

West Suffolk Council Tree Management Policy

Appendix 12: Benefits of Trees

Trees and woodland should be widely recognised as bringing high quality sustainable benefits to all who live and work in the West Suffolk area. Increasing these benefits and raising the awareness of them should be an integral part of a successful Tree Management Policy.

These benefits can be categorised into three broad groups as trees and woodland play vital roles in the social, economic and environmental fabric of the West Suffolk area.

Social benefits

The social benefits relate to improved physical and mental health, enhanced living environments, increased community pride, recreation, education and community engagement;

Being near trees and woodlands is 'good for your health' and a vital component of a healthy life. Being around trees, even for a short while, is known to reduce stress levels, which in turn benefits our health generally as well as our psychological well being. Even travelling through a treed landscape can reduce states of stress and anxiety.

Regular amounts of walking also has well-known health benefits, including reducing the risk of type 2 diabetes and Alzheimer's disease, reducing the risk of coronary heart disease, reducing the risk of osteoporosis (brittle bone disease), reducing the risk of contracting colon cancer by half, help with chronic pain, arthritis and asthma. In addition, walking can help with all sorts of mental health problems such as depression and anxiety.

Walking in pleasant surroundings can have marked effects on well-being, a concept now known as 'the Biophilia effect'. This theory suggests that quality of life in the largest sense is dependent upon the richness of our connections with nature.

Regular moderate exercise in well designed, accessible woods can lead to a reduction in heart disease and other physical illnesses. Strenuous exercise, such as mountain biking and orienteering, can have greater beneficial health effects.

There is also evidence for improved postoperative recovery rates in hospital wards overlooking wooded settings.

Trees can also bring about improvements in air quality as they filter pollutants and the provision of shade in urban areas reduces ultraviolet radiation exposure.

Dense block planting of trees along roads has a sound reducing effect, enabling a better quality of life for nearby residents, and is a less intrusive than expensive methods of reducing noise. Visually there is an economic value, as people would generally far rather gaze at trees than the harsh lines on a grassed

embankment. Areas of trees are cheaper per metre square to maintain than grass and lawns.

Trees add great beauty and character to the landscape, offering a variety of form, texture, colour, size, shape and seasonal change. They also complement the built environment by providing screening, a sense of scale, focal points, privacy and seclusion. They also define, link and separate open space. This enhances the structure and layout of the landscape and is essential to our sense of place.

Trees and woods are increasingly important as an inspirational educational resource. They enable the study of a wide variety of living organisms and processes in 'a living laboratory'.

Trees and woodlands provide great opportunities for children to create their own play environments. Enabling children to make their own choices in a natural setting helps to deepen their engagement with, and understanding and appreciation of, those settings, and has been proven beneficial to children's all round mental wellbeing.

Environmental benefits

The environmental benefits chiefly comprise biodiversity, pollution abatement, soil conservation and protection of water resources.

Trees make a major contribution to biodiversity, particularly in an urban context, with large and mature trees, many native species and most ancient trees having the greatest value. Tree foliage, decaying wood and bark provide habitats for numerous invertebrate species, which in turn provides an important food resource for insectivorous birds, bats and animals. The trunk and canopy of larger trees also provide nest sites for birds, including several declining species, and roosts for bats.

Trees also offer a sustainable, cost-effective way of managing storm water and reducing the risk of flash flooding by trapping rain water on their leaves and slowing down urban run-off following heavy storms. This reduces drainage costs, sewer overflows and downstream damage.

Trees help to create more pleasant and comfortable microclimates by providing shelter from wind and rain; providing shade from excessive sunshine and harmful ultra-violet rays; cooling the air on hot days through evaporation of moisture from leaves; slowing down heat loss at night.

Trees must take water through their root system and transpire through the leaves. During this it filters out pollutants and releases back clean water into the atmosphere.

Trees act as a 'carbon sink' that is, they absorb carbon dioxide (CO₂) throughout their lives but usually reaching their maximum absorption after 10 years of growth. Much media attention has also been given to carbon offsetting using trees, however, we need to be clear about the benefits that trees provide in terms of CO₂ absorption and carbon offsetting:

Most trees absorb between 6 kilo grams to 12 kilo grams of (CO₂) per year. It is estimated that for every ton of timber produced one ton of CO₂ is removed from the atmosphere.

However, most of this carbon is stored within the structure of the timber itself and it must be remembered that this is only a temporary store, as the carbon is released back into the atmosphere once the timber begins to decompose naturally or burnt as a fuel. Professor Oliver Rackham, OBE, FBA, stated that 'Telling people to plant trees is like telling them to drink more water to keep down rising sea levels.'

The process where trees sequester carbon from the atmosphere is one of the components of the carbon cycle. The carbon cycle is the set of biogeochemical processes by which carbon undergoes chemical reactions, changes form and moves through different reservoirs on earth, including living organisms. The geological component of the carbon cycle is driven by plate tectonics and includes processes like volcanic eruptions and burial of carbon-rich sediments on the ocean floor. The biological component of the carbon cycle is driven by respiration and photosynthesis by living organisms, which includes trees.

Humans influence the global carbon cycle in several ways, but primarily through burning fossil fuels. As fossil fuels can be seen as carbon stores that are not normally available within the carbon cycle in a relatively short timescale, then burning fossil fuels leads to a net increase in the carbon within the carbon cycle.

Carbon storage in plant biomass (of which trees are only one group), is a relatively small proportion of the total stored in the entire carbon cycle. Approximately 70 times more is stored in the oceans and four times more is stored within the soil. Both these stores are also much longer term and stable stores compared to plant biomass.

Carbon is stored within the soil as the product of leaf fall and the effects of soil micro-organisms. To maximise the carbon sink effect of trees this process should be allowed to take place. Therefore, trees within paved areas, or with regularly mown grass underneath, and where leaves are collected will have a much reduced carbon offsetting capacity. To maximise carbon offsetting, planting of new trees and management of existing trees should take into account these factors wherever possible

The production of oxygen (O₂) by trees, whilst removing (CO₂) from the atmosphere is often overlooked. It is due to the worldwide production of oxygen by trees (and other vegetation) that we are able to survive but on a local level we often never give this a thought.

Economic benefits

There are many economic benefits of trees and woods. In addition to employment and the value of timber, they include positive influences on inward investment, increased property values, reduced energy costs, regeneration of derelict and damaged land, and tourism.

Trees create an amenable, healthy environment that is favourable for economic development. There is ample evidence that 'greening projects' are highly effective in kick-starting inward investment and encouraging commercial enterprises.

The 2003 regional woodland strategy estimated the economic value of woodland to the East of England economy is in the region of £680 million per year. The majority of this however accrues from the value of the green infrastructure that trees, and woodlands provide (or capital value of woodlands in the landscape). For example, increases in house prices, inward business investment, recreation and tourism activity which generate real spend in the region but for which there is no market transaction with the woodland owner.

It has been estimated that woodland contributes significantly to about 20 per cent of the region's 'out of town' attractions, as well as contributing more generally to the visitors' experiences of a day out or holiday in the region. Some wooded areas are already major tourism magnets: Thetford Forest is the third most visited attraction in the East of England region.

The use of woodlands as a setting for art is becoming increasingly common and includes such events as concerts, plays and sculpture. Where possible the opportunities for including sculpture within tree planting or as a result of management work should be explored.