

ELM IN A BURY ST EDMUNDS HOUSING ESTATE

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Introduction

Elm *Ulmus* sp has featured rarely in the pages of the Suffolk Naturalists' Society's Transactions, despite the effects of 'Dutch elm disease'. In the society's early days, our founder Claude Morley described the arrival of Dutch Elm Disease from Essex in 1929 and named a few sites where it had been reported over the subsequent 2 years (Morley, 1931). The article also stated the Society had all things well *en train* for the extirpation of the 'Dutch Disease' in Suffolk, although this early optimism didn't translate to any meaningful reduction in prevalence, and in the 1930s and 1940s there were occasional laments when the disease was seen to have killed individual or small groups of trees (Anon, 1934; Burton, 1942; Morley, 1947). However, by 1958 it appeared that Dutch Elm Disease hadn't made a big impact upon Suffolk naturalists; when Simpson (1958) reported the loss of elm and other species of trees from hedgerows due to felling over the previous three decades the disease wasn't mentioned.

There are no mentions of elm disease in any of the Suffolk Transactions of the 1960s or 1970s that I can find, despite a new strain of Dutch Elm Disease appearing in the late 1960s and sweeping through the whole country in the 1970s leaving very few mature elm trees alive (Rackham, 1986). Indeed, the only significant mention of elm in those decades was by Trist (1978) who reported removing 40-year-old elms 30 feet high from Mickfield fritillary meadow during the restoration of the meadow following scrub invasion. By 1982, though, it was apparently all over for elm in the county, with Simpson (1982) stating that '*Elms, which used to be such a feature of the landscape, have died from Dutch elm disease*'. This message was reinforced by our then President, Bob Stebbings (2012) who said in a review of the county that '*in the late 1960s and through the early 70s, we lost all our lovely elm trees which were such a huge visual delight in East Anglia*'. According to some reviews, elm seems to have vanished from Suffolk as they do not explicitly mention the shrub stage of this species perhaps because it was perceived as being of lesser value than mature trees.

It seems that many naturalists and conservationists have taken little notice of the ecology of trees, whether elm or other species, with foresters and arboriculturalists filling the vacuum of study and conservation action. For example, amenity arboriculturalists led the battle to save mature elms in Brighton from the 1970s and continue to do so even now (Brighton and Hove City Council, 2020) by felling infected trees or pruning off minor infections, and cutting the roots of infected trees to prevent transmission of the disease underground to neighbouring elms. Native species of elm are rarely sold by tree nurseries or plant suppliers, although there is a small, but increasing market for disease-resistant hybrids, varieties, and/or non-native elms for those who want to plant a native elm substitute. Consequently, native elm rarely features in woodland or amenity landscape planting.

The reported losses to disease, and a lack of replanting, might suggest that elm could be a rare species worthy of conservation. However, surveys of all plant species

in Suffolk in the years leading up to 2010 showed that elm was actually rather common (Sanford & Fisk 2010). In that book, distribution maps of *Ulmus glabra*, *U. procera* and *U. minor* show that the genus is almost ubiquitous, albeit with some local variation in terms of the distribution and abundance of each elm species within the county. The distribution is confused due to the presence of several natural hybrids of elm, and the planting of cultivated clones, the identification of which is very much a specialist area. Difficulties in taxonomy of this genus are such that there is not complete agreement amongst taxonomists regarding the distinction between some species and 'hybrids', or indeed even how many species of elm there are (Stace, 2019; Sell & Murrell, 2018).

Many birds, and some small mammals, eat elm seeds which appear more often on trees rather than the shrub stage. Elm leaves provide food for caterpillars of many moths, including the peppered, light emerald and white-spotted pinion moths. Caterpillars of the white-letter hairstreak butterfly feed on elms and the species has declined dramatically since Dutch elm disease arrived in the UK with a fall of 97% in abundance since 1975; its population is weak, but stable, in Suffolk (Stone, 2017). White-letter hairstreak adults are normally seen at the top of elm tree canopies and rarely use the shrub stage of elm.

The study area

With elm apparently under pressure, I wanted to see how elms were faring in the area where I live, the Moreton Hall ward of West Suffolk Council, in eastern Bury St Edmunds. Moreton Hall is a recent extension to Bury St Edmunds, with residential and commercial development starting in the 1970s and proceeding eastwards continually ever since. There are over 8000 residents and approaching 3500 houses, so if it were a separate village it would be one of the largest villages in West Suffolk. There are sizeable commercial areas employing many people in office, manufacturing, warehousing, comparison retail, car dealers and trades sectors and there are five schools.

The late 20th century phase of the Moreton Hall development mainly occupies the post-glacial outwash on the valley side of the River Lark, whilst by the beginning of the 21st century the development has spilled over onto the plateau interfluvium. The valley-side farmland prior to development comprised relatively small fields and Georgian/Victorian-era planted woodlands and hedgerows; whereas on the plateau to the east there were larger fields formed from common-field arable land and common land in the 18th and early 19th centuries, when it was enclosed through Parliamentary Acts. The plateau therefore has fewer hedgerows compared to the valley side and no woodland. Part of the plateau was used as a temporary World War II airfield, reflecting the area's flatness and openness, part of which is undeveloped and remains as a small civilian airfield.

Survey methods

The survey was inspired by a local community group, Woodland Ways, which on a Sunday morning in May 2019 carried out an elm survey in Moreton Hall ward. Members of the group were not botanists, but had received some training in how to



Elm with large leaf



Elm with little leaf

recognise elm. This provided a data set which may not have been complete, but which found a large number of elms in the form of both mature trees and shrubs across the ward. The ward was searched again in October and November 2019, revisiting the elm identified by the community earlier the year and found that, with the exception of one hornbeam, all had been identified correctly. All other areas of woodland, scrub and hedgerows pre-dating the development, but now encapsulated within it, and all areas of new woodland and shrub planting were visited where publicly accessible or visible from a public space. Private gardens, school grounds and land within commercial properties were not entered to carry out survey, and so the results omitted any elm which might be in those areas. Elm was marked onto a large-scale Ordnance Survey map, so that eight-figure grid references could be subsequently identified. There was no attempt to distinguish between different taxa of elm even though there was considerable morphological variation; for example, leaf length varied from a minimum of 2-3cm up to 15cm, sometimes on elm specimens in close proximity.

Where there were large contiguous stands of elm, or where elm was found in a woodland, it was more difficult to plot the exact location, and this is a minor limitation to the survey methodology. Elm was either recorded as a tree, defined for this survey as being over 100mm stem diameter at 1.3m above



Elm hedge managed as formal garden hedge

ground level and/or over 5m high, or as a shrub, the latter category including hedgerow elms. The stem diameter was estimated rather than measured which allows for some error to creep into the results, and there were problems in defining a 'tree'. Where a group of elm stems emerged from the ground from a single point source, with their trunks touching or almost so, each stem was counted as a separate tree even though they were probably joined by roots underground or formed coppice where the stool was not visible. The number of elms in individual stands was estimated rather than counted, when over c10 stems were present. The surrounding habitat was also recorded, and the form of growth; for example, whether it was a tree in woodland, in a hedgerow, or a shrub on a road verge or field boundary, or elsewhere.



Elm hedges Shakers Lane

Results

Elm was found to be widely distributed across Moreton Hall ward of Bury St Edmunds, in both residential and commercial areas. It was found in 369 of the 10 x 10 metre OS grid squares within the 4km² ward, which is around 1% of the available 10m x 10m grid squares. Elm was much more abundant on the valley side, rather than on the plateau interfluvium, perhaps reflecting the distribution of historical field boundaries and woodland presence.

Two elm woodlands were identified, one being the southern end of Layhill Covert where elm was the dominant tree over around a third of the wood; and a smaller elm wood was beside Symonds Road between the road and an associated cycle path. Elm was also found in the form of trees and shrubs in small areas of other Georgian/Victorian era woods, namely Home Covert, Pond Covert and 'Health Centre Wood'. It was absent, however, from the similar-aged 'Oak Plantation' which unlike the other woods had no connection to historic (pre-development era) hedgerows. The elm tree with the biggest girth had a stem diameter of 800mm, although most trees had a stem diameter from 100mm to 300mm. There were lines of trees which had grown up from hedges, particularly alongside Shaker's Lane, a narrow rural road encapsulated into the modern development, and alongside the A14 dual carriageway. There were so many elm trees that estimating their number became difficult, with thousands of trees present in the ward and thus attempts to make accurate counts were abandoned.



Elm was found as a hedgerow shrub in almost all the rural historic (pre-development era) hedges retained within the development, primarily along the valley side. It was abundant in some hedges, occurring along long lengths of the hedges, and was rarely absent from this habitat. Some of these rural hedges had become property boundaries and become managed as garden hedges with frequent clipping to form amenity hedgerows. However, elm not only survived, but seemed to have thrived with this treatment, for example it remained abundant within the formal clipped hedge boundary of a care home and of an electricity grid maintenance company.

Elm was found as a shrub alongside many roads, where it had perhaps once been a component of the adjacent hedgerow, which had since declined to leave only remnant shrubs behind; sometimes no other shrub species were present. Roads alongside which elm was found had been present prior to the 1970s era development and had been in existence for perhaps hundreds of years. Remarkably, elm was abundant in a hedge which was the 'ghost' of a previous Orttewell Road; the road having been moved north a few metres and raised on an embankment early in Moreton Hall's development, yet the old boundary hedge remained as part of the public realm amenity landscape. Elm has spread from this hedge into an area of amenity landscape planting of native trees and shrubs, with shrubs now penetrating several metres into the planted area.



Salter Close - elm suckers from hedge on right appearing at base of garden wall

Elm has also spread from the tree line alongside the A14 into the associated 1970s-era roadside plantation by up to twenty metres, and it has similarly spread by 20m or more north from Shaker's Lane into an unnamed plantation which also dates from the mid 1970s. It has also survived and spread a few metres from hedgerows now lost within woodland planting, where the elm remains but there are no other physical signs of the original hedgerow. This represents a spread of up to 0.5m per year, all from suckers. Over the course of a century it could thus spread by 50m, with the spread perhaps being influenced by the density and species composition of the woodland within which it spreads. However, not all elm spread was through areas planted with trees and shrubs. At Natterer's Wood, which in 2001 was arable land, elm has spread to an unmanaged part of the wood and competes successfully with other self-sown scrub and ruderal species. In Salter Close, elm has spread from a hedgerow beneath a frequently mown 5-metre-wide amenity grassland strip, to pop up at the base of a garden wall. It has also spread around 10m from a roadside hedge into an arable field abandoned in approximately 2002 in anticipation of commercial development which has yet to be realised. In Ten Acre Field, a public recreational site, elm has colonised the amenity grassland.

Dutch Elm disease

The survey found indications of active Dutch Elm disease, with some taller hedgerow shrubs showing signs such as dieback of mature stems, but also exhibiting vigorous regrowth from the roots. There were three dead elm trees in a hedgerow at Salter Close, and two dead trees in Kempson Way which have been left in place as ecological features as they pose little risk to the public. Beetle tunnels have been found under bark characteristic of those formed by *Scolytus* beetles which spread the fungus which causes the disease. There were also some dead trees in 'Health Centre Wood'. However, the vast majority of the trees and shrubs surveyed were remarkably healthy.



Dead elm tree in elm hedge

Conclusions

Elm is a very common woody plant in Moreton Hall ward. Visual estimates suggest that it is less abundant than oak, cherry, sycamore, field maple and Norway maple which make up most of the late 20th century plantings, but it is approximately as abundant as hawthorn, and more abundant than hazel and blackthorn. It is a good survivor from pre-development times. There is of course no detailed distribution data

in Moreton Hall pre-dating this survey, but it is reasonable to speculate that elm is at least as abundant as it was a hundred years ago. The spread of elm into late 20th and early 21st century plantations suggest that it might be, or might become, more abundant than it has been in the historical period. Even now, respectable authors promote the myth that there are few elms, such as Russell & Buggs (2019) who say that ‘*Dutch Elm Disease (DED) is one of the most devastating tree diseases of the 20th century, affecting many elm species in Europe, North America and Asia. It continues to be hugely damaging in Britain*’; which seems to be true for large trees only; elms continue to thrive at the present day. Certainly, the distribution and abundance of elm in Moreton Hall ward does not reflect the position apparently held by many authors when they discuss trees only.

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