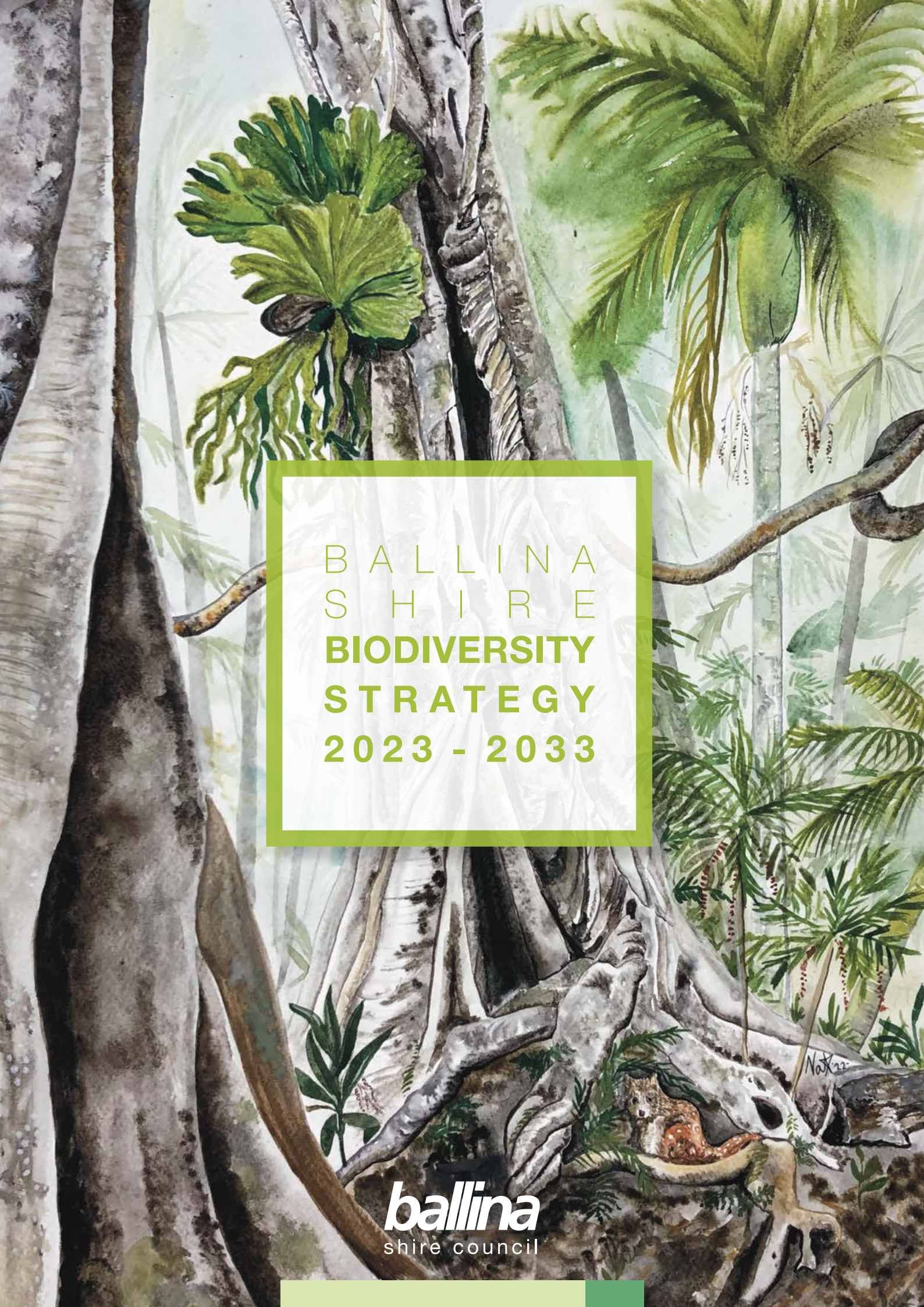

BALLINA SHIRE BIODIVERSITY STRATEGY 2023 - 2033

ballina shire council

Adopted 22 June 2023.
First published November 2022 by Ballina Shire Council, 40 Cherry Street, Ballina NSW 2478.

LANGUAGE ON COUNTRY PRONUNCIATION

The Aboriginal language words presented here are based on the broader Bundjalung language and include some words specific to the Nyangbal of the Lower Richmond, as such some spelling and pronunciation may vary from the neighbouring language dialects. Local Aboriginal language teacher Ricky Cook suggests the following pronunciation of short and long vowels:

SHORT VOWELS	LONG VOWELS
a as in **but**	**aa** as in **palm**
e as in **pet**	**ee** as in **there**
i as in **pit**	**ii** as in **bee**
u as in **cut**	**uu** as in **school**

RICKY COOK is a local Nyangbal Elder and language teacher who has worked in education for the past 40 years teaching on Bundjalung Country.

"Language goes with Country; they go hand in hand. Knowing language helps us better understand Country." Ricky Cook, 2023.

JALI LOCAL ABORIGINAL LAND COUNCIL (LALC)

Local Aboriginal Land Council's (LALCs) aim to improve, protect and foster the interests of their members and all Aboriginal people within the Council's area. The Jali LALC coordinates a number of important programs including Social Housing, Agri-Business, Aged Care, Culture & Heritage and Indigenous Protected Areas (IPAs). The Jali LALC is one of the largest landowners in the Ballina Shire that includes the Ngunya Jargoon IPA, a parcel of over 1,000 hectares of unique native vegetation that is managed by Jali LALC for its exceptional natural and cultural values.

IMAGE CREDIT

All artworks in this document are original illustrations by local watercolour artist **Natalie Herington** and subject to copyright. Nat lives in the Ballina Shire on Bundjalung country home to the Nyangbal people. Nat is an Artist, children's book illustrator and graphic designer.

"I love to connect with my home by noticing which animals are out and visiting my garden, getting to know and recognise the birds, watch the trees and plants go through their seasonal cycles and appreciate how lucky I am to be living in such biodiversity with family who equally appreciate nature and are working to protect and restore her." says Nat.

See more of Natalie Herington's work and story at ***birdvalley.com.au***

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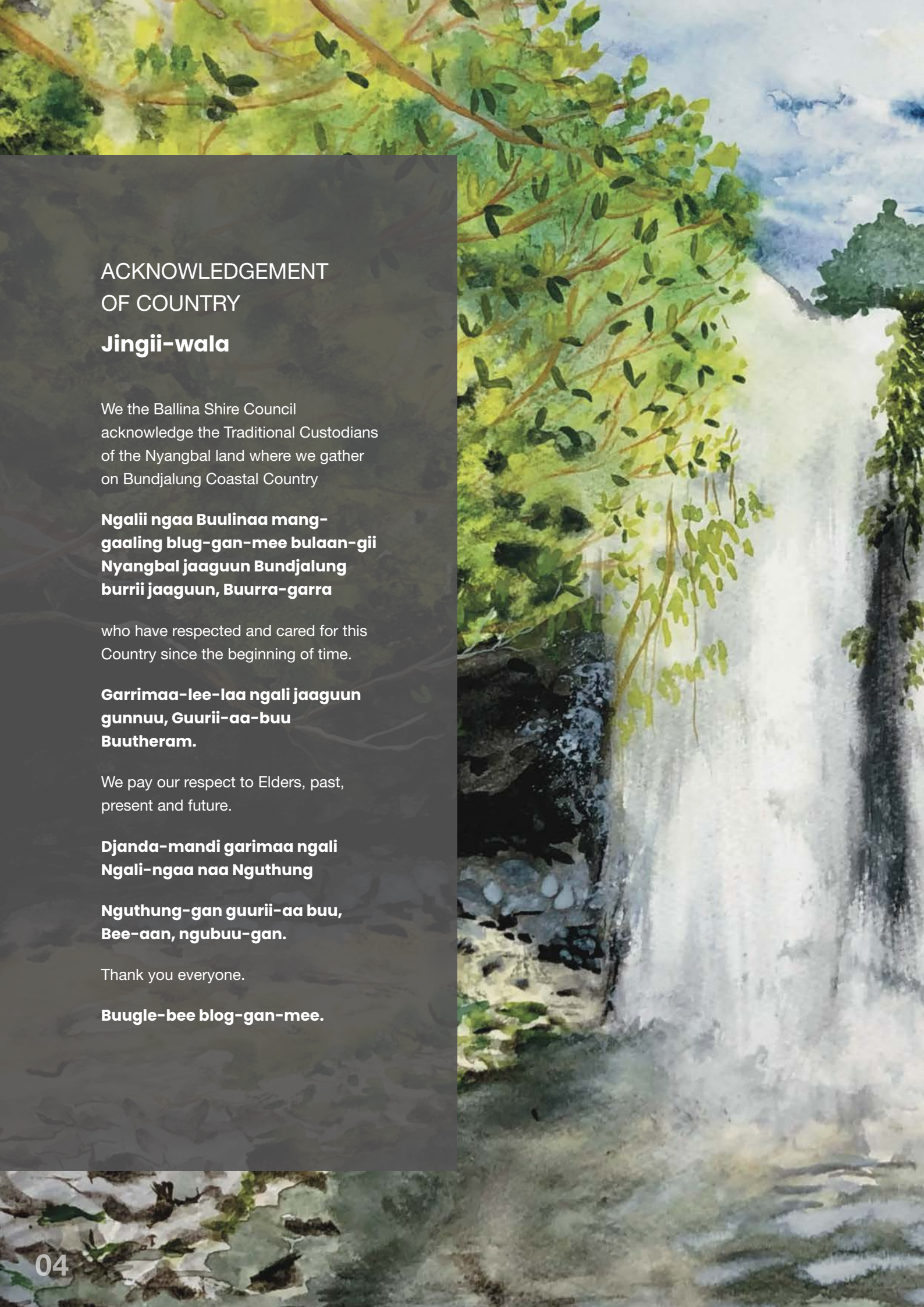


ACKNOWLEDGEMENT OF COUNTRY

Jingii-wala

We the Ballina Shire Council acknowledge the Traditional Custodians of the Nyangbal land where we gather on Bundjalung Coastal Country

Ngalii ngaa Buulinaa mang-gaaling blug-gan-mee bulaan-gii Nyangbal jaaguun Bundjalung burrii jaaguun, Buurra-garra

who have respected and cared for this Country since the beginning of time.

Garrimaa-lee-laa ngali jaaguun gunnuu, Guurii-aa-buu Buutheram.

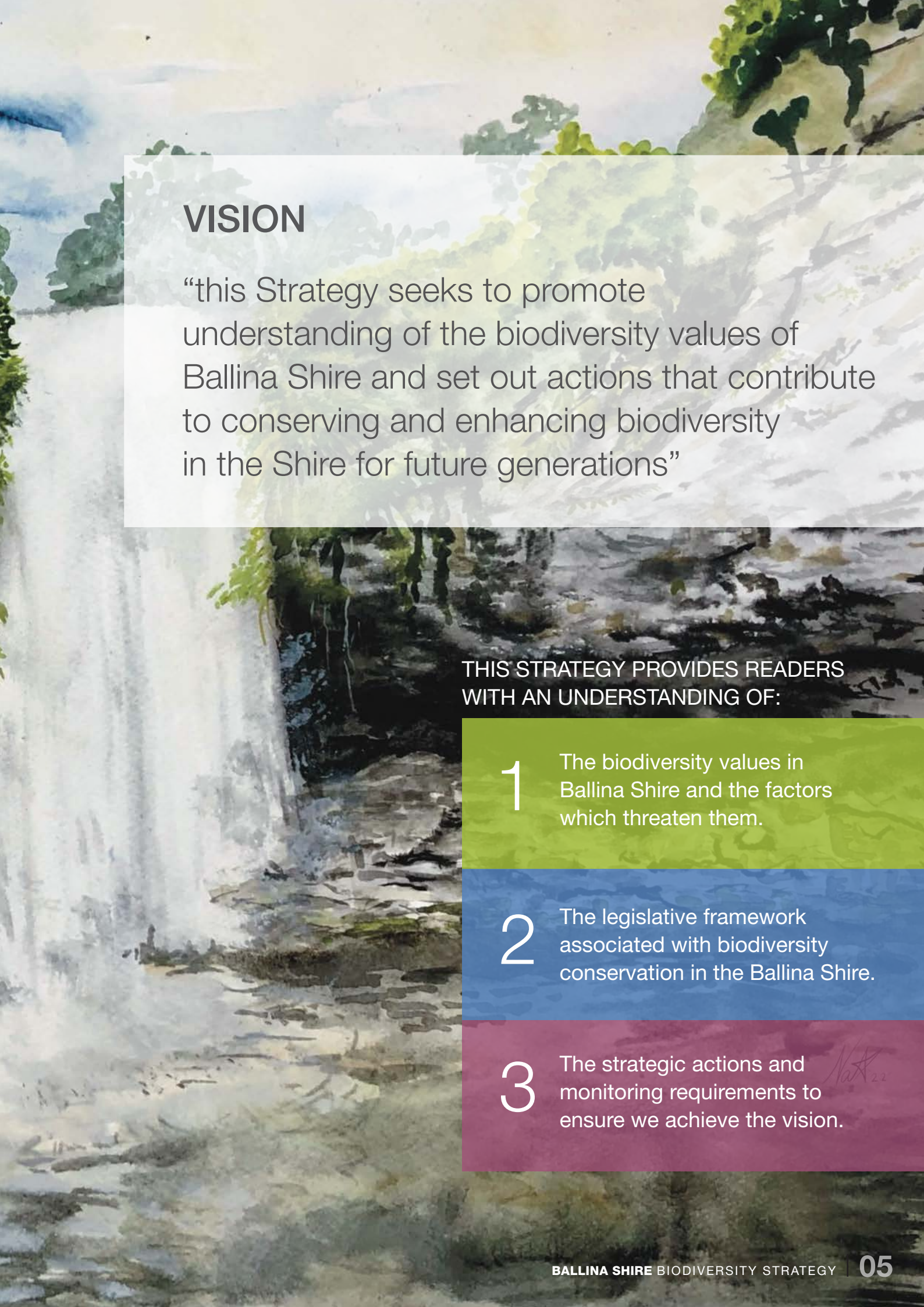
We pay our respect to Elders, past, present and future.

Djanda-mandi garimaa ngali Ngali-ngaa naa Nguthung

Nguthung-gan guurii-aa buu, Bee-aan, ngubuu-gan.

Thank you everyone.

Buugle-bee blog-gan-mee.



VISION

"this Strategy seeks to promote understanding of the biodiversity values of Ballina Shire and set out actions that contribute to conserving and enhancing biodiversity in the Shire for future generations"

THIS STRATEGY PROVIDES READERS WITH AN UNDERSTANDING OF:

1. The biodiversity values in Ballina Shire and the factors which threaten them.
2. The legislative framework associated with biodiversity conservation in the Ballina Shire.
3. The strategic actions and monitoring requirements to ensure we achieve the vision.

EXECUTIVE **SUMMARY**

Biodiversity is a critical feature of all life on Earth. In essence, the word biodiversity relates to the variability of life in all its forms, from genetics to species to ecosystems. This diversity amongst living things supports all existing communities, including Ballina's, in a variety of ways that are both vital but also enriching to life as we know it.

Ballina Shire is located within a subtropical climate. Over many thousands of years, steady, favourable climatic conditions fostered evolutionary competition accounting for the impressive diversity – a biodiversity hotspot at a national level.

The people of Ballina Shire depend on their environment and the biodiversity it holds not only for a beautiful place to live, but also for a vast variety of services including agriculture, fisheries and recreational activities. In Ballina Shire we are fortunate to have a passionate community who care about our environment.

This Strategy sets out an ambitious but deliverable 10-year program to direct conservation planning and on-ground activities in Ballina Shire for the future. Working together with the community, the measures outlined in this strategy will help conserve and enhance biodiversity in Ballina Shire and benefit the community and future generations.

THEMES

This Strategy outlines how Ballina Shire Council, in partnership with the community, can support biodiversity through four themes:

PROTECT

protect biodiversity values in Ballina Shire through strategic and statutory planning and local policy and processes

MANAGE

ensure that the natural environment in Ballina Shire is being **managed** to improve ecological resilience and reduce threats to biodiversity

ENHANCE

enhance and conserve biodiversity in urban and rural areas through revegetation and habitat rehabilitation

COLLABORATE

collaborate with stakeholders and the community to encourage participation and engagement in conservation initiatives, whilst raising awareness of the importance of biodiversity

READING THIS STRATEGY

INTRODUCTION

Explains the concept of biodiversity, identifies the biodiversity values of the Ballina Shire, and describes current and emerging threats that have already caused substantial local and regional biodiversity loss.

DEVELOPING THE STRATEGY

Describes the legislative and policy framework which has informed the Strategy and outlines the processes undertaken to develop the Strategy.

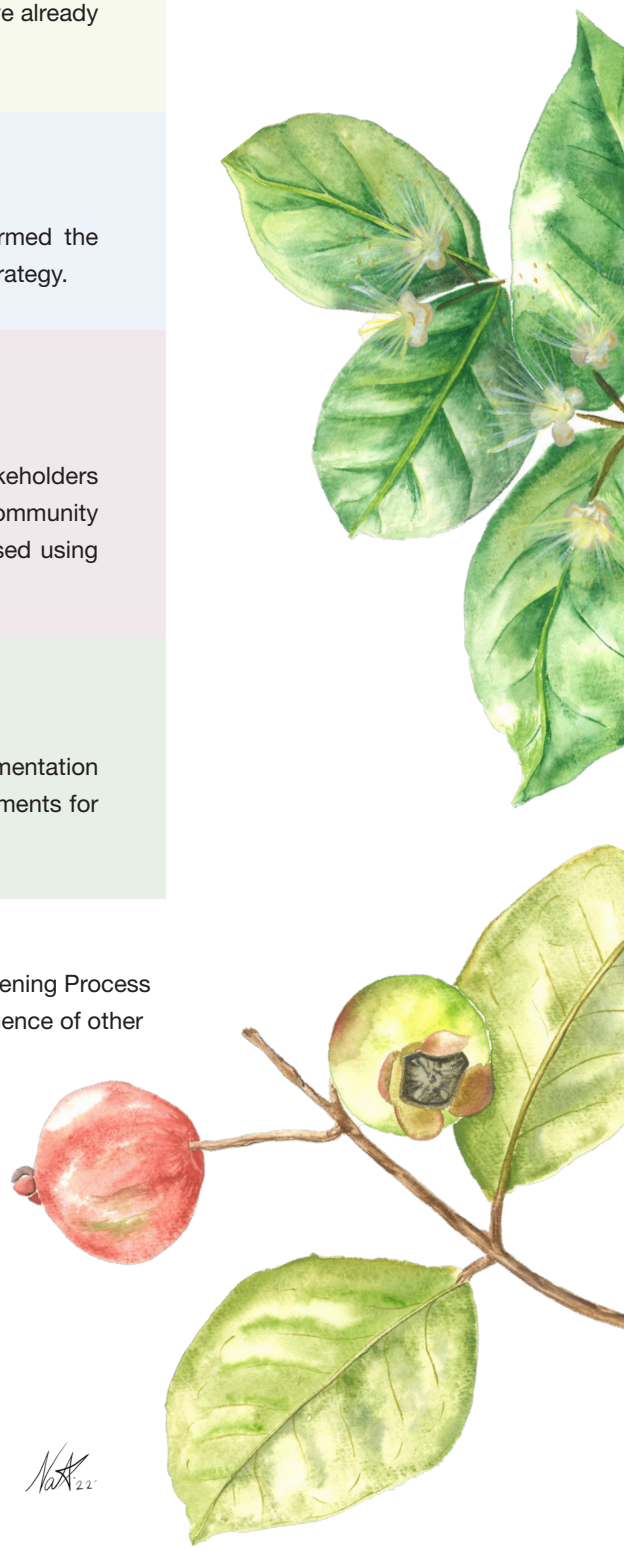
ACTION PLAN

The action plan identifies specific actions Council and relevant stakeholders can take to meet the biodiversity-related objectives of the Ballina Community Strategic Plan and Delivery Programs. These actions are discussed using four key themes: Protect, Manage, Enhance and Collaborate.

IMPLEMENTING THE STRATEGY

Outlines the resourcing and funding considerations to enable implementation of the strategy. This section also identifies the monitoring requirements for the Strategy.

The Appendices contain information on Threatened Species and Key Threatening Process (KTP) in Ballina Shire and provides legislative context with regard to the influence of other Acts, polices and plans on this Strategy.



Red Lilly Pilly
Syzygium hodgkinsoniae

INTRODUCTION

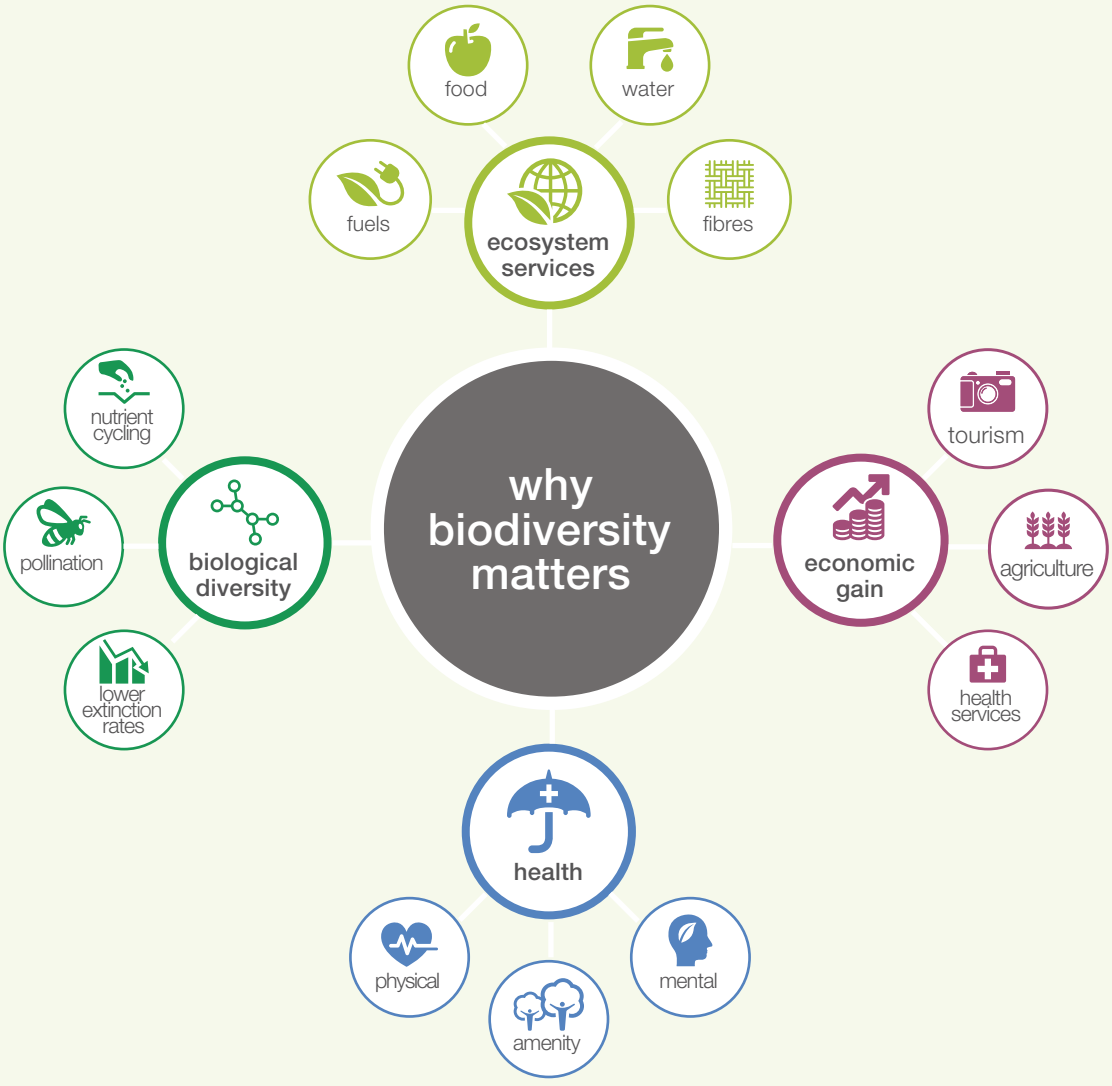
This section explains the concept of biodiversity, identifies the biodiversity values of the Ballina Shire, and describes current and emerging threats that have already caused substantial local and regional biodiversity loss.

What is Biodiversity?

Biodiversity refers to the variety of all life forms within a given area, including plants, animals, and the genes they contain, and the ecosystems in which they live. These species and ecosystems are interconnected and interdependent on one another.

Humans are reliant on ecosystem goods and services (food, water, health and recreation) delivered by the natural environment. A direct impact on one species may have a flow-on effect on other species, highlighting the need for a whole system approach to biodiversity conservation.

For instance, having healthy waterways can support a diverse macroinvertebrate (insect larvae) population, and in turn, the quality of water in a waterway relies on healthy populations of these macroinvertebrates to maintain clean water for humans, plants and animals to access.



Wompoo Fruit Dove ...

is a beautiful rainforest pigeon which can be found in Ballina Shire, often foraging on fruit high in the canopy of subtropical rainforest. Their distinctive 'wompoo' call gives the bird its name. Vegetation clearing and habitat fragmentation is the main threat to the species.

walari
Ptilinopus magnificus

WHY DO WE NEED A BIODIVERSITY STRATEGY?

Why do we need a Biodiversity Strategy?

Biodiversity plays a central role in supporting the economic, social, and environmental fabric of the region.

The responsibility to conserve and manage biodiversity is the responsibility of all levels of government and the community.

This Strategy provides an action plan to guide biodiversity conservation efforts in Ballina Shire, ensuring we leave a healthy natural environment for future generations.

What has the community asked Council to do?

The Ballina Shire Community Strategic Plan (CSP) 'our community, our future', is the overarching strategic document in place to guide all other strategies and plans within Council. Importantly, the document also encourages Council, the community and other organisations to work together to plan for the future in an efficient and collaborative manner.

This Biodiversity Strategy aligns with the broader community vision identified in the CSP, which is:

> "The Ballina Shire is safe, with a connected community, a healthy environment and a thriving economy"

This Biodiversity Strategy will support this vision by increasing the understanding of the value of biodiversity, but importantly to foster a collaborative approach between Council, the community and other government agencies to protect and enhance biodiversity in Ballina Shire for future generations.

One of the four directions set in the CSP is for a 'Healthy Environment (HE)'. The preparation of a Biodiversity Strategy is action HE 3.2i in the Ballina Shire Council - Delivery Program and Operational Plan (DPOP) 2022-2026.

Importantly, the preparation of a Biodiversity Strategy is also listed as a priority (Planning Priority 14) in the Ballina Shire Local Strategic Planning Statement (LSPS) 2020 - 2040. The LSPS identifies the community's strategic land use planning priorities for the next 20 years.

The 14 Planning Priorities and 56 Actions contained in this LSPS build on the strategic planning actions already contained within Council's CSP and DPOP.

CONNECTED COMMUNITY

ENGAGED LEADERSHIP

PROSPEROUS ECONOMY

HEALTHY ENVIRONMENT

HE3.2 MINIMISE NEGATIVE IMPACTS ON THE NATURAL ENVIRONMENT

Short-beaked Echidna
jenna-jenna
Tachyglossus aculeatus

Short-beaked Echidna ...

jenna-jenna is an egg-laying mammal, also known as a monotreme. The Short-beaked Echidna uses long sharp claws to break into ant and termite nests. It catches its prey by flicking its long sticky tongue into the nest.

OUR SHIRE

Ballina Shire is situated on Nyangbal Country within Bundjalung nation, located in the Northern Rivers region of NSW.

Ballina Shire Local Government Area (LGA) comprises a richly diverse landscape within the Northern Rivers region of New South Wales, extending over 48,000 hectares, covering over 30 kilometres of Pacific Ocean coastline, and extending across the coastal plain to the Alstonville Plateau.

Source NSW Spatial Services 2020.
This map is illustrative and not to scale.

Uralba Nature Reserve
Red Necked Wallaby
Macropus rufogriseus

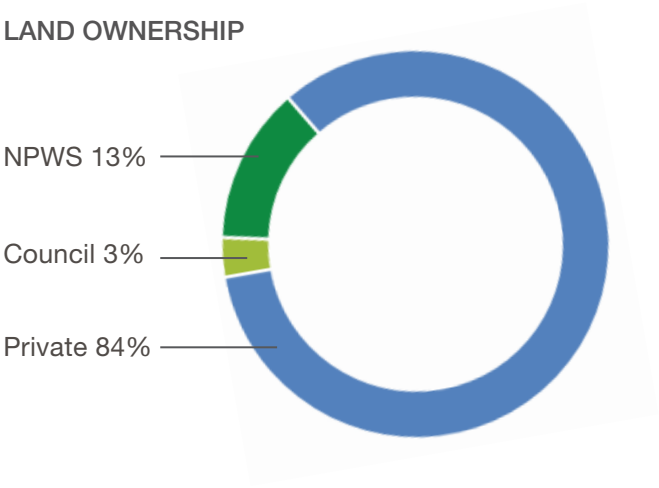
OUR SHIRE

Our Shire

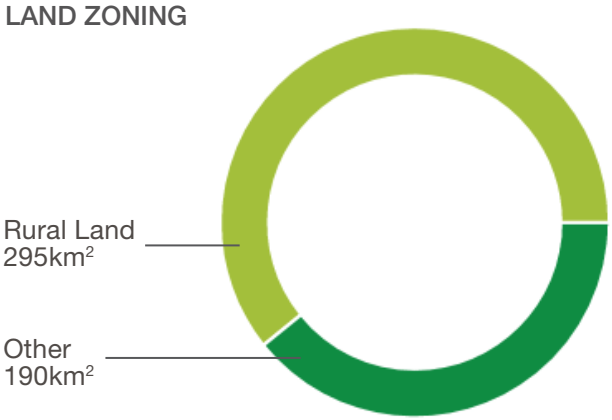
The majority of land (84%) within the Ballina Shire is privately owned. NSW National Parks and Wildlife Service (NPWS) manage 13% of land in the shire and Council manages around 3%. Comparatively, 60% of all land in Ballina Shire is zoned either RU1 Primary Production or RU2 Rural Landscape.

This highlights the importance of maintaining a collaborative partnership between community (particularly rural landholders) and government, with regard to biodiversity conservation.

LAND OWNERSHIP



LAND ZONING



THREATENED VALUES

Source: Bionet 2/6/22

Flora
144

Fauna
160

Ecological Communities
15

Nationally Significant Population
1

Fungi
1

Davidson's Plum ...

is a small to medium sized rainforest tree native to North East NSW. The species is known to occur in Ballina Shire, found in lowland subtropical rainforest and wet eucalypt forest. The large hairy leaves are bunched towards the top of the trunk and plum like fruits grow up the trunk.

Davidson's Plum
Davidsonia jerseyana

CARING
FOR COUNTRY

What does it mean?

The term 'Caring for Country' is both an obligation and an honour. Aboriginal people have been familiar with this concept since the Dreaming. Today, it is known that the Australian continent has been sustainably managed by Aboriginal people for tens of thousands of years. However, only in recent decades have the general public in Australia begun to understand what Caring for Country' symbolises.

Aboriginal people understand 'Country' to be lands and waterways to which they are connected. The connection to Country includes stories, songlines, language, laws, places, customs and ways of life that Aboriginal people have inherited from their ancestors and ancestral beings. This strong connection ensures the continued health of lands and waterways with which Aboriginal people have a traditional attachment or relationship.

At the heart of Caring for Country, is the notion that humans should live on and use land, water and air in harmony with the natural environment and it conditions, which are always changing. Human use of the environment should be guided by environmental conditions and not the other way around. Our environment should not be viewed as a constraint in which to overcome, but as an integral factor in sustaining human survival. As such our habitation of Country should be crafted around and in harmony with this natural canvas, ensuring that we 'develop' our spaces with the utmost respect to these natural life-sustaining systems.

There is a deep wisdom in the notion of Caring for Country which tells us if we do not Care for Country, we do not care for ourselves. The link is inextricable.

It's the responsibility of everyone

Now, it is the responsibility of all Australians to care for Country. Recognising and understanding the connection between humans and our environment is a vital step in this process. By working together, we can sustain and maintain generations of knowledge which will help us achieve this goal.

Caring for Nyangbal Country

Ballina Shire is situated on Nyangbal Country within the Bundjalung nation. The Nyangbal people have cared for this Country for many thousands of years and continue this legacy today. Ngunya Jargoon Indigenous Protected Area (IPA) is one example on Nyangbal Country where the land is owned and managed by Aboriginal people.

The Ngunya Jargoon IPA is a unique place which is owned and managed by the Jali Local Aboriginal Land Council (Jali LALC). Ngunya Jargoon IPA is managed by Jali LALC for its exceptional natural and cultural values.

Ngunya Jargoon IPA protects 1,114 hectares of heath and woodlands, rainforest and eucalyptus forest, forming an important wildlife corridor between protected areas to the north (Tuckean Swamp, Blackwall Range and Uralba Nature Reserve) and to the south (Broadwater and Bundjalung National Parks). Ngunya Jargoon IPA is the last remaining intact area of native bushland on the lower Richmond floodplain.

The IPA is a refuge for an extraordinary number of plants and animals, including 38 threatened animal species, such as the Long-nosed Potoroo, and more than 400 native plant species with 5 threatened flora species and 8 endangered ecological communities known to occur there.

Unfortunately, Ngunya Jargoon IPA is under a number of threats including: weed and feral animal infestation; loss of biodiversity from inappropriate fire regimes; changes to soil and water health from nearby developments; climate change related sea level rise; and illegal use including rubbish dumping and logging.

Historically, Nyangbal custodians lived at Ngunya Jargoon IPA and survived on its resources. Today, the land has many heritage sites, sacred areas, and cultural artefacts. Ngunya Jargoon IPA is managed, on behalf of the community, by a team of rangers who look after the cultural sites and work on restoring the health of Country *(Jali LALC (2017)*.

Source:

- *Jali Local Aboriginal Land Council (Jali LALC) (2017)*
- *Jali lands - More about Ngunya Jargoon IPA. Jali LALC* **jalilands.com.au/more.html**

Cultural Calendar

Below is an extract from the Ngunya Jargoon IPA Cultural Calendar for the Nyangbal Clan Lower Richmond River and surrounding countyr. The cultural calendar provides insight into the cultural significant events, plants and animals that signal seasonal change in the landscape here on Nyangbal Country *(Jali LALC, 2017)*.

Events such as those described on the cultural calendar are just one part of the interconnected ecosystem in which we are a part of. The cultural calendar may help the reader understand how Nyangbal people interpret Country. Ultimately this is a major factor in determining how to care for Country.

The Ngunya Jargoon IPA Cultural Calendar can be accessed online at ***jalilands.com.au/index.html*** or scan the QR code.

WET SEASON

season of flowering bloodwoods
Jan - Feb - late March

Pink bloodwood flowering time at Jali lands. Flying fox, possum, lorikeets and sugar gliders feed on bloodwoods. Hot and humid. Peak flood and cyclone season. Frogs peak breeding. Winter migrant birds are leaving Catfish are nesting and eels are fat. Rural Fire Service bushfire danger season ends.

AUTUMN

season of mullet
late March - end of May

Cooling and rain variable. First westerly winds. Layers of mist at Meerschaum Vale and Buckombil. Paperbark peak flowering. Swamp mahogany flowering late in this season. Watch for Noisy friar birds, Yellow faced honey eaters and Eastern spinebills coming from south and the ranges to feed on nectar at the Jali lands.

WINTER

season of banksia flowers
June - late July

Cold time. Shortest days. West and south west winds. Peak number of east coast lows. Rainforest pigeons feeding on camphor laurel fruit. Whales migrating north, sea bream spawning. Peak nectar time for honey eaters, feeding on masses of banksia flowers. Wallum froglets calling. Tuckeroo flowering. Forest red gums starting to flower. Reptiles resting up.

PRE-SPRING

coming out season
late July and August

Drying out and can be strong winds, first hint of northerly winds. Birds starting to sing and build nests. Turtles and echidnas start moving around and are fat. Old people say don't eat the first echidna after winter. Coastal acacia peak flowering, some heaths begin flowering. Banksias still flowering, river red gum peak flowering. Grey mangrove mass ripe fruit.

SPRING

season of heath flowers
September - late October

Generally the driest season, north winds. Peak birdsong. Goannas fat. Turtles fat when silky oak flowering. Heath, silky oak, and swamp lily flowering tell us it is spring. Humpback whales migrating south. Insects increase. Northern migrang birds arrive. Channel billed and Brush cuckoos, Dollar bird, Spectacles monarch, Leaden flycatcher. Wonga vine flowering. Bushfire season starts.

SUMMER

season of thunderstorms
November - December

Temperature and rainfall increasing, thunderstorms and hail. High fire risk. Oysters and pipis are fat. Many juvenile birds are begging. Massive insect eruptions. Koalas breeding. Cicadas calling. Grasstree and Christmas bells flowering especially after fire. Pigface ripe on the coast. Gums shedding their bark. Cunjevoi peak flowering.

BIODIVERSITY
IN BALLINA SHIRE

Biodiversity in Ballina Shire

From coastal dunes to the alluvial floodplain of the Richmond River to the rich basaltic volcanic soils eroding from the Wollumbin Caldera. Geology, landforms and soils of Ballina Shire are incredibly diverse.

The substrate, climatic conditions and the long term traditional management by Bundjalung peoples have over time, allowed plants and animals to occupy, compete and evolve across the region. As such, the Northern Rivers Region, including Ballina Shire, supports one of the most diverse landscapes in the country. This enriches the quality of life that is supported by the local community through its role as caretaker and steward for the benefit of current and future generations.

The following section looks broadly at the biodiversity values across Ballina Shire including:

- Marine
- Headlands
- Rivers and Estuaries
- Coastal Lowland and Floodplain
- Hinterland

Lake Ainsworth
Lennox Head

BIODIVERSITY
IN BALLINA SHIRE

Marine

The ocean and coastal environments hold a special place in the heart of our community. The marine environment is rich with plant and animal life. North from Lennox Head, Ballina Shire supports the southern portion of the Cape Byron Marine Park.

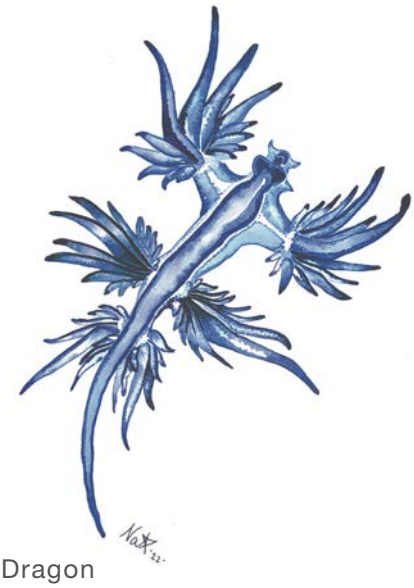
Our local marine habitats are diverse and include a range of habitats including; exposed and sheltered sandy beaches, rocky shores, rocky reefs, submerged pinnacles, riverine estuaries, coastal creeks and lakes, and a variety of sandy intertidal habitats.

This diversity of habitat supports a range of species including whales, dolphins, sea birds, fish, invertebrates and turtle species. Threatened sea turtles known to visit the marine environment around Ballina include the Loggerhead, Hawksbill and Green Sea Turtles.

There are many things that can be done to protect these turtle species, including:

- Appropriate disposal of fishing line
- Reduction of litter and debris
- Ensuring boats with propellors maintain a safe distance from turtles at sea
- Protecting nesting turtles and nest sites from disturbance
- Supporting the use of turtle-exclusion devices on trawling nets
- Promoting the use of alternative beach protection strategies to limit the use of traditional shark nets.

Ballina Angel Fish
Chaetodontoplus ballinae



Blue Sea Dragon
Glaucus atlanticus

Green Sea Turtle
buubii-ee
Chelonia mydas

Green Sea Turtles ...

buubii-ee can be found in the waters around Ballina Shire and are listed as a vulnerable species under NSW legislation. One of the main threats to Green Sea Turtles is eating marine debris. Turtles often mistake plastic debris for food and eventually suffer from plastic ingestion which can cause death. We can help turtles by simply collecting plastic, and other litter, and disposing of it properly.

BIODIVERSITY
IN BALLINA SHIRE

Headlands

The rocky cliffs and headlands of Ballina Shire's coastline are one of its most beautiful features. As with other environments and ecosystems, all of the species that live on them are interdependent.

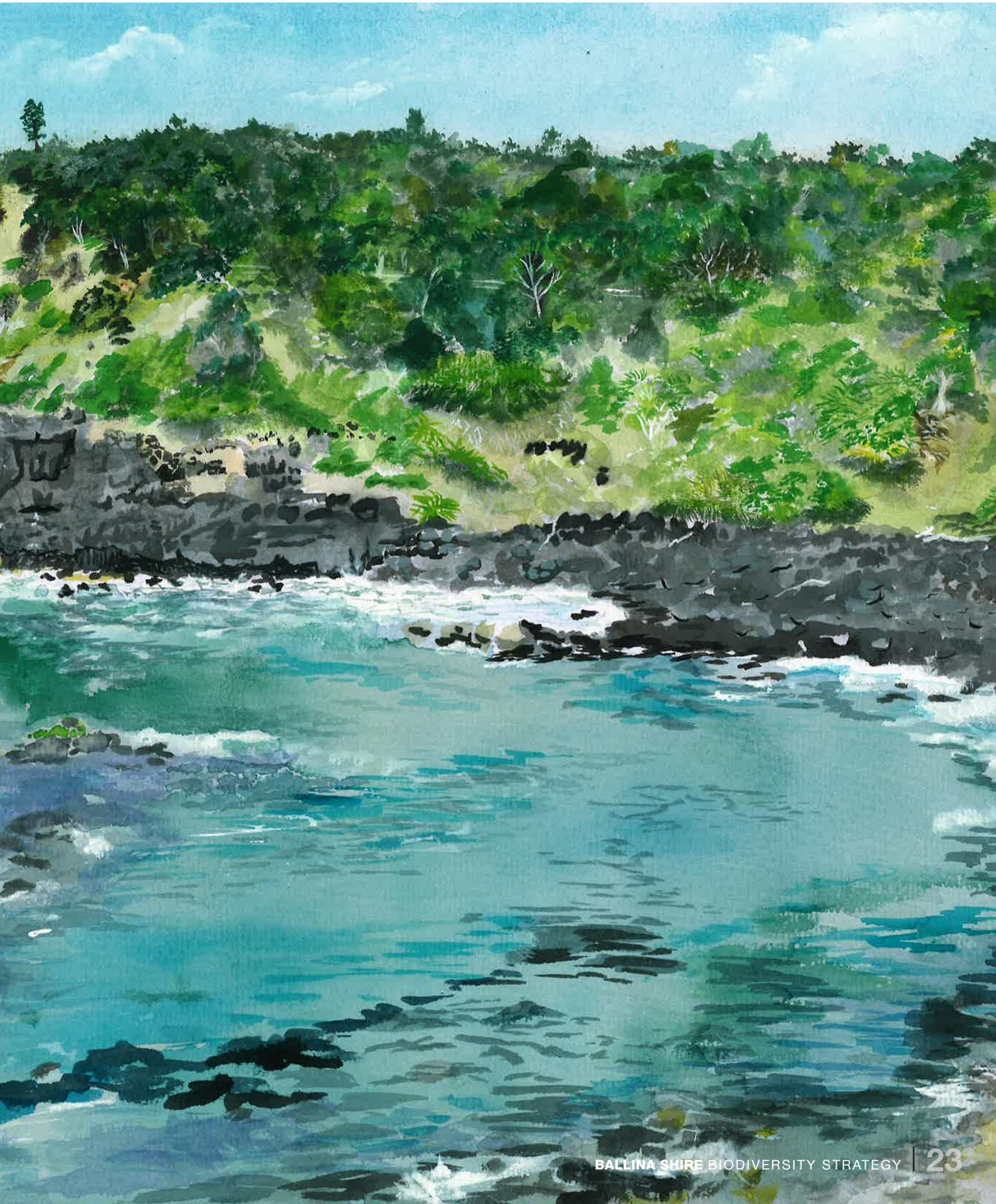
Themeda grasslands are one of the threatened ecological communities that occupy many headlands within Ballina Shire. This communitiy is listed as 'Endangered' under the *Biodiversity Conservation Act 2016* and is officially known as *Themeda grassland on seacliffs and coastal headlands in the NSW North Coast*. This community is typical low growing and dominated by Kangaroo Grass (*Themeda australis*). It can be found at Lennox headland, Boulders Beach headland and at Whites Head, north of Sharpes beach.

Littoral rainforest on basalt headlands can also be found within Ballina Shire. A stand of littoral rainforest can be found at Lennox Head at Pat Morton lookout.

Themeda Grassland ...

is an endangered community that can be found on Ballina Shire seacliffs and coastal headlands including Lennox headland, Boulders Beach headland and Whites Head, north of Sharpes Beach.

Boulders Beach headland
Skennars Head



BIODIVERSITY
IN BALLINA SHIRE

Rivers and Estuaries

Where the river and ocean meet is defined as an estuary, which is home to distinctive ecosystems such as mangroves, saltmarshes and sand flats. Each of these ecosystems is home to characteristically unique species of plants and animals that can utilise this saline environment. The Richmond River, and its estuarine environments are home to a vast array of wildlife.

Shorebirds are a special part of this coastal and estuarine environment. Ballina Shire is home to a remarkable number of shorebirds species, including threatened species such as the Pied-Oystercatcher, Australian Painted Snipe and Beach Stone Curlew.

Many residents and visitors will have seen these shorebirds while walking along Ballina's beautiful coastlines. One eye-catching bird is the Pied Oystercatcher, with its distinctive red beak and legs.

Beach and estuary users can unknowingly disturb birds from their nests which exposes eggs and chicks to predation and weather extremes. Urgent action is required to address these challenges, by changing human behaviour so that the beauty and vitality of our shorelines can be preserved (DPE, 2022a).

Pied-Oystercatcher
gawirr-gan
Haematopus longirostris

Pied-Oystercatchers ...

gawirr-gan forage on exposed sand, mud and rocks at low tide, for molluscs, worms, crabs and small fish. Their chisel-like bills pry open or break into shells of oysters and other shellfish. Pied Oystercatchers are listed as an Endangered species under NSW legislation. Threats include introduced pests such as foxes, weed invasion, coastal processes, natural predation and disturbance from beach and estuary users. This results in the destruction of nests, eggs and chicks, disturbance to foraging, nesting and resting birds, and loss of habitat.

BIODIVERSITY
IN BALLINA SHIRE

Coastal Lowland and Floodplain

Ballina Shire supports a diverse range of ecosystems and species across the coastal lowlands and floodplains. Ballina Nature Reserve and Tuckean Nature Reserve form part of a regional network of protected wetlands. These places contain a number of threatened communities including Swamp Sclerophyll Forest and Freshwater Wetlands listed under the *Biodiversity Conservation Act 2016*.

Freshwater Wetlands support a range of threatened species. One special species which can be found in Freshwater Wetlands in Ballina Shire is the Brolga. The Brolga is quite unmistakable being one of Australia's largest flying birds - standing 1.3 metres tall with a wingspan of nearly 2.5 metres.

Other threatened ecological communities which occur on protected areas of Ballina Shires coastal lowlands are: Littoral Rainforest, Lowland Rainforest on Floodplain, Subtropical Coastal Floodplain Forest, Coastal Cypress Forest, Swamp Oak Forest and Heathlands.

The coastal reserve system between Lennox Head and Ballina supports large stands of Littoral Rainforest. This community is listed as Endangered in NSW under the *Biodiversity Conservation Act 2016*. The community supports a very rare plant species Coastal Fontainea *(Fontainea oraria).*

Brolga
giagagul
Grus rubicunda

Brolgas ...

giagagul are famous for their 'dance'. The brolga dance is apparently used as part of a courtship or bonding display where a pair or many pairs face each other, crouch down and stretch upwards, trumpet, leap and toss grass and sticks into the air. One of the biggest threats to Brolgas is the loss and degradation of their wetland habitats, this may be through vegetation clearing and draining for flood mitigation and agriculture *(DPE, 2022b)*.

BIODIVERSITY
IN BALLINA SHIRE

Hinterland

Big Scrub

The Alstonville plateau and its margins were once covered in subtropical lowland rainforest known as the Big Scrub.

The Big Scrub was the largest expanse of lowland subtropical rainforest in Australia covering an area of approximately 75,000 hectares on rich volcanic and alluvial soils between Byron Bay, Ballina and Lismore.

Following the extraction of Red Cedar from the 1840s, the Big Scrub was cleared for agriculture mainly dairying. By 1900 only one-percent remained in the form of 100 small remnants scattered across a largely cleared landscape (Big Scrub Landcare, 2022). Remnant stands of this ancient community can be found in Ballina Shire at the Davis Scrub, Victoria Park Nature Reserves, and Lumley Park in the centre of Alstonville. These reserves now contain large remnant trees which would be more than 100 years old. Numerous other small remnants occur on private properties throughout the plateau and together with patches of advanced regrowth are being managed by local Landcare groups in collaboration with landholders.

This rainforest supports a diverse range of threatened plants and animals. One of the lesser-known threatened species which can be found in this rainforest is the Southern Pink Underwing Moth (*hyllodes imperialis*).

original extent of Big Scrub shown in light brown
source: bigscrubrainforest.org

Southern Pink Underwing Moth ... **jaingay**

breeding habitat is restricted to areas where a native rainforest vine, *Carronia multisepalea* can be found as this is the caterpillar's food plant. The adult moth requires low light conditions of subtropical rainforests in order to breed. This moth is named for the brilliant pink patches on its dark hindwing. The young caterpillars are dull brown, as they mature they develop a dramatic 'head' display when alarmed - 2 large eye spots and a double row of white 'teeth' *(DPE, 2022d).*

Southern Pink Underwing Moth
jaingay
Phyllodes imperialis

The Big Scrub ...

gaabal once covered an area of approximately 75,000 hectares on rich volcanic and alluvial soils between Byron Bay, Ballina and Lismore. Around one-percent of the Big Scrub remains today. Publicly accessible remnant stands of this ancient community can be found in Ballina Shire at Victoria Park Nature Reserve.

BIODIVERSITY
IN BALLINA SHIRE

Eucalypt Forests

Large stands of eucalypt forest occur in the Shire, primarily across the Blackwall Range which runs parallel to the coast, west of Coolgardie and Wardell. This area includes Uralba Nature Reserve. Eucalypt forests support a range of distinctive species including Alberts Lyrebird *(Menura alberti)*, which is listed as a Vulnerable Species in NSW under the *Biodiversity Conservation Act 2016*.

Albert's Lyrebird is a large, long-tailed, mostly ground-dwelling bird. The species is commonly mistaken with its more commonly known cousin - Superb Lyrebird (*Menura novaehollandiae*), although Alberts Lyrebird can be distinguished by its richer brown plumage and, in males, less elaborate tail feathers. They are masters of mimicry, able to imitate the calls of dozens of other wildlife and man-made sounds such as chainsaws and cars.

Albert's Lyrebird is restricted to a small area of far south-eastern Queensland and north-eastern NSW – including Ballina Shire, where the species is at its southernmost limit. The species is threated across most of its range due to clearing and fragmentation of rainforest and wet eucalypt forest habitat. The species requires well connected habitat so that they can disperse, find partners, reproduce and expand the population (DPE, 2022e).

An isolated population in the Blackwall Range is under threat because it is so small, and isolated from other populations at the extent of its range. It is estimated that 10 or fewer birds make up this population (DPE, 2022).

Koalas are another iconic and important species which can be found in these eucalypt forests. Ballina Shire is home to a nationally important population of Koalas, as defined under the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999*.

Koalas ...

buurrabii are an iconic species and Ballina Shire's eucalypt forests are home to a nationally important population of 285-380 Koalas. This population is key for the long-term survival and recovery of Koalas across the Northern Rivers. Koala habitat has become so severely fragmented that Koalas are exposed to stresses that impact their survival. Koala survival is dependent on the retention of habitat and connectivity of remnant vegetation.

Koala
buurrabii
Phascolarctos cinereus

THREATS TO BIODIVERSITY IN BALLINA SHIRE

Threats to biodiversity in Ballina Shire

A key threatening process (KTP) is defined as a process that threatens or may threaten the survival, abundance or evolutionary development of a native species or ecological community. Many of these processes are historical, ongoing and emerging threats, and will directly threaten biodiversity.

The Commonwealth Government's *Environment Protection* and *Biodiversity Conservation Act 1999* lists 21 key threatening processes (KTP) and the *Biodiversity Conservation Act 2016* identifies 39 KTPs.

The following section describes several significant key threatening processes that occur within Ballina Shire.

It is important to note that there are many more processes which threaten biodiversity which are not mentioned above. Appendix 1 identifies all key threatening processes listed in the *Environment Protection Biodiversity Conservation Act 1999* and the *Biodiversity Conservation Act 2016.* Cumulatively, these pressures lead to habitat degradation and ultimately can cause native flora and fauna to become extinct.

Loss of native vegetation

Clearing of native vegetation refers to the removal of endemic species of trees, shrubs, herbs, forbs, groundcovers and native grasses. Historically, the greatest threat to biodiversity in Ballina shire has been the large-scale removal of vegetation and modification of low-lying areas for development, timber extraction and agriculture. More recently, other activities that negatively impact natural habitats include invasion of exotic weeds, removal of timber for firewood and collection of rocks for use in urban backyards.

These impacts have flow on effects across the environment by decreasing habitat for native plants and animals, while increasing habitat for weed and pest species. Soil erosion, increased greenhouse gas emissions, changes in natural water flows, changes in soil composition expose the risk of acid sulfate soils which can have significant flow on effects.

Habitat Fragmentation

Habitat fragmentation is a significant problem in Ballina Shire. Habitat fragmentation is the process where by a large area of habitat is broken into a number of smaller areas. This can have negative effects on species and communities as they become isolated into smaller populations with limited gene flow between, leading to inbreeding issues, reduced potential to adapt to environmental change and reduced resilience to disease. The lack of habitat in the surrounding environment (which is often cleared or urbanised) is a major factor in limiting movement of species between these fragmented patches of habitat that remain.

Roads play a significant role in habitat fragmentation for wildlife. Crossing a road can be (and often is) fatal for an animal. Wildlife vehicle strike has a major impact on wildlife populations within Ballina Shire.

In 2020 - 2021, according to the NSW Wildlife Rehabilitation dashboard (DPE, 2023), 255 animals were rescued in Ballina Shire after being struck by a car.

The majority of land in Ballina Shire is privately owned so it is important that stakeholders work together in managing natural habitats. Connectivity and wildlife corridors are required at local and regional landscape scales to maintain the overall biodiversity of the Northern Rivers.

Long-nosed Potoroo
Potorous tridactylus

Long-nosed Potoroo ...

inhabits coastal heaths and dry and wet sclerophyll forests with dense understorey and occasional open areas an essential part of habitat. They dig small holes in the soil to feed on underground-fruiting fungi, roots, tubers and insects (DPE, 2022f). The species has experienced a population decline on the far north coast of New South Wales. Processes which threaten the survival of the species includes habitat loss, fragmentation, degradation from coastal development, predation from feral animals and inappropriate fire regimes (Andren et al . 2013). Key populations appear to be located at Cobaki Lake, Tyagarah/Brunswick Heads and Wardell. The majority of habitat for the Long-nosed Potoroo population at Wardell is located on land owned and managed by The Jali Local Aboriginal Land Council. Protection of habitat for the Long-nosed Potoroo is crucial for their conservation.

THREATS TO BIODIVERSITY IN BALLINA SHIRE

Loss of important habitat features

Habitat features are parts of the environment (living or non-living) that provide native animals with food and shelter and sites for nesting, migration and social interaction. An animal may use a range of different habitat features over the course of its life.

Examples of habitat features include trees (dead or alive) with hollows, rocks, caves, cliffs, hollow logs, fallen timber, leaf litter, wetlands, sand dunes or a diversity of native overstorey, understorey and groundcover plants.

The removal or modification of habitat features disrupts the local ecosystem and can have a significant effect on wildlife diversity, which may lead to local extinctions of native plants and animals. These features often take hundreds of years to develop, as is the case for tree hollows and hollow logs.

Clearing of vegetation for urban expansion and agriculture, particularly in the past 100 years has caused the loss of many important habitat features across Ballina Shire. We should continue to provide habitat for native species, in the form of native vegetation.

Whether this is installing artificial hollows for large forest owls, possums, gliders and other birds or increasing leaf litter coverage for reptiles, frogs and insects. Our native species rely upon healthy and diverse habitats for survival.

Sugar Glider
jerrd-muud
Petaurus breviceps

Sugar Gliders ...

jerrd-muud are active at night and often sleep during the day. They live in forests and woodlands and feed on nectar, pollen, insects and the sap of certain eucalypt or wattle trees. Sugar Gliders have a 'gliding membrane' - a thin sheet of skin which stretches between its forepaws and its ankles. When it leaps from a branch, its outspread limbs extend the membrane, allowing the animal to glide from tree to tree. The greatest threat to the species is the loss and alteration of the forest habitats, the species requires mature forest with hollow bearing trees to survive.

THREATS TO BIODIVERSITY IN BALLINA SHIRE

Climate Change

Human-induced climate change is a significant threat to biodiversity and is listed as a key threatening process in NSW and Commonwealth legislation. Climate change, particularly rising temperatures, will significantly affect biodiversity and ecosystems.

Scientists expect climate change to cause changes to the abundance and geographic range of many species, restrict or alter species movement, and interfere with their life cycles and interactions with other species. The scale, rate and nature of projected climate change, and the unpredictable interactions between climate change and other factors that cause stress to ecosystems, have the potential to overwhelm the capacity of current ecosystems to adapt.

Ballina Shire and the North Coast region generally is predicted to be affected by the impacts of climate change through warmer temperatures, more high temperature days, fewer frosts, decreased rainfall during winter and spring, increased severe fire weather days, increased intensity of storms and continued sea-level rise (OEH, 2019).

Addressing the threats to biodiversity caused by climate change is a key aspect of this Strategy. Council and the community should be prepared for climate change events including (but not limited to), intensity and length of natural disaster events, changes in species distribution and range, coastal erosion and sea level rise. This Strategy outlines a number of actions which can make Ballina Shire more resilient to the impacts caused by climate change.

Invasive Species

Invasive flora species are a direct threat to biodiversity in Ballina Shire. We commonly know these as ‘weeds’. Ballina Shire is home to many common weed species including Camphor Laurel, Small-leaved Privet, Broad-leaved Privet, Lantana, Madeira Vine, Moth Vine, Bitou Bush and other garden escapees.

These weeds (amongst others) have colonised almost all patches of vegetation across the Shire. Weeds create ongoing negative impacts for the natural environment. They are difficult to control and will continue to spread.

Ballina is also home to many animal pest species, including: wild dogs, European red fox, feral cat, Indian myna, cane toad, mosquito fish, black rat, European rabbits and feral deer. Wild dogs and foxes are a major predator of native animals and ground nesting birds. These species are of particular concern along our beaches where shorebirds nest.

Introduced animals also damage native plants and degrade natural habitats. For example, feral pigs continue to cause damage in many of our important wetlands across Ballina, while cane toads and Indian mynas are aggressive and often compete with native species for resources and habitat.

Due to the current legislative complexities concerning invasive species management, it is important that we work together to control and eradicate invasive species to create a healthy natural environment.

Coastal Fontainea ...

is an extremely rare native tree found in small numbers at Lennox Head, in remnant regrowth littoral rainforest on highly fertile red-brown soils. These remnants only occur on stony slopes within 1km of the sea and at about 50m above sea level (DPE, 2022).

Coastal Fontainea
Fontainea oraria

THREATS TO BIODIVERSITY IN BALLINA SHIRE

Inappropriate fire regimes

Alteration of fire regimes is considered a major threat to biodiversity in Australia. Fire and biodiversity issues arise when the fire regime (frequency, intensity, season, extent) at a location changes and the resulting environment becomes unsuitable for the original species make-up of that location. Natural fire regimes across Ballina Shire have been drastically altered following the suppression of Aboriginal burning regimes.

Regular fire is a natural component of the open forests of Ballina Shire and it plays a crucial role in maintaining habitat for many species, including Koalas. However, there are many ecosystems and species that are not adapted to fire and require protection from it. Rainforests are one example of a fire sensitive ecosystem.

Large unplanned and high intensity fires have the potential to decimate biodiversity across a landscape - fire dependent and fire sensitive ecosystems alike. This was evident to most Australians following the 2019 – 2020 bushfires which devastated eastern Australia.

Conversely, the long-term exclusion of fire can lead to irreversible habitat decline. Many open forests in Ballina are under threat due to lack of fire. Invasive species (including Camphor Laurel) and many pioneer rainforest species are become established due to inadequate fire frequency, which is decreasing habitat opportunities for species which rely upon open forest types (Baker, 2022).

Ecological and cultural burns are the primary tool for reducing the risk of high intensity bushfires and provide an invaluable tool for reducing the likelihood of high intensity bushfires. It is important that we continue to work together as a community to understand and manage fire. This collaboration is particularly important between Aboriginal communities, Council, landholders, and other fire management authorities.

Silky Oak
Grevillea robusta

Blue Banded Bees ...

jambulang are native bees which grow to be around 1 cm long. Unlike the common European Honey Bee, the Blue Banded Bee is solitary. The species will build small nests close to one another, like a little community, instead of living in a large hive.

Blue Banded Bee
jambulang
Amegilla cingulata

THREATS TO BIODIVERSITY IN BALLINA SHIRE

Alteration to natural flow regimes in waterways and groundwater

Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands is recognised as a major factor contributing to loss of biological diversity and ecological function in aquatic ecosystems, including floodplains (DPE, 2022g).

Alteration to natural flow regimes refers to reducing or increasing the frequency, duration, magnitude, timing of natural water flows - in a way which changes surface and subsurface water levels.

Human processes have predominantly altered flows in streams, rivers and their floodplains, and wetlands. Building of dams, diversion of flows by structures or extraction, and alteration of flows on floodplains with levees and structures contribute to the alteration to natural flow regimes.

This is a prominent threat to biodiversity and natural process in Ballina Shire as many of our ecosystems and species in Ballina Shire are adapted and reliant upon natural flow regimes. It is important that we recognise the threat which alterations to natural flow regimes can cause. Minor changes in surface runoff and land use in certain areas of the catchment, can potentially cause major changes elsewhere.

In Ballina Shire, the Alstonville Basalt aquifer is a shallow water table which provides subsurface water to many Groundwater Dependent Ecosystems (GDE) across Ballina Shire – from wetlands to riparian communities to rainforests. In turn, these communities provide habitat for many species of flora and fauna.

The Richmond River is a prominent feature of the Shire, particularly for towns and villages along the river. The Richmond River floodplain covers approximately 1,000km^2 and was historically a mosaic of open wetlands, Melaleuca forest and lowland subtropical rainforest.

Human activity across the Richmond River floodplain (and the catchments of Emigrant and North Creek) have caused drastic changes in river and waterway health, and ultimately the loss of many important local habitats. Poor water quality, high sediment loads, blackwater fish kill events and bank erosion are just some of the factors contributing to poor waterway health in Ballina Shire.

Ballina Shire Council is working with many stakeholders across the region to improve the health of waterways in the Shire. It is important that these projects continue and that this Strategy reflects and acknowledges the vision of existing plans.

Killen Falls
Emigrant Creek


rock
walany
waterfall
gaa-wang

DEVELOPING
THE BIODIVERSITY STRATEGY

This Chapter summarises the information Council used to develop this Biodiversity Strategy. In this chapter you can find information on:

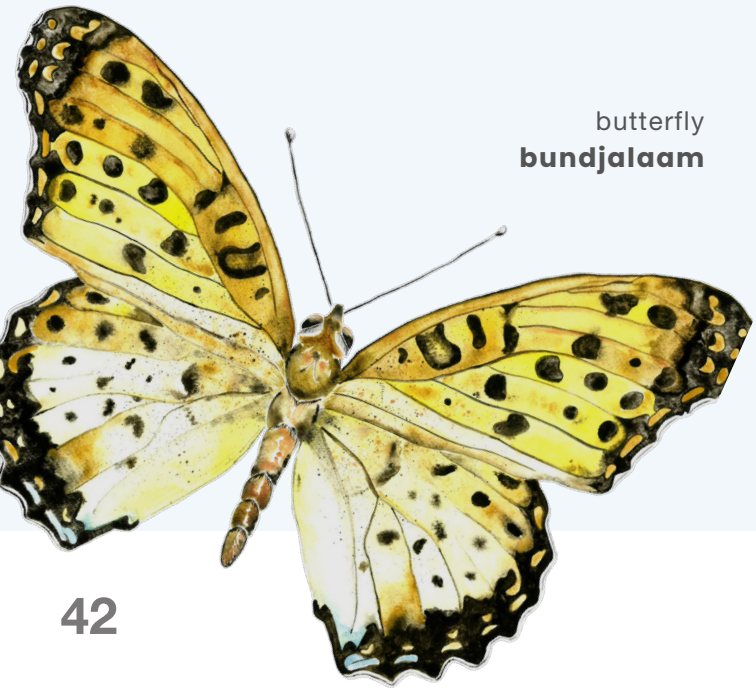
- The legislative and policy framework that governs how biodiversity is managed in Ballina Shire.
- How the Strategy was developed – including stakeholder consultation.

Legislative framework for the Biodiversity Strategy

This Biodiversity Strategy is embedded within a broader network of legislation, planning policies and strategies that relate to biodiversity management. There are various legislative mechanisms, polices and plans from Commonwealth, state, regional and local bodies which promote and support biodiversity management in Ballina Shire.

Commonwealth and State Government legislation and planning documents guide and influence local plans and strategies, including this Strategy. Conversely, this Strategy will complement and inform our existing local plans and policies.

The following illustration provides information on key legislative mechanisms, policies and plans from the Commonwealth, state, regional and local bodies – with regard to their influence on this Strategy.



butterfly
bundjalaam

COMMONWEALTH

- Environment Protection and Biodiversity Conservation Act 1999
- Australia's Strategy for Nature 2019-2030
- Australian Pest Animal Strategy 2017-2027
- Dept Climate Change, Energy, Environment and Water Recovery Plans

NSW

- Local Government Act 1993
- Biodiversity Conservation Act 2016
- Environmental Planning and Assessment Act 1979
- Fisheries Management Act 1994
- Local Land Services Act 2013
- National Parks and Wildlife Act 1974

REGIONAL PLANS

- North Coast Regional Plan 2041
- North Coast Regional Strategic Pest Animal Management Plan 2018 - 2023
- North Coast Regional Strategic Weed Management Plan 2023 -2027
- North Coast Local Land Services Natural Resource Management Plan 2022 - 2026
- Far North Coast Regional Water Strategy

LOCAL STRATEGIC PLANNING STATEMENT AND COMMUNITY STRATEGIC PLAN
10+ YEAR FOCUS

LOCAL STRATEGIES AND PLANS

- Koala Management Strategy
- Coastal Zone Management Programs
- **Biodiversity Strategy**
- Climate Change Policy
- Bidiversity Compensatory Habitat and Offset Policy
- Development Control Plan
- Vegetation Management Plans
- Coastal Zone Management Plans
- Healthy Waterways Program
- Local Environmental Plan

COMMUNITY ENGAGEMENT

RESOURCING STRATEGY

- Long Term Financial Plan
- Workforce Management Plan
- Strategic Asset Management Plan

DELIVERY PROGRAM
4 YEAR FOCUS

OPERATIONAL PLAN
1 YEAR FOCUS

Perpetual monitoring and review

ANNUAL REPORT

DEVELOPING
THE BIODIVERSITY STRATEGY

HEALTHY
ENVIRONMENT

HE1 WE PROTECT, RESPECT, AND ENHANCE OUR NATURAL ENVIRONMENT
HE2 OUR OPERATIONAL CHOICES ARE BASED ON SUSTAINABILITY AND LIMIT OUR IMPACT ON THE ENVIRONMENT
HE3 OUR BUILT ENVIRONMENT IS RESPECTFUL OF THE NATURAL ENVIRONMENT AND THE ECOSYSTEM

Consultation

Consultation for the Ballina Shire Community Strategic Plan (CSP) our community, our future 2022 – 2032 and other Council planning documents, highlighted that the community continue to value the environment highly.

Responses received during the most recent CSP consultation, as well as feedback received during preparation of the Climate Action Policy, Place-based strategic plans (i.e. Alstonville 2037, Ballina 2035, Lennox Head Strategic Plan, Wardell 2035 and Wollongbar 2039), has ultimately informed this Biodiversity Strategy.

Four workshops were held in late October 2022 for community stakeholders and organisations with an environmental, industry and/or business interest in Ballina Shire, including Council Ward Committee members.

Workshop participants were provided with the action tables contained within the draft Strategy. Participants were then asked to provide feedback via questions and activities focused around what the participants liked about the actions in the Strategy, how the actions could be improved and their opinion on how the Strategy could be implemented and funded.

Following the workshops, Council at the November 2022 Ordinary meeting, considered the draft Ballina Shire Biodiversity Strategy and resolved to place the document on public exhibition.

The draft Strategy was placed on public exhibition for a period of three months from December 2022 to March 2023.

To promote the public exhibition of the draft Strategy, community engagement actives included:

- Publishing a project specific webpage from which the draft Strategy could be downloaded.
- An online feedback form/survey accessed via the webpage.
- Social media posts via Council social media platforms.
- Three community information and market stalls held at Ballina, Lennox Head and Alstonville.
- Presentation at a Lennox Head Residents Association meeting.
- Meetings with representatives from Jali Local Aboriginal Land Council.
- Contacting key stakeholders (Government and non-Government) to inform them of public exhibition of the draft Strategy.

Key messages expressed by the community and made evident via responses during the public exhibition included:

1. The community is seeking Increased involvement from Council to:
    - Regenerate natural ecosystems.
    - Increase environmental education, community awareness and pride in local biodiversity and celebrate the environmental champions in Ballina Shire.
    - Support rural landholders and community groups to protect and enhance biodiversity assets in Ballina Shire.

- Implement on ground actions working in partnership with public and private stakeholders.
- Provide clear environmental protection principles and develop stronger regulatory processes to protect biodiversity.

2. The Strategy must be adequately resourced via a stable long-term funding stream in order to achieve the desired outcomes.
3. Council should monitor implementation of the Strategy, make adaptive changes where required and remain transparent with the community with regard to implementation of the Strategy, including how and where funding is spent.
4. Concern about application of Conservation Zones (C Zones) associated with Council's C Zone review (a separate planning proposal process).

What you said about Ballina Shire

A 'Healthy Environment' is one of four directions that underpin the CSP. Maintaining a healthy environment, a key factor the community: it is one of the main reasons why people like living in Ballina Shire. During consultation for the Ballina Shire Community Strategic Plan 2022 – 2032, around half of respondents noted that the best thing about living in Ballina Shire is the beautiful environment, the relaxed lifestyle and access to open spaces and recreation.

Improved understanding, management and protection of biodiversity was ranked number one, in terms of features that could be improved in Ballina Shire over the next 10 years.

The following quotes are from Ballina Shire Community Strategic Plan 2022 – 2032, Phase 1 engagement.

What you said about Ballina Shire ...

"improve environmental education promoting in schools and community"

"greater emphasis on environmental education (specific to our area) within schools, continue to implement great walk/ bikeways for people to get out amongst nature"

"care for rainforest areas to encourage biodiversity"

"listen to First Nation more on management of the environment"

"continue and increase support for environmental groups in shire"

"climate change needs to be more of a focus"

"Council to give benefits (rates) for those who are retaining green cover or those who are planting more in their private land to encourage business to adopt green areas"

"buildings well set back from natural areas and waterways"

"protect our flora and fauna"

"continue to invest in improving our waterways"

"more education for citizens on how they can help to care for the environment"

"focus on expanding and improving habitat regeneration with public walk and cycle access to it"

Eastern Yellow Robins
jilum-jilum
Eopsaltria australis

ACTION PLAN

This section identifies what we need to do to realise our vision and objectives of this Strategy, over the next 10 years. Council has prioritised actions to initiate as:

VERY HIGH priorities within 1-2 years of adoption of the Strategy
HIGH priorities within 3 years of the adoption of the Strategy
MEDIUM priorities within 5 years of adoption of the Strategy
LOW priorities within the Strategy 10 year timeframe.

PROTECT

AIM

PROTECT biodiversity values in Ballina Shire through strategic and statutory planning, and local policy and processes.

OBJECTIVES

1.1 Council strategies, policies, plans, management practices and development assessment processes value and protect biodiversity.

1.2 Ensure biodiversity knowledge is adequate and current to support decision-making, conditions of consent and strategic planning.

1.3 Existing plans and polices which consider biodiversity management are implemented.

MANAGE

AIM

Ensure that the natural environment in Ballina Shire is being **MANAGED** to improve ecological resilience and reduce threats to biodiversity.

OBJECTIVES

2.1 Council has capacity to implement this Strategy and other natural resource management projects.

2.2 Council's management of biodiversity and natural areas is informed and prioritised.

ENHANCE

AIM

ENHANCE and conserve biodiversity in urban and rural areas through revegetation and habitat rehabilitation.

OBJECTIVES

3.1 Council is actively working to enhance the natural environment.

3.2 Enhance biodiversity values on Council owned and managed public land.

COLLABORATE

AIM

COLLABORATE with stakeholders and the community to encourage participation and collaboration in conservation initiatives, whilst raising awareness of the importance of biodiversity.

OBJECTIVES

4.1 Council develops strong partnerships with relevant Aboriginal stakeholders to respect, promote and protect cultural and environmental knowledge.

4.2 Council fosters strong working relationships with stakeholders.

4.3 Council works positively and proactively with rural landholders to facilitate biodiversity restoration and conservation on private land.

4.4 Increase community awareness and pride in the importance of biodiversity and encourage participation in conservation initiatives.

4.5 Council advocates for matters that aim to protect and enhance biodiversity.

THEME 1 **PROTECT**

PROTECT biodiversity values in Ballina Shire through strategic and statutory planning, and local policy and processes.

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
1.1	**OBJECTIVE: COUNCIL STRATEGIES, POLICIES, PLANS, MANAGEMENT PRACTICES AND DEVELOPMENT ASSESSMENT PROCESSES VALUE AND PROTECT BIODIVERSITY**			
1.1.1	Reinforce biodiversity provisions within the Ballina Shire Development Control Plan 2012 (BDCP 2012) in alignment with Council's Biodiversity Strategy objectives.	Very High	$	BDCP 2012 adopted and in use.
1.1.2	Develop a standardised Voluntary Planning Agreement (VPA) which outlines Council's expectations regarding management of native vegetation and habitats for proponents in relation to preservation of, or offsetting of impacts to biodiversity on private land.	Very High	$	Standardised VPA agreement adopted by Council.
1.1.3	Develop a policy (or standardised VPA) which outlines Council's expectations regarding the dedication of land to Council for environmental conservation and enhancement purposes as a result of a development or an activity. At a minimum the policy (or standardised VPA) should outline the following: • Standards for the type, quality, nature and condition of land which may be dedicated to Council. • Estimation of the funding required to manage land for it to achieve the desired condition state.	Very High	$$	Policy or standardised VPA adopted by Council.
1.1.4	Develop a template to support consideration of implications to biodiversity when assessing planning proposals.	Very High	$	Template developed and in use.
1.1.5	Develop guidelines which provide a standardised methodology for baseline groundwater and/or hydrological monitoring reports submitted to Council.	Very High	$$	Guidelines published and enforces ensuring all groundwater and/or hydrological monitoring follows a standardised and scientifically robust methodology.

RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
1.1.6	Identify and nominate, where appropriate, any other land in Ballina Shire with biodiversity values that warrant inclusion on the Biodiversity Values Map (BV Map) under clause 7.3(3)(k) of the *Biodiversity Conservation Regulation 2017*.	Very High	$	Submit an application to the Biodiversity and Conservation Division North East Branch Planning team which nominates any other land in Ballina Shire with biodiversity values that warrant inclusion on the BV Map.
1.1.7	Review land use zones to reflect longer term conservation value of land where implementation of habitat and vegetation restoration works has been required through the development assessment process.	Very High	$$	All land subject to habitat and vegetation restoration works through the development assessment process are mapped and an appropriate conservation land use zone is applied.
1.1.8	Develop a standardised template for the preparation of environmental plans and revegetation management plans required as part of the development application process.	High	$$	Templates developed and published for use.
1.1.9	Develop standardised conditions of consent in relation environmental matters.	High	$	Conditions of consent developed and uploaded into the NSW Planning Portal for use.
1.2	**OBJECTIVE: ENSURE BIODIVERSITY KNOWLEDGE IS ADEQUATE AND CURRENT TO SUPPORT DECISION-MAKING, CONDITIONS OF CONSENT AND STRATEGIC PLANNING**			
1.2.1	Undertake a shire wide wildlife corridor mapping project to identify and map wildlife corridors which will inform conservation efforts and inform future land use planning.	Very High	$$$$	Shire wide spatial mapping layer available and readily used to inform conservation efforts and inform future land use planning.
1.2.2	Review the Ballina Shire Koala Management Strategy (KMS).	Low	$	KMS reviewed and updated where applicable.
1.2.3	Undertake a Koala population survey and establish a regular monitoring program to assess the status of the Koala population in accordance with action #3 of the Ballina KMS.	Very High	$$ (per event)	Regular and repeatable Koala monitoring program established.
1.2.4	Validate shire wide vegetation mapping in accordance with the plant community type (PCT), vegetation formation and threatened ecological communities (TEC) classifications published by NSW Department of Planning and Environment (DPE).	High	$$$	Vegetation mapping validated and up to date across the shire.

RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

THEME 1 **PROTECT** CONT.

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
1.2.5	Create a mapping layer, using existing information where relevant, which spatially identifies High Environmental Value (HEV) entities and their appropriate ecological buffer. HEV entities may include (but should not be limited to): • Wildlife corridors • TEC Vegetation • Threatened species locations or known habitat • Pre-existing protected habitat • Bushland on a slope >18 degrees • Over-cleared vegetation types • Over-cleared landscapes • Wetlands • Old growth vegetation • Koala Habitat • Waterways • Flying fox camps • Other important habitat features (i.e. large native trees, hollow bearing trees and/or raptor nests).	High	$$$	Shire wide spatial mapping layer available which is incorporated into the LEP or DCP and readily used to inform conservation efforts and inform future land use planning.
1.2.6	Develop a GIS database to record and map areas covered by Vegetation Management Plans and areas that have been revegetated for conservation.	High	$ ongoing resources needed	The interactive database will map the area subject to management and provide information on; the conditions of consent (if applicable), works to be conducted, the progress of works, relevant due dates and the source of funding associated with the works.
1.2.7	Develop a priority restoration and investment map that identifies key sites and target species and communities on private and public land requiring either protection or restoration, to assist in directing future Council and community restoration activities.	High	$$	Priority restoration and investment map available and informed by outcomes of action 1.2.1.
1.2.8	Identify public land suitable as biodiversity offsetting sites through an audit of all public land against rehabilitation potential and review forecasted biodiversity offsetting needs of future public and private development.	High	$$	Biodiversity offset sites - public lands map developed and adopted for use, and informed by action 1.2.7.
1.2.9	Support and/or undertake research which reports on Koala subpopulations in Ballina Shire (including populations outside of the Koala management precincts acknowledged in the Ballina KMS) with regard to the management options and long-term outlook for the population.	High	$$$$	Greater understanding of Koala subpopulations within Ballina Shire, with recommendations provided which detail management options and long-term outlook of the subject population.

RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
1.2.10	Conduct a review of Ballina Shire's biodiversity values as a baseline for ongoing biodiversity monitoring. Include: • Updated Ballina Shire flora and fauna lists • Status of threatened flora and fauna • Status of weed species • Extent of native vegetation • Extent of protected vegetation (public and private land) • Status of altered fire frequency.	High	$$$ annually	Greater understanding of the current condition of biodiversity values in the Shire – providing a baseline for monitoring and evaluation in future years.
1.2.11	Implement a regular forum to upskill Council staff, contractors and members of local volunteer organisations with current best practice ecological information and any changes to Council policy.	Medium	$	Support staff, contractors and volunteers to understand current best practice ecological information and any changes to Council policy.
1.2.12	Investigate and implement best practice mitigation measures to reduce wildlife vehicle collisions.	Medium	$$ for investigation >$$$$ for implementation	Rate of wildlife vehicle collisions reduced and best practice mitigation measures applied to new and existing roads.
1.3	**OBJECTIVE: EXISTING PLANS AND POLICES WHICH CONSIDER BIODIVERSITY MANAGEMENT ARE IMPLEMENTED**			
1.3.1	Implement environmental actions within Council's place-based strategic plans - (i.e. Alstonville 2037, Ballina 2035, Lennox Head Strategic Plan, Wardell 2035 and Wollongbar 2039).	Ongoing	Varied	Environmental objectives of Council's place-based strategic plans are achieved.
1.3.2	Continue to implement actions within Coastal Management Programs (CMPs).	Ongoing	Varied	Objectives of the CMPs are achieved.
1.3.3	Continue to implement actions within the Healthy Waterways Program.	Ongoing	Varied	Objectives of the Healthy Waterways Program are achieved.
1.3.4	Continue to implement actions within the Climate Action Policy.	Ongoing	Varied	Objectives of the Climate Action Policy are achieved.
1.3.5	Implement actions from Ballina Shire Koala Fire Management Plan, including collaboration with stakeholders.	Ongoing	Varied	Objectives of the Ballina Shire Koala Fire Management Plan are achieved.
1.3.6	Continue to implement actions within the Ballina Koala Management Strategy (KMS).	Ongoing	Varied	Objectives of the Ballina KMS are achieved.

RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

THEME 2 **MANAGE**

Ensure that the natural environment in Ballina Shire is being **MANAGED** to improve ecological resilience and reduce threats to biodiversity.

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
2.1	**OBJECTIVE: COUNCIL HAS CAPACITY TO IMPLEMENT THIS STRATEGY AND OTHER NATURAL RESOURCE MANAGEMENT PROJECTS**			
2.1.1	Employ specialist staff to implement actions within this Strategy and other environmental priorities identified by Council.	High	$$$$ annually	Position/s filled and actions implemented.
2.1.2	Investigate and report on the benefits of investing in recruitment, training and leadership to establish and retain natural area management personnel (e.g. bush regeneration team, biodiversity project officers, environmental scientists, Aboriginal officers, grants officers).	Very High	$	Undertake a cost benefit analysis to assess Council's requirements for a NRM team and ensure Council has the capacity to effectively deliver this Strategy.
2.2	**OBJECTIVE: COUNCIL'S MANAGEMENT OF BIODIVERSITY AND NATURAL AREAS IS INFORMED AND PRIORITISED**			
2.2.1	Develop a Natural Areas Management Plan for all Council owned and managed areas to identify and prioritise the management of biodiversity values in the Shire.	High	$$	A Natural Areas Management Plan is endorsed by Council for Council owned and managed land. This Plan would be developed in consultation with relevant public and private landholders so that landscape scale outcomes can be achieved.
2.2.2	Investigate the suitability of floodplain development in Ballina Shire from a biodviersity perspective, considering site suitability, sustainability and where material (fill) will be sourced to mitigate flooding impacts.	High	$$	Studies commissioned to ensure the environment and natural water flows are not impacted by floodplain development.
2.2.3	Consult with relevant key stakeholders to determine the scope of a pest species control plan and program for Ballina Shire.	Very High	$	Enhanced understanding of key pest species in the shire and how they can be controlled.

RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
2.2.4	Prepare and implement pest species control plan and program for Ballina Shire after action 2.2.3 is complete.	High	TBA	Pest species are managed and controlled by relevant parties in collaboration with stakeholders.
2.2.5	Develop and implement a pandanus wasp control program.	Medium	$$ annually	Pandanus wasp infestations controlled.
2.2.6	Undertake studies to gain a better understanding of groundwater and sub-surface hydrological flows in Ballina Shire.	Medium	$$$	Studies provide recommendations to ensure sustainable management of groundwater and sub-surface hydrological flows.
2.2.7	Undertake an audit of quarries across the region to understand their respective life expectancy and capacity to supply fill material used for flood mitigation in Ballina Shire.	Medium	$$	Studies provide recommendations to ensure existing quarries will meet fill requirements associated with flood mitigation and ensure that new quarries will not cause ongoing legacy issues.
2.2.8	Incorporate mapping of shorebird roost and foraging habitats in into Council's mapping system and implement relevant actions for habitat management.	Medium	$$	Habitat for shorebirds is identified and management actions developed to reduce conflict with other projects or interests.
2.2.9	Develop a recommended planting list to identify species in different vegetation communities likely to be adaptable or sensitive to climate change impacts, and effective in carbon sequestration.	Medium	$	Planting lists consider climate change.
2.2.10	Investigate need and suitability regarding development of flying fox camp management plans in Ballina Shire, based on previous State Government research.	Medium	$	Conflicts between humans and flying foxes is avoided by identifying high risk conflict camps.
2.2.11	Review street lighting and other lighting on Council owned buildings and reserves in relation to the provision of wildlife friendly lighting.	Low	$$$	Lighting which may have a negative impact on wildlife movement (particularly marine species) is replaced with lighting which considers best practice guidelines.

RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

THEME 3 **ENHANCE**

ENHANCE and conserve biodiversity in urban and rural areas through revegetation and habitat rehabilitation.

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
3.1	**OBJECTIVE: COUNCIL WORKING TO ACTIVELY ENHANCE THE NATURAL ENVIRONMENT**			
3.1.1	Work collaboratively with stakeholders to enhance the natural environment in accordance with objectives listed under Themes 4: Collaborate.	Very High	$	Council and relevant stakeholders work collaboratively to achieve desired outcomes.
3.1.2	Work with relevant stakeholders (i.e. NPWS, Crown lands, Jali LALC) and investigate opportunities to provide and promote more natural places and experiences in the shire (i.e. Forested parks, shared paths and walking tracks).	High	$	Opportunities to visit natural places and provide experiences increases.
3.1.3	Implement the Potential Utility Of Crown Road Reserves Program (Biolink, 2018) with regards to Koala habitat.	High	$$$ will include ongoing costs	Implementation of the program and an increase in Koala habitat area as a result.
3.1.4	Based on the outcomes of actions 1.2.7 and 1.2.8, investigate opportunities for Council to purchase land for the purpose of environmental conservation.	High	$$ for investigation $$$$+ for land purchase	Council purchase environmentally sensitive land for the purposes of environmental protection and rehabilitation.
3.2	**OBJECTIVE: ENHANCE BIODIVERSITY VALUES ON COUNCIL OWNED AND MANAGED PUBLIC LAND**			
3.2.1	Continue targeted restoration (weeding, planting of trees, shrubs and understorey, retention of tree hollows, fallen branches, logs and shrub layer, removal of threats) within Council reserves to enhance connectivity and habitat values.	Very High	$$$$ will include ongoing costs	Improved biodiversity in Council reserves.

RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
3.2.2	Continue support for community volunteer groups (i.e landcare and coastcare groups) who assist Council in managing vegetation on public land in Ballina Shire.	Very High	$	The work of community volunteer groups who assist Council in managing vegetation on public land in Ballina Shire is acknowledged and supported by Council.
3.2.3	Expand and/ or restore remnant vegetation and create Council managed habitat components within reserves, particularly for areas with opportunities for habitat connectivity.	High	$$$$ will include ongoing costs	Remnant vegetation stands expanded and connected to other habitat areas.
3.2.4	Rebuild migratory shore bird islands in Chickiba wetland.	Medium	$$$$ will include ongoing costs	Increased migratory shore bird use of the wetland.
3.2.5	Investigate opportunities to manage fire regimes on Council reserves in partnership with fire agencies seeking to minimise bushfire risk.	Medium	$	Opportunities to manage fire regimes on Council reserves identified, fire agencies made aware of these opportunities and ecological burns undertaken in accordance with the appropriate fire frequency status as recommended by experts.
3.2.6	Add biodiversity assets that are threatened by altered fire regimes to the Far North Coast Bush Fire Risk Management Plan to leverage agency assistance with burn implementation.	Medium	$$	Council and community can advocate for assistance from fire agencies to conduct ecological burns to protect these biodiversity assets.
3.2.7	Manage artificial raptor nest poles in the shire.	Low	$$$ will include ongoing costs	Increased use of nest poles by raptors.

RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

THEME 4 **COLLABORATE**

COLLABORATE with stakeholders and the community to encourage participation and collaboration in conservation initiatives, whilst raising awareness of the importance of biodiversity.

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
4.1	**OBJECTIVE: COUNCIL DEVELOPS STRONG PARTNERSHIPS WITH RELEVANT ABORIGINAL STAKEHOLDERS TO RESPECT, PROMOTE AND PROTECT CULTURAL AND ENVIRONMENTAL KNOWLEDGE**			
4.1.1	Engage with relevant Aboriginal stakeholders to understand how to improve working relationship in biodiversity management.	Very High	$	Improvement in working relationship and opportunities where Council and relevant Aboriginal stakeholders can collaborate are identified.
4.1.2	Work with relevant Aboriginal stakeholders to identify triggers for consultation on biodiversity issues, and to integrate these into Council's day-to-day operations.	Very High	$	Aboriginal cultural heritage triggers identified, process developed, and staff notified of relevant changes in process.
4.1.3	Investigate opportunities to work with Jali LALC to assist in the conservation of species and ecosystems on lands managed by Jali LALC (including the Long-nosed Potoroo and Koala populations at Ngunya Jargoon IPA).	High	$	Assist Jali LALC in maintaining and improving biodiversity and cultural assets within Ballina LGA.
4.1.4	In consultation with Jali LALC increase inclusion of local language for place, plants and animals in Council biodiversity documents and outputs.	High	$	Environmental messaging for visitors and tourism providers incorporates local language where relevant.
4.2	**OBJECTIVE: COUNCIL TO DEVELOP STRONGER WORKING RELATIONSHIPS**			
4.2.1	Improve communication between Council and other agencies (DPE, LLS, NGOs, DPI, RFS, NPWS, TfNSW).	High	$	Clear communication path and workflows are developed and maintained.
4.2.2	Establish a small grants system where Council can provide funding to support environmental organisations working in the shire.	Medium	$$$	Organisations who are assisting recovery of species or communities are supported with this funding.

RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
4.2.3	Investigate opportunities for Council to work with stakeholders (other government agencies, community groups and Aboriginal stakeholders) to assist in the conservation of threatened species in the shire.	Very High	$	Ensure Council is doing working collaboratively and effectively in managing threatened species in the shire.
4.2.4	Seek opportunities to work with tourism operators to build capacity in environmental awareness.	Medium	$	Increased environmental and/ or nature based tourism opportunities.
4.2.5	Collaborate with rural industry groups, councils and conservation organisations operating in the shire to support positive biodiversity outcomes in rural areas.	Very High	$	Positive biodiversity outcomes realised in rural areas.
4.2.6	Consult with TfNSW regarding the future land use of Teven Swamp, immediately west of Highway Service Centre, with a vision to create a wildlife area.	Medium	$	Wildlife area established on subject land.
4.3	**OBJECTIVE: COUNCIL WORKS POSITIVELY AND PROACTIVELY WITH RURAL LANDHOLDERS TO FACILITATE BIODIVERSITY RESTORATION AND CONSERVATION ON PRIVATE LAND**			
4.3.1	Establish a long-term rural landholder extension support program.	Medium	$$$$ will include ongoing costs	Increase in positive environmental outcomes on rural properties.
4.3.2	Investigate and implement opportunities to promote landholder uptake in conservation.	Very High	$	Increase uptake in conservation projects on rural private land.
4.3.3	Develop engagement material which connects rural landholders to available land and biodiversity management resources including: training and grant opportunities, information on rights and responsibilities on rural land.	High	$	Develop material with input from relevant stakeholders who have existing working relationships with rural landholders (i.e DPI, NRAR, EPA, LLS, universities and neighbouring councils), provide rural landholders with easy to understand information on biodiversity and land management resources.

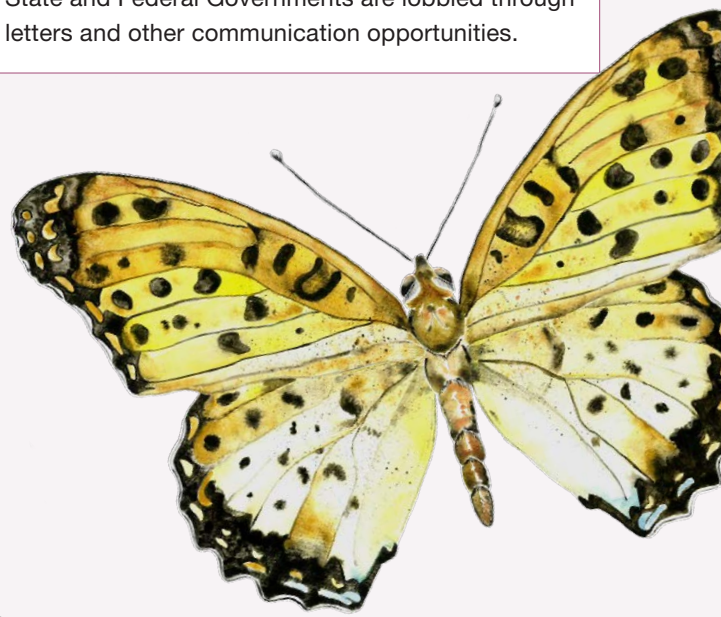
RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

THEME 4 **COLLABORATE** CONT.

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
4.3.4	Seek grant funding opportunities for multi-stakeholder restoration and revegetation projects on private land.	Medium	$	Funding secured for restoration projects on private land.
4.4	**OBJECTIVE: INCREASE COMMUNITY AWARENESS AND PRIDE IN THE IMPORTANCE OF BIODIVERSITY AND ENCOURAGE PARTICIPATION IN CONSERVATION INITIATIVES.**			
4.4.1	In collaboration with the relevant agencies, raise community awareness of the importance in conducting ecological and cultural burns in certain ecosystems to improve environmental outcomes.	High	$	Benefits of planned and cultural burns become common knowledge with regard to improving environmental outcomes.
4.4.2	Provide education to the community in ways to help protect and enhance biodiversity including: • Simple steps people can take to reduce their climate footprint • How to improve biodiversity of urban areas and villages • How to protect native wildlife from threats • Information on the Shire's most threatened species • information on the flora and fauna typically found in the shire.	High	$$	Best practice biodiversity management, which staff can readily re-use and distribute.
4.4.3	Increase environmental education in parks, reserves and newsletters.	Medium	$$	Undertake an environmental awareness signage program.
4.4.4	Investigate opportunities to collaborate with local schools to encourage environmental awareness in students.	Low	$	Encourage environmental stewardship.
4.4.5	Identify shared path or active transport routes and options that can be introduced to increase nature-based experiences.	Low	$	Locations to potentially construct shared path or active transport options identified.

RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

ID	ACTION	PRIORITY	RESOURCE INTENSITY	MEASURES AND TARGETS
4.4.6	Promote local biodiversity-related events and citizen science initiatives.	Low	$	Community biodiversity and conservation events promoted via Council media platforms as required.
4.4	**OBJECTIVE: COUNCIL ADVOCATES FOR MATTERS THAT AIM TO PROTECT AND ENHANCE BIODIVERSITY**			
4.5.1	Undertake formal consultation with TfNSW advocating for remaining land surplus of the M1 highway alignment to be gifted to Council for the purpose of biodiversity offsetting.	Very High	$	Surplus lands donated to Council for the purpose of biodiversity offsetting.
4.5.2	Lobby State and Commonwealth Governments to increase conservation spending on the Shire's most at risk species, including (but not limited to - Long-nosed Potoroo, Koala, Alberts Lyrebird and Coastal Fontainea).	Very High	$	State and Federal Governments are lobbied through letters and other communication opportunities.



RESOURCE INTENSITY KEY: **$** less than $10,000 **$$** $10,000 - $50,000 **$$$** $50,000 - $100,000 **$$$$** $100,000 - $300,000

IMPLEMENTING THE STRATEGY

Resourcing and Funding

Council will implement the strategy through the use of existing resources, seeking out of grant funding and through the support of a number of external stakeholders identified in this strategy, including government and non-government agencies whose roles and priorities are to manage biodiversity conservation and natural resources.

Many actions identified in the Strategy can only be achieved through partnerships and collaboration with other key stakeholders.

Implementation of actions will be guided by the priorities identified in the Action Plan of this strategy and the resourcing and funding sources available at any given time.

A key advantage of having the Ballina Shire Biodiversity Strategy in place is that the strategy clearly outlines the community's vision and aspirations for conservation and enhancement of biodiversity and the natural environment of the shire. This provides a valuable platform for Council to seek grant funding and resource support from other sources and stakeholders.

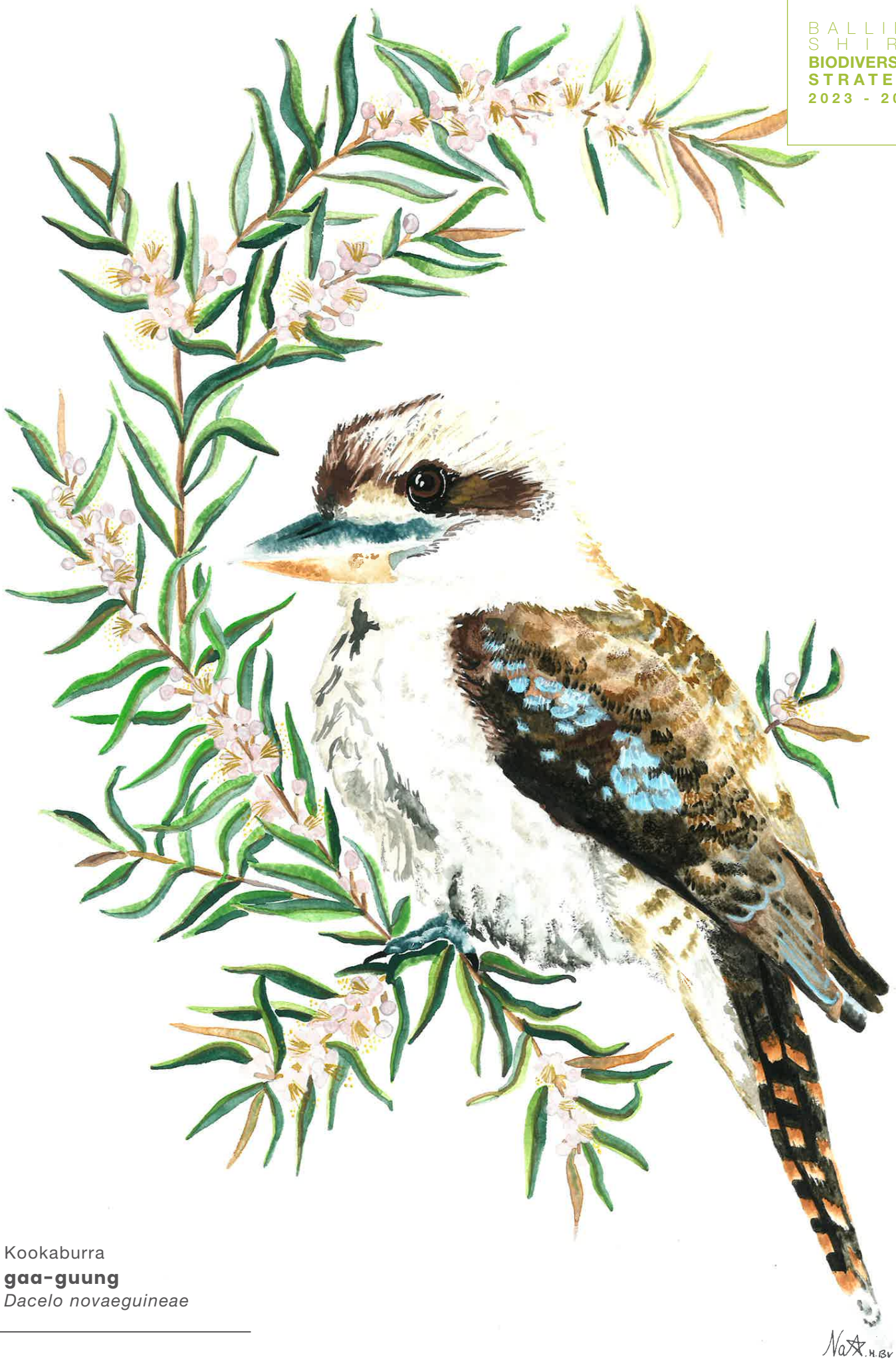
Monitoring

The Strategy has clear linkages with key corporate documents and the identified actions will be reported on for the relevant financial years as part of the Integrated Planning and Reporting framework and the Annual Report.

Regular analysis of actions within this Strategy will be conducted to make sure individual actions and the overall Strategy remain relevant and responsive to community needs throughout the Strategy's duration.

The Strategy will undergo a minor review in 2028 and a major review prior to 2033, in order to prepare for a renewed Biodiversity Strategy for the period 2033 – 2043.

Circumstances may occur where minor administrative changes to this document may occur. Where an update does not significantly alter this document, such a change may be made administratively. This may include a change to the name of a Council department, Commonwealth or State Government or a minor update to legislation which does not have a significant impact. Any modification that does significantly change or update the document will only be done by resolution of Council.



Kookaburra
gaa-guung
Dacelo novaeguineae

Pandanus
jambinbin
Pandanus spp.

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APPENDIX 1
THREATENED FLORA

Threatened entities in Ballina Shire

As of 5/7/22 (source: Bionet). The habitat profile for each species has been sourced from the NSW Bionet Threatened Biodiversity Profile Data Collection catalogue, managed by the Department of Planning and Environment (DPE) through the NSW BioNet-Atlas database.

FLORA SCIENTIFIC NAME	FLORA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Acronychia littoralis	Scented Acronychia	E	E	Littoral rainforest on sand.
Arthraxon hispidus	Hairy Jointgrass	V	V	Moist shady places in or on the edges of rainforest and wet eucalypt forest, often near creeks or swamps.
Baloghia marmorata	Jointed Baloghia	V	V	Subtropical rainforest on soils derived from basalt.
Bulbophyllum globuliforme	Hoop Pine Orchid	V	V	Grows on Hoop Pines (Araucaria cunninghamii) in upland subtropical rainforest.
Clematis fawcettii	Northern Clematis	V	V	Drier rainforest, usually near streams.
Corchorus cunninghamii	Native Jute	E	E	Areas where rainforest and moist eucalypt forest meet, and areas which formerly supported this vegetation but have been converted to plantation.
Corynocarpus rupestris subsp. rupestris	Glenugie Karaka	V	V	Dry rainforest on steep volcanic screes on the peak, in well drained nutrient rich soils.
Cryptocarya foetida	Stinking Cryptocarya	V	V	Littoral rainforest in sandy soils, mature trees known on basalt soils.
Cryptostylis hunteriana	Leafless Tongue-orchid	V	V	Does not have well defined habitat and is known from a range of communities, including swamp-heath and woodland.
Cynanchum elegans	White-flowered Wax Plant	E	E	Dry, littoral or subtropical rainforest, and occasionally in scrub or woodland.
Davidsonia jerseyana	Davidson's Plum	E	E	Lowland subtropical rainforest and wet eucalypt forest at low altitudes (below 300 m). Many trees are isolated trees in paddocks and roadsides in former rainforest habitats. Restricted to north-east NSW to as far south as Wardell.
Davidsonia johnsonii	Smooth Davidson's Plum	E	E	Wet sclerophyll forests, with a smaller number of sites known from subtropical rainforest. Plants still persist in cleared areas as isolated clumps in paddocks or in regrowth dominated by Lantana (Lantana camara) and other weed species.

FLORA SCIENTIFIC NAME	FLORA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Davidsonia johnsonii	Smooth Davidson's Plum	E	E	Lowland subtropical rainforest and wet eucalypt forest, isolated trees in paddocks and cleared land.
Desmodium acanthocladum	Thorny Pea	V	V	Fringes of riverine subtropical and dry rainforest on basalt-derived soils at low elevations.
Diploglottis campbellii	Small-leaved Tamarind	E	E	Riverine and subtropical rainforest and Brush Box forest, some trees isolated in paddocks and roadsides.
Elaeocarpus williamsianus	Hairy Quandong	E	E	Subtropical to warm temperate rainforest, including regrowth areas, on soils derived from metasediments.
Endiandra floydii	Crystal Creek Walnut	E	E	Warm temperate or subtropical rainforest with Brush Box overstorey, and in regrowth rainforest and Camphor Laurel forest.
Endiandra hayesii	Rusty Rose Walnut	V	V	Sheltered moist gullies in subtropical and warm temperate rainforest on alluvium or basalt.
Floydia praealta	Ball Nut	V	V	Riverine and subtropical rainforest, usually soils derived from basalt.
Fontainea australis	Southern Fontainea	V	V	Lowland subtropical rainforest, usually on basaltic alluvial flats, and also in cooler subtropical rainforest in the Nightcap Range. Restricted to the Tweed Valley and a few locations in the upper reaches of the Richmond Valley.
Fontainea oraria	Coastal Fontainea	CE	E	Extremely rare, restricted to a small number of trees at Lennox Head in north-east NSW. Occurs in remnant littoral rainforest on highly fertile red-brown krasnozem soils derived from the basalt. These remnants occur on stony slopes within 1 km of the sea and at about 50 m above sea level.
Gossia fragrantissima	Sweet Myrtle	E	E	Dry subtropical and riverine rainforest, isolated plants can be found in paddocks from regrowth mostly on basalt-derived soils. Occurs in south-east Queensland and in north-east NSW south to the Richmond River.
Hicksbeachia pinnatifolia	Red Boppel Nut	V	V	Subtropical rainforest, moist eucalypt forest and Brush Box forest.

APPENDIX 1 CONT.
THREATENED FLORA

FLORA SCIENTIFIC NAME	FLORA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Isoglossa eranthemoides	Isoglossa	E	E	Understorey of lowland subtropical rainforest, in moist situations on floodplains and slopes.
Macadamia tetraphylla	Rough-shelled Bush Nut	V	V	Subtropical rainforest usually near the coast.
Ochrosia moorei	Southern Ochrosia	E	E	Riverine and lowland subtropical rainforest.
Olax angulata	Square-stemmed Olax	V	V	Low-lying coastal heaths and heathy woodlands on sandy soils near swamps, often in association with Wallum Banksia (Banksia aemula).
Owenia cepiodora	Onion Cedar	V	V	Subtropical and dry rainforest. In NSW, from Bangalow to the Macpherson Range.
Paspalidium grandispiculatum	-	V	V	Restricted to poor sandy soils on sandstone. It has been found in open forest of Turpentine (Syncarpia glomulifera) on undulating topography as well as in drier foresdt types on ridges.
Persicaria elatior	Tall Knot-weed	V	V	Damp or swampy situations and sometimes with Melaleuca linarifiolia.
Phaius australis	Southern Swamp Orchid	E	E	Swampy grassland or swampy forest including rainforest, eucalypt or paperbark forest mostly in coastal areas.
Randia moorei	Spiny Gardenia	E	E	Subtropical, riverine, littoral and dry rainforest, with Hoop Pine and Brush Box canopy.
Rhodamnia rubescens	Scrub Turpentine	CE	-	Subtropical rainforests, warm temperate rainforests, littoral rainforests, and wet sclerophyll forests. It may also occur as a pioneer in adjacent areas of dry sclerophyll and grassy woodland associations.
Rhodomyrtus psidioides	Native Guava	CE	-	Rainforest and its margins with sclerophyll vegetation, often near creeks and drainage lines. Pioneer species in disturbed environments such as regrowth and rainforest margins.
Rutidosis heterogama	Heath Wrinklewort	V	V	Heaths in clay soils, disturbed roadsides.

FLORA SCIENTIFIC NAME	FLORA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Symplocos baeuerlenii	Small-leaved Hazelwood	V	V	Occurs in temperate rainforest on less fertile soils derived from rhyolite, primarily in the Tweed and Brunswick Valleys in north-east NSW.
Syzygium hodgkinsoniae	Red Lilly Pilly	V	V	Riverine and subtropical rainforest on rich alluvial or basaltic soils.
Syzygium moorei	Durobby	V	V	Subtropical and riverine rainforest.
Thesium australe	Austral Toadflax	V	V	Grassland or grassy eucalypt woodland where Themeda australis is predominant, on grassy headlands.
Tylophora woollsii		E	E	Moist eucalypt forest, moist sites in dry eucalypt forest and rainforest margins.

Green Tree Frog
jadine
Litoria caerulea

APPENDIX 1 CONT.
THREATENED FAUNA

Threatened entities in Ballina Shire

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Assa darlingtoni	Pouched Frog	V	-	Cool, moist rainforest, including Antarctic Beech, or moist eucalypt forest in mountainous areas, mostly above 800 m but have been found as low as 300m.
Crinia tinnula	Wallum Froglet	V	-	Acid paperbark and sedge swamps known as 'wallum', this is a banksia-dominated lowland heath ecosystem characterised by acidic waterbodies.
Litoria aurea	Green and Golden Bell Frog	E	V	Amongst vegetation in and around permanent swamps, lagoons, farm dams and on flood-prone river flats, particularly where there are bullrushes or spikerushes.
Litoria brevipalmata	Green-thighed Frog	V	-	Rainforest, moist to dry eucalypt forest and heath, typically where surface water gathers after rain.
Litoria olongburensis	Olongburra Frog	V	V	Paperbark swamps and sedge swamps of the coastal 'wallum' country amongst sedges and rushes.
Mixophyes fleayi	Fleay's Barred Frog	E	E	Rainforest and wet eucalypt forest of the escarpment and foothills, close to gravely streams.
Mixophyes iteratus	Giant Barred Frog	E	E	Deep, damp leaf litter in rainforests, moist eucalypt forest and near dry eucalypt forest.
Philoria kundagungan	Mountain Frog	E	-	Shallow burrows in mud, moss or leaf litter along edges of constantly flowing streams and permanent soaks in highland forest.
Philoria loveridgei	Loveridge's Frog	E	-	Dependent on high moisture levels, headwaters of small streams and soaks where groundwater is continually present, subtropical, warm temperate rainforest and wet eucalypt forest.
Amaurornis moluccana	Pale-vented Bush-hen	V	-	Variety of coastal wetlands from wetlands, mangroves, lagoons and swamps to river margins and creeks running through rainforest.
Anseranas semipalmata	Magpie Goose	V	-	Shallow wetlands (<1 m deep), large swamps and dams with dense growth of rushes or sedge.

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Anthochaera phrygia	Regent Honeyeater	CE	CE	Dry open forest and woodland with an abundance of nectar-producing eucalypts, particularly box-ironbark woodland, swamp mahogany forests, and riverine sheoak woodlands.
Ardenna carneipes	Flesh-footed Shearwater	V	-	Marine, nest on Lord Howe Island in forests on sandy soils from Ned's Beach to Clear Place, with smaller colonies below Transit Hill and at Old Settlement Beach.
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V	-	Woodlands and dry open sclerophyll forests, usually dominated by eucalypts; also recorded in shrublands, heathlands and various modified habitats.
Atrichornis rufescens	Rufous Scrub-bird	V	E	Subtropical, warm temperate, cool temperate rainforest and moist eucalypt forest with rainforest mid-storey. Moist, densely vegetated lower levels with deep leaf litter.
Botaurus poiciloptilus	Australasian Bittern	E	E	Permanent freshwater wetlands with tall dense vegetation, particularly bullrushes and spikerushes.
Burhinus grallarius	Bush Stone-curlew	E	-	Lightly timbered open forest and woodland, and partly cleared farmland with woodland remnants, preferring areas with dry leaf-litter, fallen timber and sparse ground cover.
Calidris alba	Sanderling	V	-	Low beaches of firm sand, often near reefs and occasionally inlets and tidal mudflats.
Calidris canutus	Red Knot	-	E	Sheltered coasts on mudflats and sandbars of estuaries, harbors, lagoons; occasionally on beaches, reefs.
Calidris ferruginea	Curlew Sandpiper	E	CE	Tidal mudflats, sandy ocean shores and occasionally inland freshwater or salt-lakes.
Calidris tenuirostris	Great Knot	V	-	Tidal mudflats, sandy ocean shores and occasionally inland freshwater or salt-lakes.
Calyptorhynchus banksii banksii	Red-tailed Black-Cockatoo (Coastal species)	CE	-	Wide variety of habitats in coastal north-east NSW. Dry open forest and areas of mixed rainforest-eucalypt forest.
Calyptorhynchus lathami	Glossy Black-Cockatoo	V	-	Sheoaks in coastal forests and woodlands, timbered watercourses, and moist and dry eucalypt forests of the coast and the Great Divide up to 1,000 m.

APPENDIX 1 CONT.
THREATENED FAUNA

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Carterornis leucotis	White-eared Monarch	V	-	Coastal rainforest, swamp forest and wet eucalypt forest, prefers edges where trees frequently covered with vines.
Charadrius leschenaultii	Greater Sand Plover	V	-	Wide sandy beaches, mangroves, saltmarsh, mudflats and exposed reefs.
Charadrius mongolus	Lesser Sand Plover	V	E	Mudflats, wide sandy beaches, estuaries and tidal areas in mangroves.
Chthonicola sagittata	Speckled Warbler	V	-	Eucalyptus dominated communities with sparse shrubs and grassy understorey.
Circus assimilis	Spotted Harrier	V	-	Grassy open woodland, inland riparian woodland, grassland and shrub steppe.
Climacteris picumnus victoriae	Brown Treecreeper	V	-	Eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range, and less commonly on coastal plains and ranges.
Coracina lineata	Barred Cuckoo-shrike	V	-	Rainforest, eucalypt woodlands, swamp woodlands and timber along watercourses.
Cyclopsitta diophthalma coxeni	Coxen's Fig-parrot	CE	E	Drier rainforests and adjacent wet eucalypt forest, wetter lowland also wetter lowland rainforests.
Daphoenositta chrysoptera	Varied Sittella	V	-	Inhabits eucalypt forests and woodlands, especially rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland.
Dasyornis brachypterus	Eastern Bristlebird	E	E	High elevation open forest, woodland with dense tussock or sedge understorey adjacent to rainforest or wet eucalypt forest.
Diomedea antipodensis	Antipodean Albatross	V	V	Nests in open patchy vegetation, such as among tussock grassland or shrubs on ridges, slopes and plateaus

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Diomedea exulans	Wandering Albatross	E	V	In the Australasian region, it occurs inshore, offshore and in pelagic waters. On breeding islands, the Wandering Albatross nests on coastal or inland ridges, slopes, plateaux and plains, often on marshy ground (Falla 1937; Warham & Bell 1979). Nests of the Wandering Albatross are sited on moss terraces, in dense tussocks, and often in loose aggregations on the west (windward) side of islands. It prefers open or patchy vegetation (tussocks, ferns or shrubs), and it requires nesting areas that are near exposed ridges or hillocks so that it can take off (Warham & Bell 1979).
Diomedea gibsoni	Gibson's Albatross	V	V	On breeding islands, the Gibson's Albatross nests on coastal or inland ridges, slopes, plateaux and plains, often on marshy ground (Falla 1937a; Warham & Bell 1979). Nests of the Gibson's Albatross are sited on moss terraces, in dense tussocks, and often in loose aggregations on the west (windward) side of islands. It prefers open or patchy vegetation (tussocks, ferns or shrubs), and it requires nesting areas that are near exposed ridges or hillocks so that it can take off (Warham & Bell 1979).
Dromaius novaehollandiae	Emu population in the NSW North Coast Bioregion and Port Stephens LGA	E	-	Open forest, woodland, coastal heath, coastal dunes, wetland areas, tea tree plantations and open farmland, and occasionally in littoral rainforest.
Ephippiorhynchus asiaticus	Black-necked Stork	E	-	Swamps, mangroves, mudflats, dry floodplains.
Erythrotriorchis radiatus	Red Goshawk	CE	V	Open woodland and forest, preferring a mosaic of vegetation types, a large population of birds as a source of food, and permanent water. Typically found in riparian habitats along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and riparian Eucalyptus forest of coastal rivers. Population in NSW is naturally small (probably only one pair), and lies at extreme of the natural range of the species in Australia.

APPENDIX 1 CONT.
THREATENED FAUNA

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Esacus magnirostris	Beach Stone-curlew	CE	-	Tidal flats at the mouth of estuaries or on open beaches.
Falco subniger	Black Falcon	V	-	Widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. In NSW there is assumed to be a single population that is continuous with a broader continental population
Glossopsitta pusilla	Little Lorikeet	V	-	Forages in open Eucalyptus forest and woodland; also feeds on Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity.
Grus rubicunda	Brolga	V	-	Shallow swamps, floodplains, grasslands and pastoral lands, usually in pairs or parties.
Gygis alba	White Tern	V	-	Marine environments, coastal tall open forest up to 1 km inland.
Haematopus fuliginosus	Sooty Oystercatcher	V	-	Intertidal rocky and coral reefs, mostly ocean shores.
Haematopus longirostris	Pied Oystercatcher	E	-	Open beaches, intertidal flats, sandbanks and occasionally rocky headlands.
Haliaeetus leucogaster	White-bellied Sea-eagle	V	-	Coastal habitats and around terrestrial wetlands characterised by the presence of large areas of open water (larger rivers, swamps, lakes, ocean). Habitats may include freshwater swamps, lakes, reservoirs, billabongs, saltmarsh and sewage ponds in addition to bays and inlets, beaches, reefs, lagoons, estuaries and mangroves.
Hieraaetus morphnoides	Little Eagle	V	-	Open eucalypt forest, woodland or open woodland. Sheoak or acacia woodlands and riparian woodlands of interior NSW are also used.
Hirundapus caudacutus	White-throated Needletail	-	V	Most often recorded aerial foraging above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy. Breeding does not occur in Australia.
Irediparra gallinacea	Comb-crested Jacana	V	-	Among vegetation floating on slow-moving rivers and permanent lagoons, swamps, lakes and dams.

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Ixobrychus flavicollis	Black Bittern	V	-	Dense vegetation fringing and in streams, swamps, tidal creeks and mudflats, particularly amongst swamp sheoaks and mangroves.
Lathamus discolor	Swift Parrot	E	CE	On mainland Australia foraging occurs where eucalypts are flowering profusely or where abundant lerp infestations occur. Favoured feed trees include winter flowering species such as Swamp Mahogany Eucalyptus robusta, Spotted Gum Corymbia maculata, Red Bloodwood C. gummifera, Forest Red Gum E. tereticornis, Mugga Ironbark E. sideroxylon, and White Box E. albens. Commonly used lerp infested trees include Inland Grey Box E. microcarpa, Grey Box E. moluccana, Blackbutt E. pilularis and Yellow Box E. melliodora.
Lichenostomus fasciogularis	Mangrove Honeyeater	V	-	Mangrove forest, also near coastal forests and woodlands including casuarina and paperbark swamps.
Limicola falcinellus	Broad-billed Sandpiper	V	-	Tidal mudflats in coastal estuaries and lagoons, mudflats adjacent to mangroves for feeding.
Limosa lapponica baueri	Black-tailed Godwit (baueri)	-	V	Found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. Less frequently it occurs in salt lakes and brackish wetlands, sandy ocean beaches and rock platforms. Often occurs around beds of seagrass, and sometimes in nearby saltmarsh or the outer margins of mangrove areas.
Limosa limosa	Black-tailed Godwit	V	-	Tidal mudflats, sandspits, swamps, shallow river-margins and reservoirs.
Lophoictinia isura	Square-tailed Kite	V	-	Dry woodland and open forest, particularly along major rivers and belts of trees in urban or semi-urban areas. Home ranges can extend over at least 100 km2.
Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V	-	Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses.

APPENDIX 1 CONT.
THREATENED FAUNA

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V	-	Drier open forests or woodlands dominated by box and ironbark eucalypts, and open forests of smooth-barked gums, stringybarks, ironbarks and tea-trees.
Menura alberti	Albert's Lyrebird	V	-	Mixed rainforest and open wet forest frequently dominated by Brush Box.
Nettapus coromandelianus	Cotton Pygmy-Goose	E	-	Freshwater lakes, lagoons, swamps and dams, particularly those vegetated with waterlilies and other floating and submerged aquatic vegetation.
Ninox connivens	Barking Owl	V	-	Eucalypt woodland, open forest, swamp woodlands and timber along watercourses.
Ninox strenua	Powerful Owl	V	-	Woodland and open forest to tall moist forest and rainforest. Requires large tracts of forest or woodland habitat but may also occur in fragmented landscapes.
Numenius madagascariensis	Eastern Curlew	-	CE	Estuaries, bays, harbours, inlets and coastal lagoons, intertidal mudflats and sometimes saltmarsh of sheltered coasts.
Onychoprion fuscata	Sooty Tern	V	-	Breeds in large colonies in sand or coral scrapes on offshore islands and cays including Lord Howe and Norfolk Islands.
Oxyura australis	Blue-billed Duck	V	-	Deep water in large permanent wetlands and swamps with dense aquatic vegetation.
Pachycephala olivacea	Olive Whistler	V	-	Wet high altitude forests above 500 m
Pandion cristatus	Eastern Osprey	V	-	Littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. Typically occur in coastal areas but occasionally travel inland along major rivers. Wetland habitats include inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes.
Petroica boodang	Scarlet Robin	V	-	Dry eucalypt forests and woodlands with an open and grassy understorey with few scattered shrubs. Both mature and regrowth vegetation are utilised; habitat usually contains abundant logs and fallen timber.

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Petroica phoenicea	Flame Robin	V	-	Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes; prefers clearings or areas with open understoreys. Breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense. In winter, birds migrate to drier more open habitats in the lowlands (i.e. valleys below the ranges, and to the western slopes and plains).
Pezoporus wallicus wallicus	Eastern Ground Parrot	V	-	Heathland and sedgeland within or adjacent to swamps.
Phaethon rubricauda	Red-tailed Tropicbird	V	-	Marine, coastal cliffs and under bushes in tropical Australia.
Phoebetria fusca	Sooty Albatross	V	V	This pelagic or ocean-going species inhabits subantarctic and subtropical marine waters, spending the majority of its time at sea, and rarely occurs in continental shelf waters.
Podargus ocellatus	Marbled Frogmouth	V	-	Subtropical rainforest spending most time is deep, wet sheltered gullies.
Pomatostomus temporalis temporalis	Grey-crowned Babbler	V	-	Open woodlands dominated by mature eucalypts, with regenerating trees, tall shrubs, and an intact ground cover of grass and forbs.
Procelsterna cerulea	Grey Ternlet	V	-	Vagrant birds occasionally occur in coastal NSW waters, particularly after storm events.
Pterodroma leucoptera leucoptera	Gould's Petrel	E	E	Breeds on both Cabbage Tree Island, and on nearby Boondelbah Island. The range and feeding areas of non-breeding Petrels are unknown.
Pterodroma nigripennis	Black-winged Petrel	V	-	Ranges throughout the Tasman Sea and Central Pacific Ocean, breeding at various island groups including Lord Howe Island.
Pterodroma solandri	Providence Petrel	V	-	Marine, nests on the tops of Mount Gower and Mount Lidgbird and to a less extent, on the lower slopes of the mountains.
Ptilinopus magnificus	Wompoo Fruit-dove	V	-	Rainforests, low-elevation moist eucalypt forest, and Brush Box forests.
Ptilinopus regina	Rose-crowned Fruit-dove	V	-	Subtropical and dry rainforest, moist eucalypt forest and swamp forest.

APPENDIX 1 CONT.
THREATENED FAUNA

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Ptilinopus superbus	Superb Fruit-dove	V	-	Subtropical and dry rainforest, moist eucalypt forest and swamp forest.
Puffinus assimilis	Little Shearwater	V	-	
Rostratula australis	Australian Painted Snipe	E	E	Well-vegetated shallows and margins of wetlands, dams, sewage ponds, wet pastures, marshy areas, irrigation systems, lignum, tea-tree scrub, and open timber.
Stagonopleura guttata	Diamond Firetail	V	-	Grassy eucalypt woodlands, open forest, mallee, temperate grassland, and secondary grassland derived from other communities, riparian areas, and sometimes in lightly wooded farmland.
Sternula albifrons	Little Tern	E	-	Coastal waters, bays, shallow inlets, salt or brackish lakes.
Stictonetta naevosa	Freckled Duck	V	-	Permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. In drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds.
Sula dactylatra	Masked Booby	V	-	Marine, remains at Lord Howe Island year round but ranges widely for food and some juveniles wander before returning to breed.
Thalassarche melanophris	Black-browed Albatross	V	V	Coastal waters over upwellings and boundaries of currents.
Todiramphus chloris	Collared Kingfisher	V	-	Restricted to mangroves and other estuarine habitats, occur about mouths of larger coastal rivers.
Turnix maculosus	Red-backed Button-quail	V	-	Grassland, sedgelands near creeks. Swamps and wetlands.
Turnix melanogaster	Black-breasted Button-quail	CE	V	Drier rainforests and vine scrubs, often in association with Hoop Pine and a deep moist leaf litter layer. During drought it may move to adjacent wetter rainforests.
Tyto longimembris	Eastern Grass Owl	V	-	Areas of tall grass, including tussocks in swampy areas, grassy plains, swampy heath, cane grass, sedges on flood plains.
Tyto novaehollandiae	Masked Owl	V	-	Dry eucalypt forest and woodlands.

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Tyto tenebricosa	Sooty Owl	V	-	Dry, subtropical and warm temperate rainforests and wet eucalypt forests. Nest in large tree hollows.
Xenus cinereus	Terek Sandpiper	V	-	Tidal mudflats, estuaries, shores and reefs of offshore islands and coastal swamps.
Thersites mitchellae	Mitchell's Rainforest Snail	E	CE	Remnant areas of lowland subtropical rainforest and swamp forest on alluvial soils, found amongst leaf litter on the forest floor.
Argynnis hyperbius	Australian Fritillary	E	CE	Open swampy coastal habitat where the caterpillar's food plant, Arrowhead Violet (Viola betonicifolia) occurs.
Nurus atlas	Atlas Rainforest Ground-beetle	E	-	Low elevation rainforest and wet eucalypt forest with well developed rainforest understorey, undisturbed old-growth on highly productive soils.
Nurus brevis	Shorter Rainforest Ground-beetle	E	-	Low elevation rainforest, predominantly drier rainforests.
Petalura gigantea	Giant Dragonfly	E	-	Permanent wetlands, both coastal and upland.
Petalura litorea	Coastal Petaltail	E	-	Permanent wetlands, swamps and bogs with some free water and open vegetation. Restricted to coastal and near coastal lowlands between Coffs Harbour and Ballina.
Phyllodes imperialis southern subspecies	Pink Underwing Moth	E	E	Undisturbed subtropical rainforest below 600 m. Breeding habitat is restricted to areas where the caterpillar's food plant, a native rainforest vine, Carronia multisepalea, grows in a collapsed shrub-like form.
Aepyprymnus rufescens	Rufous Bettong	V	-	Tall moist eucalypt forest to open woodland with tussock grass understorey.
Arctocephalus pusillus doriferus	Australian Fur-seal	V	-	Prefers rocky parts of islands with flat, open terrain. They occupy flatter areas than do New Zealand Fur-seals where they occur together.
Arctocephalus pusillus doriferus	Australian Fur-seal	V	-	Reported to have bred at Seal Rocks, near Port Stephens and Montague Island in southern NSW. Haul outs are observed at isolated places along the NSW coast.

APPENDIX 1 CONT.
THREATENED FAUNA

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Cercartetus nanus	Eastern Pygmy Possum	V	-	Range from rainforest to heath. North Coast mainly in rainforest, wet eucalypt forest and tee-tree-banksia scrub.
Chalinolobus dwyeri	Large-eared Pied Bat	V	V	Near cave entrances and crevices in cliffs.
Chalinolobus nigrogriseus	Hoary Wattled Bat	V	-	Dry open eucalypt forest dominated by spotted gum, boxes and ironbarks. Also healthy coastal forests where Red Bloodwood and Scribbly Gum are common. Naturally sparse understorey is favourable.
Dasyurus maculatus	Spotted-tailed Quoll	V	E	Dry and moist eucalypt forests and rainforests, fallen hollow logs, large rocky outcrops.
Dugong dugon	Dugong	E	Marine	Warmer coastal and island waters of the Indo-West Pacific to northern NSW, where its known from incidental records only.
Eubalaena australis	Southern Right Whale	V	E	Coastal waters, oceans, especially in southern areas below the Gladstone and Port Hedland latitudes.
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V	-	Moist and dry eucalypt forest and rainforest, particularly at high elevations.
Macropus dorsalis	Black-striped Wallaby	E	-	Dry rainforests and moist eucalypt forest with rainforest understorey or dense shrub layer.
Macropus parma	Parma Wallaby	V	-	Moist eucalypt forest with thick shrubby understorey, often with nearby grassy areas and rainforest margins.
Megaptera novaeangliae	Humpback Whale	V	V	Oceanic and coastal waters worldwide.
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V	-	Occurs in dry sclerophyll forest and woodland east of the Great Dividing Range. Roosts in tree hollows.
Miniopterus australis	Little Bent-winged Bat	V	-	Moist eucalypt forest, rainforest and dense coastal scrub.
Miniopterus orianae oceanensis	Large Bent-winged Bat	V	-	Forest or woodland, roost in caves, old mines and stormwater channels.

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Myotis macropus	Southern Myotis	V	-	Bodies of water, rainforest streams, large lakes, reservoirs.
Nyctimene robinsoni	Eastern Tube-nosed Bat	V	-	Streamside habitats within coastal subtropical rainforest and moist eucalypt forests with well developed rainforest understorey.
Nyctophilus bifax	Eastern Long-eared Bat	V	-	Lowland subtropical rainforest and wet and swamp eucalypt forest, extending to adjacent moist eucalypt forest.
Ozimops lumsdenae	Northern Free-tailed Bat	V	-	Rainforests to open forests and woodlands often along watercourses.
Petauroides volans	Greater Glider	-	V	Ranges and coastal plains of eastern Australia, where it inhabits a variety of eucalypt forests and woodlands.
Petaurus australis australis	Yellow-bellied Glider	V	V	Tall mature eucalypt forest generally in areas with high rainfall and nutrient rich soils. Dens in tree hollows of large trees, often in family groups. Forest type preferences vary with latitude and elevation; mixed coastal forests to dry escarpment forests in the north; moist coastal gullies and creek flats to tall montane forests in the south.
Petaurus norfolcensis	Squirrel Glider	V	-	Blackbutt, bloodwood and ironbark eucalypt forest with heath understorey in coastal areas, and box-ironbark woodlands and River Red Gum forest inland.
Petrogale penicillata	Brush-tailed Rock Wallaby	E	V	North-facing cliffs and dry eucalypt forest and woodland, inhabiting rock crevices, caves, overhangs during the day, and foraging in grassy areas nearby at night.
Phascogale tapoatafa	Brush-tailed Phascogale	V	-	Drier forests and woodlands with hollow-bearing trees and sparse ground cover.
Phascolarctos cinereus	Koala	V	E	Appropriate food trees in forests and woodlands, and treed urban areas.
Phoniscus papuensis	Golden-tipped Bat	V	-	Rainforest and adjacent sclerophyll forest. Roosts in abandoned hanging Yellow-throated Scrubwren and Brown Gerygone nests.

APPENDIX 1 CONT.
THREATENED FAUNA

FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Planigale maculata	Common Planigale	V	-	Rainforest, eucalypt forest, heathland, marshland, grassland and rocky areas with surface cover close to water.
Potorous tridactylus	Long-nosed Potoroo	V	V	Cool temperate rainforest, moist and dry forests, and wet heathland, inhabiting dense layers of grass, ferns, vines and shrubs.
Pseudomys gracilicaudatus	Eastern Chestnut Mouse	V	-	Wet coastal heath and forest areas along the coast and ranges, dense understorey of sedges.
Pseudomys novaehollandiae	New Holland Mouse	-	V	Occurs in open heathlands, open woodlands with a heathland understorey, and vegetated sand dunes.
Pseudomys oralis	Hastings River Mouse	E	E	Dry open forests with dense, low groundcover with diverse mix of ferns, grass, sedges and herbs.
Pteropus poliocephalus	Grey-headed Flying-fox	V	V	Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V	-	Forages in a variety of habitats, roosts in tree hollows and buildings.
Scoteanax rueppellii	Greater Broad-nosed Bat	V	-	Woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest.
Syconycteris australis	Common Blossom-bat	V	-	Feeds in heathland and paperbark swamps; roosts in littoral rainforest. Also recorded in subtropical rainforest, wet sclerophyll forest and other coastal forests.
Thylogale stigmatica	Red-legged Pademelon	V	-	Rainforest, vine scrub, moist eucalypt forest with dense understorey and ground cover.
Vespadelus troughtoni	Eastern Cave Bat	V	-	Cave roosting species found in dry open forest and woodland near cliffs and rocky overhangs.
Cacophis harriettae	White-crowned Snake	V	-	Low to mid-elevation dry eucalypt forest and woodland with well developed litter layer.
Caretta Caretta	Loggerhead Turtle	E	E	Ocean dwellers, females come ashore to lay eggs during warmer months.

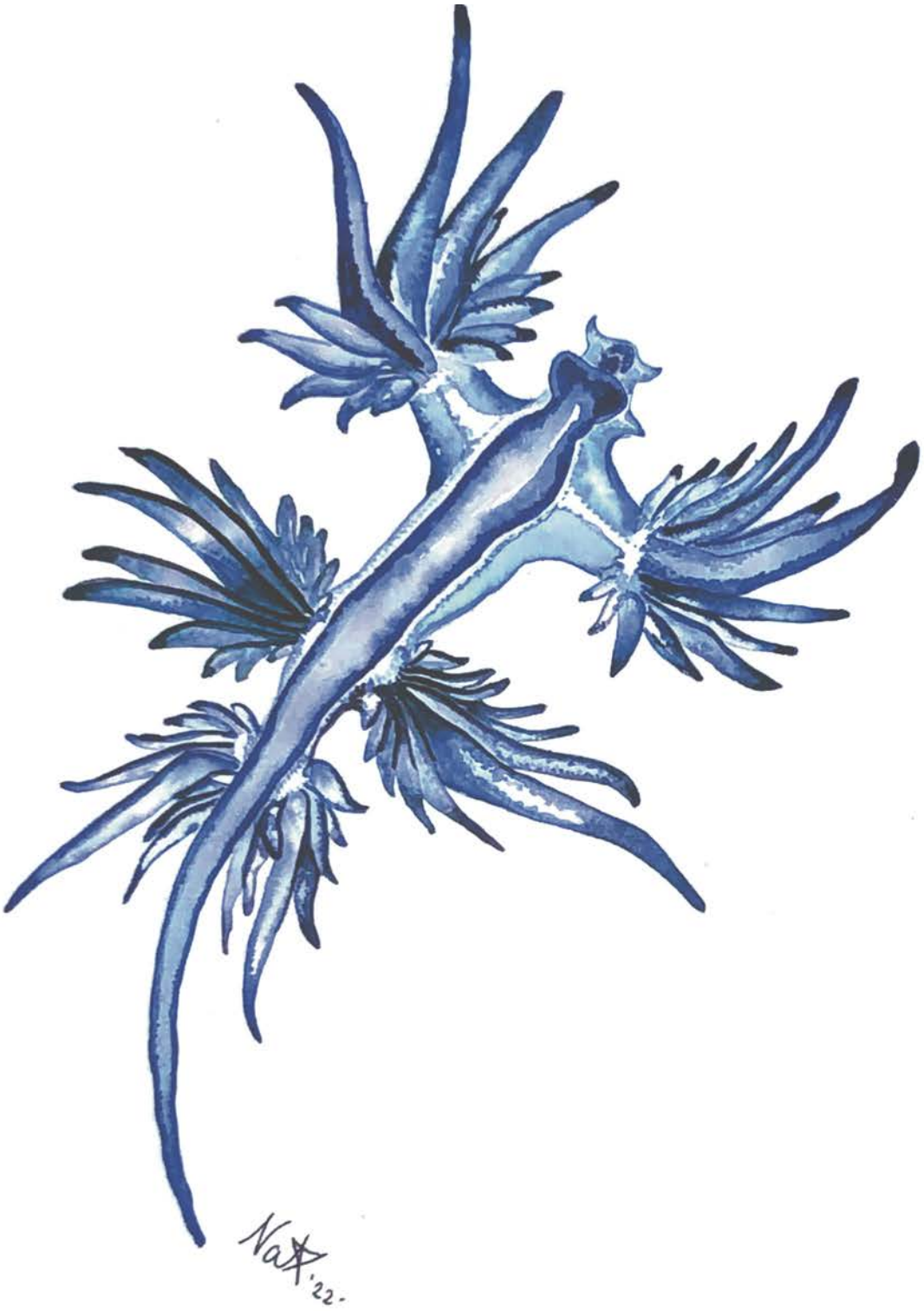
FAUNA SCIENTIFIC NAME	FAUNA COMMON NAME	BC ACT	EPBC ACT	HABITAT REQUIREMENT
Chelonia mydas	Green Turtle	V	V	Ocean-dwelling species spending most of its life at sea, scattered nesting records along the NSW coast.
Coeranoscincus reticulatus	Three-toed Snake-tooth Skink	V	E	Rainforest and occasionally moist eucalypt forest, on loamy or sandy soils.
Dermochelys coriacea	Leathery Turtle	V	V	Occurs in inshore and offshore marine waters, occasional breeding records from NSW coast, including between Ballina and Lennox Head in northern NSW.
Eretmochelys imbricata	Hawksbill Turtle	_	V	This species sttles and forages in tropical tidal and sub-tidal coral and rocky reef habitat. They have also been found (less frequently) within seagrass habitats of coastal waters. Have been obserevd in temeprate regions as far south as northern NSW.
Hoplocephalus bitorquatus	Pale-headed Snake	V	-	Dry eucalypt forests and woodlands, cypress woodland and occasionally in rainforest or moist eucalypt forest. Favours streamside areas, particularly in drier habitats.
Hoplocephalus stephensii	Stephens' Banded Snake	V	-	Rainforest and eucalypt forests and rocky areas up to 950 m.

Green Tree Frog
jadine
Litoria caerulea

APPENDIX 2
KEY THREATENING PROCESSES

Key Threatening Processes listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

- Aggressive exclusion of birds from potential woodland and forest habitat by over-abundant noisy miners (*manorina melanocephala*)
- Competition and land degradation by rabbits
- Competition and land degradation by unmanaged goats
- Dieback caused by the root-rot fungus (*phytophthora cinnamomi*)
- Fire regimes that cause declines in biodiversity
- Incidental catch (bycatch) of sea turtle during coastal otter-trawling operations within Australian waters north of 28 degrees South
- Incidental catch (or bycatch) of seabirds during oceanic longline fishing operations
- Infection of amphibians with chytrid fungus resulting in chytridiomycosis
- Injury and fatality to vertebrate marine life caused by ingestion of, or entanglement in, harmful marine debris
- Invasion of northern Australia by Gamba Grass and other introduced grasses
- Land clearance
- Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants
- Loss of biodiversity and ecosystem integrity following invasion by the Yellow Crazy Ant (*anoplolepis gracilipes*) on Christmas Island, Indian Ocean
- Loss of climatic habitat caused by anthropogenic emissions of greenhouse gases
- Novel biota and their impact on biodiversity
- Predation by European red fox
- Predation by exotic rats on Australian offshore islands of less than 1000km^2 (100,000 ha)
- Predation by feral cats
- Predation, habitat degradation, competition and disease transmission by feral pigs
- *Psittacine circoviral* (beak and feather) disease affecting endangered psittacine species
- The biological effects, including lethal toxic ingestion, caused by cane toads (*Bufo marinus*)
- The reduction in the biodiversity of Australian native fauna and flora due to the red imported fire ant, *Solenopsis invicta* (fire ant)



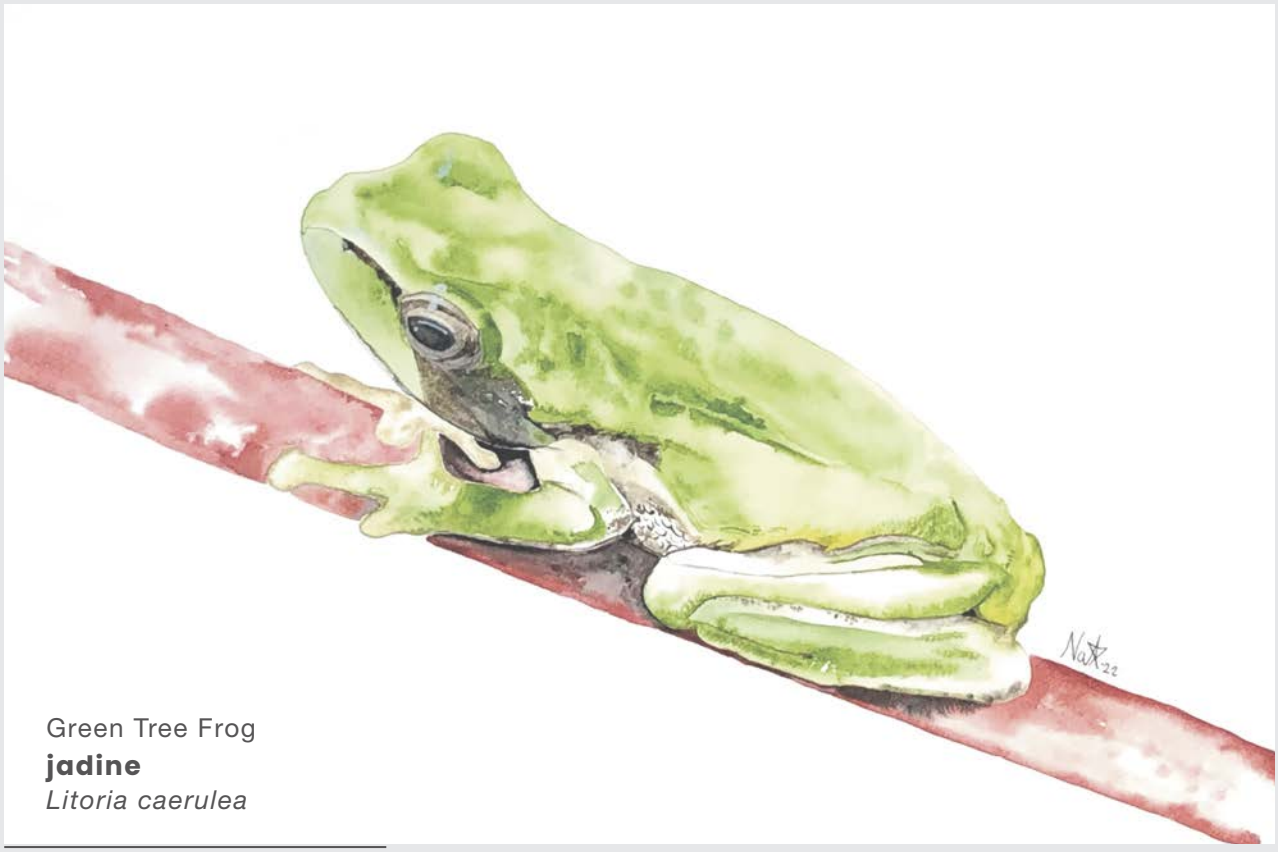
Blue Sea Dragon
Glaucus atlanticus

APPENDIX 2
KEY THREATENING PROCESSES

Key Threatening Processes listed under the Biodiversity Conservation Act 2016 (BC Act)

- Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, *manorina melanocephala* (Latham, 1802)
- Alteration of habitat following subsidence due to longwall mining
- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Anthropogenic Climate Change
- Bushrock removal (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)
- Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus* (L.)
- Competition and habitat degradation by Feral Goats, *Capra hircus Linnaeus* 1758
- Competition from feral honey bees, *Apis mellifera* L.
- Death or injury to marine species following capture in shark control programs on ocean beaches (as described in the final determination of the Scientific Committee to list the key threatening process)
- Entanglement in or ingestion of anthropogenic debris in marine and estuarine environments (as described in the final determination of the Scientific Committee to list the key threatening process)
- Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners
- Habitat degradation and loss by Feral Horses (brumbies, wild horses), *Equus caballus* Linnaeus 1758
- Herbivory and environmental degradation caused by feral deer
- High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition
- Importation of Red Imported Fire Ants *Solenopsis invicta* Buren 1972
- Infection by *Psittacine Circoviral* (beak and feather) Disease affecting endangered psittacine species and populations
- Infection of frogs by amphibian chytrid causing the disease chytridiomycosis
- Infection of native plants by *Phytophthora cinnamomi*
- Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae
- Introduction of the Large Earth Bumblebee *Bombus terrestris* (L.)
- Invasion and establishment of exotic vines and scramblers
- Invasion and establishment of Scotch Broom (*Cytisus scoparius*)
- Invasion and establishment of the Cane Toad (*Bufo marinus*)
- Invasion, establishment and spread of Lantana (*Lantana camara L. sens. lat)*
- Invasion of native plant communities by African Olive *Olea europaea* subsp. *cuspidata* (Wall. ex G. Don) Cif.
- Invasion of native plant communities by *Chrysanthemoides monilifera*
- Invasion of native plant communities by exotic perennial grasses
- Invasion of the Yellow Crazy Ant, *Anoplolepis gracilipes* (Fr. Smith) into NSW
- Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants

- Loss of hollow-bearing trees
- Loss or degradation (or both) of sites used for hill-topping by butterflies
- Predation and hybridisation by Feral Dogs, *Canis lupus familiaris*
- Predation by *Gambusia holbrooki* Girard, 1859 (Plague Minnow or Mosquito Fish) (as described in the final determination of the Scientific Committee to list the threatening process)
- Predation by the European Red Fox *Vulpes vulpes* (Linnaeus, 1758)
- Predation by the Feral Cat *Felis catus* (Linnaeus, 1758)
- Predation by the Ship Rat *Rattus rattus* on Lord Howe Island
- Predation, habitat degradation, competition and disease transmission by Feral Pigs, *Sus scrofa* Linnaeus 1758
- Removal of dead wood and dead trees



Green Tree Frog
jadine
Litoria caerulea

APPENDIX 3
LEGISLATIVE CONTEXT

Legislative Context

Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) protects the listed Matters of National Environmental Significance (MNES). Under the EPBC Act actions that are likely to have a significant impact on MNES are subject to a detailed assessment and approval process.

New South Wales legislation

Biodiversity Conservation Act 2016

The Biodiversity Conservation Act 2016 includes provisions for threatened species protection that councils must consider. Threatened species and endangered ecological communities listed within this Act are to be considered when undertaking an environmental assessment in accordance with Part 4 or 5 of the Environmental Planning and Assessment Act 1979.

Created under the Act is the Biodiversity Offsets Scheme. The scheme is a framework to avoid, minimise and offset impacts on biodiversity from development and clearing and to ensure land that is used to offset impacts is secured in-perpetuity. The Biodiversity Offset Scheme also provides funds for landowners to manage their land for conservation through Biodiversity Stewardship Agreements.

Biodiversity Certification addresses the potential impacts on biodiversity during the early planning stages of land use change. It encourages planning authorities and landholders to design their development footprint in a way that avoids and minimises impacts on biodiversity values and protects those areas.

Biosecurity Act 2015

The Biosecurity Act 2015 provides a framework to manage biosecurity risks from animal and plant pests, diseases, weeds and contaminants. Management of these risks include locating, containing and eradicating any new entries and effectively minimising the impacts of those pests, diseases, weeds and contaminants that cannot be eradicated through robust management arrangements. The Act also imposes general biosecurity duty obligations on all landholders and land managers to control pest species.

Crown Land Management Act 2016

The Crown Land Management Act 2016 aims to improve the way Crown Land is managed and facilitated, giving consideration to environmental, social, cultural heritage and economic factors. The Act acknowledges the spiritual, social, cultural and economic importance of Crown land to First Nations People and recognises and facilitates First Nations People/communities involvement in the management of Crown land.

Environmental Planning and Assessment Act 1979

The Environmental Planning and Assessment Act 1979 is the principal planning legislation for NSW. This Act provides the statutory basis for environmental assessment of development in conjunction with State Environmental Planning Policies and Local Environmental Plans. Determining authorities have a legal obligation to consider the environmental impact of all activities and development under this Act.

Fisheries Management Act 1994

The Fisheries Management Act 1994 aims to conserve, develop and share the fishery resources of NSW for the benefit of present and future generations. This Act protects fish habitats, marine vegetation and threatened species, including those species found in inland rivers and waterbodies.

Local Government Act 1993

The Local Government Act 1993 states that ecologically sustainable development requires the effective integration of economic and environmental

considerations in decision-making processes. A number of principles underpin ecologically sustainable development and can be used to guide our decision making and actions. These include:

- The precautionary principle
- Intergenerational equity
- Biodiversity and ecological diversity
- Improved economic valuation including environmental factors.

Local Land Services Act 2013

The Local Land Services Act 2013 allows the regional Local Land Services business units to provide advisory, extension, partnership and strategic planning services that support adoption of best practice land management in accordance with State priorities for biosecurity, natural resources management and agricultural advisory services. This Act also regulates the clearing of native vegetation on rural land.

National Parks and Wildlife Act 1974

The National Parks and Wildlife Act 1974 aims to conserve the natural environment including habitat, ecosystems and processes, and biological diversity. The Act also conserves landscapes and natural features of significance and objects, places or features of cultural value within the landscape by fostering public appreciation, understanding and enjoyment of nature and cultural heritage.

Protection of the Environment Operations Act 1997

The Protection of the Environment Operations Act 1997 is the key piece of environment protection legislation administered by the NSW Environmental Protection Authority. The Act provides the operational framework for pollution control and licensing for regulated activities as well as significant investigation and enforcement powers.

Rural Fires Act 1997

The Rural Fires Act 1997 aims to provide prevention, mitigation and suppression of bush and other fires, coordination of bush firefighting and bush fire prevention throughout the State. This Act aims to protect persons from injury or death, property infrastructure and environmental, economic, cultural, agricultural and community assets from damage arising from fires. This Act also protects the environment by requiring certain activities referred to be carried out having regard to the principles of ecologically sustainable development

Ballina Local Environmental Plan (1987 and 2012).

The Ballina Local Environmental Plan (1987 and 2012) (BLEP) are the principal legal documents for guiding the planning decisions for Ballina Shire. The plan allows Council to regulate the ways in which all land both private and public may be used and protected through zoning and development controls. Biodiversity Certification was conferred on the LEP in 2010 and allows development in identified areas to proceed without the need for detailed biodiversity assessment.

Some land is identified on the BLEP 2012 maps as ‘deferred matter’ and generally comprises the land previously identified in the Draft Ballina Local Environmental Plan 2011 as E2 Environmental Conservation Zone or E3 Environmental Management Zone. The deferral of these areas is a result of a decision by the Minister for Planning & Infrastructure to review the application of the E zones on the North Coast. The BLEP 1987 continues to apply to land identified in BLEP 2012 as ‘deferred matter’.

APPENDIX 3
POLICY AND PLANS

Policy and Plans

Internal

The Strategy will rely on the mechanisms of the Integrated Planning and Reporting framework for consultation, review, resourcing and reporting. Council has many plans and strategies which need to be considered to ensure that development of any new strategy will tie in with and complement the existing documents where possible. The Biodiversity Strategy has clear linkages with the following key plans:

Community Strategic Plan 2040

The Ballina Shire Community Strategic Plan (CSP)' 'our community, our future' Is Council's commitment to work in partnership with our residents, community groups and the State and Federal Governments to realise your vision – The Ballina Shire is safe with a strong connected community, a healthy environment that is treasured and protected with a thriving economy.

The CSP outlines what we need to do to realise our vision by focusing on four areas: connected community, prosperous economy, healthy environment. The healthy environment direction identifies three key outcomes.

- HE1 We protect, respect and enhance our natural environment.
- HE2 Our operational choices are based on sustainability and limit our impact on the environment
- HE3 Our built environment is respectful of the natural environment and the ecosystem

Other key corporate documents that the Strategy has strong linkages to include:

- Development Control Plan
- Climate Action Policy
- Place-based strategic plans - (i.e. Alstonville 2037, Ballina 2035, Lennox Head Strategic Plan, Wardell 2035 and Wollongbar 2039)
- Koala Management Strategy
- Climate Action Policy
- Healthy Waterways Program
- Coastal Management Plan

Ballina Shire Local Strategic Planning Statement (LSPS) 2020 -2040

The LSPS plans for the Ballina community's economic, social, environmental and leadership needs from a strategic land use planning perspective in the 20-year period to 2040.

The LSPS provides a Northern Rivers regional context for the Ballina community. It aligns relevant Directions and Actions within the North Coast Regional Plan 2036 with local planning priorities. The 14 Planning Priorities and 56 Actions contained in this LSPS build on the strategic planning actions already contained within Council's Community Strategic Plan 2017 – 2027 (CSP), and the Delivery Program and Operational Plan 2019 – 2023.

Preparation of a Biodiversity Strategy is listed as a priority (Planning Priority 14) in the LSPS.

External

The Strategy has been heavily influenced by a number of external agencies that are involved in biodiversity conservation and natural resource management. Some of these key agency strategies or programs are listed below.

Australia's Strategy for Nature

The Commonwealth's Australia's Strategy for Nature 2010-2030 is a guiding framework that applies across all sections of government, business and the community. This strategy aims to set out priorities which will direct efforts to achieve healthy and resilient biodiversity and provide a basis for living sustainably.

Australian Pest Animal Strategy 2017 to 2027

The strategy provides national guidance on best practice vertebrate pest animal management, in striving towards the national vision of protecting Australia's economy, environment and social wellbeing from the impact of pest animals. It reaffirms agreed national pest animal management principles, and sets national goals and priorities that will help improve Australia's overall ability to prevent and respond to new pest animal incursions and manage the negative impacts of established pest animals.

Australian Department of Energy & Environment Recovery Plans

The Australian Government Minister for the Environment may make or adopt and implement recovery plans for threatened fauna, threatened flora (other than conservation dependent species) and threatened ecological communities listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Recovery plans set out the research and management actions necessary to stop the decline of, and support the recovery of, listed threatened species or threatened ecological communities. The aim of a recovery plan is to maximise the long term survival in the wild of a threatened species or ecological community.

NSW Saving our Species Plan

Saving our Species is a state-wide program that aims to secure threatened plants and animals in the wild in NSW. The program consults extensively with experts and applies independent peer reviewed science to species, populations of a species and ecological communities projects, provides targeted conservation projects and encourages partnerships with community, corporate and government in threatened species conservation.

NSW Invasive Species Plan

The NSW Invasive Species Plan 2018-2021 supports the NSW Biosecurity Strategy 2013-2021 and identifies key deliverables to help prevent new incursions, eliminate or contain existing populations and effectively manage already widespread invasive species. The Plan includes weeds, vertebrate and invertebrate pests in terrestrial, freshwater and marine environments.

North Coast Regional Plan 2041

The North Coast Regional Plan 2041 sets a 20-year strategic land use planning framework for the region, aiming to protect and enhance the region's assets and plan for a sustainable future.

As a 20-year plan, it applies to the Local Government Areas (LGAs) of Ballina, Bellingen, Byron, Clarence Valley, Coffs Harbour, Kempsey, Kyogle, Lismore, Nambucca, Port Macquarie/ Hastings, Richmond Valley and Tweed.

The plan covers all facets of land use planning, including employment areas, town centres, housing and related infrastructure, the natural environment and hazards.

North Coast Regional Strategic Pest Animal Management Plan 2018 - 2023

The purpose of the Plan is to protect the economy, environment and community, through strategic management of the region's pest animals. The Plan outlines how North Coast LLS will work with Government, industry and community to share the responsibility to prevent, eradicate, contain or manage pest animals to achieve a balance in economic, environmental and social outcomes in the North Coast Local Land Services region of NSW.

North Coast Regional Strategic Weed Management Plan 2023 - 2027

The Plan outlines how North Coast LLS will work with government, industry and the community to share responsibility and work together to identify, minimise, respond to, and manage weeds. It relates to all lands and waters (excluding marine) in the North Coast Local Land Services region of NSW.

The plan sets the vision and goals for weed management on the North Coast, and outlines strategies and actions to achieve outcomes based on principles of shared responsibility, sustainable landscapes, collaborative leadership and innovation.

North Coast Local Land Services Natural Resource Management Plan 2022-2026

The Plan identifies how the region will focus its effort and resources to deliver natural resource management, in partnership with public and private landholders, investors, the regional community and other stakeholders. The Plan delivers the strategic planning, program co-design, community engagement and coordination of program delivery that supports landholder adoption of best practice natural resource management, to improve farm production, increase economic returns, and improve the condition of natural resources at a landscape scale.


fig tree
jumbul


palm tree
bigabiny
tree roots
wayaan

BALLINA SHIRE BIODIVERSITY STRATEGY 2023 - 2033

ballina shire council

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