



True Service Tree

Sorbus domestica

Species Action Plan

1. Introduction

The true service tree has a status of critically endangered within the Vascular Plant Red Data List for Great Britain and is on the Threatened Plants Database of the Botanical Society of the British Isles.

2. Current Status

2.1 Ecology and habitat requirements

The true service tree has bunches of white flowers in May and June, which produce small pear shaped fruits about the size of a large damson in October. The tree is sun loving but resistant to cold, tolerant of spells of drought and adaptable to a wide range of reasonably free-draining soils (*Bignami, 1994*). It can be mistaken for mountain ash (*Sorbus aucuparia*) when not in flower or fruit. Efforts in Britain to propagate the tree have had some success, as germination from seed is difficult. Regeneration from seed seems to be scarce throughout Europe, although in warmer and more favourable sites vegetative propagation by root suckers is common (*Rotach, 2003*).

In central and southern Europe the tree was once planted for its fruit and so can be found in remnant farmhouse orchards and along the edges of fields and country roads. It may also be found in former coppice or coppice with standards woodland. In ancient times the fruit was fermented in grain to make an alcoholic drink. The Romans called this drink cervisia from which the name Service is derived. A brew made from whitty pear, by which name true service tree is also known, was also once added to mead to enhance the flavour and the alcoholic content. The timber is very fine-grained and very hard. It was therefore used to make cart and wagon wheel hubs and rims, screws for wine presses, gears and other parts of the machinery in water mills grinding wheat to make flour. In modern times its other use is to make a very thin, hard-wearing veneer. In many places it is the most expensive timber available (*Jennings, 2003*).

In Britain true service tree has been discovered in such diverse habitats as the Wyre Forest in Worcestershire and soft, south facing cliffs of limestone-related soils in Glamorgan and Gloucestershire.

2.2 Population and distribution

The European distribution of true service tree is shown in figure 1. The tree is believed to originate in central and southern Europe, in particular the Balkan peninsula, Italy and southern France, but the introduction of the species to other areas of Europe by the Romans makes distinguishing between native and naturalised trees complicated. In several European countries the tree is considered of national importance due to its rarity and programmes of conservation and propagation are ongoing. This is not the case in Britain where there are questions over its native status. However, the tree is acknowledged to have historical and cultural significance and so is interesting for this reason.

In countries where the tree is considered native it can be found from sea level to 900m in altitude and it is particularly widespread in low mountains and hills.

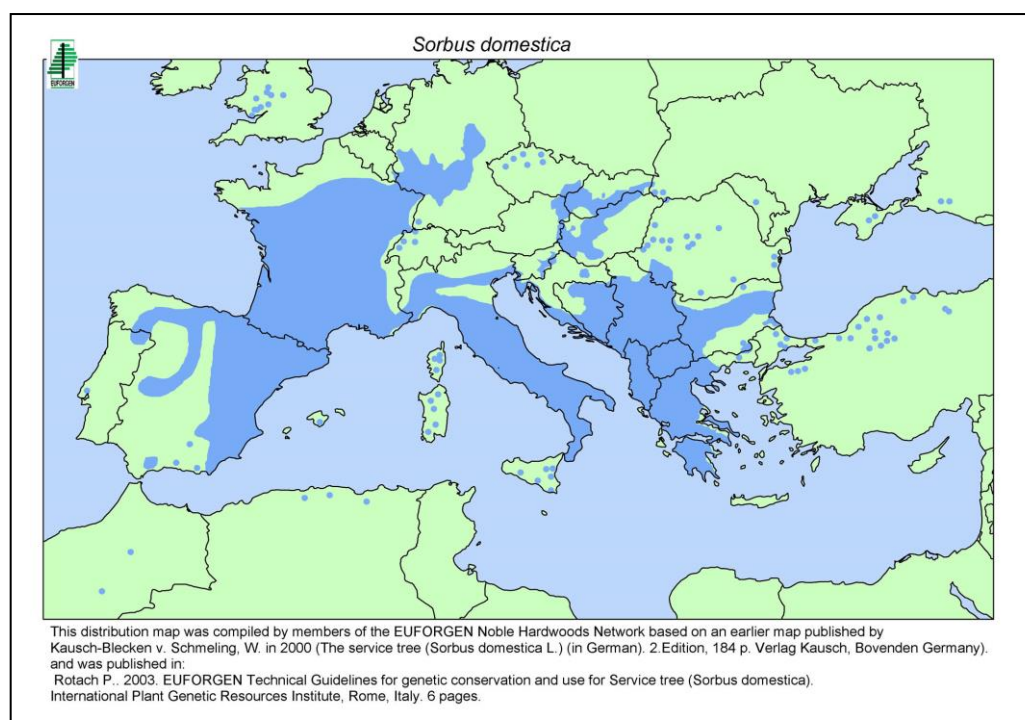


Figure 1. European distribution of *Sorbus domestica*.

The first recognised true service tree found in England was the Wyre Forest tree, or Wyre Forest Whitty Pear, described in 1678 by Alderman Edmund Pitt of Worcester in a letter to the Philosophical Transactions of the Royal Society. This original tree was burnt down by a poacher in 1862, but by this point interest in the tree was such that a number of cuttings had been propagated and raised at Arley Castle. These young trees were subsequently planted at locations throughout Worcestershire and nearby counties including Arley Arboretum, Croome Park, Kyre Park, Worcester Cathedral, Bewdley and the Botanical Gardens in Oxford.

In 1916 a new tree (a direct descendent of the original) was also planted to replace the one lost in Wyre Forest and this still survives today. When the Glamorgan and Gloucestershire trees were discovered in the mid-1980s, genetic analysis revealed close similarities between these trees, European trees, and those descended from the original Wyre tree. These studies are however incomplete and the conclusions may require revision. One of the trees at the Glamorgan site was estimated at the time of discovery to be 400 years old.

2.3 Legislation

There is no legal protection of the true service tree in Great Britain.

2.4 Summary of important sites

There are currently 30 known *Sorbus domestica* trees growing in Worcestershire.

Table 1. Locations of known *Sorbus domestica* trees in Worcestershire. Data provided by Worcestershire Recorders and Forestry Commission.

DATE PLANTED	LOCATION	GRID REFERENCE
?	Arley Cottage	SO 76858038
1916	Wyre Forest Arboretum (Original Whitty Pear)	SO 74947514
Oct-06	Wyre Forest Arboretum - site 64	SO 74927515
Mar-13	Wyre Forest Arboretum - site 108	SO 74927514
2005	Dowles Brook, Wyre Forest	SO 77127641
1958	19, Forestry Houses, Callow Hill	SO 74917392
1960	Loen, Long Bank, Bewdley	SO 76027415
1870?	Withy Bed Wood, Button Oak, Bewdley TREE 1	SO 75777705
1870?	Withy Bed Wood, Button Oak, Bewdley TREE 2	SO 75767704
1870?	Withy Bed Wood, Button Oak, Bewdley TREE 3	SO 75757703
1870?	Withy Bed Wood, Button Oak, Bewdley TREE 4	SO 75757703
1870?	Withy Bed Wood, Button Oak, Bewdley TREE 5	SO 75757703
1980	Cadbury's Chalet, Button Oak, Bewdley Tree 1	SO 75717716
1980	Cadbury's Chalet, Button Oak, Bewdley Tree 2	SO 75717715
1950	Arley Arboretum (Original tree)	SO 76338053
1994	Arley Arboretum (Tree 74)	SO 76178050
1900?	Arley Arboretum, entrance cattle grid – Tree A	SO 76728077
1900?	Arley Arboretum, entrance cattle grid – Tree B	SO 76718077
1900?	Arley Arboretum, entrance cattle grid – Tree C	SO 76718075
1900?	Arley Arboretum, entrance cattle grid – Tree D	SO 76718075
1900	Pool House, Astley	SO 79576835
2001	15, Spring Grove Road, Kidderminster	SO 819753
Dec-00	Millhampton Wood, Ombersley	SO 832652
Dec-00	Bishford House, Chatley, Droitwich	SO 851608
1900	Worcester cathedral grounds behind new public toilets	SO 85005446
1900	Worcester cathedral bishop's palace garden	SO 84915458
1900	Croome Perry Wood, Pershore	SO 90014588
?	Croome Birch covert	SO 86624497
?	Broadway	SP 10723753
1987	Bodenham Arboretum	SO 806812
2009	Kemerton New Park	SO 938369

3. Current factors affecting the species

- A lack of detailed and current information on the present distribution and history of both wild and cultivated trees.
- A lack of recording effort for possible wild trees.
- Incomplete genetic dataset available on the species.
- Lack of protection for known trees.

4. Current Action

4.1 Local protection

Because of their often-isolated location most cannot claim sufficient public amenity value to justify a Tree Preservation Order. The tree at Worcester Cathedral is within a conservation area.

4.2 Site management and programmes of action

None currently in Worcestershire.

4.3 Survey, research and monitoring

A research project undertaken by Frances Claxton in 1999 looked at the current status and distribution of the true service tree in Worcestershire. The project was intended to inform the production of the first True Service Tree SAP in the Worcestershire Biodiversity Action Plan and also to provide tissue samples for genetic analysis at Kew.

5. Associated Plans

Woodland, Ancient and Veteran Trees.

6. Conservation Aim

The origins of the true service tree within Worcestershire are better understood and the protection of all recorded trees is maximised

7. Conservation Objectives

- Tree Preservation Orders placed on vulnerable trees
- Identify suitable potential planting locations within the Wyre Forest SSSI
- Identify a local nursery partner who will propagate trees from local seed
- Carry out DNA analysis work on Worcestershire trees
- Carry out further focused survey within the county to collect new records, based on knowledge of known favoured site conditions.
- Produce a short ID guide to the different *Sorbus* spp. and engage with key people e.g. local authority tree officers

References and further information

Bignami, C (1994). *Description and use of Service Tree*. GENRES Project 29 coordinated by the Horticulture Department, University of Florence, Italy.

Claxton, F (1999). *The Whitty Pear – Sorbus domestica L. A Natural Pioneer Millennium Award Project*. Worcestershire Record Issue 7 p28-30.

George, J. P., Konrad, H., Collin, E., Thevenet, J., Ballian, D., Idzajt, M., Kamm, U., Zhelev, P and Geburek, T (2015). *High molecular diversity in true service tree (Sorbus domestica L.) despite rareness: data from Europe with special reference to the Austrian occurrence*. *Annals of Botany*, **115**: 1105–1115.

George, J.-P., Woodman, J., Hampton, M., Konrad, H and Geburek, T (2016). *True Service-tree (Sorbus domestica, Rosaceae) in the British Isles: Rare but diverse*, *New Journal of Botany*, **6**:1, 21-30.

Gerry, H (2012). *Sorbus domestica: The Woodward Family connection in Worcestershire*. Worcestershire Record Issue 33 p67-68.

Green, H. 2009. The Old Sorb Tree, Whitty Pear or The True Service Tree, *Sorbus domestica* L, Previously *Sorbus pyriformis*. *Wyre Forest Study Group Review*, 10:69-73.

Hampton, M and Kay, Q. O. N (1995). *Sorbus domestica* L., new to Wales and the British Isles. *Watsonia*, **20**: 379–384.

Jennings, F (2003). The Sorb Tree of Wyre: The True Service or Whitty Pear Tree. *Worcestershire Record*, Issue 15, page 59

Kay, Q. O. N., Kitchen, M. A. R and Kitchen, C (1999). *Sorbus domestica* L. (Rosaceae). In: Wigginton, M .J (Ed). *British red data books, 1. vascular plants*. Peterborough: JNCC.

Nelson-Jones, E., Briggs, D and Smith, A (2002). *The origin of intermediate species of the genus Sorbus*. *Theoretical and Applied Genetics*, **105**: 953–963.

Paton, A (1967). *True Service Trees of Worcestershire*. *Proceedings of the Botanical Society of the British Isles Vol 7 (1)* 9-13.

Piagnani, M. C., Debellini, C and LoScalzo, R (2012). *Phyllometry and carpometry, chemical and functional characterization of fruits of Sorbus domestica* L. (service tree) selections. *Journal of Berry Research* **2**: 7–22.

Rich, T. C. G., Houston, L., Robertson, A and Proctor, M. C. F (Eds) (2010). *Whitebeams, rowans and service trees of Britain and Ireland: A monograph of British and Irish Sorbus* L. [BSBI Handbook No. 14]. Botanical Society of the British Isles.

Rotach, P (2003). Technical guidelines for genetic conservation and use for Service tree (*Sorbus domestica*). European Forest Genetic Resources Programme.

Wilson, B (2018). *Sorbus domestica*. *The IUCN Red List of Threatened Species*.