Sent: 16/11/2020 3:09:12 PM
Subject: 181 Allambie Rd. DA2020/0552- Submission and registering to speak
Attachments: 181 Allambie Rd. Reasons to refuse DA20200552.docx; ACFUrbanThreatenedSpeciesReportFinal.pdf;

Hi Carly,

Further to your email letter dated 11th Nov.

I would like to register to speak at The Northern Beaches Local Planning Panel meeting on 18th of Nov.

I am also forwarding an additional submission which contains video links which I believe are important to view.

In addition I attach a recent Australian Conservation Foundation Report which details the vital importance of conserving urban bushland. (Very relevant to this D.A.)

My phone number is 0424 225 078.

Cheers and best wishes

Malcolm Fisher.

IMPORTANT REASON'S FOR REJECTING DA2020/0552

As noted in the Planning Panel's refusal of the application (D.A. 2018/1667) this development will have a seriously negative impact on the irreplaceable bushland and waterways of the adjoining Manly Warringah War Memorial State Park. I now urge The Panel to support Northern Beaches Council's (and the community's) recommendation- and reject the slightly amended (DA2020/0552) -which would have an equally damaging effect on a sensitive environment.

Here are some concise but important reasons: -

In the hinterland behind Manly's famous surfing beaches there is a beautiful nature reserve (comprising 930 acres). A small creek was dammed here in 1892 to create a water supply for the growing settlement and the catchment was thus subsequently protected to preserve water quality. In later years **it became Australia's only war memorial created by conserving natural bushland –hence its formal name "Manly Warringah War Memorial Park"** (otherwise known as Manly Dam Reserve).

Sadly, in recent times, such wisdom has not prevailed and encroachments have occurred, threatening Manly Dam reservoir's status as **the very last place, in Sydney, where you can still swim in unpolluted freshwater.**

The recent extension of Manly Vale school into bushland adjoining the south east side of the park, really illustrated how removing vegetation on a steep slope can create serious levels of erosion and pollution. (A Joint Regional Planning panel approved this development 3-2). The below photograph reveals the damage done (which is ongoing during rain): -

The below two links show video footage of how the mud and the siltation then flowed into Mermaid Pool at Manly Creek. (An area the community has been endeavouring to restore for nearly 20 years.) Council and the EPA attended the site on numerous occasions.

https://vimeo.com/275960138 https://vimeo.com/277379448

A s a result of community disquiet at the ongoing despoilment of the park, former NSW Premier, Mike Baird committed to ensuring that the area was better protected. Subsequently State park gazettal was formalised on 7th April 2017. **So why are continued violations even being considered?**

The proposed development at 181 Allambie Rd will have the same harmful effect on Curl Curl Creek and Manly Dam Reservoir, which it sits above. Nothing can stop the flow of disturbed earth in times of heavy rain. Up to 70% more volume of run off will be produced from the site than currently occurs. These increased flows will have a major impact on the environmental integrity of the waterways downstream because of the erosion caused by regular, small to medium sized events. The damage to creeks, receiving waters and associated aquatic ecosystems downstream will be continual and irreversible.
Curl Curl Creek is the **only place in Greater Sydney** where the Gondwanan Climbing Galaxias fish lives. And it is thought to have survived here for 60 million years! A recent story in the Sydney Morning Herald outlined its perilous existence. They require clean, unsullied water to remain alive.

https://www.smh.com.au/environment/conservation/manly-dam-s-ancient-climbing-fish-have-a-new-threat-to-scale-20200828-p55qck.html

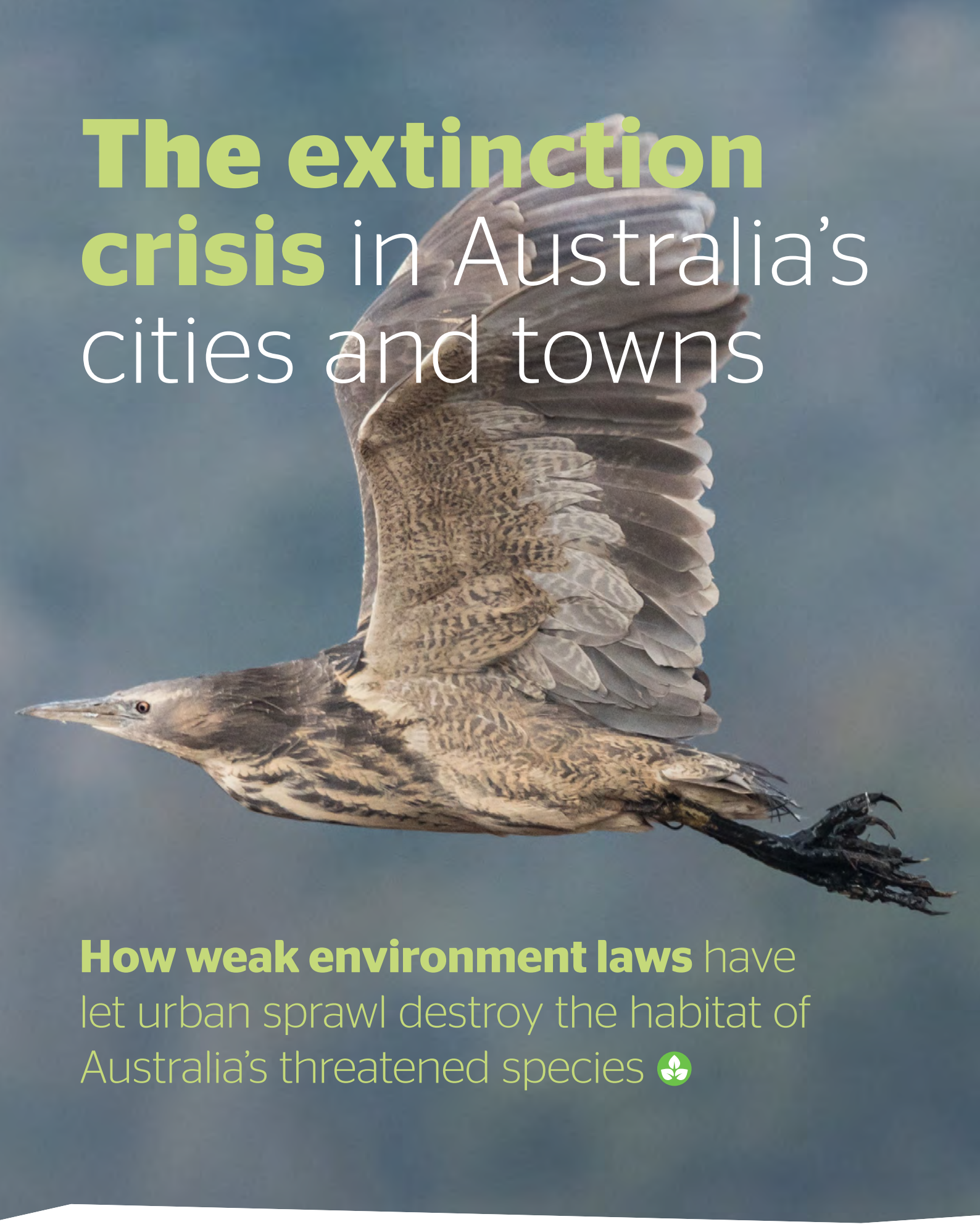
Strangely there is **no** mention of this unique creature (or other aquatic fauna) in any of the D.A. reports and documentation but there are a number of submissions which detail its scientific importance.

I would be happy to take the panel to view this urban miracle first hand. It currently lives in a "category A" Catchment (characterised as "very high ecological value").

I also attach a report from the Australian Conservation Foundation which details the importance of protecting urban bushland in the fight against species extinction. You will note that **eight threatened species** have been recorded on the subject site. Including the tiny and very vulnerable Eastern Pygmy Possum.

Northern Beaches Council was recently awarded the accolade of NSW "Sustainable City of the Year" which mirrors the important value that the community puts on our precious environment.

The indigenous word for Allambie is actually "to remain a while". Let's hope that is the case for the rare biodiversity.



The extinction crisis in Australia's cities and towns

How weak environment laws have let urban sprawl destroy the habitat of Australia's threatened species

AUSTRALIAN CONSERVATION FOUNDATION

Front cover. Australasian bittern. *Photo*. Helen Cunningham.
Below. Koala. *Photo*. Doug Gimesy.

Executive **summary**

Australia is home to an incredible diversity of life, and one thing nearly all Australians share is a love and appreciation of the natural world.

But despite our natural diversity and deep connection with our environment, Australia is in the midst of an extinction crisis. We have caused the extinction of more mammals than any other nation, and today nearly 2,000 plants, animals and ecosystems remain under threat of extinction.

While our national parks and wilderness areas are essential for protecting biodiversity, our cities and towns also provide critical habitat for threatened species. In fact, 25% of Australia's nationally listed threatened plants and 46% of threatened animals can be found in our urban areas. While many of these species also have habitat outside cities and towns, for 39 threatened species, these urban areas are the last remaining places in which they exist.

Australia's national environment laws — which are undergoing a once in a decade review — are failing to protect this urban habitat. This report documents for the first time how much urban forest and woodland habitat has been destroyed under these laws. Between 2000 and 2017, at least 20,212 hectares of forested habitat for nationally listed threatened species has been destroyed within Australia's cities and towns.

While cities are a major cause of the extinction crisis, they can also be an important part of the solution and local communities are often leading the way with inspiring initiatives to restore urban habitat. It's time for the Australian Government to step up too. By creating strong environment laws and funding the protection and restoration of urban habitat, we can create jobs, make our cities more liveable and help end extinction.

Contents

Executive summary 2

Introduction 4

Cities and towns 7

Weak laws 9

Inspiring solutions 18

National leadership 23

Appendix 25

References 26

Introduction

Australians love nature.

As one of only 17 megadiverse nations on the planet, Australia is home to incredible plants and animals, many of which are endemic.[1] These 17 megadiverse nations are home to the majority of Earth's life forms and feature high numbers of endemic species. From tiny spider orchids to giant freshwater crayfish, colourful cockatoos and mysterious marsupials, Australia's unique plants and animals are part of our national identity. They feature on our currency and inspire the names of our sporting teams.

While many Australians have explored our dramatic landscapes and famous national parks, it is often the less dramatic urban bushland areas where people walk, rest and play that we know and love best. Indeed, in this time of social distancing and travel restrictions, recreation in nearby nature has been critical to many people's physical health and mental wellbeing.

This love of nature is part of who we are. A 2019 survey of 55,000 people by the Australian Broadcasting Corporation found 'appreciation of the natural environment' was the second most important aspect of 'being Australian'.[2]

This connection with local bushland often extends to a sense of care and protection, especially when favourite places are threatened by yet more urban sprawl, pollution and industrialisation. That's why local people across the country are organising their communities to protect and restore urban habitat, and the threatened species which survive there.

Right. Bushwalkers, Victoria.
Photo. Annette Ruzicka/MAPgroup.

Until we grapple with the **ongoing problem of habitat destruction,** and repair the damage done, **the fate of Australia's threatened wildlife** will remain dire.

Right. ACF CEO Kelly O'Shanassy kayaking on Yarra River, with vulnerable Grey-headed flying-foxes overhead. *Photo*. Doug Gimesy.

Extinction crisis

Australia is in the midst of an extinction crisis. Globally, more than one million species are now at risk of extinction.[3] This not only threatens many beautiful, rare and unique plants and animals. It ultimately threatens human survival.

Australia has a terrible record of failing to protect our unique wildlife. We have caused the extinction of more mammals than any other country and are the fourth-worst nation in the world for the extinction of native wildlife.[4]

Our extinction record is not just a regrettable legacy of the past. We have witnessed the extinction of three animal species in the last decade alone — the Bramble Cay melomys, the Christmas Island pipistrelle and the Christmas Island forest skink. Nearly 2,000 Australian plants, animals and ecosystems are currently threatened with extinction and new species and ecosystems, like the Grey falcon and the Elderslie banksia scrub forest in Sydney, are being added to the list. These 2,000 threatened species and ecosystems are just the ones we know about — the real number is likely to be much higher. We don't even know what we are losing.

There are many interrelated causes of extinction. Invasive species, disease, fire and climate change all play a major role. But habitat destruction is a fundamental and primary driver.[5] Put simply, our threatened wildlife need habitat to live, feed and breed. Yet, despite everything we know, intentional habitat destruction is ongoing and appears to be accelerating.[6]

This report details the little-known prevalence of nationally listed threatened plants and animals in 99 of Australia's biggest cities and towns. It also documents, for the first time, how much forest and woodland habitat for these same threatened species has been destroyed between 2000 and 2017 under Australia's failing national environmental laws.

Until we grapple with this ongoing problem of habitat destruction, and repair the damage done, the fate of Australia's threatened wildlife will remain dire.

Australia is in the midst
of an extinction crisis

Cities and **towns**

Australia is one of the most urbanised nations on earth. Nearly 90% of Australians live in cities and towns.[7] While Australia's population density is among the world's lowest — with less than three people per square kilometre,[8] the result is our sprawling capital cities are some of the largest globally.[9]

This report focuses on the 99 Australian cities and towns with populations over 10,000 people. These 99 urban centres comprise just 0.22% of the Australian land mass, (17,420 km2), yet they are home to more than 22 million people. They range in size, from 10.5 km2 for Nelson Bay, NSW, to 2597.4 km2 for Melbourne, Victoria.

Common perceptions often place urban areas as essentially human environments, rather than natural ones. But this report shows that Australian cities and towns are in fact ecologically very important because they provide critical habitat for some of Australia's most threatened species.

In fact, 25% of all nationally listed threatened plants and 46% of nationally listed threatened animals can be found in Australia's 99 cities and towns.[10] Cities have a disproportionately high number of threatened species and are home to, on average, three times as many threatened species per hectare as rural environments.[11] While many of these species also have habitat outside cities and towns, for 39 threatened species, these urban areas are the last remaining places in which they exist.[12]

Australian capital cities harbour large numbers of nationally threatened plant and animal species. Sydney is home to 80 threatened species, Melbourne has 46, Perth has 35, Brisbane has 30 and Hobart has 29.

Table 1 - Number of threatened species in Capital cities

Rank	Capital city	Threatened species
1	Sydney	80
2	Melbourne	46
3	Perth	35
4	Brisbane	30
5	Hobart	29
6	Canberra & Queenbeyan	24
7	Adelaide	22
8	Darwin	9

Sprawling regional centres also have large numbers of threatened species. The Gold Coast-Tweed Heads and the NSW Central Coast are each home to 39 threatened species, while Newcastle Maitland has 33.

Table 2 - Top 10 cities for number of threatened species

Rank	Capital city	Threatened species
1	Sydney	80
2	Melbourne	46
3	Gold Coast Tweed Heads	39
4	Central Coast	39
5	Perth	35
6	Newcastle Maitland	33
7	Brisbane	30
8	Hobart	29
9	Wollongong	29
10	Sunshine Coast	26

The prevalence of threatened species in our cities and towns challenges the misnomer that high conservation value ecosystems exist only in remote national parks or wilderness areas. While protecting large intact ecosystems is certainly important for protecting biodiversity, for many threatened species including several that are critically endangered, these urban areas are the last place where we can protect them within their original range.[13]

Examples of threatened species that only exist in urban areas include the critically endangered Frankston spider orchid which is confined to a small area on Victoria's Mornington Peninsula, south-east of Melbourne. Here, much of its habitat and at least one known population has been destroyed by urban sprawl. Only a single wild population of the orchid exists, comprising just 40 plants, and the species is at high risk of extinction in the near future.[14]

The endangered Western swamp tortoise was once found in wetlands along the Swan Coastal Plain in Perth, but today only a single viable population of the tortoise survives in the wild. And the endangered Spiked rice flower is found only in the Cumberland Plain area of western Sydney and the Illawarra region near Wollongong, NSW. One of the largest known surviving populations occurs on a Sydney golf course.[15]

Protecting and restoring natural habitat within cities doesn't only benefit urban threatened species. Green spaces also provide essential ecosystem services to people and make our cities more liveable. These services include stormwater treatment, better and cooler air, and reduced impact of extreme weather events like heat waves. For example, within one year, a single tree is estimated to cool the air as much as 10 air conditioners running continuously, absorb 3400 litres of stormwater and filter 27 kilograms of pollutants from the air.[16]

25% of all nationally listed threatened plants and 46% of nationally listed threatened animals **can be found in Australia's 99 cities and towns.**

Weak **laws**

National habitat destruction

Australia's preeminent national nature law, the Environment Protection and Biodiversity Conservation (EPBC) Act (1999) is now 20 years old. Protecting habitat in order to protect species was the goal of then Environment Minister Robert Hill when he introduced the EPBC Act under the Howard Government. In 1997, Hill told Australia "the major cause of species loss is habitat loss — if we can preserve and restore habitat then we have a greater chance of preserving species. It is as simple as that, and that is what we are aiming to do".[17]

Yet under these very laws, the destruction of threatened species habitat and even the extinction of threatened species, is perfectly legal. In the first 17 years of the operation of these laws, 7.7 million hectares of threatened species habitat — an area larger than the size of Tasmania — was destroyed.[18]

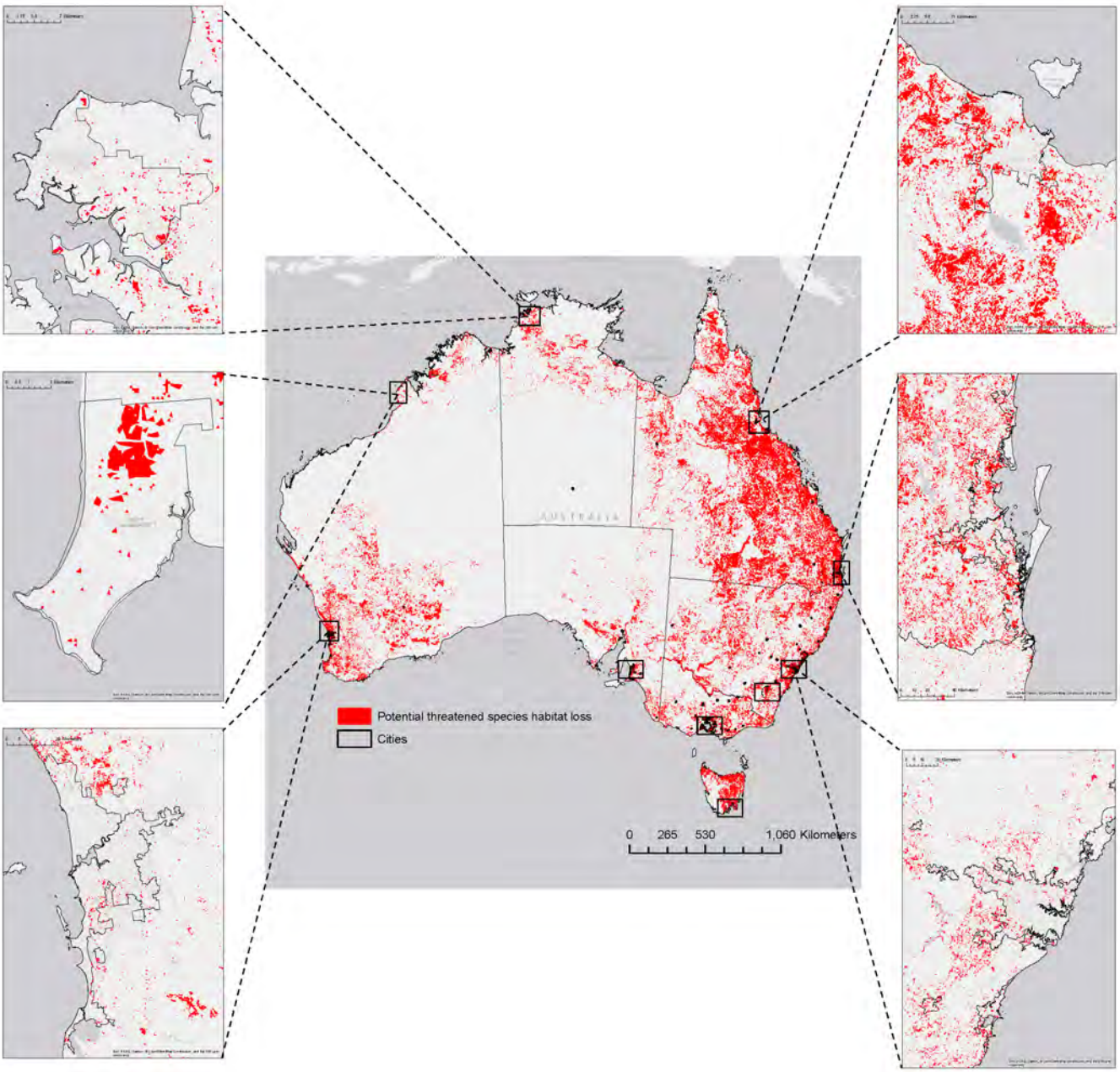
Despite a growing list of threatened species, even more habitat has been destroyed since then. Yet governments simply don't have the ability or willingness to measure it. Based on an average annual destruction rate, more than one million additional hectares of threatened species habitat has been destroyed since 2017.

Urban habitat destruction

Urban sprawl threatens species and their habitat in multiple and interconnected ways. The probability of a species being threatened with extinction increases with the percentage of its range that is urbanised.[19] Urban sprawl increases pollution, invasive species, disease, inappropriate fire regimes, changes to water flows, car strikes, human-wildlife conflicts and, most significantly, fundamental changes to how land is used causes habitat destruction and fragmentation.

Habitat destruction for urban sprawl in Australia's cities and towns is playing a significant role in worsening Australia's extinction crisis. In the first 17 years of the operation of the EPBC Act, at least 20,212 hectares of urban threatened species habitat was destroyed. This is an area equivalent to more than 11,400 MCG football grounds.

In the first 17 years of the operation of the EPBC Act, at least **20,212 hectares of urban threatened species habitat was destroyed.** This is an area equivalent to more than **11,400 MCG football grounds**



Source: *The density of threatened species habitat loss across the continent. Major cities are outlined in black, while panels showcasing cities with some of the highest loss including (top right and moving clockwise): Townsville, Brisbane and Gold Coast, Sydney, Perth, Broome, and Darwin*

Significantly, this figure accounts only for the destruction of forest and woodland habitat, and not for the destruction of grassland or other threatened species habitat. No accurate or comprehensive data exists to measure the destruction of grassland habitat for threatened species, despite current urban sprawl in Melbourne, Canberra and parts of Sydney rapidly destroying such habitat.

Estimates on the destruction of threatened species grassland habitat around Melbourne are alarming. A recent Victorian Auditor General's Office report into the Victorian Government's failure to protect critically endangered grasslands noted '... expected losses of almost 3,278 hectares of Natural Temperate Grasslands in the [Melbourne] UGB [Urban Growth Boundary], however no timeframe was given for this destruction'.[20] The report also noted the destruction of 654 hectares of native vegetation within the Melbourne UGB between 2010-2019. Much of this is likely to be threatened species habitat, but exactly how much is not clear. The paucity of information on this habitat obliteration highlights yet another stark failure of Australia's environment protection laws.

In the destruction of national threatened species habitat and land clearing more generally, Queensland is the worst state in Australia, with 64% (~12,923 hectares) of all urban threatened species habitat destroyed. Queensland is followed by NSW and ACT (combined data) at 20% and Western Australia is responsible for 9% of urban threatened species habitat destruction.

Table 3 - Total urban threatened species habitat cleared in each state

State	Hectares of habitat destroyed	% of total loss
QLD	12,923	64%
NSW & ACT	3,960	20%
WA	1,789	9%
Tas	673	3%
Vic	372	2%
SA	300	1%
NT	195	1%
National total	**20,212**	**100%**

Brisbane is by far Australia's worst city for threatened species habitat destruction during this period. The Queensland capital destroyed more than twice the amount of habitat of any other Australian city with 6,162 hectares cleared between 2000 and 2017. Australia's second-worst urban area was the Gold Coast-Tweed Heads with 2,641 hectares destroyed and Townsville was third-worst with 1,781 hectares destroyed. Virtually every large city or town in Australia (98 of the 99) experienced some threatened species habitat destruction.

Table 4 - Top ten worst cities for habitat destruction

Rank	City	Hectares of Threatened species habitat destroyed
1	Brisbane	6162
2	Gold Coast - Tweed Heads	2641
3	Townsville	1781
4	Sunshine Coast	881
5	Sydney	752
6	Gladstone - Tannum Sands	642
7	Newcastle - Maitland	503
8	Perth	470
9	Broome	427
10	Cairns	401

As a result of this destruction, 423 (or ~27%) of Australia's threatened species have had some of their urban habitat destroyed. Indeed, 45 threatened species have had more than 1,000 hectares of their urban habitat destroyed.

Below. Koala habitat destruction for urban sprawl in Deebing Heights, Qld. *Photo.* Andrew Picone.

In the destruction of **national threatened species habitat** and land clearing more generally, Queensland is the worst state in Australia, with **64% (~12,923 hectares) of all urban threatened species habitat destroyed.**

Most impacted species

The five threatened species most impacted by urban habitat destruction were the vulnerable Red goshawk (14,877 hectares), the vulnerable Grey-headed flying fox (13,522 hectares), the vulnerable Koala (13,053 hectares), the endangered Australasian bittern (12,274 hectares) and the critically endangered Regent honeyeater (9,242 hectares).

Species case study

Red Goshawk
Erythrotriorchis radiatus
Status:
Vulnerable
Population:
As few as 330 pairs
Occurance:
4 cities (6 historical)
Urban habitat destroyed:
14,877 hectares

The Red goshawk is a large and powerful red raptor with massive yellow legs and feet and an impressive wingspan of more than one metre. The species nests in very tall trees close to permanent water and preys on other birds. It is endemic to Australia and is sparsely distributed across the north of the country from the Kimberley in WA to northern NSW. Habitat loss is the biggest threat to the species, especially on the east coast. Widespread deforestation, particularly of lowland and riverine forests has caused its decline in NSW and Queensland, and will impact more northerly birds as clearing continues.

Populations have declined by 20% and more in some areas. The species is hard to observe and it is difficult to estimate the number of Red goshawks left in the wild, but it could be as few as 330 breeding pairs. Nearly 15,000 hectares of habitat for the vulnerable species has been destroyed in urban areas under Australia's national environmental laws. Ongoing clearing of coastal forests for urban sprawl in eastern Australia will reduce numbers further unless we protect and restore critical habitat for the species, and invest in its recovery.

This page. Red goshawk.
Photo. David Cook Wildlife Photography

This page. Grey-headed flying-fox. *Photo*. Doug Gimesy.

Grey-headed flying-fox
Pteropus poliocephalus
Status:
Vulnerable
Population:
Several hundred thousand
Occurance:
42 cities
Urban habitat destroyed:
13,522 hectares

This large furry fruit bat has a grey head, an orange collar encircling its neck and fur all the way to its ankle. The species is Australia's only endemic fruit bat and is one of the largest bats in the world, with a wingspan up to one metre. It roosts during the day in semi-permanent colonies known as camps and can fly long distances — up to 50 kilometres in one night — in search of seasonal eucalypt blossoms, rainforest fruits and garden flowers.

The species also plays a vital role in pollinating native forests. The Grey-headed flying fox was once found along the east coast from Ingahm in Queenland to Mallacoota in Victoria, but their range has shifted south-eastwards due to habitat loss and climate change, and the species now has a permanent presence in Melbourne.

Only a small proportion of this extensive range is used at any one time. Major threats to the species include habitat destruction from urban sprawl and agricultural expansion, as well as extreme heat events. Grey-headed flying fox numbers are difficult to estimate, but populations have declined drastically from many millions when they were first surveyed in the 1930s, to just a few hundred thousand today. More than 13,500 hectares of urban habitat has been destroyed for this vulnerable species since our national environmental laws have been in place. Survival of the species depends on the protection and restoration of its critical habitat and urgent action to address climate change.

This page. Koala. *Photo*. Doug Gimesy.

Koala
Phascolarctos cinereus
Status:
Vulnerable populations of QLD, NSW, ACT
Population:
Unknown
Occurance:
34 cities (5 historical)
Urban habitat destroyed:
13,052 hectares

One of Australia's most iconic animals, the endemic Koala needs little introduction. This solitary, leaf eating tree-dweller lives in open eucalypt forest and woodland from northern Queensland to the SA border, but it is only the populations of Queensland, NSW and ACT which are listed as vulnerable to extinction.

The main threats to the Koala are ongoing habitat destruction and fragmentation from urban sprawl, logging and agricultural expansion. Vehicle strikes and dog attacks in urban areas, as well as more intense bushfires, droughts and extreme heat events from climate change are all adding further pressure. Koala numbers have plummeted in recent years. The combined NSW and Queensland populations declined by an estimated 42% in the 20 years between 1990–2010. The situation is so dire in NSW that Koalas will be extinct before 2050 unless there is urgent government intervention to protect their habitat. Over 13,000 hectares of urban habitat, particularly in Brisbane and south-east Queensland, has been cleared for this vulnerable species since our national environment laws have been in place. To ensure Koalas survive we must protect and restore critical Koala habitat, especially around cities and towns where related pressure from car strike and dog attack is heightened. Urgent action is also required to deal with climate change and its impacts on the species.

This page. Australasian bittern. *Photo*. Helen Cunningham.

Australasian bittern
Botaurus poiciloptilus
Status:
Endangered
Population:
~3,500
Occurance:
30 cities (14 historical)
Urban habitat destroyed:
12,274 hectares

The Australasian bittern is a secretive, stocky, brown and black wetland bird, with a wingspan of more than one metre. Its preferred habitat is freshwater wetlands with dense rushes and reeds where it forages mainly at night on a range of small animals, including fish, frogs and invertebrates. Bitterns are very well camouflaged and can be difficult to spot.

They are even known to sway in time with reeds in order to blend into their surroundings, however the distinctive booming call of males often gives them away. The species occurs in fragmented populations along
the coast of south east and south west Australia, and in the Murray Darling Basin where they hide in rice crops.

The major threat to the species is the destruction and alteration of wetland breeding habitat by agriculture and urban sprawl. Climate change, fire, invasive species and pollution add to the pressure. It is estimated that Australasian bittern numbers plummeted by 70% in the 30 years between 1977–2008 and a further 20–30% over the last two generations (11 years). It is uncertain how many bitterns survive in the wild. Estimates vary from 3,500 individuals to as few as 247. Despite this, ongoing urban sprawl in Perth, Melbourne and the Gold and Sunshine Coasts has seen more than 12,000 hectares of endangered bittern habitat destroyed since our national environmental laws were in place. Survival of the species depends on reducing current threats and protecting and restoring critical habitat.

This page. Regent honeyeater. *Photo*. Dean Ingwersen.

Regent honeyeater
Anthochaera phrygia
Status:
Critically endangered
Population:
as few as 250 individuals
Occurance:
16 cities (4 historical)
Urban habitat destroyed:
9242 hectares

The striking black and yellow Regent honeyeater loves feeding on nectar in flowering Box-ironbark forests. The species is endemic to Australia. It was once common along the western slopes of the Great Dividing Range and could be found from Adelaide to Rockhampton. Habitat destruction is the major threat to the species and widespread clearing of the bird's woodland home has seen the species range contract and the population decline severely.

As with many threatened species, extinction pressure from climate change, fire and drought is only making matters worse. With as few as 250 individual Regent honeyeaters now left in the wild, the 2019–2020 summer bushfires have pushed the species even closer to the brink of extinction. Despite the bird's critically endangered status, nearly 10,000 hectares of important habitat for the species has been destroyed by urban sprawl during the first 17 years of our national environmental laws, including 3,200 hectares in Brisbane alone. In addition to the captive breeding program and community conservation efforts, all remaining critical habitat for the species must be protected and degraded habitat be restored and reconnected.

Inspiring solutions

Australian cities and towns are part of the extinction problem, but they can also be part of the solution. While the proximity of threatened species to people in urban areas can create conservation conflicts, it can also create conservation opportunities given the availability of people, technology, resources and funding that are sometimes difficult to achieve in remote areas.[21] For example, south-east Queensland's Turtle Care program organises community volunteers to patrol critically endangered Loggerhead sea turtle nesting sites along urbanised Sunshine Coast beaches.

Biodiversity sensitive urban design

How we design and build our cities can also create conservation opportunities. RMIT Professor Sarah Bekessy and her colleagues are pioneering a new approach to urban development known as 'biodiversity sensitive urban design' or simply BSUD. BSUD aims to create urban environments that make a positive contribution to biodiversity conservation. This involves careful planning, targeted regulation and innovative design and architecture.

The approach seeks to build nature into the urban fabric by linking urban planning and design to the basic needs and survival of native plants and animals.[22] For example, researchers have shown how a BSUD approach to development in western Melbourne can combine sustainable design and strong regulation to ensure the persistence of the threatened Striped legless lizard and minimise destruction of critically endangered grasslands.[23]

BSUD incorporates biodiversity into the built form, rather than restricting it to fragmented remnant habitats. This not only benefits threatened species, it benefits people with greener, cleaner and cooler cities, in which residents live longer, are less stressed and more productive.[24] BSUD encourages mid-rise, courtyard-focused buildings and wide boulevard streetscapes that lead to better liveability outcomes for all.

Streetscape created through a biodiversity sensitive urban design approach.

Source: *Graphical representation developed by Sarah Bekessy, Georgia Garrard and Nicholas Williams in collaboration with M. Baracco, C. Horwill and J. Ware, RMIT School of Architecture and Design.*

Community action

Across Australia, local people are working together to protect and restore local bushland. In the process they are improving habitat for threatened wildlife and building connection and community.

Ithaca Creek, Brisbane

Ithaca creek is a 7 kilometre-long waterway that winds through Brisbane's inner western suburbs. It abuts urban bushland in some parts, but it is mainly hidden behind housing. In 1996, local resident Terrie Templeton was out walking when she saw council workers pouring concrete into the creek. She rushed home, mobilised as many people as possible and returned to the creek with her daughter and two folding chairs. Her sit-in stopped Ithaca Creek being turned into a concrete channel and sparked a movement to naturalise local waterways across Brisbane.[25]

Community-led restoration of Ithaca creek began in the 1980s, but progress was slow until local group Save Our Waterways Now (SOWN) launched 'Ithaca Intact'. The idea was to inspire people to work with groups to restore habitat along the length of the creek. It was the first project of its type and scale in Queensland. Ithaca Intact builds community by inviting everyone who lives along the creek to work together on projects at key sites. It has taken 20 years to get small birds back into mature, restored habitat, but today Grey fantails and Scrub wrens abound along the creek and the area is likely habitat for a number of urban threatened species including the Grey-headed flying fox.

Hunter Wetlands, Newcastle

Prior to the mid 1980s, Hunter Wetlands, like many urban wetlands, was severely degraded. Literally filled with rubbish, it had been used as a transportation corridor and for recreation, and only fragmented patches of remnant wetlands remained. Yet today, the Hunter Wetlands is a vibrant wetland ecosystem teeming with birdlife.[26]

This remarkable transformation can be entirely attributed to the determination and persistence of the local community and far-sighted local organisations who joined forces to restore this wetland for the benefit of all.

The wetlands are now an internationally recognised Ramsar site and enjoy a growing reputation for excellence in wetland conservation, education and ecotourism. The Hunter Wetlands Centre, which was established to manage the wetland, is a great example of how a local community can help protect threatened species and the environment through on-ground action, advocacy and community education.

The centre is currently working on a project to protect the endangered Australasian bittern, which has had more than 12,000 hectares of its habitat destroyed within Australian cities and towns. Volunteers have restored a 43-hectare area of freshwater reedland habitat and built a predator-proof fence to keep out foxes and cats. Bitterns were previously common in the Hunter region but habitat loss and feral animals are pushing this species to the brink. Endangered bitterns have not been seen at the wetlands in the last few years but there is hope they will return.

Across Australia, local people are **working together to protect and restore local bushland.** In the process they are improving habitat for threatened wildlife and **building connection and community**

Previous page. Planting day, Ithaca Creek. *Photo*. Mark Crocker.

Westgate Park, Melbourne

The transformation of Westgate Park near the mouth of Melbourne's Yarra River from industrial wasteland into biodiverse parkland began in 1999 when 21-year-old Naomie Sunner first visited the area. The site had previously been used as a rubbish dump, a sand mine, an aircraft runway and a building site for the Westgate Bridge.[27] After the bridge was completed in 1979, the state government turned it into a park, but non-native species were planted and the site was neglected.

Naomie was determined to make a difference. She started the Friends of Westgate Park — a volunteer group that fosters Indigenous vegetation so people can learn about native habitats and engage with nature. She roped in friends, organised public plantings and started a work for the dole program. Her enthusiasm inspired others to join and the group expanded from planting to propagation, established a corporate volunteer program, commissioned a landscape plan, applied for grants and began advocating to government agencies.

The parkland now has more than 300,000 plants spread across nine distinct vegetation types including heathland, lakes and grasslands. A dedicated group of local birdwatchers has undertaken a monthly survey of the site since 2007. When they started, the number of species observed at the park was in the '90s and today the site has attracted 158 unique species.

Nature for neighbourhoods

Australian Conservation Foundation's (ACF) Nature for Neighbourhoods campaign is inspiring ACF community groups across Australia to partner with local conservation organisations to tackle the challenge of restoring urban habitat. In the process, ACF Community groups are reaching new supporters and strengthening their local community.

For example ACF's Bendigo community group are working with the City of Greater Bendigo on a multi-year project to restore a 16-hectare site degraded by historic gold mining and quarrying. While face-to-face activities for the project are currently on hold due to Coronavirus restrictions, plans are in place to revegetate the degraded quarry with endemic local species to restore habitat and attract local wildlife. The project is attracting local interest, and community members and their families who have never done this kind of activity before are keen to get involved.

Another example is ACF Community Canberra's work with Friends of Mount Majura to improve degraded grassy woodland at a nature reserve known as 'The Fair'. The group has been removing woody weeds and replanting the site with local native species to provide habitat for birds and spiders.

Frends of Westgate Park community group transformed an industrial wasteland into biodiverse parkland which now has more than **300,000 plants spread across nine distinct vegetation types** including heathland, lakes and grasslands.

Previous page. Revegated land. *Photo.* Friends of Westgate Park.

National **leadership**

This report has demonstrated how Australia's national environmental laws have systematically failed to protect the urban habitat our threatened species need to survive. While local communities and ACF groups are doing their best to protect remnant habitat and restore the damage done, governments must step up.

The EPBC Act is currently under independent review and this presents a once in a decade opportunity to show national leadership and ensure our environmental laws and institutions are fit-for-purpose and can meet the challenges of an increasingly uncertain future.

To protect and restore urban habitat for threatened species and local communities, the Australian Government must create strong environment laws and an independent regulator, establish a national environmental fund and create jobs in habitat restoration.

Create strong environment laws

A new generation of strong national environment laws and institutions can protect our threatened wildlife and the habitat they need to survive. A new nature protection framework will guarantee environmental decisions are transparent and hold decision makers and corporations to account.

This new legal framework must:

- Ensure federal government leadership on the protection of the environment, including through the development of legally enforceable national environmental goals, plans and standards.
- Create an independent national regulator to conduct transparent environmental assessments and inquiries as well as undertake monitoring, compliance and enforcement actions.
- Ensure the protection of critical habitat for threatened species and the mandatory implementation of recovery and threat abatement plans.
- Expand national regulatory oversight to key environmental matters, such as climate change, air pollution, key biodiversity areas and nationally important wetlands.
- Guarantee communities the right to have a say in environmental decisions and to hold regulators to account.
- Create simpler regulatory processes that deliver certainty and transparency.

Establish a national environmental fund

Australia needs an independently administered $4.5 billion National Environmental Fund to support the long-term protection and recovery of threatened species and ecosystems across Australia, including in urban areas.

The fund would:

- Support the direct implementation of threatened species recovery and threat abatement plans.
- Deliver landscape-scale ecosystem investments in natural infrastructure such as urban canopy programs which improve health and biodiversity outcomes.
- Assist with bushfire recovery activities — including revegetation and built asset reconstruction across Australia's national reserve system.
- Provide incentive payments to land managers, including Indigenous communities and farmers, to deliver conservation outcomes on their properties.
- The fund would also be used to leverage private investments in conservation, including through supporting markets that reward sustainable, ethical and responsible production.

Create jobs in habitat restoration

Australia needs coordinated state and federal leadership and investment in conservation and land management to create meaningful jobs and support long-term environment outcomes. A $2.4 billion investment will create an estimated 24,000 jobs in the sector in the first year of operation.

Programs across urban, suburban and regional areas can deliver a strategic response to both the devastating impacts of the catastrophic 2019–2020 bushfires and support economic recovery. It is critical that investments contribute to meaningful and long-term environmental outcomes, including high-priority habitat restoration and management activities in metropolitan, suburban and peri-urban areas.

Right. Tree planting *Photo*. Annette Ruzicka/MAPgroup.

Appendix

Methods

Two key studies were used in the production of this report. First, in order to detail the occurrence of nationally listed urban threatened species, we used Ives et.al 2015 analysis of the distribution of Australia's then 1,643 threatened terrestrial species within the spatial extent of 99 Australian cities and towns with more than 10,000 people.[28]

Second, to calculate the destruction of nationally listed, forested urban threatened species habitat between 2000 and 2017, Michelle Ward took 2017 data on the distribution of Australia's then 1,587 terrestrial threatened species and overlaid this with historic forest and woodland loss information and the spatial extent of the same 99 Australian cities and towns.[29] The resulting analysis forms the basis of this report.

Disclaimers

1. Nationally listed threatened species habitat destruction data covers the period 2000–2017 and includes forests and woodlands, but not grasslands or other ecosystems
2. The nationally listed threatened species occurrence data is for terrestrial species from 2016. Some species have been added to the EPBC Act threatened species list since then, and some removed.
3. Both datasets include only threatened species and habitat where they are 'known' or 'likely' to occur, but not species or habitat where they 'may' exist. As a result the number of threatened species listed for any one town may be lower than equivalent lists generated from the EPBC Protected Matters Search tool.
4. Some cities cross state borders like Albury-Wodonga, Canberra-Queenbeyan and Gold Coast-Tweed Heads, making precise state-by-state comparisons difficult. For this reason NSW and ACT are combined into one, but this has not been done for other states.

It's time for laws that
actually protect nature

References

1 Megadiverse Countries, United Nations Environment Program https://www.biodiversitya-z.org/content/megadiverse-countries

2 ABC, What makes an Australian? Probably not what you think, 22 October 2019 https://www.abc.net.au/news/2019-10-22/annabel-crabb-national-identity-what-makes-an-australian/11623566

3 A Million Threatened Species? Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) https://ipbes.net/news/million-threatened-species-thirteen-questions-answers#:~:text=The%20IPBES%20Global%20Assessment%20estimated,species%20are%20threatened%20with%20extinction.

4 IUCN Red List, Country totals animals, 5 July 2018 http://cmsdocs.s3.amazonaws.com/summarystats/2018-1_Summary_Stats_Page_Documents/2018_1_RL_Stats_Table_6a.pdf

5 Brendan Wintle and Sarah Bekessy, Let's get this straight, habitat loss is the number one threat to Australia's species, The Conversation, 11 April 2017 https://theconversation.com/lets-get-this-straight-habitat-loss-is-the-number-one-threat-to-australias-species-85674

6 Scientists' statement on land clearing in Australia, Society for Conservation Biology, 8 July 2016 http://scboceania.org/landclearing/

7 Urban Population, The World Bank Data https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=AU&most_recent_value_desc=true

8 Population Density, The Word Bank Data https://data.worldbank.org/indicator/EN.POP.DNST?most_recent_value_desc=true

9 Demographia, World Urban Areas, 2020 http://www.demographia.com/db-worldua.pdf

10 Ives et.al. Cities are hotspots for threatened species, Global Ecology and Biogeography, 7 December 2015 https://onlinelibrary.wiley.com/doi/abs/10.1111/geb.12404

11 ibid.

12 Soanes and Lentini, When cities are the last chance for saving species, Frontiers in Ecology and the Environmental, 1 April 2019 https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/fee.2032

13 Soanes and Lentini, The 39 endangered species in Melbourne, Sydney, Adelaide and other Australian cities, The Conversation, 9 February 2019 https://theconversation.com/the-39-endangered-species-in-melbourne-sydney-adelaide-and-other-australian-cities-114741

14 Australian Government, Frankston Spider Orchid Recovery Plan https://www.environment.gov.au/resource/frankston-spider-orchid-caladenia-robinsonii-gwcarr-recovery-plan-1999-2003

15 Soanes and Lentini, 2019

16 City of Sydney, Urban Forest Strategy, 2013 https://www.cityofsydney.nsw.gov.au/__data/assets/pdf_file/0003/132249/Urban-Forest-Strategy-Adopted-Feb-2013.pdf

17 ABC, National News Bulletin, 30 June 2020 https://www.youtube.com/watch?v=6YMzxf2ZdBs&feature=youtu.be

18 Ward et.al. Lots of loss with little scrutiny: The attrition of habitat critical for threatened species in Australia, Conservation Science and Practice. 2019 https://conbio.onlinelibrary.wiley.com/doi/pdf/10.1111/csp2.117

19 McDonald, et. al. The implications of current and future urbanization for global protected areas and biodiversity conservation. Biological Conservation, 2008 https://www.sciencedirect.com/science/article/abs/pii/S0006320708001432

20 Victorian Auditor General's Office, Protecting Critically Endangered Grasslands, June 2020 https://www.audit.vic.gov.au/sites/default/files/2020-06/20200617-Endangered-Grasslands-report.pdf

21 Soanes and Lentini, 2019

22 Sarah Bekessy, et.al, Here's how to design cities where people and nature can both flourish, The Conversation, October 24 2018 https://theconversation.com/heres-how-to-design-cities-where-people-and-nature-can-both-flourish-102849

23 Georgia E. Garrard et.al, Biodiversity Sensitive Urban Design, Conservation Letters, 21 September 2017 https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/conl.12411

24 Sarah Bekessy, et.al., 2018

25 Save Our Waterways Now http://www.saveourwaterwaysnow.com.au/

26 Hunter Wetlands Centre https://wetlands.org.au/

27 Westgate Biodiversity, Our Histories https://westgatebiodiversity.org.au/our-histories/from-construction-site-to-neglect/

28 Ivers et.al., 2015

29 Ward, et al., 2020 – unpublished.

A new generation of **strong national environment laws** and institutions **can protect our threatened wildlife** and the habitat they need to survive

Australian Conservation Foundation
Level 1, 60 Leicester Street
Carlton VIC 3053
ABN 22 007 498 482

Telephone 1800 223 669
Website acf.org.au
Email acf@acf.org.au
Twitter @AusConservation

AUSTRALIAN CONSERVATION FOUNDATION