



Biddenham Conservation Volunteers

Cowslip Meadow, Biddenham Tree Survey 2023

Introduction

BCV conducted a survey of the perimeter trees lining Cowslip Meadow in 2022. These results were compared to an earlier sample in 2017. This year it was decided to repeat the survey.

Our aim was to improve accuracy of identification and counting, taking care not to count separate stems as different trees. We wanted to confirm the species list, locate clumps of a specie on the map areas we had used for this year's flower surveys.

Methods

In 2022, we counted trees with a trunk estimated as over 15cm diameter. This was not measured and was a subjective judgement by different surveyors; inevitably this leads to miscounts and less reliable data. This year, we decided to measure with a piece of string a 47cm circumference, but noted smaller species.

We applied the 47cm circumference test at 1m off the ground, being guided by the Bedford Borough Council's threshold for dealing with tree preservation. However, if a specimen was branched lower than this height, or coppiced, we took the 47cm to be at the tree's base.

The meadow was divided into areas A-H, aligning with the 2023 flower survey areas. Last year we had 18 perimeter zones. It will not therefore be possible to compare exactly the sites of different trees, but we can see where these areas overlay, should there be merit in making a rough comparison. For each area there was an east and a west perimeter survey.

The anticipated results will be:

- a) an update of the species list for the meadow's perimeter trees; and
- b) a count of the number of well-established mature live trees with a circumference greater than 47cm.

The map with areas A-H is shown.



West on top of photo, east to bottom, north to right.

Results

East perimeter: Species present	Numbers of Trees in area A-H (girth larger than 47cm)								Totals
Areas>	A	B	C	D	E	F	G	H	
<i>Italian Alder (Alnus cordata)</i>	1	2	3	6	1		2		15
<i>Alder (Alnus glutinosa)</i>							1		1
<i>Ash (Fraxinus excelsior)</i>	11		10	9	12	5	11	2	60
<i>Buckthorn Alder (Frangula alnus)</i>		1							1
<i>Buckthorn (Rhamnus cathartica)</i>		1		1	2				4
<i>Blackthorn (Prunus spinosa)</i>	1								1
<i>English Oak (Quercus robur)</i>	1			3	4			1	9
<i>Field Maple (Acer campestre)</i>	8	16	10	16	10	1	11		72
<i>Field Elm (Ulmus minor)</i>		2	15	15					32
<i>Hawthorn (Crataegus laevigata)</i>		8		3	5			1	17
<i>Hazel (Corylus avellana)</i>		10	1						11
<i>Cherry Plum (Prunus cerasifera)</i>				2					2
<i>Scots Pine (Pinus sylvestris)</i>			2	4					6
<i>Spindle (Euonymus europaeus)</i>		6							6
<i>Sycamore (Acer pseudoplatanus)</i>		1							1
<i>Wild Cherry (Prunus avium)</i>	3	3	5	7	3	2	10		33
<i>Small-leafed Lime (Tilia cordata)</i>			1	6	20	5	7		39
<i>Purging Buckthorne (Rhamnus cathartica)</i>		2							2
<i>Norway Maple (Acer platanoides)</i>				1					1
Totals	25	52	47	73	57	13	42	4	313

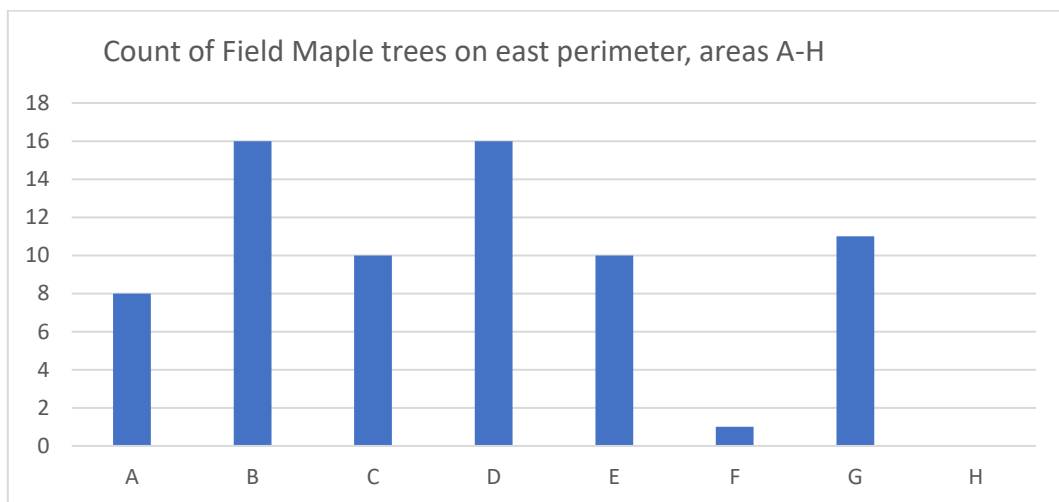
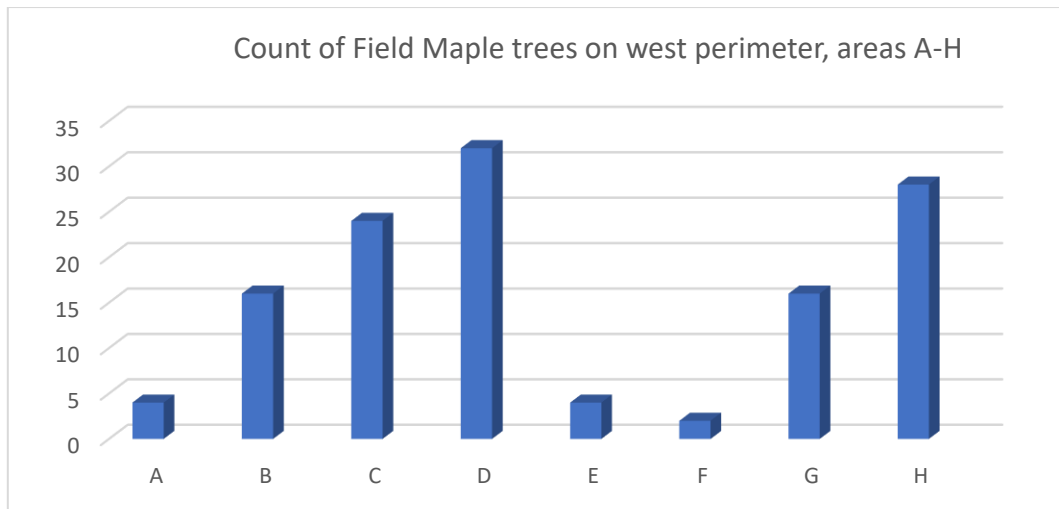
Wetland copse: Species present	Tree numbers
<i>Italian Alder (Alnus cordata)</i>	2
<i>Crack Willow (Salix fragilis)</i>	2
<i>Grey Willow (Salix cinerea)</i>	1
<i>Common Osier Willow (Salix viminalis)</i>	3
<i>Red Osier Dogwood (Cornus sericea)</i>	1
Totals	9

West perimeter: Species present	Numbers of Trees in area A-H (girth larger than 47cm)								Totals
Areas>	A	B	C	D	E	F	G	H	
<i>Italian Alder (Alnus cordata)</i>	3	4	6	3	1	1	2	15	35
<i>Alder (Alnus glutinosa)</i>				1		2	2	5	10
<i>Ash (Fraxinus excelsior)</i>	2	16	14	6	3	1	12	7	61
<i>Buckthorn Alder (Frangula alnus)</i>			2						2
<i>Buckthorn (Rhamnus cathartica)</i>					1				1
<i>Blackthorn (Prunus spinosa)</i>				5					5
<i>English Oak (Quercus robur)</i>	1	5	1	1	1		2	4	15
<i>Field Maple (Acer campestre)</i>	4	16	24	32	4	2	16	28	126
<i>Field Elm (Ulmus minor)</i>					6	1			7
<i>Hawthorn (Crataegus laevigata)</i>			5	14		1	5	2	27
<i>Hazel (Corylus avellana)</i>	7	4	10	37		4	28		90
<i>Black Poplar (Populus nigra)</i>								1	1
<i>Scots Pine (Pinus sylvestris)</i>			2		1			1	4
<i>Spindle (Euonymus europaeus)</i>				5					5
<i>Crack Willow (Salix fragilis)</i>						12	1		13
<i>Grey Willow (Salix cinerea)</i>							4		4
<i>Goat Willow (Salix caprea)</i>						9			9
<i>Wild Cherry (Prunus avium)</i>		11	9				4	1	25
<i>Dog Rose (Rosa canina)</i>				2					2
<i>Small-leafed Lime (Tilia cordata)</i>	1	6	4	10	9		7	1	38
<i>Gelder Rose (Viburnum opulus)</i>				1					1
<i>Hornbeam (Carpinus betulus)</i>							2		2
Totals	18	62	77	117	26	33	85	65	484

Total trees counted in 3 areas = 806

Analysis

Where tree numbers are low the intermittent nature of their presence is clear to see. With more common species, the distribution can be shown graphically. For example, with Field Maple which was the dominant specie.



Discussion

As stated earlier, comparison with 2022's survey is not appropriate as the meadow survey areas have been reset. Also, by being more accurate in counting only more established mature trees, with a girth greater than 47cm, a different tally of trees has emerged, and some trees are now excluded using this size test. However, we did note of smaller specimens to confirm an accurate species list. The girth threshold of 47cm does not easily select species like Hawthorne, Rose or Spindle, which all have a smaller stature.

There were areas where batches of the same species had been planted in proximity. For example, Elm was quite common in areas C and D on the east perimeter with several standing dead Elm among them. Wild Cherry has grouped in areas B and C on the west perimeter. Often Lime and Field Maple were found in clusters too. Some trees, like Wild Cherry, partially spread by sending out root suckers that create dense populations. We need to remind ourselves the meadow trees were planted and several of them have produced local offspring from seed or sucker. There are also examples of young trees growing, resulting from being self-seeded from outside of the meadow.

Survey accuracy was good adding six new species not previously identified. For example, finding a Sycamore and a Norwegian Maple, both were not recorded previously and this points to a more accurate identification process. Other additions to the species list are, Red Osier Dogwood, Common Osier Willow, Hornbeam and Purging Buckthorne. 23 species were counted overall.

The most common species are Field Maple (198), Ash (121), Hazel (101), Wild Cherry (58) and Italian Alder (52).

The small copse in the wetland area has few (9) mature trees. They are mainly willow species, these also thrive in area F on the west side, which is boggy in places. Last year, when we included smaller trees, we found 16 specimens in the copse. The biggest area of scrub is along the west perimeter in areas C, D and E.

Our total count was 806 trees. In 2022, when we counted less mature trees, it was 1,103. Our different areas, A-H varied in their depth and length and in the density of tree coverage giving rise to varied area m² values. Consequently, making quantitative tree comparisons between areas has little merit and the areas are simply used to identify location of specie clumps that might inform our future tree planting tasks.

Of interest to our task of butterfly surveying, is that Norwegian Maple is a favourite food source for Brimstone caterpillars. Spindle that was heavily infested with caterpillars in the spring, and Blackthorne with a fungal infection, have generally recovered well and have good berry crops. Crack Willow is also a popular caterpillar food source, and Goat Willow foliage is eaten by several moth species caterpillars and is the main food plant for the purple emperor butterfly.

At one point we observed a large raptor nest, larger and very different in construction to a crows' nest. Buzzards and kites are regular patrollers above the meadow, so they may be the owner or past owner.

Footnote: Readers might like the Woodland Trust Tree ID App: ["Download our free Tree ID app for Android and iPhone to identify the UK's native and non-native trees. It's an A-Z tree guide in your pocket. [Download the app](#)"]

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