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“Dangerous” urban trees & community health & safety

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Introduction

- Forest Research project “Climate change and street trees”
- Reviews the governance structures relating to [individual] trees in the urban environment
- Strong governance protecting against immediate threats to human health and safety, but weak governance to protect against longer-term threats.

Research Problem

- General concern that urban tree canopy cover is decreasing
  - Street trees being removed
  - Large broadleaf trees removed and replaced with smaller species
- "Overall London is not losing its street trees. ... there has in actual fact been a net gain of over 8,000 ... an increase of just 1.66 per cent" (London Assembly 2007: 4)
- *Trees in Town II* (Britt & Johnston 2008: 43-44)
  - mean number of trees per hectare surveyed has (probably!) increased between 1992 and 2004.
  - from approximately 50 trees/ha to 60 trees/ha (mean for ALL England).
  - Increases shown in 5 of 8 English regions.

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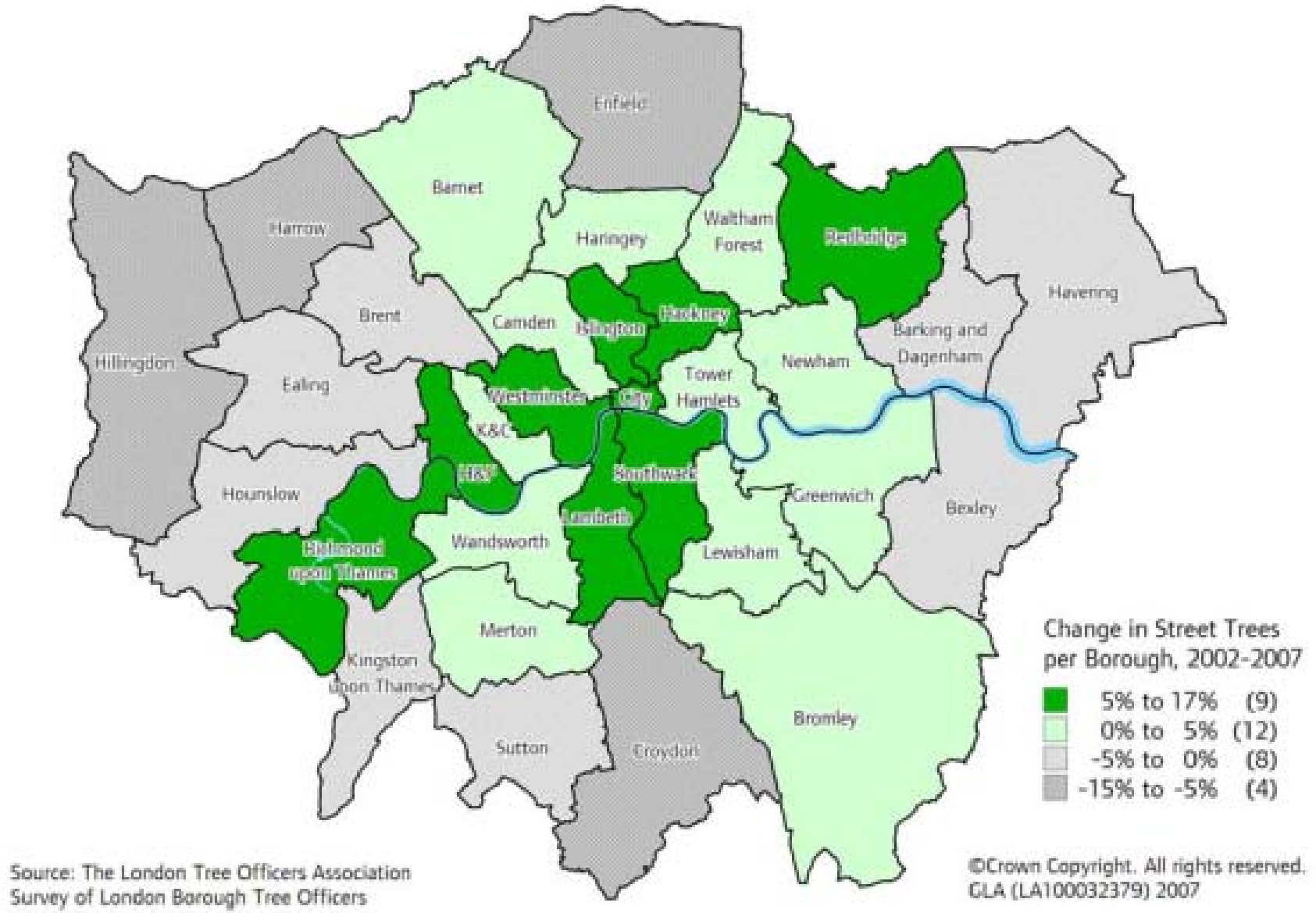

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Region	**Least** urban tree canopy		**Most** urban tree canopy	
	n	Towns	n	Towns
North-East	11	Peterlee, Skelton, Barnard Castle, Shildon, Ashington, Amble, Redcar, Hartlepool, Stockton-on-Tees, Langley Park, Bishop Auckland	0	
North-West	1	Blackpool	1	Windemere
Yorks & Humber	2	Hemsworth, Dearne	2	Huddersfield, Sheffield
East Midlands	2	Ibstock, Wirksworth	1	Whaley Bridge
West Midlands	3	Stoke-on-Trent, Newport, Rushall	1	Knowle
Eastern	1	Sudbury	1	Chigwell
South-East	0		8	Hythe, Midhurst, Tadley, Princes Risborough, Oxford, Crawley, West Kingsdown, Heathfield
South-West	0		6	Budleigh Salterton, Tavistock, Poole, Truro, Bristol, Christchurch

Source: Britt & Johnston 2008

Problems are (1) loss of big trees, (2) overall increases too small and (3) uneven distribution.

Reasons for urban tree removal?

1. "Fear of subsidence claims is possibly the single greatest threat to street trees in London ..." (Greater London Authority 2005: 34)

2. Interfering with new development of built environment

3. "the bulk of trees are removed for health and safety reasons" (London Assembly 2007: 4)
   - falling branches / trees,
   - tripping on roots,
   - slipping on fruit or leaves.

Removing urban trees – who decides?

1. Ownership

1. "any plant – whether a magnificent tree or a dying weed – is part of the land on which it stands ... the plant belongs to the owner of the soil surrounding the base of its stem" (Mynors 2002: 25)
2. common law 'duty of care' upon all landowners not to harm others – 'reasonable care' to ensure 'reasonable safety'
3. Legal liability for any harm where this 'reasonable care' is shown *not* to have been taken, a case can be made under the law of negligence
4. tree ownership generally brings with it the legal authority to make decisions about that tree - as and when the owner desires

2. Lack of 'protection'

1. Vast majority of *individual* trees require *no consent from authorities* to carry out work on them (including felling / removal)
2. Forestry Law - Felling licence regime weak regarding individual trees
3. Planning Law - TPO – mainly reactive/response to planning application
4. When tree is deemed 'dead, dying or dangerous' – no consent is needed under either forestry or planning law.

3. Lack of resources

1. Tree maintenance requires repeated / long-term resource allocation
2. Full assessment of 'dead, dying or dangerous' requires 'expert' knowledge

Liability + lack of constraint + limited resources = tree loss, or else...

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Other formal governance facilitating *removal*

- Highways Act 1980
- Electricity Act 1989
- Telecommunications Act 1984
- Civil Aviation Act 1982
- Regulation of Railways Act 1868
- New Roads and Street Works Act 1991 (Codes of Practice)

Governance promoting *retention, replacement and planting* of urban trees

1. Law – no general power for public authorities to require others to plant trees
   - Forestry
     - (Forestry Act 1967 – felling licence regime - restocking)
   - Planning Law
     - (T&CPA 1990 - tree preservation orders)
     - Application of Standards (e.g. BS5837; NJUG Guidelines;)
2. Policy
   - Forestry Commission (e.g. *Read Report*; RFF/S)
   - Others – e.g. DEFRA; Local Authorities; Trees for Cities; Woodland Trust
3. Best Practice (NHBC; CfSH)
4. Informal designations ('veteran' trees; 'Great Trees of London')

Health and safety risks of urban trees

- Major hazard is vehicles hitting standing trees
  - "25% of all fixed object accidents each year in the United States, resulting in deaths of approximately 3,000 people ... Specifics of accident rates and crash circumstances in urban areas are not well understood" (Wolf & Bratton 2006)
  - Inter-relationship of these accidents and other factors such as drink-driving and speed, not analysed.
- Defective trees falling on (or in path of) people or vehicles appears to be a small risk
  - Few defective trees - "Very few [trees] were considered to be either in poor condition (2.4%), or dead or dying (0.4%)." (Britt & Johnston 2008:102)

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Is *all* removal for health & safety necessary?

"with proper risk assessment and appropriate risk management ... many more trees could probably be saved from felling." (Britt & Johnston 2008: 99)

"there has also been considerable loss of veteran tree habitat due to ill-informed safety management"
(English Nature 2000: 2)

Urban trees contribution to safety and health

1. Community safety, cohesion and 'informal surveillance'

- correlations between the 'greenness' of urban spaces (including trees) and reduced crime (Kuo 1998; 2001; 2003)
- increased *use* of community spaces when treed and resultant increased interaction between community members (Kuo *ibid*; Sommer & Sommer 1989; Schroeder & Ruffalo 1996)

2. Road safety

- trees can *improve* driving safety – e.g. reduction in speed resulting from improved landscaping (Burden 2008; Dumbaugh 2005; Naderi 2003)

- "Although outright removal may lead to a reduction in injurious roadside accidents, the broader benefits that trees provide or their value to communities is not attained. Research about trees as roadside technology should address both deterrence and mitigation approaches. Knowledge about the physical properties of various trees and configurations of tree placement would enable roadside design that integrates plant life as a safety feature." (Wolf & Bratton 2006: 176)

Mitigating the health impacts of climate change

1. Heatwaves – “a major concern”
   - 9-day heatwave (averaging 27°C in South-East England,
   - over 3,000 immediate heat- related deaths
   - 6,350 heatrelated deaths throughout that summer in Britain
2. Flooding
   - 80,000 properties in towns and cities are at risk from ‘intra-urban’ flooding (EA)
3. Ultra-violet raditation
4. Air pollution (especially ozone [o_3])

Trees can *help* to mitigate all of these

Balanced governance?

1. Do current governance structures and processes facilitate a balanced assessment of the relationship between urban trees and community ‘health’?

2. Governance facilitating the removal of immediate health risks is strong.

3. Governance promoting longer term community health is relatively weak.

How can governance be re-balanced?

Street trees are often within the control of the 'state' (i.e. highway authority)

A. Stronger 'business as usual' policy (good FC examples; Local authority SPDs)
B. Better institutions / resources – legal challenges; wider organisational involvement
C. Better use of existing legislation – stronger felling licence or TPO regime
D. New legislation – legal 'rights' for street trees. (allocate 'guardians')

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Thank you

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