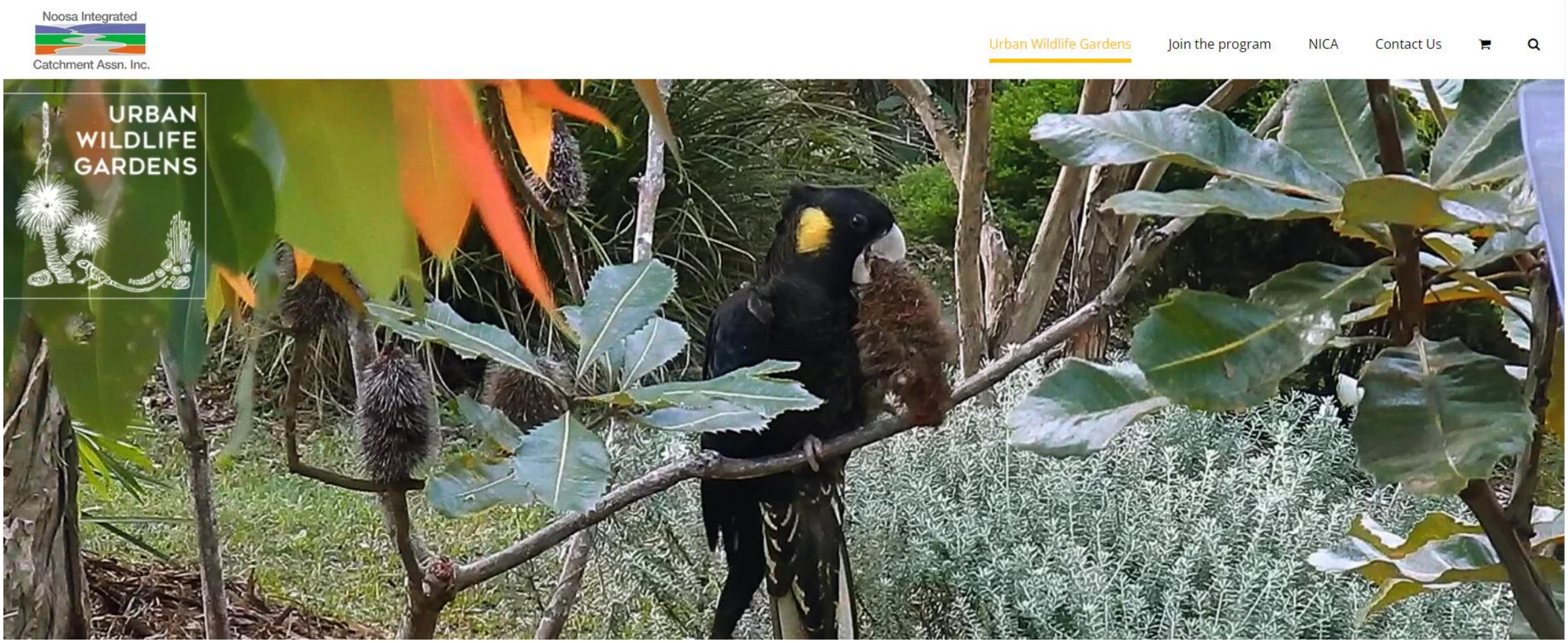


Noosa & District Landcare

Climate Resilient Landscapes

URBAN WILDLIFE GARDENS acknowledges and respects the First Nation Peoples of Australia, as the traditional custodians of our lands, waters and seas. We recognise their ability to care for Country and their deep spiritual connection with Country. We honour Elders past and present whose knowledge and wisdom ensure the continuation of Aboriginal and Torres Strait Islander cultures.

About Urban Wildlife Gardens

A not-for-profit organisation helping urban gardeners improve the biodiversity and wildlife habitat in their garden.

LEARN MORE

How to Join

A lifetime membership of just one $30 payment, provides you with a garden visit, resources, a property sign, free plants and more!

LEARN MORE

Garden Visit

Our program coordinator will visit your garden and provide expert advice specific to your circumstances.

LEARN MORE

Resources & Latest News

Hundreds of articles on a variety of topics to help grow your Urban Wildlife Garden.

LEARN MORE

Useful Links

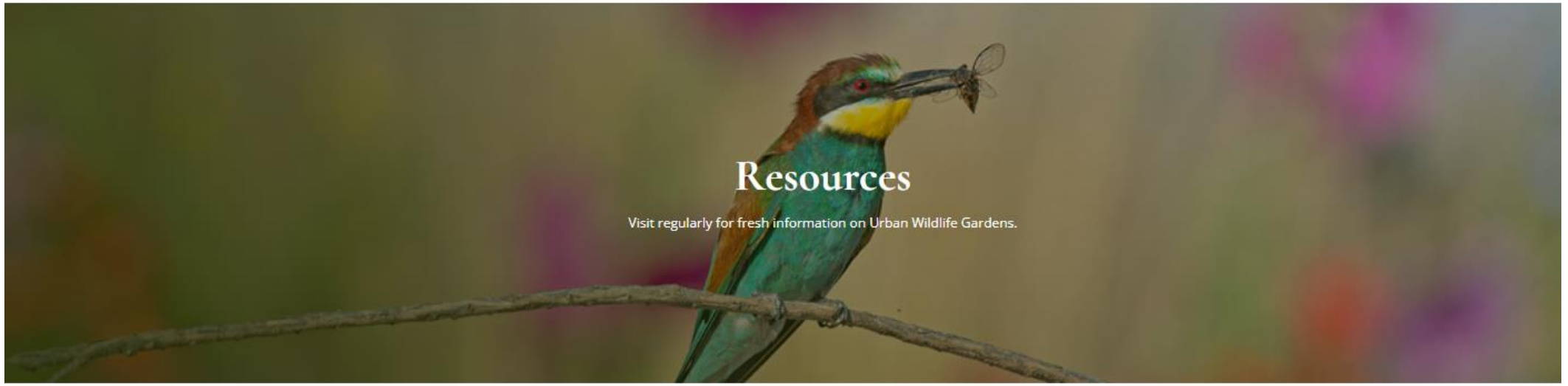
Useful UWG resources and links to other information.

LEARN MORE

Contact

We are just an email or phone call away. Find out how to reach us.

LEARN MORE



Resources

Visit regularly for fresh information on Urban Wildlife Gardens.

Weed of the Month – Japanese Climbing Fern

Mar 29, 2025

Maidenhair fern was a popular basket plant usually found in bathrooms in the 1980's. March's weed of the month can easily be mistaken for Maidenhair fern.

read more

The Importance of Native Plants for Native Insects

Mar 28, 2025

When we think of wildlife in our gardens we tend to focus on the birds, reptiles and mammals that we see there. Insects often get overlooked as an important part of a garden habitat, or are seen as a nuisance because they eat plants, build nests in inconvenient places and can often bite or sting!

Search

Topics

Membership with Urban Wildlife Gardens provides urban landowners the personalized service of a visit to their property. Michelle, our program coordinator, will visit to provide information and expert advice about how to improve the biodiversity in your garden and attract native wildlife. She will walk through your garden to discuss the natural regional ecosystem and soil types of your area and help to identify existing native plants, potentially invasive species and weeds.

You will receive:

- an UWG property sign
- 10% discount on all NICA publications
- voucher for tube stock plants from a local native nursery
- a folder of information including a list of suitable natives to plant and other ideas to make your garden wildlife friendly

Our UWG newsletter will be emailed to you monthly along with invitations to our workshops and open garden tours which are free to members.

Join Now for $30

Setting the Scene

Climate change in the South East Queensland region

VERSION 2 (Published 2024)

Queensland often experiences climate extremes such as floods, droughts, heatwaves and bushfires. Climate change is likely to exacerbate the frequency and/or severity of these events. Over time, we will increasingly be affected by changes in temperature, rainfall, sea level and extreme weather conditions.

How climate change may affect the South East Queensland region

- higher temperatures
- hotter and more frequent hot days
- variable rainfall
- increased evapotranspiration
- less frequent but more intense tropical cyclones
- rising sea level
- more frequent sea level extremes
- warmer and more acidic ocean

Addressing climate change

It makes good financial, social and environmental sense to take appropriate action to manage the risks from climate change. Well-considered and effective climate risk management and adaptation action can limit the adverse impacts of climate change on individuals, communities, the economy and natural systems.

This publication presents a summary of projected changes to the climate of the South East Queensland region, and highlights some potential impacts and possible adaptation responses.

For further information on how we can plan for and manage current and future climate impacts across different sectors and regions, refer to the Queensland Government's Climate website and the Queensland Future Climate Dashboard.

For more information on climate change in Queensland, please visit www.energyandclimate.qld.gov.au/climate.

DIRECT IMPACTS	1.5°C	2°C	2°C IMPACTS
EXTREME HEAT Global population exposed to severe heat at least once every five years	14%	37%	2.6X WORSE
SEA-ICE-FREE ARCTIC Number of ice-free summers	AT LEAST 1 EVERY 100 YEARS	AT LEAST 1 EVERY 10 YEARS	10X WORSE
SEA LEVEL RISE Amount of sea level rise by 2100	0.40 METERS	0.46 METERS	0.06m MORE
SPECIES	**1.5°C**	**2°C**	**2°C IMPACTS**
SPECIES LOSS: VERTEBRATES Vertebrates that lose at least half of their range	4%	8%	2X WORSE
SPECIES LOSS: PLANTS Plants that lose at least half of their range	8%	16%	2X WORSE
SPECIES LOSS: INSECTS Insects that lose at least half of their range	6%	18%	3X WORSE
LAND	**1.5°C**	**2°C**	**2°C IMPACTS**
ECOSYSTEMS Amount of Earth's land area where ecosystems will shift to a new biome	7%	13%	1.86X WORSE
PERMAFROST Amount of Arctic permafrost that will thaw	4.8 MILLION KM²	6.6 MILLION KM²	38% WORSE
CROP YIELDS Reduction in maize harvests in tropics	3%	7%	2.3X WORSE
OCEANS	**1.5°C**	**2°C**	**2°C IMPACTS**
CORAL REEFS Further decline in coral reefs	70–90%	99%	UP TO 29% WORSE
FISHERIES Decline in marine fisheries	↓ 1.5 MILLION TONNES	↓ 3 MILLION TONNES	2X WORSE

Figure 16: The difference in projected climate impacts between 1.5°C and 2°C of warming. Source: IPCC 2018.

But I am not giving up on nature just yet!

How can I landscape my property to make it more resilient to climate change and maximise opportunities for long term biodiversity

Climate Resilient Landscapes

1. Passive Climate Responsive Landscapes
2. Use of Verge Gardens
3. Planting for a Hotter and Drier climate in Noosa
4. Bushfires
5. Tidal Inundation
6. Severe Weather / Wind
7. Questions

1. Passive Climate Responsive Landscape Design

Passive Design:

Anthropogenic view – achieving joy to nature and humans

Using nature and climate to keep us, our house and our gardens without use of imported energy and water

Passive design in your house and garden helps reduce carbon emissions and its impact to climate change

Passive Design:

Using nature and climate to keep us cool and warm without use of energy (such as air conditioning)

Passive design in your house and garden helps reduce carbon emissions contributing to climate change, and also saves you $$!

Top Tips for Passive Landscape Design

- Plant good shade trees on the south-west to shade hot summer afternoon sun
- Avoid hedges and solid fences on the north and east as they block cooling breezes. If privacy is need use a trellis with vines instead to allow breezes to penetrate
- Don’t use shade trees on the north-east / north-west, as this is allows lovely winter sun to penetrate your garden and keep it warm in winter
- Minimise hard surfaces – planting is best for cooling
- Use natives as they are suited to natural rainfall and don’t require irrigation (and good for wildlife)
- Install a rain garden, to allow stormwater to be retained in the garden and improve soil moisture, rather than go down the gutter

https://www.sunshinecoast.qld.gov.au/development/development-tools-and-guidelines/sunshine-coast-design/coolhomes

3 Let breezes in

Cooling your home is literally a breeze when you have windows and doors that open to let breezes in. Best of all, it's a free way to cool down without the expense of air-conditioning.

You want the air to circulate throughout your home. Breezes *enter* best via smaller openings on the cooler south or east sides (lovely easterly sea breezes) and breezes *exit* best through the larger openings on the north. A combination of large and small openings, along with unobstructed internal spaces for the breeze to flow through your home, are perfect for cooling you, and your home down.

Some tips to bring breezes inside

- Combine louvres or small opening windows on the cooler south and east sides, with large retractable doors on the north to allow a flow of cooling breeze.
- Ideally position windows and doors opposite each other to maximise airflow and cross-ventilation.
- An open floor plan is ideal to allow breezes to move through your home.
- Add ceiling fans indoors and out to help circulate the air. Ideally use fans in place of air con.
- Add whirly birds to the roof to let heat and moisture out of the roof.

https://www.sunshinecoast.qld.gov.au/development/development-tools-and-guidelines/sunshine-coast-design/coolhomes

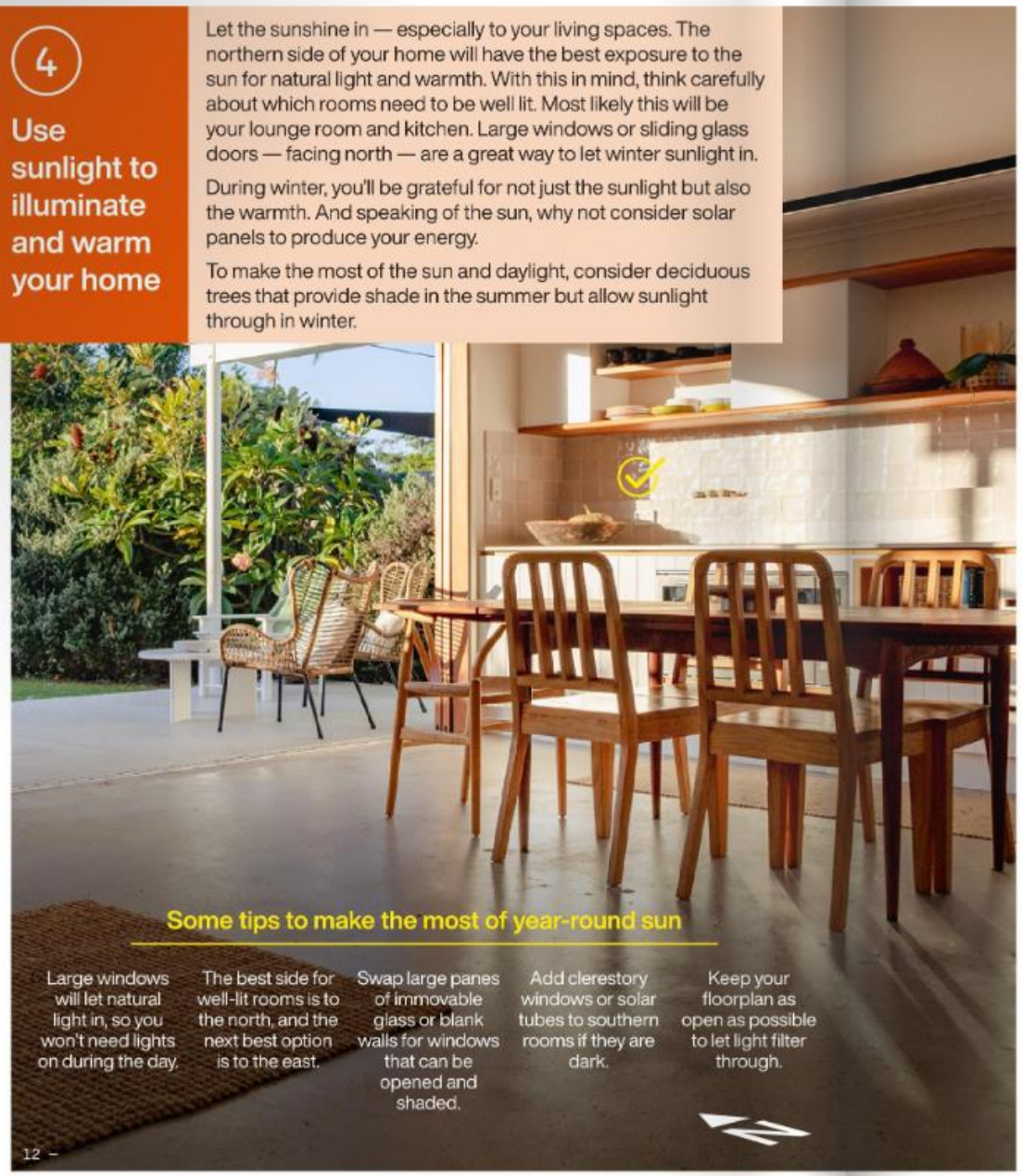
4

Use sunlight to illuminate and warm your home

Let the sunshine in — especially to your living spaces. The northern side of your home will have the best exposure to the sun for natural light and warmth. With this in mind, think carefully about which rooms need to be well lit. Most likely this will be your lounge room and kitchen. Large windows or sliding glass doors — facing north — are a great way to let winter sunlight in.

During winter, you'll be grateful for not just the sunlight but also the warmth. And speaking of the sun, why not consider solar panels to produce your energy.

To make the most of the sun and daylight, consider deciduous trees that provide shade in the summer but allow sunlight through in winter.



Some tips to make the most of year-round sun

- Large windows will let natural light in, so you won't need lights on during the day.
- The best side for well-lit rooms is to the north, and the next best option is to the east.
- Swap large panes of immovable glass or blank walls for windows that can be opened and shaded.
- Add clerestory windows or solar tubes to southern rooms if they are dark.
- Keep your floorplan as open as possible to let light filter through.

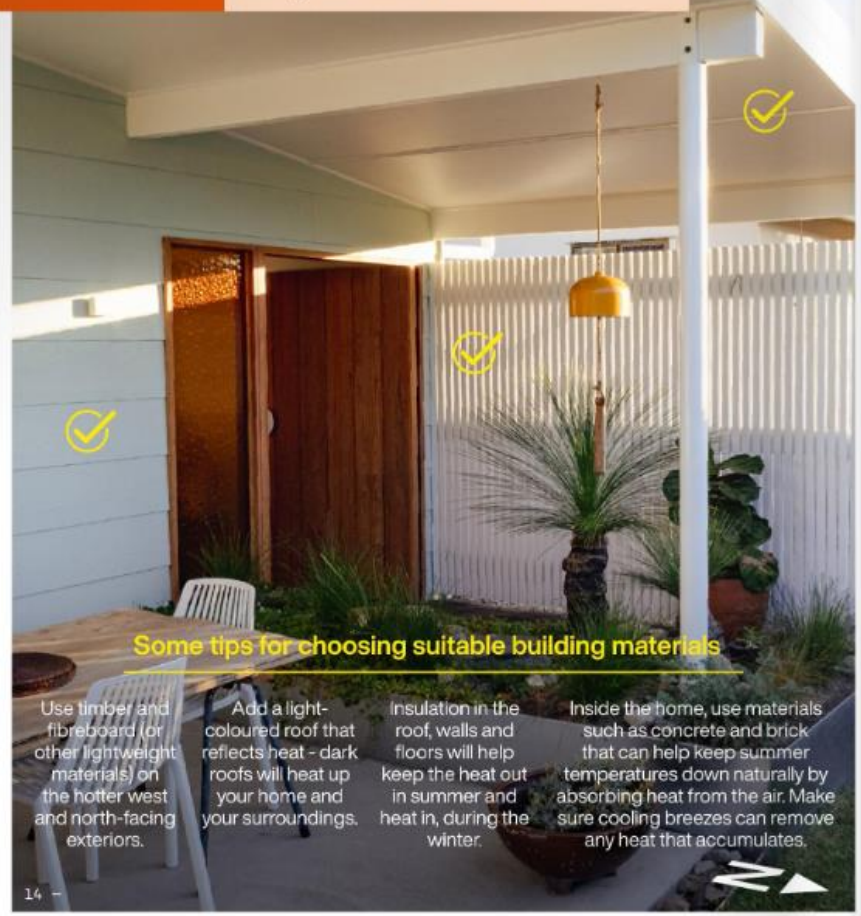
https://www.sunshinecoast.qld.gov.au/development/development-tools-and-guidelines/sunshine-coast-design/coolhomes

5

Choose the right building materials for the climate

Ask an architect, building designer or builder about the best materials to use in your home to suit the climate. The external walls and roof that are exposed to direct sun are best made of materials that do not absorb and store heat.

Don't forget insulation. It's essential for Sunshine Coast homes. A well-insulated roof can significantly cut your heating and cooling costs. Add wall and floor insulation, and shading to windows and doors, and your savings will increase even more.



Some tips for choosing suitable building materials

Use timber and fibreboard (or other lightweight materials) on the hotter west and north-facing exteriors.

Add a light-coloured roof that reflects heat - dark roofs will heat up your home and your surroundings.

Insulation in the roof, walls and floors will help keep the heat out in summer and heat in, during the winter.

Inside the home, use materials such as concrete and brick that can help keep summer temperatures down naturally by absorbing heat from the air. Make sure cooling breezes can remove any heat that accumulates.

6

Create shade

A pergola, eaves, roof overhang or a verandah are examples of ways to shade external walls and windows, to help keep things cool.

To further prevent the transfer of heat from outside to inside, add awnings, shutters or screens that open on the north, west and east-facing sides of your home. Eaves and overhangs are essential on the Sunshine Coast.

Some tips to create shade

Prioritise shade on the north side and west sides of your home.

Add trees, gardens, awnings or pergolas particularly to the west side, to block the sun during the hotter months.

West-facing rooms will be the hottest so add external shade via adjustable screens, eaves, awnings, a pergola or trees.

Ideally eaves will be a minimum of 600mm or more to shade windows and allow windows to remain open during rain. If your windows don't have suitable eaves – add an awning above the window to add more protection.

https://www.sunshinecoast.qld.gov.au/development/development-tools-and-guidelines/sunshine-coast-design/coolhomes

7 Include gardens and trees

Don't just rely on a shade structure to shade your home.

One of the best things you can do to make your Sunshine Coast home more comfortable is to include gardens and trees in your overall plan. Well designed gardens create shade, help direct cooler air into your home and provide a leafy outlook.

Be mindful of the parts of your home that need shade or sunlight. Native ground covers are more effective than paving or grass to cool the air and conserve water.

A garden designer or landscape architect can help you with advice relevant to your house block.

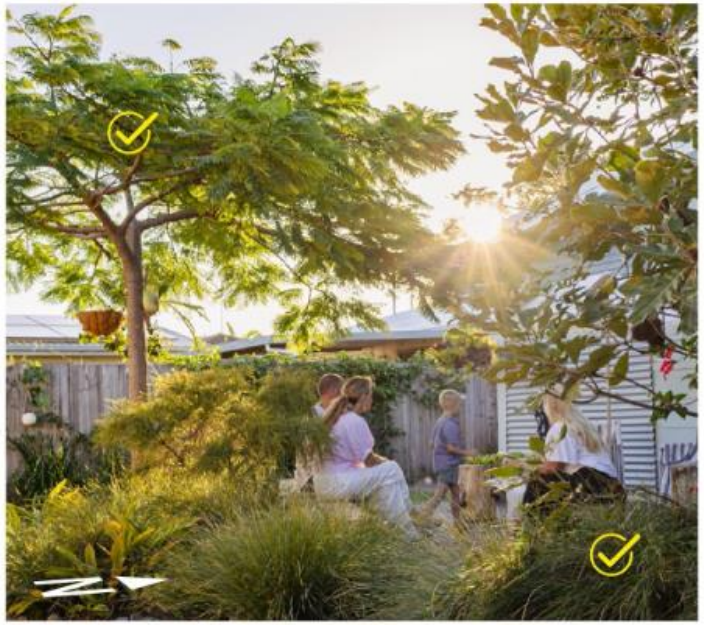
Some tips for using gardens and trees to cool your home

Plant shade trees on the west and southwest to block the hot afternoon sun.

Plant deciduous trees (that lose their leaves in winter) on the north side to allow the winter sun to warm your home.

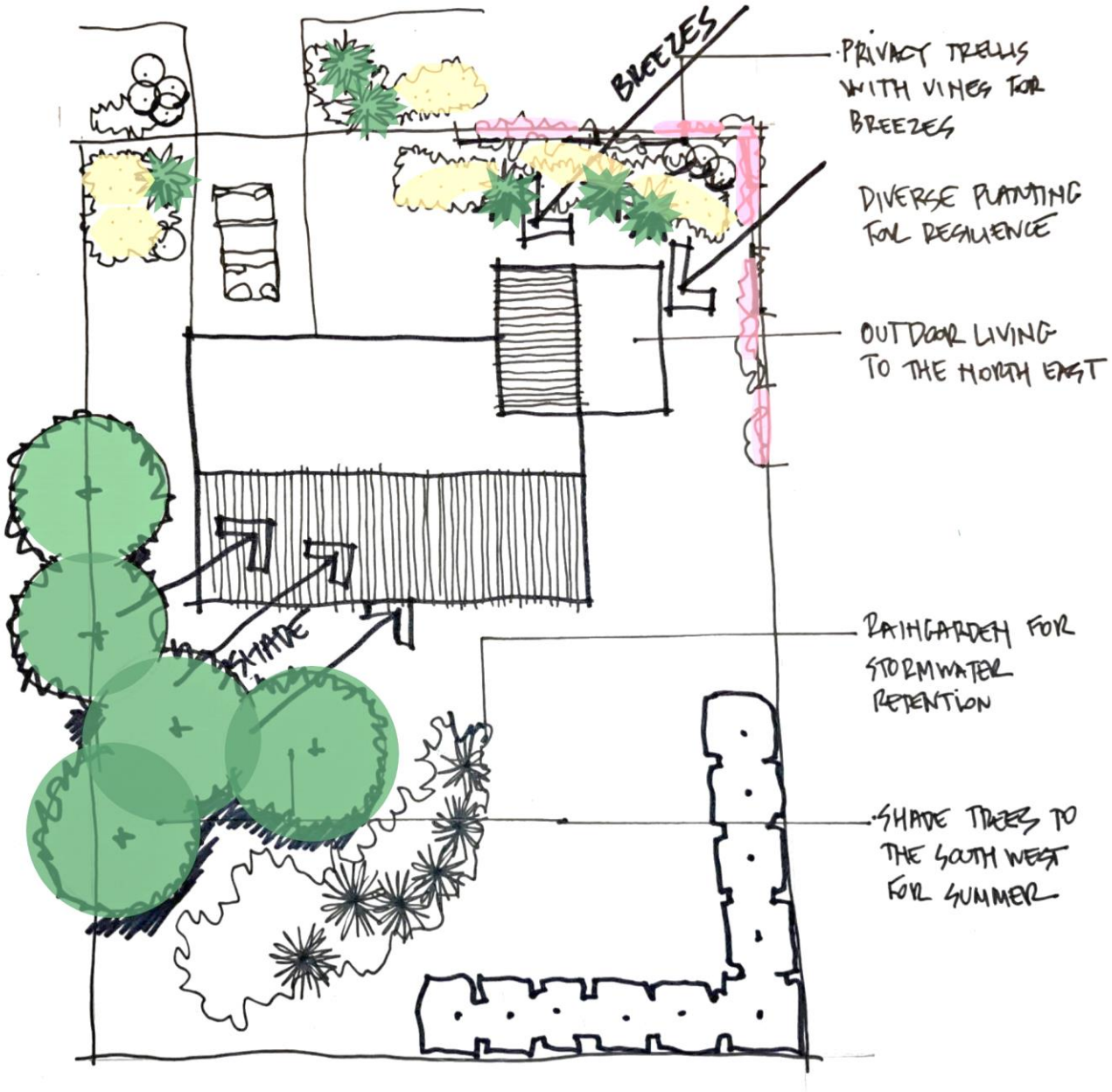
Where space is limited between your house and the fence, consider planting climbers along the fence line.

Minimise unshaded hard paving directly beside your home to avoid unwanted heat radiating off the paving.

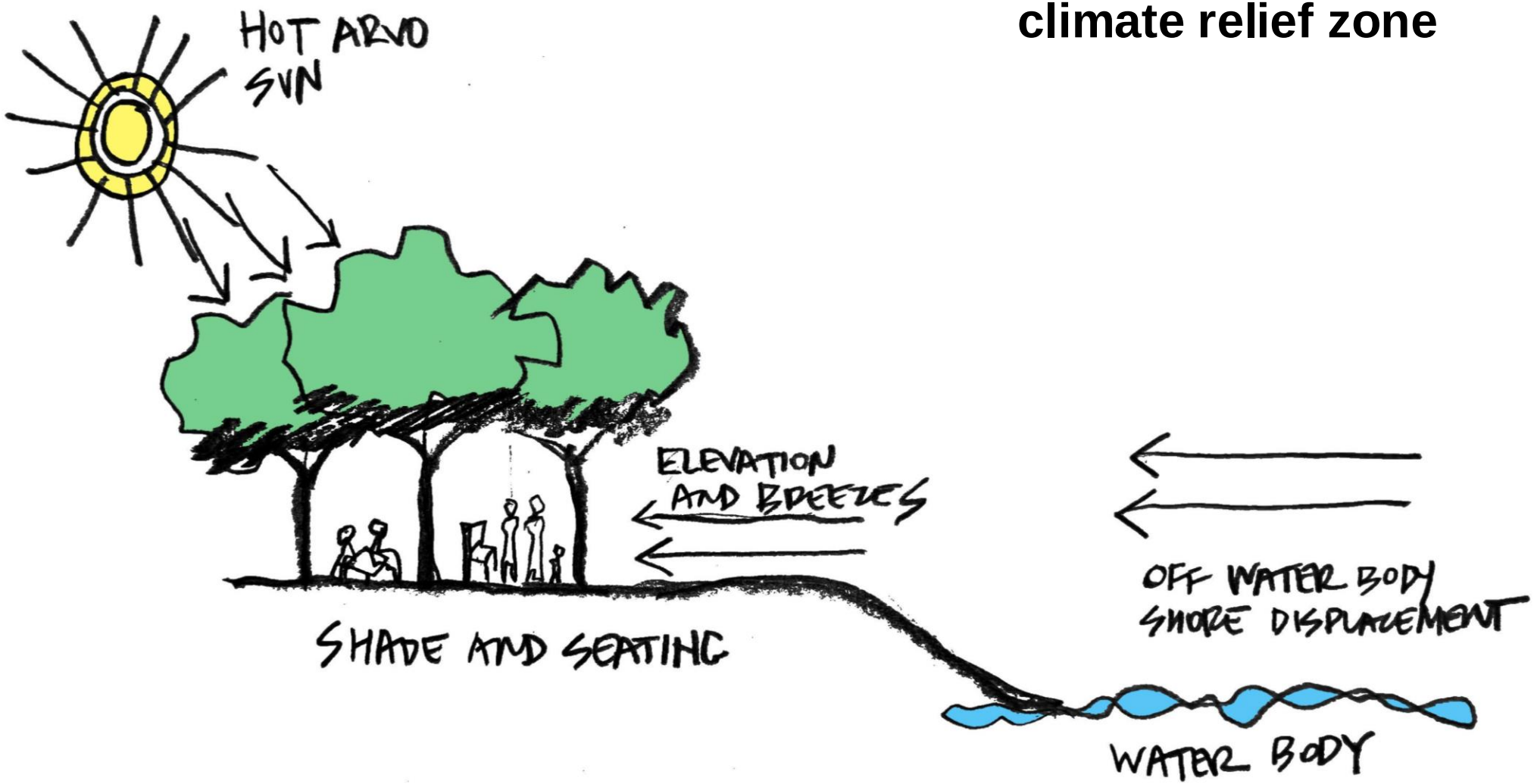


https://www.sunshinecoast.qld.gov.au/development/development-tools-and-guidelines/sunshine-coast-design/coolhomes

passive garden design



climate relief zone



2. Urban Greening and use of Verge Gardens

.

Verges present significant opportunities in Noosa to assist urban greening

This is now permitted in Noosa!

Council has endorsed an Encroachments Policy and supporting organisational procedures which, clarifies verge management in urban and rural residential areas including garden planting on verges at the front of properties in urban and many rural residential areas.

Key principles for verge gardens include:

1. Maintenance of lawns and removal of common weeds on verges by adjacent private property owners in urban areas is supported and encouraged.

2. Planting of low groundcovers and small shrubs that grow to less than two metres in verges by adjacent private property owners in urban areas is supported when undertaken in accordance with these guidelines.

3. Street tree planting is undertaken by Council as part of an asset management program.

4. Landscaping, including earthworks, drainage, irrigation, driveways, footpaths, fences, planting boxes, retaining walls and garden structures and sculptures, is not permitted.

5. Replacement of public landscaping, gardens, and public infrastructure in verges with private planting and landscaping is not permitted.

6. Utility providers may at any time disrupt verge areas for critical maintenance of infrastructure. They do not have responsibility to reinstate any verge planting damaged due to works, however adjacent property owners may reinstate.

Applicability:

The private gardening and landscaping in road verges exemptions apply to the urban areas and villages of Noosa including: • Peregian Beach • Marcus Beach • Castaways Beach • Sunrise Beach • Sunshine Beach • Noosa Heads • Noosaville • Tewantin • Cooroy • Pomona • Boreen Point (village) • Cooran (village) • Kin Kin (village)

It also applies to rural residential estates which have formalised verges including kerb and graded verges including streets in the following: • Cudgerie Estate, Black Mountain • Stratford Park, Pinbarren • Coorooibah Estates, Lake Coorooibah • Swift Park and Forest Acres, Cooroy • Noosa Banks, Tewantin • Lenehans Lane, Livistona Drive and Foxtail Rise locality, Doonan • Kingsgate Drive and Patterson Drive, Tinbeerwah • The Ridges Wirruna Drive and Bunberrra Way, Cooran

Consultation with neighbours in road verges

- Residents are obliged to consult with their neighbours.
- Residents cannot plant on a neighbour’s verge or property without their prior written permission.

Species selection and layout in road verges

- Low growing ground cover and shrub species that are preferably native to the Noosa Shire, are not invasive and grow no higher than two metres are to be used – Council officers should refers residents to the Plant Species Guide lists below.

- Residents should consider in detail the plant choice – for example, is it suited to the aspect, sunlight, and drainage characteristics of their verge. Residents should be encouraged to seek guidance from local experts including qualified professionals, Bushcare groups, Noosa & District Landcare, Coolum Coast Care, and local plant nurseries that stock native plants.

- Pedestrians must be able to traverse the verge without being obstructed by plantings,regardless of whether there is a made or unmade footpath. A pedestrian/cyclist way with a minimum width of 1.5 metres clear of private gardening and landscaping must be maintained between the kerb and the edge of the verge garden. It is important to consider the mature size of plants when planting, to ensure that when they grow, they maintain the required 1.5m clearance.

Critical considerations in road verges

The following public services and considerations must be incorporated into private gardening and landscaping in verges:

- Visibility of motorists using the road, and those entering or exiting a residential driveway.
- Location for kerbside bin collection.
- Maintaining adequate distance from above-ground utilities such as electricity pillars, streetlights, and telecommunications structures (e.g. ground cabinets) and cables.
- Access to post boxes (mailboxes) allowing space between the verge garden and the edge of the footpath (if established) for footpath maintenance.
- Shrubs that grow to over two meters and trees are not to be planted on verge areas by adjacent private property owners to ensure maintenance of safety and prevent interference with infrastructure. Hedges are to be planted within the property boundary and not on verges.
- Any planting, gardening, or landscaping in the 1.5 m area from back of kerb will be undertaken by Council.
- Street tree planting is undertaken by Council as part of an asset management program. Palms, pandanus or bamboos are inappropriate when planted by private residents due to maintenance impacts and size of plants.

Weeds in road verges

Verges often harbour bushland weeds. What may appear to be a lush groundcover can often be an exotic garden escapee that can consume nearby bushland areas and pose a threat to local flora and fauna.

- Common, bushland and listed weeds should not be planted on verges and be removed from verges.

- All weeds should be disposed of in the bin and in landfill, as often composting and other techniques do not sterilise seeds and propagules.

- Residents are encouraged to seek guidance on weed identification and removal from local environmental groups.

Maintenance of verge planting

If verge planting is undertaken by the adjacent property owner consistent with the guidelines, the ongoing maintenance of the planting is the responsibility of the property owner including:

- Replacement of lost plants.

- Replenishment of mulch.

- Weeding.

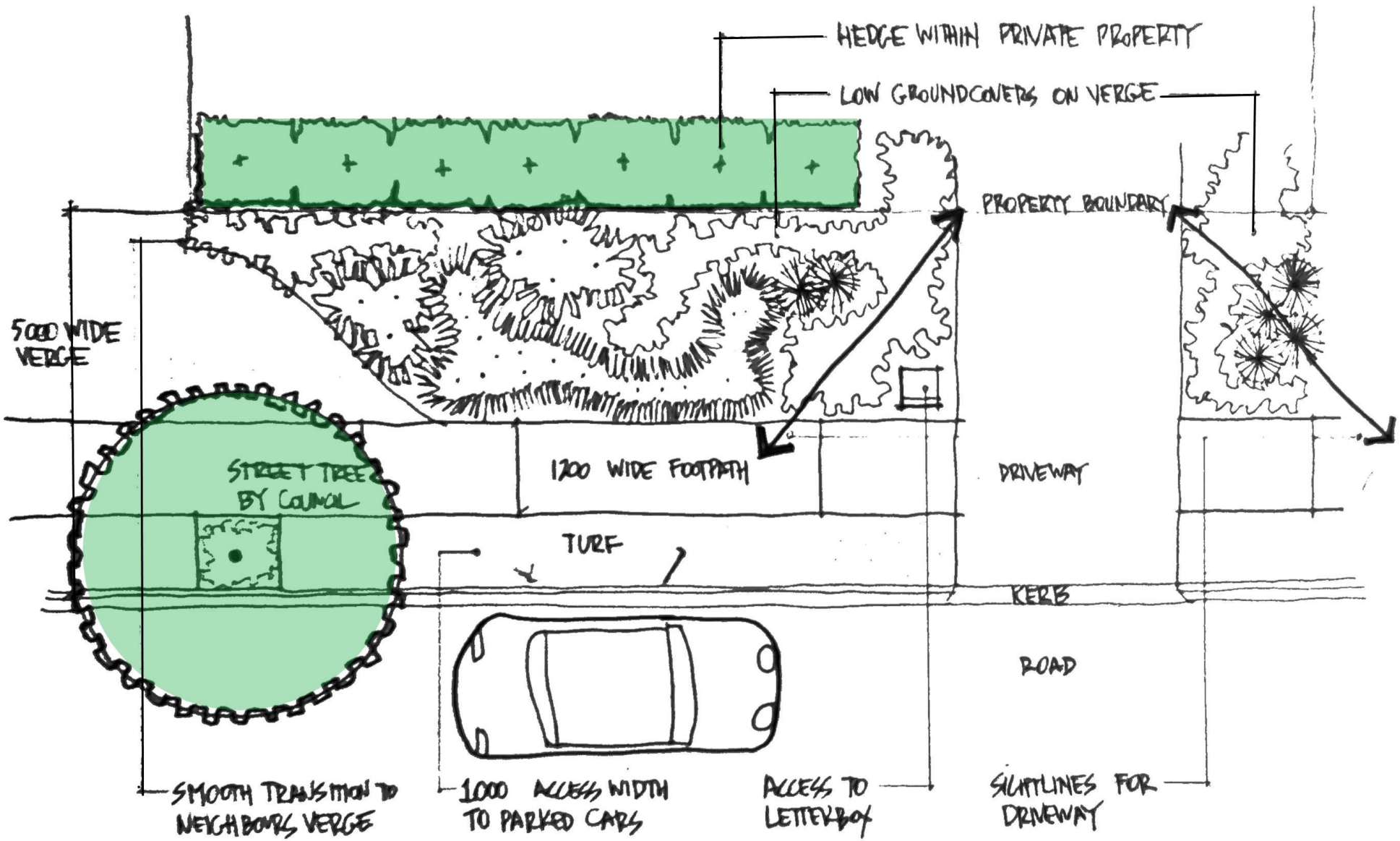
Road Verge and Park Garden Plant Species Guide

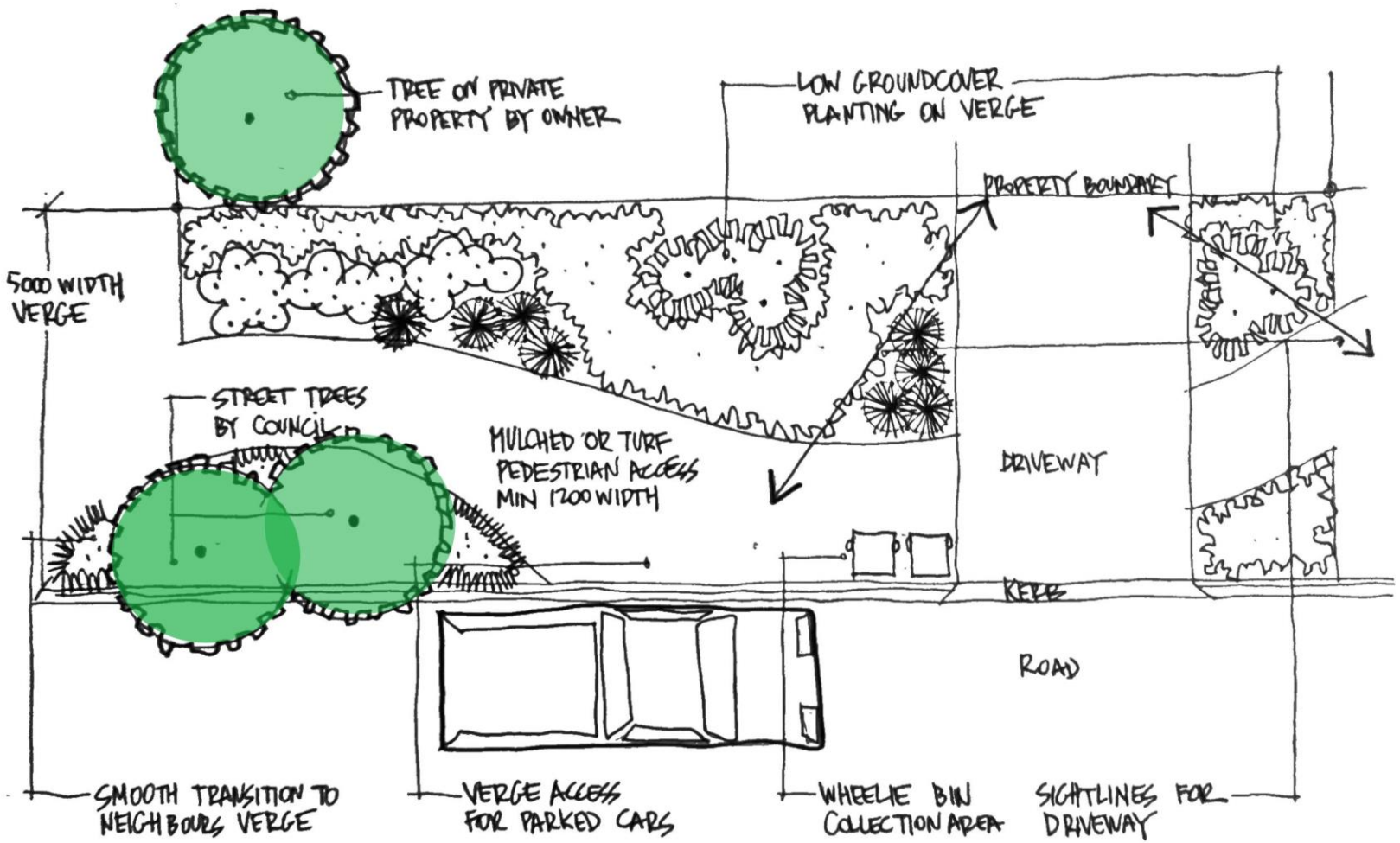
GC: Groundcover
G: Grass
TF: Tufting Plant
SS Small Shrub
MS: Medium Shrub

Coastal Areas		
Botanical Name	Common name	Form
Acacia sophorae	Coastal Wattle	MC
Acacia suaveolens	Sweet wattle	MS
Acmena smithii	Allyn Magic	SS
Alpinia caerulea	Native Ginger	TF
Anigozanthos sp.	Kangaroo Paw	MS
Austromyrtus dulcis	Midyim	GC / SS
Aotus ericoides	Eggs and Bacon	MS
Aotus lanigera	Golden Candlesticks	MS
Baeckea frutescens (was stenophylla)	Weeping Baeckea	MS
Baeckea virgata Dwarf	Dwarf Twiggy Myrtle	SS
Banksia oblongifolia	Dwarf Banksia	MS
Banksia robur	Swamp Banksia	MS
Banksia spinulosa	Golden Candlesticks	MS
Baumea rubiginosa	Soft Twigrush	TF
Bauera capitata	Dog Rose	SS
Bauera rubioides	Wiry Dog Rose	SS
Boronia falcifolia	Wallum Boronia	MS
Boronia rivularis	Wide Bay Boronia	MS
Bracteantha sp.	Federation Daisy	GC
Callistemon spp.	Bottlebrush	Chose forms that are low to medium shrub only (<2metres)
Carpobrotus glaucescens	Pigface	GC
Casuarina glauca Prostrate form	Cousin It	GC /SS
Crinum pedunculatum	River Lily	TF
Dampiera Stricta	Blue Dampiera	GC/SS
Dianella caerulea	Flax Lily	TF
Dianella congesta	Beach Flax Lily	TF
Dietes species	Wild Iris or Butterfly plant	SS
Dodonea triquetra	Native Hop	MS
Eriostemon spp.	Qld. Wax flower	SS
Gardenia augusta	Radicans	SS
Grevillea cultivars spp.	Grevilleas	Chose forms that are low to medium shrub only (<2metres)
Hardenbergia violacea	Native Sarsparilla	GC
Helichrysum spp.	Golden Buttons\ Paper Daisy	GC
Hibbertia obtusifolia	Guinea Flower	SS
Hibbertia scandens	Twining Guinea Flower	GC

Figure 1: 1500mm minimum clearance for road functions

This is now permitted in Noosa!


HEDGE WITHIN PRIVATE PROPERTY
LOW GROUNDCOVERS ON VERGE
PROPERTY BOUNDARY
5000 WIDE VERGE
STREET TREE BY COUNCIL
1200 WIDE FOOTPATH
DRIVEWAY
TURF
KERB
ROAD
SMOOTH TRANSITION TO NEIGHBOURS VERGE
1000 ACCESS WIDTH TO PARKED CARS
ACCESS TO LETTERBOX
SIGHTLINES FOR DRIVEWAY


TREE ON PRIVATE PROPERTY BY OWNER
LOW GROUNDCOVER PLANTING ON VERGE
PROPERTY BOUNDARY
5000 WIDTH VERGE
STREET TREES BY COUNCIL
MULCHED OR TURF PEDESTRIAN ACCESS MIN 1200 WIDTH
DRIVEWAY
KERB
ROAD
SMOOTH TRANSITION TO NEIGHBOURS VERGE
VERGE ACCESS FOR PARKED CARS
WHEELIE BIN COLLECTION AREA
SIGHTLINES FOR DRIVEWAY

3. Plant Selection for Hotter and Drier climate

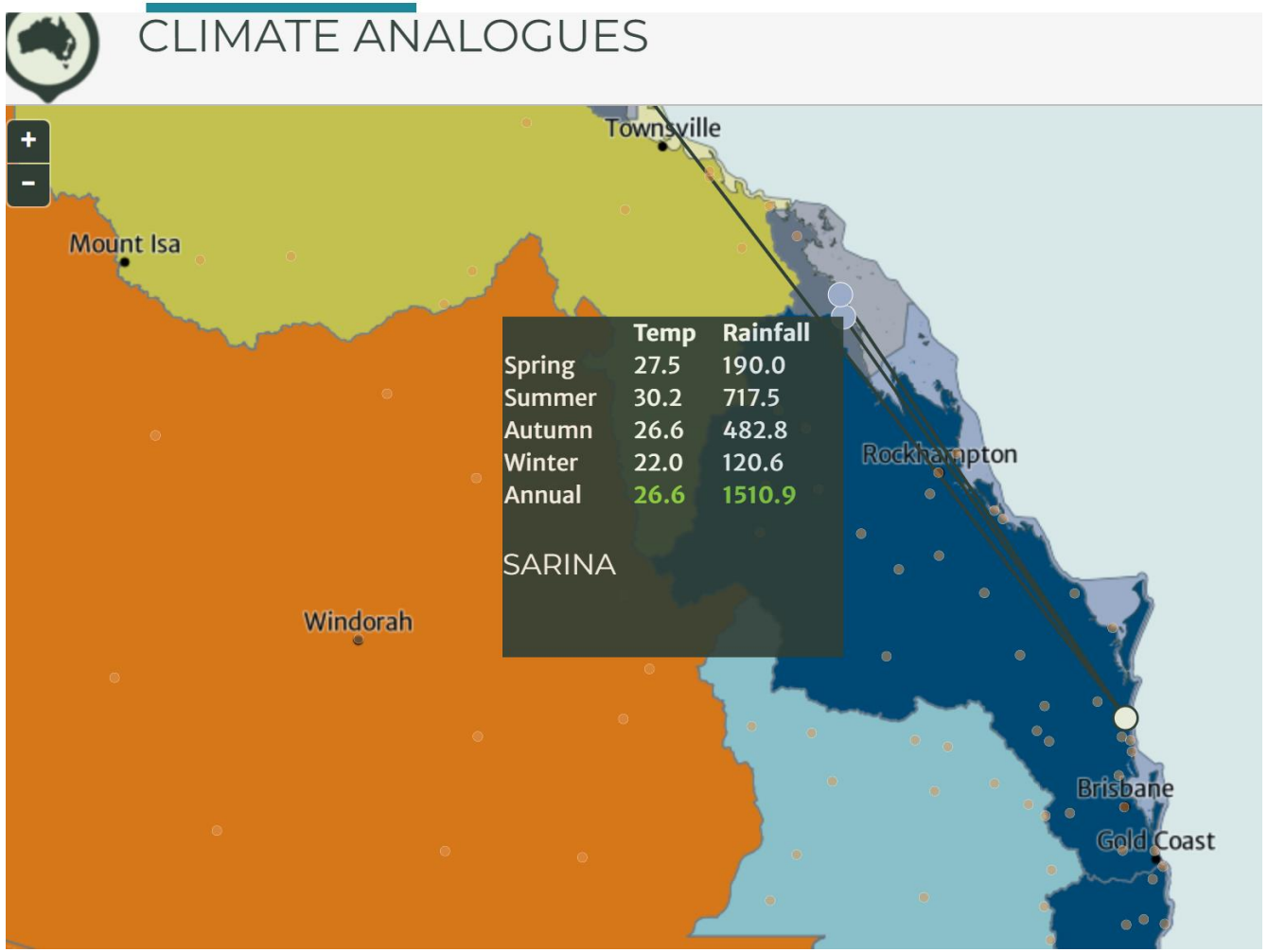
In the face of predicted climate change for Noosa (hotter and drier) how do we choose plants that will be resilient?

Two step process

1. Determine climate analogy location using Climate Explorer
2. Determine species resilience based on climate analogy using Atlas of Living Australia

Proviso– this is not a predictor of ecology change but pragmatic approach to assist in determination of planted species resilience to future change.

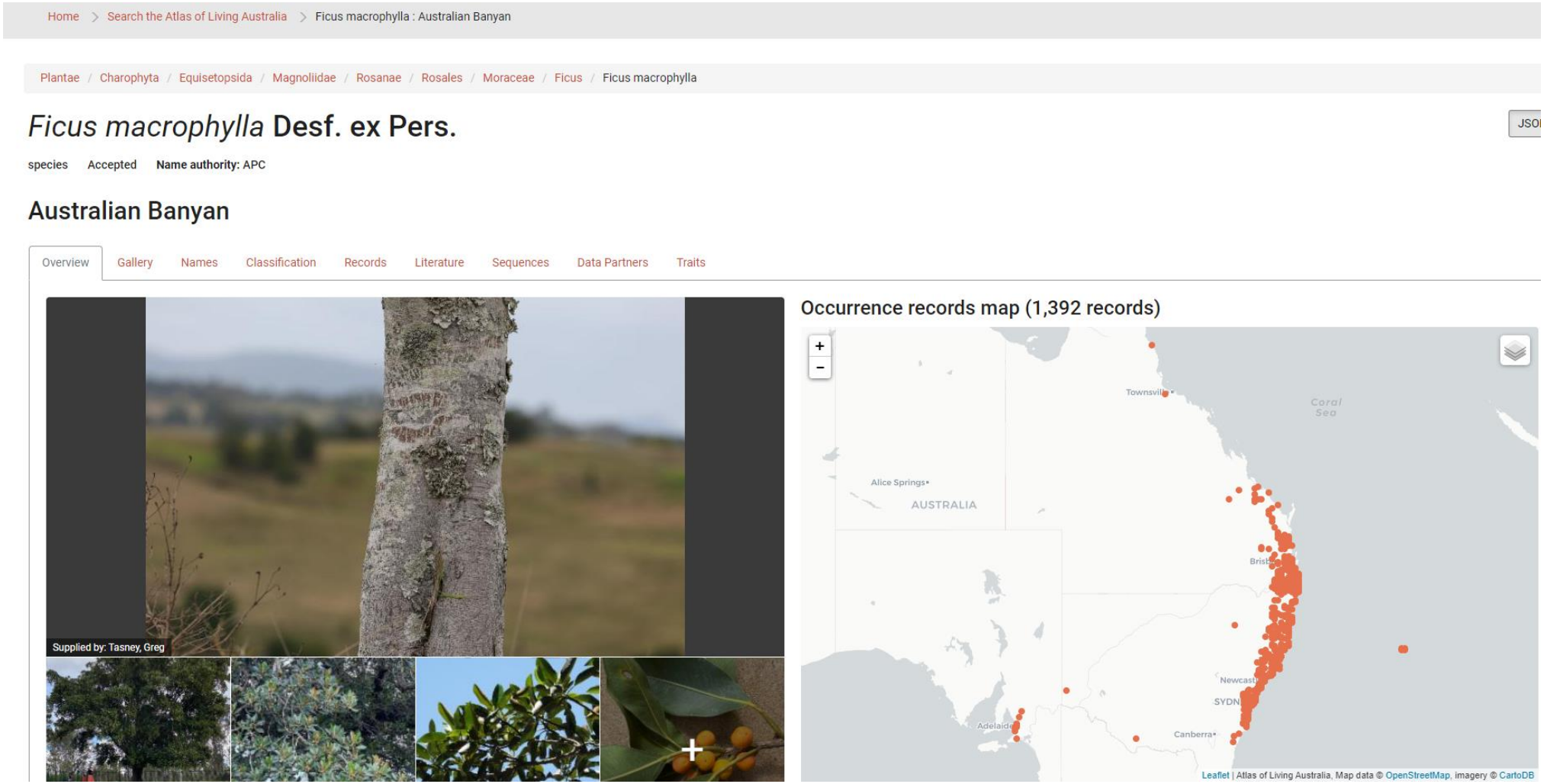
Many plants exist in Noosa and also in hotter and drier climates than Noosa.



Climate Analogue Explorer tool estimates the climate of the SEQ in 2050 as 1.9º warmer and a decline in rainfall by 6%

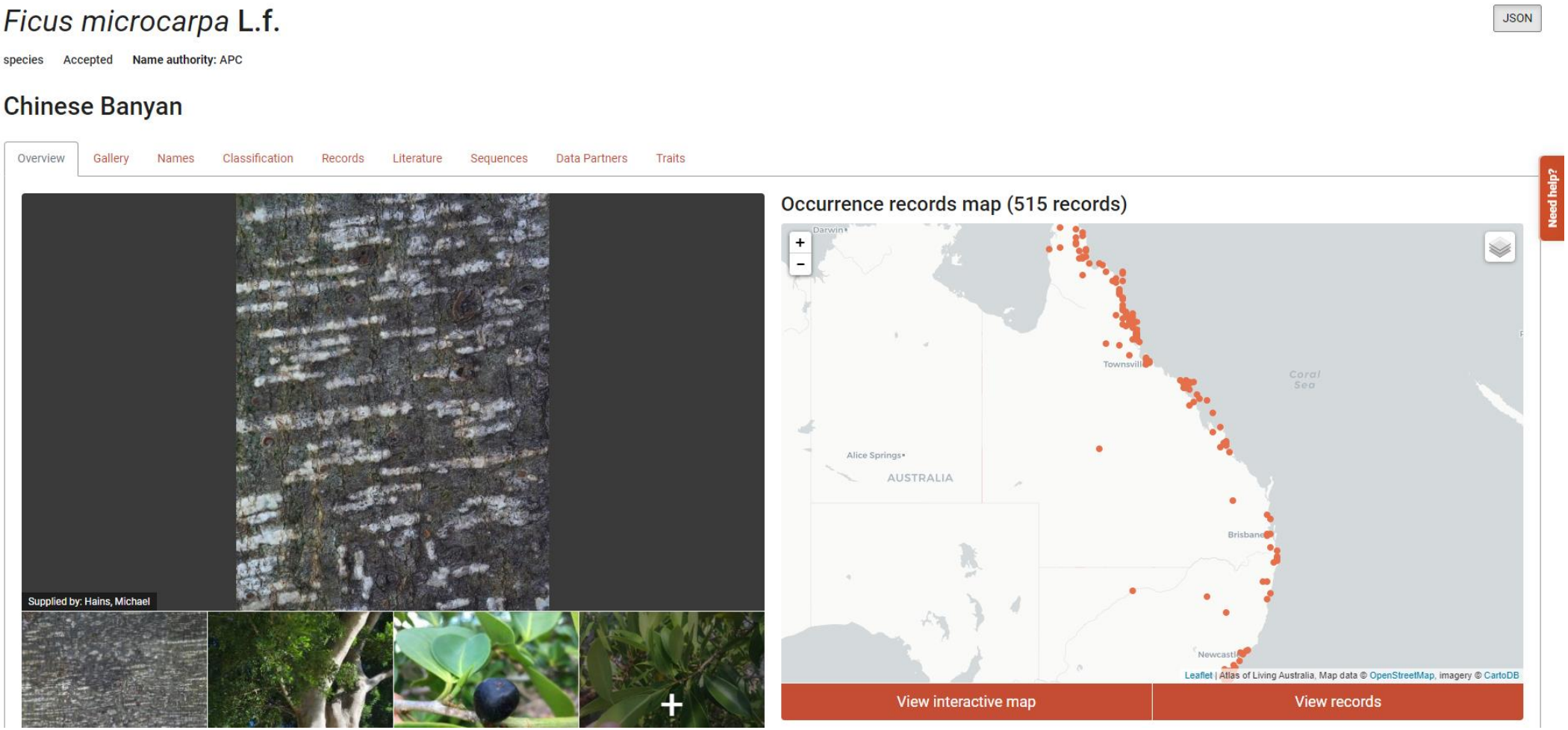
Noosa is provided with a climate analogue of Sarina near Mackay

https://www.climatechangeinaustralia.gov.au/en/projections-tools/climate-analogues/analogues-explorer/



Research of a species on the Atlas of Living Australia commonly used in parks *Ficus macrophylla* indicates it does not persist broadly in Northern Queensland

https://bie.ala.org.au/species/https://id.biodiversity.org.au/node/apni/2892956



Research of a possible alternative species *Ficus microcarpa* on the Atlas of Living Australia indicates it does persist across Northern Queensland and might be a more resilient choice

https://bie.ala.org.au/species/https://id.biodiversity.org.au/node/apni/2892956

Home > Search the Atlas of Living Australia > Banksia aemula : Banyalla

Plantae / Charophyta / Equisetopsida / Magnoliidae / Proteanae / Proteales / Proteaceae / Banksia / Banksia aemula

Banksia aemula R.Br.

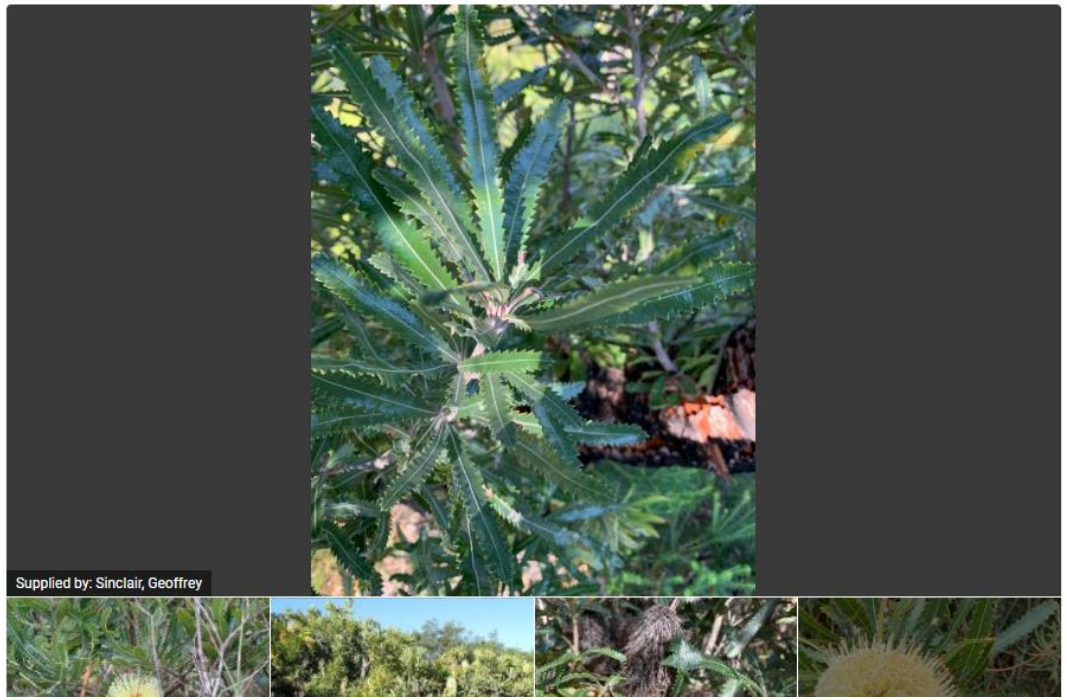
JSON

species Accepted **Name authority:** APC

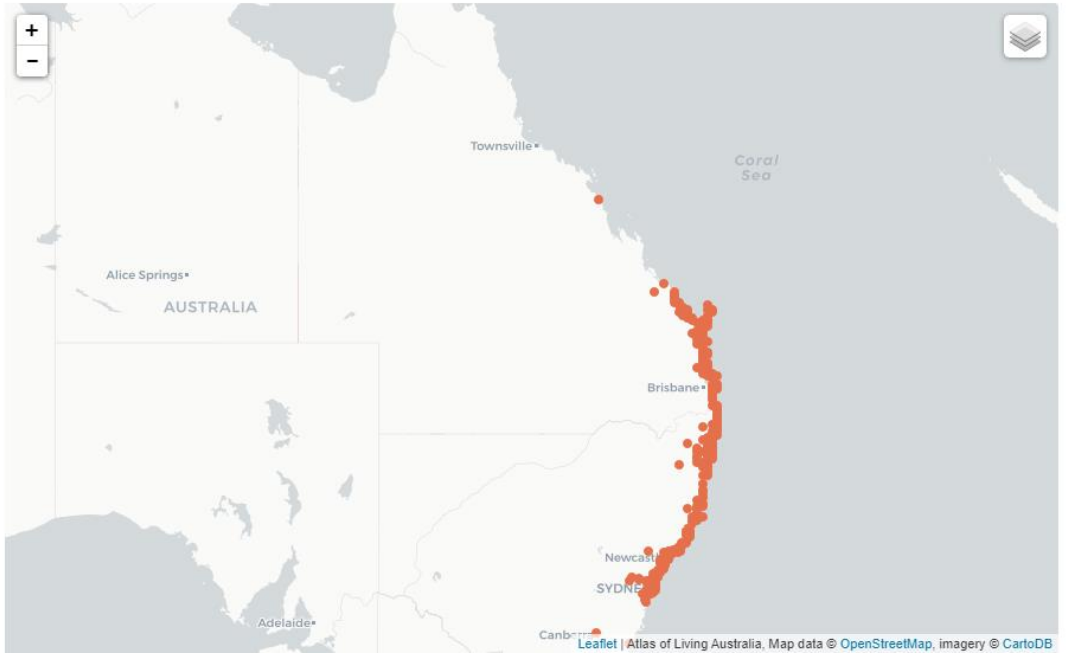
Banyalla

Overview | Gallery | Names | Classification | Records | Literature | Sequences | Data Partners | Traits

Need help?



Occurrence records map (2,424 records)



Another example – distribution of *Banksia aemula*

Banksia integrifolia L.f.

JSON

species Accepted **Name authority:** APC

Coast Banksia

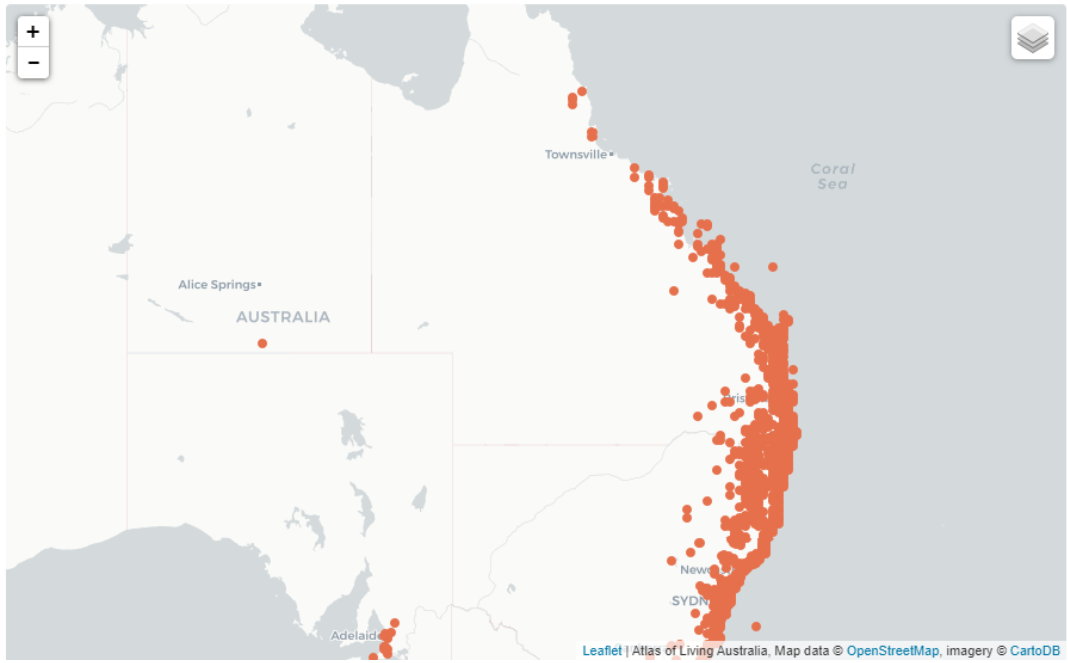
Banksia integrifolia: Brief Summary

Banksia integrifolia, commonly known as coast banksia, is a species of tree that grows along the east coast of Australia. One of the most widely distributed Banksia species, it occurs between Victoria and Central Queensland in a broad range of habitats, from coastal dunes to mountains. It is highly variable in form, but is most often encountered as a tree up to 25 metres (82 ft) in height. Its leaves have dark green upper surfaces and white undersides, a contrast that can be striking on windy days.

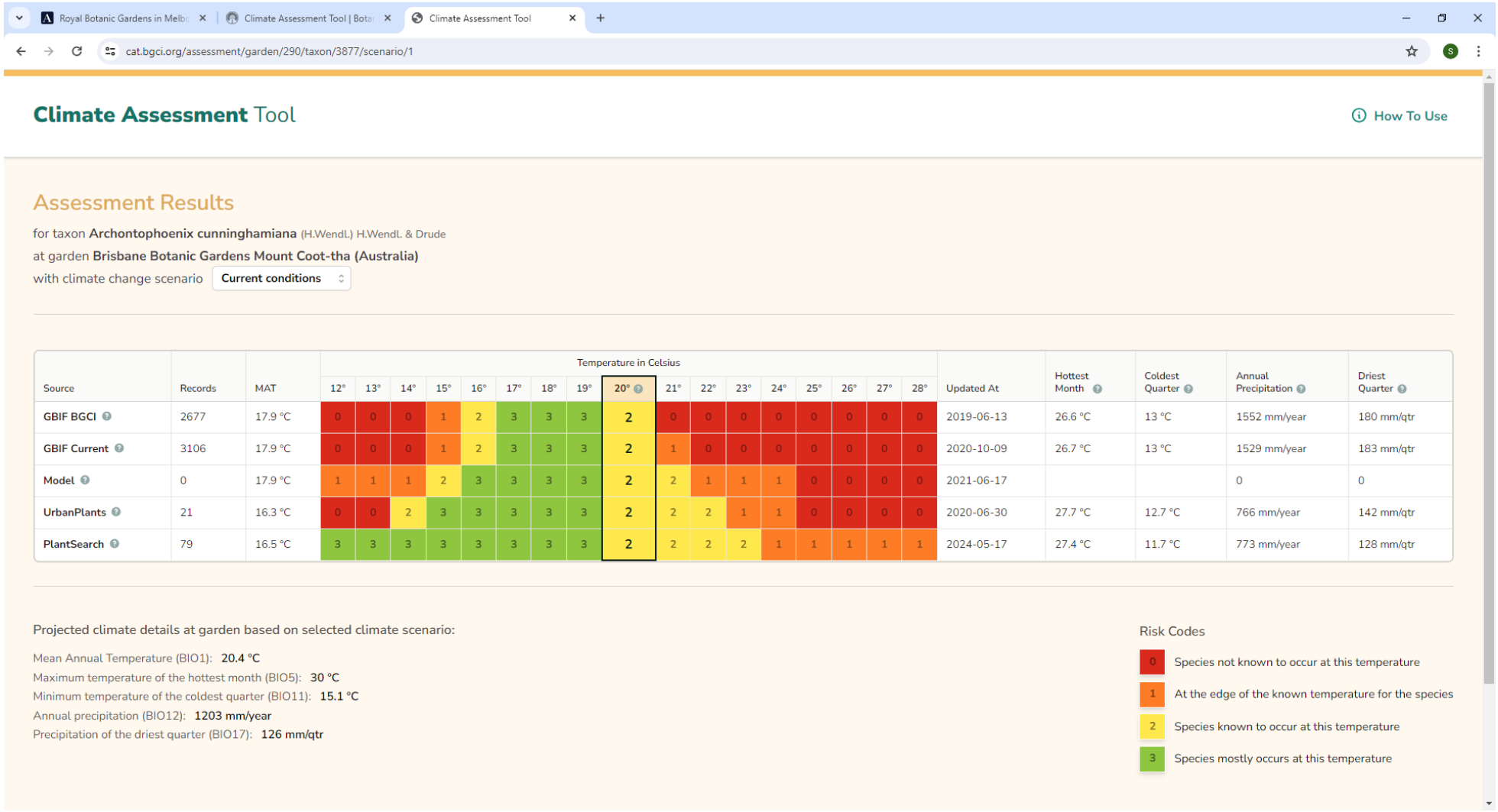
It is one of the four original Banksia species collected by Sir Joseph Banks in 1770, and one of four species published in 1782 as part of Carolus Linnaeus the Younger's original description of the genus. It has had a complicated taxonomic history, with numerous species and varieties ascribed to it, only to be rejected or promoted to separate species. Modern taxonomy recognises three subspecies: B. integrifolia subsp. integrifolia, B. integrifolia subsp. compar and B. integrifolia subsp. monticola.

A hardy and versatile garden plant, B. integrifolia is widely planted in Australian gardens. It is a popular choice for parks and streetscapes, and has been used for bush revegetation and stabilisation of dunes. Its hardiness has prompted research into its suitability for use as a rootstock in the cut flower trade, but has also caused concerns about its potential to become a weed outside its natural habitat.

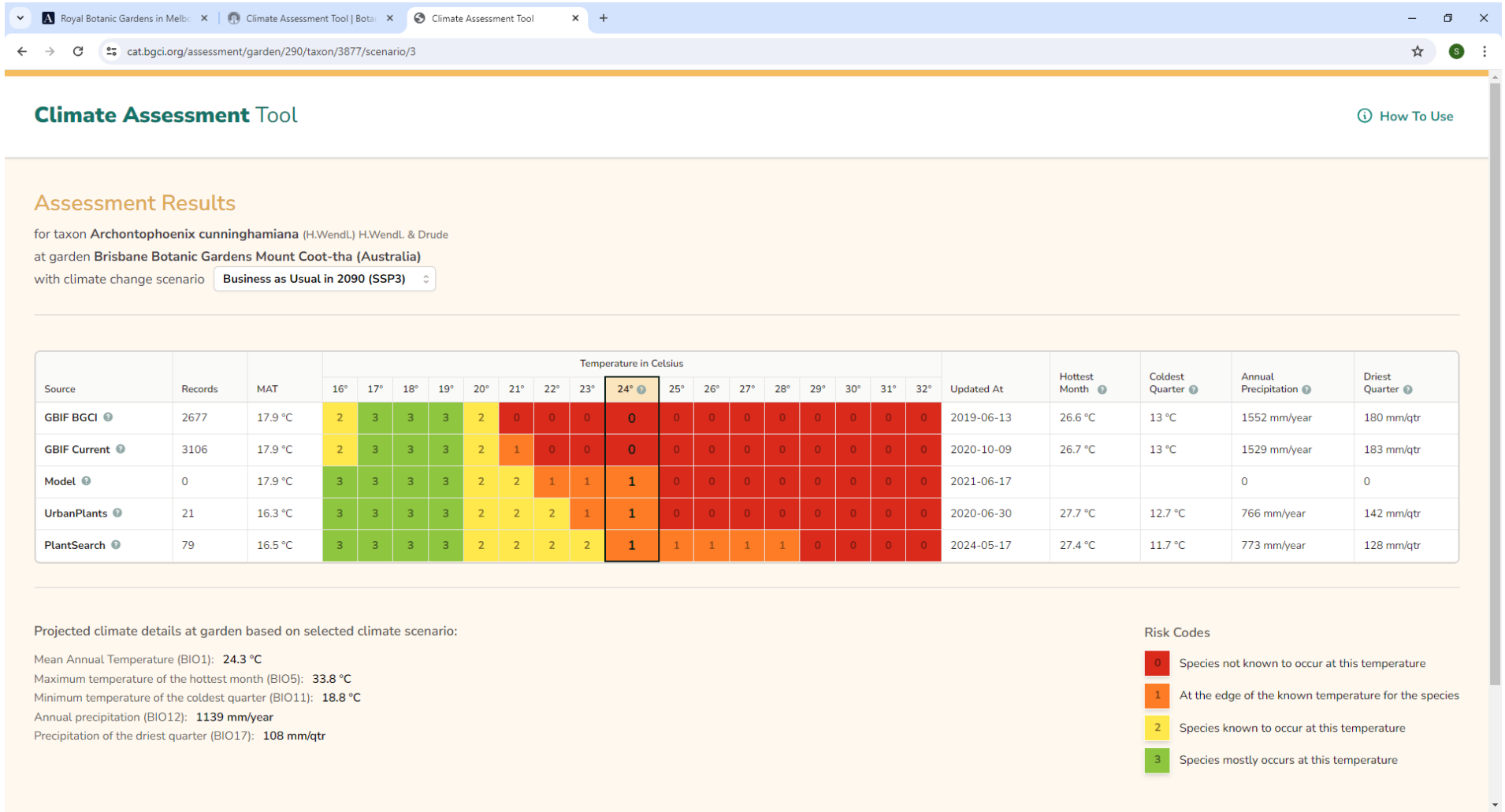
Occurrence records map (11,870 records)



Compared to distribution of *Banksia integrifolia*



Botanic Gardens Conservation International Climate Assessment Tool
https://www.bgci.org/resources/bgci-hosted-data-tools/climate-assessment-tool/



Botanic Gardens Conservation International Climate Assessment Tool
https://www.bgci.org/resources/bgci-hosted-data-tools/climate-assessment-tool/

Keys to Terms in Tables:

Form - Growth Form

TT	Tall Tree with a growth height greater than 20 metres
MT	Medium Tree with a growth height between 10 metres and 20 metres
ST	Small Tree with a growth height less than 10 metres
LS	Large Shrub with a growth height greater than 3 metres
MS	Medium Shrub with a growth height of between 1 metre and 3 metres
SS	Small Shrub with a growth height less than 1 metre
G	Grass
GC	Groundcover
TF	Tufting - a type of plant that spreads out
P	Palm
V	Vine

Table 1: Climate Resilience of Coastal Beachfront Landscaping Species

This table assesses the climate change resilience of species contained in **Table SC6.3.4.1 Coastal Beachfront Area Species of Planning Scheme Policy 2 contained within the Noosa Plan**

Botanical name	Common name	Form	Existing Geographical Distribution including climate analogue locations	Notes
PRIMARY CHARACTER SPECIES				
Acacia flavescens	Primrose Ball Wattle	ST	yes	
Acacia sophorae	Coastal Wattle	MS	no	Noosa is the northern extent of its range. Not considered resilient to predicted climate change
Acronychia imperforata	Fraser Island Apple	ST	yes	
Alectryon coriaceus	Beach Birds Eye	ST	yes	
Allocasuarina equisetifolia	Horsetail She-oak	ST	yes	
Allocasuarina littoralis	Black She-Oak	ST	yes	
Alphitonia excelsa	Red Ash	MT	yes	
Banksia aemula	Wallum Banksia	ST	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Banksia integrifolia	Coastal Banksia	MT	yes	
Callitris columellaris	Cooloola Cypress Pine	TT	yes	
Corymbia intermedia	Pink Bloodwood	TT	yes	
Corymbia tessellaris	Moreton Bay Ash	TT	yes	
Cupaniopsis anacardioides	Large Leaf Tuckeroo	MT	yes	
Elaeocarpus reticulatus	Blueberry Ash	MT	no	Rockhampton is the northern extent of its range. Not considered resilient to predicted climate change
Eucalyptus robusta	Swamp Mahogany	TT	Partial Distribution is quite limited in areas north and west of Noosa.	Consider only in locations that have additional water availability whether through irrigation or to be placed in overland flow paths to improve ground moisture
Eucalyptus tereticornis	Qld Blue Gum or Forest Red Gum	TT	yes	
Hibiscus tiliaceus	Cottonwood	MT	yes	
Lomandra longifolia/hystrix	Mat-rush	G	yes *Lomandra longifolia* prevails over hotter and drier areas compared to *Lomandra hystrix*	*Lomandra longifolia* as the more dry tolerant of the 2 species and would likely be more resilient to climate change

Botanical name	Common name	Form	Existing Geographical Distribution including climate analogue locations	Notes
Laphostemon confertus	Brush Box	TT	yes	
Laphostemon suaveolens	Swamp Box	MT	yes	
Macaranga tanarius	Macaranga	MT	yes	
Melaleuca quinquenervia	Paperbark Tea Tree	TT	yes	
Melastoma affine	Blue Tongue	MS	Partial Distribution is quite limited in areas north and west of Noosa and in specific localities that currently have high rainfall.	Consider only in locations that have additional water availability whether through irrigation or to be placed in overland flow paths to improve ground moisture
Pandanus tectorius var. pedunculatus	Pandanus/ Screw Pine	MT	yes	
Phebalium woombye	Phebalium	MS	yes	
Ricinocarpos pinifolius	Wedding Bush	MS	yes	
Xanthorrhoea johnsonii	Heath Grasstree	TF	yes	
SECONDARY CHARACTER SPECIES - TREES & SHRUBS				
Acacia aulacocarpa	Hickory Wattle	ST	yes	
Acacia complanata	Flat Stem Wattle	ST	yes	
Acacia concurrens	Dog Wattle	LS	yes	
Acacia leiocalyx	Lambs Tail Wattle	ST	yes	
Acacia maidenii	Maiden's Wattle	MT	yes	
Acacia oshanesii	Irish Wattle	ST	No	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Acmena hemilampra	Broad Leaved Lilly Pilly	ST	yes	
Acmena smithii	Lilly Pilly	ST	yes	
Allocasuarina littoralis	Black She-Oak	ST	yes	
Alyxia ilicifolia subspecies magnifolia	Large Leaved Chain fruit	LS	yes	
Angophora leiocarpa	Smooth Barked Apple	MT	yes	
Banksia serrata	Red Honeysuckle	MT	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Callistemon salignus	Weeping White Bottle Brush	ST	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Callistemon sp	(Bottlebrush) All Cultivars	LS	yes	Generally. Existing distribution of many cultivated varieties are found across Queensland
Canthium coprosmoides	Beach Canthium	LS	yes	

Botanical name	Common name	Form	Existing Geographical Distribution including climate analogue locations	Notes
Casuarina glauca	Swamp She-oak	MT	yes	
Clerodendron inerme		LS	yes	
Commersonia bartramii	Brown Kurrajong	MT	yes	
Corymbia gunnifera	Red Bloodwood	TT	yes	
Cupaniopsis parviflora	Small-leaved Tuckeroo	MT	yes	
Elaeocarpus obovatus	Hard Quandong	TT	yes	
Eucalyptus bancroftii	Tumbledown Gum	ST	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Eucalyptus conglomerata	Swamp Stringybark	MT	no	Noosa is the northern extent of its range and has very limited distribution. Not considered resilient to predicted climate change
Eucalyptus microcorys	Tallowwood	TT	no	Fraser Island is the northern extent of its range. Not considered resilient to predicted climate change
Eucalyptus racemosa	Scribbly Gum	TT	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Ficus coronata	Creek Sandpaper Fig	ST	yes	
Ficus macrophylla	Moreton Bay Fig	TT	no	Gladstone and some other isolated locations are the northern extent of its range. Not considered resilient to predicted climate change
Ficus obliqua	Small-leaved Fig	TT	yes	
Ficus platypoda	Rock Fig	LT	yes	
Glochidion ferdinandi	Cheese Tree	MT	yes	
Glochidion sumatranum	Umbrella Cheese Tree	MT	yes	
Gmelina leichhardtii	White Beech	MT	yes	
Grevillea banksii	Red Flowered Silky Oak	ST	yes	
Halfordia kendack	Southern Ghittoe	MT	Partial Existing distribution is higher rainfall areas to south of Gladstone and to north of Townville with very limited distribution to other hotter and drier locations in Queensland.	Consider only in locations that have additional water availability whether through irrigation or to be placed in overland flow paths to improve ground moisture
Hibiscus heterophyllus	Native Rosella	LS	yes	
Hibiscus splendens	Splendid Hibiscus	LS	yes	

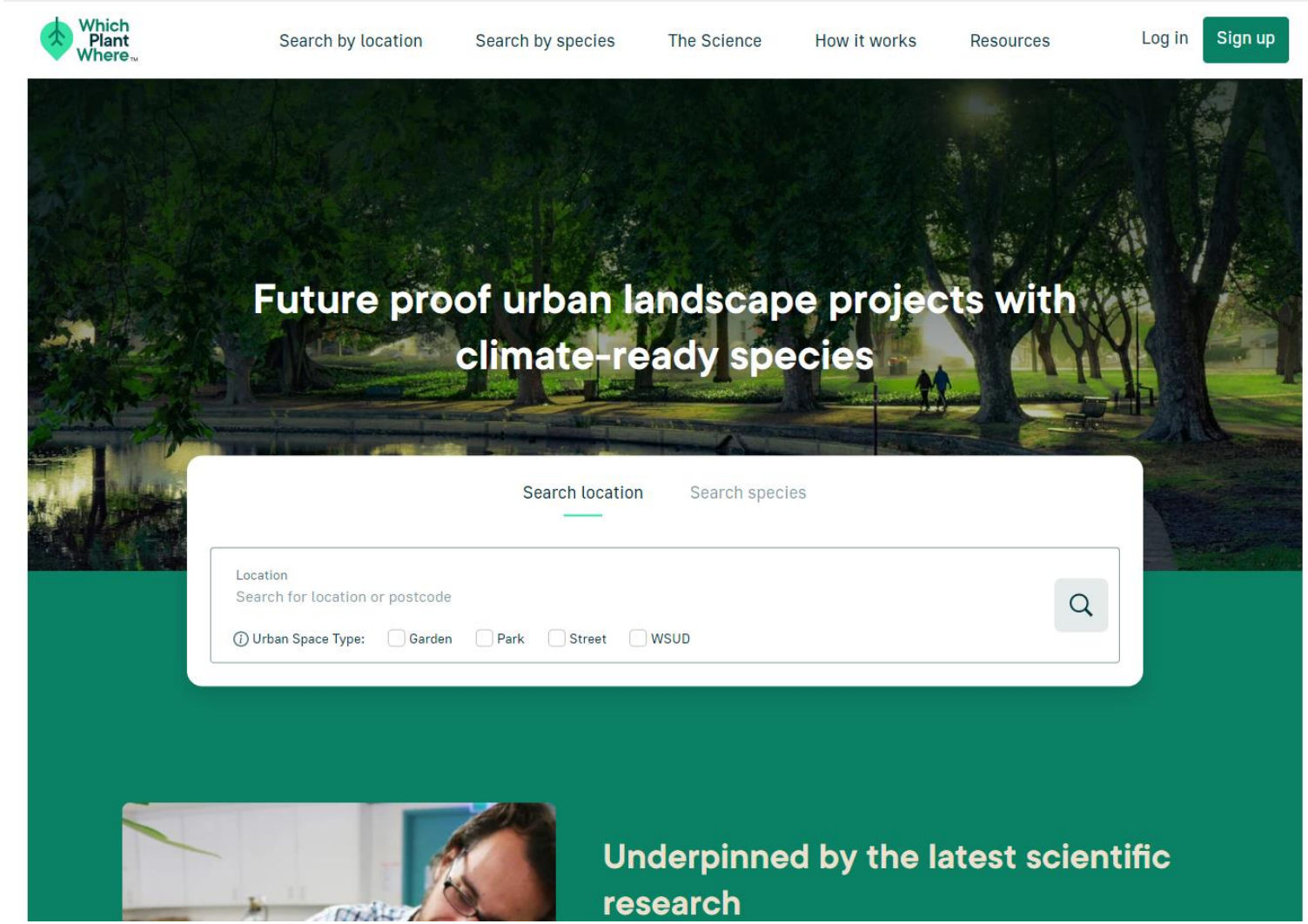
Botanical name	Common name	Form	Existing Geographical Distribution including climate analogue locations	Notes
Jacksonia scoparia	Dogwood/Native Broom	LS	yes	
Leptospermum petersonii	Lemon Scented Tea Tree	LS	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Leptospermum polygalifolium	Wild May	LS	yes	
Leptospermum speciosum	Wallum Tea Tree	LS	no	Noosa is the northern extent of its range and has very limited distribution. Not considered resilient to predicted climate change
Melaleuca bracteata	Revolution Green and Revolution Gold	TT	yes	
Melaleuca sieberi		MT	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Mellicope elleryana	Pink Euodia	MT	yes	
(H?)Omalanthus nutans	Native Bleeding Heart	ST	yes	
Petalostigma pubescens	Quinine Berry	ST	yes	
Petalostigma triloculare	Quinine Berry	MT	yes	
Pilidiostigma rhytispermum	Plum Myrtle	LS	no	Noosa is the northern extent of its range and has very limited distribution. Not considered resilient to predicted climate change
Polyscias elegans	Celery Wood	MT	yes	
Samoum glandulosum	Scentless Rosewood	ST	yes	
Vitex trifolia var bicolor	Coastal Vitex	ST	yes	
SECONDARY CHARACTER SPECIES - SMALL/MEDIUM SHRUBS, VINES AND GROUNDCOVERS				
Acacia suaveolens	Sweet wattle	MS	no	Gladstone is the northern extent of its range and has very limited distribution. Not considered resilient to predicted climate change
Alpinia caerulea	Native Ginger	TF	yes	
Alyxia ruscifolia	Chain Berry	MS	yes	
Astus ericoides	Eggs and Bacon	MS	no	Gladstone is the northern extent of its range and has very limited distribution. Not considered resilient to predicted climate change
Astus lanigera	Golden Candlesticks	MS	no	Gladstone is the northern extent of its range and has very limited

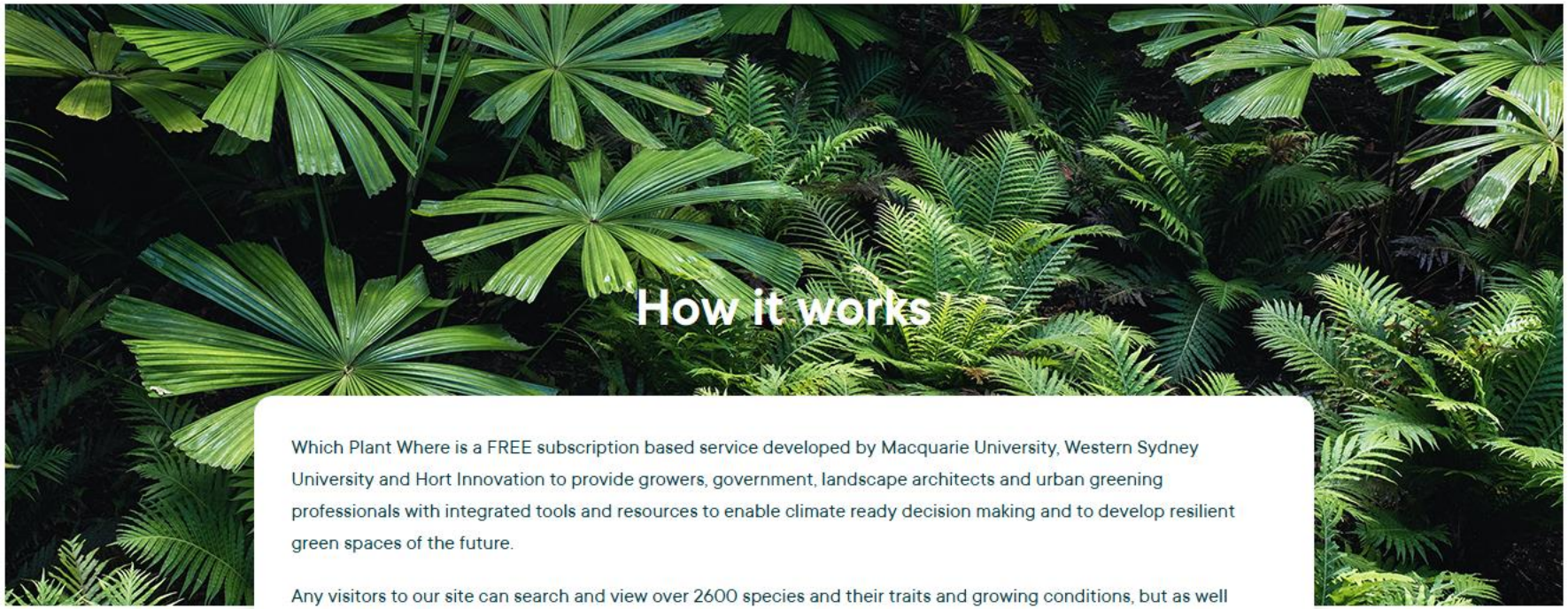
Botanical name	Common name	Form	Existing Geographical Distribution including climate analogue locations	Notes
				distribution. Not considered resilient to predicted climate change
Austromyrtus dulcis	Midyim	GC	no	Fraser Island is the northern extent of its range. Not considered resilient to predicted climate change
Baeckea stenophylla	Weeping Baeckea	MS	yes	
Banksia oblongifolia	Dwarf Banksia	SS	no	Gladstone is the northern extent of its range. Not considered resilient to predicted climate change
Banksia robur	Swamp Banksia	MS	yes	
Banksia spinulosa	Golden Candlesticks	MS	yes	
Bauera capitata		SS	no	Gladstone is the northern extent of its range. Not considered resilient to predicted climate change
Bauera rubioides	Wiry Dog Rose	SS	no	Maryborough is the northern extent of its range. Not considered resilient to predicted climate change
Baumea rubiginosa	Soft Twigrush	G	yes	
Blechnum spp.	Water Ferns	TF	yes	
Boronia falcifolia	Wallum Boronia	MS	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Boronia rivularis	Wide Bay Boronia	MS	no	Fraser Island is the northern extent of its range. Not considered resilient to predicted climate change
Bracteantha sp.	Federation Daisy	GC	yes	
Callistemon pachyphyllus	Swamp Callistemon	MS	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Carpobrotus glaucescens	Pigface	GC	yes	
Crinum pedunculatum	River Lily	TF	yes	
Dianella caerulea	Flax Lily	TF	yes	
Dianella congesta	Beach Flax Lily	TF	no	Gladstone is the northern extent of its range. Not considered resilient to predicted climate change
Dillwynia retorta	Heathy Parrot Pea	MS	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Dodonea triquetra	Native Hop	MS	yes	
Eleocharis genticulata	Spikerush	TF	yes	
Eleocharis minuta	Spikerush	TF	yes	
Eleocharis ochrostachys	Spikerush	TF	yes	

Botanical name	Common name	Form	Existing Geographical Distribution including climate analogue locations	Notes
Eleocharis spiralis	Spikerush	TF	yes	
Eleocharis tetraquetria	Spikerush	TF	yes	
Eriostemon spp.	Qld. Wax flower	SS	no (local *Eriostemon myoporoides* renamed as *Philotheca myoporoides*).	Gladstone is the northern extent of its range. Not considered resilient to predicted climate change
Grevillea sp	All Cultivars	MS	Partial Grevillea cultivars genetically based on the local *Grevillea banksii* (such as *Robyn Gordon*) has a broad distribution across Queensland	Partially resilient to predicted climate change. Choose Grevillea cultivars genetically based on *Grevillea banksii*
Hakea actites	Prickly Hakea	MS	no	Gladstone is the northern extent of its range. Not considered resilient to predicted climate change
Hardenbergia violacea	Native Sarsparilla	GC	yes	
Helichrysum spp.	Golden Buttons\ Paper Daisy	GC	yes	
Hibbertia obtusifolia	Guinea Flower	SS	yes	
Hibbertia scandens	Twining Guinea Flower	V	yes	
Hibiscus diversifolius	Swamp Hibiscus	MS	yes	
Ipomoea pes-caprae	Goats Foot Convolvulus	GC	yes	
Juncus usitatus	Common Rush	TF	yes	
Kennedia rubicunda	Running Postman	V	yes	
Leptospermum liversidgei		MS	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Lomandra confertifolia	Mat-rush	G	yes	
Melaleuca nodosa	Prickly Leaved Paperbark	MS	yes	
Myoporum acuminatum		GC	yes	
Petrophile shirleyae	Drumsticks, Conesticks	MS	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Phebalium woombye prostate form	Wallum Gold	GC	yes	
Pultenea spp.	Bush Pea/Bacon and Eggs	SS	Partial Only *Pultenea retusa* has a distribution that includes areas Queensland that are hotter and drier than	Choose *Pultenea retusa*

Botanical name	Common name	Form	Existing Geographical Distribution including climate analogue locations	Notes
			Noosa Shire including central coastal Queensland. *P. myrtoides, P. paleacea* and *P. villosa* extend to Bundaberg but do not extend to drier and hotter areas of Queensland.	
Ricinocarpus pinifolius prostate form	Wedding Bush prostrate	GC	yes	
Scaevola calendulacea	Dune Fan Flower	GC	yes	
Sowerbaea juncea	Vanilla Lily	TF	no	Gladstone is the northern extent of its range. Not considered resilient to predicted climate change
Strangea linearis	Strangea	MS	no	Bundaberg is the northern extent of its range. Not considered resilient to predicted climate change
Themeda triandra	Kangaroo Grass	TF	yes	
Viola betonicifolia	Betony Leaved Violet	GC	yes	
Viola hederacea	Native Violet	GC	yes	
Wahlenbergia stricta	Bluebells	TF	yes	

https://www.whichplantwhere.com.au/





How it works

Which Plant Where is a FREE subscription based service developed by Macquarie University, Western Sydney University and Hort Innovation to provide growers, government, landscape architects and urban greening professionals with integrated tools and resources to enable climate ready decision making and to develop resilient green spaces of the future.

Any visitors to our site can search and view over 2600 species and their traits and growing conditions, but as well asaccess to the climate modelling, mapping, co-benefits calculator and palette creator for free!

Yes, I'd like to sign up!

Clear Filters (2)

Growth form
- [ ] Tree
- [ ] Shrub
- [ ] Grass-like
- [ ] Herbaceous
- [ ] Palm
- [ ] Climber
- [ ] Fern
- [ ] Succulent
- [ ] Cycad

Urban space type
- [ ] Garden
- [x] Park
- [ ] Street
- [ ] WSUD

Height in cultivation
- [ ] 0 – 1 m
- [ ] 1 – 3 m
- [ ] 3 – 6 m
- [ ] 6 – 10 m
- [ ] 10 – 15 m
- [ ] 15+ m

Spread in cultivation
- [ ] 0 – 0.5 m
- [ ] 0.5 – 1 m
- [ ] 1 – 2 m
- [ ] 2 – 4 m
- [ ] 4 – 8 m
- [ ] 8+ m

Shade tolerance
- [ ] Full sun
- [ ] Part shade
- [ ] Full shade

Leaf loss

4563

Climatic Suitability: 2030 | 2050 | 2070

Results: 124

Results are sorted alphabetically by climatic suitability

0

Acacia aulacocarpa

Brown Salwood

Shrub
Tree

Climatic Suitability: 2030 | 2050 | 2070

Acacia harpophylla

Brigalow

Tree

Climatic Suitability: 2030 | 2050 | 2070

Acronychia imperforata

Beach Acronychia

Tree

Climatic Suitability: 2030 | 2050 | 2070

Agathis robusta

Albizia lebbeck

Alectryon coriaceus

But being pragmatic

- Don’t be too concerned for shrubs and groundcovers – these garden elements tend to be more shortlived and changeable
- Have a high variety of species to assist resilience which is also better for wildlife. Monocultures are most susceptible to climate change
- Plant a mosaic of plants with some suited to drier conditions and others suited to wetter conditions to provide maximum flexibility
- Focus on your trees: do the trees you are proposing to plant also live in hot and drier climate (such as Sarina)

Shade trees to consider for your garden and likely resilient to climate change

Species	Common Name
Acmena ingens	Red Apple
Acmena smithii	Lilly Pilly
Acronychia imperforata	Fraser Island Apple
Alectryon coriaceus	Beach Birds Eye
Allocasuarina littoralis	Black She-Oak
Argyrodendron trifoliatum	Booyong
Arytera divaricata	Coogera
Auranticarpa rhombifolia	Hollywood
Austromyrtus acmenioides	Scrub Ironwood
Backhousia citriodora	Lemon Scented Myrtle
Baloghia inophylla	Brush Bloodwood
Barklya syringifolia	Crown of Gold Tree
Banksia integrifolia	Coastal Banksia
Brachychiton acerifolius	Flame Tree
Brachychiton populneus	Kurrajong
Callistemon viminalis	Weeping Red Bottle Brush
Canarium australascium	Mango Bark
Casuarina equisetifolia	Horsetail She-oak
Cinnamomum oliveri	Oliver's Sassafras
Croton insularis	Silver Croton
Cryptocarya hypospodia	Rib Fruited Pepperberry
Cryptocarya macdonaldii	Cooloola Laurel
Cupaniopsis anacardioides	Large Leaf Tuckeroo
Cupaniopsis parviflora	Small-leaved Tuckeroo
Diploglottis australis	Native Tamarind
Elaeocarpus eumundi	Eumundi Quandong
Elaeocarpus obovatus	Hard Quandong
Flindersia australis	Crows Ash
Flindersia xanthoxyla	Long Jack\ Yellowwood

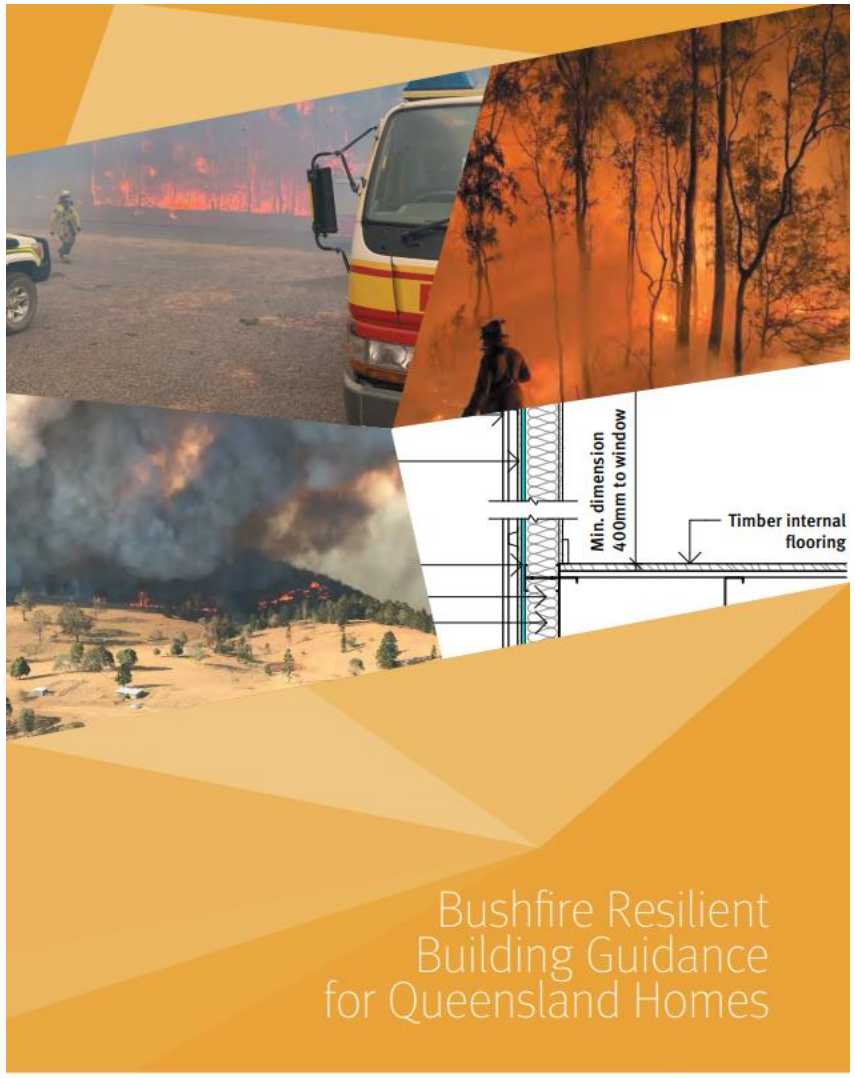
Species	Common Name
Glochidion ferdinandi	Cheese Tree
Glochidion sumatranum	Umbrella Cheese Tree
Guioa semiglauca	Guioa
Harpullia hillii	Blunt-leaved Tulipwood
Hymenosporum flavum	Native Frangipani
Jagera pseudorhus var. var. pseudorhus	Foambark Tree
Litsea leefeana	Northern Brown Bolly Gum
Litsea reticulata	Bolly Gum
Lophostemon confertus	Brush Box
Mallotus philippensis	Red Kamala
Neolitsea dealbata	White Bolly Gum
Melaleuca quinquenervia	Paperbark Tea Tree
Melia azedarach	White Cedar
Olea paniculata	Native Olive
Petalostigma pubescens	Quinine Berry
Petalostigma triloculare	Quinine Berry
Planchonella cotinfolia	Small Leafed Coondoo
Podocarpus elatus	Plum Pine/Brown Pine
Rapanea variabilis	Muttonwood
Rhodamnia argentea	Silver Myrtle
Stenocarpus sinuatus	Firewheel Tree\Wheel of Fire
Synoum glandulosum ssp glanulosum	Scentless Rosewood
Syzygium australe	Brush Cherry
Syzygium hemilamprum ssp. hemilamprum	Broad Leaved Lilly Pilly
Syzigium oleosum	Blue Lilly-Pilly
Waterhousia floribunda	Weeping Lilly Pilly

4. Bushfires

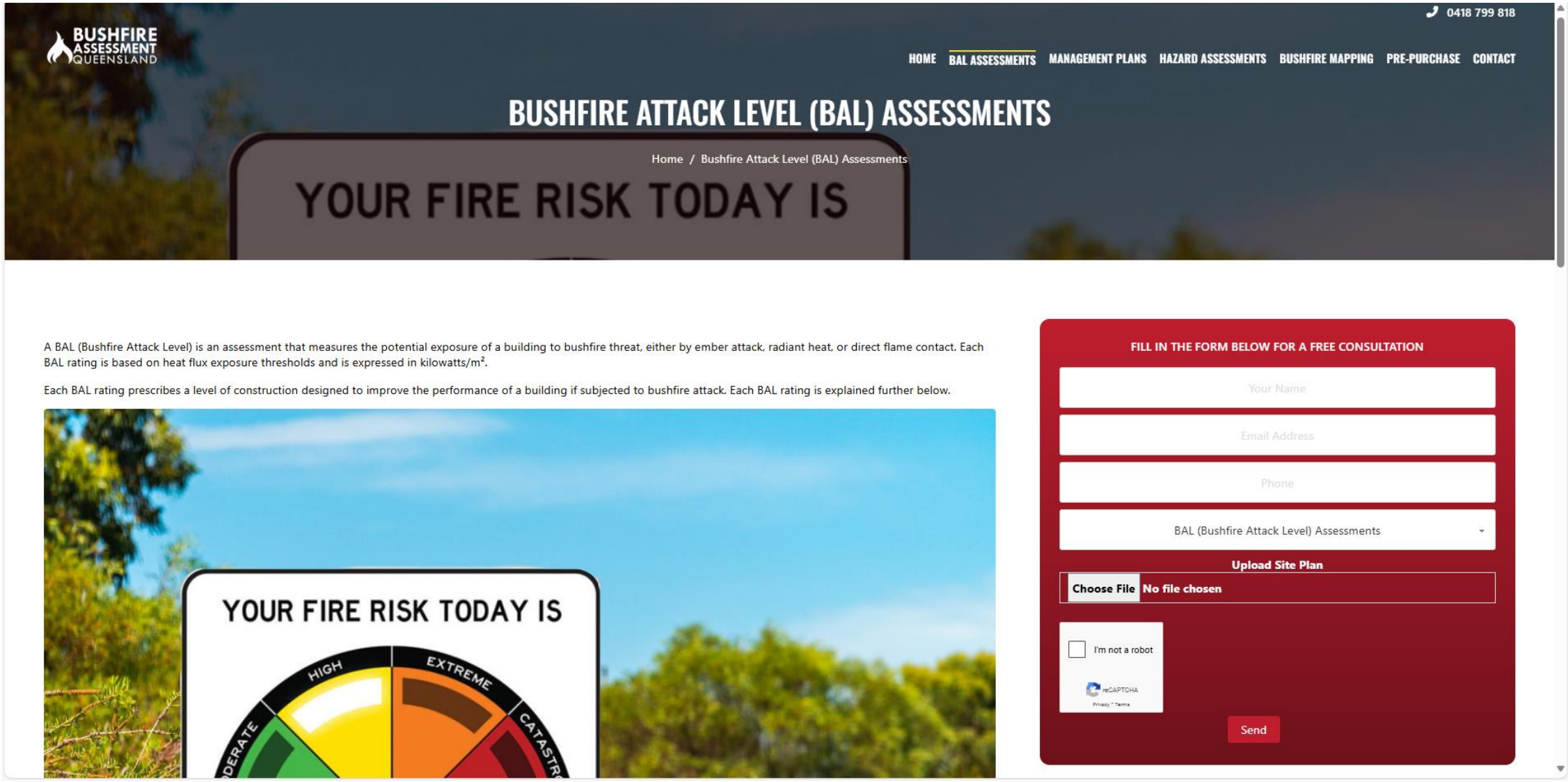
With predicted climate change our bushfore risk is fundamentally changing in SEQ

The paradox between planting to keep our houses cool, reduce carbon emissions and increasing fire risk is complex….

There are now many useful guides applicable to south east Queensland to assist in your decisions



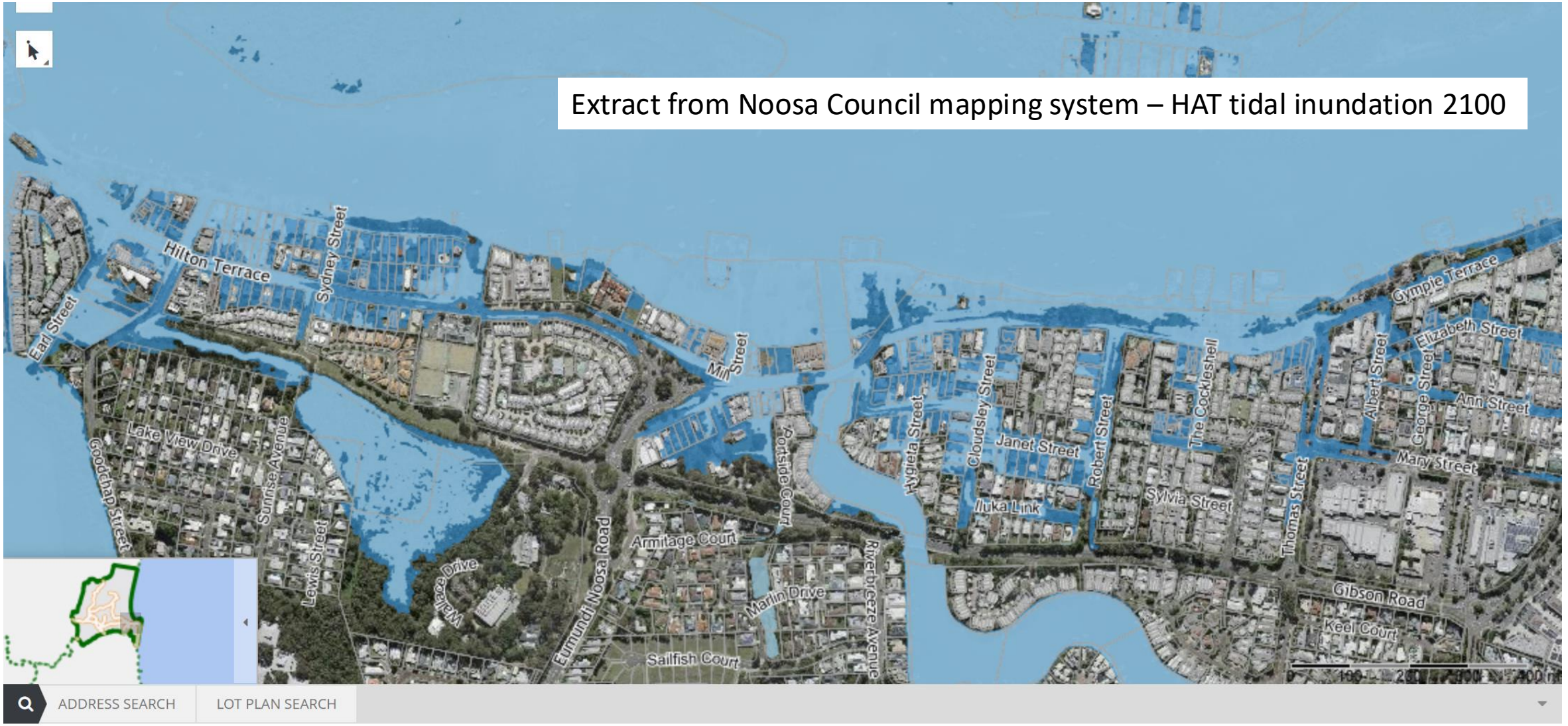
file:///C:/Users/swalsh/Downloads/Bushfire%20Resilient%20Building%20Guidance%20for%20Queensland%20Homes%20(2).pdf



https://www.bushfireassessmentqld.com.au/bushfire-attack-level-assessments/

5. Tidal Inundation

many low lying areas in Noosa along the river can be expected to have more regular tidal innudation due to rising sea levels. How do i plant a garden so that it is salt tolerant



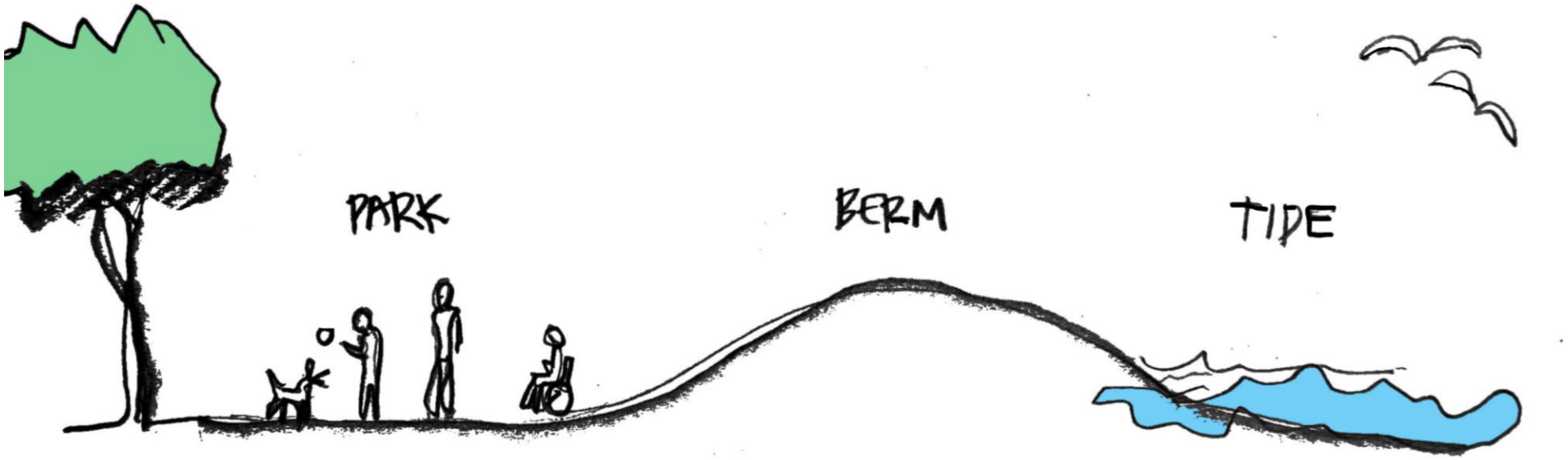
NOOSA Council

Noosa Plan 2020

Need some help? Click here to view Noosa's Interactive training videos

N

a. Protection Berms:



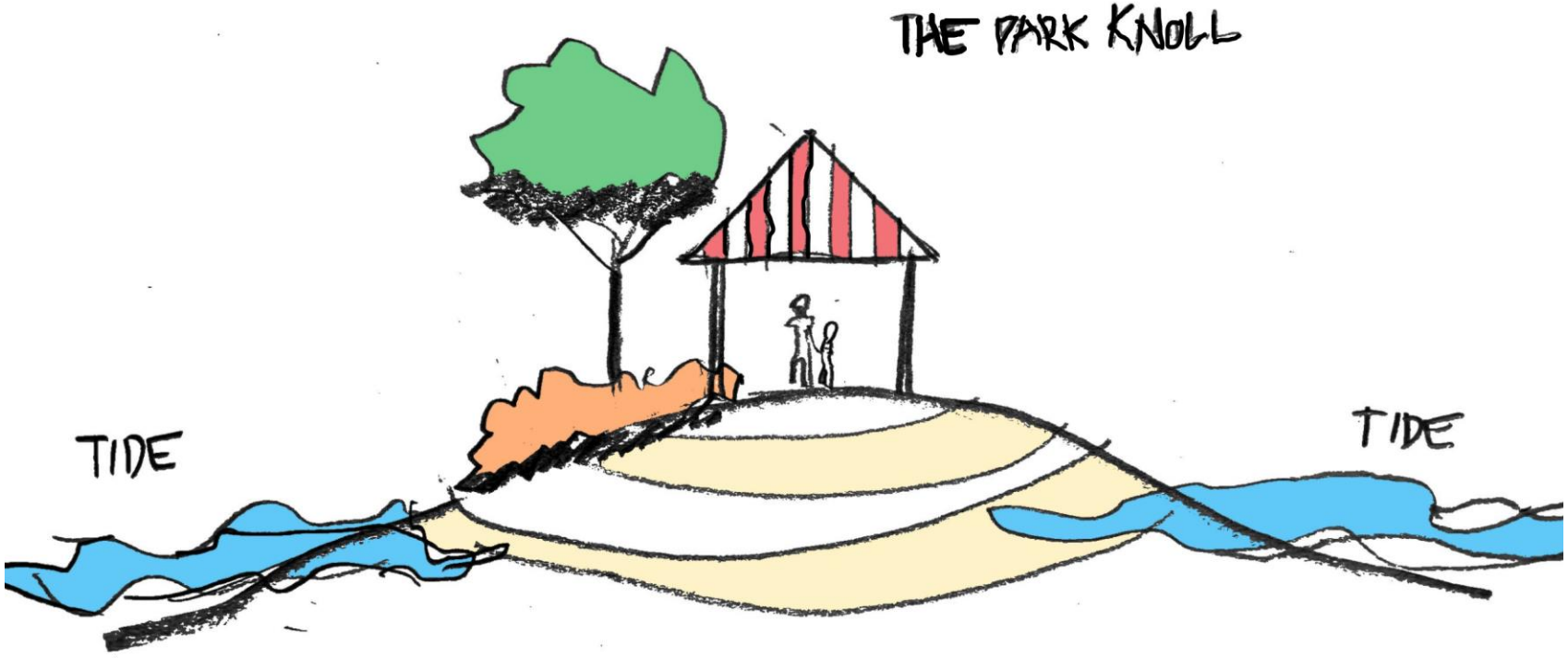
- **Berms to prevent tidal inundation**
- **Highly engineered**
- **Awkward transitions to natural surface levels**
- **Need for careful stormwater management, backflow devices and costly operational management**

“Beasts of the Southern Wild”
2012 directed by Ben Zeitlin

The berm have and the berm have nots…

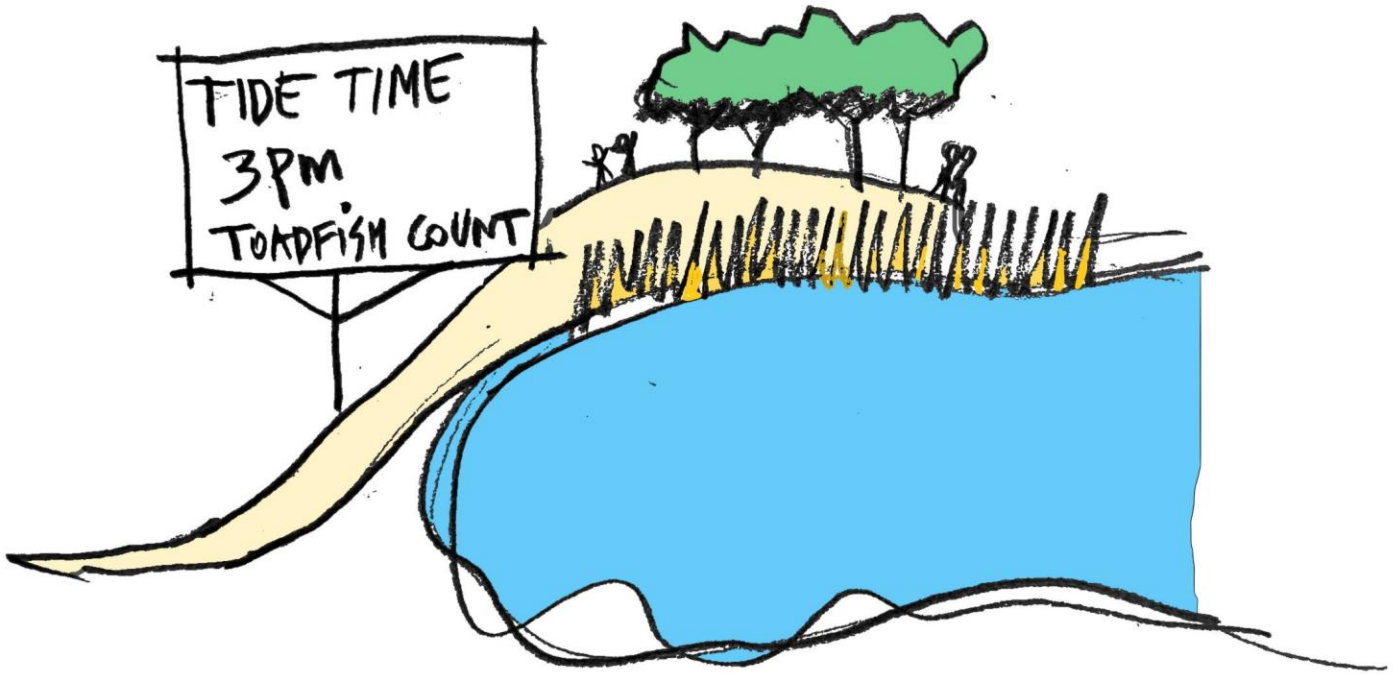
Images sources from https://www.afcinema.com/IMG/jpg/1/9/a/022-beastsofthesouthernwild_chapterimage_76_ps-1.jpg and https://www.hnoc.org/publications/first-draft/benh-zeitlin-recalls-when-his-louisiana-made-beasts-southern-wild-charmed

b. Elevated Knolls:



- **Colocation of valuable infrastructure on knolls**
- **Needs careful design to gracefully manage transitions**
- **Can create topographic interest in park**

c. Allow Inundation:



- **Design landscapes that are resilient to frequent inundation**
- **Opportunity to celebrate the process of inundation in new and interesting ways**

- ***is the denial of tidal inundation the denial of climate change and history? Is tidal inundation a valuable process to "daylight" climate change?***

A board walk trail winds through a salt marsh in Cheesequake State Park in Middlesex County, New Jersey.

https://freerangestock.com/photos/48772/board-walk-through-salt-marsh-at-cheesequake-state-park-nj.html

Or a fresh approach?

Tidal Terraces at Gosford Leagues Club Playground
AILA 2022 National Awards of Excellence in the Play spaces category.

Turf Design Studio

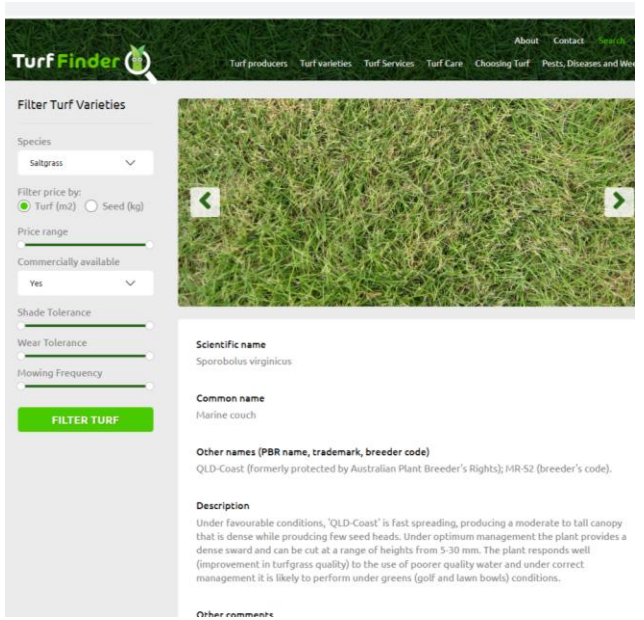
The Noosa River Everglades provides a world leading example of species that tolerate changing salinity with a constant change in inundation levels and the mix salt water and fresh water content

b. Salinity tolerance for inundation areas

We are fortunate that we have a local ecological communities of species that can tolerate fluctuating salinity. Species selection is critical to achieving green welcoming parks in a saline environment:

Species with potential:

Species	Common name	Notes
Avicennia marina	Grey Mangrove	Tree - with good shade in saline waters. Requires research and cultivation.
Casuarina glauca	Swamp oak	Tree - Copse of planting can provide dense shade.
Cebera manghas	nil	Tree - with good shade in intertidal areas in Cooloola. Requires research and cultivation.
Hibiscus tilaceus	Cottonwoods	Tree - Can certainly be trained to a shade tree structure.
Suaeda australis	Seablite	Small Shrub – dense woody perennial in sheltered foreshores
Arostichum speciosum	Mangrove fern	Groundcover – lush large tufting fern in tidal creeks
Baumea juncea	Bare twigrush	Groundcover – architectural tufting sedge in sheltered foreshores
Juncua kraussi	Sea Rush	Groundcover – architectural rush in sheltered foreshores
Schonenus brevifolius	*Zig Zag Bog Rush*	Groundcover – architectural rush in swampy coastal areas
Sporobolus virginicus	*Marine Couch*	Grass – requires research and cultivation as a turf species



Cebera manghas

Hibiscus tilaceus

Sporobolus virginicus

6. Severe Weather / Wind

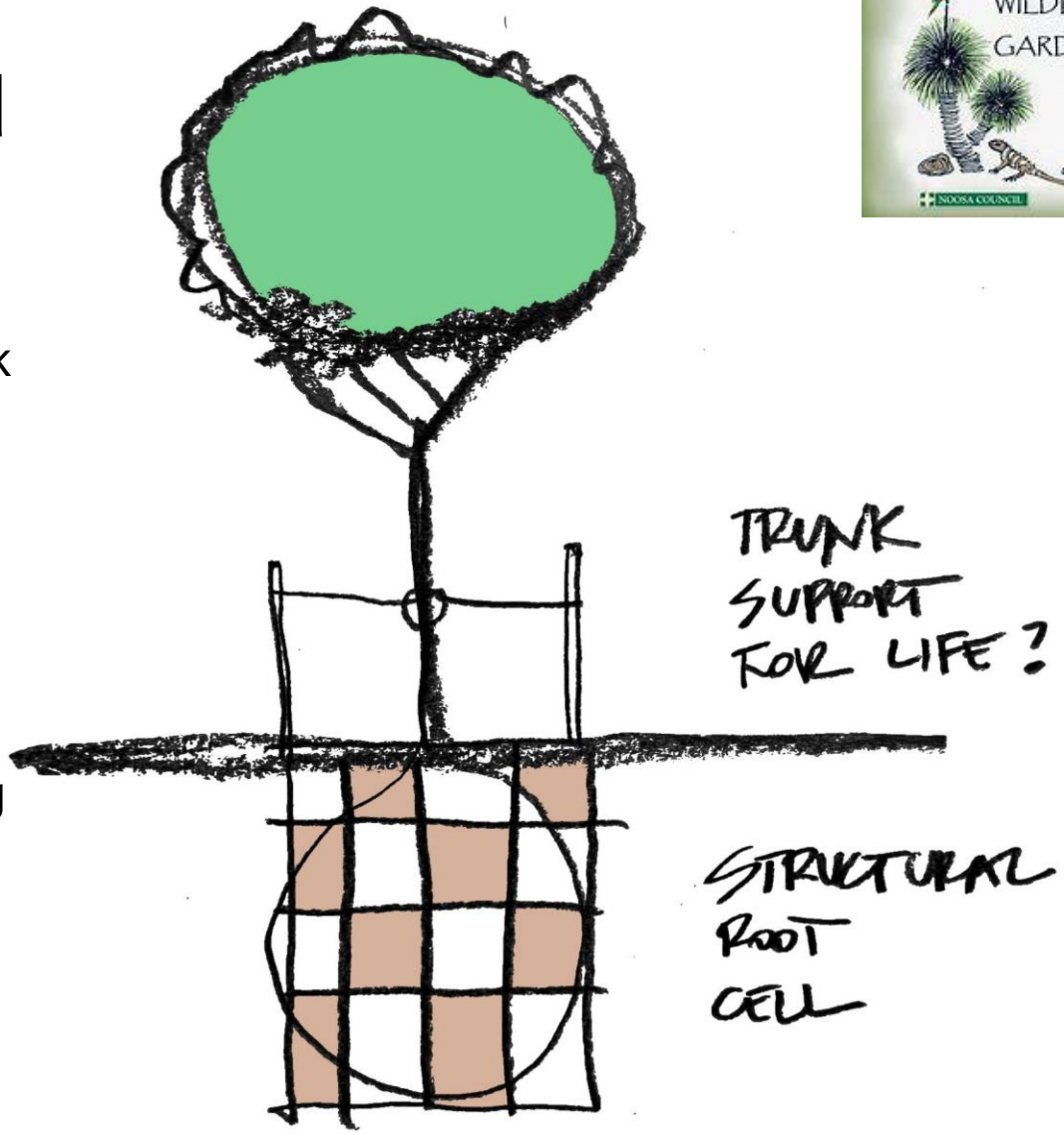
Noosa has a history of cyclones and severe winds.

Trees in exposed locations are particularly at risk of damage

Consider tree placement in regard to house in the event of tree fall – particulary to the east

Tree anchoring is an option.

Another option is proactive pruning before a predicted wind event to reduce structural loading



More information!

https://theconversation.com/a-slackers-guide-to-climate-friendly-gardening-206156

https://www.climatefriendlygardening.org/slideshows

https://gardening.cals.cornell.edu/lessons/gardening-in-our-warming-world-youth-grow/unit-two/exploring-sustainability/climate-change-in-the-garden/

https://www.natureaustralia.org.au/get-involved/take-action/wildlife-friendly-garden/

https://theconversation.com/urban-agriculture-isnt-as-climate-friendly-as-it-seems-but-these-best-practices-can-transform-gardens-and-city-farms-221537

https://renew.org.au/renew-magazine/gardening/climate-ready-gardening/

https://www.sierraclub.org/sierra/how-climate-proof-your-garden

Thankyou

URBAN WILDLIFE GARDENS is a program of NICA – Noosa Integrated Catchment Association

We receive annual program funding from Noosa Council

We have also kindly received grant funding from State Member Sandy Bolton and the Cooroy RSL

Noosa Integrated Catchment Assn. Inc.

NOOSA Council

Cooroy RSL

6. Questions and Discussion

My garden at Black Mountain