



## Life on the bright side of climate change

*Article for TCIA magazine based on a paper presented at the  
2010 Ohio ISA Chapter Conference, USA*

BTC/40/2010





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It would be easy to get carried away in the despair of climate change, but times are tough and people have additional worries. In the UK, just as in the US, we have a massive national debt, with no prospect of paying it off in less than decades, and weather extremes are already pushing our fragile lifestyle to the brink of collapse. With the merchants of doom preaching fiercer storms, frequent floods, hotter cities, evaporating water supplies and spiralling social instability, one could be forgiven for being consumed by the futility of it all! But, there is a brightside and, although environmental catastrophe may be near, we are not quite at the point of no-return yet. Indeed, trees provide a great opportunity to tip the balance back in our favour and, as tree managers, arborists (including urban foresters) can have a central role in pulling humanity back from the precipice.

From a global perspective, each of us can contribute to climate mitigation by reducing the amount of carbon we cause to be pumped into the atmosphere. Contrary to the scaremongers' propaganda, this does not have to be a big drama or that painful or require costly changes to our existing lifestyles, but it does need an understanding of the problem and the will to make change happen. As consumers, we hold great power in the way we spend our money and individuals supporting collective shopping trends are a force of great influence. It is called ethical buying, and suppliers of goods and services are acutely sensitive to it. You can make a dramatic difference by spending your money on products that are ethically sourced and delivered; everything from insurance to soap to energy. Individuals applying ethical values to their buying habits have the potential to make a big difference for a very small personal sacrifice.

Turning to arboriculture, how can individual arborists as a collective profession contribute to this international effort? Well, we should be under no illusion about climate mitigation; it is beyond our reach as a profession to make any significant impact on escalating carbon emissions. Planting trees in the urban realm has no realistic potential to mitigate, and we should not be concerning ourselves with it on a professional level. However, increasing canopy cover where we live and work has tremendous potential to make life more comfortable during the expected weather extremes. Climate adaptation holds a strong and vibrant future for arborists because tree benefits are numerous, the public has an instinctive affinity toward trees, and we have the management expertise to deliver green relief when it will be most needed. The raw currency of climate adaptation is square yards of canopy cover; within the bounds of the capacity of an urban area to support trees, the more canopy cover there is, the greater its resilience to climate

change. No one else can do this; that is why arborists matter.

In the UK, this is a daunting challenge; there will be no extra money, but the need is pressing and any delay in maximizing our urban tree stock will have uncomfortable consequences within our lifetimes. Our response has been to analyze urban canopy cover trends and to construct a strategy based on optimizing the potential of what we already have through minimizing waste and improving efficiency, all within existing budgets! A tough task at the best of times, made all the more difficult by the preliminary indications that our national urban canopy cover has been reducing for the last 20 years - and the rate of loss is escalating. The UK has an urban deforestation crisis now and reversing that trend is our immediate priority. The U.S. is facing similar challenges to its urban canopy. So far we have identified multiple causes of canopy cover loss in the UK, but no single reason stands out. Instead, widespread and consistent tree losses, driven by the convenience of removal as opposed to solving perceived problems, have gradually eroded this valuable urban resource without us realizing! Big mature trees are being replaced with hedgerow/border trees; highway trees are being felled and not replaced; good trees are not properly protected during development; newly planted trees are dying; existing trees of importance are not properly managed; city managers are not realistically factoring the value of trees into their decision-making processes; and the list goes on. The result is that lots of small losses over a long time have had a big adverse impact on our ability to cope with climate change; we are not in good shape!

There are many interesting problems and potential solutions that our investigations have thrown up, and some of those lessons may provide valuable pointers for the US in its efforts to combat climate



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change. For example, we identified that one of the major causes of canopy cover decline is the failure of newly planted trees, directly linked to tree production in the nursery and inadequate maintenance after planting. It is tough on the streets for trees and many never make it to middle age or maturity for a host of reasons. We think that small improvements in the way trees are selected, grown in the nursery and planted in the ground have the potential to wipe out planting failures and dramatically reduce establishment costs. Traditionally, nursery production has focused on the fastest growing trees in the smallest space to maximize the financial return at the nursery gate. The problem is that tall, thin trees reliant on intense watering and fertilization regimes are not well equipped to cope with harsh street conditions and often die or never flourish. One of our most promising avenues of research is into producing "tough trees" that can hit the streets running and cope with whatever is thrown at them. Genetically selecting provenances that can cope with poor urban soils, growing them at a wider spacing to increase stem taper and minimal watering in the nursery is proving to be a recipe for survival. They are more expensive to produce, but deliver dramatic savings during their life in the streets because they grow better, with much less maintenance.

The lessons so far are that big changes are tough to do because they cost money, existing legislative frameworks need updating and people have to alter

their lives. In contrast, small changes are not so hard; an adjustment here, increased emphasis there, better understanding of the reason to change and a coordinated approach are not going to have a dramatic impact on everyday lives. However, together their cumulative impact could be very effective indeed. Localized big changes are not necessary; widespread and coordinated small changes are a low impact strategy with the potential for a high impact result. Ultimately, successfully arguing the case for trees hinges on them being more valuable alive than dead. The challenge for arborists is to organize and extend the emerging body of evidence on the value of trees, and successfully communicate that to all those who can destroy them. Tree benefits are many and obvious, but there is no hope of delivering this potential without arborists and their expertise fronting the cause.

*Jeremy Barrell, of Barrell Tree Consultancy, is an international speaker and writer on trees, planning and climate change, based in southern England. He will be delivering the keynote at this year's Ohio Tree Care Conference & Trade Show, sponsored by the ISA Ohio Chapter in Columbus February 14–16. This article is a preview of his message of hope and the bright future ahead for arborists that he will be presenting at the Show.*





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Mike Glover of Barcham Trees ([www.barcham.co.uk](http://www.barcham.co.uk)) explains how research is showing that genetically selected trees grown at wider spacing on low intensity watering regimes are much better at surviving and require much less aftercare, making them much cheaper in the long run.