Summary of Botanical Recording at Broken Bridges Reserve

Dates of surveys: 2009/10/13 and 2024

The essential purpose of this project is to document changes in the vegetation over approximately a fifteen year period. Precise dates are noted in appendix of records.

The following table provides an outline of the findings according to various groups of plants found in each of three fields, the largest of which (West Field) was split into two sections A and B.

	West Field A	West Field B	East Field C	South Field F
Total species '09/'10/13	81	91	93	111
Total species 2024	84	75	74	93
No. species in common	56	50	48	61
No. grasses etc. fewer in '24	4	9	6	15
No. herbs fewer in '24	10	18	16	29

Some reasons for the changes seen:

Visits in 2009 included a late summer one as well as spring
Some species will be 'missed' on any visit, depending on the route walked.
Number of recorders
Exceptionally wet winter in 2024, causing many weeks of flooding.
Grazing, or lack of.

Despite the variables listed above, there is photographic evidence to show the spread of sedges over the west field since 2008. The range of sedge species has not changed a great deal except where some smaller species have reduced or succumbed to the invasion by larger ones. Alongside this, there has been a reduction in the grass species which are considered typical of biodiverse meadows.

All four areas showed a decline in herbaceous plants, particularly those which favour short turf. Some are quite common, e.g. daisy, dandelion, clovers etc. but are useful indicators of habitat change.

The groups of plants which were consistent between 2009 and 2024 are the larger grasses and sedges of wetland habitats and these now make up by far the greatest proportion of ground cover.

Herbs which might be expected to flourish in wet grasslands, for example Ragged Robin and Water Avens, could be found only in small quantities because of competition from sedges and were insufficient to provide valuable nectar and attract insect populations.

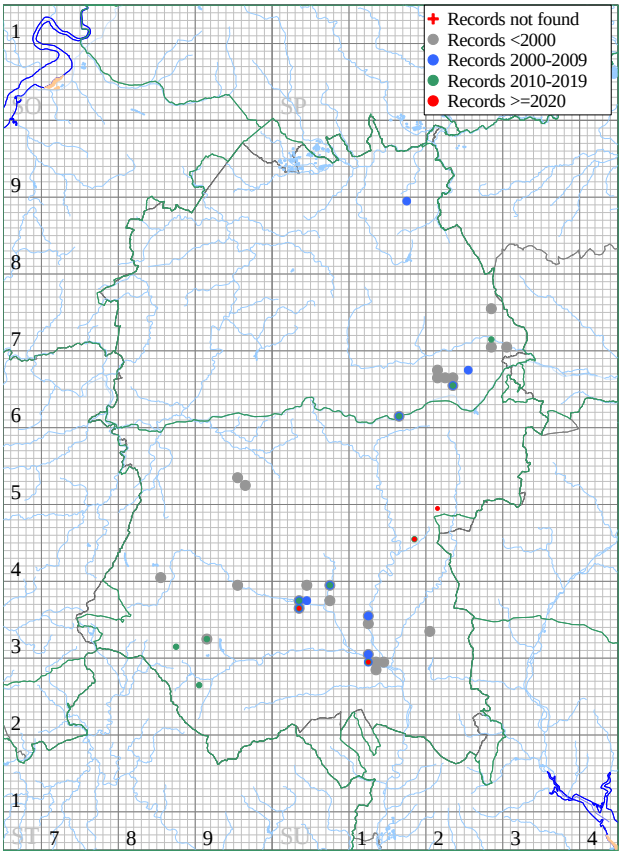
General comments on a selection of six indicative species

These species are usually found in damp meadows, often in river valleys and close to rivers. They favour long-standing, unimproved grassland and are likely to be eliminated by agricultural improvement. As poor competitors, they may also disappear through a lack of grazing, although *Lysimachia vulgaris* and *Thalictrum flavum* grow tall enough to compete for light.

Epipactis phyllanthes

Scarce in Wiltshire: some sign of an increase in range.

Epipactis phyllanthes (Green-flowered Helleborine)



This plant has been recorded over many decades. It is still present on Broken Bridges Lane but is vulnerable to track widening. Plants which grew on the edge of the path bordering the East Field have not been located for many years. The distribution map shows that the number of records since 2000 is reduced and that it appears to have been lost from several locations (grey dots).

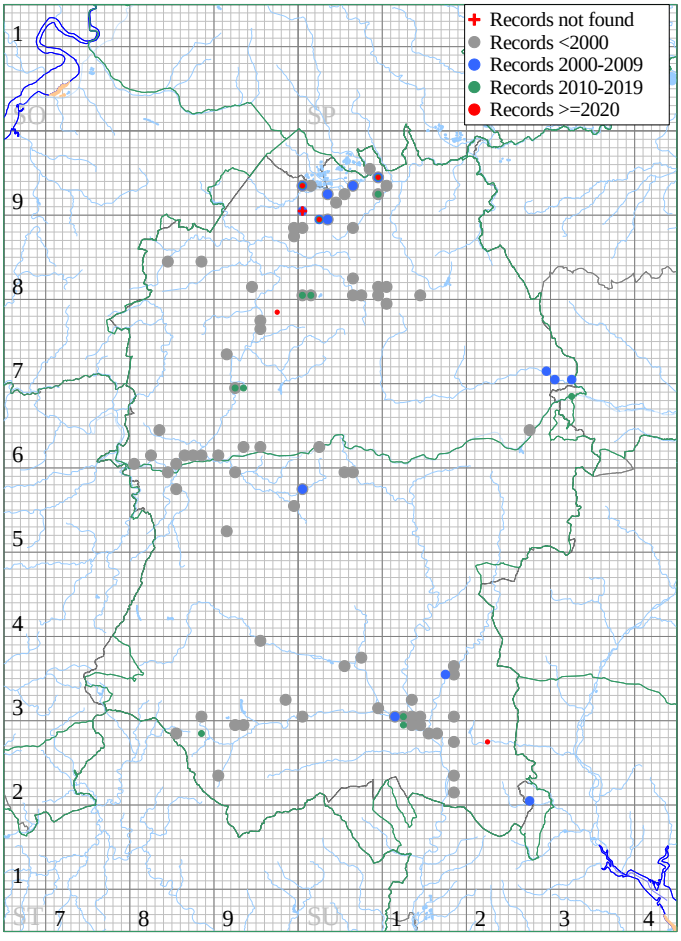
This is an inconspicuous plant and, as such, is vulnerable to being overlooked when management work is being carried out. Its greatest asset might be considered to be its rarity and its contribution to biodiversity.

Oenanthe fistulosa was first recorded in 2009 by the Wiltshire Botanical Society**.** It was present in both sections A and B of the West Field. In 2024 the latter site was refound but not the West Field A site. It requires permanently damp conditions and winter flooding.. At a national level it is classed as Vulnerable (based on the rate of decline) and is included in both the Biodiversity Action Plan (2007) and the National Environment and Rural Communities Act (2006) section 41 and, as such, is of principle importance for the maintenance of biodiversity in UK.

Scarce in Wiltshire, with signs of a serious loss in range. Requires bare, wet mud for germination, as on draw-down areas with little competing vegetation.

England Red List: Vulnerable.

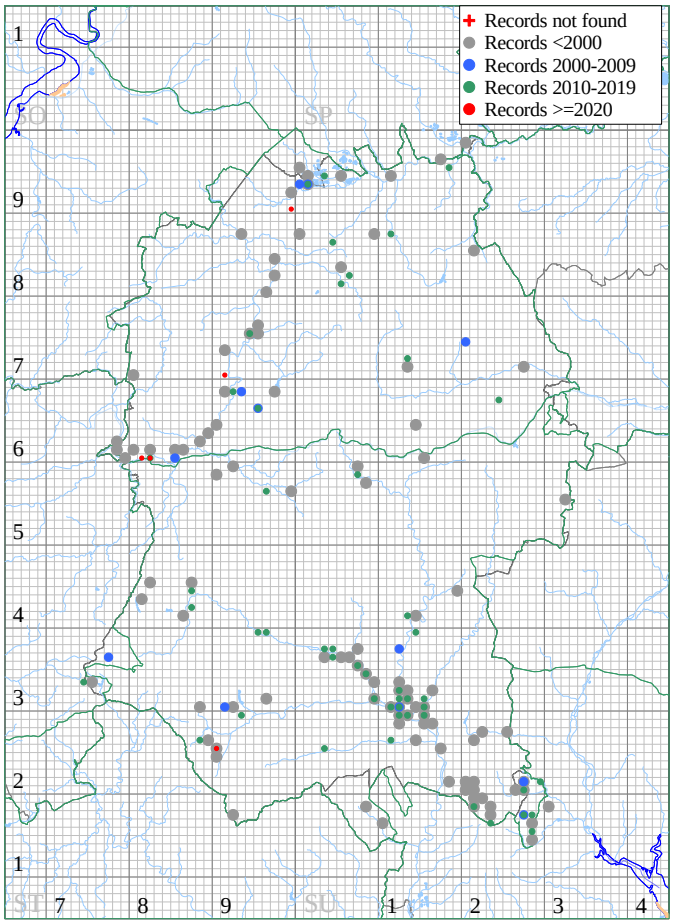
Oenanthe fistulosa (Tubular Water-dropwort)



It is worthy of note that this species has been found close to willow trees on the edges of the units and in small quantity. Suppression of the sedges and other competitive vegetation by the willow might supply a small area where this plant is able to grow. It requires very sensitive management if it is to survive on the site.

Lysimachia vulgaris was recorded from all three areas in 2009 and refound in all three in 2024. It was also recorded and refound in South Field (F). It is not regarded as rare but has a very limited distribution in South Wiltshire where it is linked mainly to the river systems where it is found particularly in damp meadows. It is therefore an uncommon plant which appears to have disappeared from many sites.

Lysimachia vulgaris (Yellow Loosestrife)

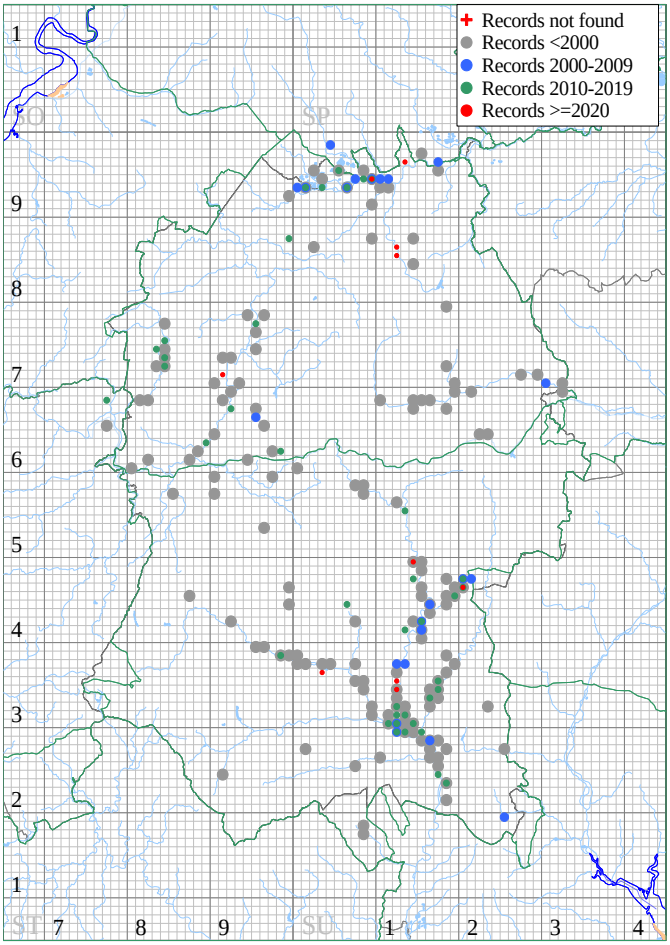


A tall, conspicuous plant which is easily spotted when in flower in June. It seems to prefer the ditchs / furrows where the ground is damper.

Thalictrum flavum, like *L. vulgaris*, is linked to the river systems because of its requirement for wet meadowlands. As such, its distribution is limited to this declining habitat. It was not known from the site before a survey in 2009 but in 2024 was found in all four locations.

Uncommon in Wiltshire, favouring damp meadows, in river valleys and the Cotswold Water Park area. It appears to have been lost from many sites in the county.

Thalictrum flavum (Common Meadow-rue)

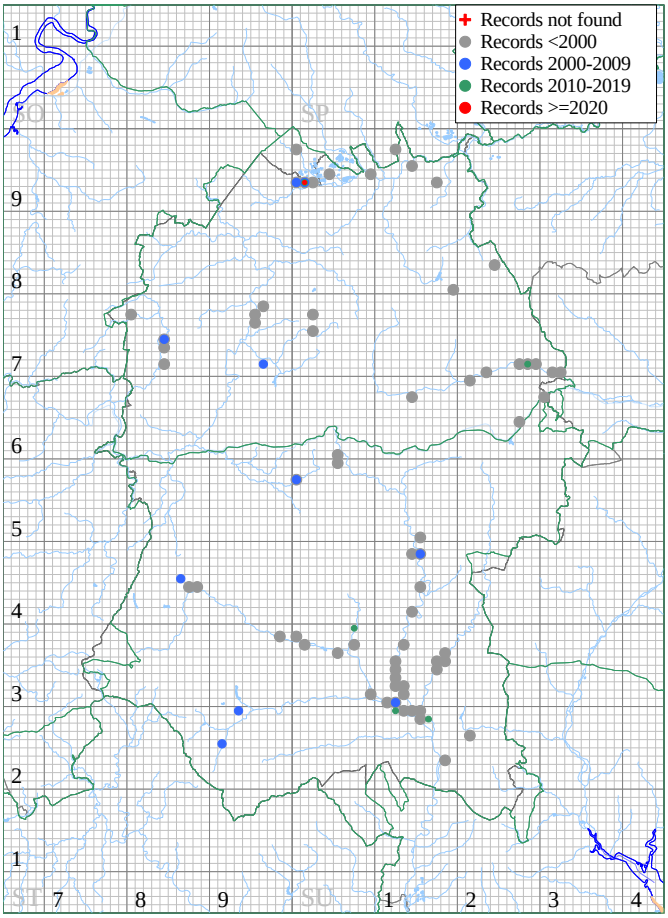


Although a tall plant, it is conspicuous only in June when its fluffy white flowering heads can be seen.

Dactylorhiza incarnata was found in both West Field (B) and in East Field (C) in 2009, and in South Field (F) in 2013. It was not known on the site before 2009. In 2024 it was located only in the East and South Fields in small quantities. The orchid is confined to wet meadows where the vegetation is sufficiently low not to provide competition. The plants in East Field (C) have recently been determined as a subspecies which has not been recorded previously from South Wiltshire.

Uncommon in Wiltshire, favouring damp meadows, in river valleys and the Cotswold Water Park area. It appears to have been lost from many sites in the county.

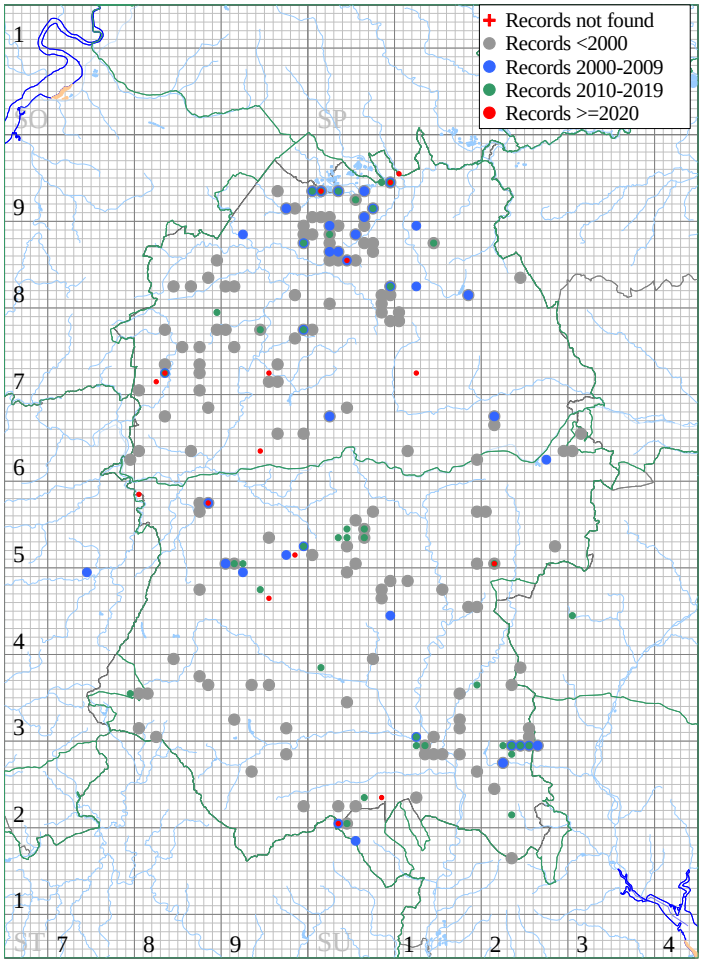
Dactylorhiza incarnata (Early Marsh-orchid)



This orchid has unspotted leaves, a lip which has a tendency to be reflexed and is marked with streaks, rather than with spots, as occurs in closely related species. This photograph was taken in 2009 and the grassy sward in which it was growing is evident.

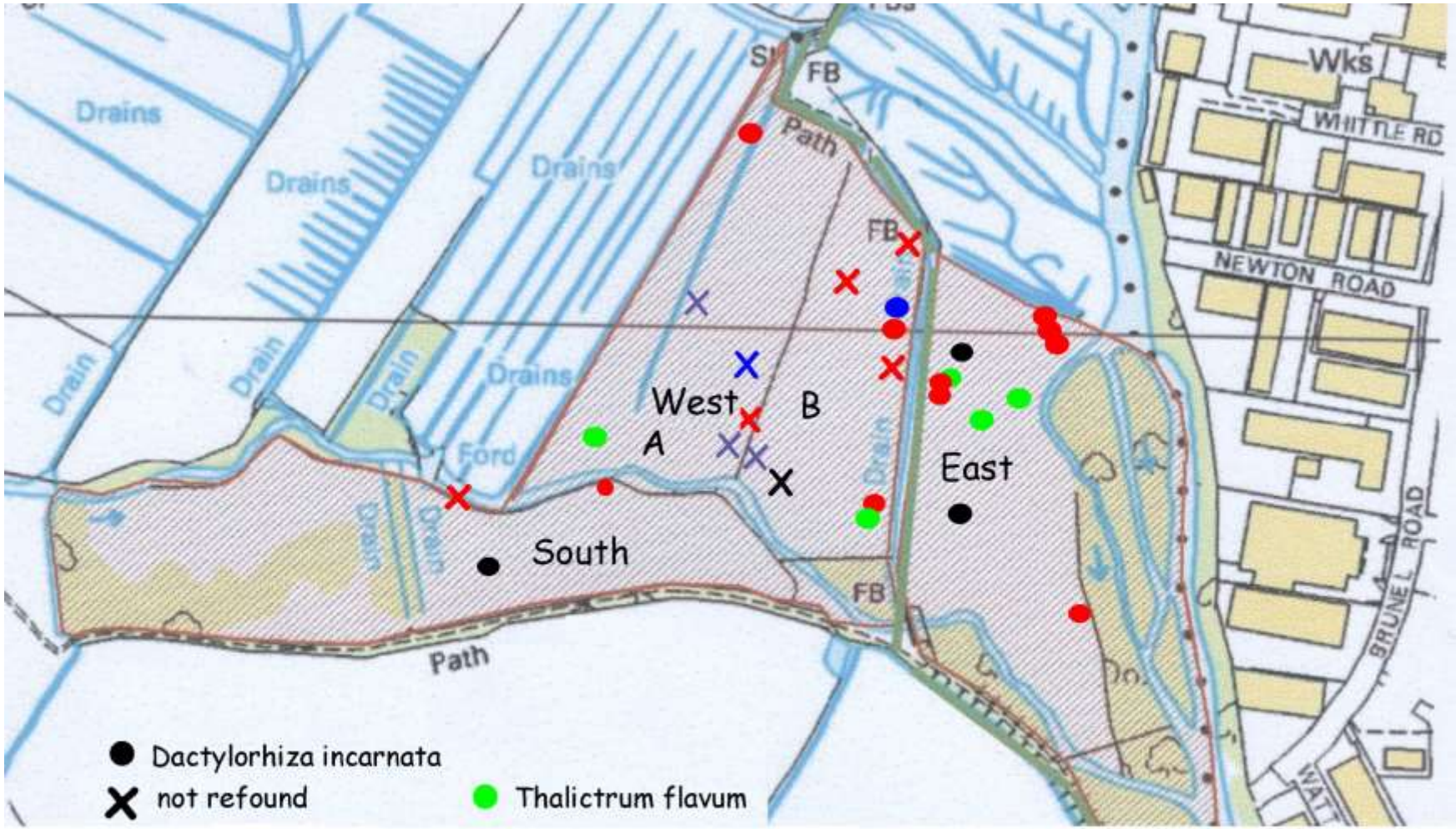
Ophioglossum vulgatum is a very small fern found in unimproved damp meadows and woodland.
Its distribution is restricted by habitat requirement, in this instance by competition from sedges and tall grasses.
It was abundant in 2009 in West Field A and had spread into West Field B
None had been found prior to this and **it was not refound in 2024**
The plant scattered throughout the county, but is most common in the Braydon Forest area in the north of Wiltshire. It favours short turf in damp grassland, but also occurs in drier areas, particularly on Salisbury Plain. It appears to have been lost from many sites. However, it is unobtrusive and easily covered by taller vegetation, so is easily missed in plant surveys. Finding it can be a matter of chance but its previous abundance suggests a marked decline, which is a matter of concern.

Ophioglossum vulgatum (Adder's-tongue)



The plant is little more than 10cm tall (max. 20cm). The 'tongue' is the reproductive part and bears spores. The whole over-winters underground.

A map of the locations of these six plants can be found on the following page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South
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Dactylorhiza incarnata
not refound
Thalictrum flavum
Lysimachia vulgaris
not refound
Oenanthe fistulosa
not refound
Ophioglossum vulgatum
not refound at any known location

Conclusions:

All fields show around 50 species which have remained constant during the 11 – 15 year period under consideration. These are the robust sedges and grasses which have spread as a result of under-grazing.

All units have shown losses and gains, which can be implied from the difference between the total number of species and those common to both recording periods.

West Field A and East Field C have suffered fewer losses of grass species than the other two fields. In the case of West Field A this may be due to a few small areas of higher ground to the south of the site where finer grasses persist. In East Field C this is most probably due to the effect of grazing. Indeed, some additional grasses may yet be recorded as the vegetation recovers from very recent grazing (22.05.24). This field has shown the greatest retention of species of particular interest that had been previously recorded.

The reduction or loss of herbs which require short turf (*Dactylorhiza incarnata* and *Ophioglossum vulgatum* have been used as examples) is of greatest concern since this illustrates the loss of biodiversity throughout the whole site.

To maximise biodiversity and retain the plants with a distribution limited to this increasingly rare habitat, it will be essential to consider their distribution within the site when plans for improved public access are considered.

A full list of species can be found on the accompanying excel spreadsheet.

Plant Recorders:

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Richard Aisbitt supplied maps of plant distribution and two photographs

Report compiled by Pat Woodruffe

The study was undertaken on behalf of Wiltshire Botanical Society www.wiltsbotsoc.co.uk