



AUSTRALIAN  
GARDEN  
HISTORY  
SOCIETY

# AGHS framework for action on CLIMATE CHANGE

The mission of the Australian Garden History Society is to promote awareness and conservation of significant gardens and cultural landscapes. It does this through engagement, research, advocacy, and other activities. To achieve that mission the Society must consider how climate change affects gardens and cultural landscapes.

## Climate Action

Climate change is already causing the modification of natural and ornamental ecosystems and the loss of human life.



**Goal 13 of the UN Sustainable Development** calls for urgent action to combat climate change and its impacts. It is intrinsically linked to the other 16 goals of the 2030 Agenda for Sustainable Development, which promotes prosperity for all while protecting the planet.

Combating global warming requires a unified worldwide effort, at the international, national and local level. Direct local action includes changing the way we live and the way we care for our immediate environment, including our private and public gardens and cultural landscapes. The scale of the challenge is daunting.

The Australian Garden History Society has drawn up this document, accompanied by resources published on the website, to inspire and guide both custodians of old gardens and existing landscapes and gardeners creating the history of the future. We offer guidance about how to mitigate and adapt to the effects of climate change.

## Definitions

**CULTURAL LANDSCAPE** The UNESCO definition is 'the combined work of nature and humankind, expressing a long and intimate relationship between people and their natural environment'.

**GARDEN** A garden is a type of small-scale cultural landscape. It is a planned space, usually outdoors, that is set aside for the cultivation, display and enjoyment of plants and other forms of nature. *The Oxford Dictionary* begins its definition of a garden as 'a piece of ground devoted to growing flowers, fruit or vegetables. It may be a larger area such as a pleasure ground or parkland.

**MITIGATION** avoiding or reducing the emission of greenhouse gases

- e.g. planting and retention, especially of large, old trees, and succession planting

**ADAPTATION** responding to changes anticipated to come with global warming

- e.g. selecting drought tolerant plants, minimising hard pavements

## Gardens and landscapes are the embodiment of change

Plan for change from the base of passed-down practice; expect the unexpected and don't give up on garden making. We need gardens. Our grandchildren and future generations will need them too.

[Trevor Nottle](#), AGHS South Australia

Green spaces, in the form of public and private gardens, green infrastructure, forests and broad-scale landscapes can transform microclimates and help with adaptation to a changing climate. They contribute to carbon capture and climate mitigation on a global scale. They are vital for human health and wellbeing, contribute to biodiversity and sustain wildlife in urban areas, cool our towns and cities, capture pollutants and alleviate flooding.

These spaces are also facing threats from climate change and demographic shifts. To tackle these requires, as Jane Lennon has explained<sup>1</sup>, greater integration of Indigenous caring for Country, so that we achieve a more holistic management of the interconnected layers of cultural landscape.

The conservation of significant gardens is a complex business. There is an inherent tension in conserving something composed of living elements with variably finite lives as well as the infrastructure that maintains and contains that life. A changing climate means that the plant species or cultivars used to create a garden or living landscape may not continue to be suitable for the site. It may also mean faster erosion and the deterioration or shorter life-spans of some materials used in gardens. These sort of effects add to the already complex question of how to conserve, restore or recreate a significant landscape, created one year, 200 years or 60,000 years ago.

## AGHS climate change actions

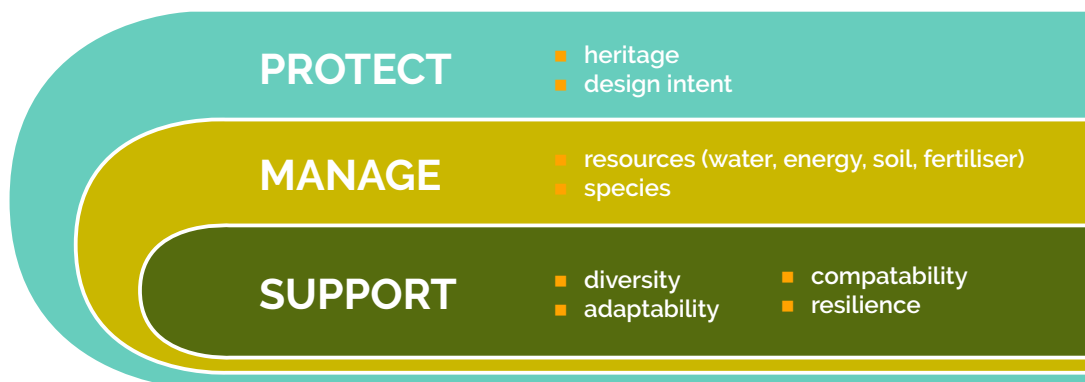
The Society commits to:

- 1 foster a low-carbon' (ideally a net carbon neutral to positive) approach to all our activities
- 2 assist garden owners and custodians of cultural landscapes to understand and conserve heritage values in the context of responding to changing climatic conditions
- 3 support research on climate change adaptation, mitigation and management in the field of gardens and landscapes, particularly in regard to understanding and driving action in historic gardens and landscapes and their evolving interpretation
- 4 promote up-to-date alternatives to unsustainable practices
- 5 establish linkages with other organisations to increase awareness of the importance of gardens and landscapes in responding to climate change and to the conservation and adaptation of heritage gardens and landscapes.

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1 Lennon, J. (2016). Sustaining Australia's Cultural Landscapes. *Landscape Journal*, 35, pp. 271–286.

## A framework for action



## Actions for garden owners

**First, understand the significance of a garden or landscape.** Draw on the knowledge of Traditional Custodians of the land. Part of the process of evaluating significance is to determine which values are of most importance at the time, noting that heritage values of a place or object change over time, as do their intent and purpose. **This must be done before assessing the climate risks.**

**Then seek the best, evidence-based advice on climate change adaptation, mitigation and management.** This advice will include climate modelling for your region; a thorough understanding of the site (including aspect, soil type, water availability, drainage, shading and other climate mitigating factors); and consideration of other goals and concerns: e.g. overall senescence, pathogen and disease impacts (now or predicted), climate-sensitive design and current water availability.

**Assess the risks to the garden or landscape.** This assessment should include the likely consequences of 'doing nothing' (keeping the existing approach to maintenance and plant replacement) and risks to particular objects or components (for example, specimen plants, sub-landscape, integrity of design). Examine the capacity for adaptation and the consequences of intervention for heritage values, intent and purpose. Consider how further resilience could be provided.

**Engage communities and stakeholders.** Gauge community and key stakeholder appetite for change. Where relevant and possible, engage with traditional custodians as co-designers of any intervention. Encourage discussion about adaptation to, and mitigation of, climate change, with all stakeholders.

**Respond.** Consider the scale of the property and landscape, and the likely severity of climate change impact. Ideally this should be the last step in the framework, except where the precautionary principle may apply, namely in situations where measures should be taken to respond to threats or harm, even before all the evidence is to hand. 'Minimise harm' and provide most prudent solution. For example, not removing old trees that have a reasonable safe life expectancy even if modelling suggests they will not tolerate future climates. (It may be possible to mitigate water or temperature extremes). Plan for eventual replacement but maintain care while a tree is safe.

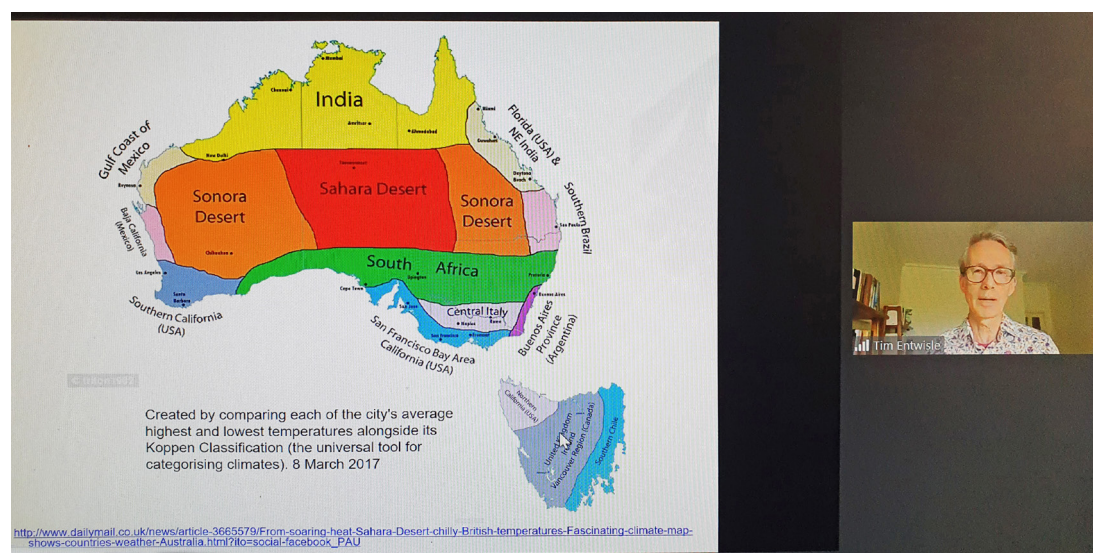
## Actions for the AGHS

### Use the AGHS's voice and activity to:

- advocate for climate-sensitive heritage management policies
  - in its collaborations with other organisations, the AGHS will strive to heighten awareness of gardens and cultural landscapes in the overall effort to combat global warming and to showcase what can be done at the individual as well as collective level to mitigate and adapt to climate change as well as to advocate for stronger national and global action
- increase awareness of sustainable practices when gardening in heritage areas
- offer advice to councils and others on climate-friendly ways to preserve gardens and cultural landscapes
- support the dissemination of information on climate adaptation through AGHS's journal, *Australian Garden History*, the AGHS website, conferences and other events, but also, where possible, by supporting original research or synthesis of research findings.
  - AGHS support for research will focus on knowledge generation and dissemination that helps its members and others better understand the implications of climate change for their practice as guardians of heritage and as gardeners.

### Reduce the Society's carbon footprint by:

- using recycled paper, including for the journal as well as sustainable packaging
- encouraging greater use of virtual meetings for the National Management Committee, and other meetings, which can offer the combined benefit of allowing more participation as well as less impact on the environment
- striving for a light footprint for conferences and events, moving some online, while aiming to be as sustainable possible when gathering in person, for example by avoiding paper programs, using recycled materials when catering and preferring vegetarian options, choosing the least polluting means of transport
- where possible, organising plastic free events and activities, for example consider alternatives to plastic crockery and cutlery and avoid plastic pots at working bees and plant sales.



AGHS patron, Professor Tim Entwisle, talking at the 2020 AGHS annual general meeting – held on Zoom – about the Royal Botanic Gardens Victoria climate change strategy



## Resources for adapting to climate change

AGHS is compiling resources to help gardeners adapt to and mitigate climate change. These include case studies, tools, tips and links to the work of other organisations. Here is a sample of those resources. More can be found on the AGHS website. To contribute to this database, contact [editor@gardenhistorysociety.org.au](mailto:editor@gardenhistorysociety.org.au)

### CASE STUDY Australian Arid Lands Botanic Garden: research–community partnership



Plant ecologist Andy Leigh, who investigates how Australian plants respond to extreme temperature stress, established a collaborative research agreement with the Australian Arid Lands Botanic Garden (Port Augusta, South Australia), via the Port Augusta City Council. The Council provided a small amount of funding each year for six years. The AALBG staff and the Garden's Friends gave on-ground support to grow experimental plants. This included bulldozing and setting up an experimental garden bed on site, and giving

plants different amounts of water, so that Leigh's team could measure the combined effects of drought and heat stress of plants in situ.

<https://www.portaugusta.sa.gov.au/attractions/parks-and-gardens/australian-arid-lands-botanic-garden>

### TIP Replace peat with sawdust or composted bark



Peatlands are critical for preventing and mitigating the effects of climate change, preserving biodiversity, minimising flood risk and ensuring safe drinking water. They are the largest natural terrestrial carbon store. Damaged peatlands are responsible for almost five per cent of global anthropogenic CO<sub>2</sub> emissions.

While not an easily renewable resource, peat is still a primary ingredient in many potting mixes. Look on the label for alternatives such as sawdust, composted bark or fibre coir.

### LINK Heritage and Climate Change



The Heritage Council of Victoria, in partnership with Heritage Victoria, has drafted six principles to guide policy, strategy development and decision making in the management of Victorian cultural heritage places and objects protected under the Heritage Act.

<https://heritagecouncil.vic.gov.au/research-projects/heritage-and-climate-change/>

## TOOL Learning about place

Resources to help identifying the traditional owners of a particular area (source: Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS))

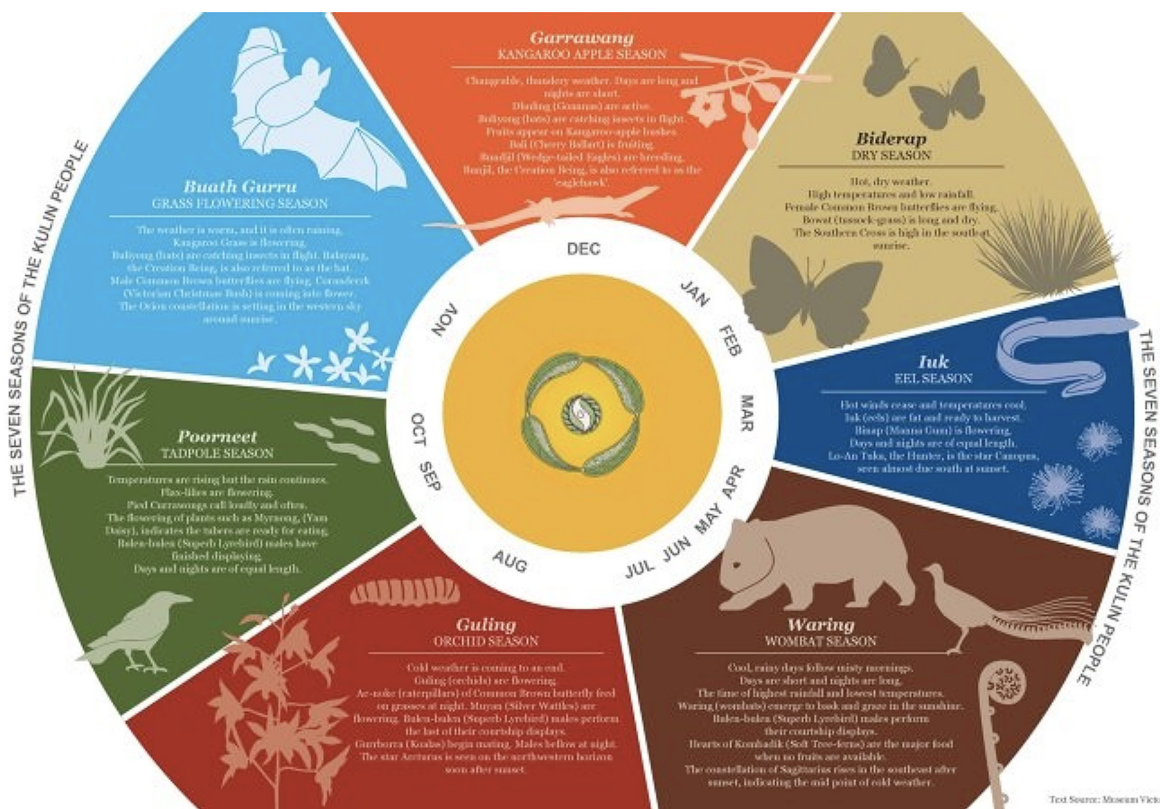
- Start with the website for your local government authority (the shire or municipal council). Many council websites include an acknowledgement of the local traditional owners.
- State and territory government websites also include information about traditional owners in their jurisdictions, especially in the context of information about local offices. In addition, a number of states and territories have Aboriginal and Torres Strait Islander consultative bodies, which themselves might offer advice.
- Land councils representing the local Aboriginal or Torres Strait Islander communities can help. You can find information for the relevant land councils on the [Creative Spirits website](#). You can also find details about native title groups and corporations on the [Prescribed Bodies Corporate website](#).

AIATSIS has a guide to engaging with traditional owners:

<https://aiatsis.gov.au/sites/default/files/2021-06/fpicsnapshot2020.pdf>

The Bureau of Meteorology is working with First Nations communities that wish to record and share valuable seasonal and environmental information and traditional knowledge. It has published seasonal calendars for 17 areas around Australia:

<http://www.bom.gov.au/iwk/index.shtml>



Seasonal calendar of the Kulin Nation, which celebrates Indigenous knowledge systems, graphic interpretation and design by Greenaway Architects



## CASE STUDY Honour Avenues



Anzac Parade by Adriano Rotolo CC BY-NC-SA 2.0



Monterey Cypress by lastonein, CC BY-NC-ND 2.0



Holm oak, Walimai.photo, CC BY-NC-ND 2.0

Australia has hundreds of Honour Avenues of trees commemorating service men and women who died or served in the First World War. And more for WW2 and later conflicts. Some of the earliest were planted as early as 1915.

Many are more than 100 years old and are either dying or showing signs of stress, with communities rallying to replant missing trees, sections or avenues. In some cases, difficult decisions on what species to use have to be made. Not all original choices succeeded because of variations in climate, rainfall or aftercare. Despite an inclination to replant 'like-for-like', some have chosen not to do this, because what were popular species have proven an environmental weed in some regions, such as Monterey pine (*Pinus radiata*), or have not flourished, such as Monterey cypress (*Hesperocyparis macrocarpa*), which tends to split and drop large branches.

While 'English' (in fact, European) elms (*Ulmus procera*) were a popular choice in southeast Australia, the warming, drying climate and fears of Dutch elm disease wiping them out is forcing a rethink. Similarly 'English' (again, European) oaks were popular but other oak species such as Turkey oak (*Quercus cerris*) or Algerian oak (*Q. canariensis*) do much better in warmer, drier regions. Let's use them!

Moyne Shire Council in Western Victoria has, in consultation with the community, decided to replace Monterey cypresses at Mortlake Avenue of Honour with holly/holm oak (*Quercus ilex*) from the Mediterranean. While this will give a different effect, it is an excellent choice for this hot, dry rural area with strong winds.

