

## 3. Trees and Woodlands in the West of England

### 3.1 Benefits of Trees and Woodlands

Trees are nature's 'do it all' and provide a huge range of interrelated benefits, contributing to all aspects of our quality of life and delivering across the eight GI outcomes contained in the JGIS.



#### Nature

GI Outcome:  
Ecological Connectivity

From ancient woodlands to hedgerows and urban parks, trees are a vital element of ecosystems, providing food, habitat and nesting sites for a huge number of species. Sixteen species of bird on the BTO's red list are woodland species, including the lesser-spotted woodpecker, wood warbler and woodcock<sup>26</sup>; rare populations of greater and lesser horseshoe bats are dependent on trees and hedgerows for foraging; and countless species of insects rely on trees and woodland.

New trees and woodland will be vital in addressing the ecological emergency, alongside improving the management of our existing trees and woodland. Dynamic, complex and shifting ecosystems where natural processes, such as natural regeneration of trees and scrub, are allowed to evolve will need to play a part in this.



#### Health and wellbeing

GI Outcome:  
Health and Wellbeing

Trees, and the natural environment more generally, provide a range of benefits to both our mental and physical health. In urban areas, trees mitigate asthma and breathing conditions by filtering air borne pollution, provide cooling and shade during heatwaves, and lower stress levels. Trees also contribute to safer communities: research suggests that housing associated with trees and greenery suffer from less crime and their inhabitants feel safer<sup>27</sup>. There is even evidence that trees benefit hospital patients' recovery times: less time is spent in wards with views of trees<sup>28</sup>.

Woodlands provide recreational opportunities for people in both cities and the countryside, increasing physical activity levels and otherwise improving both physical and mental health. Visiting forest environments can help lower blood pressure and pulse rate, reduce cortisol levels, and suppress sympathetic nervous activity<sup>29</sup>. Additionally, children growing up in green spaces have a lower risk of psychiatric disorders later in life<sup>30</sup>.

<sup>26</sup> <https://www.bto.org/our-science/publications/psob>

<sup>27</sup> Branas et al, 2018. Citywide cluster randomized trial to restore blighted vacant land and its effects on violence, crime, and fear.

<sup>28</sup> Forest of Avon Trust website, <https://forestofavontrust.org/about-detail/the-benefits-of-trees>

<sup>29</sup> <https://www.forestresearch.gov.uk/news/contribution-forests-human-health-and-well-being/>

<sup>30</sup> Engenmann et al, 2019. Residential green space in childhood is associated with lower risk of psychiatric disorders from adolescence into adulthood



## Economy

GI Outcome:  
Resilient Economy

Aside from their value from contributions to health and wellbeing (it is estimated that universal access to good-quality greenspace would save the NHS £2.1 billion a year<sup>31</sup>), trees provide numerous other economic benefits that make them worthwhile investments:

- Green environments increase businesses' patronage by 30-50% and willingness to spend by 10-50%<sup>32</sup>.
- Green environments improve productivity by 15%, reduce staff turnover by 18% and reduce the amount of sick leave taken by 10-23%<sup>33</sup>
- Quality of life is a factor in the relocation of 57% of business executives<sup>34</sup> and people pay 3-7% more to live on tree-lined streets<sup>35</sup>, and so trees can support inward investment.

Woodlands also reduce flash flooding, thereby reducing the economic (and social) impacts of flooding events, and can provide a range of other sustainable products (such as timber and fuel) that support a thriving local economy. Additionally, woodlands offer recreational opportunities, such as walking routes, mountain biking trails and activity centres, which can bring in both direct (e.g. renting of mountain bikes) and indirect (e.g. cafés) employment.

Provisional figures from the Environment Agency's Natural Capital Tool estimate that woodland in the West of England is worth £717 million in carbon sequestration, air quality improvements and hazard regulation alone.

With strong demand for housing, trees are also vital in ensuring that people have high-quality places to live and in mitigating the impacts of new development.



## Mitigating and adapting to climate change

GI Outcome:  
Resilience to climate change

Trees and woodlands will be crucial in both mitigating (by sequestering and storing carbon) and adapting to climate change. The UK Committee on Climate Change (CCC) recognises the role that trees and woodlands will play in reaching net zero, and recommends that at least 30,000 ha of woodland should be created annually to do so. Locally produced wood can also provide a low- or zero-carbon source of fuel by offsetting fossil fuels, and timber can act as a lower-carbon construction material than steel and concrete.

Trees and woodlands will also be critical in adapting to climate change: providing corridors for species to travel through to adapt to a warmer climate, keeping rivers cool, providing shade and cooling in hotter urban areas, and reducing the severity of flooding events caused by climate change.



## Water Management

GI Outcome:  
Sustainable water management

Trees and woodlands are crucial to delivering an improved water environment. Well managed riparian habitat that includes trees is critical for both in-river wildlife (for example, through the shading of rivers) and terrestrial wildlife (through providing ecological corridors), and for improving water quality. Suitably placed trees and woodlands can also act to mitigate flood risk and reduce the run-off of soil and nutrients from agricultural and other settings, further improving water quality.

31 Natural England. An estimate of the value and cost effectiveness of the expanded Walking the Way to Health Initiative scheme 2009 (TIN055). <http://publications.naturalengland.org.uk/publication/35009>. 2009.

32 Literature Review, Greater Manchester Combined Authority: <https://www.youtube.com/watch?v=u8RzZ3kdwUs>

33 Literature Review, Greater Manchester Combined Authority: <https://www.youtube.com/watch?v=u8RzZ3kdwUs>

34 Forest of Avon Trust website, <https://forestofavontrust.org/about-detail/the-benefits-of-trees>

35 Forest of Avon Trust website, <https://forestofavontrust.org/about-detail/the-benefits-of-trees>



## Soil and agriculture

GI Outcome: Sustainable food production

From hedgerows to agroforestry, trees are a vital component of sustainable agricultural systems: protecting soil (trees and other vegetation can reduce soil erosion and soil loss<sup>36</sup>), shading livestock, and increasing yields.

In addition to their role in supporting wider agricultural systems, fruit and nuts from trees forms a crucial part of a healthy diet, with traditional orchards also forming a priority habitat.



## Culture

GI Outcomes: Sustainable places, Valued healthy landscape

Apart from the more tangible benefits outlined above, trees also have strong cultural and spiritual value, providing a sense of place and bringing communities together. Our ancient and veteran trees may have been around for hundreds of years, providing a continued sense of identity.

Trees and other green spaces are crucial to ensuring that new development delivers resilient, healthy, and environmentally friendly places.



<sup>36</sup> Forest Research, <https://www.forestresearch.gov.uk/tools-and-resources/urban-regeneration-and-greenspace-partnership/greenspace-in-practice/benefits-of-greenspace/erosion-control/>