

LOCAL WILDLIFE SITES newsletter



Herts and
Middlesex

NEWS FROM YOUR HERTFORDSHIRE LOCAL WILDLIFE SITES PARTNERSHIP 2018

Welcome...

to the 2018 Local Wildlife Sites newsletter. In this issue we are looking at ancient and veteran trees, which species depend on them and how to best manage them.

What are Wildlife Sites?

Local Wildlife Sites (LWS) are sites of substantive nature conservation value and although they do not have any statutory status, many are equal in quality to statutory Sites of Special Scientific Interest (SSSI).

There are more than 40,000 Local Wildlife Sites in England overseen by 65 Local Sites systems, covering contrasting landscapes in coastal, rural and urban situations. Hertfordshire currently has 1,575 habitat LWS. Together with SSSI, LWS support locally and nationally threatened species and habitats. They play a critical role in forming the building blocks of ecological networks and Living Landscapes.



photo: Carol Lodge

What are Ancient and Veteran Trees and why are they important?

The term 'ancient' refers to a tree's age class as beyond full maturity, characterised by crown retrenchment and reduced annual incremental growth. Wood-decay attributes accumulate, such as cavities and decay columns, rots, stubs, decorticate wood, and flaking or fissured bark. These veteran features usually naturally increase with age, but many are a response to environmental impacts. Such stresses may be biotic, like fungal and bacterial attacks causing cankers, exudations and rots. They can also be abiotic: wounds can facilitate entry of micro-organisms; storms can cause limb-loss, shake and lightning scars; drought or flooding can lead to root and canopy die-back.

Ancient trees will more likely develop particular age-associated features, such

as large cavities in stem and limbs, included bark and load-bearing tears, water-filled hollows in limb-joints and gnarly root collars with detritus build-ups and established water seepages, as well as more deeply fissured and leached acidic bark. Epicormic growth may testify to their retrenchment and regenerative abilities, so that a living healthy ancient tree potentially provides a continuity of decay features over that of an early veteran or rotting snag. Mature trees begin to naturally become richer in such decay characteristics.

Ancient trees are hugely valuable for wildlife. Over 20% of the UK's 13,650 fungal species are thought to be saprophytic (feeding on dead organic matter), with the great majority of other species that utilise the dead wood resource relying on the initial

We
want to
hear from
you!

Comments or suggestions for future articles
If you preferred to receive your newsletter via email, please contact Carol Lodge:

carol.lodge@hmwt.org

transformative action of this extensive group. Decaying wood exclusively supports 6% (1,700 species) of the entire British invertebrate fauna and their obligate associates (predators, parasites and gallery exploiters).

Over two-thirds of our woodland birds are cavity-nesters. The process of decay which begins when fungal spores gain entry to a wound, is especially important for hole-nesting birds such as Marsh and Willow Tits, as the decaying wood is softer than living tissue and therefore easier to excavate. Even Greater Spotted Woodpeckers, who will begin by excavating a small hole into fresh wood, will allow a rotting process to begin before excavating more deeply.

Additionally, features such as flaking bark and trunk cavities also provide

homes for roosting bats including rare specialist species like the Barbastelle bat. Eight of our seventeen British Bat species heavily depend on tree-holes and cavities as roost sites.

Also, many epiphytes (especially moss and lichen species) are slow colonisers and are dependent on habitats which show great continuity over many years, as is provided by veteran trees, and allow rich and complex communities to develop over time. Some species such as the Knothole Yoke-moss will only grow on veteran Beech trees. When veterans are removed, its many epiphytes, along with saprophytes and associated wildlife, can be lost with it.

Saproxyllic invertebrates are the most commonly celebrated users of deadwood in Britain. Some are highly specialised, such as the larvae of the

rare Violet Click Beetle (*Limoniscus violaceus*), which, in Britain, only develop in brown-rotted wood-mulch of hollow Beech and Ash trees, specifically enriched by the droppings, feathers and bones of cavity-nesting birds. Its specific requirements, along with several other poorly-dispersing beetle and lichen species, are so intrinsically linked to ancient trees – in particular ancient pasture-woodland – that it is thought to indicate a continuity of ancient trees and therefore veteran features to primeval times.

Long-term experimentation in promotion of veteranancy is underway in the UK, including the experimentation of saproxyllic-fungal inoculation of a variety of tree species.

Carol Lodge:
Herts & Middlesex Wildlife Trust

Epicormic growth, signifying regeneration after crown retrenchment. Protection and foraging site for birds and invertebrates.

Brown-rotted heartwood has left a hollow, with accumulated debris. Note beetle-borings and spider's webs



Woodpecker drills and invertebrate borings into the white-rotted external cambial layer



Veteranisation was probably initiated by a lightning-strike, frost, or shearing crack



Dead branches with bare wood, flaking bark, stubends, splits and tears, used by bats, crevice-nesters and invertebrates



Arboreal cavities often develop where branches break, used by hole-nesters



A calloused old wound has left a crevice, with droppings and a feather, evidencing avian use



Remains of an old Hornet's nest, fallen from the hollow

all photos: Carol Lodge





Large old apple tree with 3 years of progressive crown reduction to reduce weight load and stop gradual collapse.



Old plum with significant rot and deadwood, being replaced by elder and suckers



Old apple tree with selective crown removal to reduce weightload and avoid further tree splitting

Orchard trees and the need for management

Benign neglect is a key reason why we have lost

up to 90% of our traditional orchards

'Wi' fruit for me, the apple tree do lean down low in Linden Lea' goes the old poem by William Barnes. But what if the tree continues to lean down so low it falls over? The old tree may be wonderful for deadwood ecology but left to its own devices will soon be no more. Fruit trees tend to develop veteran characteristics more quickly than other trees, but having been pruned often, they need appropriate management to ensure they are maintained. Other than direct loss through agricultural change, benign neglect is a key reason why we have lost up to 90% of our traditional orchards.

Other than replacing trees where necessary, it's crucial to manage them properly helping them into senescence. With the right knowledge, many such features can be retained, encouraged and even replaced to keep old orchards a feature of our environment today. This maintains not only local landscape character, but also fruit varieties, cultivars,

blossom, fruit production and all of the associated ecology and ecosystem services these habitats provide.

The removal of lichen-encrusted limbs or dense ivy may seem poor conservation management. It is, however, reasonable to keep the original tree standing, to retain most of its remaining old trunk and branching network, and to reduce any uneven weight-bearing load. This will eventually result in more blossom and fruiting as well as a regeneration of regrowth.

Trees can be managed in rotation so as not to remove all such features in one go whilst others can be retained to allow ecological processes to run their full course. Unmanaged trees become very vulnerable to severe weather, so if damage is to be minimised, some management is necessary. To address this, expert pruning courses are held in Hertfordshire in Tewin, Tring,

Chorleywood and elsewhere. These provide practical demonstration classes for managing old fruit trees and their replacements. This should ensure that at least some old fruit trees and their wildlife continue to lean down low – but are not entirely lost from our countryside.

Martin Hicks
Herts Ecology, HCC

Further details
...of courses can be obtained from **Orchards East** (info@orchardseast.org.uk) and **Martin Hicks** (martin.hicks@hertfordshire.gov.uk)



The importance of Veteran Trees to the **barbastelle** bat

How old trees can help sustain one of our most endangered mammals

With only a small number of breeding roosts known to exist in the UK, the barbastelle is one of the country's rarest and most endangered mammals and is protected under National, European and International legislation.

At one time, the barbastelle was thought to be extinct in Hertfordshire. There are now a few widely dispersed locations in the county where this rare species has been intermittently recorded, but detection is very difficult due to the secretive nature of this species and the specialist equipment required. Since 2015, the Hertfordshire Barbastelle Project, a partnership project between Herts & Middlesex Wildlife Trust and Herts & Middlesex Bat Group (HMBG), has hugely increased the number of records of barbastelles and shed more light on their distribution over the county. This culminated in the discovery of a new maternity colony in 2018 – only the second such colony ever to be found in Hertfordshire!

Barbastelles typically roost behind the peeling bark plates of oak trees, but

also in splits and cracks. They prefer veteran trees within the shaded interior of ancient woodland because temperatures are more stable and humidity is higher, which helps them save energy. They will typically move roost every 2 to 3 days over the summer, so a large number of these roost sites is needed.

There are a number of things that can be done to provide the habitats barbastelles require. This species favours veteran tree features for roosting and feeding. Furthermore, wetland habitats and ancient woodlands with ponds, streams and rivers are ideal for supporting barbastelle colonies, particularly during the maternity period.

Allowing large oaks with peeling bark within woodlands to grow increases the number of potential roosting sites for the bats. If tree surgery is required for safety reasons, it can be helpful to retain as much of the main stem as possible and limbs with peeling bark or splits and cracks. For felling work being undertaken, please consider

leaving a 15 metre buffer of uncut trees around ancient or veteran trees.

Roost features can also be created artificially by sinking upward, vertical slots into oak trees or by ring-barking certain trees. Flat, crevice bat boxes – such as the Schwegler 1FF – can be erected in suitable habitats to encourage roosting within the wood. Allowing riverine vegetation to develop and digging new ponds near flight paths can provide better feeding habitats for the barbastelle.

Matt Dodds
Herts & Middlesex Wildlife Trust

If you believe you own or know of a woodland with potential to support barbastelle bats, please contact either the Trust or HMBG to request a survey



photo: Denise Foster

Barbastelle



photo: Carol Lodge

Parkland in Hertfordshire

Parklands in Hertfordshire originate from either Royal hunting grounds, original wood pasture – possibly centuries old – or were created from agricultural land in the 18th and early 19th centuries. They are often rich in veteran trees whose longevity is mostly attributed to their historic management. In wood pasture, many trees were pollarded, with the cut wood providing winter fodder for grazing animals. The elevated height of the tree regrowth protected the new growth from being grazed, and the regular pruning served to extend the tree’s life. In more recent times, many of these pollards have fallen out of management because the practice is no longer continued, resulting in them becoming top-heavy, unbalanced and their survival being threatened.

The historic practice of pollarding promotes the development of veteran features in living trees. Indeed, pasture-woodland is thought to mimic the

deadwood characteristics of natural woodland. The confinement of several poorly-dispersing beetles and lichen species to ancient pasture-woodland is thought to indicate a continuity of ancient trees and veteran features to primeval times. Such sites, however, are few and isolated, with many in poor or compromised condition.

In Hertfordshire, we are privileged to have a number of great parklands including Panshanger Park, Sacombe Park, Brocket Park, Stagenhoe Park, Knebworth Park, Broxbournebury Park and Youngsbury Park. These contain a variety of ancient and veteran trees, most famously the ‘Panshanger Oak’ in Panshanger Park, which was allegedly planted by Queen Elizabeth I in the 16th century. Knebworth Park contains over 500 Hornbeam pollards which date to at least the mid-18th century, if not earlier.

Managing veterans according to their

individual needs will extend their lifespan and provide a stable habitat for the species they support, greatly benefitting wildlife.

The longer they are managed by careful pollarding, the longer the trees will live. However, veteran or ancient trees that have fallen out of the pollard cycle do not respond well to re-pollarding. They are extremely fragile, sensitive to surgery and can easily be killed by overzealous pruning. If work is needed on an old tree that has not been pruned for over ten years, it must be done with extreme caution and with the advice of conservation experts. A living tree provides stability for its veteran features, but when a tree dies, the whole tree will decay faster than the rate of decay within a living tree, losing the habitats it provided for some of the rarest species in the UK.

David Williamson



Did you know?

Many Click Beetles, some recorded in Hertfordshire, are associated with the heart rot of living veteran and ancient Oaks, Ash, Beech and Elms. Their life cycle is so intrinsically linked to heart rot of old living trees that their presence can indicate the

continuity of veteran and ancient trees in that locality all the way back to the ice age.

They got their names from the curious way in which they get back on their feet, if they have flipped over: They arch their back and flip up into the air with an audible ‘click’, until they land on their feet.





Lichens – Ancient Trees to orchards

Scripture-wort (*Graphis scripta*)

Barnacle lichen (*Thelotrema lepadinum*)

Lichens are dual organisms – a combination of a fungus and alga – and often provide a useful indication of the health and history of an ecosystem.

Besides being of value in their own right, veteran trees support distinct associations of lichens. The species of greatest conservation interest are generally to be found in tree trunks. Some may be indicative of ecological continuity and occur in relic communities with species likely to have been more widespread before the industrial revolution, but now widely lost due to pollution. These communities can, for example be found on Hornbeam pollards in woodlands in southern Hertfordshire or on some of the veteran oaks in Panshanger Park. These specialist lichens are often easily overlooked, such as the minute pinhead species lining bark crevices and small crusts towards the base of the tree. The richness on these trees is often only revealed by close examination with a hand lens.

Veterans found in more sheltered and humid environments usually have the greatest variety of lichens. Many of these can be badly affected by sudden changes in the micro-environment, making sensitive management crucial. Ancient woodland is also important because it offers a stable micro-climate. The Barnacle Lichen (*Thelotrema lepadinum*), occasionally found in

Hertfordshire, is said to require a continuity of tree cover of at least 400 years. In optimum environments in the west of the country Scripture-wort *Graphis scripta* often occurs in early successional habitats e.g. as a twig species in Willow Carr, in the east it tends to be associated with our ancient woodlands occurring e.g. on the smooth trunks of Hornbeam.

The boughs of orchard trees often draw one's attention due to their prolific cover of foliose (leafy) lichens. These species have flourished since sulphur dioxide pollution has been reduced and tend to be better colonists and more widespread than the species on ancient trees. Orchards in Hertfordshire often have a good range and high cover of lichens, supporting invertebrates and food webs in the orchard ecosystem. Maintenance is an important factor: Although pruning will lead to the removal of some of the lichens, it also creates broad, open canopies with a good balance between shade and light for lichen colonisation. In addition, some fruit trees, particularly cherry, have an acidic bark suitable for species such as the bearded lichen (*Usnea subfloridana*). This group however, has been in decline in the region due to pollution. In this way, the changing lichen communities on orchard trees are good indicators of environmental change.

Andrew Harris

The partnership

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The Wildlife Sites Partnership in Hertfordshire includes Herts and Middlesex Wildlife Trust, Hertfordshire Environmental Records Centre, Hertfordshire Ecology, Natural England, the Countryside Management Service, Lee Valley Regional Park Authority, Chilterns AONB, the Forestry Commission and the Environment Agency, and is coordinated by Herts and Middlesex Wildlife Trust.



Herts and Middlesex

Registered address:
Herts and Middlesex
Wildlife Trust,
Grebe House,
St Michael's Street,
St Albans, AL3 4SN

01727 858901
info@hmw.t.org
www.hertswildlifetrust.org.uk

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