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Module 5 The supply, planting, and aftercare of woody plants
Unit Code: A/602/3936
UNIT GUIDE 2023-24

LO 4. Understand appropriate protection and support system requirements

4.1 Identify one appropriate protection system and one appropriate support system for use with a newly planted street tree

4.2 Identify how a newly planted tree may be protected from rabbit and deer damage

4.3 Identify a minimum of two ways that a young tree may be protected from grass-cutting machinery damage

4.4 Identify a minimum of two ways that newly planted trees may be protected from vandalism in the urban environment

It is considered common knowledge that many street trees are killed within the first few years after planting. Some factors are:

- Windthrow
- Storm damage
- Drought
- Nutrient deficiencies
- Diseases
- Insects
- Mammal damage
- Vandalism
- Toxins and pollutants
- Inhospitable site and insufficient soil
- Mechanical damage

Trees should have an appropriate level of protection for their environment.

Bark Protection: The bark of younger trees is especially vulnerable and needs to be protected to ensure the tree's survival. Light protection methods such as hessian or bamboo wrapping, or light mesh cages, should be used at the base of the tree.

Temporary Measures: Any temporary protection, like mesh guards, should be removed once the tree is established. This removal should be planned as part of the tree's aftercare during its early years.

Permanent Protection: Permanent tree protection should primarily be achieved by selecting appropriate locations and sizes for planting. Using larger tree pits combined with low-level planting is an effective protection strategy that also enhances biodiversity.

Street Furniture for Protection: In busy areas, street furniture, including seating or raised planters, can be strategically used to protect trees while optimizing space.

Metal Tree Guards: Metal tree guards may be necessary in areas where trees are at risk from vehicle strikes. However, budgeting for the maintenance and eventual removal of these guards is crucial, as they must be removed to accommodate the tree's growth.

The overarching message is that tree protection should be well-planned, considering both temporary and permanent methods, to ensure the trees can thrive without being compromised by their surroundings.

Birmingham's newly planted street trees are now caged with mesh wire.

Guidance supporting and caring for street trees during their initial growth phase.
Here are the key points:

Tree Stakes:
Purpose: Stakes are necessary to support street trees during their early years, protecting them from strong winds and accidental damage while their root systems are established.
Installation: Stakes should be embedded at least 60cm into the ground and securely tied to the tree.
Ties: Avoid using plastic or rubber ties as they need manual removal and can harm the tree if left in place. Instead, biodegradable ties like jute should be used.
Removal: Both stakes and ties should be removed after 18 to 24 months, once the tree is sufficiently established.

Root Anchor Systems:
Alternative to Staking: Root anchor systems can be used as a permanent alternative to stakes. These systems support the tree without the visual impact of stakes and do not require removal.
Specialist Installation: These systems must be specified and installed by a specialist and are only suitable for larger root balls.

Tree Irrigation:
Importance: Proper irrigation is crucial for the health of newly planted street trees, especially in the first few years after planting.
Irrigation Systems: In hard landscapes, irrigation rings, root drenchers, or similar systems should be installed to effectively water the root ball.

Public Involvement: Notices should be placed on new street trees, encouraging residents to water them and providing clear guidance on how to do so. This guidance should include the use of grey water, which is clean wastewater from household activities.

Overall, the focus is on ensuring street trees are well-supported and watered during their crucial early growth stages, with an emphasis on sustainable practices and community involvement.

The importance of providing proper care for young trees, particularly those that are less than three to five years old, to ensure their healthy establishment and growth. Here are the key points:

1. **Special Care for Young Trees**:
   Critical Period: Trees in the landscape that are less than three to five years old need special attention to ensure they establish well and grow rapidly.
   Root and Branch Development: Early care is essential for helping young trees develop a strong root system and a robust branch structure.

2. **Long-term Benefits**:
   Preventive Care: Investing time and resources in the proper training and care of young trees is more efficient and cost-effective than addressing problems once the tree matures.
   Strong Foundation: Proper early care lays the foundation for a healthy, structurally sound tree that is less likely to encounter issues later in life.

Overall, early intervention and proper care are crucial for the long-term health and stability of young trees, making it a wise investment in the landscape

4.2 Identify how a newly planted tree may be protected from rabbit and deer damage

Practical advice on protecting plantings and plantations from wildlife damage, particularly by deer, rabbits, and hares.
Mesh Stock Fencing: Sufficient for small in-field plantings, offering basic protection against wildlife.
Deer Fencing: Recommended for larger plantations, especially where deer pressure is high. Necessary when larger deer species are present or may visit from neighbouring lands.
Small-Mesh Fencing: Effective at the base of fences to deter smaller animals like rabbits, hares, and muntjac deer.
Routine Maintenance: Essential for maintaining fence integrity, as deer are adept at finding and exploiting weaknesses.
Deer Leaps: Outward-facing leaps can be installed to encourage deer to exit fenced areas.
The benefits and challenges of using tree shelters for protecting broadleaf trees and shrubs. Key points are:
Micro-Climate Benefits and Protection: Tree shelters are effective at creating a micro-climate that promotes tree growth, making them a popular choice despite their relatively high cost. They can protect young trees from smaller mammals and low densities of deer. However, larger deer species may push over the shelters and browse the trees inside.
Limitations for Shrubs: Shrub shelters, being shorter, do not protect against deer browsing. Temporary netting may be needed until shrubs are fully established.
Environmental Concerns: The environmental impact of plastic waste from older tree shelters is significant, with many ending up as litter or in landfills. This has led to increased awareness about the importance of making environmentally responsible choices when purchasing tree shelters.
Sustainable Materials: A 2021 study by University College London suggests that recyclable polypropylene shelters are preferable to bio-based alternatives like bio-propylene and polylactic acid-starch blends. Research into more sustainable alternatives is ongoing.
Alternative Protection Methods: For areas where tree planting occurs at lower densities, such as parklands or wood pastures, and where larger deer species or grazing livestock are present, alternative protection methods include using mesh fencing supported by a stake or timber tree guards.
Overall, the passage emphasizes the importance of carefully selecting tree shelters or alternative protection methods based on specific environmental conditions and the presence of wildlife or livestock.

Additional Considerations:
Fence Height: For effective deer protection, fences should typically be at least 1.8 to 2.4 meters (6 to 8 feet) tall, depending on the deer species present.
Fence Construction: Using high-tensile wire and securing it well to posts can increase the fence's durability against deer attempting to push through.
Electric Fencing: This can be an additional deterrent, especially for more determined or frequent deer visitors.
Gates: Ensure gates are as tall as the fence and that the base is secure to prevent entry beneath them.

Visual Barriers: Deer are more likely to challenge fences if they can see food or shelter on the other side. Adding a visual barrier, like woven plastic strips or plantings, can discourage attempts to jump over.
By implementing these strategies, you can effectively reduce wildlife damage to your plantings and ensure the health and growth of your trees and shrubs.

Guidelines/management practices for protecting trees and vegetation from damage caused by rabbits and hares.

Rabbit Damage and Prevention
Damage Characteristics:
Rabbits cut and eat accessible shoots.
They can cause ringbarking (removal of bark) up to 50 cm from the ground.
They make sharp, angled cuts across small stems or branches.
Often, the removed portions of the plant are eaten.
They can damage trees with diameters up to 100 cm, though they mainly affect trees that are 0–10 years old.
The vegetation around their burrows is often grazed very low, leaving round droppings.
Preventative Measures:
Fencing: Use 1.05 m high netting made of 18-gauge wire with 31 mm hexagonal mesh. The bottom of the netting should be either dug into the ground or turned out 150 mm towards the rabbits and then turfed over.
Tree guards: Use 0.6 m tall tree shelters, split plastic tubes, or plastic mesh or spiral guards. Be aware that lateral growth may still be browsed when using spiral guards and meshes.
Chemical Repellents: Apply repellents like Aaprotect to dormant trees starting in mid-November.

Hare Damage and Prevention
Damage Characteristics:
Hares similarly cut shoots to rabbits, but often leave the shoots on the ground.
They may eat vegetation along a row of young trees.
Hares can cause damage up to 70 cm from the ground.
Preventative Measures:
Fencing: Use 1.2 m high netting, like rabbit netting, but with an additional line wire 100 mm above the netting.
Tree guards: Use 0.75 m tall tree shelters or plastic mesh guards.
Chemical Repellents: Use the same chemical repellents as recommended for rabbits.
These guidelines should help in minimizing damage caused by rabbits and hares to young trees and vegetation.

L to R: Micro-climate benefits. Staked loops of mesh fencing. Timber tree guard. Image credits: Mark Malins

Raptor perch. Spot-sprayed planting site. Deer and rabbit-fenced line-sprayed site, spirals not used. Image credits: Mark Malins

L to R: A well-maintained upland deer fence. Lowland deer fence and secure gate, plus rabbit mesh. Image credits: Mark Malins

To naturally control populations of voles and rabbits, it is important to support and encourage the presence of predatory species. This can be done by:

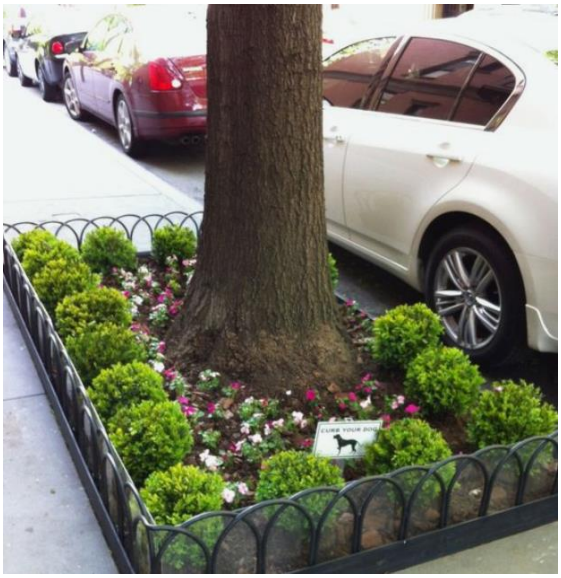
Tolerating Predators: Maintaining a level of tolerance towards predators like foxes, stoats, and weasels, which are natural predators of small mammals like voles and rabbits, helps in controlling their populations.
Encouraging Birds of Prey: Birds of prey such as kestrels and barn owls are effective in reducing vole and rabbit numbers. Their presence can be fostered by creating suitable habitats.
Installing Raptor Perches and Nest Boxes: Setting up raptor perches and specialist nest boxes specifically designed for kestrels and barn owls can encourage these birds to settle in the area, boosting their local populations and enhancing natural pest control.
These methods support a balanced ecosystem and reduce the need for human intervention in controlling small mammal populations.

Methods for managing grass and small mammal activity around young trees to support their healthy growth. Here is a summary of the key points:
Grass Removal Before Planting: Removing tussocky grasses around trees before planting is crucial. This not only discourages vole activity but also reduces plant competition, benefiting both broadleaf trees and conifers.
Spiral Guards and Herbicides: Spiral guards can be fitted to young broadleaf trees to deter smaller mammals like voles. However, these guards are more effective when used in combination with herbicides to control surrounding vegetation.
Traditional Methods of Vegetation Control: Traditionally, unwanted grass is dealt with by screening or scraping away vegetation with tools like a spade or mattock before planting. While effective initially, this method is temporary as grasses and weeds quickly grow back, potentially choking the trees within shelters.
Herbicide Application: A more enduring solution is applying a one-metre diameter spot spray or a metre-wide line spray of herbicide around trees. This method not only controls grass growth but also deters voles, assisting in the rapid and resilient establishment of trees. Proper timing and use of herbicides can significantly speed up tree growth.
Concerns Over Herbicides: Given the environmental and health concerns surrounding herbicide use, exploring alternative methods might be necessary depending on site-specific conditions or personal preferences.

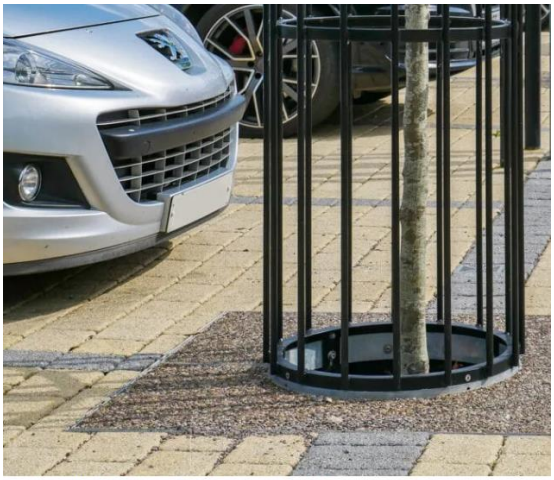
Mulch as an Alternative: A half-metre radius of deep woodchip mulch around each tree can help suppress competing vegetation, although repeated applications may be necessary. Mulch mats are another alternative, but they may not be as effective because voles can burrow underneath them.
Overall, the passage discusses a variety of methods for managing vegetation and small mammals around young trees, emphasizing the importance of site-specific solutions and the potential need to balance effectiveness with environmental and health considerations.

4.3 Identify a minimum of two ways that a young tree may be protected from grass-cutting machinery damage

Street trees can be protected with strimmer guards. Other solutions are different types of pit covers, garden beets around trees, seating areas, fences, and mulch circles.



Tree arille in need of removal.



ArborResin tree surround and tree quard.

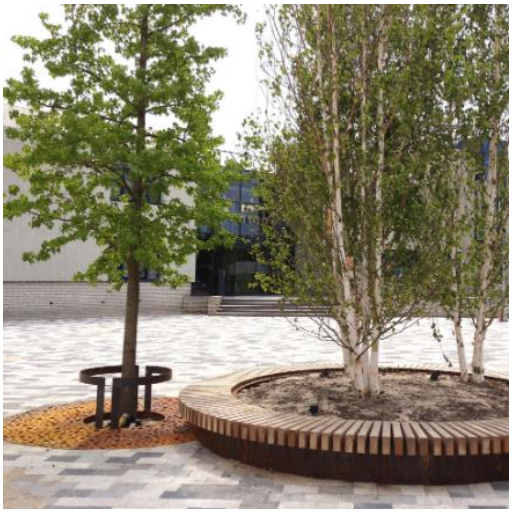
a b c d e f

Six common types of covering materials for urban tree pits. a No cover (CK), b Turf (T1), c Breathable plastic blanket, d Tree grate, e Wood board, f Cement

Creating a tree circle around the base of a trunk is a practical and beneficial approach to tree care, particularly in areas where machinery like lawnmowers and strimmers are commonly used. Here are some key points to consider regarding the benefits and implementation of a tree circle:

Benefits of a Tree Circle

Protection from Damage: By establishing a clear area around the base of the tree, you reduce the risk of accidental damage to the trunk from mowing and trimming equipment. This protection is essential for the long-term health of the tree.
Soil Health: A tree circle can be mulched with organic materials, which helps retain soil moisture, suppress weeds, and gradually improve soil quality as the mulch breaks down. This enhances nutrient availability for the tree's roots.
Improved Visibility: For young or slender trees, maintaining a clear ground area makes them more visible to both people and machinery, reducing the likelihood of accidental damage. This is especially important in winter months when foliage is sparse.
Aesthetic Appeal: A well-maintained tree circle can enhance the overall appearance of your landscape, providing a tidy and organized look.



4.4 Identify a minimum of two ways that newly planted trees may be protected from vandalism in the urban environment

Newly planted trees can be protected from vandalism through the following methods:

Tree Guards and Barriers: Installing physical barriers, such as metal or plastic tree guards, around the base of the tree can prevent damage from being inflicted by passersby. These guards protect the trunk from being cut, scratched, or broken. Larger barriers, like fencing or bollards, can be used to protect multiple trees or trees in high-traffic areas.
Community Engagement and Education: Engaging the local community by educating them on the importance of trees can create a sense of ownership and responsibility. Community involvement can reduce vandalism as people are less likely to harm something they feel connected to. Initiatives like "adopt-a-tree" programs can involve residents in the care and protection of the trees, making them less likely to be targets of vandalism.

Stricter laws and law enforcement for tree vandalism
The updated regulations surrounding illegal tree felling and non-compliance with Forestry Commission orders in the UK have significantly increased the penalties for offenders. Here is a summary of the key changes:
Unlimited Fine for Illegal Felling:
The penalty for felling trees without the required felling licence has been raised. Previously, the maximum fine was £2,500 or twice the value of the felled trees, whichever was greater. Now, offenders face an **unlimited fine**.
Imprisonment and Unlimited Fine for Non-Compliance:
If an individual fails to comply with a Forestry Commission Enforcement Notice and a subsequent court-ordered Restocking Order, they risk not only an unlimited fine but also **imprisonment**. This order mandates that any illegally felled trees must be replanted.
Land Charges for Restocking and Enforcement Notices:
Restocking Notices and Enforcement Notices will now be listed on the **Local Land Charges Register**. This means that these notices will be visible to prospective buyers of the land, which could potentially decrease the value of the land. These measures aim to strengthen the protection of trees and woodland, ensuring that illegal felling is met with more substantial consequences.

Trees indeed serve as a vital public asset, providing a wide array of benefits that extend far beyond their immediate surroundings. The significance of trees can be understood through several key dimensions:
Physical and Environmental Benefits:

Climate Regulation: Trees play a crucial role in absorbing carbon dioxide, helping to mitigate the effects of climate change. They also provide shade, reducing the urban heat island effect and cooling surrounding areas.
Air Quality Improvement: Trees filter pollutants from the air, including harmful particles and gases like sulphur dioxide and nitrogen oxides, thereby improving overall air quality.
Water Cycle Regulation: Through transpiration, trees release moisture into the atmosphere, contributing to the water cycle and reducing the likelihood of floods by stabilizing soil and reducing runoff.

Biodiversity and Ecosystem Support:

Habitat for Species: A single mature tree can support up to 50 different species, including birds, reptiles, mammals, fungi, and microorganisms. This biodiversity is crucial for the health of ecosystems, providing food, shelter, and breeding grounds for various organisms.

Soil Health: Trees contribute to soil fertility by dropping leaves and branches that decompose, adding organic matter to the soil. Their roots also help prevent soil erosion.

Psychological and Community Benefits:

Mental Health: Exposure to trees and green spaces has been shown to reduce stress, anxiety, and depression, contributing to better mental health and overall well-being.

Community Cohesion: Trees and green spaces serve as communal gathering spots, fostering social interaction and community engagement. They can also increase property values and enhance the aesthetic appeal of neighbourhoods.

Spiritual and Cultural Significance:

Trees often hold spiritual and cultural importance for many communities around the world. They are symbols of life, growth, and connection to nature, often playing central roles in cultural traditions and spiritual practices.

Climatic Resilience:

Carbon Sequestration: Trees are critical in the fight against climate change, as they sequester carbon dioxide from the atmosphere, storing it in their biomass and the soil.

Microclimate Moderation: Trees help moderate local climates by providing shade, reducing wind speeds, and maintaining humidity levels.

Overall, the profound benefits of trees make them indispensable assets to both human society and the natural environment. Their protection and conservation are essential for maintaining ecological balance, supporting biodiversity, and enhancing the quality of life for all species.


City of Canterbury
This Tree
Has Been
Poisoned
If you have information
regarding the poisoning
of this tree, please
call City of Canterbury on
9759 9360

The idea of leaving vandalized trees and signage in the urban environment as a form of warning and remembrance could serve multiple purposes in raising awareness and fostering a deeper sense of responsibility within the community. Here are some thoughts on this approach:

Raising Awareness and Educating the Community:

Visual Reminder: Leaving vandalized trees in place, along with clear signage, serves as a stark visual reminder of the damage done to the community's natural assets. It could effectively communicate the consequences of such actions, both to the individual responsible and to the broader public.

Educational Value: Including information about the ecological and financial value of the trees on the signage could educate the public on the true cost of vandalism. A "price tag" on the vandalized trees would highlight not just the economic loss but also the environmental and social costs associated with the destruction.

Promoting Accountability and Deterrence:

Public Accountability: Displaying vandalized trees could promote a sense of accountability within the community. Knowing that such acts will be publicly displayed may deter potential vandals from damaging public property in the future.

Community Engagement: This approach could spark conversations within the community about the importance of protecting shared resources. It could also lead to community-driven initiatives to prevent future vandalism and to care for local green spaces.

Creating a Space for Reflection and Healing:

Remembrance and Reflection: The presence of vandalized trees can serve as a space for the community to reflect on the impact of violence against nature. It could be seen as a symbol of resilience and a reminder of the need to protect and nurture urban green spaces.

Memorialization: Similar to memorials for other types of community losses, leaving vandalized trees in place could serve as a living memorial, reminding people of what was lost and the importance of communal care for natural assets.

Long-term Considerations:

Restoration Plans: While the vandalized trees could be left as reminders for a certain period, it is also important to plan for their eventual replacement or restoration. The community should be involved in discussions about how and when to restore these spaces, perhaps turning the process into an opportunity for public education and engagement.

Sustainability and Renewal: Over time, the damaged trees could be replaced with new plantings, symbolizing renewal, and the community's commitment to protecting its natural environment.

By implementing this strategy, the community would not only mourn the loss of a public asset but also gain a stronger appreciation for the value of trees and the need to protect them. It could transform an act of vandalism into a powerful tool for education, reflection, and community solidarity.

Source

https://healthystreets.surreycc.gov.uk/requirements-and-guidance/section?id=7.7
https://www.forestresearch.gov.uk/research/recognising-types-of-mammal-damage-to-trees-and-woodland/
https://forestrycommission.blog.gov.uk/2022/03/17/tree-protection-thinking-about-risks-and-opportunities/
https://www.cheltenham.gov.uk/info/67/trees/1795/damage_to_council_owned_trees
https://savingourtrees.wordpress.com/2013/05/02/the-worst-case-of-tree-vandalism-i-have-ever-seen/
https://auf.isa-arbor.com/content/16/5/124#:~:text=After%20the%20first%20two%20years,the%20species%20or%20between%20years.
https://cdn.forestresearch.gov.uk/2022/02/lru_bpg12.pdf