

**RESILIENT
EAST**

*Climate Ready
Eastern Adelaide*

Street Tree Species Guideline

A working guideline to help with
climate ready greening in the eastern
region



City of
Norwood
Payneham
& St. Peters



Street Tree Species Guideline

A working guideline for Resilient East Council staff to consider for street tree replacement programs, street upgrades and open space to help increase greening for climate resilience in the eastern region.

(Version 1 Dec 2020)

Background

Resilient East Councils are acutely aware of the direct risks that climate change creates for urban canopy cover green spaces and particularly on our street trees as well as greater indirect risks such as pathogens and plant parasites which can further harm trees under climate stress.

There is a wealth of collective knowledge across the Resilient East Councils which continues to grow through trialling new strategies and reviewing the probable causes or poor tree health and mortality. To date this knowledge was only shared ad hoc and informally.

What is this guideline?

This Guideline captures practical knowledge of many Resilient East council Arborists to assist in urban tree selection. It is a list of over 100 common trees species found in this region with an assessment of various attributes. Arborists used their local industry knowledge to assess attributes that relate to the suitability of a tree in a heating and drying climate including: useful life expectancy, pruning and water needs, its resilience to drought, pests and severe weather events. Trees found in the landscape but might now be inappropriate have not been included.

What are the predicted climate impacts for Adelaide? (Green G and Pannell A (2020))

Globally we are at 1°C of warming already, with the average for South Australia being higher at 1.3°C. Under a high emissions scenario, by 2050 it is projected that:

- Average temperature increases by up to 2.1°C
- The number of days over 35°C increase by 40% and 40°C by 50%
- Annual rainfall decline between 6-15%, and more seasonal variability (greatest decline in spring)

- More extreme weather including heatwaves, storms, flooding and fire risk days.

Some of the related impacts of these climatic changes on trees include: increased stress on water resources and reduced water availability throughout the year, increasing demand for irrigation, loss of biodiversity, potential changes to growing season and plant growth, and increased range and migration of pest plants and animals.

What is the purpose of this guideline?

The Guideline has been developed to assist Resilient East Councils plant a diversity of species that will be suitable in a changing climate.

The Guideline is not a rigid decision-making tool, as there are many factors which may influence a selection process including community preferences and expectations, soil condition, slope, aspect, biodiversity needs, and water and space availability.

What the Guideline can do is provide useful information relating to how a species selection and or how several plant species, trees and shrubs, could perform to meet needs in a particular location.

The Guideline can also assist in communicating why some species of trees may not be suitable in a location, either now or into the future, with continuing impacts of climate change, to encourage diversity within our streets and to reassess risks for the current tree stock.

How can it be used?

This Guideline can be used to support Council staff contractors, landscapers, private developers and existing property owners in street tree selection, particularly those in eastern Adelaide



It can be used to inform updates of street tree lists and improve biodiversity by demonstrating the range of trees with comparable advantages.

How is it different to and can complement other plant selector tools?

The species guideline is specific for use within the Resilient East area. Industry knowledge from Arborists within the local government sector have tailored specific species traits and tolerances through years of on the ground observations and experience.

This list should not be used exclusively, but in conjunction with other resources available, for example, SAPN lists and the Botanic Gardens Plant Selector Tool.

Attribute definitions (top row of spreadsheet)

How can it be updated?

The list is not exclusive list of suitable trees but a working document that requires updating as necessary via notification to the Chair of the Resilient East Canopy and Heat Action Working Group to consider and approve amendments. We are facing unprecedented conditions while planning for long lived trees, so it is a work in progress. As more information becomes available this list can be updated to reflect current situations and science or changes.

If you have any suggested changes please contact hello@resilienteast.com.

Attribute	Definition and relevance
Origin	The origin of a plant may be a factor when seeking to maintain or support local provenance or choosing a plant. Indigenous: local to the area (local provenance), Native: local to elsewhere in Australia, Exotic: not from Australia originally.
Height	Describes tree height at maturity in metres assuming typical soil and water conditions.
Width	Describes trees crown diameter at maturity assuming typical soil and water conditions.
Form	The natural form or shape of the tree.
Evergreen or deciduous	Evergreen trees can moderate micro climate all year round (cooling in summer and reducing frosts in winter) but they may also shed plant material all year round and can screen out winter sunshine. Deciduous trees can cool in summer and let full sunshine through in winter. They are associated with the Autumn shedding of leaves which can be a problem for stormwater systems and maintaining clear streets and footpaths. Semi-deciduous trees partially lose foliage during the year.
Life expectancy	The expected life span of a tree in an urban environment, estimated in year ranges.
Potential to gain legislative status	Species has the potential to gain legislative status in the future, because its circumference at 1 metre height may become greater than 2 metres or more.
Pruning needs	Relates to the frequency and extent of pruning required for a tree to be managed in an urban environment such as footpath and road clearances – high, moderate or low.

Water needs	Identifying where trees might benefit from water sensitive design solutions.
Pests and Disease	Any known pests or disease currently observed as impacting this species.
Drought tolerance	The recognised ability of a tree species to endure prolonged dry periods and higher temperatures. There are recognised examples of species that already suffer from poor health and mortality during drought.
Severe weather event tolerance	Trees recognised as having a low, moderate or high tolerance to storm events.
Tolerance to Development Impacts.	Describes species tolerance to urban disturbances and constraints such as cutting off tree roots, soil compaction or limb removal.
Shade	Describes amount of shade provided by tree at maturity – low, moderate, high.
Important habitat for fauna	Trees that provide nesting and shelter opportunities for urban birds, mammals and insects as well as food sources in flowers, fruit and seed will support urban biodiversity. Tree hollows may take more 60-100 years to form and it is unlikely that many trees will reach that duration of life unless adequately management. Ranked at low, moderate, high.
Regulated to plant under powerlines	Trees that may be planted in proximity to certain public powerlines as per the regulated list in the Electricity Act. Check legislation for further detail.

Resilient East is a regional climate partnership between state and local government organisations in eastern Adelaide. It is about making sure the eastern region remains a vibrant, desirable and productive place to live, work and visit, and that our businesses, communities and environments can respond positively to the challenges and opportunities presented by a changing climate.

Resilient East regularly works with agencies and organisations from all levels of government, NGOs, community groups, individuals and the private sector.

We acknowledge this land as the traditional lands for the Kurna people and we respect their spiritual relationship with their country.

This Guideline was prepared by the Resilient East Canopy and Heat Working Group.

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Visit resilienteast.com for more information.

Contact us: hello@resilienteast.com

Climate projections referenced from: Green G and Pannell A (2020). [Guide to Climate Projections for Risk Assessment and Planning in South Australia](#), Government of South Australia, Department for Environment and Water, Adelaide.



