Trees Myth-busting: A Resource

November 2024

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About this document

This document seeks to dispel, with evidence and links to widely available information, some common myths about tree planting.

It is intended to be updated with new information. It is not an exhaustive source but rather an accessible signpost to other information to help make the case for tree planting in healthcare facilities.

This document was produced with the support of RSK

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Our critical natural infrastructure

Trees are vital to the health of people and our planet. We must learn to live within our natural environment as an essential part of our natural infrastructure.

‘While grey infrastructure depreciates over time, trees appreciate in value as they mature’ Hauer and Johnson, 2003[1]

1 Hauer, R. J., & Johnson, G. R. (2003). Tree risk management. In J. D. Pokorny (Ed.), Urban tree risk management: A community guide to program design and implementation (pp. 5–10). St Paul, Minnesota: USDA Forest Service, Northeastern Area, State and Private Forestry.

Traffic lights are rightly regarded as essential urban infrastructure. They turn red, yellow and green… They do little else. We wouldn't think of not maintaining them.

Trees can also be red, yellow and green. Their benefits are multi-functional. Why would we not invest in them too?

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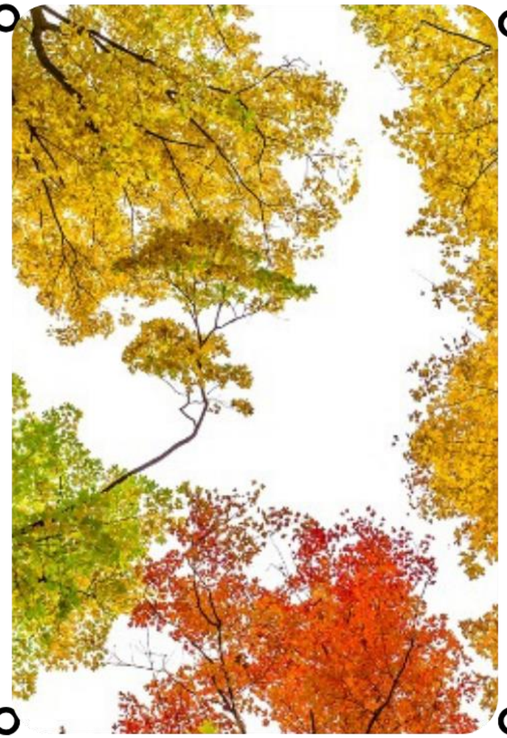
Trees are like any other form of urban infrastructure. We should invest in them in the same ways.

- Contribute to energy efficiency
- Climate adaptation / resilience
- Contribute to noise attenuation
- Urban shading / cooling
- Sense of place and wellbeing
- Carbon capture



- Nature recovery
- Contribute to amenity and property values
- Contribute to air quality management
- Habitat connectivity
- Oxygen! Our planet's lungs
- Natural flood management

Image: Arturo Casteneyra on Unsplash

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Trees are an essential way to deliver ecosystems services, which not only make life possible but worth living too.

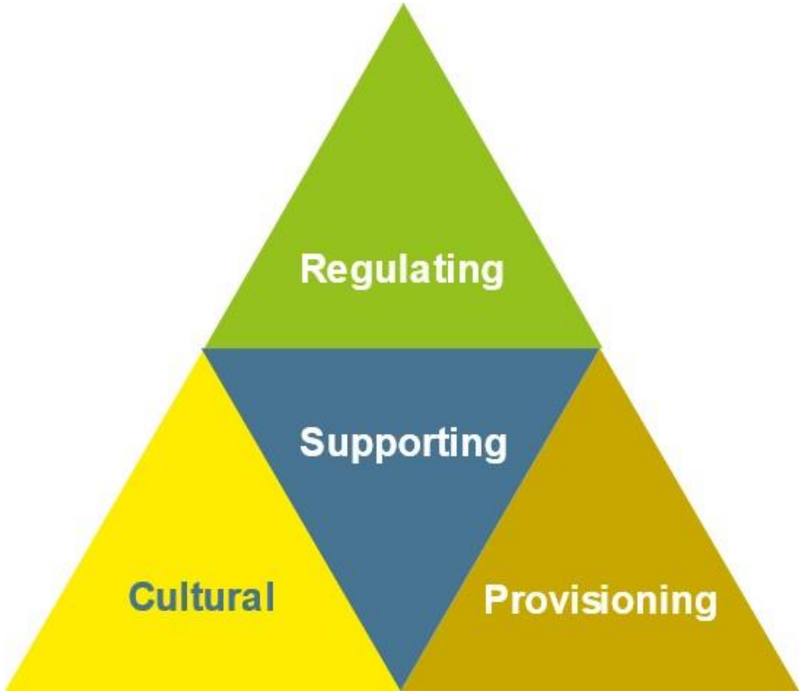

Image: Re-drawn from a graphic by Earthwise Aware

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And yet there are some common myths about trees.
These often stem from not considering their needs and habits properly, or from poor design/wrong tree in the wrong place.
We have grouped them into 5 themes, which we explore next.

Management Risks Health Design Legacy

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Myth: ‘Trees are expensive to maintain’
Reality:

Management

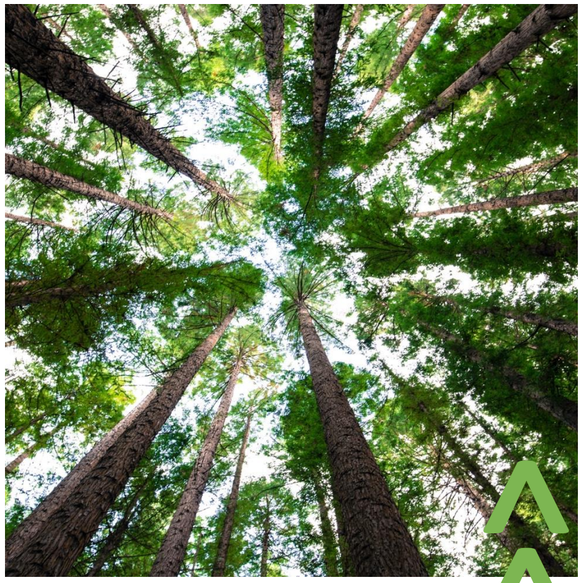
Path maintenance:

£540 per 100 square metres p.a.

Shrub beds:

£480 per 100 square metres p.a.

Woodland tree weeding:



£11.75 per 100 square metres p.a.

Newly planted woodland trees need an annual check and basic maintenance tasks during establishment period. Trees planted for 10 years or more still benefit from this care, but it is light touch – removal of stakes, re-mulching etc, easily factored into a contractor’s workflow.

Costs sources: Spons External Works and Landscaping.

Images: Unsplash (Left: Carl Tronders; Centre: Jack Blueberry; Right: Arnaud Mesureur)

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Myth: ‘Trees are expensive to maintain’

Reality:

Management

Watering is generally only needed in first years of establishment, or if trees are in unduly constrained locations, such as planters.

Image: Unsplash

Young tree specimens are MUCH easier to transplant (and grow and establish faster) than older, semi mature specimens.

Signpost

The Tree Advice Trust Arboriculture Research Note 97 notes that smaller specimens such a whips tend to establish much better partly because much less of their root system is undercut when they are lifted at the nursery than for larger grade trees.

Myth: ‘Trees are dangerous’

Reality:

The risk of fatalities from falling trees and branches is **VERY** low, in the order of **1 in 10 million** for trees in or adjacent to areas of high public use.

This can be reduced further by:

- Good maintenance regimes.
- Undertaking and periodically monitoring a tree strategy to understand risk and form a programme of remedial works to trees.
- ‘Right tree, right place’: Selecting the right species based on structural and physical characteristics, habit, growth conditions, geology and hydrology among others. For instance, Robinia pseudoacacia is a fine landscape tree but it has brittle timber and is prone to shed limbs and branches and should be avoided in high-use areas.

Robinia pseudoacacia. Public domain, CC0

Risks

Signpost

See also:

This HSE guidance

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Myth: ‘Trees are dangerous’

Reality:

Image: Unsplash

‘Trees will make my car sticky’

Again, this can be solved by **‘Right Tree, Right Place’** – avoiding trees with loose, easily blown and untidy pollen like Betula spp (Birch) or sticky, messy pollen such as Tilia spp (Lime), as well as avoiding fruiting species and those with a lot of sap.

Did you know?

Trees can also reduce wind speeds in storms, potentially reducing damage to roofs and other structures in storms, as well as associated insurance liabilities.

Risks

See also

Signpost

Advice on planting trees in the context of road safety, visibility splays and site lines, consideration of poisonous species and other issues, in this Tree Planting Guide from the Tree Council.

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Myth: ‘Trees damage infrastructure’

Reality:

Risks

Image: Ries Bosch on Unsplash

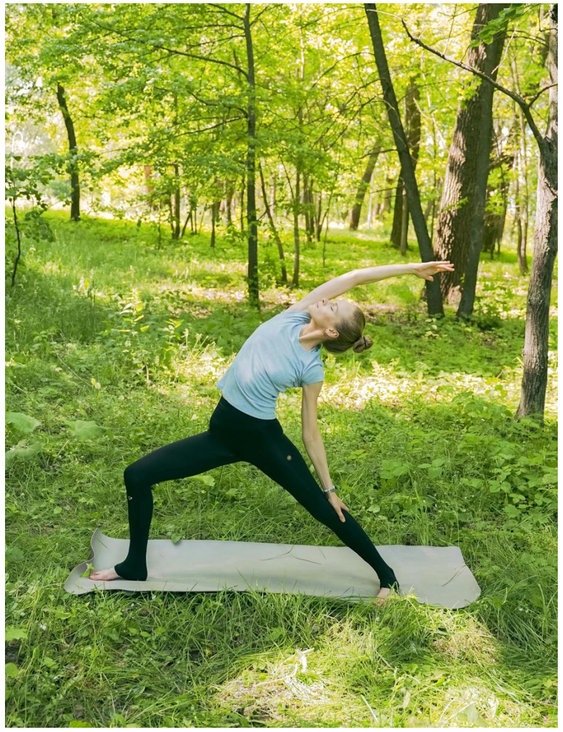
Signpost

This 2019 Tree Planting Guide from The Tree Council provides a useful and detailed list of things to consider in urban tree planting, including, **among other things**:

- Foundation depths
- Soil types and avoidance of high water demand tree species on shrinkable clays
- Species, habit and ultimate size and root spread
- Check for presence of underground utilities/services and wayleaves for these and for overhead power line and infrastructure, early in the design process
- Maintenance and pruning needs to maintain statutory overhead clearances
- Think **RIGHT PLANT, RIGHT PLACE**

Myth: ‘Trees cause allergies’

Reality:



A Woman Doing Yoga in the Woods, by Antoni Shkraba, via Pexels

Trees can improve air quality and remove airborne pollutants which helps keep levels lower and reduce health risks (especially if trees are regularly coppiced).

Trees also humidify air which can help reduce the effects of hay fever and asthma and other respiratory ailments, as well as providing a cooling effect.

Allergies can also be solved by **‘Right Tree, Right Place’** – Avoid use of trees high in pollen or with light/powdery or easily scattered and blown pollen (such as Lime and Birch). There are many other alternatives, such as female trees which are not pollen producing.

Health

Further information on trees and air quality:
Cities Alive: Rethinking Green Infrastructure.

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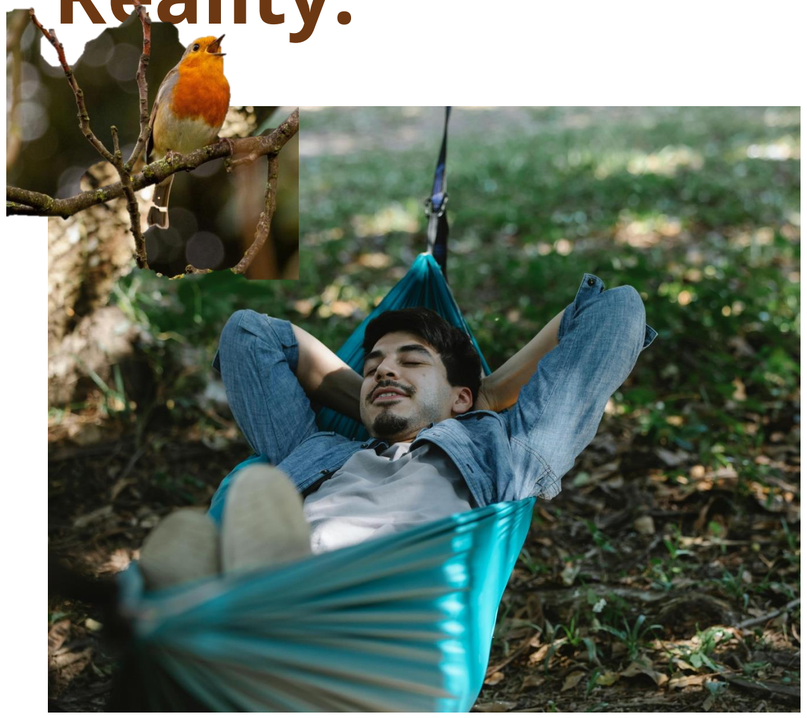
Myth: ‘Trees attract birds / other wildlife / can create noise, disturbing patients’

Reality:



Images: Uriel Mont, via Pexels, Tom Bradley, Unsplash

A mixed planting of trees and evergreen shrubs with a high leaf area can reduce noise levels.

Also, the sound of nature has been proven to be **restorative**. Various studies suggest birds and birdsongs positively affect mental health. According to one analysis, living in an area with **10% higher** avian diversity rates increases life satisfaction **1.53 times more** than a higher salary.

Anxiety and depression symptoms significantly decrease when listening to birdsong. Birds reduce paranoia by diverting one's attention away from triggers and threats. Listening to birdsong is simply an extra dose of nature-based medicine.

Health

See also:
This article, at nature.com

Did you know?

Just 120 minutes in natural environments weekly is ideal for your mental wellbeing.

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Myth: ‘Trees are a faff and we could use the space in other ways’

Reality: Urban trees provide a wide range of **ecosystems services and benefits** to landowners and wider communities. And trees bring **economic value** via various ecosystems services (which can be captured by i-Tree and other off-the-peg value measurement tools).

- **Provisioning services:** the production of food products (berries, nuts, and fruit), wood-fuel, and items for games (horse chestnut conkers) and seasonal decoration (holly leaves).
- **Regulating services:** cooling of local climates, air quality, noise abatement, carbon sequestration, interception of rainwater, and the regulation of storm water run-off.
- **Cultural services:** opportunities for exercise and relaxation, connecting people to nature, providing space for socialising and ‘de-stressing’, and opportunities for education, learning and development.
- **Supporting services:** including the cycling of nutrients and the provision of habitat for wildlife.

Design

See also:

Signpost:
See also i-Tree.

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Myth: ‘Trees are too slow growing – it will be years before I see any benefit

Reality:

Tree Planting, CC BY PDM 1.0

Tree Planting, CC BY PDM 1.0

If instant benefits are required, it is not uncommon to plant **semi-mature trees** which can provide substantial instant effect. They will have been transplanted several times and are likely to be more than 10-15 years old. They will, however, require more intensive establishment and maintenance regimes and the capital and revenue cost is much higher than for smaller trees, which have a far lower up front cost. The majority of the trees which the NHS Forest supply are smaller trees. These will have lower maintenance costs and higher establishment success than larger trees.

Design

Did you know?

Chinese Proverb:
“The best time to plant a tree was 20 years ago. The second-best time is now.”

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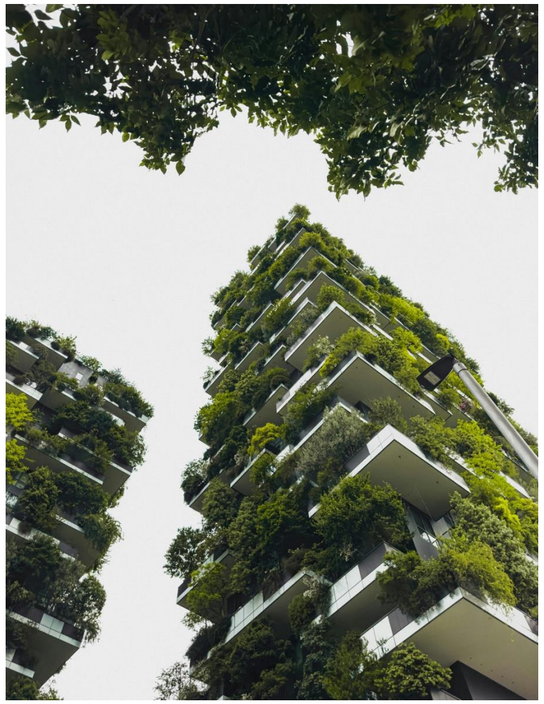
Myth: ‘Architectural design of hospitals should not be obstructed by trees

Reality:



Bosco Verticale, by Mike Hindle, via Unsplash

These are not mutually exclusive, and indeed there may well be circumstances where tree planting is not appropriate or very limited. All trees need to be carefully planned to ensure that they are appropriate to the site and form part of a co-ordinated, long-term design solution together with buildings and other infrastructure.

However, there are increasing examples demonstrating the value of fully integrating trees and buildings in a much more **symbiotic** relationship. This can be applied to design in a healthcare context.

Design

Did you know?

A growing body of research supports the benefits of intermittently planted, sequentially experienced and multi dimensional landscapes (like those by Capability Brown and Humphry Repton in the 18th Century) for our relaxation. See this link.

This also has links to the idea of enriched environments like nature being good for our mental health and cognitive development. See also Magsamen, S and Ross, I, 2023, *Your brain on art: How the arts transform us.*

Myth: ‘Legal liabilities if a tree were to cause injury or property damage’

Reality:

Image: Samuel Vogl, via Pexels

Landowners and occupiers need to manage the risks from the trees they are responsible for.

Current **HSE guidance** includes specific commentary as part of what is described as a “suggested simple tree management system” and even in a criminal /Health and Safety Law context what an appropriate inspection system would be in specific circumstances.

This can be effectively managed by establishing and implementing an appropriate and proportionate **tree management strategy**. This requires specialist technical arboricultural expertise from qualified and certified arborists. (Related areas: Tree strategies, relevant British Standards, succession planning etc.)

Legacy

Signpost:

See also:

This HSE Guidance.

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Myth: ‘Trees might become targets for vandalism’

Reality:

Image: Fons Heijnsbroek , via Unsplash

Image: Fons Heijnsbroek , via Unsplash

Trees once larger can have a calming effect on vandalism.

Research shows that trees and green space in neighbourhoods reduce cortisol levels, stress and anxiety, encourage exercise and generally makes people more civil.

Legacy

See also:

Signpost

Montgomery, C, 2013, *Happy City: Transforming our lives though urban design*
Resources on Ecomatcher

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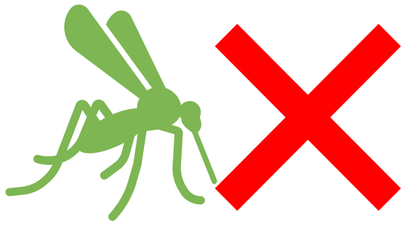
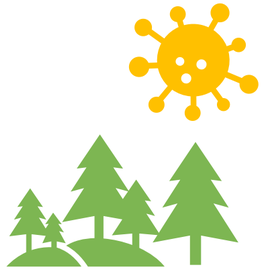
Myth: ‘Stagnant water in ponds can become breeding grounds for mosquitoes’

Additional myth

Reality:





Mosquitoes can be found in various parts of the urban environment in addition to standing water. Mosquitoes do not currently cause major harm in the UK. Malaria in England had effectively died out by the 1950s. Mosquitoes are usually only a major problem when Britons travel abroad to countries with malaria, dengue or other mosquito-borne diseases.

However, climate change is increasing the risk of non-native species, such as the Asian tiger mosquito (*Aedes albopictus*) making its way to the UK. Whilst the species does not carry malaria, it does transmit West Nile virus, yellow fever and dengue. This highlights the importance of tackling climate change, with **TREE** planting being one such **TOOL** as part of a palette of integrated mitigation and adaptation measures.

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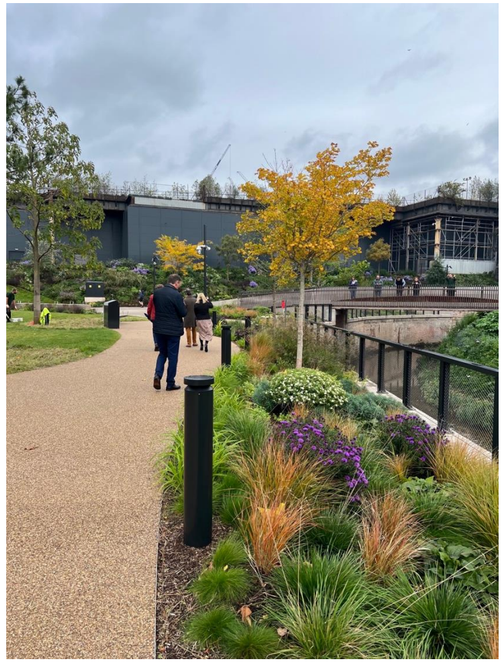
Myth: ‘Ponds and other blue spaces pose drowning risks, particularly for children

Reality:



The River Medlock, Mayfield Park, Manchester.
Image: RSK (Stephenson Halliday)

Water bodies and blue infrastructure such as SuDS can, if not well designed, present a significant risk to the children, residents and general public that will interact with them. However, **well-designed and managed** water features and SuDS should offer a low-risk profile for users to the area and can enhance the environment.

- With help from safety advisors or organisations such as RoSPA, safety standards are best and most cost-effective when they are designed into the scheme at an early stage.

- RoSPA recommends that play areas be at least **30 metres** from water features, including SuDS schemes. Effective mitigation must be provided if separation cannot be achieved (integrated barrier design, marginal planting, reeds etc.)

Additional myth

Signpost

See also:

RoSPA Guidance.

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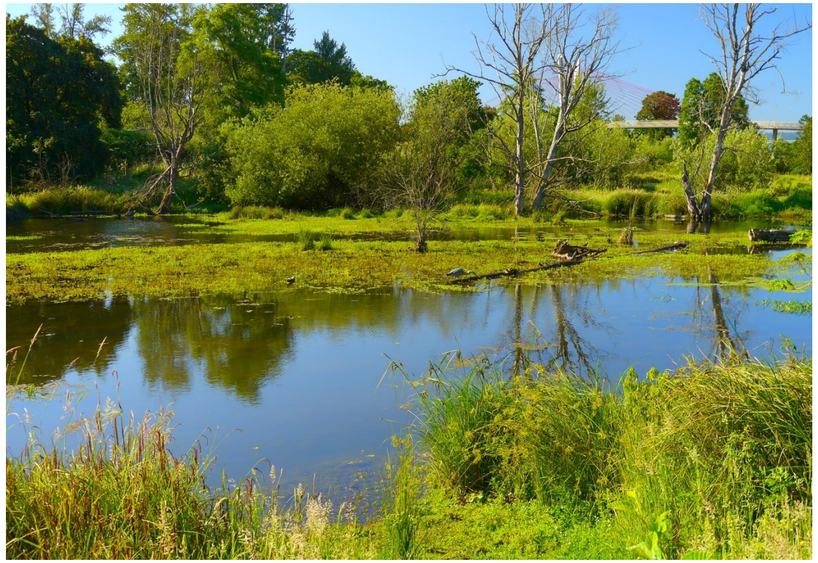
Myth: ‘Improperly managed ponds / water features can increase flood risk’

Reality:



Delta Ponds in Eugene, Oregon. Image: Rick Obst, CC BY 2.0

The primary sources of flood risk are much more likely to be rivers, direct rainfall on hard surfaces or buildings, rising groundwater, overwhelmed stormwater sewers / sewers and drainage systems. Well designed water features could form part of the solution to these risks, using the principles of Natural Flood Management (NFM), including:

- Planting trees and hedges to absorb more water, catch rainfall and slow the flow of water on the ground surface when there is excess rainwater.
- Covering the ground with planting to reduce water pollution and surface water run-off.
- Diverting high water flows and creating wetland areas to store water.

Additional myth

Signpost

See also:

Sponge Cities.

Philadelphia’s *‘Green City, Clean Waters’* project (see this Yale article on the project)

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