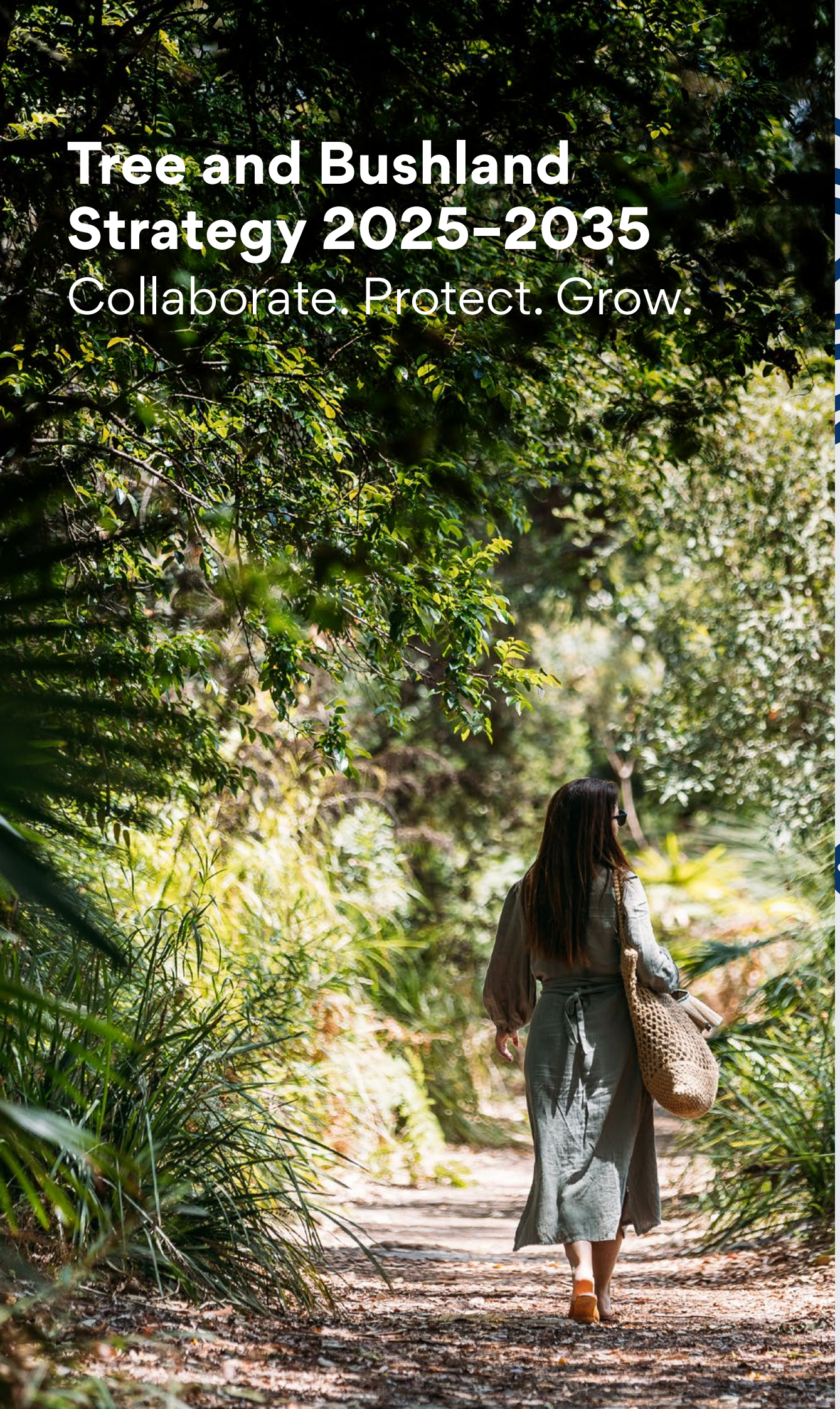
Tree and Bushland Strategy 2025–2035

Collaborate. Protect. Grow.



SUTHERLAND SHIRE

SUTHERLAND SHIRE COUNCIL

Acknowledgment of Country

Sutherland Shire Council acknowledges the Dharawal people as the Traditional Custodians of the land within Sutherland Shire.

We value and celebrate Dharawal culture and language and acknowledge the Dharawal people's continuing connection to the land, the sea, and the community.

We pay respect to the Elders and their families, past, present, and emerging, and through them, to all Aboriginal and/or Torres Strait Islander peoples.

Sunset Cultural Ceremony, Nawi Canoe, January 2024.

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Indigenous Recognition

Sunset Cultural Ceremony, Nawi Cande, January 2024.

Council is committed to working collaboratively with Aboriginal people to foster landscapes and urban environments.

Sutherland Shire Council, acknowledge the Dharawal people as the Custodians of the lands and waters. We recognise their enduring connection and invaluable cultural knowledge they contribute to caring for the environment on Country. This connection to the land, passed down through generations, provides wisdom and guidance that remains highly relevant as we face the challenges of urban development and a changing climate.

Council is committed to working collaboratively with Aboriginal people to foster landscapes and urban environments that honour cultural heritage and support the health of our natural ecosystems. This includes adopting sustainable practices and principles that reflect respect for Country, such as:

- Supporting the regeneration and care of natural areas to ensure their ongoing health and vitality.
- Recognising and respecting the cultural and spiritual significance of trees and natural landscapes.
- Prioritising the use of local plant species in tree planting and landscape design, while incorporating non-native species thoughtfully when necessary.

By embracing these principles and valuing Aboriginal people's perspectives, Sutherland Shire Council seeks to create thriving, resilient spaces that support both the community and the natural environment.

Executive Summary

The “Tree and Bushland Strategy 2025–2035. Collaborate. Protect. Grow.” is a comprehensive ten-year plan developed by Sutherland Shire Council aimed at improving the management and preservation of urban trees and bushland within Sutherland Shire. This strategy is a vital part of the Council’s Integrated Planning and Reporting framework and aligns directly with the Community Strategic Plan.

The strategy’s primary goals are to assess the current state of urban trees and bushland reserves, establish a long-term vision, and identify opportunities for improved management. It seeks to enhance community benefits, support biodiversity, and protect the character of Sutherland Shire. The strategy focuses on two main areas:

1. Achieving urban canopy growth throughout Sutherland Shire and creating connected bushland corridors.
2. Through best-practice planning and management.

Key targets include reaching a 40% urban canopy cover by 2050 while ensuring no loss of canopy cover from the 2020 baseline of 24.7% by 2035. The strategy emphasizes proactive management, equity, evidence-based decision- making, collaboration, and transparency. It also highlights the importance of trees as living entities and underscores the need for effective leadership in tree and bushland management.

The implementation plan outlines the specific activities the Council will undertake to advance this strategy, including targets and measures for increasing urban tree canopy.

Additionally, the strategy considers the impact of urban heat, social vulnerability, and public health on the community, aiming to address these issues through enhanced greening and increased urban canopy cover.

Overall, the “Tree and Bushland Strategy 2025–2035. Collaborate. Protect. Grow.” (Tree and Bushland Strategy) provides a clear and ambitious vision for the future of tree and bushland management in Sutherland Shire, fostering a sustainable and thriving environment for both the community and biodiversity.

Connected bushland corridors support biodiversity.

Defining Urban Tree Canopy

Any plant in an urban area, whether on public or private land, that is capable of growing above 5 metres in height. This includes the plant's canopy and trunk.

Note: For the purpose of measuring tree canopy in Sutherland Shire, only trees taller than 5 metres are included as tree canopy.

Defining Tree

A single or multi-trunked tree with a diameter of 100mm or more measured at 500mm above ground level.

Defining Bushland

Any bushland vegetation, including mangroves. Vegetation which is either remnant of the natural vegetation of the land or, if altered, is representative of the structure and the floristics of the natural vegetation and includes trees of any size, shrubs and all herbaceous species.

The Tree and Bushland Strategy is a ten-year plan for council and community to work together to reach a longer-term vision.

A tree on private land.

A tree within a bushland reserve.

Strategy at a Glance

Our Vision

Through collective action, Council, residents, and stakeholders unite to protect, restore, and grow green spaces, reverse canopy loss, improve health, reduce heat, and foster biodiversity, creating a safe, resilient, thriving environment that benefits current and future generations.

In 2035, Council is renowned for its best practice tree and bushland management. Urban trees and bushland are well managed, safe, connected, and thriving.

In 2050, the character of Sutherland Shire is defined by its rich natural landscapes and a thriving tree canopy, which covers 40% of the urban area. Council and community partner to protect, manage and care for bushland reserves and urban vegetation, and large trees provide shading and cooling of urban areas and connect with high value bushland to support a rich diversity of plants, animals and fungi.

Our Target

In 2025 Council adopts a 40% urban canopy target by 2050. (In line with the NSW Government land use canopy targets from the NSW Greener Neighbourhood Guide.)

By 2035 Council aims to see no loss of urban canopy on the 2024 baseline of 24.7%.

Our Focus Areas

1. Canopy growth and connected bushland corridors.
2. Achieving best practice in planning, management, risk management and stakeholder engagement.

	COLLABORATE	PROTECT	GROW
Our Principles	• Collaboration and transparency. • Leadership.	• Right tree, right place, right time. • Proactive management.	• Trees as living things. • Evidence and information. • Equity.
Our 10 Year Priorities	• Council and the community actively work together on establishing and maintaining the bushland character of Sutherland Shire. • Council shares information with the community.	• Processes for the protection and replacement of private trees are well established and managed. • Public trees are managed as essential assets, an inventory of public trees guides best practice maintenance and removal and replacement plantings.	• Council has a database of tree and bushland indicators to guide management. • Canopy cover increases, especially in high priority areas.

Through collective action, we transform landscapes and improve liveability.

OUR STRATEGY

Trees and bushland play a vital role in supporting our health and well-being. They improve air quality, provide shade, support wildlife, and enhance the local environment. It is our responsibility to manage and preserve our tree canopy and natural areas for future generations.

Framework
Plan
Vision
Targets
Drivers
Principles
Focus Areas

Our Framework

Council's Plans and Strategies aim to create a connected and safe community in Sutherland Shire, respecting both people and nature. This approach supports active lives and a strong local economy. Council follows the Integrated Planning and Reporting (IP&R) framework, mandatory for all NSW local councils. This framework links the long-term Community Strategic Plan with other Council Strategies and Plans, and short-term plans like the Delivery Program and Operational Plan.

Trees and bushland are vital for health and well-being, improving air quality, providing shade, supporting wildlife, and enhancing the environment. Council is committed to managing and preserving the tree canopy and natural areas for future generations. The Tree and Bushland Strategy guides the management and enhancement of trees and bushland in Sutherland Shire, reflecting Council's commitment to environmental protection, nature conservation, and community safety.

Consultants from Mosaic Insights helped develop this strategy by reviewing existing data and working with Council staff and community groups to define its vision, principles, focus areas, and actions. The strategy builds on the Community Strategic Plan, addressing current community challenges and pressures. It will be supported by short-term action plans over the next four years to achieve the outlined targets and commitments.

Documents that complement the work of this strategy include the Local Strategic Planning Statement, Climate Strategy (in development), Open Space Strategy, Public Transport Strategy, and Active Transport Strategy.

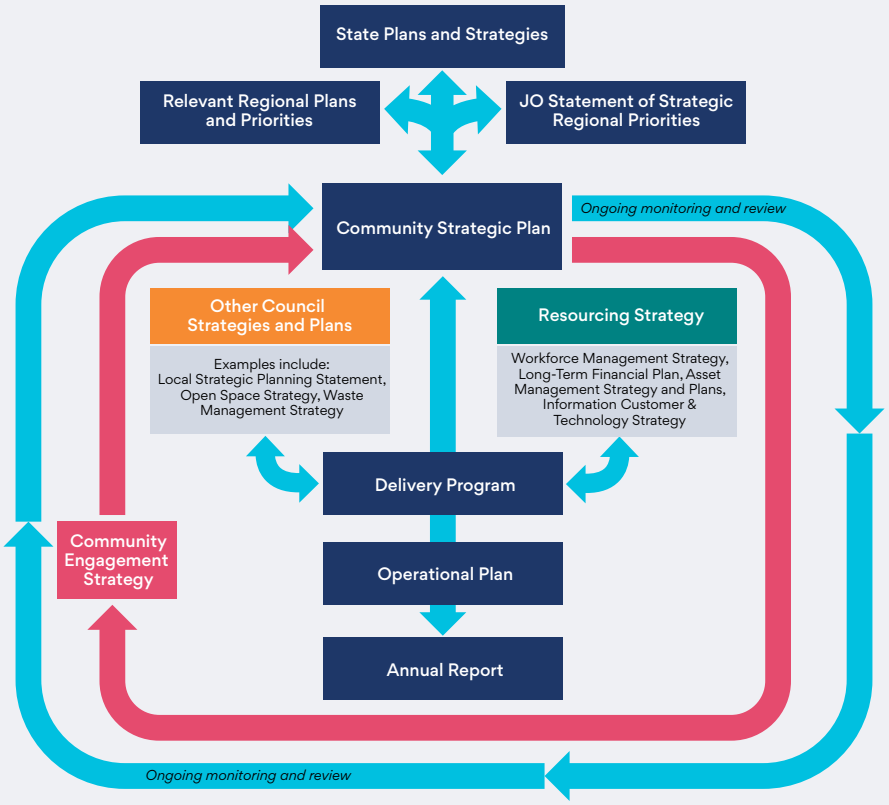


Figure 1: Integrated Planning and Reporting Framework.

Our Plan

The Tree and Bushland Strategy is a ten-year plan to enhance how trees and bushland are managed in Sutherland Shire. This plan focuses on working together with the community to ensure trees and bushland areas are protected and grow over time. Urban trees and bushland need time to grow and mature, so this strategy helps set long-term goals for their care and advancement.

The Strategy examines the current condition of urban trees and bushland reserves, sets a long-term vision, and identifies ways to improve management. It aims to enhance benefits for the community and biodiversity while protecting the character of Sutherland Shire and ensuring public safety through responsible management.

The Strategy has two focus areas:

1. Increasing urban tree cover and creating connected bushland corridors.
2. Managing risks, such as safety and tree health, to ensure that trees and bushland are safe and well maintained using best practice procedures.

These focus areas aim to increase urban canopy cover in Sutherland Shire and create connected bushland corridors. We will achieve this through best practices in tree and bushland planning and management, which requires careful handling of risks.

This Strategy is a key part of the Council's Integrated Planning and Reporting framework and aligns with our Community Strategic Plan. The strategic framework encompasses a vision, guiding principles, and actions for improving urban tree canopy in key focus areas. We will work closely with our community to ensure that our management practices are effective and well-informed.

Council's actions to implement this Strategy are listed in the Implementation Plan and will guide the development of the Delivery Program and annual Operational Plans.

This Strategy aligns with the following:

Local	Regional	State	National	Global
Sutherland Shire Council Community Strategic Plan	Greater Sydney Region Plan	NSW State Environmental Planning Policy (Biodiversity and Conservation) 2021	Commonwealth Environment Protection and Biodiversity Conservation Act 1999	2030 Agenda for Sustainable Development
Local Strategic Planning Statement	South District Plan	Best Practice Manual Trees and tree roots (2022)		Global Covenant of Mayors for Climate and Energy
Shire Wide Tree Maintenance Procedure 2023		NSW Biodiversity Conservation Act 2016		RAMSAR Convention on Wetlands
Best Practice Manual – Trees and tree roots (2022)		Environmental Planning and Assessment Act 1979		
Bushcare and Greenweb Programs				

Our Vision

Sutherland Shire's long-term vision is to restore and enhance tree canopy coverage, improve biodiversity, and foster a safe environment. These initiatives aim to create a healthier environment, reduce urban heat, support local wildlife, and ensure the safety of our tree populations for the community.

Council's strategy looks beyond the next ten years, acknowledging that today's actions on the tree canopy in Sutherland Shire may take years or decades to show results. Developed with community and staff input, this vision outlines our goals for managing trees and bushland and will guide our future actions.

Through collective action, Council, residents, and stakeholders unite to protect, restore, and grow green spaces, reverse canopy loss, improve health, reduce heat, and foster biodiversity, creating a safe, resilient, thriving environment that benefits current and future generations.

In 2035

Council is renowned for its best practice tree and bushland management. Urban trees and bushland are well-managed, safe, connected, and thriving.

In 2050

The character of Sutherland Shire is defined by its rich natural landscapes and a thriving tree canopy, which covers 40% of the urban area. Council and community partner to protect, manage and care for bushland reserves and urban vegetation, and large trees provide shading and cooling of urban areas and connect with high value bushland to support a rich diversity of plants, animals and fungi.

Tree-lined streets offer shade, enhance air quality, and encourage active transport.

Our Targets

Sutherland Shire's tree canopy targets focus on the retention, planting, and maintenance of urban trees to enhance the urban forest. These targets provide clear direction for both Council and the community to take action in enhancing Sutherland Shire's urban tree canopy.

Setting local canopy targets has benefits, but also challenges. Without reliable measurement methods, targets can be misleading. Additionally, ambitious goals may be difficult to achieve when tree management is not fully within Council's control.

Effective tree canopy targets require a clear vision and ambitious goals to drive change. Reliable methods for tracking progress and adjusting plans are essential for success. Growing healthy trees is a long-term commitment that requires community involvement.

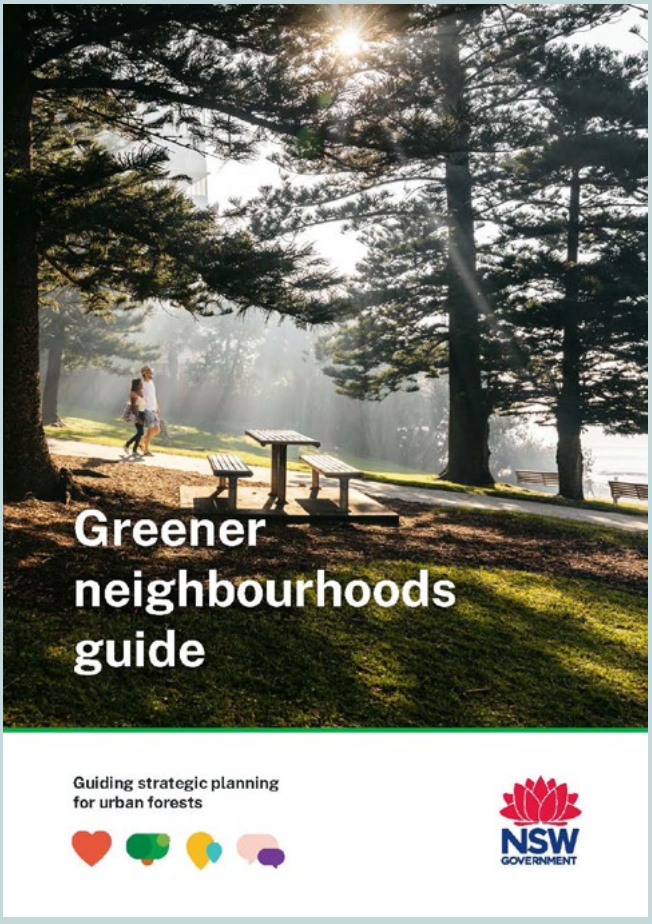
Trees planted today, with proper care, will result in modest canopy growth by 2035 and more substantial changes by 2050. Meeting tree canopy targets requires a holistic approach, involving all stakeholders.

40%
URBAN CANOPY TARGET BY 2050

In 2025 Council adopts a 40% urban canopy target.

By 2035
Council aims to see no loss of urban canopy on the 2024 baseline of 24.7%.

By 2050
Council aims to see growth in the urban canopy towards the 40% target in line with the NSW Government land use canopy targets from the NSW Greener Neighbourhood Guide - (Appendix 2).



Our Drivers

Trees and bushland play a vital role in enhancing both the community and the environment by offering several **key benefits:**

Environmental

Trees and bushland help reduce pollution, improve air quality, promote wildlife conservation, provide habitats for local animals and plants, and cool urban areas. They contribute to cleaner air, making it healthier for everyone.

Economic

The presence of trees can boost property values, attract tourism, and lower heating and cooling costs. Neighborhoods with more trees are often more desirable places to live.

Social

Trees enhance community health and well-being by promoting physical activity and creating spaces for social interaction. They provide shade, which helps reduce heat in cities, and create a comfortable environment that encourages outdoor activities.

The **local challenges and external pressures** that drive the need for Council to act are:

Challenges

Climate Change and Urban Heat: The impact of extreme weather and urban heat due to changing climate conditions.

Tree Loss: The ongoing loss of tree canopy affecting habitats and temperature regulation.

Biodiversity Threats: The increasing number of threatened species due to habitat loss and invasive species.

Ageing Trees and Safety: The risks posed by older trees nearing the end of their lifespan.

Pressures

Development Pressures: Population growth and increased development putting more strain on trees and bushland.

Illegal Activities: Damage to bushland areas caused by activities like encroachment, littering, and unauthorised trail building.

Space for Trees and Active Transport: The need for sufficient space for tree growth and the requirement for shaded transport routes to ensure safety and comfort.

Our Principles

The Strategy is based on a set of guiding principles for managing trees and bushland, centred on three key areas: collaboration, protection, and growth.

These principles will inform all decisions made under this strategy and have been developed through collaboration, incorporating best practices and community input regarding tree and bushland management. Importantly, all principles will be applied equally; no single principle will take precedence over the others. They have also influenced the development of the objectives, measures, key focus areas, and actions outlined in the strategy.

Objectives and Measures: There are eight primary objectives designed to help the Council achieve its targets and measure progress in each key area.

Accomplishing these objectives will bring Sutherland Shire closer to the Council's vision for trees and bushland by 2050.

COLLABORATE

Encourage community engagement and partnerships to protect and expand the urban tree canopy and manage our bushland.

PROTECT

Select the right tree for the right place and the right time, while supporting the retention, growth, and replacement of trees, and protecting community safety by managing unsafe trees.

GROW

Recognise trees as long term living assets that require careful lifecycle management, using evidence to inform decisions on tree and bushland management.

A growing tree canopy starts with collaboration between Council and our community.

COLLABORATE

Council and the community are working hand in hand to foster and preserve the unique bushland character of Sutherland Shire. By sharing information, resources, and expertise, Council empowers the community to actively engage in this important mission.

Together, we can help protect the environment and ensure that our trees and bushland are healthy, thriving, and well- maintained. Through these collective efforts, we are strengthening our commitment to sustainability and preserving the natural beauty of our local area for future generations.

Collaboration and transparency

Information will be openly shared with the community to support participatory decision making.

Partnerships and engagement will be established with the community, agencies, and private landowners to protect and grow the tree canopy, maintain bushland and urban vegetation to support threatened ecological communities and improve connectivity between bushland throughout urban areas.

Leadership

Council leads by example in canopy creation and tree and bushland management within all areas of its services, and plans and advocates for improved tree management by all landowners/managers.

Our Objective is to...	We will measure our progress against...
Establish teams who work collaboratively to deliver the Strategy.	• Capacity assessment of tree and bushland management (knowledge, tools and instruments, networks and champions, and demonstration sites). • Percentage of capital works spent on tree and bushland actions.
Actively engage and work with our community to value, protect and enhance urban vegetation.	• Community satisfaction with tree protection and bushland management analysis.

Caring for and maintaining tree canopy starts from the ground up.

PROTECT

We value our trees as vital community assets that contribute to the environment aesthetic beauty, and well-being of our area.

Monitoring public trees ensures they receive proper care they need, whether through regular maintenance, removal, or replacement when necessary. For private trees, we have friendly and well-organised processes in place to protect and replace them as needed. Our goal is to protect both the community and its trees from potential hazards, ensuring their long-term survival.

Right tree, right place, right time

The character and environmental values that exist across the Sutherland Shire will be preserved, enhanced, and celebrated by tree species selection that: favours endemic species; supports the enhancement and expansion of tree canopy; is resilient to climate change, considers community risks, and is based on tree function that is appropriate for the site.

Proactive management

Council actively supports the protection, retention, growth and replacement of urban trees and bushland across the public and private domain.

Our Objective is to...	We will measure our progress against...
Protect and grow the Sutherland Shire tree canopy particularly across the urban and high heat vulnerability areas and along priority walking and cycling routes.	• Delivery of actions identified by this Strategy over the next four years. • Tree canopy cover analysis: - across public and private lands, - in urban and Heat Vulnerability Index (HVI) areas, - along walking and cycling routes specifically. • Individual tree canopy losses and gains in the public and private domain.
Protect and enhance bushland and actively manage the interface between these and urban areas.	• Connectivity and interface quality of bushland and tree canopy analysis.
Manage our urban trees and vegetation to minimise risks to our community, including from bushfire.	• Tree canopy cover analysis: - across public and private lands, - in urban and HVI areas, - along walking and cycling routes specifically. • Public tree canopy health and diversity assessment, including: - public trees losses and gains, - canopy cover, - losses and gains in the private domain, - threatened species, - flora and fauna, - biodiversity values. • Increased integration of fire management with trees and bushland.

The work we do today will ensure a greener, healthier Sutherland Shire for generations to come.

GROW

We are committed to increasing canopy cover across Sutherland Shire, particularly in areas that require it the most.

Council has developed a comprehensive database of tree and bushland indicators to guide our efforts in managing and expanding our green spaces. As our community continues to grow, maintaining and enhancing the canopy will play a critical role in any development or planning proposal. We recognise the importance of trees in fostering a sustainable healthy environment for all.

Evidence and information

Decisions around the management of urban trees, urban vegetation, bushland reserves and biodiversity are planned and based on the best information available. The information includes scientific, local community and traditional Aboriginal knowledge systems.

Trees as living things

Succession planning is integral to public tree management and acknowledges that trees require long-term, lifecycle management in an urban setting including planting, establishment, maintenance and eventually removal and replacement.

Equity

Management of urban trees and bushland will be directed to areas of greatest need to ensure both social, ecological, and environmental needs are met over the longer term across the Sutherland Shire.

Our Objective is to...	We will measure our progress against...
Diversify tree species, size, age across Sutherland Shire public and private domain.	• Assessment of our inventory data against current best practice targets for structural and urban plant diversity. • Structural and urban plant diversity within landscape plans submitted with Development Applications and for Council public domain works projects.
Make an immediate and significant impact with our public tree planting.	• Number and size of trees planted in the public domain. Number of trees established in the public domain. • Net canopy and urban plant diversity in the public domain analysis. • New tree planting has a survival rate of 90% after 5 years.
Collect, analyse, and use best available data and information to proactively manage trees and bushland assets throughout their lifecycle.	• Strategy review in 2029. • Full Strategy update in 2035. • Implementation of actions from the Strategy is reported. • Consistent data collection and analysis of: - public trees losses and gains, - canopy cover, - losses and gains in the private domain, - threatened species, - flora and fauna. • Biodiversity values.

Our Focus Areas

The focus areas address significant challenges in managing trees and bushland, enabling Council to allocate efforts more effectively. This strategy highlights two key focus:

01

Canopy growth and connected bushland corridors.

Trees are crucial for biodiversity, offering shelter and food for native wildlife like koalas. Protecting them safeguards our ecosystem.

Ensuring urban trees are protected and managed to provide benefits such as shade, cooling, biodiversity, and connectivity.

Public and private urban trees are protected, planned, and managed to provide the multiple benefits gained from trees and canopy in urban areas including shade and cooling, character and amenity, biodiversity, and connectivity.

The considerable natural capital of Sutherland Shire is protected and enhanced. The interface between and connectivity of urban areas, the coastal fringe, bushland reserves and high significance conservation areas is supported by management practices that ensure vegetation complexity at all strata.

Our Focus Areas

02

Achieving best practice management, risk management and stakeholder engagement.

Proactive tree management supports long-term sustainable canopy.

Developing a clear framework for tree and bushland management, reducing risks, and engaging stakeholders in decision-making.

Best practice management

A clear framework is adopted that articulates the strategic and operational documents as well as the roles and responsibilities involved in tree and bushland management. Decision making and multifunctional outcomes are integrated through better data collection and analysis across canopy, public tree data, bushland, and biodiversity. An integrated and system-based, proactive tree and bushland asset management program is implemented that effectively manages priorities and risks for tree and bushland management, it will be cost effective, supported by data and evidence and adequately resourced

Risk management

Adoption of best practice tree management will result in reduced risk to Council and the community through a comprehensive process of assessment across operational (financial), reputational, environmental, ecological and safety risks and appropriate mitigation over the immediate-, medium- and longer-term.

Stakeholder engagement

The community and other stakeholders are informed and engaged to build literacy and the capacity to participate in trees and bushland management. They collectively act through planning, monitoring, and on-ground action.

Open communication mechanisms are in place for tree and bushland management matters affecting the community. Community participation in the delivery of the strategy is encouraged.

Our community enjoy serene waterways surrounded by lush bushland.

OUR TREES AND BUSHLAND

Our natural beauty is our greatest treasure. Let's protect the landscapes that make Sutherland Shire unique for generations to come.

Sutherland Shire
Threatened Ecological Communities
Endangered Species
Canopy Analysis
Canopy Change

Sutherland Shire

Sutherland Shire is located 26 kilometres south of the Sydney CBD, covering an area of 369 km sq and home to approximately 235,029 people.

Sutherland Shire is home to some of Sydney's most iconic beaches and includes significant natural areas including the Georges, Woronora, and Port Hacking waterways, Kamay Botany Bay, Georges River and Heathcote National Parks, and the Royal National Park – Australia's oldest national park.

This area is where Aboriginal and European cultures met. For over 65,000 years before Cook's arrival, Aboriginal people had a deep connection with Australia's unique natural environment. They have cared for, and continue to care for the land, waterways, and skies.

Sutherland Shire has a variety of environments, such as wetlands, woodlands, forests, rainforests, and dunes. These areas are home to many different plants and animals, some of which are rare or endangered.

By 2036, Sutherland Shire is expected to have a 9% population growth, reaching 257,531 people.

The population is also aging, with a larger number of people over sixty, making up 25.5% of the population by then.

The area has a tree canopy (the upper layer of trees) that covers 43.6% of the land, but this drops to just 24.7% in urban areas. Some parts of the Sutherland Shire have almost no trees.

Between 2016 and 2020, approximately 0.4% of the tree canopy was lost, equating to around 68.1 hectares of trees, or about 129 football fields. Most of this loss occurred on private land, although some trees were also removed from council land. The reasons for tree removal included safety concerns, development, aging trees, and illegal removal.

The Tree and Bushland Strategy is a plan to manage trees and natural areas in Sutherland Shire, with the understanding that trees planted today will take decades to grow fully, so action need to be taken now.

Sutherland Shire has both thriving bushland reserves and areas with limited tree cover. Efforts are being made to improve canopy cover to support both biodiversity and the well-being of the community.

Sutherland Shire: Where nature thrives and communities grow together.

Tree and Bushland Reserves

Sutherland Shire is home to several bushland reserves, which are connected to coastal and national parks, as well as important wetlands. These connections enhance biodiversity by allowing the movement of plants and animals, supporting genetic diversity and resilience.

The bushland reserves are primarily found in the western suburbs, with smaller and less connected reserves in the east due to urban development.

Waterways play a key role in maintaining connections between these areas. Additionally, there have been numerous sightings of koalas in bushland reserves near rivers and water sources.

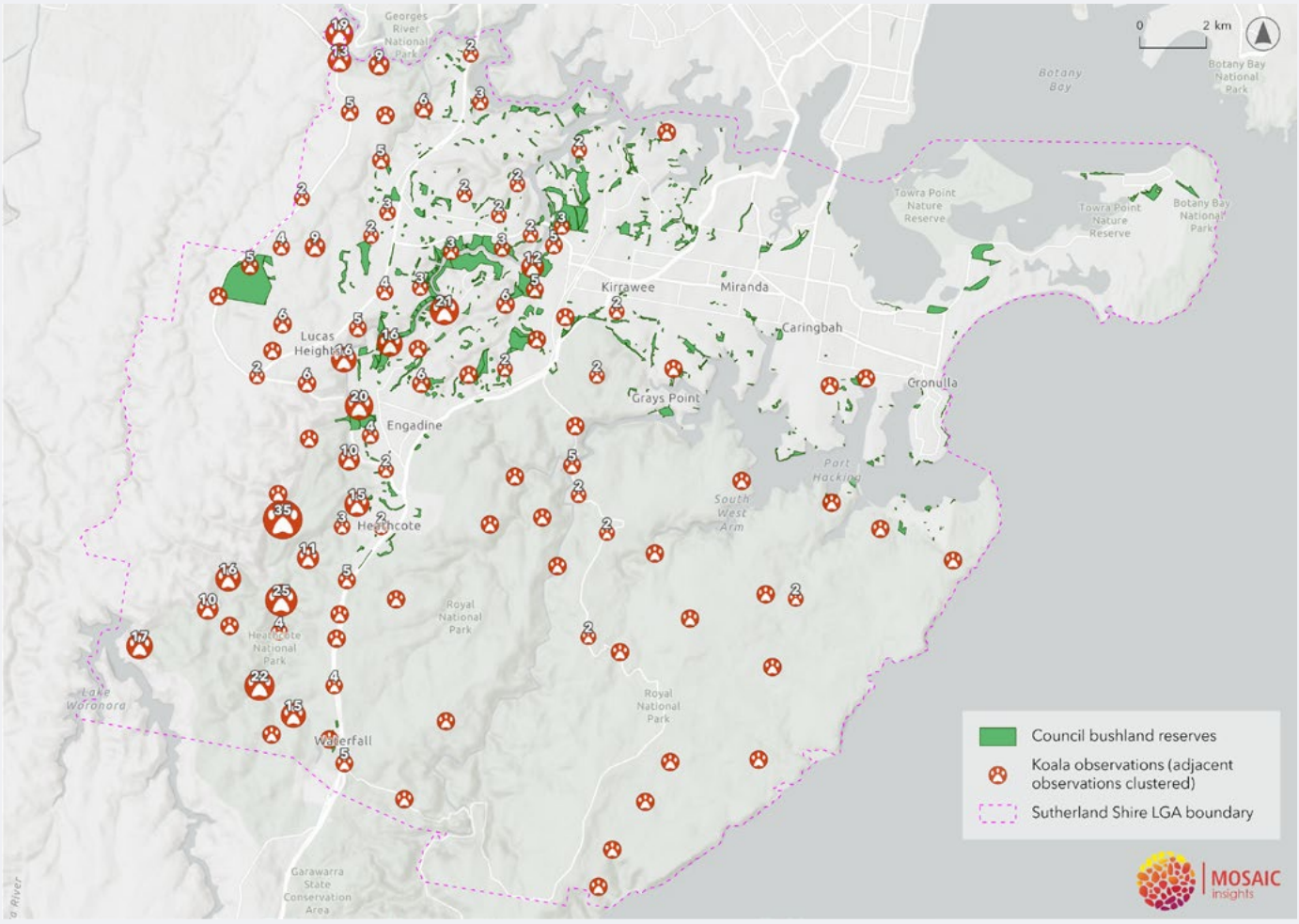


Figure 2: Koala sightings and Sutherland Shire mapped bushland reserves (NSW Government BioNet).

Threatened Ecological Communities

There are ten types of important ecosystems (called Threatened Ecological Communities or TECs) in Sutherland Shire, which are protected by law.

These ecosystems include forests, wetlands, and other valuable vegetation areas. Some of these communities are critically endangered.

1. River-Flat Eucalypt Forest
2. Shale/Sandstone Transition Forest
3. Coastal Saltmarsh
4. Kurnell Dune Forest
5. Littoral Rainforest
6. O'Hares Creek Shale Forest Complex
7. Swamp Sclerophyll Forest
8. Swamp Oak Floodplain Forest
9. Sydney Freshwater Wetland
10. Sydney Turpentine Ironbark Forest

River-Flat Eucalypt Forest

Coastal Saltmarsh

Endangered Species

Sutherland Shire is home to 86 species of plants and animals that are critically endangered, endangered, or vulnerable. Many of these species have recovery plans in place to protect them.

A large number of bird sightings occur in wetlands, with up to 2,300 birds seen in certain areas. There are also many sightings of amphibians near the wetlands.

Littoral Rainforest

Sydney Turpentine Ironbark Forest

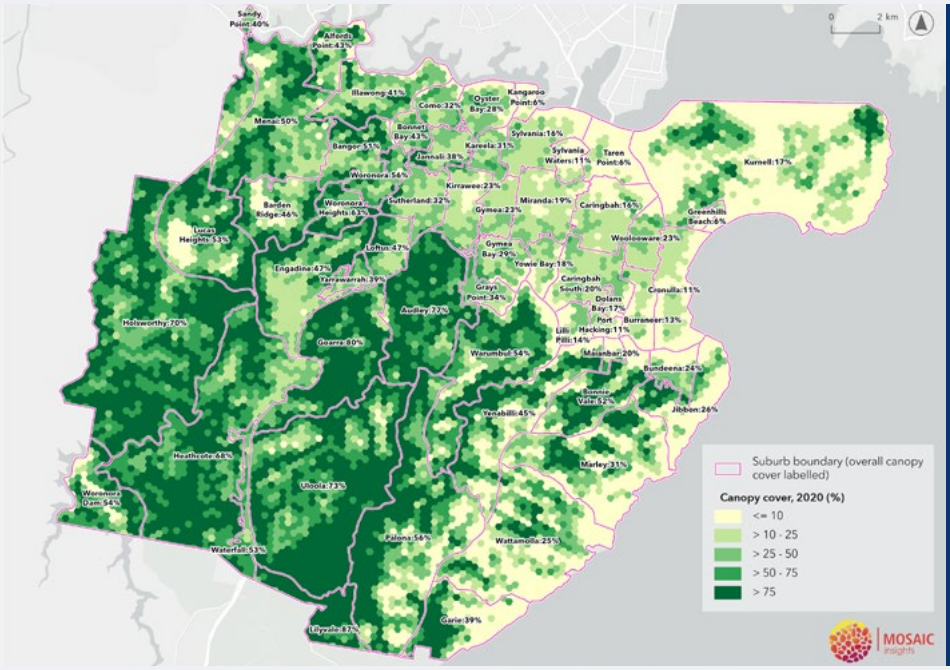
Canopy Analysis

In 2020, Sutherland Shire's overall tree canopy was 43.6%, with urban areas having only 24.7% canopy cover.

Tree canopy varies across the LGA, with some areas, particularly in the west, featuring dense tree cover, while others, especially urban areas, have less, as outlined below:

- **Over 70%:** Suburbs located within Heathcote and the Royal National Park, including Lilyvale, Goarra, Audley, Uloola, and Holsworthy have very high canopy cover.
- **Approaching or above 50% canopy cover:** Western suburbs, including Barden Ridge, Menai, Bangor, Woronora, Woronora Heights, Illawong, and Alfords Point, are less densely populated and have canopy cover approaching or above 50%.
- **Around 30% canopy cover:** Middle suburbs, including Sutherland, Como, Jannali, Kareela, and Oyster Bay, have around 30% canopy cover.
- **Between 10-25%:** Moving further east suburbs such as Cronulla, Woolooware, Caringbah, Miranda, Sylvania Waters, Burraneer, and Yowie Bay, canopy cover decreases to between 10-25%. These suburbs are more densely populated.
- **Below 20% canopy cover:** There are 15 suburbs with canopy cover below 20%, all located in the eastern areas of Sutherland Shire.
- **Less than 10%:** There are pockets of very low canopy cover on private land, primarily consisting of large business precincts in Kirrawee and Caringbah.

When considering Sutherland Shire as a whole, the tree canopy in the road reserve (which includes the land between property boundaries such as roads, verges, and footpaths) was at 30% in 2020, showing a decline of 0.9% from 2016.



In 2020 tree canopy cover made up:

- 43.6% of Sutherland Shire (including national parks).
- 24.7% of urban areas in Sutherland Shire.

Figure 3: High value biodiversity areas, tree canopy 2020 (%), and bushland reserves (Sutherland Shire Council and NSW Government SEED).

Canopy Change 2016-2020

From 2016 to 2020, Sutherland Shire lost approximately 68 hectares of tree canopy, with the majority of the loss occurring on private land.

However, there were some gains on state and federal land.

During this period, tree loss was particularly noticeable in newly developed areas such as Menai. In contrast, areas like Holsworthy saw an increase in tree cover, due to efforts by the National Parks and Wildlife Service.

The canopy loss was widespread in residential areas in Caringbah, Woolooware, Miranda, Caringbah South, Gymea Bay, Yowie Bay, and Loftus. There has been no overall growth in canopy by suburb recorded on Council owned land.

Holsworthy experienced the highest canopy growth with 11.6 Ha of canopy growth occurring on federally owned land. Uloola and Heathcote recorded the highest canopy growth on state-owned land (Figure 4).

Areas within the National Parks in the Sutherland Shire that show a reduction in tree canopy between mapped periods can largely be attributed to hazard reduction burns conducted during this time. These burns are essential for mitigating bushfire risks and maintaining ecological health, which can temporarily impact canopy cover while contributing to long-term vegetation resilience and biodiversity.

Between 2016 and 2020 Sutherland Shire saw a canopy loss of 0.40%, equivalent to 68.1 hectares.

The change was made up of:

- 53.6 hectares of canopy loss on private land,
- 22.6 hectares of canopy loss on council land,
- 8.1 hectares of canopy gained on state and federal land.

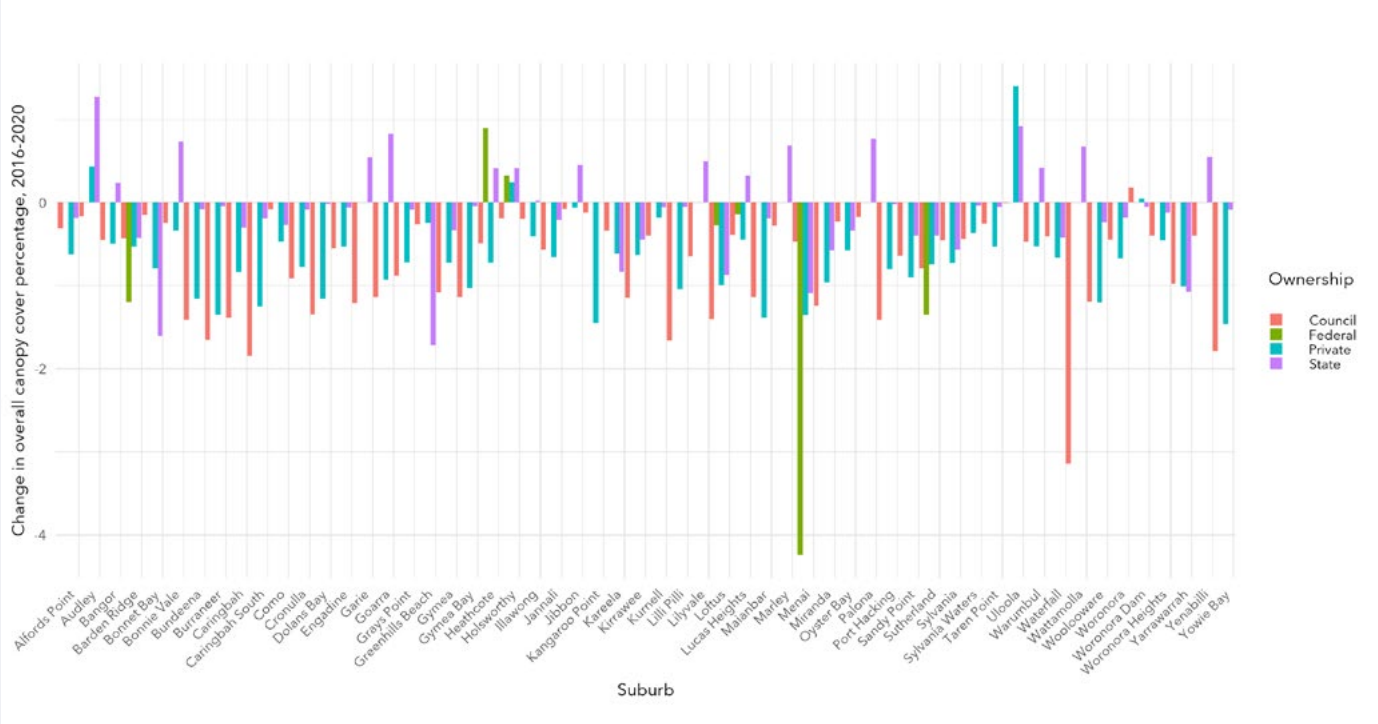


Figure 4: Tree canopy change by suburb and land ownership (2016-2020) (Sutherland Shire Council)

Shaded spaces are more than just comfortable—they're essential for keeping our communities cool in the face of rising temperatures

OUR COMMUNITY

Urban areas without trees face higher temperatures, increasing community vulnerability, especially for the elderly, children, and those with health conditions. Planting and preserving trees is essential to mitigate urban heat and protect community health and well-being.

Community Vulnerability
Urban Heat
Heat Vulnerability
Social Vulnerability and Health
Population Density
Active Transport

Community Vulnerability

The amount of tree canopy and green space in Sutherland Shire can impact the health and well-being of its residents. Urban areas are typically warmer than rural areas.

This is mainly due to buildings and roads absorbing more heat, and a lack of trees to cool the area naturally. In 2019, areas like Miranda, Barden Ridge, and Menai were among the hottest.

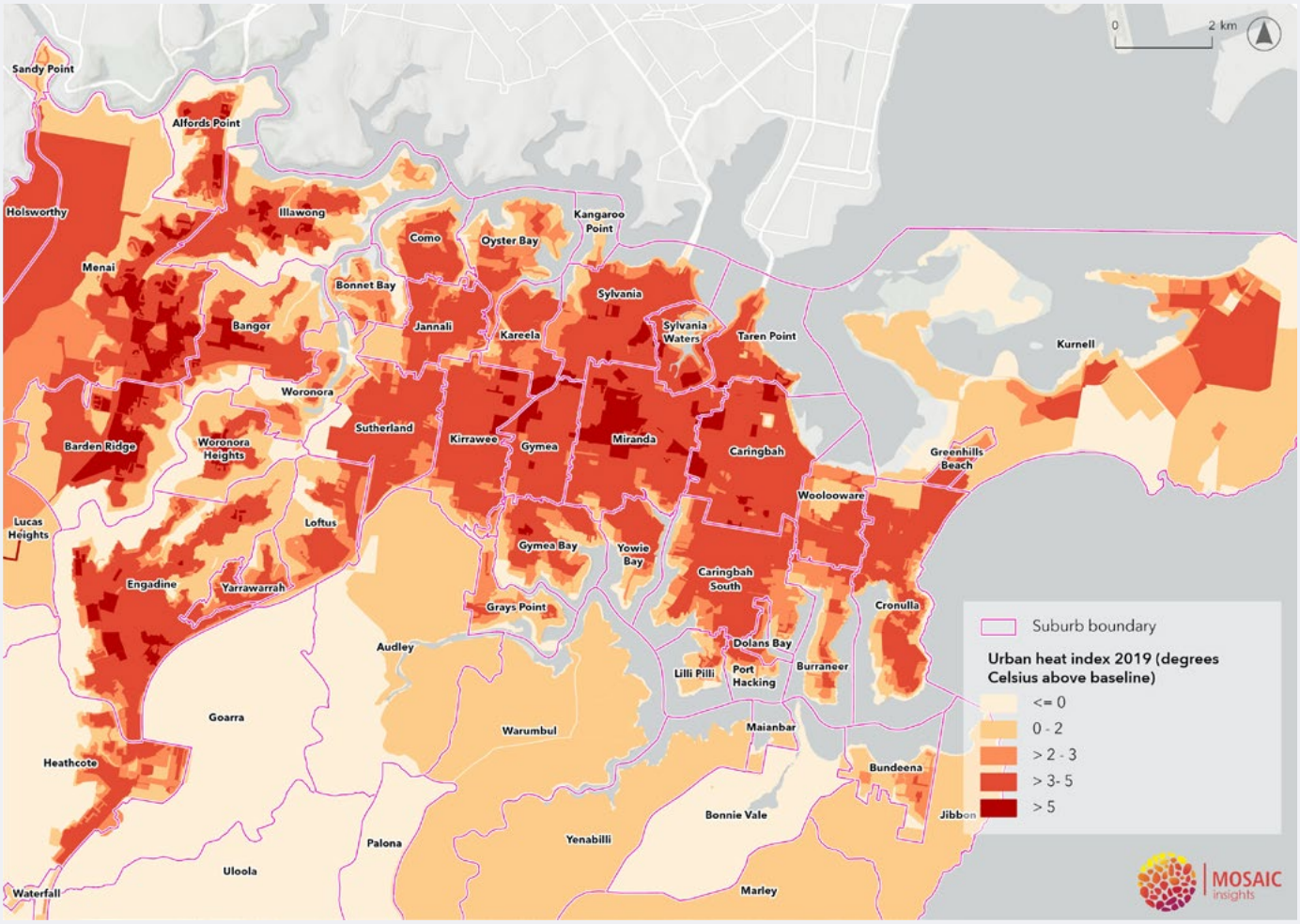


Figure 5: Urban Heat Index (2019) for Sutherland Shire (NSW Department of Planning and Environment)

Urban Heat

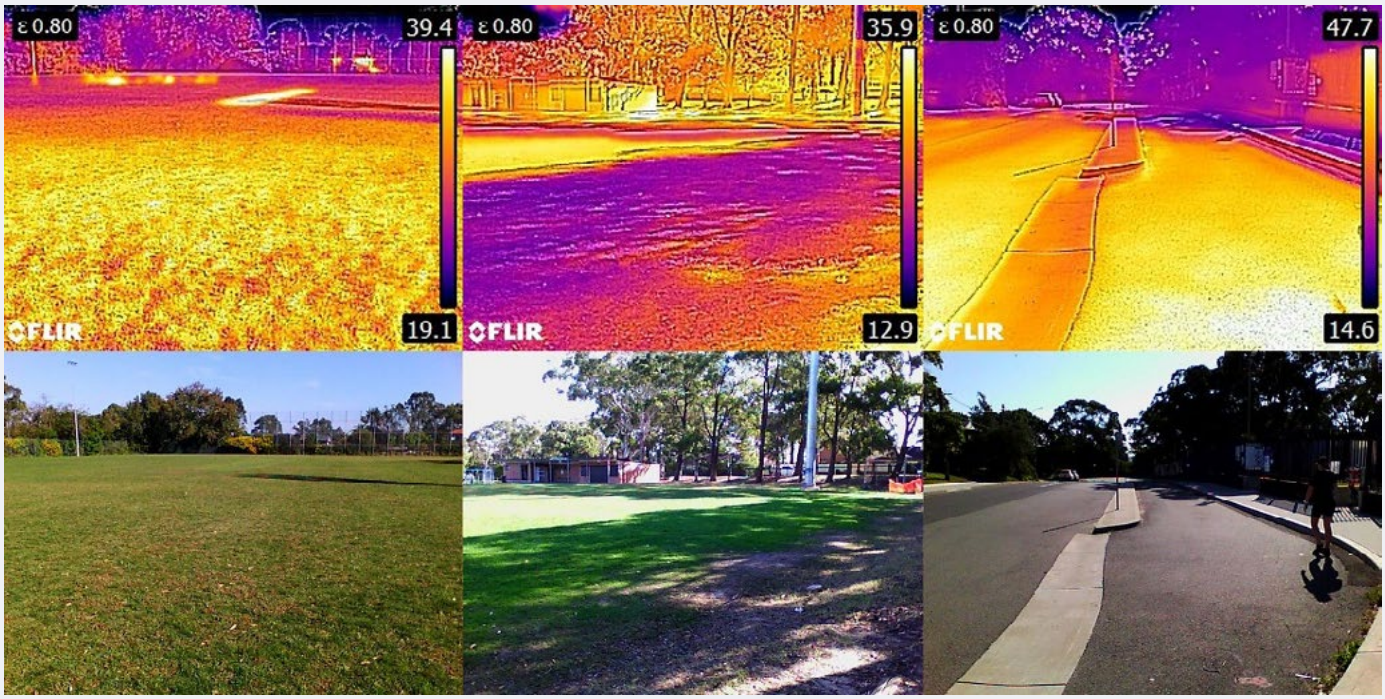
Urban environments are generally hotter than natural and rural environments. In large cities, average temperatures can be 1°C to 3°C higher than average rural temperatures. Temperatures vary across the city, with some parts experiencing even higher temperatures. These higher temperatures are caused by the materials used in buildings and infrastructure, which absorb more heat compared with natural environments. The lower levels of vegetation in urban areas also reduces the natural cooling that plants provide (AdaptNSW, 2023).

The spatial distribution of excess urban heat in 2019 can be seen in Figure 5, with urban areas showing higher peak summer surface temperatures when compared to a natural baseline. Urban heat is highest (greater than 7 degrees Celsius above baseline) in central Miranda and recently developed areas of Barden Ridge, Menai, Illawong, Alfords Point and Bangor.

Heat Vulnerability

The NSW Heat Vulnerability Index (HVI) dataset identifies areas where populations are more vulnerable to the adverse effects of urban heat. HVI uses indicators for exposure, sensitivity, and adaptive capacity to calculate an overall heat vulnerability index. A vulnerability of 1 represents a combination of low exposure, low sensitivity and/or high adaptive capacity. A vulnerability of 5 represents high exposure, high sensitivity and/or low adaptive capacity.

The most recent edition of this dataset is from 2016 and is likely not reflective of current community vulnerability to excess heat in new growth suburbs but can be used as a general indication of overall heat vulnerability in established residential areas.



Urban areas with limited vegetation lack the natural cooling effects provided by plants. These photos, taken in 2024 at Kirrawee and Cronulla, illustrate the temperature differences between areas with and without trees. The pictures at the top show purple areas indicating the coolest temperatures, while yellow and red signify hotter regions. Credit: Dr. Eliza Middleton.

Social Vulnerability and Health

Certain areas in Sutherland Shire have higher populations of individuals who may be more vulnerable to extreme heat, especially those with low-income households or health conditions. These areas would benefit significantly from increased tree canopy and improved green spaces.

Population Density

Areas with higher population density tend to have more buildings and less green space and tree canopy, leading to higher temperatures. Population density is highest in central parts of Sutherland Shire, including suburbs like Sutherland, Miranda, and Cronulla.

Active Transport

Active transport, like walking or cycling, is important for health, and trees can make these activities more comfortable by providing shade and cooling.

However, heat in urban areas can make it harder for people to be active outdoors. Improving tree canopy cover could help support more active transport options.

By increasing our tree canopy, we create cooler, more resilient cities for growing populations.

Together, we can keep our green spaces healthy and thriving!

IMPLEMENTATION PLAN

Delivering the Strategy
Implementation Plan

Delivering the Strategy

Integration

This Strategy will integrate with our four-year Delivery Program and annual Operational Plans, supporting our delivery of Sutherland Shire's Community Strategic Plan.

Implementation

The Strategy's delivery will be guided by a detailed Implementation Plan contained within it. The Implementation Plan outlines a program of actions for each Focus Area, including timeframes, resources, and responsibilities.

Evaluation

Measures have been developed to track our progress in delivering this Strategy. Data will be collected throughout the implementation process. Monitoring and evaluating our delivery of the Strategy will be ongoing. We will use various methods to measure the Strategy's achievements and impact, including canopy analysis, capacity assessments, compliance checks, and community satisfaction surveys.

Reporting

Council's progress in delivering the Strategy will be reported as part of our regular performance reporting cycle. We will report on the Strategy's delivery in the following ways:

- Occasional updates via social media and the Our Shire newsletter.
- Annual Reports to Council.
- A mid-term review in 2029.
- A major review in 2034/35 prior to developing the next Tree and Bushland Strategy.

Resourcing

Some actions will require additional funding, and these will be considered as part of Council's annual budget and planning process. We may apply for external funding to help us deliver the actions in this Strategy.

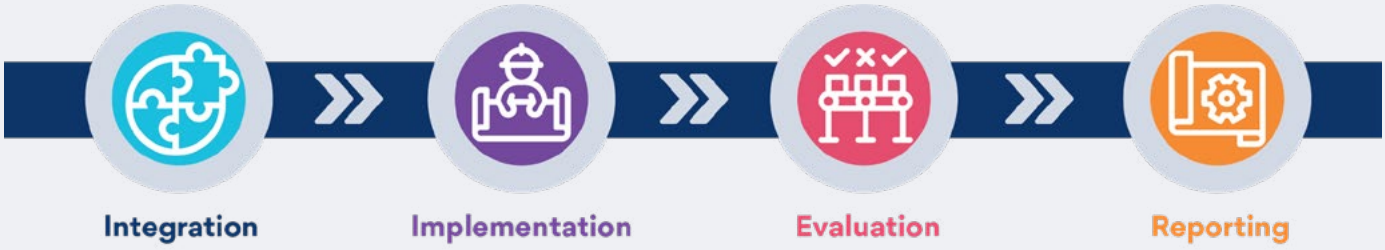


Figure 7: Delivering the Strategy through the four components of integration, implementation, evaluation, and reporting. All four components are underpinned by the fifth component, resourcing.

Implementation Plan

FOCUS AREA 1
Canopy Growth and connected bushland corridors

	Action	Collaboration	Funding	Y1. 25/26	Y2. 26/27	Y3. 27/28	Y4. 28/29	Y5. +5 Years	Ongoing	Measure
1	Deliver tree planting and urban vegetation with all Council capital projects at the planning design and delivery phases based on adopted canopy targets for specific land uses.	**Lead:** • Assets Strategy and Delivery **Collaboration:** • Traffic and Public Domain Services	Funded						✓	Increased integration of quality of tree planting in capital works program.
2	Increase focus on enforcement and compliance of regulations for trees and bushland.	**Lead:** • Environmental health and building **Collaboration:** • Development Services	Funded						✓	Change in (increase) compliance of by laws for trees and bushland.
3	Monitor canopy change (growth and losses), tree removal, planting & establishment rates.	**Lead:** • Environmental Science **Collaboration:** • Development Services • Assets Strategy and Delivery • Open Space Operations	Funded	✓				✓	✓	Canopy change monitoring every 4 years implemented starting in 2024/25. Data is collected for all tree removal and plantings. Report prepared annually containing the statistics on trees planted and trees removed across Sutherland Shire Local Tree and Bushland Report Card prepared and published as part of the State of Sutherland Shire report.
4	Develop and implement a proactive Tree Management Program to maximise biodiversity and amenity benefits and minimise risks, with: • Proactive Inspection • Proactive Maintenance • Proactive Planting	**Lead:** • Open Space Operations **Collaboration:** • Environmental health and building • Assets Strategy and Delivery • Traffic and Public Domain Services	Funded		✓	✓	✓	✓		New tree management program are in place for public tree: • assessment • planting • establishment • maintenance • management
5	Develop a Koala Management Plan.	**Lead:** • Environmental Science **Collaboration:** • Open Space Operations	Funded		✓					Koala Management Plan developed and implemented.
6	Review and update Council's Native Plant Selector list to include species that can survive and thrive in urban environments and under a changing climate.	**Lead:** • Environmental Science **Collaboration:** • N/A	Funded		✓					Updated species lists available for staff and community.

	Action	Collaboration	Funding	Y1. 25/26	Y2. 26/27	Y3. 27/28	Y4. 28/29	Y5. +5 Years	Ongoing	Measure
7	Identify and protect trees and bushland areas with Aboriginal cultural significance, ensuring their preservation and integrating traditional knowledge into the management and conservation practices.	**Lead:** • Open Space Operations **Collaboration:** • N/A	Funded		✓					Bushland vegetation with Aboriginal significance protected. Aboriginal heritage sites protected. Consultation with Aboriginal community completed. AHIMS with sites of Aboriginal heritage updated. Consistent references to AHIMS with Environment and Heritage NSW. Aboriginal community cultural practices supported.
8	Update relevant bushland plans of management and develop place-based bushland interface masterplan/s that: • identify high priority corridors. • identify interface areas through the urban area that connect high value bushland and biodiversity sites. • considers urban vegetation, corridor creation/ preservation, and bushfire management.	**Lead:** • Assets Strategy and Delivery **Collaboration:** • Open Space Operations	Funded			✓				Bushland and interface masterplans are developed. Bushland plans of management are updated. Effectiveness of bushland management actions evaluated.
9	Develop Customer Service Level Standard for tree management and maintenance that supports the objectives of this Strategy.	**Lead:** • Open Space Operations **Collaboration:** • Environmental health and building	Funded			✓				Customer Service standard developed that reinforces the invention and objectives of this Strategy.
10	Obtain grant funding and implement and deliver programs that remediate bushland areas, reduce invasive species, restore disturbed ecosystems and protect natural waterways.	**Lead:** • Open Space Operations **Collaboration:** • Assets Strategy and Delivery	Part - Funded					✓		Program embedded in Delivery Program and Operational Plans.
11	Develop Street Tree Master Plans for Sutherland Shire to outline the planting program, tree removals and replacements, species selection and timeframes	**Lead:** • Traffic and Public Domain Services **Collaboration:** • Asset Strategy and Delivery • Environmental health and building • Open Space Operations • Strategic Planning	Part - Funded			✓				Street tree master plans adopted and embedded in Public Domain plans, Operational Plans and Delivery Program.

Implementation Plan

FOCUS AREA 2
Achieving best practice tree and bushland management, risk management, and stakeholder engagement

	Action	Collaboration	Funding	Y1. 25/26	Y2. 26/27	Y3. 27/28	Y4. 28/29	Y5. +5 Years	Ongoing	Measure
Best Practice Management										
1	Establish formal and informal networks within Council to improve the outcomes for trees and bushland.	**Lead:** • Open Space Operations **Collaboration:** • Environmental Science • Traffic and Public Domain Services • Development Services • Environmental health and building • Public Safety and Lifeguards • Communication, Engagement and Customer • Asset Strategy and Delivery	Funded						✓	Significant capital works include trees and urban vegetation as consideration. Information related to trees and bushland is shared. Staff skills for best practice tree and bushland management are increased.
2	Manage trees and bushland through the asset management and planning process.	**Lead:** • Open Space Operations **Collaboration:** • Asset Strategy and Delivery • Environmental health and building • Strategic Planning	Funded						✓	Asset management process in place for trees and bushland including an asset register and long-term planning.
3	Review the Urban Tree & Bushland Policy to ensure consistency with strategy.	**Lead:** • Environmental health and building **Collaboration:** • Asset Strategy and Delivery • Environmental Science	Funded	✓	✓					Urban Tree and Bushland Policy reviewed to align with the Strategy and definitions.
4	Revise tree and bushland references in the Local Environmental Plan and the Local Strategic Planning Statement to strengthen protection and replacement of canopy and urban vegetation. Update as part of the next review.	**Lead:** • Strategic Planning **Collaboration:** • Environmental Science • Development Services	Funded	✓	✓					Tree and bushland references ready for inclusion in the next review of the Local Environmental Plan.

	Action	Collaboration	Funding	Y1. 25/26	Y2. 26/27	Y3. 27/28	Y4. 28/29	Y5. +5 Years	Ongoing	Measure
5	Update Development Control Plan and planning controls to protect and increase canopy in the public and private domain.	**Lead:** • Strategic Planning **Collaboration:** • Environmental Science • Development Services • Asset Strategy and Delivery	Funded	✓	✓					Development Control Plan and planning controls updated to reflect the ambitions of this Strategy and to include targets for canopy cover outlined in the NSW Government Greener Neighbourhoods Guide.
6	Update operational manuals and standards to include appropriate canopy targets.	**Lead:** • Environmental Science **Collaboration:** • Asset Strategy and Delivery • Environmental health and building • Open Space Operations • Traffic and Public Domain Services	Funded		✓	✓				Canopy targets included in all relevant operational documents and manuals.
7	Evaluate the impact of the Greenweb layers and increase impact where possible.	**Lead:** • Environmental Science **Collaboration:** • Strategic Planning	Funded			✓				Impact of the Greenweb layers evaluated and increased.
8	Review the Biodiversity Strategy.	**Lead:** • Environmental Science **Collaboration:** • Open Space Operations	Not Funded		✓	✓				Updated Biodiversity Strategy to align and strengthen the intentions of this strategy.
Risk Management										
9	Complete a tree inventory of all public trees, streets and parks.	**Lead:** • Open Space Operations **Collaboration:** • Environmental health and building • Assets Strategy and Delivery • Traffic and Public Domain Services • Environmental Science	Funded		✓	✓	✓	✓		Inventory data on all public trees is available for planning and management teams across Council.
10	Manage risk from trees in accordance with industry best practice.	**Lead:** • Open Space Operations **Collaboration:** • Environmental Science • Corporate Governance	Funded		✓	✓	✓			Tree Risk Management is incorporated into Public Tree Management Guideline. Public Tree Management Guidelines build on Statewide Mutual – Best Practice Manual for trees and tree roots. A risk assessment for public tree management using a wide-ranging framework (such as PESTLE) to assess risk across a range of domains: a. Political b. Environment c. Social d. Technological e. Legal f. Economic

	Action	Collaboration	Funding	Y1. 25/26	Y2. 26/27	Y3. 27/28	Y4. 28/29	Y5. +5 Years	Ongoing	Measure
Stakeholder Management										
11	Expand the volunteer program to increase tree planting.	**Lead:** • Open Space Operations **Collaboration:** • Assets Strategy and Delivery • Environmental Science • Communication, Engagement and Customer	Funded			✓	✓	✓	✓	Volunteer tree planting program developed and implemented. Number of volunteers participating in tree planting program increased. Number of volunteer hours participating in tree planting program increased. Number of trees planted under the tree planting program increased.
12	Implement appropriate fire hazard reduction programs to maintain the ecological integrity of natural areas and reduce bushfire hazard risk.	**Lead:** • Open Space Operations **Collaboration:** • Environmental Science • Assets Strategy and Delivery • Environmental Science	Funded						✓	Rural Fire Service Bushfire Management Plan Actions Delivered.
13	Leverage external networks to support best practice tree and bushland management within Sutherland Shire and strengthen partnerships with: • Local First Nations groups and/or Local Land Council • National Parks and other large landowners • Crown lands • Researchers • Advocacy groups • RFS • Neighbouring Councils.	**Lead:** • Open Space Operations **Collaboration:** • Environmental Science	Funded						✓	External partnerships and networks increased and formalised. Research opportunities identified and secured to fill knowledge gaps for Sutherland Shire. Citizens' science program commenced. Plan for capturing and reporting data from citizens science developed.
14	Maintain and enhance the Bushcare program to support and develop volunteers' skills and engagement.	**Lead:** • Open Space Operations **Collaboration:** • Environmental Science	Funded						✓	Volunteer program developed and implemented. Number of volunteers participating increased. Number of volunteer hours participating increased.
15	Use the bushcare volunteer program to demonstrate and showcase best practice bushland and corridor management initiatives.	**Lead:** • Open Space Operations **Collaboration:** • Assets Strategy and Delivery • Communication, Engagement and Customer	Funded						✓	Demonstration sites are known and used to improve practice and learning across the council.

	Action	Collaboration	Funding	Y1. 25/26	Y2. 26/27	Y3. 27/28	Y4. 28/29	Y5. +5 Years	Ongoing	Measure
16	Engage with the community and private landholders on the importance of trees, bushland, and their connectivity through bushland corridors when proposing specific changes to planning controls related to trees.	**Lead:** • Strategic Planning **Collaboration:** • Communication, Engagement and Customer	Funded						✓	Number of participants. Participants have increased understanding of importance of trees in private developments.
17	Develop communication and engagement plans to enhance community awareness of the value of trees, ensuring inclusion of Aboriginal community perspectives.	**Lead:** • Environmental Science **Collaboration:** • Open Space Operations • Assets Strategy and Delivery • Community Connections	Not - Funded		✓	✓	✓			Number of community members attending events, workshops or activities related to trees and bushland. Number of collaborations or consultation with Aboriginal groups in engagement activities. Reach of communication efforts (e.g. website visits, social media impressions etc.)
18	Review and consolidate information about tree and bushland management into a database (One Council) and use for reporting internally to staff and externally to community.	**Lead:** • Environmental Science **Collaboration:** • Assets Strategy and Delivery • Environmental health and building • Open Space Operations • Information Management and Technology	Not - Funded		✓	✓				Relevant staff know where to access and how to use data about tree and bushland management. A clear plan for development of a tree and bushland report card for the community is developed.
19	Develop a strategic approach to bushfire management that balances the preservation of biodiversity, and implements programs for bushfire management and preparedness.	**Lead:** • Open Space Operations **Collaboration:** • Environmental Science	Not - Funded		✓	✓	✓			Integration of bushfire management with tree and bushland management. Best practice bushfire management implemented including prescribed burning, cultural burning and establishment of asset protection zones that protect urban areas and Council facilities.

Caring for our environment creates social and educational opportunities.

SUPPORTING INFORMATION

Appendix 1
Appendix 2
Glossary
References

Appendix 1

Available data used for the assessment of trees and bushland (and biodiversity) included:

- Sutherland Shire datasets: land ownership, property, road, footpaths, historical canopy 2020, historical canopy 2016, Green Streets program, Sutherland Shire Local Environmental Plan 2015
- Flora and Fauna survey datasets from NSW Government BioNet
- Vegetation Type Map 2005, 2011 from NSW Government BioNet
- Urban Vegetation Cover to Modified Mesh Block 2019 from NSW Government Central Resource for Sharing and Enabling Environmental Data (SEED)
- Biodiversity values map from NSW Government SEED
- NSW Wetlands from NSW Government SEED
- SRLUP Future Residential Growth Area from NSW Government SEED
- NSW Heat Vulnerability Index to ABS Statistical Area Level 1 2016 from NSW Government SEED
- NSW Urban Heat Island to Modified Mesh Block 2019 (NSW Department of Planning and Environment)
- Cycling Propensity (Transport for New South Wales)
- Census of Population and Housing 2021 (Australian Bureau of Statistics)

The current canopy and change in canopy for Sutherland Shire was assessed using historical tree canopy datasets (2016 and 2020). Canopy cover and change in cover was assessed at both LGA and suburb scales. Analysis included whole suburbs as well as canopy cover over different land uses.

Appendix 2: Greener Neighbourhoods guide - Public Domain Canopy Targets - Table 7 and 8

Table 7: Open space canopy targets

Land-use category	Minimum canopy target
Open spaces (< 5 ha) without sports courts and fields	Minimum 45% canopy cover
Open spaces (< 5 ha) with sports courts and fields	Minimum 45% canopy cover. Target only applies to areas outside the courts and fields. Where possible, the remaining area should exceed the 45% minimum to compensate for any reduced canopy
Regional open space	Determined on a case-by-case basis. At a minimum, proponents should demonstrate no-net loss of canopy and a contribution to strategic canopy targets.

Table 8: Street canopy targets

Land-use category	Minimum canopy target
Existing residential streets	
12 m -20 m reserve* with overhead powerlines	Minimum 40% canopy cover
12 m -20 m reserve* with underground powerlines	Minimum 50% canopy cover
Existing Industrial streets	
20 m -25 m reserve with overhead powerlines	Minimum 35% canopy cover
20 m -25 m reserve with underground powerlines	Minimum 45% canopy cover
New residential streets	
12 m-20 m reserve* with underground powerlines	Minimum 70% canopy cover
New industrial streets	
20 m -25 m reserve* with underground powerlines	Minimum 60% canopy cover
*Note: Targets exclude intersections and arterial roads. These street types are highly variable and subject to specific design standards, therefore canopy targets for these roads should be developed on a site-specific basis	

Appendix 2:
Greener Neighbourhoods guide - Private land canopy targets - Table 9

Table 9: Private land canopy targets

Development category	Tree canopy target (min% of site area)	Deep soil# target (min% of site area)	Minimum canopy target*
Detached dwellings^			
Less than 300 m^2	20%	20%	For every 200m^2 of site area, or part thereof at least one small tree
300m^2 - 600 m^2	25%	25%	For every 250m^2 of site area, or part thereof at least one medium tree
Greater than 600 m^2	30%	30%	For every 350m^2 of site area, or part thereof at least 2 medium trees or one large tree
Attached dwellings^			
Less than 150m^2	15%	15%	At least one small tree
150m^2 - 300m^2	20%	20%	For every 200m^2 of site area, or part thereof at least one smell tree
Greater than 300m^2	25%	25%	For every 225m^2 of site area, or part thereof at least one medium tree
Multi dwelling housing^			
Less than 1,000 m^2	20%	20%	For every 300m^2 of site area, or part thereof at least one medium tree
1,000m^2 - 3,000m^2	25%	25%	For every 200m^2 of site area, or part thereof at least one medium tree
Greater than 3,000m^2	30%	30%	For every 350m^2 of site area, or part thereof at least 2 medium trees or one large tree
Apartments			
Less than 650m^2	15%	10% Minimum 3m dimension	For every 350m^2 of site area or part thereof, at least one small tree is to be planted in the deep soil area
650m^2 - 1,500m^2	20%	15% Minimum 3m dimension.	For every 275m^2 of site area or part thereof, at least one medium tree is to be planted in the deep soil area.
1,500m^2 - 3,000m^2	25%	20% Minimum 3m dimension with a wider contiguous portion that is a minimum 6m wide and at least 25% of the minimum deep soil area.	For every 450m^2 of site area or part thereof, at least 2 medium trees or one large tree is to be planted in the deep soil area.
Greater than 3,000m^2	35%	25% Minimum 3m dimension, with a wider contiguous portion that is a minimum 6m wide and at least 25% of the minimum deep soil area.	For every 300m^2 of site area or part thereof, at least one large or 2 medium trees are to be planted in the deep soil area.

cont.

Development category	Tree canopy target (min% of site area)	Deep soil# target (min% of site area)	Tree-planting rate*
Business parks			
All lots	35%	25%	For every 300m² of site area, at least 2 medium trees or one large tree
Industrial			
All lots	25%	15%	For every 400m² of site area or part thereof, at least 2 medium trees or one large tree
Bulky goods			
All lots	25%	15% Minimum 6m	For every 400m² of site area or part thereof, at least 2 medium trees or one large tree

#Deep soil is critical to deliver effective urban tree canopy-without a sufficient deep soil area, canopy targets cannot be met. Deep soil could be included in an LEP, and as a subset of landscaped area. Deep soil reflects the same aspects of a landscaped area, but also requires a minimum surface area, and to be unimpeded above and below ground.

*The tree-planting rate: the number of trees that need to be planted within a deep soil area to achieve a set target. Tree size categories:

- Small tree - minimum 6 m mature canopy diameter
- Medium tree-minimum 8 m mature diameter
- Large tree -minimum 12 m mature diameter.

^ For these development types, the canopy and deep soil target are the same. In these situations, tree canopy will not cover the entire deep soil area. Proponents should meet the deep soil target as a priority and are encouraged to plant more trees than prescribed in the tree-planting rate, where possible.

Glossary

TERM	DEFINITION
2030 Agenda for Sustainable Development	A global framework adopted by all United Nations Member States to achieve sustainable development by 2030. It includes 17 Sustainable Development Goals (SDGs) aimed at ending poverty, protecting the planet, and ensuring prosperity for all.
Active Transport Strategy	A strategy promoting walking, cycling, and other non-motorised forms of transport, aiming to improve health, reduce congestion, and decrease environmental impacts.
Best Practice Manual - Trees and Tree Roots (2022)	A guide that outlines effective methods and practices for planting and maintaining trees, ensuring their health and minimising damage to surrounding infrastructure.
Biodiversity	The variety of plant and animal life in a particular habitat or ecosystem. Higher biodiversity means a healthier and more stable environment.
Biodiversity Conservation Act 2016	A piece of Australian legislation that establishes a framework for conserving biodiversity, including the protection of threatened species and ecological communities.
Biodiversity Values	The inherent value of ecosystems, species, and genetic diversity in maintaining ecosystem services and overall ecological balance.
Bushland	Any bushland vegetation, including mangroves. Vegetation which is either remnant of the natural vegetation of the land or, if altered, is representative of the structure and the floristics of the natural vegetation and includes trees of any size, shrubs and all herbaceous species.
Bushland Corridors	Continuous stretches of natural vegetation that connect different areas of bushland, allowing wildlife to move freely and promoting biodiversity.
Canopy	The upper branches and leaves of trees (above 5m) that form a "cover" over the area below. The tree canopy provides shade, helps regulate temperature, and supports wildlife.
Canopy Analysis	The process of studying and mapping the upper layers of vegetation (tree canopy) to assess habitat quality, tree density, and biodiversity.
Canopy Cover	The percentage of land area covered by tree canopy. It is used to measure how much of an area is shaded or protected by trees.
Canopy Loss	The decrease or reduction in tree canopy cover, often due to development, disease, or environmental factors.
Capacity Assessments	Evaluations of how much a system, service, or resource (like tree planting or maintenance) can handle or support, considering available resources.
Capital Works	Large-scale projects for constructing, expanding, or renovating physical assets like roads, bridges, and buildings, requiring significant investment and planning for long-term community development.
Climate Strategy	A Council strategy that outlines actions and policies aimed at mitigating climate change and adapting to its impacts, including reducing emissions and enhancing resilience.
Commonwealth Environment Protection and Biodiversity Conservation Act 1999	A key piece of Australian federal legislation that provides a framework for protecting and managing the environment and biodiversity, including threatened species and ecosystems.

Community Strategic Plan (CSP)	The Community Strategy Plan is a 10 year plan that is endorsed by Council on behalf of the community to outline the community's vision, priorities and aspirations, and strategies on how to achieve them.
Compliance Checks	Reviews to ensure that activities, such as tree planting or removal, follow regulations and meet established standards.
Critically Endangered Ecological Communities (CEECs)	Ecological communities that are at an extremely high risk of becoming extinct in the wild. They are listed under conservation legislation due to their rarity or degradation.
Delivery Program	A plan that outlines the specific actions and projects the Council will undertake in a set time (usually four years) to achieve the goals of a longer-term strategy.
Designated footpaths	A constructed path that Council has built and maintains for the purpose of pedestrian movement across a footway.
Development Control Plan (DCP)	A Development Control Plan (DCP) provides detailed planning and design guidelines to support the planning controls in the Local Environmental Plan (LEP) and is prepared and adopted by Councils. A DCP describes how to go about a land use.
Endangered Ecological Communities (EECs)	Ecological communities that are at risk of becoming critically endangered if their current trend continues. They are considered at a significant risk of extinction.
Endangered Species	Species that are at a high risk of becoming extinct in the wild due to factors like habitat loss, over-exploitation, or disease.
Environmental Land Use	The way in which land is developed and utilised, including residential, commercial, agricultural, industrial, and conservation uses.
Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)	A key piece of Australian federal legislation that provides a framework for protecting and managing the environment and biodiversity, including threatened species and ecosystems.
Environmental Resilience	The ability of an ecosystem or community to adapt to, recover from, and thrive despite environmental stresses or disruptions, such as climate change or natural disasters.
Evidence-Based Decision Making	Making decisions based on data and research rather than assumptions or guesses. This ensures that actions are effective and backed by solid information.
Footway	The Council owned land between the private property boundary and the road.
Green Infrastructure	A network of multi-functional green space and other green features which can deliver quality of life and environmental benefits for communities.
Greening	The process of planting and maintaining trees and vegetation in urban areas to improve the environment, reduce heat, and increase green space.
Greenweb Program	A program focused on creating green corridors or "webs" in urban environments to improve biodiversity and environmental sustainability.
Heat Vulnerability	The degree to which people, communities, or environments are susceptible to the impacts of heat, such as heatwaves, due to factors like age, health, or infrastructure.
Integrated Planning and Reporting Framework	A framework used by governments and organisations to plan, implement, and report on environmental, social, and economic strategies in a cohesive and systematic manner.
Koala Sightings	Observations of koalas in a specific area, which can be used to monitor their population and habitat health.
Land Use Categories (Residential, Commercial, etc.)	The classification of land based on its primary use or intended purpose, including residential, commercial, industrial, agricultural, or recreational uses.

Littoral Rainforest	A type of rainforest found along the coast, characterised by a high biodiversity of plant and animal species, often near the shorelines.
Local Environment Plan (LEP)	Legal document prepared by Council and approved by the State Government to regulate and guide Council's planning decisions regarding land use and development. LEPs allow Council to regulate the ways in which all land, both private and public, can be used and protected through zoning and development controls.
Local Strategic Planning Statement (LSPS)	Each council is required to prepare a Local Strategic Planning Statement (LSPS) which will set out the 20-year vision for land-use in the local area, the special character and values that are to be preserved and how change will be managed into the future. The statements should be read in conjunction with relevant State and Regional planning policies and plans, which will continue to guide planning decisions and the preparation of development controls in local environmental plans.
Long-Term Recovery and Action Plans	Plans designed to guide the recovery of ecosystems, species, or communities following a significant disturbance, such as a natural disaster or environmental degradation.
Native Vegetation	Plant species that are indigenous to a specific area and have evolved in that region's climate and soil conditions over time.
NSW Biodiversity Conservation Act 2016	The New South Wales legislation designed to conserve biodiversity, including the protection of threatened species and ecological communities.
NSW Government BioNet	An online database that supports biodiversity conservation in New South Wales by providing access to biological records and data.
NSW Government SEED	A platform that provides access to environmental and biodiversity data collected by the New South Wales Government.
NSW Heat Vulnerability Index (HVI)	A tool used to assess the vulnerability of populations to heat impacts, particularly in urban areas.
NSW State Environmental Planning Policy (Biodiversity and Conservation) 2021	A planning policy that aims to protect and conserve biodiversity in New South Wales through regulations and guidelines.
Open Space Strategy	A strategy that seeks to manage and create accessible green spaces in urban areas, enhancing community health, biodiversity, and environmental sustainability.
Operational Plan	A plan that details the day-to-day actions and resources needed to carry out the Delivery Program and achieve its objectives.
Population Density	The number of individuals of a species (typically humans) living in a given area, usually expressed as individuals per unit of area (e.g., per square kilometre).
Proactive Management	Taking action to prevent problems before they occur, rather than just reacting to them. In this context, it refers to actively caring for and maintaining trees and bushland to ensure their health.
Public Domain Strategy	A strategy that guides the management and use of public land or spaces, balancing accessibility, conservation, and community interests.
Public Transport Strategy	A strategy to improve and expand public transportation systems, making it easier for people to travel and reducing reliance on cars, which can contribute to environmental degradation.
RAMSAR Convention on Wetlands	Wetlands recognised internationally for their significance to biodiversity, particularly migratory waterfowl, under the RAMSAR Convention.
Recovery Plan (for Endangered Species)	A detailed plan that outlines the actions needed to prevent the extinction of endangered species and promote their recovery.
Right Tree, Right Place, Right Time	A principle that refers to planting the appropriate species of tree in the right location at the right time to ensure its health, growth, and positive impact on the environment.

Road Reserve	The section of land between property boundaries that is divided by a road. This area typically includes nature strips, trees, footpaths, kerbs, gutters, and the road itself.
Shale	A fine-grained sedimentary rock formed from consolidated mud or clay, characterised by its ability to split into thin layers. It primarily consists of clay minerals and quartz.
Shale Forest Complex	A type of forest ecosystem dominated by shale soils, often found in areas with moderate rainfall and specific plant species adapted to these soils.
Shale/Sandstone Transition Forest	A forest type that occurs where shale and sandstone geological formations meet, supporting distinct plant communities due to the variation in soil and climate conditions.
Shire-Wide Tree Maintenance Procedure 2023	A procedural guide that outlines the management and care of trees within a specific shire, ensuring their health and sustainability.
Social Vulnerability	The degree to which a community or individual is at risk of harm due to social, economic, or demographic factors, such as poverty, lack of access to resources, or discrimination.
Socio-Economic Indexes for Areas (SEIFA)	A set of indices developed by the Australian Bureau of Statistics that measures the relative socio-economic disadvantage or advantage of geographic areas.
Stakeholders	Individuals or groups who have an interest in or are affected by a project or decision. This can include residents, community groups, businesses, and local authorities.
Sustainability	The ability to maintain or improve environmental health, economic stability, and social well-being over the long term, without depleting natural resources or harming future generations.
Swamp Oak Floodplain Forest	A type of forest found on floodplains, dominated by swamp oak trees and associated wetland vegetation, supporting a range of wildlife.
Swamp Sclerophyll Forest	A forest type found in swamps or wetlands, characterised by sclerophyll (hard-leaved) trees adapted to waterlogged soils.
Tree and Bushland Indicators	Measurements or signs that help to monitor the health and condition of trees and natural areas. These can include tree size, species, health, and the diversity of plants and animals present.
Tree Canopy Change	The variation in the extent of tree canopy cover over time, which can be due to natural growth, environmental factors, or human activities like deforestation.
Urban Heat	The increased temperature in urban areas compared to their rural surroundings, caused by factors like buildings, pavement, and human activity, leading to the urban heat island effect.
Urban Heat Index	A measure that combines air temperature and humidity to represent how hot it feels in urban environments, often influenced by the density of buildings and infrastructure.
Urban Heat Island Effect	A phenomenon that occurs in developed areas where the replacement of natural land cover with paving, buildings, roads, and parking lots results in an increase in outdoor temperatures. The heat island effect can be mitigated by vegetation, green roofs, and light coloured materials that reflect heat.
Urban Heat Vulnerability	The susceptibility of urban populations to the negative effects of heat, such as heat-related illnesses or mortality, especially in high-density or under-resourced areas.
Wetlands (Freshwater and Coastal)	Areas where water saturates the land, supporting a unique ecosystem of plants, animals, and microorganisms. Freshwater wetlands are dominated by non-saline water, while coastal wetlands are influenced by tides and saltwater.
Waterways	Rivers, streams, and other bodies of flowing water that serve as vital connectors for ecosystems, facilitating the movement of species and nutrients across landscapes.

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Contact Details
4-20 Eton Street Sutherland
NSW Australia

Locked Bag 17,
Sutherland NSW 1499

T 02 9710 0333
ssc@ssc.nsw.gov.au

Credit: Emma Brame