NHS Forest: Tree Planting Guidance Pack
(2021 Edition)

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1. Introduction and purpose of the Guidance Pack

The NHS Forest, run by the Centre for Sustainable Healthcare, has been donating trees for planting on or near NHS land across the UK since 2009. This Guidance Pack will introduce you to the NHS Forest and its tree planting programme. It will provide you will all the information you need to start planning your own tree planting initiatives, organise tree planting events, and ensure your trees are well looked after as they establish in the first few years of their life.

There is a saying about tree planting: *The right tree, in the right place, at the right time, and for the right reason*. This means that quality of selection of species, planting location, and commitment to aftercare are all more important factors than trying to plant as many trees as possible. This is the mantra by which we help NHS sites plant trees – it is by no means just about numbers.

In this Guidance Pack, we have tried to cover everything that you need to plan a tree planting project. If you have any questions, please do get in touch with the team at info@nhsforest.org.

2. Summary

2.1. What is the Centre for Sustainable Healthcare?

The Centre for Sustainable Healthcare (CSH) is a charity dedicated to pioneering action to tackle the twin crises of climate change and biodiversity loss and to improve wellbeing. Our work is focused on the interface between climate change and health improvement – particularly transformational changes tackling both issues in the NHS. Our Green Space for Health programme partners with the NHS to use their green space in nature recovery, and the NHS Forest network is a key part of this. CSH has worked extensively with UK hospitals and health centres since 2008, supporting green space improvements for the wellbeing of people and the planet. We have produced policy reports, best practice guides and substantial research studies.

2.2. What is the NHS Forest?

The NHS Forest, established in 2009, is an alliance of over 200 healthcare sites across the UK working to transform their green space and realise its full potential for health, wellbeing and biodiversity. As of 2021, our sites have planted over 77,000 trees and engaged with all aspects of green space development in healthcare settings, including woodland walks, community gardens, allotments and orchards, horticultural therapy, coppice woodlands, pollinator-friendly planting, wildflower meadows, and more.

The NHS Forest runs an annual conference and awards scheme as well as providing help and guidance on all aspects of the use of green space in healthcare, from advising on the practicalities of tree planting to collating and disseminating the growing academic evidence on the links between green space and health. We want to make green space integral to NHS care and practice, including public health, with benefits for patients, staff and the wider community. The NHS Forest supports that mission by capturing and publicising learning from the best NHS green space initiatives and working with individual health sites on innovative projects.

2.3. What is the NHS Forest tree planting programme?

The NHS Forest began its life as a tree planting initiative. It runs a twin programme of tree sponsorship, where individuals or organisations can donate money to the NHS Forest to fund the provision of trees, and tree provision, where saplings are donated annually in the tree planting season (November to March) to NHS Forest sites that have registered interest. Each year, due to variations in the number of tree sponsors and wider network funding, the absolute number of available trees varies. Planting projects range from small sites, such as ambulance stations planting two trees during the 'Two at Two o'clock' campaign for the annual NHS Sustainability Day, to larger-scale projects, such as a 1,000-tree willow coppice project at Guild Lodge in Preston.

Our aim is to support healthcare sites, no matter how small or large, how rural or urban, to engage with the multiplicity of benefits that trees can provide for the environment and human health. Planting trees helps the NHS estate reduce its carbon emissions and work towards Net Zero, and provides social and environmental benefits for communities and ecosystems. It also greens healthcare, bringing nature into the health system and integrating the benefits of the outdoors and nature connection with the needs of NHS staff and patients, for example by providing beautiful spaces in which to exercise and relax.

Every year, we invite NHS sites across the country to register their interest in receiving free saplings. The NHS Forest team works with these sites to develop planting plans, choose the right tree species (whether for an orchard, a woodland, a hedgerow, or something else), organise volunteers, develop press and publicity on planting events, and advise on all aspects of the tree planting and maintenance process to ensure every NHS Forest tree is well cared-for and given the best chance of survival.

2.4.   Brief rationale for project

Described as 'the nation's greatest outpatient department', the natural environment, enriched by trees and woodland, improves health and wellbeing, prevents disease and assists patients in recovering from illness. Many NHS sites provide only limited green space in which patients and others can relax and exercise, even though nature has been proven to help in recovery and in tackling obesity, coronary heart disease, and mental health problems. The benefits of time spent with trees are not just for patients but extend to public health and preventative healthcare benefits in the wider community, as well as offering stress-relieving environments for NHS staff.

Tree planting on the NHS estate brings numerous other benefits, including improving air quality, reducing the urban heat island effect, giving shade, reducing storm water runoff, absorbing carbon dioxide and providing habitats for wildlife. It also highlights the links between people's immediate environment and the global environment, and how human health cannot be separated from planetary health.

You can read more about the expansive and growing evidence base for the use of nature in healthcare, including tree planting, on the NHS Forest website.

2.5.   Why you should join the NHS Forest

Becoming part of the NHS Forest is an opportunity to join a growing network of healthcare sites across the UK that are interested in transforming their estates to develop the use of green space to benefit staff, patients, the wider community, and the local and global environment. It enables you to connect with others who share similar values and visions. Each NHS Forest site gets a customised page on our website, a regular newsletter, and access to our tree planting scheme as well as the wider advice and support available through our network.

2.6.   Partner support

Since 2009 the NHS Forest has benefitted from the support of numerous charitable, corporate and individual partners. Learn more about them on our website.

2.7.　Purpose of the Guidance Pack

This Guidance Pack is designed to help NHS sites of any size move through the process of receiving, planting and caring for NHS Forest trees. It will take you from the initial expressions of interest and registration of your site as a part of the NHS Forest, through ordering trees and different types of tree planting (e.g., hedgerows, woodland, individual standard trees), tree maintenance and aftercare, to checklists for planting equipment and handouts for volunteers. It should help you with all aspects of developing your tree planting project, but in the case of any questions or concerns, the NHS Forest team is here to help at info@nhsforest.org.

3. How to get started

3.1.　Expressing interest

You can express interest in the NHS Forest by emailing info@nhsforest.org.

3.2.　Registering to join

To sign up as an NHS Forest site, you don't need to have already planted trees. We welcome registrations from all healthcare sites interested in improving their use of green space, as well as those already engaged in nature-based activities. To sign up, visit the NHS Forest registration page on our website. It is free, and the sign-up form takes around five minutes to complete. Your site will become part of our network and be displayed on our map of NHS Forest sites.

3.3.　Planning, planting and community engagement

The NHS Forest team is here to support you throughout your tree planting programme development. Briefly, this comprises: identifying suitable sites for your trees, deciding on species and number of trees, planning planting days and any volunteer recruitment that needs to take place to ensure a successful planting event, and press releases or event planning to mark the occasion of planting your NHS Forest trees.

The NHS Forest team will organise tree ordering and delivery to your site and inform you of the delivery date in advance. The tree planting season runs from November to March and sites are encouraged to select a delivery date as early as possible so that we can give the nursery plenty of notice.

Community engagement in the planting and maintenance of sites, including by staff, patients, schools and individuals, is a key component of the NHS Forest, as we aim to create a green space that the community can access and enjoy. This is most likely to be achieved if the community is involved from the early stages of designing and creating the Forest. Not only does it promote a sense of ownership that can help to prevent vandalism and encourage long term care of the site, but it also provides direct benefits to the people involved. For example, activities like planting and weeding are a great way to keep fit.

In many cases, you may be able to approach existing community groups, such as environmental or 'friends of' groups and schools, to help with tree planting, aftercare and community events. NHS sites may also want to consider establishing a new 'Friends of the NHS Forest' group, by recruiting volunteers to help create the site and care for it in the long term.

3.3.1.   Seeking advice in the community

Some sites may benefit from specialist support or advice. The NHS Forest team can provide advice in some cases but in others more specialised assistance may be needed. Usually, we can help you to identify what kind of specialists you might want to involve, and help you locate the right person (e.g., The Woodland Trust, The Conservation Volunteers, landscape gardeners, ecologists). Depending on the project, there is often money available to pay for a specialist where this is appropriate. If funding is an issue, many of our NHS Forest sites have had success in receiving specialist advice pro bono from generous members of the community who are happy to give back to the NHS, particularly if it has supported them in the past. This can also be an opportunity to identify local stakeholders who are interested in supporting the ongoing maintenance work or developing community events on your site as time goes on. We encourage sites to make use of local community forums, social media groups, and patient networks if they are struggling to identify the kind of assistance that they need.

3.4.   Expectations and tree agreements

All sites receiving NHS Forest trees are required to sign a tree agreement with the NHS Forest and the Centre for Sustainable Healthcare (CSH). This ensures that there is a mutual understanding of the division of responsibilities in the tree planting process.

Briefly, the NHS site is responsible for fiscal and legal obligations relating to planning, building control and environmental legislation; ensuring that the ground where the trees are planted is not scheduled for building development within the next 10 years; the direction and management of all activity including planning, planting and maintenance; registering to join the NHS Forest; providing access to the planting areas for staff, patient and community groups (except in exceptional circumstances); providing photographs of the tree planting and sending them to CSH; ensuring that adequate public liability insurance is in place.

3.5.   Legal compliance

Please note that NHS sites are responsible for compliance with fiscal and legal obligations including planning, building control, statutory consents, health, safety and environmental legislation arising from NHS Forest project activity at that site.

3.6.   Reporting progress

The NHS Forest requires sites to report on their tree planting. The information that we require is:

- Number and species of trees (this is on record with the NHS Forest already but if any changes occur then the site is required to report this to us)
- Number of volunteers involved in tree planting
- Type of volunteers e.g., staff, patients, community groups

NHS Forest
Green space for health

- Area planted in hectares or square metres

Occasionally we may ask for extra information to meet the criteria of our funders. In this case, we will let you know well in advance of any further information that you need to gather for us.

3.7.   Promotion

Once the trees have been planted, everyone can start to reap the benefits of their own part of the NHS Forest. To ensure that patients, staff, visitors and the wider community get the fullest benefit, NHS sites should consider ways of promoting their forest and encouraging people to use and enjoy the space. The site can be promoted through leaflets, posters and displays in the hospital. On site events, such as picnics, could be organised by volunteers or community groups. All NHS Forest sites are encouraged to put up signage indicating that the area is part of the national NHS Forest. The NHS Forest team will supply our logo files or work with you to design signs for this purpose.

Each NHS Forest site is contributing to the green infrastructure of their wider area. Sites can potentially maximise the benefits to people and the environment by talking to their local authority and/or CCG about green infrastructure provision in their locality and seek to make links with others working to provide green spaces for their communities. Local link workers (non-clinicians employed to support people to unpick complex issues affecting their wellbeing, found in primary care networks) can also advise on opportunities to use the NHS Forest site in green social prescribing initiatives.

3.8.   What if we want to be part of the NHS Forest tree planting programme, but don't have space to plant trees?

The NHS Forest includes a Tree Sponsorship Scheme which allows individuals or groups to sponsor tree planting within the NHS Forest. The Tree Sponsorship Scheme also enables people to celebrate a birth, say thank you for great care, or commemorate someone's life, for example. It is a good way for staff to give a lasting gift when a colleague retires.

While we can never guarantee exactly where a sponsored tree will be planted, we do guarantee it will be planted as part of the NHS Forest. NHS Forest trees may be planted on or near health sites of many kinds, including hospitals, GP surgeries and ambulance stations. This means that any trees you sponsor will contribute to the overall network of green space on NHS estates, helping provide healthcare sites with opportunities to improve patient and staff wellbeing, contribute positively to the local environment and reduce carbon emissions.

To sponsor a tree please visit the tree sponsorship page on the NHS Forest website.

4. Technical information and detailed tree planting guide

There are many different types of tree planting (see 4.5. below for more detailed information).

- Hedges can act as screens or boundaries while providing corridors for wildlife and softening harsh environments

- Single trees and clumps can form features in the centre of open, grassy areas. Eventually they will develop into splendid parkland trees with an open canopy

- Avenues of trees in open areas or along road edges will form neighbourhood features of the future

- Orchards can provide a valuable resource for humans as well as wildlife. Apples and pears can be eaten straight from the tree, while crab apples, elderberries, rowan berries and blackthorn sloes can be used to make a variety of drinks and jams.

4.1.   Identification and design of suitable tree planting sites

Every site has different qualities – from soils and water resources, to aspect and landscape. Proximity to roads and buildings, local archaeology, existing trees and ancient woodlands, pipes and cables, and wildlife habits are all examples of issues that may need considering. There are also other questions that arise when creating a woodland or planting area within or near a healthcare site. Here are some specific issues you should consider at the design stage:

- Consider access for staff, patients and the community, early in the process. What walkways, paths, seating arrangements and so on will be part of your planting design?
- What planting arrangements would bring the most benefit to staff, patients and the wider community? For example, trees that are visible from ward windows can create attractive views for patients which may aid recovery. A grove of trees can provide secluded cover for patients and staff relaxation. Planting around an entrance can make visitors feel more welcome. Undertaking a community consultation will enable NHS sites to find out what people need and want from the space
- Will healthcare staff use the new space as part of patients' rehabilitation, and will patients themselves use it to speed recovery? If so, consider what needs they have; for example, do you need to design a space with wheelchair access?
- Trees planted over an area in straight lines are easier to maintain in the short-term but can look regimented, so a less ordered scheme is recommended. Trees will thin themselves over time, if left to their own devices, and will develop a more natural pattern
- Scalloped woodland edges blend more naturally into the landscape and the edges themselves are important wildlife habitats
- All sites need good access for management – so it is worth considering access for maintenance vehicles, if these will be required
- Avoid planting trees where they will cast too much shade on buildings where patients and staff benefit from daylight.

4.2.   Biosecurity and tree provenance

The Woodland Trust encourages tree nurseries to register in a voluntary scheme which assures the provenance of native trees – UKISG (UK and Ireland Sourced and Grown). At the NHS Forest we ensure that all our donated saplings have been grown from British seed in British nurseries, without ever leaving the UK. This prevents the importation of pests and diseases – a particularly important issue,

given that our native trees may have no natural defences against foreign species. One devastating example of where this has happened has been with historic imports of ash saplings infected with ash dieback, which is now endemic across the UK and predicted to cause an almost-total destruction of our ash trees – 150 million mature trees and 2 billion saplings by 2040.

4.3.   Species selection

The NHS Forest exclusively provides native British tree species to match the conditions of the native environment and provide habitats for biodiversity.

Soil type, aspect, altitude and hydrology of a site can all influence species choice. It is worth starting with common species and adding more specialised ones later. Some species, for example willow and alder, like wet areas. Aspen and birch are common on high and exposed sites. Oak in one of its forms is found everywhere in the UK as are hazel and hawthorn. Trees that already grow on or near your site in hedgerows or woodlands can give a good indication of which species will do well in a new planting scheme.

British trees have a huge variation in their forms and colours across the seasons. Maples are known for their autumn colour and the dogwoods have a beautiful array of greens, reds and yellows, as do some of the willow species. The blossom on blackthorn and hawthorn is the backdrop to spring and catkins on hazel are a delight early in the year when little else is about. Planting birch and alder together will give subtle but elegant changes in dark reds throughout winter and of course the dark green needles of Scots pine provide cover in the winter. Consider what effect you are looking for throughout the seasons; this does not just mean leaves, but also bark colour and tree shape.

Blackthorn, holly, gorse and hawthorn create effective natural borders, dividing space on a site, screening eyesores such as car parks, and providing habitats for wildlife such as birds and insects.

Bearing in mind any environmental constraints, NHS sites are encouraged to invite staff, patients and local residents to choose the tree species that they would like to see. Sadly, it is no longer a sensible option to plant ash due to dieback.

4.3.1.   Tree size and growth rate considerations

Generally, it is inadvisable to plant trees near walls and buildings as any tree, large or small, can affect foundations by taking moisture from the soil or blocking drains. If your plot is close to buildings but you still want to plant trees, go for smaller trees and larger shrubs as they are less likely to cause damage – thorn or birch may be suitable. The further a site is from buildings the more largesse you will have with your species choice – assuming you are not blocking views or sight lines along highways, etc. A large tree – an oak or lime for example – can easily grow to a height of 20m and a span of 15m – but it will take a long time to get that big!

The forest should be designed with growth and management in mind, as in general, the quicker the growth rate the shorter the lifespan of a tree. Therefore, you may consider planting a range of tree species with a view to taking out some of the faster growing ones in, say, 15 years' time and leaving the bigger, but slower growing, trees. Remember that trees do need ongoing management and be aware how wide a tree or hedge will grow. The spot where you plant that tiny twig in an open field could be the centre of a 15m diameter mature parkland tree or a one- or two-metre-wide hedge. Bear this in mind when planting beside roads, boundaries or paths.

4.4.   What are whips?

Trees supplied by the NHS Forest are young trees known as whips: saplings which are one to two years old. They are around 40cm to 1m tall and are grown by nurseries for the purpose of planting out. To handle whips properly, keep the tree roots moist and always covered – for example, in the bag they are delivered in. Keep the trees in the planting bag until the moment of planting. All trees are vulnerable to root damage while being planted – be careful! If, due to weather conditions or other unforeseen events, you are not able to plant whips immediately, you can keep them in storage for a few days. This needs to be a cold but frost-free place, such as an unheated shed. However, do not keep your plants in storage for any longer than is necessary. If, for example, the ground is frozen for a long time, contact the NHS Forest for advice on storing your plants to ensure the best chance of survival as you wait for the thaw. This will depend on your location and the local weather conditions.

4.5.   Types of tree planting

The following brief descriptions of different types of tree planting may help inspire you to see the possibilities for different uses for trees on your site. Different types of tree planting have different appropriate spacings for planting each tree – for example, hedging trees are planted 30cm apart or 40-45cm if planting a double hedging row, and standard woodland planting is 1.5 – 2m between trees. Of course, designed areas such as avenue trees or some orchards may have planting spacing unique to the site you are planting on. Tiny forests, or Miyawaki forests, are planted very densely (see section 4.5.5).

4.5.1.   Woodland

In 2020, only 16.2% of the UK's population had accessible woodland areas of at least two hectares within 500m of their homes[1]. Woodlands provide a multiplicity of benefits to human health and wellbeing, as well as the overall environment through carbon sequestration and biodiversity support. While woodland cover has declined significantly in the UK, there is now a huge public appetite to preserve our remaining ancient woodland and expand native tree cover. Creating a woodland can involve extending existing ancient woodland by planting alongside the edges, taking inspiration from the species that already grow there to inform your planting design. New woodlands can also be created but will need careful design and care as they establish in the first years of their life. Woodlands, even very small ones, can provide opportunities to design-in spaces that support human wellbeing, such as trails, quiet seating areas, beautiful open glades, and nature walks with information boards about plants and wildlife.

4.5.2.   Coppice

Coppice woodlands are traditionally planted with species such as hazel or willow. These are managed woodlands where each year a proportion of trees are coppiced – cut back and allowed to regrow from the base – on a rotational system. Coppice woodlands can provide the raw materials needed to build fencing, create beautiful woodwork projects, or provide fuel. Coppicing can also increase woodland biodiversity as when trees are cut, greater amounts of light can reach the ground, which allows other

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[1] Woodland Trust (2021). *State of the UK's Woods and Trees 2021.* https://www.woodlandtrust.org.uk/state-of-uk-woods-and-trees

species to grow. Many of these species provide food for butterflies and other insects, birds and mammals.

4.5.3. Orchards

Traditional orchards not only provide food for the community but can also support a huge variety of wildlife. Blossom encourages pollinating insects, which are in decline across the country. Hollow trunks and holes – which are particularly common in fruit trees – shelter bats, woodpeckers and owls. Orchards can form part of a community garden, or a standalone grove. They look beautiful in the spring and come the autumn the benefits of fresh fruit can be enjoyed by all – from fruit picking to community apple juice or cider-making days. Orchards can range in size from a few fruit trees creating a focal point within the landscape, to larger woodland-style plantings providing huge quantities of food. Globally, there are over 7,500 varieties of apples alone, and heritage fruit tree planting is an important way to preserve genetic diversity in fruit and celebrate the vast range of varieties that have been bred over millennia.

4.5.4. Hedging

Hedgerows are an important part of the British landscape, and the largest wildlife habitat in the UK, providing a home for over 2,000 species, including frogs, newts, birds, butterflies and pollinating insects. Hedgerows are home to 80% of British woodland birds, 50% of mammals and 30% of butterflies. In addition, every kilometre of new hedgerow can store 600-800 kg of carbon dioxide equivalent per year, meaning they play a key role in the fight against climate change.[2] Traditional hedgerow trees such as hawthorn, blackthorn and hazel make a beautiful boundary line or windbreak.

4.5.5. Tiny / Miyawaki forests

Tiny forests, or Miyawaki forests, are dense and fast-growing native woodland, based on a forest management method developed in the 1970s by Dr. Akira Miyawaki. High density planting of saplings replicates the regeneration process that occurs in a natural forest when a clearing opens in the canopy after a large tree falls. The saplings grow very fast to compete for light, and natural selection favours the fastest-growing trees and naturally thins out the planting. As a result, this dense forest grows in 20 to 30 years instead of taking up to 200 years. After the first two years, this forest has very little management or maintenance requirements.

4.5.6. Individual trees

Trees planted by themselves can form a feature point in a landscape when they reach maturity – think of the way your eyes are drawn to a large oak in an arable landscape in the British countryside. Individual trees with greater spacing than typical woodland planting can be used to create dramatic visual landscapes – a widely spaced avenue is an example of this. However, they will take time to reach maturity if planting as whips, so think about other ways that the landscape could be made interesting in the meantime, for example by planting interesting ground flora or choosing species that grow quickly or have eye-catching blossom from a young age.

4.6. Ground preparation

Trees require suitable soil, water, light and nutrients to grow, so if soil is compacted and drainage is poor, it is particularly important that it is broken up before planting. Where dense or high grass is

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[2] The Tree Council (2021). *Talk to the Hedge.* https://hedgelink.org.uk/campaign/national-hedgerow-week/

present, tree growth and survival rates will be reduced through competition for resources. Where areas are shaded by buildings, hedgerows and established trees, the choice of tree species should be carefully considered, as shade can hold back some young trees.

4.7. Choosing your planting day

Tree planting is traditionally carried out between November and March, avoiding frost and snow if possible. It is best for the tree roots to plant on dull, drizzly days, but exposure to drying winds damages the fine root fibres.

4.8. Different planting methods

There are several different ways to plant trees. Notch planting is often the best method for planting young trees, and is fast as well. For this, you simply create a notch in the ground with your spade, push the spade backwards and forwards to open the notch, and then slide the plant into position using a sideways wiping motion. Tread carefully and firmly around the stem to close the notch. Unless the plants are very small, you should make a notch in the shape of a "T" and slide the plant in along the second notch from the opening at the join of the two notches (i.e. the middle of the top of the "T"). In grassy areas, grass will need to be cleared from 1m diameter around the planting location prior to planting.

Pit planting is the other traditional method of planting young trees. However, it is slower and harder work than notch planting. It is better to use pit planting if you are handling trees with bushy roots that won't fit in T notches; if you have compacted and heavy clay soils; and if you have very crumbly or friable soils where a notch would collapse. For pit planting, dig a hole and remove the soil, then break it up and replace it around the tree roots. Ensure the soil collar (visible mark on tree trunk showing where the soil reached to when it was at the tree nursery) is at the correct height. Firm the soil afterwards with your hands or feet, taking care not to cause compaction.

Some general guidelines apply to both the above methods:

- Water the tree immediately after planting. Use around one bucket of water per plant
- When creating holes or notches, make sure they are big enough that no roots are bent or broken. Ensure roots are spread evenly rather than cramped or bent.
- Bare-root trees should be planted to the same depth as they were growing previously in the nursery. The soil collar will provide a guideline.
- Tread firmly around the tree after planting to securely anchor the roots without overly compacting the soil. A tree is well anchored when you gently pull on its stem and the plant does not loosen.

4.9. Aftercare and ongoing management

The first five years of a tree's life are crucial for its establishment and longer-term chances of survival. During this period, trees are particularly vulnerable to competition for light, nutrients and water, and to damage by animals. After this initial period, the canopy will shade the ground, reducing competition from other plants, and the tree stems will be less susceptible to pest damage. If trees grow well and

establish a strong root system and good top growth in the first few years, they will have improved drought, disease and predator resistance.

Maintaining a weed or grass-free ring of one metre diameter around young trees for the first three years of their growth reduces competition for light, nutrients and water and therefore enhances the tree's growth rate and chance of survival. You can create this ring by fitting a mulch mat at planting, mulching with materials such as straw after planting, and/or hand weeding. Weed problems are greater where soil fertility is higher – in this case, if herbicides are not used, maintaining a mulch is particularly important.

Mowing or strimming is not an effective method of weed control as this stimulates grass growth. Hand weeding tends to only be an option with smaller planting areas due to its labour requirements. Therefore, mulching is often the preferred option. There are a variety of ways you can mulch your young trees, for example with a DIY sheet mulch of disused natural fibre carpet (best for weed suppression) or a 10cm thick layer of loose mulch (e.g. woodchip). Keep mulches away from tree stems to prevent rot – think of mulches like a doughnut shape around the tree, rather than a pile against the stem, and annually replace them in winter. Leaving decaying leaves around the base of the tree is good practice to encourage mycorrhizal activity, stimulating the growth of fungal species which support tree health, particularly in the roots.

Watering young trees is very important. Do not underestimate the water requirements of saplings, particularly during the growing season. Ensure young trees are not left to dry out during periods of drought – watering is particularly important in spring and summer. Mulches can also help retain water in the soil. Drought is more common a problem than it used to be in the UK due to climate change, and observing which tree species establish and grow successfully in a drought year can inform your future planting designs. Drought makes weed control more important: a week of weed growth during April can reduce water availability for saplings until October!

Tree protection is also important for saplings, particularly in more rural areas where animal interference is a greater risk. The NHS Forest supplies all its saplings with biodegradable stakes and guards to ensure young trees have adequate protection from interference. In more urban areas, vandalism is a greater risk, and local community involvement in tree planting can foster a sense of ownership and protection and reduce the risk of vandalism.

Once a tree has grown to 3m, you should be able to remove the guards. Stakes can be removed once the tree can stand unsupported without bending or shifting in the ground, which can take anywhere between 18 months and three years.

4.10. Encouraging biodiversity with further planting

Supporting the environment and community wellbeing through planting trees doesn't have to finish with the trees! Introducing appropriate flowering plants alongside and around your tree planting areas can provide visual delights and homes for wildlife. Many of our loveliest woodland species, such as wood anemones, native bluebells, ferns, primroses and red campion, work together to create a landscape that has a vibrancy and visual interest throughout the seasons. Some woodland species are easier to establish than others; seek advice from horticulturalists or arborists for more information and to discuss the most appropriate species for your area. When planting trees with wider spacing, such as for an avenue or individual standard trees, consider using some of the surrounding space to establish a

wildflower meadow. This will support insect biodiversity as well as encouraging the establishment of non-grass species which pose less of a competitive threat to the young trees. Bulbs can easily be underplanted to provide a beautiful splash of colour around your trees in the early spring.

4.11. Considerations for urban trees

Trees in urban areas are particularly important for the quality of the local environment – they filter air pollution, give shelter from the wind, provide shade, and reduce the urban heat island effect producing a cooling effect in cities. They also increase the desirability of neighbourhoods and promote wellbeing in the community. However, tree species selection is particularly important in the urban environment due to their potential to destabilise built structures through root growth.

Additionally, too dense a tree planting can feel threatening – ensure that tree cover is balanced with open space, and that paths are wide, clear and attractive. If creating a path through urban woodland, consider installing lighting to increase feelings of safety at night and in the darker winter months. Urban trees may need more careful management to ensure that branches are not posing a threat to parked cars or buildings and that the root system and tree health is stable enough that there is no risk of trees falling. All local councils will have tree officers who are experts in these matters and can be called upon for advice.

5. Planting day equipment and volunteer organisation

5.1. Equipment checklist

- First aid kit and at least one designated first aider in the group
- Close fitting clothes are best – they do not get snagged in branches
- Wellies or work boots are best for footwear. If possible, wear steel toe capped footwear
- Gloves – gardening gloves are fine
- Heavy duty spade and fork
- If children are involved, junior spades are easier for them to handle.

5.2. Organising volunteers

Preparation for volunteer planting events includes:

- Ensuring adequate public liability insurance
- A risk assessment which considers the risks and safety measures that need putting in place for volunteers working on site, for example trip hazards
- Arranging access to the site
- Arranging plants, tools, refreshments, first aid and personal protective equipment such as gardening gloves
- Access to toilets and wet weather cover
- Ensuring there is a designated First Aider on site.

When planning how many volunteers you may need for a tree planting event, consider the approximate number of trees you expect to plant each day. Rates for experienced volunteers for pit planting are around 20 to 30 trees per person per day. If using notch planting, which is quicker, allow for 80 to 100 trees per person per day, or 50 to 57 if stakes and guards are also to be fitted. Schoolchildren or inexperienced volunteers will be considerably slower.

General points to consider when involving volunteers in environmental work are:

- Appoint a project leader to oversee the event. They should explain the purpose of the work, general site safety, demonstrate tool use and set the objectives for the day
- Where possible, verbal explanations can be backed up with work plans, demonstrations or samples of work. For example, clear labelling of trees for planting and copies of planting plans will help avoid mistakes and allow workers to get on without further instruction
- Small groups should work methodically on one goal at a time, rather than piecemeal on several things, none of which may get finished at the end of the day
- Large groups should be divided up and work on several tasks or on different parts of the site
- Mark on the ground where you want trees planted, including which species are to go where. This can be done with small flags, sticks, pre-printed diagrams, and so on
- Whatever the division of labour, do not leave anyone out, but find a place for people of all strengths and abilities. New volunteers can work alongside more experienced ones
- Count out and count in the tools at the start and finish of work and note any which need repair
- In organising the group, aim for a balance between high work standards and conditions which are not only safe but also rewarding for volunteers
- Make sure to thank volunteers at the end of the day!

The following points apply specifically to tree planting:

- It is usually easier to work in pairs. One person measures the spacing, digs the notch and holds it open with the spade, while the other person quickly transfers the plant from the planting bag to the notch
- Separate teams can check that the trees are firm, fit tree stakes, guards and mulches. Others can keep the teams supplied with trees and other materials
- Swap the teams around from time to time so everyone has an opportunity to plant a tree.

If you are involving people with different needs in planting, Thrive has particular experience of gardening and planting for people with disabilities, ill health, autism and special educational needs. It is a good organisation to contact to ensure you design a planting event that is accessible and enjoyable for all your volunteers.

We encourage sites to produce hand-outs for volunteers so they have information to refer to on the day and can, as much as possible, work to their own speed and without having to go back to supervisors for information or reminders too often. Bear in mind the level of experience, age and mobility of your volunteers, as well as your chosen planting method, any specific information relevant to your site, and overall aims for the day. If you would like guidance in producing a handout, please get in touch with the NHS Forest team.

6. Further reading, resources and information

6.1.   Academic evidence for benefits of trees

On the NHS Forest website, you can find links to the academic evidence for the use of green space in healthcare. Trees support these overall benefits to physical and mental health, as well as providing numerous environmental benefits. Here are some headline benefits that have been identified through research. For more in-depth reading please see the NHS Forest website.

- **Accelerated patient recovery**: Even a view of trees from a ward window can improve patient recovery time and reduce need for pain medication
- **Improved community health**: The health of patients, staff and local communities can be dramatically improved by providing opportunities to exercise outdoors and access green spaces, including woodlands
- **Increased social cohesion**: Trees and woods can enhance social cohesion between the NHS estate and local communities through joint involvement in planting, maintenance and enjoyment of trees and woodland
- **Improved air quality**: Trees and woodland have a measurable impact on air quality, through absorbing pollutants, interceptive harmful smoke, pollen and dust particles, and releasing oxygen
- **Reduced noise**: Trees deflect and absorb stressful sounds, such as traffic, improving the hospital grounds environment for patients and staff
- **Mitigation of the urban heat island effect**: The cooling and shading benefits of trees help provide spaces to escape the heat during heatwaves, and reduce the 'urban heat island' effect caused by hard surfaces in city areas
- **Reduced flood risk**: Trees regulate the rate at which rainfall reaches the ground and slow the flow of runoff, increasing water infiltration and the ability of drainage channels and manmade drains to cope with excess water
- **Reduced carbon emissions:** Trees help mitigate climate change by absorbing carbon dioxide from the atmosphere
- **Economic benefits:** These include reduced costs through preventative healthcare from trees and greenspace; reduced costs linked to flood prevention; reduced energy costs for buildings; reduced site maintenance costs; value from leisure use.

6.2.   Online resources

The following websites provide other relevant resources for tree planting projects, volunteer activities, and horticultural advice:

TCV – The Conservation Volunteers

The Woodland Trust

Small Woods Association

Lantra

Plantlife

The Royal Horticultural Society