Urban nature-based solutions: Adaptive governance and monitoring

Urban green-blue spaces, such as parks, waterways, street trees, gardens and nature reserves are essential elements of resilient and liveable cities. As well as being aesthetically pleasing, green-blue spaces provide many functions and benefits for people and the other species that call our cities home. They cool our cities, treat air and water, provide space for recreation and connection, and habitat for biodiversity.

As urban ecosystems develop and adapt to changing environments, an adaptive governance approach can underpin a flexible and responsive framework for ongoing green-blue space management. Adaptive governance is supported by effective monitoring, involving ongoing collection of data on selected indicators that can reveal changing site conditions and shifts in ecosystem function, form and composition.

Adaptive governance

Adaptive governance recognises that ecosystems change over time, and that changes may be uncertain and unexpected and abrupt. Therefore, flexible, integrated, and responsive governance systems are required to deal with the system's dynamism and uncertainty.

Effectively managing and maintaining the dynamic evolution of urban ecosystems requires the involvement and coordination of a diversity of stakeholders from different levels of government and from across the community. Table 1 summarises key aspects of adaptive governance and the benefits of their application to urban ecosystems.

Images: (above) Heron, Brisbane and (left) Kangaroo Grass Themeda triandra, Northcote, Melbourne. Second page: citizen science and fieldwork data collection. Credit: Judy Bush.

Table 1: Adaptive governance and urban ecosystems *(Adapted from Stanford and Bush 2020)*

Adaptive governance elements	Application to urban ecosystems
1. Learning through experimentation and feedback	Experimentation and innovation
	Provision for careful monitoring
	Findings are fed back into policy and continued management
2. Collaboration and partnerships between government and non-government actors for planning and implementation	Roles, responsibilities and recognition for both government and non-government actors
	Capacity building and resourcing for management and monitoring by collaborators, partners and non-government participants
	Provision for autonomy in activities
3. Vertically and horizontally interconnected networks and systems of governance	Use of bridging organisations, such as alliances, networks, professional associations and think tanks
	Mechanisms for sharing knowledge between all levels of governance

Monitoring and evaluation

Adaptive governance also requires ongoing monitoring of the system and its parts so that health, functioning and changes are identified and can then be addressed. Monitoring key site and ecosystem indicators allows ecosystem changes to be identified and documented, and adjustments made to management actions. Monitoring also underpins ongoing accountability and reporting to stakeholders, governance partners and community. Monitoring can inform program learning and contribute to ongoing improvements in management actions, resourcing and governance.

For local residents: Get involved!

• Find out about the biodiversity that is native to your local area through citizen-science initiatives. Discover local friends groups and join in planting days, Waterwatch and bird-watching activities. Log the results of your biodiversity monitoring to local or national wildlife atlases.

For policymakers and planners: Lead with good practice!

• Develop field guides for local residents, workers or visitors to identify and monitor biodiversity in your local area.
• Link with local, state or federal conservation activities and programs such as Australia's Strategy for Nature.
• Promote global and local sustainability and biodiversity days such as National Tree Day, World Wetlands Day and National Threatened Species Day.

Here are some links to help you get started:
• Australia's Strategy for Nature https://www.australiasnaturehub.gov.au/national-strategy
• Australian Citizen Science Association https://citizenscience.org.au/ala-project-finder/
• Atlas of Living Australia https://www.ala.org.au/home/record-a-sighting/
• Birdlife Australia http://www.birdlife.org.au/get-involved

More information

CAUL factsheet: Urban Greening: Monitoring and Evaluation https://nespurban.edu.au/wp-content/uploads/2019/12/Urban-Greening-Monitoring-and-Evaluation-Factsheet.pdf
CAUL academic paper: https://nespurban.edu.au/wp-content/uploads/2020/04/Bringing-nature-back-into-cities.pdf

Citation: Bush, J, 2020, Urban nature-based solutions: adaptive governance and monitoring Project 3.8 Factsheet, CAUL Hub, Melbourne.

The Clean Air and Urban Landscapes Hub is funded by the Australian Government's National Environmental Science Program.

Sources

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