

# Green Spaces

MEA factsheet #1h



## Green spaces and climate change

Climate change and the Earth's green spaces are linked together in many complex ways. The way we use our green spaces can have a significant impact on climate change, something this factsheet explores in some detail. Likewise, climate change is likely to impact green spaces, making it difficult for plants and animals to survive due to altered temperatures and weather patterns. This vicious cycle can, however, be broken and our green spaces put to good use in helping to combat climate change. Even a walk in the woods can be a low carbon form of exercise!

## The importance of green spaces

From absorbing CO<sub>2</sub> to producing alternatives to fossil fuels, green spaces can have an important part to play in helping to reduce the magnitude of climate change. The following sections explain how.

### Reducing CO<sub>2</sub>

As plants grow, they absorb CO<sub>2</sub> from the atmosphere. This CO<sub>2</sub> helps them to grow and is assimilated into their tissues, locking it away and stopping it from having an affect on climate change. So long as the plant keeps growing, it keeps absorbing CO<sub>2</sub>. If the plant dies and rots away or is cut down and burned, the CO<sub>2</sub> is released back into the atmosphere again.

Both the rotting and burning of wood or other plant material are classed as carbon neutral. The amount of CO<sub>2</sub> released is the same as the amount absorbed in growing.

Even better than this, by planting new trees or vegetation in areas where there were previously none, CO<sub>2</sub> can be locked away. So long as these trees or plants are left in place permanently or replaced when they die or are harvested, this reduction in CO<sub>2</sub> will be long lasting and will help to combat climate change. However, it's important that native tree species are planted as these will best support the native animals and fungi that will ultimately carry out the rotting of the dead wood.

On the other hand, by reducing the amount of vegetation on a piece of land, the CO<sub>2</sub> levels in the atmosphere will ultimately increase. One of the key ways this is happening is through deforestation. As trees are cut down and used



as fuel or turned into paper which is disposed of to rot away in landfill, the CO<sub>2</sub> they were storing is released back into the atmosphere. Around the world, forests are being clear felled without replanting new trees. As a result, deforestation currently accounts for up to 30% of greenhouse gases.

However, buying sustainably produced timber products can help ensure that properly managed forests have a future. Look for the FSC logo on furniture, flooring and garden products.



### Regulating temperatures

Woodlands are well known for their ability to regulate temperature extremes, creating comfortable microclimates for the plants and animals that live there. This effect can also be harnessed in our towns and cities.

The smart location of trees in urban areas can create wind breaks in the winter, helping to reduce heating bills. Likewise, carefully placed trees can help to create shade in the summer, while cooling the air further through the transpiration of water through their leaves. Due to these effects, urban trees have been estimated to bring about a reduction of 25% in net cooling and heating, according to a study in California (Akbari, 2001)

## Growing food locally

We import over half our food, often over great distances, yet much of it could be grown here in ways that benefit our green spaces. Food makes up around 30% of our individual carbon footprint from its production and transport.

In the UK, food miles account for around 18 million tonnes worth of CO<sub>2</sub> emissions each year. This is the equivalent to travelling over 100,000,000 miles by plane - the same distance as to the moon and back 200 times!

A lot of this mileage can be avoided by buying locally produced food. Farmers markets and organic box schemes are great ways to do this. Look out for place of origin labels on food items in the shops. For the ultimate in local food, grow your own in your garden or on an allotment, or arm yourself with a guide book and go foraging!

The majority of agriculture's contribution to climate change comes from the use of synthetic nitrogen fertiliser. This generates nitrous oxide, a greenhouse gas over 300 times more potent than CO<sub>2</sub>. Organic farming avoids these fertilisers and uses less energy too.



## Replacing fossil fuels

Green spaces can be used to grow and coppice trees such as alder and willow, which can be used as a fuel in wood burning stoves and wood pellet boilers. These systems can be installed to replace oil fuelled boilers and gas central heating systems - both of which release large amounts of CO<sub>2</sub> in heating buildings.

## Reducing flooding

Cleaning up after flooding is costly, both in terms of finances and energy use. Unfortunately, flooding events in the UK are predicted to increase with climate change.

Careful management of our waterways and water catchment areas can help to reduce flooding, reducing the CO<sub>2</sub> emissions involved in cleaning them up. By planting trees in the upland areas that feed into our rivers and alongside riverbanks, more of the heavy rainwater is absorbed, helping to stop floods from occurring.



## Further Information:

### Big Barn

A directory of UK local food producers.  
[bigbarn.co.uk](http://bigbarn.co.uk)

### MWF

Wood boiler installation and wood fuel supply across the Midlands.  
[wood-fuel.co.uk](http://wood-fuel.co.uk)

### The Logpile

Contains an up to date database of wood fuel suppliers and pellet equipment suppliers.  
[nef.org.uk/logpile/index.htm](http://nef.org.uk/logpile/index.htm)

### Soil Association

Information on organic food and farming, including details of suppliers and local food campaigns in your area.  
[soilassociation.org](http://soilassociation.org)

### Forest Stewardship Council

Promoting responsible management of the world's forests.  
[fsc-uk.org](http://fsc-uk.org)

Updated June 2010

[www.mea.org.uk](http://www.mea.org.uk)  
[info@mea.org.uk](mailto:info@mea.org.uk)

marches  
energy agency 

Marches Energy Agency is a registered charity, number 1070942



