

Tree and Woodland Management Policy

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1. Policy statement

Tewkesbury Borough Council ('the council'), as a tree owner, has a responsibility to ensure that its trees do not pose a danger to the public or property. The council has a statutory duty of care to members of the public and staff who must not be put at unnecessary risk because of any failure by the council to take all reasonable precautions to ensure their safety. In the National Tree Safety Group publication, "Common Sense Risk Management of Trees", statistics show that there is about a one in 10 million chance of an individual being killed by a falling tree or part of a tree in any given year.

This policy seeks to manage the risks associated with trees using a risk-based approach which both identifies with the risk presented to the public and buildings by their location and size and then through periodic inspections of the trees to assess whether they represent any additional risk to life or property as a result of structural faults or suffering from decay or pests and diseases, and to take remedial action as appropriate.

This policy will set out Tewkesbury Borough Council's methodology for planting new trees and woodlands. With climate change affecting the health of current tree stocks, and limiting choices for planting of new species, this policy will set out a step-by-step guide for the council to use for making decisions around the planting of new trees, and how it manages its current stock.

2. The status of trees and woodlands in the UK and Tewkesbury Borough Council

As of 2021, woodland covered just 13.2% (3.2 million ha) of the UK's land surfaceⁱ. This figure has increased since 1998 but falls well below the average for our neighbours in Europe; EU-27 average woodland coverage is 40%ⁱⁱ. Approximately half of this habitat is made up of native tree species, and the other half made up of commercial conifer plantations. Trees outside of woodland, such as hedgerows, street trees, trees on farms and along rivers cover 3.2% of Britain's land areaⁱⁱⁱ.

To tackle the joint emergencies that Tewkesbury Borough Council has declared; both climate and ecological, there is a need to find opportunities within the borough to increase canopy coverage. As of 2023, tree coverage across Gloucestershire was ~14% (35,822ha) and throughout Tewkesbury Borough was ~8% (3,398ha). There is a further 8.6% of land identified as being 'woodland opportunity'^{iv}; areas identified which do not encroach on high-value farmland, priority habitats or protected areas.

The UK Government has set a target that would increase England's tree cover from 14.5% to 17.5%. Since 1924, tree planting rates have been maintained at more than 5,000 ha/year, primarily for two main reasons: timber supply and biodiversity/farm woodland. This consistent increase is attributed to a wide range of drivers, many of which are new, including carbon credits, flood resilience, water quality improvement and human health and well-being^v.

To achieve this aim, numerous charities and organisations have created 'woodland opportunity' maps for councils to utilise to move towards this target. Extensive work conducted by Friends of the Earth identifies that within the England, there is the space to nearly double woodland coverage^{vi}. Tewkesbury Borough Council will aim to achieve 17.5% canopy coverage across the borough (Action 6).

There are currently over 300 tree preservation orders in Tewkesbury Borough, with a number of woodland and conservation areas also identified for protection, which will ensure that those trees and woodlands continue to contribute to the amenity and biodiversity across the borough.

2.1 The importance of trees and woodlands

Trees and woodlands play a pivotal role in the overall health of the natural environment. Historically trees and been treated as individual organisms, rather than complex communities. Research now suggests that there is an inherent symbiosis between trees, but also into further reaching groups of organisms, such as animals, insects and fungi; in many cases species of one group cannot survive or function without the others^{vii}. To put this in perspective, a single oak tree can support up to 2,300 species^{viii}.

In the UK, one third of all woodland wildlife species are currently in decline, and one in ten woodland wildlife species are at risk of extinction. Having areas high in biodiversity helps reduce the chance that pests, diseases, natural disasters and other threats will have drastic impacts on an ecosystem. Using ash dieback as an example; the UK may lose up to 80% of all ash trees, which will have a devastating impact on the landscape and the species associated with that species, but having a rich and diverse population of tree species will help mitigate this impact^{ix}.

In 2021, the asset value of UK woodlands was thought to be an estimated £382 billion^x, and the value of trees outside of woodlands between £68.5-£151.5 billion^{xi}.

3. Tree stock management and risk management

Like all living organisms, trees are subject to decline and collapse and they can be damaged physically or invaded by pathogenic organisms. As trees deteriorate, they are increasingly likely to shed limbs or fall in strong winds and the potential to cause harm increases.

Ancient, Veteran, decaying and standing/lying dead trees are often beautiful and uniquely valuable as habitat for wildlife and even though the tree may have poor physiological condition, the structural integrity of the tree may be good. Tree works may be necessary where there is a clearly perceptible risk to life or property. The resolution of conflicts can be achieved by tree work, but we will also consider other measures such as modifying the use or management of the surrounding land.

This Tree Safety Management Policy address the risk and responsibilities on the authority for the management of falling trees, branches and limbs which is managed by ensuring that:

- the risk to life and property, as a result of tree deterioration, is kept to a minimum as is reasonably practicable
- a system of tree inspections is in operation in relation to the above risk
- a record of trees and inspections is retained
- staff who carry out inspections are competent to do so
- work identified through the inspection programme to be undertaken by suitably qualified staff or contractors and where practically possible to be completed in accordance with BS3998:2010G

Trees are dynamic and are continually self-optimising organisms. In general, trees develop in balance with their environment both above and below ground. As far as possible trees are allowed to grow to their full potential in keeping with the original ideals behind tree planting across the Borough. Tree works are not undertaken as a matter of course but only carried out if essential. This approach reduces unnecessary wounding which could be detrimental to the tree's health in the long term.

There can often be practical and necessary reasons for removing trees, such as historic inappropriate planting or a tree may be succumbing to a disease. These cases are unfortunate, however, Tewkesbury council pledges to consult with the community on such matters, particularly where a significant group of trees or a significant individual tree has issues to explain the reasons for the decision and how the community would like to replace the group or the tree.

Any tree works that have been identified from the inspection assessment are prioritised by risk factor. Recommended works will be undertaken by a suitable qualified person when it is practical to do so. Unless tree works are required as an emergency, works will form part of a planned

management programme. Tree works will be programmed to take into consideration such factors as bird nesting season and to carry out pruning at the correct time of year which will be dependent on tree species. These works will be subject to available resources at that time and as per the inspection assessment. However, the council does not usually prune trees to allow light or to enhance views. With regards to seasonal nuisances such as fallen leaves, seeds and fruit, liability to remove these rests with the individual. Whilst falling leaves, seeds and fruit etc are annoying, they are not legally a 'nuisance', which has a very specific meaning.

3.1 Periodic inspections program

Periodically no longer than every 5 years the council will review the ongoing inspection frequency for all trees within the council's ownership. The following matrix is designed to take account of the probability and severity to give a risk value which in turn establishes the inspection frequency. The severity is determined through the maturity of the tree whilst the probability is determined by the location to buildings, vehicles and pedestrians.

The above review was undertaken as a combination of a desk-top exercise and site visits. All Council owned trees must be identified and scored within the matrix which establishes a periodic inspection programme. The periodic inspector will identify trees that have defects (findings) record them, assign a hazard rating and report their findings within the council tree management system.

PERIODIC INSPECTION MATRIX	Severity by size of tree	Small tree less than 3m	Small tree estimated size 3m to 9m	Medium tree estimated size 9m to 15m	Large tree estimated to be in excess of 15m	Large tree on unstable land i.e. on steep slopes, high wind area
Probability population and usage		1	2	3	4	5
No access i.e. in wooded area with very little or no access, no buildings in the area	1	Score 1 Very low	Score 2 Very low	Score 3 Very low	Score 4 Low	Score 5 Low
Light foot and vehicle traffic, no buildings within fall parameter of the tree	2	Score 2 Very low	Score 4 Low	Score 6 Low	Score 8 Medium	Score 10 Medium
Medium foot and vehicle traffic, unoccupied building within fall parameter of the	3	Score 3 Very low	Score 6 Low	Score 9 Medium	Score 12 Medium	Score 15 High

tree i.e. bus shelter or scout hut						
High volume foot and vehicle, or occupied building within fall parameter of the tree i.e. located on route to a large school or factory	4	Score 4 Low	Score 8 Medium	Score 12 Medium	Score 16 High	Score 20 High
Extremely high volume of foot and vehicle traffic or occupied building within fall parameter of the tree i.e. on major trunk road or on route to multiple commercial units or large town location	5	Score 5 Low	Score 10 Medium	Score 15 High	Score 20 High	Score 25 Very high

Score 1 to 3	Very low risk zone 1	To be inspected every 5 years
Score 4 to 7	Low risk zone 2	To be inspected every 4 years
Score 8 to 12	Medium risk zone 3	To be inspected every 3 years
Score 13 to 20	High risk zone 4	To be inspected every 2 years
Score 21 to 25	Very high-risk zone 5	To be inspected every year

3.2 Periodic inspectors' qualifications

Periodic inspections must be carried out by a competent person, experienced in tree inspections including and not limited to visual signs of serious ill health or significant structural problems, such as substantial fractured branches or rocking root plate, record them, assign a hazard rating and report their findings within the council management system.

The council officer commissioning these inspections must be satisfied that the person carrying out these inspections is suitably qualified, experienced and has the necessary professional indemnity insurance.

3.3 Findings and remedial works through inspections

All trees will be inspected according to the frequency determined by the risk zones table above using the council tree management system. All inspection must be recorded on the tree management system along with any findings.

Future inspections of trees with no findings (defects) will be inspected in line with the periodic inspection programme.

Where a tree with defects is identified as being potentially hazardous the finding must be recorded on the tree management system and the risk assessed. This risk score will determine when the remedial works or next inspection should take place by recording a task within the system; this will override the periodic inspection programme.

Trees must be recorded as assets within the tree management system and where there a number of trees within a location with the same periodic inspection score these can be inspected on mass and recorded as inspected although any defects (findings) must be recorded as individual trees within the asset register.

Tewkesbury Borough Council will commission suitably qualified contractors to carry out the remedial works who will be required to update the tree management system when they complete the remedial works or inspections are completed.

The inspector must risk score the finding in line with the matrix below to ensure TBC commission the complete the remedial works within a timely manner to reduce the risk of injury.

FINDINGS MATRIX	Probability by finding	Highly unlikely	Unlikely	Possible	Likely	Highly likely
Severity by zone		1	2	3	4	5
Tree within risk zone 1	1	Score 1 Very low	Score 2 Very low	Score 3 Very low	Score 4 Low	Score 5 Low
Tree within risk zone 2	2	Score 2 Very low	Score 4 Low	Score 6 Low	Score 8 Medium	Score 10 Medium
Tree within risk zone 3	3	Score 3 Very low	Score 6 Low	Score 9 Medium	Score 12 Medium	Score 15 High
Tree within risk zone 4	4	Score 4 Low	Score 8 Medium	Score 12 Medium	Score 16 High	Score 20 High
Tree within risk zone 5	5	Score 5 Low	Score 10 Medium	Score 15 High	Score 20 High	Score 25 Very high

Score 1 to 3	Very low risk	No task assigned return to periodic inspection programme
Score 4 to 9	Low risk	Task to be completed within 1 year

Score 10 to 15	Medium risk	Task to be completed within 3 months
Score 16 to 20	High risk	Task to be completed within 1 month
Score 25	Very high risk	Task to be completed immediately

Disclaimer: Trees will be inspected in accordance with the periodic tree inspection program; only trees that have findings identified and tasks will be inspected in accordance with the above matrix until the defect has been rectified.

3.4 Monitoring of inspections work

To ensure adherence to the Tree and woodland strategy, adequate tree inspection records must be kept for a minimum of 10 years and systems demonstrating compliance with the policy must be in place.

3.5 Timings of works

Due to the sensitivities of specific species within the tree and woodland networks, the timings of any works is important, especially in relation to nesting birds and bats.

3.5.1 Nesting birds

In the UK, the Wildlife and Countryside Act 1981 (as amended) protects nesting birds. All wild bird species, their eggs and nests are protected by law. All works to suitable habitat including trees, shrubs and woodland must always try to avoid harming birds or to use measures which do not kill or injure them before considering taking harmful action. Timings of works should be undertaken outside of the bird nesting season (generally considered to be between March – August inclusive, however this is not defined by law and a number of species are known to nest outside of this time). If works are undertaken during the nesting bird season, the trees, shrubs and/or woodland should be inspected by a suitable qualified and experienced ecologist prior to the work commencing. If an active nest is identified, a no works buffer should be installed around the nest until the nest is no longer active, or the chicks have fledged, as confirmed by the ecologist.

3.5.2 Bats

In the UK, all bat species, their breeding sites and resting places are fully protected by law including the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017. All bat species are also European Protected Species. Around three quarters of British bat species are known to roost in trees. Trees provide shelter and attract a diverse range of insect species for bats to feed on. Since bats are not able to bore holes or make nests, they use whatever gaps are available – including cavities and crevices made by other animals, the natural decay of the wood or arboricultural methods.

Bats use different parts of the tree for different reasons, depending on the time of year and temperature. For example, in the summer bats might use the higher canopy sites to have their young in warmer temperatures. In winter, they might move deeper and lower into the tree to hibernate. Trees such as oak, beech and ash are particularly suitable for bats, but any woodland or tree has potential for a bat roost – especially if it has cavities in the trunk or branches, woodpecker holes, loose bark, cracks, splits and thick ivy. Any feature with bat roosting potential should be inspected by the surgeons involved and if necessary, by a bat licenced ecologist/worker prior to the commencement of the works. Should individual bats or evidence of bats be identified, all works should stop immediately and advice sought from a bat licenced ecologist/worker.

3.5 Fallen trees and natural regeneration

Where trees fall naturally, there will be initial checks for ownership and responsibility. If the tree has fallen on council owned or managed land, then an assessment will take place for the suitability of allowing natural regeneration to occur. As much as it is the council's position to increase its canopy cover, it is also important to occasionally allow natural gaps in the canopy to remain; facilitating the growth of new seedlings in the newly created space. Leaving deadwood will also be encouraged, where it is safe to do so, as it is an important resource biodiversity, nutrient cycling, and river health^{xii}. Fallen trees will be removed if they are a risk to the general public, i.e. across pathways, roads, and rights of way. Any work required to make the individual trees safe will be commissioned to suitably qualified contractors, who will update the tree management system as required during and after the remedial work is completed.

4. New tree planting

The planting of new trees will play an important role in Tewkesbury Borough Council's ambition to increase its tree canopy coverage to 17.5%. Where possible, Tewkesbury Borough Council will choose to plant suitable, and responsibly sourced trees. These will preferably be sourced from UK suppliers, but in case any species are required to be imported, they will meet UK Plant Healthy Standards to minimise the risk of importing pests and diseases. Tewkesbury Borough Council will aim to plant UK native species, with the understanding that non-native species with higher climate resilience may be more suitable in certain locations.

Tewkesbury Borough Council will utilise the Gloucestershire Local Nature Partnership's 'Nature Recovery Network Mapping' tool^{xiii} to assist in its decision making for creating new habitat and enhancing current habitats. This map has identified areas where nature recovery is most needed

throughout the county to maximise its impact and best utilise available funding (see Figure 1 and 2, below). Before agreeing to a site for a new planting project, the area will be assessed for its suitability to provide for new trees (see Figure 5).

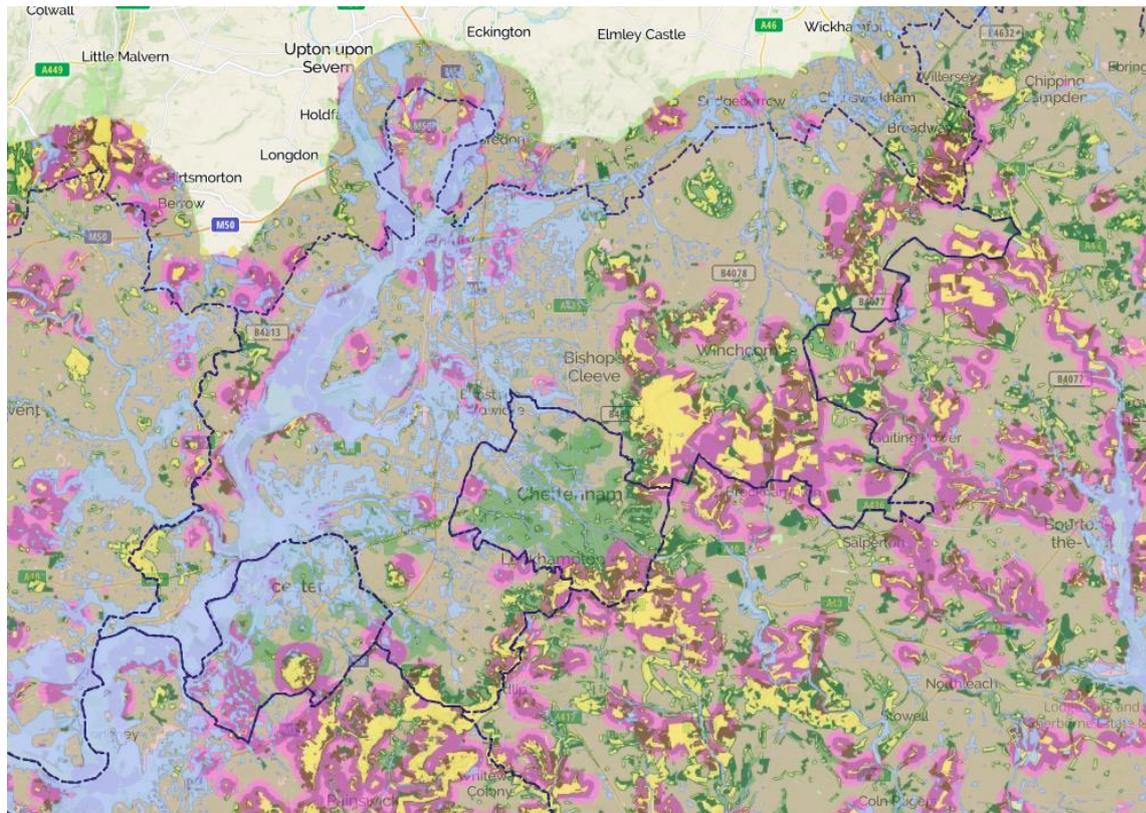


Figure 1 (above). A snapshot of Tewkesbury Borough Council's nature recovery network potential.

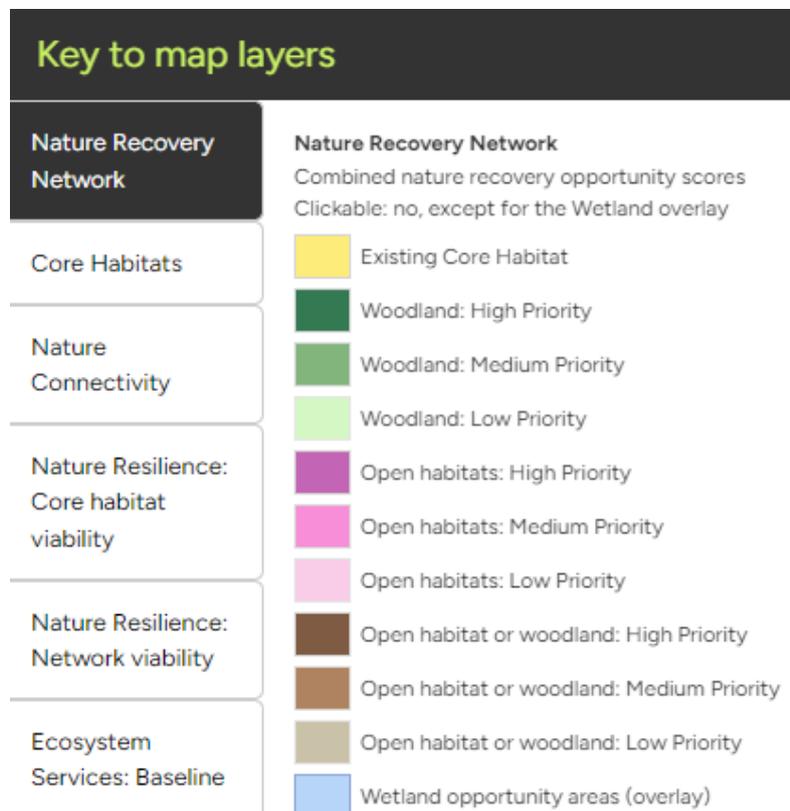


Figure 2 (right). A key of map layers for Figure 1

4.1 Climate change and trees

Deciding which trees species should be planted and where, are important topics to consider with the changing climate. Location of new tree planting sites is important for several reasons; trees aid in soil stabilisation, flood mitigation, air quality and regulation of urban temperatures. Species selection will become more important as the UK begins to see earlier, longer and more intense summers, as well as longer, wetter winters; trees will need to be increasingly resilient to these changes in our climate.

Climate change may also bring about new risks to existing tree stocks, as well as the health of newly planted trees; trees affected by drought stress become more susceptible to diseases which they would normally be resistant to^{xiv}, and a warmer climate is making the spread of diseases easier^{xv}. Table 1 has been compiled by using data from multiple sources, but mainly the Trees and Design Action Group (TDAG), and Forest Research's ESC4 (Ecological Site Classification) tool. These we decided upon through consultation with expert organisations. Table 1 highlights which tree species are most suited for planting in Tewkesbury Borough and will be used as a basis for decision making of which species to purchase.

Planting a diverse range of species is important to increase the overall resilience of Tewkesbury Borough Council's tree stock, and sourcing nurseries which stock these species is a priority action of this strategy (Action 8).

4.2 Types of suitable trees

Tables 1 and 2 will be used to inform decisions of which trees to plant, in which locations. New trees will fall under two categories: urban and rural.

4.2.1 Urban

Urban trees are being recognised for the multitude of benefits they provide:

- 1) *Natural climate control*: Buildings, roads and other physical structures absorb ambient heat, and then release it back into the environment, making urban centres 'heat islands'. The more densely populated urban area, the more pronounced the effect. Trees offer direct shade, add moisture to the environment and cool the air through evapotranspiration and help reduce energy consumption.
- 2) *Carbon dioxide vacuums*: Trees absorb carbon dioxide directly from the air and use it to create hydrocarbons for their own growth. Depends on age and size, any one tree can store

between 1 to 22 tonnes of CO₂ over the course of its life (in context, in a 10-year period a typical passenger vehicle will release ~50 tonnes of CO₂ over a 10-year period).

- 3) *General human health indicators*: Trees can block and reduce noise, water pollution, and harmful airborne pollutants. Access to nature can help alleviate stress, anxiety and depression, as well as help stabilise blood pressure. All of this directly reduces stress and cost on health institutions.
- 4) *Local community assets*: Areas with urban trees or even microwoods can help to address social inequality and inclusion. Low-income populations often reside in parts of urban areas that experience disproportionately higher levels of heat and pollution, and trees can help to alleviate this.
- 5) *Biodiversity hotspots*: A diverse coverage of trees protects and enhances overall biodiversity. Higher quality habitats will support animals, insects and natural vegetation, which in turn further supports tree health. Healthy tree stocks support locally rare, threatened or endangered species and provide refuge and important corridors around an impermeable landscape^{xvi}.

4.2.2 Rural

Rural trees are recognised for their benefits to conservation and their ecological importance:

- 1) *Climate change*: Trees both remove and store carbon; absorbing carbon dioxide during photosynthesis and storing it during their lifecycle. Much of this carbon is stored in the leaves, which can be transferred back into the soil as they fall and rot down.
- 2) *Flood mitigation*: Trees near waterbodies reduce the amount of water entering watercourses, which in turn can reduce the likelihood of a river or watercourse bursting its banks during periods of high intensity rainfall events, which are likely to increase in frequency and severity.
- 3) *Biodiversity*: biological richness and diversity has continued to decline for many decades. UK biodiversity indicators for England show a 41% decline in woodland butterfly species and a 27% decline in woodland bird species between 1970 and 2019. Improper placement and poor management of woodlands can be detrimental to biodiversity, even if numbers of trees increase^{xvii}.
- 4) *Food production*: Trees can shelter livestock from extreme conditions, be that heatwaves or extreme cold and rainfall events. Trees also improve soil health and prevent soil erosion; especially pertinent for trees located close to watercourses which can help to protect the waterbodies from the pollution from farmland run-off.

5) *Agroforestry*: Currently less than 20% of wood consumed in the UK is homegrown, with the rest being imported. There are risks involved in importing timber, especially from countries with poor regulations around deforestation, such as Brazil, USA, China and Russia.

Tree (<i>species</i>)	Tree (common)	D R	H R	FL R	FR R	UK native?	Suitable location	Known issues	Grown in UK?
<i>Alnus rubra</i>	Red Alder	✓	✓	✓	✓	✗	Wet Poor soil Full sun	None	✓
<i>Juglans regia</i>	Common walnut	✓	✓	✓	✓	✗	Well drained Full sun	Aphids, Blister mite, leaf spot, leaf blotch, honey fungus, coral spot	✓
<i>Juglans nigra</i>	Black walnut	✓	✓	✓	✓	✗	A large and robust standard. Grows well in full sun. Can tolerate wetter conditions	Aphids, walnut blister mite, walnut leaf spot, walnut leaf blotch, honey fungus, coral spot	✓
<i>Nothofagus obliqua</i>	Roble beech	-	✓	✗	✓	✗	Sheltered	Aphids, honey fungus	✓
<i>Platanus spp.</i>	Plane	✓	✓	✓	✓	✗	Not urban	Plane anthracnose, honey fungus	✓
<i>Populus spp.</i>	Poplar	✓	✓	✓	✓	✗		Short lived	✓
<i>Pinus nigra</i>	Corsican Pine	✓	✓	-	✓	✗	Suitable for all conditions. Timber productive	Honey fungus, adelgids, conifer aphid	✓
<i>Acer platanoides</i>	Norway maple	✓	✓	✓	✓	✗	Suitable for all conditions.	Aphids, honey fungus, verticillium wilt	✓
<i>Castanea sativa</i>	Sweet chestnut	✓	✓	✓	✓	✗	Fast growing, durable timber	Chestnut blight	✓

<i>Populus tremula</i>	Aspen	✓	✓	✓	✓	✓	Fast growing, suitable for all conditions	Leaf beetles, sawflies, bacterial canker, tree rust	✓
<i>Betula papyrifera</i>	Paper birch	✓	✓	✓	✓	✗	Fast growing but relatively short lived. Very hardy. Suitable in most conditions	Bronze birch borer, birch leaf miner, aphids, honey fungus, tree rust, mildews	✓
<i>Carya ovata</i>	Shagbark Hickory	✗	✓	✓	✓	✗	Tolerates wetter conditions well. Very long-lived. Edible fruits and attractive autumn foliage. Pest free	Crown gall, mildews and leaf spot	✓
<i>Fagus orientalis</i>	Oriental beech	✓	✓	✗	✓	✗	More tolerant of hot and dry conditions than European beech. Can be grown as a hedge. Hardy.	Susceptible to bark stripping by deer and rabbits when young. Beech scale and beech red spider mite. Honey fungus	✓
<i>Liriodendrum tulipifera</i>	Tulip tree	✓	✓	✓	✓	✗	Large and robust specimen tree. Prefers shady conditions and grows shorter and less healthily in full sun. Pest free	Honey fungus	✓
<i>Quercus alba</i>	White oak	✓	✓	✓	✓	✗	Long-lived tree famed for its wood. Hardy and tolerant of	Oak processionary moth, aphids, caterpillars,	✓

							all growing conditions	leaf-mining moths and oak gall wasps. Mildew and honey fungus	
<i>Quercus frainetto</i>	Hungarian oak	✓	✓	✗	✓	✗	Can tolerate acidic soils, but not lime. Can cope with extreme heat and drought, as well as some waterlogging	Oak processionary moth, aphids, caterpillars, leaf-mining moths and oak gall wasps. Mildew and honey fungus	✓
<i>Quercus pubescens</i>	Downy oak	✓	✓	✓	✓	✗	Tolerant of 'Mediterranean' style conditions and will tolerate high levels of rainfall	Oak processionary moth, aphids, caterpillars, leaf-mining moths and oak gall wasps. Mildew and honey fungus	✓
<i>Quercus pyrenaica</i>	Pyrenean oak	✓	✓	✓	✓	✗	Can tolerate hot and dry conditions due to a short growth period	Oak processionary moth, aphids, caterpillars, leaf-mining moths and oak gall wasps. Mildew and honey fungus	✓
<i>Acer saccharinum</i>	Silver maple	✓	✓	✓	✓	✗	Tolerant of most conditions and very hardy. Provides attractive	Aphids, horse chestnut scale, Verticillium wilt, Acer leaf scorch, honey fungus	✓

							flowers and autumn foliage		
<i>Acer macrophyllum</i>	Oregon maple	✓	✓	✓	✓	*	Hardy and can grow in most conditions	Aphids, horse chestnut scale, Verticillium wilt, Acer leaf scorch, honey fungus	✓

Table 1. Matrix of suitable climate resilient species. D R = drought resilient. H R = Heat resilient. FL R = Flood resilient. FR R = Frost resilient. This table is not an exhaustive list of potential species, and focuses predominantly on non-native species. Native species will still be preferred, where suitable. The council will also take into consideration the rooting nature of specific species when planting near buildings and property.

4.3 Fruit trees and orchards

With over 70% of Gloucestershire’s orchards being lost in the last 50 years, their restoration and replacement is imperative for a county synonymous with the fruit tree^{xviii}.

Where able, Tewkesbury Borough Council will work with and support community groups and charities to restore and replant existing orchards, as well as actively encourage the planning and planting of new sites across the borough. There are multiple funding avenues available from local charities, the county council, and the government to aid in this.

Planting of new orchards and fruit trees should occur during the winter planting season, preferably from December – March as this is their period of dormancy. There are a number of criteria that are important to consider before choosing a new planting site^{xix}:

- The amount of sunlight the area receives – for most fruit trees, the more sunlight the better crop of fruit.
- How exposed the area is – the more exposed the lesser the chance of pollination and the bigger risk of frost damage.
- The soil type – this will impact how wet or dry the ground will be and fruit trees require a well-draining soil type, rich in nutrients to grow to their full potential.
- Size and shape of the adult tree – like will all trees, consideration of the size of the fully grown tree must be considered before planting; unsuitable sites can lead to poor development and eventual removal of trees.

Nutrient rich soil is important for the growth and development of fruiting bodies, and mulching can play an important role in providing extra nutrients in nutrient-poor soils. Organic manures are an effective source of feed for newly planted trees, but mulching is an acceptable substitute if this is not feasible.

Maintenance of fruit trees is important to keep them at sustainable sizes, which will improve cropping by increasing the amount of light reaching the centre of the tree and increasing the production of fruit buds. Pruning redirects the trees energy into making fruit rather than making wood, thus increasing fruit production^{xx}. Pruning of fruit trees is a specialist skill, and Tewkesbury Borough Council would recommend that only experienced individuals lead on this. There are a number of organisations, especially in Gloucestershire, which will assist with this.

4.4 Ash dieback

Ash trees across the UK are threatened by ash dieback, a disease caused by the fungus *Hymenoscyphus fraxineus*, which has a fatality rate of at least 70-85% over a 20-year period. Ash is a common and important species of native tree, present in many of our woodlands, open habitats and hedgerows.

Ash is estimated to account for more than 10% of the canopy in 90% of woodlands in Gloucestershire and in some cases, forms 80-100% of the canopy^{xxi}. First identified in 2012, by 2019 the disease had been recorded in 84% of the 10km squares which wholly or partially cover the county, which was a 63% increase since 2016. It is a fair assumption that ash dieback will be ubiquitous across the county in the near future, if not already.

Tewkesbury Borough Council acknowledges that there is not a large population of Ash trees within its estate and this current strategy outlines an inspection policy around dangerous trees and that experts will inspect suspected trees afflicted with Ash dieback and assess their risk. For felled ash trees on TBC land, there are 11 suitable species recognised as being the most appropriate to occupy any gaps left in the canopy, which have been identified by research by Forest Research and these can be found in Table 2^{xxii}. Replacement trees for felled ash will be planted in line with the planting plan outlined in Table 2.

Species	Common name	% of species supported, similar to Ash	Available and grown in UK
Sessile Oak	<i>Quercus patraea</i>	67%	Yes
Pedunculate oak	<i>Quercus robur</i>	67%	Yes
Beech	<i>Fagus sylvatica</i>	42%	Yes
Sycamore	<i>Acer pseudoplatanus</i>	42%	Yes
Hazel	<i>Corylus avellana</i>	42%	Yes
Downy birch	<i>Betula pubescens</i>	42%	Yes
Silver birch	<i>Betula pendula</i>	42%	Yes
Alder	<i>Alnus glutinosa</i>	31.5%	Yes
Rowan	<i>Sorbus aucuparia</i>	31.5%	Yes
Aspen	<i>Populus tremula</i>	31.5%	Yes
Hawthorn	<i>Crataegus monogyna</i>	31.5%	Yes

Table 2. Table showing potential replacements for felled ash trees. Column 3 shows the % of species each replacement tree hosts in comparison to Ash (*Fraxinus excelsior*)

Gloucestershire County Council, as the main highways authority within the borough, is responsible for a high proportion of 'at risk' ash trees along the highways network and has published position statement on how they will manage any risk, and how they will manage any issues arising from the felling of infected trees.

4.5 Oak processionary moth

Oak processionary moth (OPM) (*Thaumetopoea processionea*), pictured below, is a pest which are a hazard to both humans and the environment. Their hairs can be extremely irritating to humans and can cause itchy skin rashes, eye and throat irritations and, occasionally, breathing difficulties.

The caterpillars eat oak leaves, and can strip entire trees bare, leaving them more vulnerable to other diseases or pests. There are measures in place to control their spread from London, where they were accidentally introduced in 2005. Caterpillars emerge in the spring from eggs laid high in the canopy the summer before. There are current treatments of targeted insecticides after their emergence, and due to the timing of their emergence, this has very limited impact on other species^{xxiii}.

Although both Gloucestershire and Tewkesbury Borough are currently outside of the established 'at risk' area^{xxiv}, the general public should still be vigilant, and any sightings of either the caterpillars or moths should be reported to: treealert@forestresearch.gov.uk

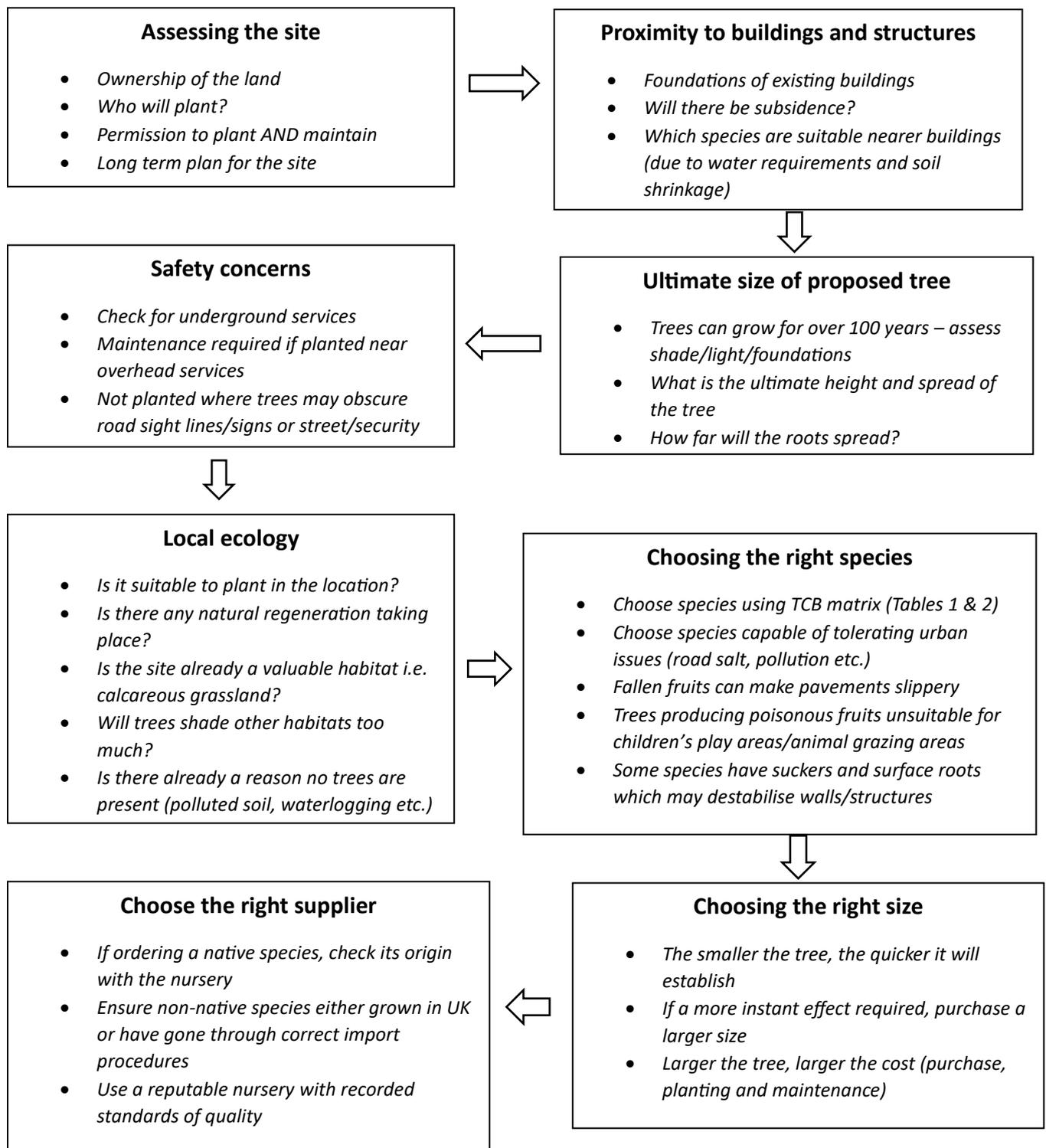


Figure 3. Oak processionary moth caterpillar (*Thaumetopoea processionea*)^{xxv}



Figure 4. Oak processionary moth adult^{xxvi}

Figure 5. A systematic flow diagram of how new tree planting sites and projects should be assessed^{xxvii}



5. Management and monitoring of new and existing trees and woodlands

5.1 New trees and woodlands

Annual care for trees in their first five years is vital. Large numbers of young trees die from neglect; especially from failure to control weeds.

The Tree Council provides a thorough management guide^{xxviii} for newly planted trees, and Tewkesbury Borough Council will use this to manage its new stock. The 3 main areas of care are: watering, weed control and mulching.

5.1.1 Watering

Except in long, dry spells, watering is rarely required for transplants or whips. If they have been planted at the correct time of year (November – March), there should be plenty of rainfall to ensure their survival. Larger, standard trees may require watering while they are establishing, as their requirements are greater. For example, standard and semi-mature trees require up to 75 litres of water per tree, every other week during dry weather in the growing season. Watering 'little and often' only encourages surface rooting and may increase the tree's vulnerability to drought and scorching.

5.1.2 Weed control

Grasses and fast-growing herbaceous perennials compete with young trees for moisture, nutrients, space and light. To help trees establish, it is important to keep an area roughly 1m² clear of weeds for the first 3 years. Although onerous, this is important for early survival of newly planted trees.

5.1.3 Mulching

Mulching is a simple and effective way of controlling weeds, keeping the ground cooler and moist, reducing the need to strim near to the tree and avoids the need for any chemical use. Organic mulches are particularly beneficial to newly planted trees, as they break down and offer an extra source of nutrients.

Mulches are especially useful for larger trees and woodland planting. They will be applied immediately after planting, so long as the area is clear of weeds and the tree has been watered sufficiently. One application of mulch is usually enough, but in areas of higher footfall, additional mulch may need to be added after weed clearance. Mulch will not be applied during periods of frost or drought, as this will be counterproductive. It is important to ensure that mulch is not spread too

thickly, as this may inhibit gas exchanges and to avoid spreading directly onto the stem/trunk, as this may encourage rot.

6. Ecosystem services and the benefits of trees and woodlands

Trees and woodlands offer a multitude of ecosystem services, which can now be more accurately calculated as surveying techniques are becoming more accurate and wider reaching.

Ecosystem services provided by new and existing trees are summarised below:

6.1 Carbon storage and sequestration

Tewkesbury Borough Council recognises the importance of both newly planted trees and existing woodlands and trees as sinks of carbon, as well as their potential to sequester carbon as they grow. Newly planted trees will be entered into a database held by Tewkesbury Borough Council, to not only manage and monitor them to assess their health and wellbeing, but also to assess their contributions toward both nature enhancement targets of the council; directly increasing canopy coverage, as well as the council's goal of becoming and staying carbon neutral.

Tewkesbury Borough Council will look to survey and record their existing tree stocks to estimate the amount of carbon currently being stored and sequestered. Newly planted trees will be added to this survey for the same purpose.

6.2 Air pollution removal

Poorer air quality is a particular problem in many urban areas, and despite Tewkesbury Borough being predominantly rural, the effects are still felt. As populations continue to rise, there will be a greater risk of poor air quality, and planting trees in strategic locations can positively impact this.

Trees, as well as other vegetation, can act as a barrier between people and pollutants, e.g. planting of motorway verges, directly capture pollutants and particulates travelling through the air on their leaves, reducing air temperature (thereby lowering ozone levels), and can indirectly reduce energy consumption in buildings.

6.3 Surface run-off

The ability of trees to contribute to reducing surface run-off is of incredible importance, especially in an area such as Tewkesbury Borough. Run-off can contribute to pollution in rivers, streams, wetlands and lakes, as well as exacerbate local flooding events. Planting trees and vegetation in strategic areas can mitigate these issues, and slow down a flooding event at the source, rather than retroactively fitting extra mitigation measures within the built environment, often at extremely high costs.

7. Communication

As a policy that is in the public eye, Tewkesbury Borough Council will ensure that it publicises the positive work that it is doing to help combat climate change. Tewkesbury Borough Council will communicate both externally and internally details of any new tree planting projects that it is involved in, whether this be through newsletters, internal bulletins, social media posts or updates on its website.

7.1 Internal communications

Tewkesbury Borough will work closely with internal departments and will follow the guidance set out in Figure 5.

Planning – to ensure that planting projects and current management of woodlands adhere to planning regulations, and do not impinge on and building safety. This will be particularly beneficial when considering new planting projects that could contribute towards carbon credits and/or biodiversity net gain (BNG).

Environmental health – they oversee the current contract of UBICO, who are responsible for much of the street scene and maintenance provision throughout the borough, to ensure that the best practises are being followed for both new and existing trees and woodlands, as well as guaranteeing that no pesticides, herbicides or peat-rich compost is used in any of the work contracted out.

Property services – working towards the carbon neutral 2030 target, new and existing projects will help sequester and capture carbon to offset against the council's emissions.

7.2 External communications

Tewkesbury Borough Council will work closely with neighbouring districts, boroughs and the county council to deliver reasoned and successful tree planting projects. The council will work closely with local environmental charities, to increase the scope of projects and to deliver where is best for both the borough, the county, and the wider environment. The council will communicate new projects with an emphasis on involving town and parish councils to be more involved in how projects are delivered and managed. The council will utilise the local tree warden groups, whose local knowledge will be key, in ascertaining areas where species flourish and falter, to further enhance the chances of project success.

Actions

- 1) *Assess the health of our current tree stock – including risks from Ash die back/oak moth and other potentially harmful diseases or pests*
- 2) *Obtain spatial information of the council's current tree stock, and create an accurate map (December 2024)*
- 3) *Use GIS mapping software to record and monitor each new tree planted in the borough on council owned land, and those planted on private land where the council is notified*
- 4) *Continue to work with partners throughout the borough to identify new locations for tree planting on private land*
- 5) *Grow community group and tree warden involvement across the borough*
- 6) *Increase tree canopy across the borough*
- 7) *Encourage local landowners to offer parcels of land for planting projects*
- 8) *Only plant trees which are UK-grown with certified nurseries, or if imported, have gone through an appropriate quarantine process*
- 9) *Plant and establish a diverse range of trees which will tolerate the changing climate and ensure that planted trees have a 90% survival rate with a detailed and funded management plan.*
- 10) *Only engage competent and qualified individual to undertake any future tree work*

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