



CONNECTING PEOPLE AND NATURE IN URBAN LANDSCAPES



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Green space and natural areas play an important role in the health and well-being of people living in cities. There is mounting evidence to show diverse health, social and economic benefits are gained when people living in urban areas interact with nature in their daily lives. Maintaining enough space for nature, and connecting areas of nature in urban landscapes, provides multiple benefits for urban communities.

Make room for biodiversity

Maintaining biodiversity in urban landscapes is challenging. Competition for land over housing, infrastructure and development, reduces the area available for biodiversity and often leads to a loss of critical connection between remaining natural areas. Small, disconnected and isolated patches of habitat are prone to weed invasion, high nutrient input and other pressures. Maintaining a diverse assemblage of native plants and animals may improve the ecological function of such patches and ultimately increase our ability, and that of plant and animal communities, to cope with climate change in urban areas.

Biodiversity Sensitive Urban Design (BSUD) offers a way through these challenges. Innovative planning processes that integrate infrastructure design, community well-being and the needs of biodiversity generate opportunities for people to engage with the natural environment and bringing a wealth of social, and economic benefits to the community.



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Centennial Park, Sydney

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Connected corridors for biodiversity

The Southern Sydney Regional Organisation of Councils (SSROC), with funding from the Australian Government through the Sydney Coastal Councils Group's (SCCG's) Sydney's Salty Communities program, has implemented a project called

Pockets of bushland in urban areas improve the health and well-being of urban communities. Even small patches can support a range of plants and animals and play an important role in conserving biodiversity across urban landscapes.

Connected Corridors for Biodiversity (CCB). The project encompasses a total of 23 pre-amalgamation local government areas and aims to create tools that assist Councils to increase habitat connectivity, and thereby increase the resilience of biodiversity to climate change and other threats across the project area. The tools include:

- A habitat corridor map to guide the enhancement of habitat connectivity across the highly urbanised project area and facilitate a more coordinated, regional approach to habitat conservation and connectivity

initiatives.

- A guide to the regulatory tools, financial incentives and other mechanisms that can be used by Councils to promote biodiversity conservation on privately-owned land.



Connecting with nature in an urban context

Associate Professor Sarah Bekessy from RMIT spoke to SCCG managers, planners and on-ground staff attending an October 2016 capacity building workshop about the many benefits of creating and maintaining natural areas in urban environments.

Sarah emphasised that nature is a crucial element of livable cities and a shift in the way urban areas are planned so as to include natural areas and green space is essential rather than something that can be 'offset'



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elsewhere if lost. Additionally, broader perceptions of natural areas may be required beyond our customary view of large, intact ecosystems: even small natural areas such as remnant bushland, parkland and street trees can create corridors and contribute in important ways to the ecological network of a city and be valued by people in such an urban setting.

Sarah presented five compelling reasons why biodiverse green space should be embraced in urban areas. The main themes are outlined below.

1. Health and well-being

Urban dwellers exposed to biodiversity demonstrate a range of physiological and psychological benefits including reduced incidence of disease and higher levels of well-being. These benefits are well recognised by published studies and provide a compelling case for public investment in planning livable cities with access to nature and green spaces.

2. Increasing resilience to climate change

Natural areas and green spaces in urban environments help to ameliorate the 'urban heat island effect', which

is likely to be exacerbated by the increasing incidence of heat waves expected with climate change. Vegetation provides a cooling effect through shading, reflectance and evapotranspiration, in addition to other ecosystem services provided.

3. Threatened species conservation

Pockets of natural areas provide critical habitat refuges for biota including threatened species, which tend to be over-represented in urban landscapes compared to rural areas. Providing for a greater diversity of species and more structurally complex habitats greatly benefits biodiversity, including threatened species. Further, studies have shown that green spaces with higher levels of diversity provide greater human health benefits compared to less diverse areas.

4. Re-connecting with nature

With the growth and development of cities has come a decrease in natural areas and a disconnection of people

BIO Map

The Office of Environment and Heritage (OEH) has produced the Biodiversity Investment Opportunities Map (BIO Map). It identifies core bushland areas and corridors for priority investment. These areas are important at regional and state level and BIO Map aims to strategically direct investment in order to achieve better biodiversity



from the natural environment. Urban planners have the opportunity to plan for livable cities by enabling communities to interact more productively with green space and natural areas, increasing health and well-being and building a stronger sense of connection and stewardship of these areas.

5. Connecting Indigenous culture & history

An increasing proportion of the world's indigenous population lives in cities and other urban environments. This often results in a loss of cultural identity and difficulties passing on traditional knowledge. Engaging Indigenous people in the planning, design, implementation and governance of urban nature will provide multiple benefits and opportunities.

outcomes. Currently BIO Map has been developed as a pilot in the Cumberland subregion in western Sydney and in the Illawarra. These maps are publically available and by providing a means to focus on connecting natural spaces will support the longer-term survival of wildlife. BIO Map identifies areas where landowners have more opportunities to receive funding to voluntarily protect their bushland. The BIO Map can also assist councils and the community to draw a link between local actions and wider efforts to conserve biodiversity.

References and further reading

- T. Astell-Burt, X. Feng, G. S. Kolt, **Is Neighborhood Green Space Associated With a Lower Risk of Type 2 Diabetes? Evidence From 267,072 Australians.** *Diabetes Care* 37, 197-201 (2014).
- D. E. Bowler, L. Buyung-Ali, T. M. Knight, A. S. Pullin, **Urban greening to cool towns and cities: A systematic review of the empirical evidence.** *Landscape Urban Plan.* 97, 147-155 (2010).
- G. E. Garrard, N. S. G. Williams, S. A. Bekessy, (In review) **A new protocol for biodiversity sensitive urban design.** *Conserv. Lett.*
- F. E. Kuo, W. C. Sullivan, **Environment and Crime in the Inner City: Does Vegetation Reduce Crime?** *Environ. Behav.* 33, 343-367 (2001).
- G. Lovasi et al., **Children living in areas with more street trees have lower prevalence of asthma.** *Journal of Epidemiol. Comm. H.* 62, 647-649 (2008).
- A. M. Rizwan, Y. C. L. Dennis, C. A. Liu, **A review on the generation, determination and mitigation of Urban Heat Island.** *J. Environ. Sci.* 20, 120-128 (2008).
- World Health Organisation, **Climate change and health.** *Fact sheet, Number 266* (2015).

The Urban Biodiversity seminar series delivered by ARC was supported by Sydney Coastal Councils Group through funding from the Australian Government.



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