3 had similarly high stone content also, full details of which can be found in Appendix C.



Image 5 & 6 – Stone content within 25cm soil found at Pit 1.

It was also noted on Boring 1 that although the deeper, silty clay loam soils didn't suffer the same levels of drought, the top 25cm contained 17% stones large than 2cm. As such, that area could not be graded higher than **ALC Grade 3a**.

### 3.4 Interactive Limitations

Interactive limitations are the physical limitations which result from interactions between climate, site and soil (MAFF, 1988). Within this, soil wetness, droughtiness, irrigation and soil erosion are assessed.

Soil wetness expresses the extent to which excess water imposes restrictions on crop growth and cultivations. The soil wetness class of the site is Wetness Class I. The undisturbed soils, with no slowly permeable layer found in the top 80cm, and no gleying within 70cm, puts the site into this category. The ALC grade based on Wetness Class I. This considers topsoil texture and the site's Field Capacity Days (FCD) value of 142 (Table 1), both of which are not a limiting factor and therefore this land falls into **ALC Grade 1** for soil wetness.

Droughtiness indicates the degree to which a shortage of soil water influences the range of crops which may be grown and the level of yield which may be achieved. Two crops, a shallow and a deep rooting crop, are used to provide an average drought risk assessment of the soil. Stoniness of the soil, soil type and soil structure are all used to determine the moisture balance (crop adjusted available water capacity *less* moisture deficit). Using the droughtiness information obtained from the auger borings and soil pits, the following ALC grades would apply to this site.

The moderate structural condition of the firm or very firm subsoil with considerable flint content has been a key contributor to the low droughtiness grading for the areas classified as **ALC Grade 3a** and **ALC Grade 3b**. Despite this, rooting was observed to a depth of 70cm to 120cm on the site, which was used as a cut-off point for the purpose of calculating the amount of available water.

Boring 1 was the only area with a higher grade for droughtiness (**ALC Grade 2**), owing to the deeper profile and lower stone content.



Image 7 – Areas of crop stress (lighter green) in between pockets of available soil moisture (darker green), causing drought stress in wheat. Observed in late May 2022.



Image 8 – Below the winter wheat crop canopy. High stone content affecting water availability within the areas affected by drought stress. Observed in late May 2022.

Soil erosion by wind or water action can be an important factor to consider. On this site, given the presence of reasonably well-structured silty clay loam soils which are less susceptible to wind blowing, water-induced erosion is the more likely form of erosion to occur during periods of heavy rainfall. On balance, due to the lack of physical characteristics expected to be present if soil erosion was taking place, it is not considered significant enough to downgrade the site.

# 4. Conclusion

Prior to carrying out this report, the area of land in question at Watling Street was classified by Natural England in their pre 1988 Agricultural Land Classification Map as ALC Grade 3, as shown in Appendix E.

Drawing on the climatological data, site limitations, soil limitations and interactive limitations investigated in this report, the 4.35 hectares of land at the Watling Street site should now receive the following agricultural land classification:

	ALC GRAD	ALC GRADE FOR LAND AT WATLING STREET							
ALC Grade	Area (ha)	Area (%)	Limiting Factor						
1	-	-	-						
2	-	-	-						
3a	0.67	15%	Stoniness						
3b	3.68	85%	Droughtiness/Stoniness						
4	-		-						
Non agricultural	-	-	-						

The high stone content, coupled with the moisture deficits for both wheat and potatoes, have resulted in this grade being given on the 4.35 hectares site. The droughtiness effect of the silty clay loam is certainly a factor, together with the high stone content resulting in restrictive cultivations. The final ALC grade map can be found in Appendix F.

# 5. References

Ministry of Agriculture, Fisheries and Food, 1988, Agricultural Land Classification of England and Wales

Meteorological Office, 1989, Climatological Data for Agricultural Land Classification

Munsell Colour Chart

National Soil Resources Institute, 2022, Full Soils Site Report for location 514317E, 204486N, 1km x 1km, National Soil Resources Institute, Cranfield University.

# Appendix A – Interpolated Climate Calculations

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ATO = (1+11, 1+1, 0, 95) + (1+12, 1) + (1+12, 1+1, 1+1, 0, 95) + (1+12, 1+1, 1+1, 1+1, 1+1, 1+1, 1+1, 1+1,	$\begin{array}{l} 02 \\ \end{array} = 147(1 - 247 \\ t_{1} + 5 + 0 - 02 \\ \end{array} + \left( 1478 + 45 + 0 - 01 \\ \end{array} \right) \\ 32 \\ \end{array} = 1472 + 147 \\ (6.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (1.197 \\ (116 - 72) \\ = 103 + 33 \\ \end{array}$
ATO = (1+11, 1+1, 0, 95) + (1+12, 1) + (1+12, 1+1, 0, 95) + (1+12, 1+1, 1+1, 96 + 0, 95) + (1+12, 1+1, 1+1, 1+1, 1+1, 1+1, 1+1, 1+1,	$\begin{array}{l} 02 \\ \end{array} = 147(1 - 247 \\ t_{1} + 5 + 0 - 02 \\ \end{array} + \left( 1478 + 45 + 0 - 01 \\ \end{array} \right) \\ 32 \\ \end{array} = 1472 + 147 \\ (6.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (0.09 \\ (1.197 \\ (116 - 72) \\ \end{array} = 109 + 12 \\ (1.197 \\ (116 - 72) \\ = 103 + 33 \\ \end{array}$
ATO = (1+11, 1+1, 0, 95) + (1+12, 1) + (1+12, 1+1, 1+1, 0, 95) + (1+12, 1+1, 1+1, 1+1, 1+1, 1+1, 1+1, 1+1,	$\begin{array}{l} 02 \\ \end{array} = 147(1 \\ 247 \\ 477 \\ $
ATO = (1+11, 1+1, 0, 0, 95) + (1+12, 1) + (1+12, 1+1, 1+1, 5, 24 + 5, 0) + (1+15, 24 + 5, 0) + (1+15, 24 + 5, 0) + (1+15, 27	$\begin{array}{l} 02 \\ &= 14411 \\ 244 \\ 445 \\ 4$
ATO = (1+11, 1+1, 0, 95) + (1+12, 1) + (1+12, 1+1, 1+1, 0, 95) + (1+12, 1+1, 1+1, 1+1, 1+1, 1+1, 1+1, 1+1,	$\begin{array}{l} 02 \\ &= 14411 \\ 244 \\ 445 \\ 4$

Appendix B – National Soil Resources Institute – Full Soil Site Report

# Appendix C – Soil Pit Information including Droughtiness Calculations

	Wetness Grade		-									Wetness	Grade		•												Capacity Class Grade	,	-								Wetness	Grade	1								
SS	<b>Netness</b> Class	-	-								SS	Vetness	Class	-	-										ş	3	Vetness Class	-	-							SS	Vetness	Class	-								
	Field V ipacity	Days	747								Soil Wetness	Field	pacity	14.2	444										Soil Wetness	Field	pacity V	Days	747							Soil Wetness	Field	Dave	142								
	<u> </u>	S /LS Subsoil				c	5				So	20% Tav AP 20% Field Wetness Wetness	eduction for Ca	liosanc c1/c						0	,				So	20%	eduction for Ca	S /LS Subsoil				0				So	TAVOR AP Wheat 20% TAV Tav AP 20% Field Wetness Wetness	S /IS Subsoil						0			
Less	AP tatoes R		26	18	17	8	8 8	8 5	Į ť	8	ness	AP	tatoes R		34	5 00	31			109	109	101	80	2	ness	AP	tatoes R		26 29	29		8	8	ā :	ų w	 ness	AP httore	mm s		27	13			88	ΒĘ	i Ri	æ
nougnu	soil) Po		ם ב	17	16		40 DO+	101		rade	Potatoes Droughtiness	Tav	soil) Po	<sup>10</sup>	9 E	17	17				AP Pot	(m m	(mm	rade	Potatoes Droughtiness	Tav	soil) Po		51	17			AP Pot	(mun di	rade	Potatoes Droughtiness	Tav Foil Do	8011 P0		17	17			AD Dot	101 J	) a	rade
	TAV ones) (:	~ ~					<	A	MB Potatoes (mm) MB Potatoes (mm)	Droughtiness Grade	 otatoes	TAV	ones) (;	~ ~							A	MD Potatoes (mm)	MB Potatoes (mm)	Droughtiness Grade	otatoes	TAV	ones) (:	* *		-			A	MD Potatoes (mm)	NIB Potatoes (mm) Droughtiness Grade	otatoes	TAV TAV	sones/ (						-	MD Potatoes (mm)	MB Potatoes (mm)	Droughtiness Grade
	20% duction for (st	S /LS Subsoil				c	5	4		Droug		20%	duction for (st	liosanc c1/ c						0		d OM	MBP	Droug		20%	ŝ	S /LS Subsoil				0		d QM	Droug		20%	s /issuhsoil (st						0	d CM	MBP	Droug
	heat n Rec					78	۹ ۲	¢	5	e B		heat	۔ ڇڏ				~	-	~	143	143	109	34	۲								103	103	61,	a e		heat Do.	ر ق م			_			88	8 Q	67 F	3b
nuness	APWhe		52	i II	5		1.4	Ê 1	ÊÊ	e e	htiness	r AP W	E E		n d	, «	18	1	ŝ		Ē	(F	<u>۴</u>	de	htiness		AP Wheat		22	H	56		(r	Ê	ê a	 htiness	r apw	mm %		27				1	Ê (2	2 7	de
wneat Drougntiness	, TAVO	(soil)	1 L	17	∞		ABWhoat (mm)	heat (m	MB Wheat (mm) MB Wheat (mm)	ness Gra	Wheat Droughtiness	, TAVO	EAV	(soil) 10	1 1	17	10	10	10		AP Wheat (mm)	MD Wheat (mm)	MB Wheat (mm)	ness Gra	Wheat Droughtiness	TAVO	, EAV	(soil) %	17	10	10		AP Wheat (mm)	MD Wheat (mm)	IVIB W neat (mm) Jughtiness Grade	Wheat Droughtiness	, TAVO	(soil)	19	17	17	10	10	mm) toodMID	MD Wheat (mm)	MB Wheat (mm)	ness Gra
whe	r TAv or EAv TAv or AP Wheat (stones) % EAv mm				0.5		MOV			Droughtiness Grade	 Whe			-			0.5	0.5	0.5		APW	MDM	MBW	Droughtiness Grade	Whe	TAVOr				0.5	0.5		APW	MDW	MB W heat (mm) Droughtiness Grade	 Whe		(stones) % EAV	1	t.	0.5	0.5	0.5	Max		MBW	Droughtiness Grade
	Structural TAv or EAv TAv or Condition for (stones) %	AW	UOM	MOD	MOD							Structural	Condition for	AW	DOM	DOM	MOD	MOD	MOD							Structural	Condition for	AW	MOD	MOD	MOD						Structural Condition for		1	MOD	MOD	MOD	MOD				
	Structure		Strong medium subangular blocky	Strong course subangular blocky	Strong medium prismatic								Structure		Strone medium subaneular blockv	Strong course subangular blocky	Strong course subangular blocky	Strong course subangular blocky	Strong medium prismatic								Structure		Strong medium subangular blockv	Strong course subangular blocky	Strong medium prismatic						Churchuro	Suucure		Strong medium subangular blocky	Strong course subangular blocky	Strong course subangular blocky	Strong medium prismatic				
	Lithology Gleyed? SPL?												Gleyed? SPL?														Gleyed? SPL?										Clas Chourd	utnology bleyear SPLr									
	Lithology	- Lint	Flint	Flint	Flint								Lithology	Elint/Graval	Flint/Gravel	Flint/Gravel	Flint/Gravel	Flint/Gravel	Flint/Gravel								Lithology	Elin+/Course	Flint/Gravel	Flint/Gravel	Flint/Gravel						lithology	ntnology	Flint/Gravel	Flint/Gravel	Flint/Gravel	Flint/Gravel	Flint/Gravel				
	Stones %	70.00	30% %5(	50%	50%							Stones	%	17%			10%										Stones %	7070	35%								Stones	%		40%							
	Mottle Colour											Mottle	Colour %														Mottle Stones Colour %										Mottle	Colour									
	Mottle												Mottle														Mottle										01++014	NIOTTIE									
	Depth Texture Colour Mottle Stones cm	c/ cavor	10VR4/3	10YR5/3	10YR5/3								Colour Mottle	10VB3/3	7.5YR4/4	10YR4/4	10YR4/4	10YR4/4	7.5YR4/6								Colour	c/ cu/01	7.5YR4/4	10VR4/4	10YR4/4						Colour Mottle Stones	COLOUIL	10YR	10YR43	10YR43	10YR46	10YR46				
	exture	MTCI	JUL NICL									Depth	exture				ZCL										Depth Texture cm	N77CI		ZCL							Depth Toxtum	exture		ZCL							
	Depth T	00	8 8									Depth	⊷ - წ				20									-	Cepth cm T	,	3 2	20	30						Depth	- 5		25							
:	- ۶		N 00	20	70							Bottom	-	<b>5</b> %	3 5	205	70	85	120							Bottom	~		202	70	100						Bottom		55	50	70	80	100				
ľ	-	<b>5</b> d	- f	30	20							Top		<b>5</b> c	23	1 2	50	70	85								-	5	25	50	70						Top T	unden und	, 0	25	20	70	8				
	Soil?											Top	Soil?														Top Soil?										Top	Soil?	>								
	Horizon	Ŧ		i m	4								Horizon	-	• ~	4 m	m	m	4								Horizon		7	m	m						norion	похпон	H	2	m	e	m				
	Pit/Boring Horizon Soil?	0:+ 1	LILI										Pit/Boring Horizon	Boring 1	1 9 100												Pit/Boring Horizon	C anima	DUILING 2								Dit/Boring	Pityboring Honzon Soil?	Boring 3								

DATE

26th May 2022

SAMPLES FROM SCOTT PROPERTIES

CHARLOTTE JUDD CERES RURAL SUITES 11-12 COUNCIL OFF LONDON ROAD SAFFRON WALDEN CB11 4ER Tel: 07535 893 629

Reference: 08300/37537/22	Field Name: PIT 1 HORIZON 1	Result	(*)
Sand (2.00 - 0.063mm) %		7	
Silt (0.063 - 0.002mm) %		58	]
Clay (< 0.002mm) %		35	
Textural Classification	Silty Cla	ay Loam	1

Reference: 08300/37538/22	Field Name: PIT 1 HORIZON 3	Result	(*)
Sand (2.00 - 0.063mm) %		4	
Silt (0.063 - 0.002mm) %		63	1
Clay (< 0.002mm) %		33	]
Textural Classification	Silty Cla	ay Loam	1

Reference: 08300/37539/22	Field Name: PIT 1 HORIZON 4	Result	(*)
Sand (2.00 - 0.063mm) %		1	
Silt (0.063 - 0.002mm) %		41	]
Clay (< 0.002mm) %		58	1
Textural Classification		Clay	1

Reference: 08300/37540/22	Field Name: BORING 1 H/ZON 4	Result	(*)
Sand (2.00 - 0.063mm) %		11	
Silt (0.063 - 0.002mm) %		65	1
Clay (< 0.002mm) %		24	]
Textural Classification	Silty Cla	ay Loam	1

Reference: 08300/37541/22	Field Name: BORING 2 H/ZON 1	Result	(*)
Sand (2.00 - 0.063mm) %		13	
Silt (0.063 - 0.002mm) %		61	
Clay (< 0.002mm) %		26	
Textural Classification	Silty Cla	ay Loam	1

Reference: 08300/37542/22	Field Name: BORING 3 H/ZON 2	Result	(*)
Sand (2.00 - 0.063mm) %		16	
Silt (0.063 - 0.002mm) %		51	
Clay (< 0.002mm) %		33	
Textural Classification	Silty Cla	ay Loam	1

#### Notes (\*)

(1) In calcareous soils the sand, silt and clay sized fractions are likely to contain particles of carbonate which may result in the incorrect classification of soil type.



# Appendix E – Pre 1988 Agricultural Land Classification Map

Natural England, 2022

Appendix F - Agricultural Land Classification Map with Soil Pit Locations



Appendix F - Agricultural Land Classification Map with Soil Pit & Auger Boring Locations





# Appendix G - Definition & Description of Agricultural Land Classification Grades

### 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 (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 very severe limitations which restrict use to permanent pasture or rough grazing, except for occasional pioneer forage crops.