

Hedgerows and Hedgerow Trees in the Ivel and Ouse Valleys 1978

A report to Bedfordshire County Council

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Introduction

In 1979 a study of the loss of hedgerows in the river valleys was undertaken through comparison of 1947 and 1976 air photographs. For this a sample of 27 kilometre squares was used forming approximately 17% of the study area. The same km² were used in the summer of 1980 for the study of the species and condition of hedgerow trees and the condition of hedgerows. This continued the work done in parts of North Bedfordshire by G. Dennis in 1979.

Method

All trees in hedgerows within the selected km² were counted and details taken of species, size and condition.

Species	All identified except species of willow, poplar and elm
Size	Three categories: <6m (20') 6.1 – 15m (20-49') >15m (50')
Condition	Good: healthy tree capable of many years further growth, good shape and little or no dead wood Moderate: tree with many years growth but showing signs of deterioration, lean or damage Poor: dead or dying; rotten branches, cavities or major stem damage. Little prospect of long term survival.

Trees under 6m and of moderate or good condition which are part of the hedge are vulnerable to machine trimming. Nevertheless these are capable of growing into hedgerow trees if retained and are included to show potential future trees.

Clumps of coppice shoots arising from cut stumps (usually Ash) are included as 1 potential tree/clump in the <6m category.

Trees in narrow belts, groups or small spinneys are not included.

The hedgerows were described as continuous or discontinuous and as managed (regularly or recently trimmed) or unmanaged (not recently trimmed and in a 'wild' condition).

Lengths of hedge were identified and plotted on the appropriate km² of a 6" map. Each length was described and the trees counted and entered on a survey sheet. A summary sheet was produced for each km².

Results

The main tree species discovered are summarised in Table 1.

Table 1 Species of hedgerow tree

Species	No.	% of total	% Upper Ouse	% Lower Ouse
Ash	810	35	47	25
Elm	336	14	7	21
Willow	330	14	19	11
Sycamore	190	8	7	10
Oak	188	8	9	8
Poplar	159	7	2	10
Lime	105	5	2	7
Field Maple	70	3	3	3
Others	137	6	4	5

The survey reveals that Ash is easily the most frequent species, although it is most common in the Upper Ouse valley. Elm and Willow are the next most abundant species. Elm was probably more common before the advent of Dutch Elm Disease as many trees have now been felled. It is not surprising that willow is relatively frequent in a river valley. These three species account for over 60% of all the trees surveyed. Of the other species the numbers of oak appear to be rather low in view of the predominantly clay soils of the valley sides. The frequency of Lime reflects the planting in roadside schemes. Rows of poplars occur as field boundaries, particularly on the Lower Ouse and Ivel valley.

The 16 species in the 'others' category were, in order of frequency: Apple, Horse Chestnut, Rowan, Cherry, Silver Birch, Whitebeam, Hornbeam, Laburnum, Red Chestnut, Sweet Chestnut, Plane, Hazel, Holly, Plum, Scots Pine.

Table 2 Height of hedgerow tree

Species	% <6m	% 6-15m	% >15m
Ash	42	48	10
Elm	67	22	11
Willow	55	42	3
Sycamore	67	27	6
Oak	27	48	14
Poplar	37	52	11
Lime	53	40	7
Field maple	71	29	0
Others	84	11	5

The figures in Table 2 reveal the height categories of the different species. As there was little difference between the Upper and Lower Ouse no comparative figures are included. At first sight the table reveals a healthy picture with a large proportion of trees in the <6m category which could grow on to replace those of 15m+. However many of these small trees are vulnerable to the machine trimming of hedgerows and so their long term survival is in doubt. As for the proportion, in the other two height categories this reflects the age of the trees, as the majority of the trees surveyed were young, and the growth characteristics as some species do not often achieve 15m (e.g., Field Maple).

As far as the individual species are concerned the large number of small elms reflects the recent growth of suckers from trees affected by Elm Disease. There are few small oak and this does not bode well for its future in the river valleys; the large number of trees in the 'other' category of <6m is a result of recent verge and hedgerow planting. This planting has

tended to use a wider variety of species than appear to be normally present in the river valley.

Table 3 Condition of hedgerow trees %

Species	Poor	Medium	Good
Ash	11	14	75
Elm	88	0	12
Willow	5	16	79
Sycamore	5	4	91
Oak	16	29	55
Poplar	1	2	97
Lime	2	6	92
Field Maple	11	1	88
Others	8	9	83
TOTAL	20	11	69

Table 3 reveals the condition of the hedgerow trees surveyed. With over 2/3 in the good category the table purports to show a satisfactory picture. However, as the majority of trees of less than 6m are in the good category this means that only about 50% of the trees in the larger two categories are in good condition. This is particularly true of Ash and Oak and many of the larger specimens which are important in the landscape are showing signs of deterioration.

As for the other species the majority of the Elm in the poor category are dead or dying through Elm Disease; the numbers of Willow in the medium category is due to the fact that many of these trees have been pollarded at some time in their lives and this now needs to be done again as the pollarded regrowth is leading to the break up of the trees.

Table 4 Type of hedgerows

Type	Length (m)	% total	# of trees	m/tree
No hedge, line of trees only	7269	9	416	18
Continuous, managed	34,732	43	601	58
Continuous, unmanaged	7696	9	428	18
Discontinuous, managed	20,959	26	549	38
Discontinuous, unmanaged	10,598	13	331	32
TOTAL	81,618	100	2325	35

Table 4 shows the type of hedgerows surveyed. The overall average of 1 tree per 35m masks wide variations. Apart from the fact that 29% of the hedgerows had no trees, unmanaged hedgerows tended to have more trees. This reflects the number of stools and saplings present. However, these are vulnerable if these hedges are cut back by machine and in the case of stools active management is needed to select the best stems. Nine percent of 'hedges' consisted only of a line of trees, with no shrubs, and these are probably a relic of a former hedge.

There is considerable difference between the hedges in the Upper and Lower Ouse and these are set out in Table 5.

Table 5 Type of hedgerow by study area

	% of total		m/tree	
	Upper Ouse	Lower Ouse	Upper Ouse	Lower Ouse
No hedge	5	13	24	17
Continuous, managed	65	21	60	52
Continuous, unmanaged	8	11	19	17
Discontinuous, managed	7	44	18	50
Discontinuous, unmanaged	15	11	32	32

The Upper Ouse valley has a far greater proportion of 'continuous, managed' hedgerows and this probably reflects the fact that hedges still have a function as stockproof field boundaries. Many of the farms by the river have livestock enterprises. In marked contrast there are fewer livestock units in the Lower Ouse and Ivel valleys and so there is little need for hedgerows for continuous field boundaries. Consequently many are discontinuous, cut low, with few trees. There are also far more relic 'hedges' just marked by a line of trees. Although the hedgerows in the Upper Ouse tended to be managed better, a larger percentage (35 as opposed to 23) had no trees at all.

Conclusion

1. Predominant species are Ash, Elm, Willow. Recent planting shows a wider variety.
2. Large proportion of young trees, but these vulnerable to machine trimming. As these are already established they could form replacement trees without costs of planting. Consequently there is potential for promotion of the tree tagging scheme to safeguard young trees from machine trimming of hedgerows.
3. Approximately 50% of trees >6m are in poor or moderate condition. Therefore need for planting programmes or tree tagging to ensure the future of trees as landscape features. In particular Elm Disease has led to a substantial loss of trees, and specimens of Oak and Ash are frequently in poor condition.
4. Hedgerows in the Lower Ouse and Ivel valleys especially have lost their function as stockproof boundaries. This is reflected in their maintenance which often results in a low cut gappy hedge which is consequently vulnerable to removal.