



Nursery & Garden Industry
Australia

Case Study

For immediate release

The new blueprint for green space

The nursery industry is another step closer to benefitting from a national framework for measuring urban green space (UGS), after the completion of the research project, 'Measuring Australia's green space asset'.

A national system of metrics and measurement to quantify both the demand side of UGS (land cover, extent of the area) and the supply side (benefits to health, local economy, visual improvement) would provide valuable information for nursery growers, media producers and landscape architects looking to supply planting material for cities.

Researchers from the University of Technology Sydney (UTS) concluded that a nationally consistent framework or 'blueprint' to measure a range of factors for urban green space was highly likely to be adopted and could realistically be implemented.

The 'Measuring Australia's green space asset' (MUGS) project, an initiative of Hort Innovation's Green Cities Fund, was co-funded by UTS, levies from the nursery and turf industries and the Commonwealth Government.



Map of green space for Melbourne with Sentinel EVI2, 12 December 2016. Figure provided from the MUGS Final Report

The Green Cities Fund supports strategic, longer-term research to drive a measurable increase in urban green space and build on the momentum created by 2020 Vision, which aims to make urban areas 20 per cent greener by 2020.

UTS researchers working on the project examined methods, approaches and tools of measurement through stakeholder interviews and focus groups, and reviewed local and global scientific literature to develop a blueprint for mapping, monitoring and reporting on UGS in Australia.

Researchers stressed the need to distinguish between a metric – a specific system or standard of measurement, such as the number of trees – and a measure or means of measuring that typically comprises a multitude of metrics.

The project examined a range of measuring methods including:

- Ground tree surveys and tree mapping
- Urban green infrastructure mapping
- Ecosystem services frameworks and models
- Geospatial modelling and mapping technique
- Aircraft/satellite mapping of greenness, heat, wetness, land cover type



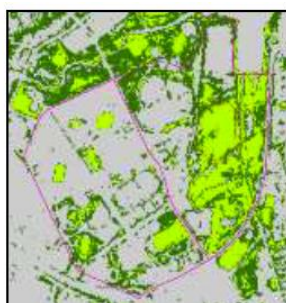
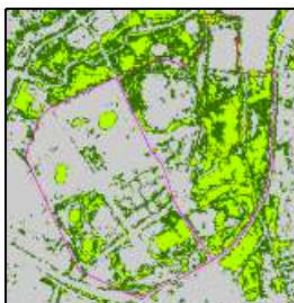
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- 3-d LiDAR and radar mapping techniques.

These were investigated within three broad systems – environmental, such as measuring climate change mitigation and habitat division; social, such as human health and wellbeing, cultural, visual and aesthetic factors; and economic, covering commercial vitality and property values.

Researchers found a strong interest in a more consistent, possibly national approach to the measurement of UGS, but questions remain as to whether this should be broad, and include structural elements such as green roofs and walls, or more specifically focused on the types of green and open space typically managed by councils.



Map of green space in Sydney's Olympic Park through different seasons. Figure provided from the MUGS Final Report

Local governments appeared to be most in need of a consistent method of measuring UGS, supported by state and Federal governments, but the commercial sector including developers and landscape architects varied in their approach and the methods they used to measure various dimensions.

Commercial approaches and methods were often developed for specific projects and not 'codified' in stand-alone software and online platforms for wider use, and any inventory of these approaches would also need to consider commercial intellectual property.

Typically, researchers found a core set of measures around quantities of urban trees and canopy cover was mentioned before any measures of use and experience. A second category was measuring ecosystem services, or the benefit that nature provides to people through heat mitigation, air quality regulation, the provision of shade and shelter, and scenic beauty.

The accessibility and quality of UGS were also seen as relevant factors to measure.

Several focus group members were interested in measures that could support asset management processes, since UGS asset managers must consider the benefits of vegetation relative to their risks, such as trees falling on people and roots causing damage to other critical infrastructure.

Researchers collated their findings into a series of groupings or 'frames' where users would apply UGS metrics:

- Vegetation management – quantity and quality of trees, grass, phenology and other types
- Asset management – measures defining UGS as assets, including risks and benefits
- Ecosystem management – measures addressing the role of the urban vegetation in the wider (urban) ecosystem



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- Urban planning – spatial relationships between supply and demand of vegetation
- Human wellbeing and liveability – relationships between the presence of vegetation and its use and experience by people.

Some of these frames had a higher ‘innovation potential’ – the potential to address a knowledge gap. Hard tools are already available for measuring vegetation in UGS, but the human wellbeing and liveability category is seen as the ‘Holy Grail’ of measurement.

The blueprint was presented at the EcoCity World Summit in Melbourne and the 10th Making Cities Liveable conference in Brisbane in July, and is available to the public.

For a copy of the final report, please visit the Hort Innovation website and complete an order form (<http://horticulture.com.au/resources/final-report-order-form/>).

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