

AGRICULTURAL LAND CLASSIFICATION FOR THE PROPOSED BROADWAY BY-PASS

1. Background Information

Introduction

The land around Broadway was visited by members of the Resource Planning Group during March 1989, in order to undertake an Agricultural Land Classification survey for each of the ~~low~~ proposed by-pass routes, and the land adjoining them. Information was collected in sufficient detail to present the maps at a scale of 1:10,000.

Climate

This falls within Agro-Climatic Area 30, close to the borders with Areas 21 and 26. Average annual rainfall varies between 670mm and 700mm. Monthly rainfall is fairly evenly distributed throughout the year, although wettest in August, November and December. The number of days at field capacity varies between 156 and 166 days in a typical year. The growing season is from mid-March to early December, and the grazing season from late March to late October. The mean date of the last frost is in late April.

Altitude and Relief

This varies between 65 metres to the west of Broadway, and 130 metres to the east of the town. However, most of the area surveyed is between 70 and 90 metres. The land is almost level to the west of Broadway, gently undulating to the north, and to the south and east it slopes towards the steep scarp slope of the Cotswolds.

Solid Geology

The majority of the area is underlain by Jurassic rocks of the Lower Lias, comprising undifferentiated clays, silty in the upper parts, with argillaceous limestone bands. This adjoins an area of Middle Lias on the scarp slope to the east of the town.

Drift Geology

There is an area of River Gravel to the west and south of the town, along with a limited amount of Head Gravel, mainly unbedded limestone gravel. There is a small area of Alluvium, also to the south west of Broadway.

Soils

The soils are variable around the town. Clay soils occur on much of the lower lias; some of these are calcareous. To the south west lighter sandy silt loam/clay loam soils have developed on the gravel. Between the disused railway line and the Leamington Road, deeper sandy soils occur overlying limestone. Soil depth represents a limitation to the agricultural use of some areas to the west of Broadway.

Agricultural Land Use

At the time of survey the land was under a wide variety of agricultural uses.

To the north much of the land was under cereals, beans, grass ley and permanent pasture, with permanent pasture on the poorer soils to the east of Broadway. To the south west, a wide range of horticultural crops were grown, and the land was intensively farmed with several smallholdings.

2. Agricultural Land Classification

Grade 1 land occurs to the north of the town, in a limited area adjoining a new housing development. It accounts for 5 hectares and 2% of the area surveyed. These soils are typically sandy loams or sandy clay loams to depth, or overlying loamy sand or weathered limestone below 75cm. This land has no or very minor limitations to its agricultural use, and although mainly under grass is capable of growing a very wide range of agricultural and horticultural crops.

Grade 2 land accounts for 62 hectares and 23% of the area surveyed. It occurs to the north and west of Broadway.

To the west of Broadway the soils are typically heavy clay loams, usually calcareous, overlying extremely stony sandy loams or loamy sands (gravel). Although these soils are wetness class I, the combination of the heavy topsoil, coupled with the relatively high number of days at field capacity, prevent a higher grading. An equally limiting factor is soil depth, particularly on sandy silt loam and medium clay loam topsoils, where the depth to the gravel is usually less than 60cms. Thus, soil wetness and soil depth, are the main limitations to the agricultural use of this land.

To the north of Broadway, the soils are typically sandy loams, sandy silt loams or sandy clay loams, often overlying medium clay loams with clay at depth. Many of these soils fall into wetness class II, with gleying present above 70cms. Other soils have a droughtiness limitation due to the light textures coupled with high stone content at depth.

Subgrade 3a land accounts for 38 hectares and 14% of the area surveyed. It is limited to isolated pockets to the south west and north of Broadway.

To the south west the main limitation is soil depth, with weathered limestone/gravel occurring above 45cms. In places, possible droughtiness is lessened by the availability of irrigation.

Around Smallbrook Farm, to the north of Broadway, soils are typically calcareous heavy clay loams overlying calcareous clays, which fall within Wetness Class II.

Subgrade 3b land accounts for 142 hectares and 53% of the area surveyed. It mainly occurs to the north east and south east of the town, but also covers a large area to the west of Broadway near Great Collin Farm and Masty Farm. Soils are typically clays or calcareous clays to depth, and it is the heavy topsoil texture coupled with the relatively high number of days at field capacity which limit the use of this land, i.e. wetness.

Non agricultural land accounts for 9 hectares and 3% of the area surveyed.

Urban land, agricultural buildings and water account for 13 hectares and the remaining 5% of the area surveyed.

3. Summary of the Agricultural Land Quality

Grade	Area (ha)	% of land surveyed (approx)
1	5	2
2	62	23
3a	38	14
3b	142	53
Non-ag	9	3
Urban, ag.buildings, water	13	5
Total agric area	247 hectares	
Total area surveyed	269 hectares	

4. Land Affected by Different Route Options

Route option	Grade	Approx. distance in metres	% of land surveyed on that route
1	2	782	30
	3a	514	24
	3b	1204	46
	Total	2600	100
2	2	350	19
	3a	84	5
	3b	1362	72
	Urban	66	4
Total	1862	100	
3	2	279	18
	3a	263	17
	3b	990	63
	Urban	28	2
Total	1560	100	
4.	2	1136	38
	3a	265	9
	3b	1413	48
	Non agric	79	3
Urban	55	2	
Total	2948	100	

- NB. 1. All measurements are in metres and excludes the area not surveyed east of Broadway.
2. Route options 2 and 3 have been measured from the Fish Hill to the east of Broadway, assuming they will follow the same route as option 1 as far as the Leamington Road.
3. Only linear distance has been measured and no account has been taken of road width.