



## New management for Brisbane's natural assets

**As increasing numbers of people move to the region, Brisbane City Council is assessing the feasibility of using asset-based management processes, traditionally used for managing infrastructure such as bridges and roads, to help define and manage natural assets such as wetlands, parks and water quality. It's an approach that puts the value of ecosystem services on the same level as other key infrastructure.**

As the fastest growing region in Australia, south-east Queensland needs to work hard to continue to provide green spaces for its residents and visitors to enjoy.

Through the development of Brisbane City Council's 'Living in Brisbane 2026' document, it was found that Brisbane residents place a high value on recreational opportunities, its green and shady nature and eco-friendliness.

One million people are expected to arrive in the next 20 years, so the demand for natural spaces will increase, along with housing and development, road infrastructure and services.

Over the next few years, Council expects

to plant two million trees, and to restore Brisbane to 40 per cent bush cover by 2026. But with the greater number of natural assets comes a greater need to protect and manage them.

As part of its bid to preserve Brisbane's natural capital and quality of life, Brisbane City Council asked CSIRO Sustainable Ecosystems to assess the feasibility of using asset-based management processes, usually used for urban infrastructure, to help develop a management process for the city's natural assets.

'Environmental asset management is being adopted by various other Australian local governments, mainly due to the rapid growth of urban areas being seen across the nation, and with that, the increasing importance of "green" or natural spaces to citizens,' says Dr Leonie Pearson, an environmental economist with CSIRO Sustainable Ecosystems.

'To date, however, management of natural assets via environmental asset management planning (EAMP) has been done in a piecemeal, *ad hoc* fashion, highly dependent on the context of

application and the perceived need of the management process.'

Generally, local governments have undertaken 'State of the Environment' reporting to describe natural assets, but EAMP will provide an opportunity to incorporate the concept of 'ecosystem services' (such as water storage by aquifers, or air quality management by trees) and the associated natural assets into a management system built directly into council decision-making.

'This will hopefully mean that there is more acceptance of the concept of ecosystem services and as a result of EAMP, the importance of these assets can be recognised and accounted for,' explains Dr Pearson.

CSIRO looked at the internal processes in the Brisbane City Council, reviewed national and international examples of managing natural assets, and suggested a way that EAMP could work for the Council.

There are practical benefits for local councils in implementing EAMP. For one, the process aligns the value of each natural asset with the financial expenditure it deserves. Asset management frameworks are also transparent, accountable and robust, and can be accredited by various external agencies or groups. But the real advance is that using them puts natural assets on an equal footing with the built environment during budgeting discussions.



**Urban growth is requiring new measures to safeguard and plan green assets in and around Brisbane.** Holger Mette, iStockphoto

‘We interviewed seven managers from across various business units with the Brisbane City Council to test the EAMP,’ says Dr Pearson.

‘We found<sup>1</sup> that the idea directly engages senior decision-makers in managing natural assets, something that has not generally been the case in the past.’

However, implementing an environmental asset plan is difficult as not all ecosystem services are equal – no single category captures the diversity of what a fully functioning ecological system provides to people. So, particular ecosystem services need to be linked to individual environmental assets, such as a wetland, and then associated with values.

The Brisbane City Council is therefore currently developing a regional classification system for its local ecosystem services and their supporting assets. Once this framework is finalised, the Council can then use this common language for categorising natural assets in its EAMP.

### Ecosystem services in cities

Common features of Australia’s cities are large parks, tree-lined streets and backyard vegetation. These natural assets don’t



**Top: Moreton Bay fig and Jacaranda trees on Brisbane’s Coronation Drive. EAMP can link ecosystem services to individual green assets, such as trees.** Jo Savill, CSIRO

**Bottom: Even small riverside clumps of mangroves provide useful ecosystem services to Brisbane.** Jo Savill, CSIRO

simply look pretty – they also provide a range of ecosystem services for urban citizens. Areas of vegetation usually contain relatively high levels of biodiversity providing habitat for a range of animals and plants that help ecosystems function. Trees and other types of vegetation are also natural air conditioners for cities – they can lower summer temperatures and provide shade, thus decreasing energy usage by conventional air conditioning, for example.

Since many Australian cities are located near major rivers or the coast, they also often contain stretches of wetland vegetation. Even small and isolated wetlands, such as a few mangroves along a river, provide a range of important ecosystem services. Wetlands can improve water quality by, say, removing nutrients that have been released from sewage treatment plants, and they can also buffer waves and protect urban areas from storms and floods. Wetland vegetation adds further service by controlling erosion



**Parklands not only provide visual and recreational amenity, but also cooling, animal habitat and some stormwater control as added ecosystem services.** N Joy Neish, iStockphoto

through binding and stabilising the soil.

Natural assets also provide a large range of recreational, educational and aesthetic services in cities. Attractive landscape features such as trees and water bodies can also enhance housing conditions and increase property values.

Overall, natural assets in cities provide for a more healthy, safe and pleasant environment in which to live and work. They contribute to the well-being of citizens and can save the costs of many urban services such as water filtration. Their continued functioning is critical to the liveability of Australian cities.

That said, this role of natural assets is rarely understood by people living busy modern lifestyles, meaning such assets can often be undervalued in urban areas. To address this, local councils are trying to find new ways to value these natural assets and to secure funds for their integrated management. Environmental asset management provides an accessible new approach.

● Sonja Heyenga and Jo Savill

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<sup>1</sup> Pearson L, Heyenga S, Wang X and Whitten S (2007) Environmental Asset Management Plan Feasibility Study – Brisbane City Council. St Lucia. CSIRO Sustainable Ecosystems.