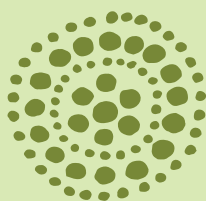


# **Tweed Conservation Strategy**

## **2025-2035**





## Acknowledgement of Country

Tweed Shire Council wishes to acknowledge the Ngandowal and Minyungbal speaking people of the Bundjalung Country, in particular the Goodjinburra, Tul-gi-gin and Moorung – Moobah clans, as being the traditional owners and custodians of the land and waters within the Tweed Shire boundaries. Council also acknowledges and respects the Tweed Aboriginal community's right to speak for its Country and to care for its traditional Country in accordance with its lore, customs and traditions.

## Conservation

Means protecting and restoring species richness, genetic diversity, and natural habitats to ensure that ecosystems remain healthy and functional.

October 2024

Cover image: Buttressed roots on large yellow carabeen in lowland rainforest – Photo credit: Michael Corke.

# Contents

<b>A message from the Mayor</b>	<b>4</b>
<b>Towards a healthy natural environment</b>	<b>5</b>
Our unique and remarkable place	6
Looking after this place is important to everyone	6
<b>Our community</b>	<b>7</b>
Our conservation values	8
The work that we do	9
<b>Preparing the strategy</b>	<b>11</b>
Community views and experience	11
Where does the strategy apply?	12
Legislation and policy context	14
What are the issues we need to address?	16
<b>Our strategy</b>	<b>18</b>
1     Protect the integrity of ecosystems.	18
2     Improve the quality and condition of ecosystems	23
3     Collaborate with diverse knowledge holders and partners	27
4     Adapt to changes impacting ecosystems	30
<b>Monitoring, evaluation and reporting</b>	<b>33</b>
<b>Appendix 1</b>	<b>34</b>



# A message from the Mayor

Welcome to the Tweed Conservation Strategy. I offer my gratitude to the people of the Bundjalung country who are the traditional custodians of the land and waters within the Tweed Shire. It is their careful custodianship over many generations that has resulted in the remarkable opportunity we have to live in such a unique and precious natural environment. We have much to learn and many valuable opportunities to work together to care for country and to make decisions guided by traditional knowledge and practices.

Early in the development of the strategy, we had a great response to our community survey. More than 350 people shared with us their views on what they value and what they suggest Council do to protect and improve our environment. We have combined this input with the international and national framework for biodiversity conservation to develop this strategy which will be implemented by our Sustainability and Environment team over the next ten years.

The strategy presents an important opportunity to commit to our shared responsibility to protect and care for the things that we value and to build on the important work that we have been doing over the past twenty years with the guidance of the Tweed Vegetation Management Strategy.

Most importantly, the strategy provides our plan to act on one of the strongest messages we received through our survey – the intrinsic connection between the health of our natural environment and our own wellbeing.

We all know that trees keep water in the soil, slow floodwaters down and provide habitat.

We want to work with you to protect and improve our world-heritage listed rainforests, our coastal wetlands and koala habitat because everything we do today impacts on what we leave for our grandchildren to inherit, so let’s make a positive difference together.



**Councillor Chris Cherry**

*Mayor of  
Tweed Shire*





# Towards a healthy natural environment

The *Tweed Conservation Strategy 2025-2035* (the strategy) is Tweed Shire Council's plan to protect and improve the natural environment. Council is recognised as a leader in sustainability and environmental programs because of the valuable outcomes it has delivered.

The strategy continues and builds on the important and effective work that we have been doing over the past 20 years. This includes:

- landscape scale habitat restoration for threatened species and communities, waterway rehabilitation and coastal management
- protection of the environment through planning and policy
- collaboration with and support for landholders and groups
- contribution to innovative applied research projects.

New actions and opportunities have also been identified for the strategy through community consultation, research, and recognition of emerging issues.

Our strategy sets out how Council will lead and collaborate with our community to take action to continue positive and effective programs that protect and improve the natural environment through 4 objectives:

- 1 **Protect the integrity of ecosystems**
- 2 **Improve the quality and condition of ecosystems**
- 3 **Collaborate with diverse knowledge holders and partners**
- 4 **Adapt to changes impacting ecosystems.**

## Our unique and remarkable place

The Tweed is one of Australia's most ecologically diverse areas. Its outstanding biodiversity values make it a unique natural landscape worthy of conservation. Forty-nine vegetation types, ranging from subtropical rainforests to coastal wetlands, support a diverse assemblage of plants and animals. Importantly, the Tweed Shire includes World Heritage Areas, and it is a climate change refuge for many species.

What sets the Tweed apart is not only this amazing abundance of ecosystems and the sheer variety of species, but also the fact that many species do not occur anywhere else. Regrettably, Tweed Shire is home to more than 200 species currently threatened with extinction.

The region's cultural heritage is deeply intertwined with the natural environment. First Nations people are the traditional custodians of the land and sea. They hold stories, knowledge and connection with the natural environment that can guide our community to best protect and improve the natural environment.

The Tweed River and runoff from its catchment provide 100% of the Tweed Shire's water supply, while also supporting the community and local businesses by offering a wide range of recreational opportunities.



# Looking after this place is important to everyone

People in the Tweed community consistently tell us that a healthy natural environment is one of their highest priorities.

In the 2021 community survey for the *Tweed Shire Community Strategic Plan 2022–2032*, 94% of respondents indicated that protecting the environment was important.



This plan recognises that the natural environment is what our community members value most about living here and that they want to share the responsibility of protecting and looking after it.

Our community understands that the health of our environment is directly linked to human health and wellbeing and that the physical, emotional, and social benefits of being able to spend time in nature are now widely recognised.

It is also clear to us that protecting the natural environment is critically important in the face of increasing impacts from climate change such as flooding, invasive weeds, bushfires, and drought, together with the pressures from urbanisation and population growth. Protecting and sustaining the natural environment also delivers significant benefits to the local economy.

The health of our landscape directly impacts on the quality and quantity of water in our drinking supply, and the quality of waterways used extensively for recreation.

## Conservation values of the Tweed

Our special biogeography – the link between geological history and our biota



Following the break-up of Gondwana, Australia drifted north and the climate became hotter and drier. Rainforests contracted to a few mountainous areas on the eastern seaboard that remained relatively cool and wet. The Tweed Shield volcano, formed between 23 and 20 million years ago, is an example. Over millennia, this prominent landform intercepted moisture-laden winds from the coast, providing a wet, stable climate. Long-term climatic stability favoured the formation and longevity of complex rainforest ecosystems. The Tweed’s luxuriant rainforests, and the unique plants and animals they support, are intertwined with our fascinating geological history. Image: The Cougals (west peak) looking along the Caldera toward Springbrook and Lamington National Parks. Photo credit: Michael Corke.



# Our community

Tweed Shire covers an area of about 1,300 square kilometres and adjoins the NSW shires of Byron, Lismore and Kyogle, with the NSW/Queensland border to its north where it divides the twin towns of Tweed Heads and Coolangatta.

The Bundjalung people lived in the Tweed more than 40,000 years prior to the arrival of European cedar getters who established settlements here in the 1840s. The Tweed is one of the most desirable places to live in Australia.

In 2021, more than 97,300 people were estimated to live in the Tweed. The population is estimated to reach more than 112,000 by 2041. Our diverse population is geographically spread across more than 20 urban communities, coastal and rural towns and villages.

## Conservation values of the Tweed

Wollumbin – the Tweed shield volcano



Tweed Shire is unique – we live in an old volcano. The Tweed shield volcano is one of the largest and best-preserved erosion calderas on earth. Once 2 kilometres high, Wollumbin (pictured) and the surrounding caldera are all that remain of a huge shield volcano active between 23 and 20 million years ago. Its great height and coastal location attracted very high rainfall, considerable runoff and a drainage pattern resulting in the Tweed Valley’s present-day geography. Reliable high rainfall and fertile volcanic soils are 2 reasons for the shires outstanding subtropical rainforests. Wollumbin is highly significant to all language groups of the Bundjalung Nation. The Aboriginal community continues to maintain a powerful cultural connection to the mountain and surrounding landscape. The cultural stories connected to Wollumbin are wide and varied, and include a mythological warrior, patriarch of mountains, cloud catcher, high place and place of special significance for the brush turkey. Other stories are held only by community members with appropriate cultural knowledge, are not shared publically or written down, and are passed on in accordance with oral traditions. Image: Looking over the upper Tweed River catchment towards Wollumbin from the Border Ranges National Park.

Photo credit: Michael Corke.



# Our conservation values



	Internationally significant landscape and conservation values		
	90 threatened plant species		120 threatened animal species
	11 Endangered Ecological Communities		55 endemic species (species that only occur in the Tweed and surrounds)
	21,437 hectares of National Park		37 km of coastline
	The Tweed River catchment is 1,054 km <sup>2</sup> and is wholly contained within the Tweed Volcano Caldera, and the Tweed Shire local government area		700km of waterways including freshwater creeks, estuaries and wetlands
	Tweed's unique identity as one of Australia's Great Landscapes, the "Green Cauldron"		5,870 hectares of natural areas managed by Council





# The work that we do

We are proud of the work we have been doing to protect and improve conservation values. Here are some examples of works, programs, and achievements that we have delivered:

- Highly successful private land conservation programs supporting landholders through Land for Wildlife (LfW), biodiversity, river health and sustainable agriculture grants.
- Landscape-scale habitat restoration and conservation projects including Tweed Byron Bush Futures, Tweed Byron Koala Connections and the Tweed Coast koala habitat restoration program.
- Innovative applied research projects improving knowledge and on-ground outcomes through peer reviewed journal articles, regional collaboration, monitoring, and recovery actions.
- Significantly improved development outcomes resulting from environmental planning and policy development and implementation.
- Rehabilitation of more than 120 km of creek and riverbanks.
- Development and implementation of the Tweed Coast Comprehensive Koala Plan of Management 2020 and the Tweed Development Control Plan Chapters A16 (Preservation of Trees and Vegetation) and A19 (Biodiversity and Habitat Protection).
- Development and Certification of the Tweed River Estuary Coastal Management Program 2022-2032.
- Securing more than \$10 million of external funding for the successful development and implementation of conservation projects.
- Working with and supporting community groups including Landcare, Dunecare and Coastcare, koala and other wildlife rescue, care and advocacy groups.
- Wildlife protection outcomes through a landscape scale, integrated vertebrate pest management program.
- Local and regional weed management on public land, including coastal dune vegetation restoration and protection outcomes through regional collaborative targeted management of bitou bush.
- Leading and collaborating on regional environmental conservation and research projects, initiatives, and policy development.
- Development of strong relationships based on effective collaboration with community, private and public land managers to implement national, state, regional and local management plans.
- Recognition of our work through numerous regional, state, and national awards for planning, policy and on ground works.
- Building capacity for improved natural resource management on farms through education, extension, research and demonstration.



## Environmental planning and policy – planning for a healthy future



Our team plays a key role in guiding good decision making for land use. One of the ways we do this is through our environmental planning and policy work. This includes preparing strategies, policies and plans that make sure conservation values such as habitat, threatened species and significant trees are suitably considered when a change in land use is proposed. We also provide a referrals service to advise on the ecological issues of development applications and planning proposals.

Some of the most notable achievements in this area are:

- Strategies and plans including the Tweed Coast Koala Plan of Management, DCPA19 –Biodiversity & Habitat Management and Coastal Management Programs
- Assessment of an average of 100 tree preservation order permits and 125 development applications per year
- Protection and dedication of high environmental value land through planning and development approvals
- Technical advice and support for landholders, applicants, consultants, peers within Council and throughout the region
- Major projects including the Conservation Zone Review, Development Control Plan Review and priority development proposals.

## Conservation values of the Tweed

### Gondwana rainforests



Our stunning rainforests provide a unique glimpse into the past. These rainforest refuges represent once widespread ecosystems that evolved millions of years ago when Australia was still part of Gondwana. Our region’s major biodiversity habitat represents an outstanding example of biological evolution linked to a significant event in the earth’s history – the break-up of Gondwana. These significant attributes lead in 1986 to the region’s listing as a World Heritage Area. The Tweed’s forests are the centrepiece of what is now known as the Gondwana Rainforest Reserves of Australia. Image: Tweed lowland rainforest. Photo credit: Michael Corke.



## Preparing the strategy

Preparation of the strategy is a key project of Council's 2022-2026 Delivery Program that delivers on the priority for 'A healthy natural environment' adopted in the Tweed Community Strategic Plan 2022-2032. The strategy will replace the Tweed Vegetation Management Strategy 2004 as Council's plan to protect and improve the natural environment. The strategy will complement and support other key plans and strategies including the Coastal Management Program, Sustainable Agriculture Strategy, Open Space Strategy and Climate Change Adaptation Plan.

## Community views and experience

The strategy was informed by extensive consultation and conversations with the community, feedback from Council staff and Councillors, and analysis of the outcomes of work we have done so far.

A widely distributed community survey completed by more than 350 people reported that a healthy natural environment is important to everyone, and that protecting and improving the environment is essential to sustain our health and economy. The survey also revealed that our community members:

- understand the issues impacting the environment
- believe that looking after the natural environment is something that we can be proud of
- spend their time in nature at our beaches, river, creeks and forests
- would like to see our waterways protected from grazing stock, wildlife protected from feral and domestic animals, and habitat protected from the impacts of development, and identified these as the most important actions we should take to protect the environment.

Other ways we gathered feedback included:

- meeting with the Tweed Coast and Waterways Committee
- meetings with the Tweed Aboriginal Advisory Committee
- meeting with Tweed Shire Councillors
- meetings with Council staff to align the strategy with organisational priorities
- presentations and discussions with community members
- Council endorsement of the draft strategy for exhibition
- formal submissions from the community on an initial draft of the strategy.



# Where does the strategy apply?

Protecting and improving our natural environment is a responsibility that is shared between all members of the Tweed community. The strategy responds to this by identifying a broad suite of aims, some of which are the responsibility of a specific Council business unit, and others which require the input from and collaboration with our community.

Just 4.5% of land in the Tweed (approximately 5,870 hectares) is the direct responsibility of Council as landholder and manager. These areas include water and wastewater management, recreational areas, community facilities and bushland reserves. The strategy is also particularly relevant to our catchment and waterways with Council being the lead agency in the management of our rivers and estuaries.

Council’s influence is much further reaching however, through its threatened species conservation projects, policy development and education and engagement activities. Through relationships with landholders, other government agencies, First Nations people and other important partners, we can work collectively towards the broader goals and objectives that are adopted for the whole of the Tweed.

Through the actions outlined in the strategy, Council commits to:

- demonstrating leadership by good management of land under its direct care and control
- developing and implementing environmental policy that results in positive environmental outcomes while allowing for sustainable growth, and
- supporting the broader community and other land managers to engage in and deliver conservation activities on private and other land tenures
- minimise our impact on the environment, protect and improve the health of our land, waterways and native wildlife and mitigate the impacts of climate change

## Conservation values of the Tweed

### Tweed’s outstanding rainforests



The mountainous escarpment of the Tweed caldera and surrounds support the most diverse and luxuriant lowland subtropical rainforest in New South Wales. These moist, fertile environments play host to myriad plant and animal species, many of which are found nowhere else on earth. These habitats support many of our rainforest giants and white booyong (*Argyrodendron trifoliolatum*), rose marara (*Pseudoweinmannia lachnocarpa*), black bean (*Castanospermum australe*), purple cherry (*Syzygium crebrinerve*) and red apple (*Acemema ingens*) all reach record heights here. Image: Rainforest in Numinbah Nature Reserve, on the southern slopes of Mount Mumdjín, the highest point on Springbrook Plateau. Photo credit: Michael Corke.





# Conservation on private land– working together at a landscape scale








Council’s private land conservation programs demonstrate the approach taken in this strategy to working across the landscape.

These programs offer landholders the opportunity to voluntarily access technical support and financial assistance to protect and improve habitat. Council cannot compel landholders to manage their land in any particular way, but this program shows that landholders throughout the landscape appreciate the benefits of working together to improve conservation values, scenic amenity and agricultural production outcomes.

Interest in the program continues to grow each year and more than 885 grants have been awarded to landholders over the past 10 years.

Landholders from more than 600 properties have been involved in these programs to date, with 800 hectares of habitat restored

	885 grants awarded to landholders		
	600 properties covering 14,180 hectares		750 hectares of habitat improved
	More than 173,000 trees planted		132 km of river bank restored



## Legislation and policy context

This strategy is guided by international and national conventions for the protection of biodiversity including the international 2022 Kunming–Montreal Global Biodiversity Framework, which sets numerous global biodiversity actions for the next decade including to ‘ensure at least 30% of terrestrial, inland water, and of coastal and marine areas are effectively conserved and managed’.

Australia is a signatory to the Kunming–Montreal framework and the Australian Government has subsequently made a commitment to ‘protect and conserve 30% of land and 30% of oceans by 2030 (30 by 30)’. This commitment is included to the Australian Government’s Nature Positive Plan which sets out a regenerative approach to protection of the environment. This plan is part of a package of environmental law reform that aims to prevent further extinction of plants and animals, improve decision making and restore accountability and trust.

**Biodiversity, or biological diversity, is defined in Australia’s Biodiversity Strategy<sup>1</sup> as “the variety of all life forms on earth: it is the different plants, animals and micro-organisms, their genes, and the terrestrial, marine and freshwater ecosystems of which they are a part”. Biodiversity supports everything in nature that we need to survive – food, clean water, medicine, and shelter.**

The protection of Australia’s biodiversity is regulated by environmental legislation and guided by plans and strategies at all levels of government. A comprehensive list of the legislation plans and strategies that are relevant to protecting and improving the natural environment in Tweed Shire is included as Appendix 1 and summarised at Figure 1.

The strategy distils the key directions found within these conventions, legislation, policy and community-stated priorities into clear actions and activities that are relevant to the local, Tweed context. These actions form Council’s contribution to the collective effort to address the wide range of contemporary ecological impacts, challenges and opportunities facing biodiversity conservation.

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<sup>1</sup> Department of Climate Change, Energy, the Environment and Water. (2022). Threatened Species Strategy Action Plan 2022–2032. Canberra: Australian Government.



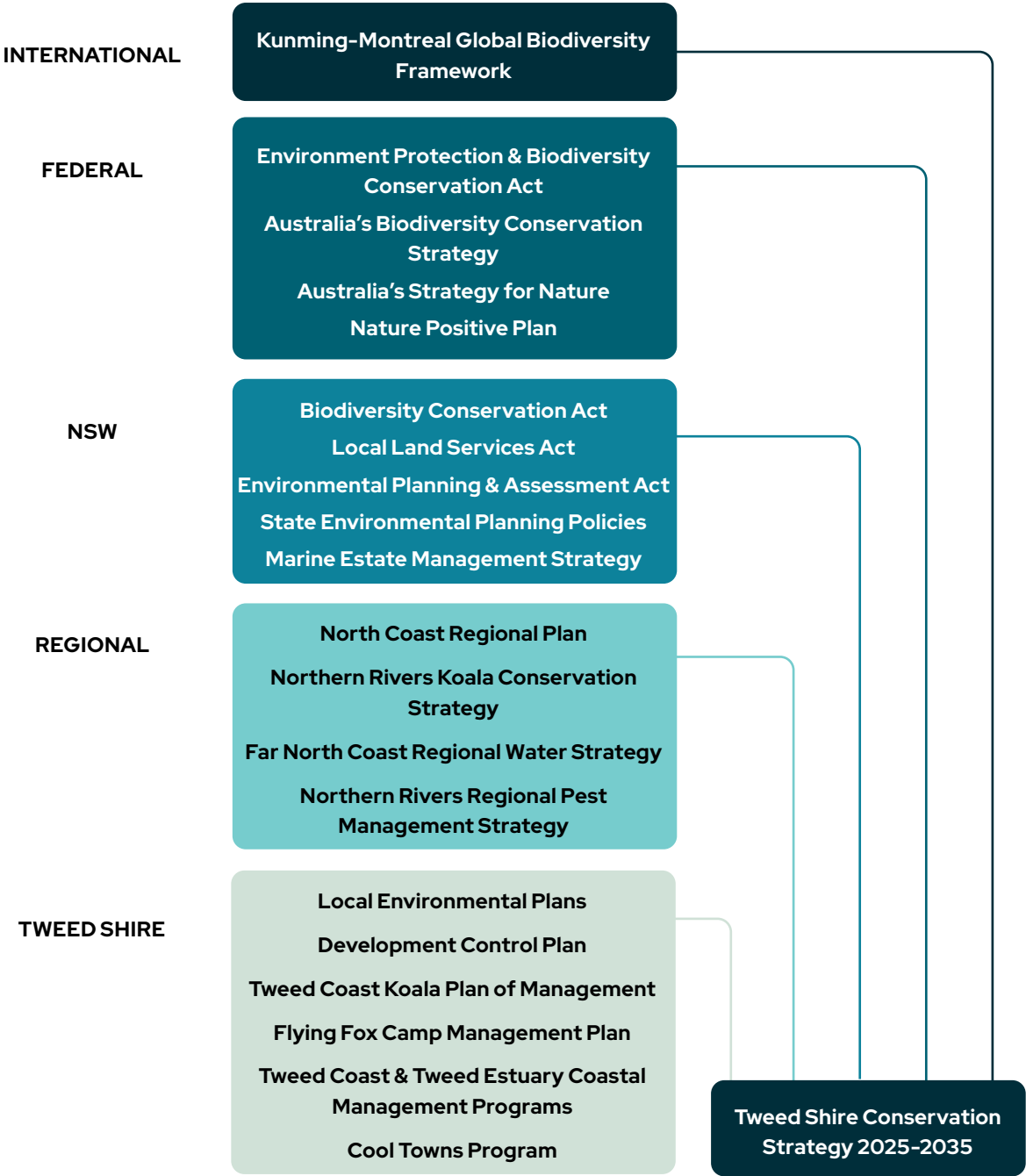


Figure 1: Summary of the legislative and policy framework for biodiversity conservation.



## What are the issues we need to address?

Our strategy responds to the issues that contribute to the loss of biodiversity and have a negative impact on our unique conservation values. The strategy has been prepared to align and prioritise our approach to these issues.

### **Land use practices**

Land use practices such as agriculture, forestry, poorly managed bushland and urban development can have significant impacts on ecological systems. Unsustainable land management practices can lead to soil and waterway erosion, habitat loss and degradation, and pollution, affecting the health and resilience of ecosystems

### **Climate change**

Climate change presents various ecological challenges, including rising temperatures, changing rainfall patterns, and more frequent extreme weather events like storms and droughts. These changes can have profound effects on ecosystems, including altered species distributions, disrupted migration patterns, and increased stress on vulnerable species and habitats.

### **Invasive species**

Invasive species, both plant and animal, can have significant negative impacts on native ecosystems. Invasive species outcompete native flora and fauna, disrupt ecosystem functions, and result in further impacts to threatened species.

### **Degradation of water quality and quantity**

Maintaining clean water sources and adequate water supplies is essential for the health of both terrestrial and aquatic ecosystems. Water pollution from agricultural runoff and the impact of grazing animals on creek banks, urban runoff, and industrial activities, as well as pressures on water resources due to population growth and climate change negatively impact our water resources, and the species/systems dependent on them.

### **Land use planning**

Poorly planned agricultural, residential or infrastructure development can result in habitat removal, degradation and fragmentation. Governments at all levels have acknowledged that current offset arrangements are contributing to environmental decline. This approach to facilitating development outcomes results in a net loss of biodiversity.

### **Coastal erosion and sea level rise**

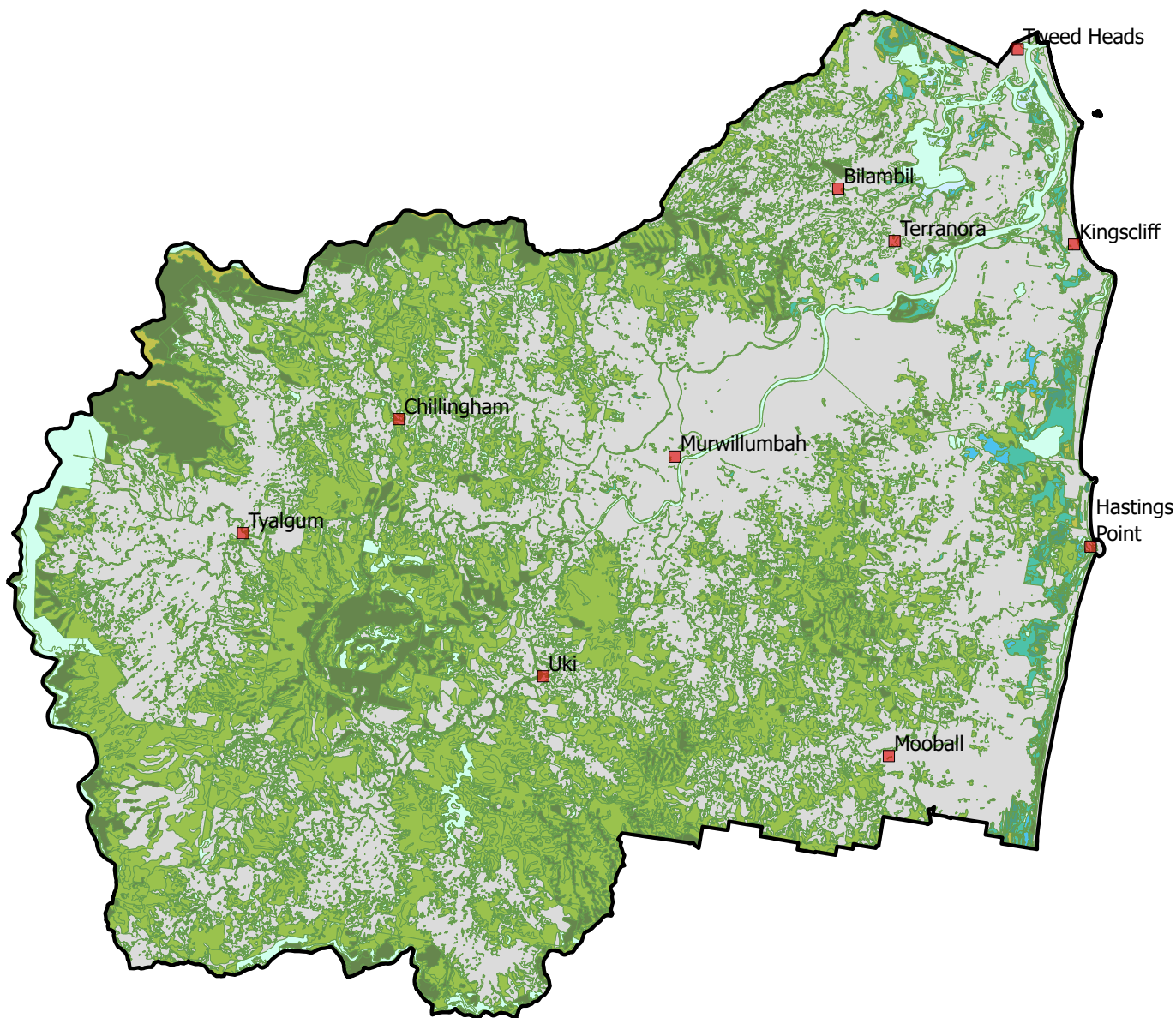
Coastal areas are vulnerable to erosion and inundation due to rising sea levels and more frequent extreme weather events. This can lead to loss of coastal habitats, increased vulnerability to storm damage, and threats to human communities located in coastal areas.

### **Fire**

Changes in climate patterns, land use practices, and invasive species can increase the frequency and severity of wildfires, posing significant risks to ecosystems, property, and human lives. Conversely, the lack of well managed fire in the landscape results in the loss of fire dependent vegetation and wildlife.







Map 1 – Major vegetation communities. The 49 different vegetation types are grouped into major vegetation communities. The mapping and classification was done in 2009 as part of the Tweed Vegetation Management Strategy.

Major vegetation communities (2009)

- Estuarine Complexes
- Foredune Complex
- Heathlands
- Highly Modified / Disturbed
- Melaleuca and Swamp She-oak Forests
- Miscellaneous Map Units
- Rainforest and Riparian Communities
- Sclerophyll Forests / Woodlands on Sand Substrates and Alluvium
- Sclerophyll Open Forests on Bedrock Substrates
- Sedgeland and Related Communities



# Our strategy

This section sets out the actions that will be completed during the initial 5 years of the implementation of the strategy as we work towards achieving its objectives. Many actions rely on collaboration and consultation within Council, and with community partners and government agencies.

The actions are presented against each of the 4 strategy objectives and their delivery will involve:

- Consideration of the objectives in decision making, policy setting and environmental planning.
- Review and adaptive amendments in accordance with the monitoring, evaluation and reporting provisions at Section 5.

## 1 Protect the integrity of ecosystems.

Protecting the integrity of ecosystems is vital because they support all life on Earth. Ecosystems are interconnected communities where every plant, animal, and microorganism play a role. When we protect ecosystems, we're safeguarding biodiversity, which is essential for resilience and adaptation to changes in the environment. Human systems are entirely dependent on a healthy natural environment for food production, tourism, recreation, safe water, clean air, and scenic amenity.

It is most important to protect what still exists as many of the critical elements of a healthy natural environment are only available in old trees and forests. Research has shown that a single old tree has an average of 380 metres of branches, together with tree hollows, peeling bark, nectar, seeds and fallen limbs and leaves that are all essential habitat elements for thousands of animal species. Trees that provide this level of habitat are generally at least 100 years old and so are irreplaceable in the short term.

It is also essential to protect the younger forests to ensure that these ecosystems persist beyond the time of the old forests. These developing forests provide the critical connections between the remnant forests, ensuring genetic diversity, resilience to fire and weather events and the capacity to adapt to climate and other changes in the environment.

Protecting and improving what we have is also the least expensive and most effective approach. Habitat restoration of existing forests generally costs several thousand dollars per hectare, whereas planting a new forest costs tens of thousands of dollars per hectare. The risk of failure is higher when growing trees from seedlings than restoring existing forests on the scale required to restore ecosystems.

The NSW biodiversity legislation acknowledges the need to protect existing native vegetation by including the clearing of areas of vegetation over a specified threshold as an activity that is likely to significantly affect threatened species. This legislation also provides for voluntary conservation agreements, where landholders can elect to protect their land in perpetuity.



Species and communities that are listed as threatened are facing extinction. Measures to protect them from threats and increase their occurrence and sustainable persistence are essential in addition to the protection and improvement of habitat. Numerous recovery plans, conservation strategies and programs are in place seeking to protect threatened species from becoming extinct. Regional and multi-species approaches are also in place and seek to increase the effectiveness and efficiency of efforts through coordinated, collaborative actions.


**There are two main categories of ‘significant’ species and communities relevant to this strategy.**

- 1 Threatened species and communities are those listed as either Critically Endangered, Endangered or Vulnerable under NSW or federal legislation
- 2 Priority species and communities are particularly special or iconic in the Tweed, and require locally focussed and/or strategic actions, beyond the protection of their habitat alone, to ensure their ongoing presence. A priority action of the strategy is to develop and implement a method to determine priority species.

The strategy adopts the following definition of ‘protect’: *Where a statutory mechanism is applied to a site or area to prevent loss of values, damage, or destruction (National Park, Voluntary Conservation Agreement, State Environmental Planning Policy, TLEP 2000 environmental zone C2 Environmental Conservation Zone, or Community Land classified as Natural Area).*

## Conservation values of the Tweed

Rare and threatened species



Our region supports over 1,500 species of native flowering plants and ferns including 54 species restricted to the Tweed and immediate surrounds. The Shire supports many rare plants and animals threatened with extinction. One of our most recognisable rare plants is the Coolamon (*Syzygium moorei*). This large tree typically grows along watercourses and has sprays of beautiful pink flowers in spring and summer. Following a submission by a member of the public, Tweed Shire Council agreed to the species being adopted as the Shire’s floral emblem, attesting to the importance the community places on valuing our rare and spectacular flora. Image: The flowers of the Coolamon are the floral emblem of the Tweed. Photo credit: John Turnbull.



## Community views and experience

Thirty-five per cent of the community survey respondents said they were not happy with how well the environment is currently protected. The following actions were identified as the most important to protect the environment:

- 1 Make laws that better protect our natural environment.
- 2 Help people with private land look after our natural environment.
- 3 Stop new buildings and roads affecting our natural environment.

## Our actions –protect the integrity of ecosystems

In this table, each action is given a reference number. The current program column indicates whether the action is an existing program. The timeframe for starting the action is identified for Years 1 – 5 with Year 1 meaning 2025. The available resourcing to deliver the actions is listed as F (funded) or P (priority to identify funding).

ID	Action	Current program	Timeframe	Resourcing
<b>Aim:</b> <i>Tweed’s land and water-based ecosystems are diverse, connected and healthy</i>				
1.1	Assist landholders to protect ecosystems by offering technical and financial assistance through our Land for Wildlife, Biodiversity, River Health and Sustainable Agriculture grants programs.	Y	Years 1-5	F
1.2	Provide an ecological referrals service to assess planning and development proposals to ensure consistency with environmental legislation and policies.	Y	Years 1-5	F
1.3	Develop and implement environmental policy controls that protect priority species and communities, incentivise conservation actions and minimise the impact of development on the natural environment.	Y	Years 1-5	F
1.4	Review and update the Tweed vegetation mapping.	Y	Year 1	F (in part)
1.5	Complete Stage 2 Conservation Zone review in accordance with the NSW Government Far North Coast C-zone guidelines.	N	Years 1-3	P
1.6	Review and update the Tweed Vegetation Management Strategy ecological prioritisation method and map - including landscape connectivity priorities.	N	Year 2	P
1.7	Develop and implement an annual program for post consent monitoring of development consent conditions.	N	Year 2	F
1.8	Identify measurable ecological referral performance targets and conduct an annual review of referrals to determine whether desired outcomes are being achieved and policy settings are appropriate.	N	Year 2	F
1.9	Support the NSW Biodiversity Conservation Trust to increase the number of Voluntary Conservation Agreements.	Y	Years 1-5	F (in part)

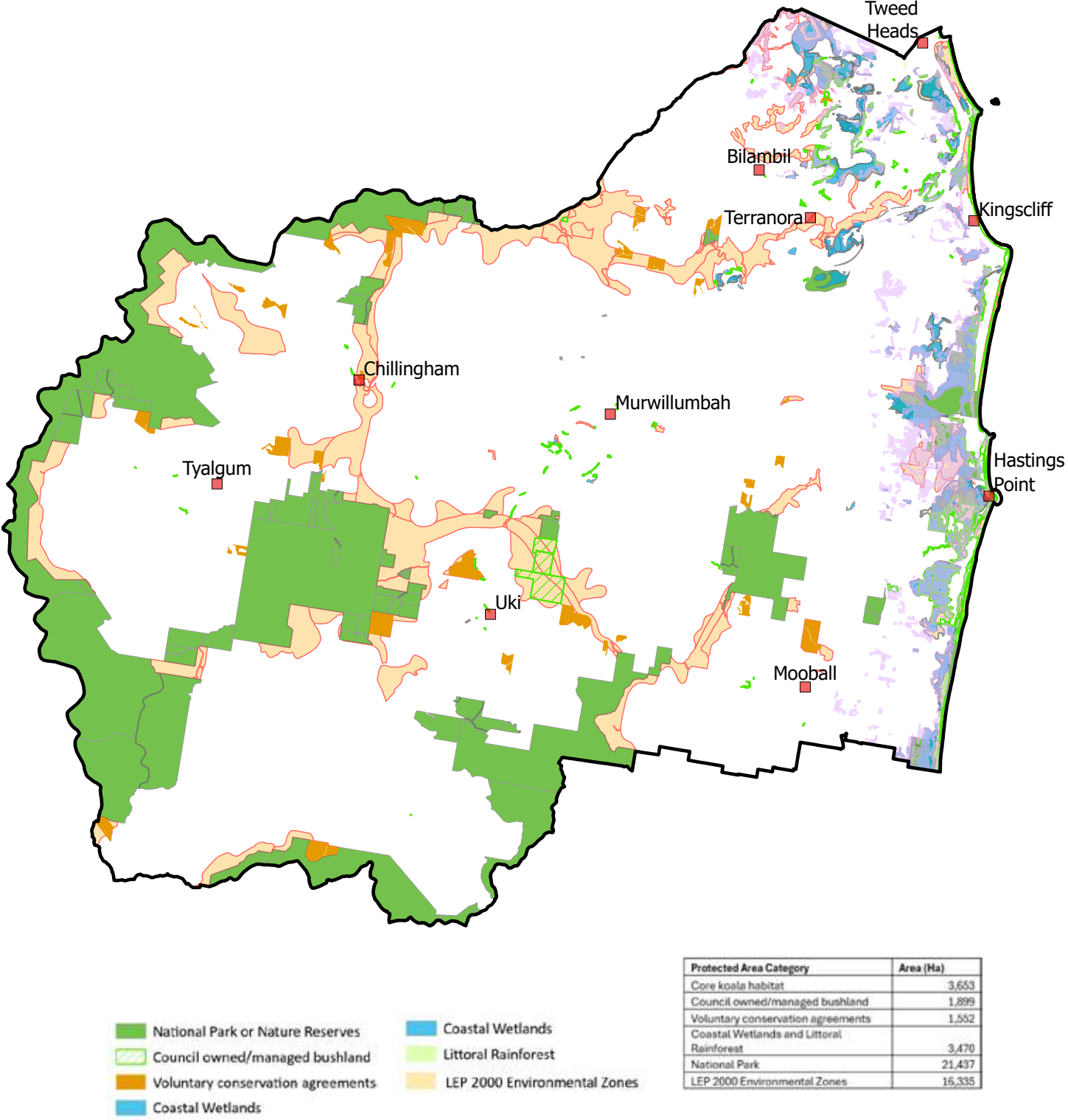




ID	Action	Current Program	Timeframe	Resourcing
<b>Aim:</b> <i>Tweed's land and water-based ecosystems are diverse, connected and healthy</i>				
1.10	Develop a Natural Areas Dedication and Acquisition Policy to ensure that natural areas dedicated to Council are ecologically significant, viable and have appropriate management arrangements in place.	N	Year 2	F
1.11	Facilitate quarterly natural area management coordination meetings with Council's Water & Wastewater, Parks & Active Communities departments and other land managers.	Y	Years 1-5	F
<b>Aim:</b> <i>Threatened and priority species are accounted for and protected</i>				
1.12	Implement existing recovery and management plans for priority species, threatened species and communities.	Y	Years 1-5	F (in part)
1.13	Develop new recovery and management plans for priority species, threatened species and communities.	Y	Years 1-5	F (in part)
1.14	Implement integrated cross tenure vertebrate pest management programs to protect threatened and priority species.	Y	Years 1-5	F
1.15	Develop and implement a method to identify priority species and communities and map their distribution.	N	Year 2	P
1.16	Prepare and adopt a Shire-wide Koala Plan of Management.	N	Year 4	P
1.17	Implement community behaviour change programs to influence social norms and affect change in domestic animal management.	Y	Years 1-5	F (in part)
1.18	Provide technical support for the investigation of unauthorised vegetation removal.	Y	Years 1-5	F (in part)
1.19	Develop and implement a cross-tenure wildlife monitoring program integrating existing species specific and site-based programs.	N	Year 4	P

Council is actively involved in the delivery of a range of threatened species recovery and management plans. These include the Tweed Coast Koala Plan of Management, the Tweed Flying-fox Camp Management Plan, the Glossy Black-Cockatoo Conservation Guidelines and a range of other plans for threatened plants such as Small-leaved Tamarind and Smooth Davidsonia.





Map 2 - There is a range of measures in place that seek to protect vegetation of high environmental significance. This map displays the areas of vegetation that are protected by these laws and policies.



## Conservation values of the Tweed

### Rare and threatened species



Albert's Lyrebird (*Menura alberti*) is shy, reclusive, and extremely rare. It is found only in high quality subtropical rainforest and wet sclerophyll forest in isolated areas of northeast NSW and southeast Queensland. The Tweed caldera and adjacent ranges is the stronghold for the species; it is more common here than anywhere else. This fascinating bird is renowned for its loud, penetrating call and its ability to flawlessly mimic other species. Council has partnered with the community to detect and monitor known populations and to protect, restore and extend its preferred habitat.

Photo credit: Marama Hopkins

## 2 Improve the quality and condition of ecosystems

Improving the quality and condition of ecosystems is crucial because ecosystems provide us with what we need to live and thrive – like clean water, air, food, and materials. When ecosystems are healthy, they can better regulate climate, prevent floods, purify water, pollinate plants, and provide habitats for animals. Clean water and healthy waterways only exist where catchments are protected and restored.

The movement of wildlife between patches of habitat is important for accessing resources, maintaining, and improving genetic diversity, and responding to natural hazards or climate change. Without the ability to move safely through the landscape, species become more susceptible to fire, flood, disease, predation, road trauma and extinction.

In the Tweed, we have a good basis to work from to improve the quality and condition of ecosystems. The National Parks estate protects large areas of internationally significant forest and important coastal areas. This is supported by a small but significant reserve estate managed by Council and the large network of private land managed to protect and improve habitat and ecosystems.

However, there is a significant amount of work required to improve the quality and condition of ecosystems within our Council managed natural area estate and on private land. Slowing ongoing environmental degradation is crucial to reversing biodiversity losses. Threatening processes such as habitat destruction, invasive species, inappropriate grazing and fire regimes, pollution and disease must be managed and mitigated. For example, a major concern in the Tweed is invasive weeds in riparian zones and the proliferation of serious environmental weeds.

Protecting and rehabilitating waterways, both fresh and estuarine, delivers major public benefit across health, environmental and economic measures. Council supports waterfront landholders to protect and rehabilitate waterways, by co-funding initiatives such as erosion control, fencing, provision of stock water troughs, wetland rehabilitation and weed control. Council also monitors water quality and uses this information to plan and prioritises waterway rehabilitation projects, and report to the community on the health of our rivers and creeks.

Given the vital importance of agriculture to the Tweed and its extensive footprint in the landscape, Council works with farmers to improve soil health and pursue opportunities for nature to thrive on farms

Community views and experience

Threats such as weeds, pest animals, land clearing and climate change were all listed by our community as causing harm to our natural environment. The community suggested the following ways we could improve the quality and condition of ecosystems:

- 1 Help people with private land look after our natural environment.
- 2 Protect waterways from grazing stock.
- 3 Improve and extend weed management.

Our actions – improve the quality and condition of ecosystems

In this table, each action is given a reference number. The current program column indicates whether the action is an existing program. The timeframe for starting the action is identified for Years 1 – 5 with Year 1 meaning 2025. The available resourcing to deliver the actions is listed as F (funded) or P (priority to identify funding).

ID	Action	Current program	Timeframe	Resourcing
Aim: To improve habitat condition and enhance landscape connectivity				
2.1	Increase participation in Land for Wildlife, Biodiversity, River Health, Koala Habitat Restoration and Sustainable Agriculture grants programs.	Y	Years 1-5	F
2.2	Develop, improve and implement management plans for natural areas and coastal reserves under Council management.	Y	Years 1-5	F (in part)
2.3	Develop and implement a strategic plan for the natural area estate.	N	Year 2	P

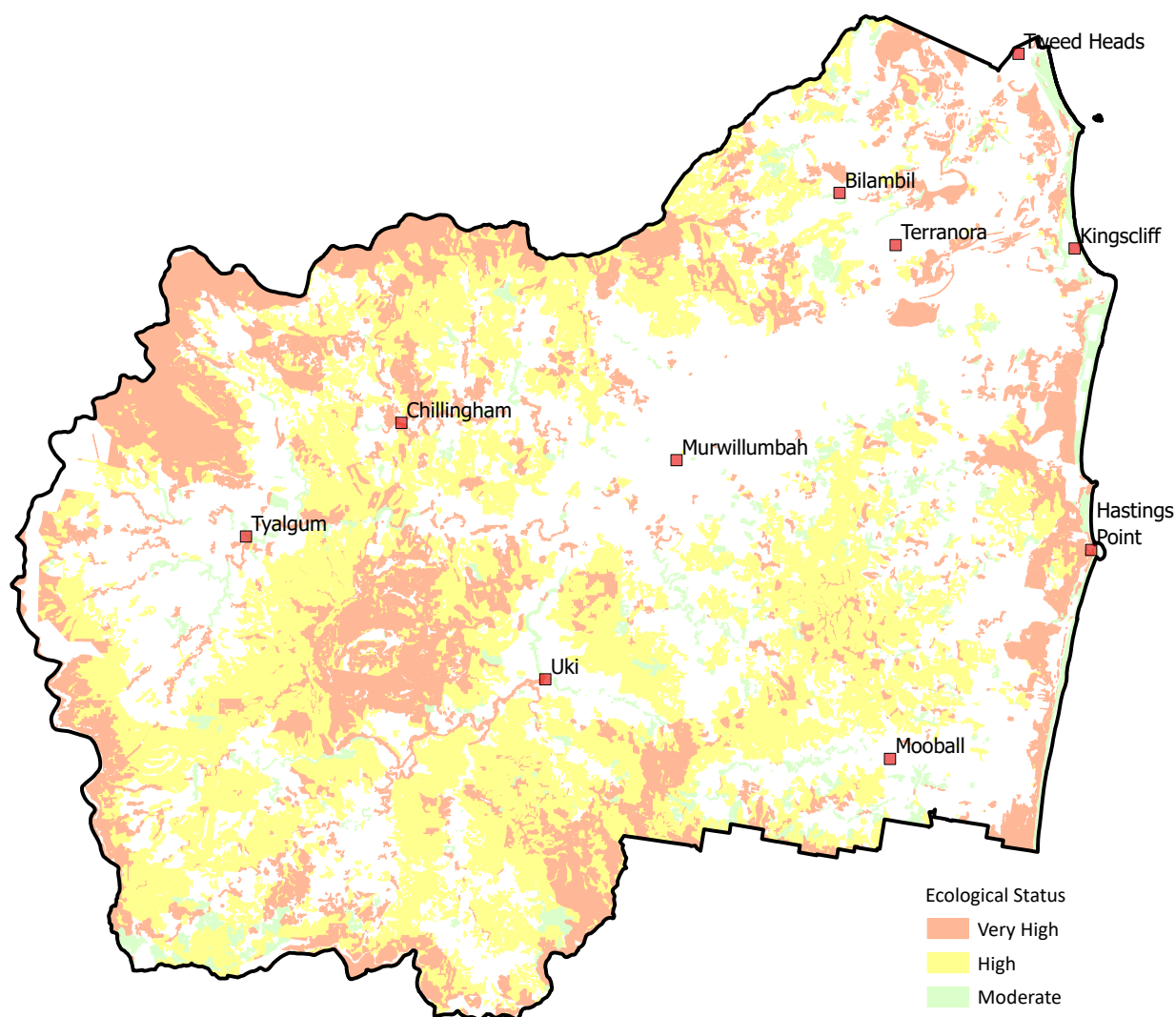




2.4	Work with landholders and partner groups to create additional habitat and improve existing habitat for priority species such as koala, platypus, Glossy Black-Cockatoo and Bush Stone-curlew.	Y	Years 1-5	F
2.5	Ensure planning and development approvals are in accordance with legislation, policy and strategies in regard to improvement in habitat condition and landscape connectivity.	Y	Years 1-5	F
2.6	Implement erosion control and riparian vegetation restoration projects on river and creek banks on private and public land to improve aquatic habitat and water quality.	Y	Years 1-5	F
2.7	Design and implement cross-tenure wildlife protection projects that include habitat restoration and pest animal monitoring and management programs.	Y	Years 1-5	F (in part)
2.8	Develop a shire-wide fire management plan to inform strategic low intensity burning of the natural area estate to protect and improve fire dependent ecosystems.	N	Year 3	P
2.9	Deliver the actions of the Tweed Sustainable Agriculture Strategy.	Y	Years 1-5	F
2.10	Implement the Tweed River Estuary and Tweed Coastline Coastal Management Programs.	Y	Years 1-5	F
2.11	Develop and implement a policy for the revegetation of Council owned or managed riparian land.	N	Year 2	F
2.12	Prepare sub-catchment scale management plans, including identification of locations for revegetation of Council owned or managed land.	N	Years 1-5	P
2.13	Grow and supply local native trees for riparian revegetation projects.	Y	Years 1-5	F

ID	Action	Current program	Timeframe	Resourcing
<b>Aim:</b> <i>Threatening processes are managed, reduced and mitigated</i>				
2.14	Prioritise land for involvement in private land conservation programs where threatening processes can be reduced and landscape connectivity can be improved through restoration actions.	N	Years 1-5	F
2.15	Complete a vegetation condition audit of the coastal reserve and work with other land managers to increase vegetated dune and foreshore buffers.	N	Year 3	P
2.16	Develop and implement vertebrate pest animal management action plans.	N	Year 1-5	F
2.17	Develop and implement an asset management plan for the natural area estate.	N	Year 3	P





Map 3 - Ecological status. This map displays the areas of vegetation that have been assessed for their ecological status. This assessment was done as part of the [Tweed Vegetation Management Strategy](#) and was based on the remnant size, fauna habitat values, connectivity and ecosystem significance.



### 3 Collaborate with diverse knowledge holders and partners

All our work is dependent on and improved by collaborating with others. This includes people who work across other sections of Council, in state government agencies, with community organisations, as business and industry operators, or as individuals. While we know that we have worked well with others over many years, we also know that we can continue to extend and improve, particularly with First Nations Australians.

Council values the many partners and community members involved in the various conservation programs and environmental activities in our Shire. Recognition and awareness of different visions, approaches, and knowledge systems is required to ensure we continue to enjoy access to diverse and healthy ecosystems in the Tweed. Most importantly, we must make decisions guided by traditional knowledge and practices and with the informed consent of First Nations Australians.

Working together with the community is essential to the success of program outcomes. From major landscape scale habitat restoration projects, riparian restoration to individual wildlife protection actions, acknowledging and acting on our shared responsibility will make sure that we can continue to work well together.

Tweed Shire is uniquely positioned to achieve sustainable management of waterways due to our natural catchment boundary correspondingly closely with our political borders. To achieve this requires close collaboration with and support of private landholders; to protect streambanks, improve soil health and reduce impacts from agricultural activity.

Through our work, we provide an important education and capacity building role for the community. All programs and projects include opportunities to provide information and guidance that increase community awareness and appreciation of the environment, and the actions required to protect and improve it.

There is also good opportunity through citizen science projects for the community to contribute critical knowledge that can be used to help protect and improve the natural environment.

#### Community views and experience

Our community members reported a strong interest in contributing and participating in actions to protect and improve the natural environment. Three key things the community recommended to continue and improve regarding working together are:

- 1 Assist the community to have more chances to spend time in nature.
- 2 Provide opportunities for people to help plant trees, care for their land and be citizen scientists.
- 3 Ensure all stakeholders and partners, including farmers, are part of our approach to working together.



Our actions – collaborate with diverse knowledge holders and partners

In this table, each action is given a reference number. The current program column indicates whether the action is an existing program. The timeframe for starting the action is identified for Years 1 – 5 with Year 1 meaning 2025. The available resourcing to deliver the actions is listed as F (funded) or P (priority to identify funding).

ID	Action	Current program	Timeframe	Resourcing
<b>Aim:</b> <i>Decision making is guided by traditional knowledge and practices with the informed consent of indigenous people</i>				
3.1	Offer to attend meetings of the Aboriginal Advisory Committee on a regular basis to discuss actions, priorities and opportunities and request feedback.	N	Years 1-5	F
3.2	Develop a proposed list of Bundjalung names for natural area reserves to discuss and seek support for them from the Aboriginal Advisory Committee.	N	Year 1	F
3.3	Seek approval for establishment and the funding for at least one Indigenous specified position within the Sustainability and Environment Unit.	N	Year 2	P
3.4	Invite First Nations Australians to be involved in the development of the proposed Shire-wide fire management strategy and strategic plan for the natural area estate	N	Years 1-5	F
<b>Aim:</b> <i>Nature-based activities benefit our community's health and wellbeing</i>				
3.5	Promote the values, opportunities and responsible enjoyment of the natural area estate.	Y	Years 1-5	F (in part)
3.6	Provide safe and equitable access to natural areas and beaches and waterways.	Y	Years 1-5	F (in part)
3.7	Assess the current nature-based recreation opportunities and work with other Council land managers and the NSW National Parks and Wildlife Service to develop additional opportunities while ensuring protection of the environment.	N	Year 3	P
<b>Aim:</b> <i>Environmental programs enable and encourage broad participation and build capacity</i>				
3.8	Develop and implement collaborative projects with Tweed Byron Local Aboriginal Land Council to protect threatened species, monitor and manage pest animals and restore habitat.	Y	Years 1-5	F (in part)
3.9	Work with Tweed Landcare Inc to support Nature Care groups restoring and maintaining Council owned or managed bushland.	Y	Years 1-5	F



3.10	Support new and existing citizen science projects that improve knowledge and participation in conservation projects.	Y	Years 1-5	F (in part)
3.11	Develop and deliver targeted bushland neighbour education and participation programs to increase positive attitudes and actions in relation to the Council managed natural area estate.	N	Years 1-5	F (in part)
ID	Action	Current program	Timeframe	Resourcing
3.12	Conduct workshops, field days and training sessions to build networks, share knowledge and give landholders strategies to improve their land management practices and to build community awareness and participation in conservation programs and actions.	Y	Years 1-5	F (in part)
3.13	Provide opportunities for people to be involved in tree plantings for habitat and riparian restoration.	Y	Years 1-5	F (in part)
3.14	Work with peers to design and implement regional partnerships and research projects	Y	Years 1-5	F (in part)
3.15	Support and strengthen existing and emerging networks of groups working towards protecting and improving ecosystems.	Y	Years 1-5	F (in part)
3.16	Prepare and distribute information on a regular basis about the outcomes of the strategy.	N	Years 1-5	F (in part)



**Rainbow bee-eater**





## 4 Adapt to changes impacting ecosystems

The natural environment is always changing, as are the things that impact negatively and positively on it. The most significant known impact is the changes that are already underway due to changes in the climate. There are many things we do not know about how our natural environment will be affected, therefore monitoring, research and responding to new information are important.

Tweed Shire is recognised as a climate change refuge due to the relatively moderate climate, high rainfall and proximity to the ocean. However, we are already experiencing the impacts of climate change in the Tweed. In addition to impacts such as increased temperatures and the cycle of droughts, bushfire, flood and other extreme weather events, there are many more impacts to species, communities, and ecosystem services that are already evident and many others that are likely.

Helping ecosystems adapt to climate change involves protecting ecosystems that are in good condition, providing refuges for species that need to adapt to changes in climate, and identifying those species and communities that are most vulnerable. Some of the local ecosystems known to be vulnerable to these impacts are coastal floodplains, wetlands, and some rainforest types.

It is important that we clarify the specific risks by understanding exposure and vulnerability, identify options to respond and implement actions that manage or reduce impacts. Working together with other agencies, stakeholders and organisations is essential to each of these elements.

Other changes that have an impact on the natural environment will also become obvious over time, and it is important that we monitor for these changes, regularly review the status of the natural environment, and amend our actions to respond when we need to. This process of monitoring and review can involve information gathered through our own programs, together with regional, state and national monitoring and adaptation strategies.

### Community views and experience

The impacts of climate change were identified by the community as one of the top causes of harm to the natural environment. This included increased temperatures, sea level rise and extreme weather events. Addressing these impacts was similarly recognised as a key action to improve conservation outcomes

### Our actions – adapt to changes impacting ecosystems

In this table, each action is given a reference number. The current program column indicates whether the action is an existing program. The timeframe for starting the action is identified for Years 1 – 5 with Year 1 meaning 2025. The available resourcing to deliver the actions is listed as F (funded) or P (priority to identify funding).



ID	Action	Current program	Timeframe	Resourcing
<b>Aim:</b> <i>Climate change impacts relating to biodiversity are regularly assessed and actions taken</i>				
4.1	Complete a study to identify climate change impacts on ecosystems, vegetation communities, habitat and species.	N	Year 1	P
4.2	Map predicted impacts to key wildlife habitat from climate change and map potential landscape scale compensatory areas.	N	Year 2	P
4.3	Prioritise land for private land conservation programs, natural area reserve dedication and acquisition that: <ul style="list-style-type: none"> <li>1. Prioritise species and ecosystems at greatest risk from climate change impacts</li> <li>2. Are suitable for landward regression of at-risk communities</li> <li>3. Increase landscape connectivity</li> <li>4. Are high carbon ecosystems</li> </ul>	N	Years 1-5	F
4.4	Ensure planning and development approvals are in accordance with legislation, policy and strategies in regard to not increasing climate change impacts or reducing the resilience of species or communities.	Y	Years 1-5	F
4.5	Improve awareness and use of Indigenous land management practices .	N	Years 1-5	P
4.6	Investigate options to develop carbon credit generating projects and implement them where they can be shown to be high quality, cost efficient and effective.	N	Year 3	P
4.7	Participate in research projects to plan for and adapt to climate change impacts on threatened and priority species and their habitat.	Y	Years 1-5	F
4.8	Reduce our community's carbon emissions through delivering a range of actions including renewable energy programs, community engagement projects and adaptation planning.	Y	Years 1-5	F (in part)
ID	Action	Current program	Timeframe	Resourcing
<b>Aim:</b> <i>Monitor and respond to changes that affect the natural environment</i>				
4.9	Increase the use of information and technology to monitor changes that affect the natural environment.	N	Years 1-5	P
4.10	Develop and implement a biodiversity climate change risk adaptation plan to respond to climate change impacts including flood and drought, sea level rise and tidal inundation on threatened and priority species and communities.	N	Years 1-5	F (in part)



4.11	Monitor the quality of waterways and provide relevant and timely information to the community on waterway health.	Y	Years 1-5	F
4.12	Maintain specific engagement and collaboration with partners including First Nations people, researchers, land managers and threatened species experts to monitor change and adaptation.	Y	Years 1-5	F
4.13	Increase the resilience of ecosystems through delivery of a range of projects that protect and improve existing habitat including biodiversity, river health and sustainable agriculture grants.	Y	Years 1-5	F (in part)
4.14	Develop and implement a method for expert panel review and evaluation of the conservation strategy and its implementation.	N	Year 4	P
4.15	Conduct 5 yearly evaluation, review and reporting of the conservation strategy in accordance with the evaluation method	N	Year 5	P

# Conservation values of the Tweed

## Private land conservation



Eighty-six per cent of the Tweed Shire’s area is private land. Much of the Shire’s outstanding biodiversity, including high conservation value habitat and rare flora and fauna, is found on private land. Effective land custodianship, therefore, is basic to effective environmental management. Council’s Private Land Conservation Program unites technical skills, financial resources and passion to enable Council and the community to collaboratively look after the environment. The Land for Wildlife Program has proven popular with environmentally minded landholders; over 200 of them are now registered and help to conserve our diverse native habitats. Image: Council works with landholders to improve the habitat values on private land through a range of programs. Photo: Michael Corke.



# Monitoring, evaluation and reporting

Council's Sustainability and Environment Unit will lead the delivery of the actions, monitoring, evaluation and reporting of this strategy.

Regular reporting of the progress and outcomes of the strategy actions will be completed through the Council reporting framework. This will consist of:

- a. a six monthly progress updates
- b. annual summary report and
- c. evaluation, review and reporting in 2030.

In addition to progress on implementing actions, the 5-yearly review and reporting will also identify progress against the following indicators. These indices will help to assess how our work is contributing to our objectives and the adopted international and national targets.

- 1 Shire-wide vegetation cover is maintained at a minimum of 51%.
  - Vegetation cover is a useful and meaningful indicator for wildlife habitat that can help us understand if we are suitably protecting and improving habitat.
  - The vegetation cover indicator will be considered alongside council's Cool Towns Program<sup>2</sup> for urban canopy cover.
  - Vegetation cover is considered all areas of mapped vegetation, as identified by aerial photography or satellite imagery.
- 2 30% of the pre-clear extent<sup>3</sup> of major vegetation communities in the shire are present within the overall vegetation cover.
  - This is to assess the level to which protection and improvement actions are addressing all major vegetation communities.
  - Major vegetation community types are a category of vegetation used in our mapping and were defined by the Tweed Vegetation Management Strategy 2004.
- 3 Improvement in habitat condition and connectivity.
- 4 Broad participation and engagement in conservation programs and natural area management.

The milestone reporting will also be informed by and report on:

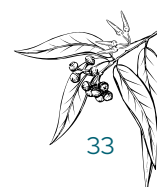
  - An expert panel review and update of the priority species listing and ecological prioritisation mapping in accordance with a method developed under the strategy.
  - An expert panel review and evaluation of the conservation strategy and its implementation
  - Analysis of emerging issues and opportunities with recommendations for any amendments to the strategy.

The strategy itself may require a review and update where changes to policy, legislation or resourcing that directly influence the strategy have occurred.

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<sup>2</sup> Tweed Shire Council (2022) Cool Towns Urban Forest Program. [www.yoursaytweed/cooltowns](http://www.yoursaytweed/cooltowns)

<sup>3</sup> The 'pre-clear extent' is the vegetation that is estimated to have been present prior to European occupation. The NSW State government has prepared maps that estimate this, and these maps can be compared to current vegetation mapping to assess how much of each vegetation type is present.



# Appendix 1

Legislation, policies, strategies and plans that are relevant to protecting and improving the natural environment of the Tweed Shire.

## Federal Government:

- *Environment Protection and Biodiversity Conservation Act 1999*
- *Nature Positive Plan 2022*

## NSW Government:

- *Biodiversity Conservation Act 2016*
- *Environmental Planning and Assessment Act 1979*
- *Coastal Management Act 2016*
- *NSW Marine Estate Management Strategy*
- *Biosecurity Act 2015*
- *Local Land Services Act 2013*
- *North Coast Regional Plan 2041*
- *NSW Fisheries Management Act 1994*
- *NSW Rural Fires Act 1997*

## Regional:

- *Northern Rivers Koala Conservation Strategy 2023*
- *Far North Coast Regional Water Strategy 2023*
- *Northern Rivers Regional Pest Management Strategy (2012-2017 currently under review)*
- *North Coast Regional Strategic Weed Management Plan 2023-2027*

## Tweed Shire Council:

- *Community Strategic Plan 2022-2032*
- *Tweed Local Environmental Plan 2014*
- *Tweed (City Centre) Local Environmental Plan 2012*
- *Tweed Local Environmental Plan 2000*
- *Tweed Development Control Plan 2008*
- *Local Strategic Planning Statement 2020*
- *Tweed Vegetation Management Strategy 2004*
- *Tweed Coast Comprehensive Koala Plan of Management 2020*
- *Tweed Estuary and Tweed Coast - Coastal Management Programs*
- *Tweed Shire Drinking Water Quality Protection Plan*
- *Tweed Shire Integrated Water Cycle Management Strategy*
- *Tweed Flying-fox Camp Management Plan 2018*
- *Wildlife Protection Areas Policy 2017*
- *Tweed Vegetation Management Guidelines 2012*
- *Vegetation Vandalism on Public Land Policy*
- *River Health Grants Policy 2014*
- *Climate Change Adaptation Plan*
- *Tweed Sustainable Agriculture Strategy 2016*
- *Asset Protection Zones on Public Land Policy*





## *Conservation values of the Tweed*

### Community engagement



Council has long partnered with the community to celebrate our shared appreciation for the Tweed's unique natural environments, and the health and wellbeing benefits they provide. Attendance at Council run National Tree Day planting events epitomises the community's desire to get its hands dirty to help look after the environment.

Photo credit: Matt Bloor.





*Contact and connect*

**02 6670 2400**

[tweed.nsw.gov.au](https://tweed.nsw.gov.au)

[tsc@tweed.nsw.gov.au](mailto:tsc@tweed.nsw.gov.au)

PO Box 816 Murwillumbah NSW 2484

