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SOUTH SOMERSET DISTRICT PLAN : SOUTH PETHERTON AGRICULTURAL LAND CLASSIFICATION, REPORT OF SURVEY

1. Summary

As part of MAFF's statutory input to the preparation of the South Somerset District Plan MAFF was asked to provide a statement of land quality on areas of land that were adjacent to the 1985 Agricultural Land Classification map. Since the production of this ALC map MAFF has introduced revised guidelines and criteria for grading the quality of agricultural land. As a result of this, additional field work has been undertaken to check the grading on the original map. The 1985 map has now been fully revised and the 1992 edition stands as MAFF's definitive statement on land quality around the village.

The 1985 map showed significant areas of Grade 1 land around the southern fringe of the village. Recent survey information has confirmed only a small portion of this Grade 1 land and much of the area has been reclassified as Grade 2 as a result of slight wetness and workability limitations.

The field work was carried out by members of the Resource Planning Group (South West Region) at a scale of 1:10,000 (ie approximately one soil observation per hectare in the additional areas) and this information has been extrapolated to grade the rest of 1985 map units.

The table below provides the details of the ALC statistics by grade, and the attached ALC map shows the distribution of the grades.

Grade	Area (ha)	% of Survey Area	% of Agricultural Area
1	21.1	10.2	18.4
2	72.5	35.2	63.3
3A	8.3	4.0	7.2
3B	9.8	4.7	8.65
4	0.3	0.1	0.3
5	2.6	1.2	2.3
Non Agric	7.9	3.8	100% (114.6 ha)
Agric Blds	0.3	0.1	
Urban	84.0	40.7	
TOTAL	206.8 ha	100%	

2. Climate

The climatic criteria are considered first when classifying land as they may be overriding in the sense that severe climatic limitations will restrict land to low grades irrespective of favourable soil or site conditions. A detailed estimate of the prevailing climate has been made by interpolation from a Met. Office 5 km dataset.

The parameters used in assessing the impact of overall climate are accumulated temperature (a measure of the relative warmth of a locality), and average annual rainfall (a measure of overall wetness). A total of four climatic interpolations were requested and details of these are attached. These show that there is no overall climatic limitation affecting the site. The area is climatically Grade 1, is moderately droughty and has a field capacity range of 166-168 days. No local climatic factors are important on the site.

3. Agricultural Land Classification

Grade 1 : Pit 2 is typical of these soils (details attached) and describes a soil with a Fine Sandy Silt Loam topsoil overlying a deep Medium Clay Loam subsoil which shows no evidence of significant wetness, is stone free and possesses moderate structural conditions which together do not produce a droughtiness limitation. Particle Size Distribution analysis has shown that the topsoil clay content is approximately 18% clay. The soils are therefore border-line FSZL/MCL but will work as light soils and are placed in a workability class better than the heavier soils to the north and west.

Grade 2 : The soils on the southern fringe are similar to those that are placed in Grade 1 but have been downgraded due to the sporadic occurrence of gleying in the upper and lower subsoils. This evidence of wetness places the soils in Wetness Class II (ie the soil profile is wet within 70 cm

for more than 90 days, but not wet within 40 cm depth for more than 30 days in most years). No slowly permeable layers were observed within 80 cms in these soils. Topsoils have generally over 18% clay content and when combined with the slight wetness problem these soils have been placed in Grade 2 due a slight workability limitation.

The Grade 2 soils that occur to the north of the village are also placed in Wetness Class II (see pit 4). These soils show gleying below 40 cm and exhibit slowly permeable layers in the lower subsoil.

The Grade 2 soils to the east of the village at Hams Field are slightly different and are described by Pit 1. These soils are downgraded due to a workability limitation and typically exhibit Heavy Clay Loam topsoils overlying Clay subsoils which contain up to 5% stone. These subsoils show evidence of gleying below 40 cm but display moderate structural conditions and are therefore not slowly permeable horizons.

Sub-grade 3A : A small area of this grade has been mapped in the north east of the survey area where soil droughtiness is a problem related to stony and sometimes shallow subsoils.

Sub-grade 3B : Pit 3 is typical of these soils and describes Clay topsoils which overlie upper subsoils which exhibit gleying and which pass into lower subsoils which are slowly permeable. These profiles are placed in Wetness Class III and are downgraded due to the significant wetness and related workability limitations.

Other areas of 3B highlight areas where slopes are locally limiting.

Grades 4 and 5 : These map units identify areas where gradients are in the range 11-18° and greater than 18° respectively.

CLIMATIC INTERPOLATIONS

Grid Reference	ST 434175	ST 429175	ST 431162	ST 438166
Altitude (m)	55	25	40	40
Average Annual Rainfall (mm)	790	758	777	775
Accumulated Temperate (° days)	1515	1549	1532	1532
Field Capacity (days)	168	163	167	166
Moisture Deficit, Wheat (mm)	103	109	105	105
Moisture Deficit, Potatoes (mm)	96	102	98	98
Overal Climatic Grade	1	1	1	1

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SOUTH PETHERTON Pit Number : 1P

Grid Reference : ST34401171
Average Annual Rainfall : 775 mm
Accumulated Temperature : 1532 degree days
Field Capacity Level : 166 days
Land Use : Cereals
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 37	HCL	10YR54 00	1	3		
37- 56	C	10YR54 00	0	5	C	MCSAB
56- 75	C	10YR64 53	0	5	C	MCSAB
75-100	C	10YR63 00	0	1	C	WMSAB

Wetness Grade : 2
Wetnesss Class : I
Gleying : 057 cm
SPL : No SPL

Drought Grade : 2
APW : 124 mm MBW : 19 mm
APP : 116 mm MBP : 18 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Workability

SOUTH PETHERTON Pit Number : 2P

Grid Reference : ST34381167
Average Annual Rainfall : 775 mm
Accumulated Temperature : 1532 degree days
Field Capacity Level : 166 days
Land Use : Soft Fruit
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 30	FSZL	10YR53 00	0	0		
30- 45	MZCL	10YR54 00	0	0		MCSAB
45-120	MCL	10YR53 54	0	0	M	MCSAB

Wetness Grade : 1
Wetnesss Class : I
Gleying : 045 cm
SPL : No SPL

Drought Grade : 1
APW : 168 mm MBW : 63 mm
APP : 130 mm MBP : 32 mm

FINAL ALC GRADE : 1
MAIN LIMITATION :

SOUTH PETHERTON Pit Number : 3P

Grid Reference : ST34331165
Average Annual Rainfall : 775 mm
Accumulated Temperature : 1532 degree days
Field Capacity Level : 166 days
Land Use : Ploughed
Slope and Aspect : degrees O

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 28	ZC	10YR43 00	0	0	C	
28- 44	C	10YR53 52	0	0	M	MDCSAB
44- 70	C	10YR52 00	0	0	M	MDMPR

Wetness Grade : 3A
Wetnesss Class : III
Gleying : 028 cm
SPL :044 cm

Drought Grade : 3A
APW : 098 mm MBW : -7 mm
APP : 110 mm MBP : 12 mm

FINAL ALC GRADE : 3B
MAIN LIMITATION : Wetness

SOUTH PETHERTON Pit Number : 4P

Grid Reference : ST34341175
Average Annual Rainfall : 775 mm
Accumulated Temperature : 1532 degree days
Field Capacity Level : 166 days
Land Use : Ley
Slope and Aspect : degrees

HORIZON	TEXTURE	COLOUR	STONES >2	TOT.STONE	MOTTLES	STRUCTURE
0- 25	MCL	10YR42 00	0	0		
25- 41	HCL	10YR42 00	0	0		
41- 68	MCL	10YR53 00	0	0	M	MCSAB
68-120	MCL	25 Y64 62	0	0	M	MCPFR

Wetness Grade : 2
Wetnesss Class : II
Gleying : 041 cm
SPL :068 cm

Drought Grade : 1
APW : 139 mm MBW : 34 mm
APP : 116 mm MBP : 18 mm

FINAL ALC GRADE : 2
MAIN LIMITATION : Wetness

SECTION 2

DESCRIPTION OF THE GRADES AND SUBGRADES

The ALC grades and subgrades are described below in terms of the types of limitation which can occur, typical cropping range and the expected level and consistency of yield. In practice, the grades are defined by reference to physical characteristics and the grading guidance and cut-offs for limitation factors in Section 3 enable land to be ranked in accordance with these general descriptions. The most productive and flexible land falls into Grades 1 and 2 and Subgrade 3a and collectively comprises about one-third of the agricultural land in England and Wales. About half the land is of moderate quality in Subgrade 3b or poor quality in Grade 4. Although less significant on a national scale such land can be locally valuable to agriculture and the rural economy where poorer farmland predominates. The remainder is very poor quality land in Grade 5, which mostly occurs in the uplands.

Descriptions are also given of other land categories which may be used on ALC maps.

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 (eg 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.

Descriptions of other land categories used on ALC maps

Urban

Built-up or 'hard' uses with relatively little potential for a return to agriculture including: housing, industry, commerce, education, transport, religious buildings, cemeteries. Also, hard-surfaced sports facilities, permanent caravan sites and vacant land; all types of derelict land, including mineral workings which are only likely to be reclaimed using derelict land grants.

Non-agricultural

'Soft' uses where most of the land could be returned relatively easily to agriculture, including: golf courses, private parkland, public open spaces, sports fields, allotments and soft-surfaced areas on airports/airfields. Also active mineral workings and refuse tips where restoration conditions to 'soft' after-uses may apply.

Woodland

Includes commercial and non-commercial woodland. A distinction may be made as necessary between farm and non-farm woodland.

Agricultural buildings

Includes the normal range of agricultural buildings as well as other relatively permanent structures such as glasshouses. Temporary structures (eg polythene tunnels erected for lambing) may be ignored.

Open water

Includes lakes, ponds and rivers as map scale permits.

Land not surveyed

Agricultural land which has not been surveyed.

Where the land use includes more than one of the above land cover types, eg buildings in large grounds, and where map scale permits, the cover types may be shown separately. Otherwise, the most extensive cover type will usually be shown.