

Submission to the Victorian Planning Authority.

RE: The Bannockburn Growth Plan (Growth Plan) and the Bannockburn Flora and Fauna Reserve (BFFR).

Introduction

The [REDACTED] is the Committee of Management for the Bannockburn Flora and Fauna Reserve (BFFR), mentioned within the Growth Plan as both a significant environmental community asset as well as a wildfire risk to the Bannockburn community.

In essence, urban development has an inverse correlation to wildlife health and numbers. As the density of urban development increases, its proximity to wildlife rich habitat results in the inexorable decline of native species of plants and animals. The threats that accompany urban development kill native species, destroy their habitat, or repel them from the region. Inappropriate urban development adjacent to the BFFR, a precious and highly valued reserve, will result in the destruction of the very thing the community wants to appreciate and preserve.

The decisions before the VPA regarding the Bannockburn Growth Plan are vast, broad and far-reaching. The [REDACTED] hope is that as the needs of the region: the social, heritage, wild and functional, are balanced for optimal outcomes. Our hope is that the rich, significant and vulnerable biodiversity of BFFR might carry equal weight at all stages of discussion and decision. The inexorable decline of biodiversity is only observed after the fact and is often impossible if not very costly to reinstate. If the questions and possibilities we present in this current submission are considered, we believe there is hope for better outcomes for all, especially for the wildlife of the Bannockburn Flora and Fauna Reserve.



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Section A: Land use conflicts

This submission is fashioned around a set of serious land use conflicts that exist at the interface between BFFR and the Growth Plan boundary at the north-west and south-west precincts. We wish to highlight key issues, threats, shortcomings and missed opportunities inherent in the Growth Plan regarding the value and integrity of the endangered and vulnerable flora and fauna of the BFFR. They are:

Land use Conflict 1. The Growth Plan fails to provide plans, policy, and actions to ameliorate or mitigate the commensurate threats urban development poses to the security of the native habitat the BFFR provides for wildlife.

Proposed resolution: That the ongoing development of the Growth Plan incorporates into its design, plans, policy and actions to ameliorate or mitigate the commensurate threats urban development poses to the security of the native habitat the BFFR provides for wildlife

Land use Conflict 2. The separation distances outlined (Growth Plan - Table 9, page 61), noted to be provided entirely within growth area boundaries, attend only to the wildfire threat the BFFR poses to the Bannockburn community, but fails to reciprocally acknowledge the actual threats urban development pose to wildlife on the BFFR.

Proposed resolution: That the ongoing development of the Growth Plan incorporates into its design an equal emphasis on what short-term and long-term risks urban and industrial development may pose for the wildlife of Bannockburn Flora and Fauna Reserve.

Land use Conflict 3. The Growth Plan notes a commitment to the protection and enhancement of biodiversity within the Growth Plan boundary, but not for the neighbouring land and biodiversity of the BFFR, significantly impacted by urban development.

Proposed resolution: That the ongoing development of the Growth Plan incorporates into its design the acknowledgement of responsibility to exercise harm minimisation strategies pertinent to the protection and preservation of the wildlife and its habitat for high conservation land adjoining the Growth Plan boundaries.

Land use Conflict 4. The Growth Plan has failed to assess and incorporate the value the interface zone serves to the native wildlife that breed, feed and shelter in the BFFR.

Proposed resolution: That the ongoing development of the Growth Plan incorporates into its design the mandatory provision for thorough habitat surveys and monitoring protocols to account for the traditional use by BFFR wildlife of the grazing areas along the western boundary, for both the north and south precincts.

Land use Conflict 5. The Growth Plan fails to capture the unique regional, cultural, and environmental significance of the BFFR and its vulnerability to urban threats.

Proposed resolution: That the ongoing development of the Growth Plan incorporates into its design the unique regional, cultural, and environmental significance of the BFFR and its vulnerability to urban threats.

Section B: The unique environmental significance of the BFFR

The Bannockburn Flora and Fauna Reserve.

The Bannockburn Flora and Fauna Reserve is a high-quality remnant of the now endangered Melbourne Yellow Gum Plains Grassy Woodland of the Victorian Volcanic Plains (EVC 55_61 Plains Grassy Woodland - EPBC Act 1999). Not only is this type of vegetation community endangered, it hosts numerous endangered, vulnerable and declining species of flora and fauna. It also contains a site of cultural significance for the traditional custodians, the Wadawurrung, which is registered on the Aboriginal Heritage Register.

Among the rich variety of life forms that call the reserve home are 165 indigenous plant species. This includes more than a dozen species of native orchids (including the rare Green Midge Orchid), the federally-listed Clover Glycine, and the rare Snowy Mint-bush.

The bushland reserve provides opportune and secure nesting, feeding, breeding and shelter habitat for a host of wildlife species, including koalas, echidnas, kangaroos, lizards, frogs, wallabies, bats, sugar gliders, native rats, and possums. Significantly, at least 52 of the 113 native birds recorded in the reserve depend on the reserve for breeding habitat, including migratory birds and top order predators.

The host of native bees, wasps, moths, butterflies, gnats, worms, slugs, snails, caterpillars, crustaceans, centipedes, millipedes, beetles, ants, spiders, flies, damselflies, mayflies, dragonflies, and bugs that currently thrive in the BFFR are the primary food source for many native fauna, including 50 of the 113 birds and all 8 bat species recorded at the reserve. BirdLife Australia has released a national Temperate Woodland Birds Conservation Action Plan (CAP) in 2020 to address the pervasive decline of Australia's woodland birds. Of the 49 target species listed in the CAP, 21 are resident at BFFR. The populations of these target species are at best declining and at worst in danger of extinction (Swift Parrot). The long-term health of the BFFR is therefore critical for the region's birds and their vulnerable habitat.

Section C: Threats to wildlife

Introduction.

The designated vegetation class of the BFFR (and its inhabitants) is listed as endangered as a result of the effects of white settlement and the various threats that have arrived and persisted with colonisation. Agriculture, industry, and urban development result in serious and at times catastrophic compromise to native life and habitat, either by habitat destruction, or by a raft of introduced threats. It is the latter of these that this submission wishes to bring to the forefront for planners and decision-makers.

As Vanderduys, et. al. (2016) have stated: "Where threatened biodiversity is adversely affected by development, policies often state that "no net loss" should be the goal and biodiversity offsetting is one mechanism available to achieve this. However, developments are often approved on an ad hoc basis and cumulative impacts are not sufficiently examined. We demonstrate the potential for serious threat to an endangered subspecies when multiple developments are planned", and

“The high rates of biodiversity decline documented globally demand close attention to the conservation status of threatened species where threats are ongoing. Many species continue to decline because of changes in land use that include broad scale land clearing for agriculture and urban development, as well as more subtle effects from fragmentation, invasive species, grazing, changed fire regimes and shifting climate envelopes.”

Such future decline in wildlife numbers and diversity within the BFFR is highly likely due to the changes in the landscape adjacent to, and within the reserve that result from the encroaching urban development. Only intentionally sympathetic planning and policy can avert this eventuality.

An increase of urban development has been found to cause up to a 90% decrease in the number of native birds surrounding and within the development zone (Ikin, et. al., 2012, p. 964). This is due to habitat destruction, an increase of pest species including cats and dogs, light & noise pollution, and a reduction in food sources and supply as a result of pesticide and herbicide use to control insects, weeds and feral animals such as rats. As well as this decrease, there is an increase of up to 200% in aggressive species that outcompete local indigenous birds of the woodland environment, including Noisy Miners (Minor & Urban, 2010, p. 56). Higher density housing increases the number and density of domestic and feral animals, both of which compromise the chance for the native fauna to compete and survive.

In just one generation of birdlife, there is significant potential that an entire species of bird can be made extinct (Sewell & Catterall 1998, p. 49).

The primary threats that accompany urban development are:

1. Invasive weeds
2. Feral pests
3. Toxic chemicals
4. Rubbish
5. Street lighting
6. Human mindset

Invasive weeds

Inappropriate development adjacent to the BFFR increases the likelihood of infestation by many exotic, introduced and transformational weeds within the reserve. Weeds are introduced through human uses, animals such as horses, birds, dogs and cats transporting weeds, and by wind. Weeds, including exotic garden plants, can grow so prolifically that they choke native flora habitats, making them uninhabitable for our birdlife and other animals. Typically weeds form a near-impenetrable biomass, thereby thwarting native habitat for wildlife and plants that cannot compete. Weeds that take over natural environments can cause further sustained environmental damage, including significantly increased fire danger, increased presence of foreign soil nutrients and the proliferation of habitat for introduced predators including foxes and cats. This alien seedbank can last for decades, germinate and proliferate very quickly (Groves & Willis 1999, p. 168), is harmful to the environment and has costly control measures. The small Parks Victoria-managed Wabdallah Reserve within Bannockburn is an example of how quickly habitat values can deteriorate if management is

poorly funded or ignored. What was in 2000 a relatively weed free reserve is now infested with Veldt grasses, Chilean Needle Grass, Serrated Tussock and introduced broom species (pers. comm. McCallum 2020).

Feral pests

While included within other sections of this submission, urban development sees the inexorable increase in cats, dogs, rats and mice. All have undisputed negative and often catastrophic effects on the security of native life.

Feral cats are estimated to eat tens of millions of native animals each night in Australia. Research published in the Journal of Biogeography (The Conversation, February 3, 2015) demonstrates that cats kill hundreds of different kinds of animals, including at least 16 species considered globally threatened.

Feral cats are a serious threat to wildlife in Australia. Cats have been implicated in the extinction of at least 20 mammal species and sub-species, including the lesser bilby and desert bandicoot, numbat and western ground parrot.

Eliminating the impact of cats on our native animals is an impossible endeavour, but it is essential in the fight to conserve our unique fauna. To settle for a decline in the rate of decline is still catastrophic for wildlife.



Toxic chemicals

Owls, eagles, falcons and other birds of prey are dying from eating rats and mice that have ingested Second Generation rodent poisons.

These household products – including Talon, Fast Action RatSak and The Big Cheese Fast Action brand rat and mice bait – have been banned from general public sale in the US, Canada and EU, but are available to purchase from supermarkets and retailers throughout Australia.

An inevitable decline in the numbers of birds of prey will ensue as urban development, and the increased presence of rodents and toxic chemical to control them encroaches towards the BFFR.



Rubbish

With urban development approaching the BFFR, combined with the intentions noted in the Growth Plan for the Bannockburn community to capitalise on its high amenity (Growth Plan Vision – Principle #5, p19), the increase in humans residing in close proximity to the reserve, combined with the increased use for recreation, will inevitably result in increased litter and rubbish dumping within and around the reserve. At best, rubbish is costly to clean up and control, but at worst, is dangerous to the lives of many species that ingest rubbish fragments, or feed them to their offspring.



Street lighting

The leading contribution to light pollution in Australia is street lighting (Department of the Environment and Energy, 2020). The increase of light pollution so close to the reserve will affect the local amphibians, which have sensitive eyes. It may take many minutes, in some cases hours for their eyes to adapt to light changes, and can severely impact on their ability to catch their prey (Raap, Pinxten & Eens, 2015, p. 4). It is also evident that light pollution can affect the mating call of frogs and limits their time foraging due to the higher risks of predation. Many insects and moths are attracted to lights, impacting upon insect-foraging fauna including birds, owls and bats and their foraging times, their sleep and breeding patterns (Adams, et. al., 2019, p. 8). Light pollution also causes harm to insects that are attracted to lighting. It is these insects that are likely to experience significant decline in their populations due to the easy predation by native fauna, and affect their mating, and

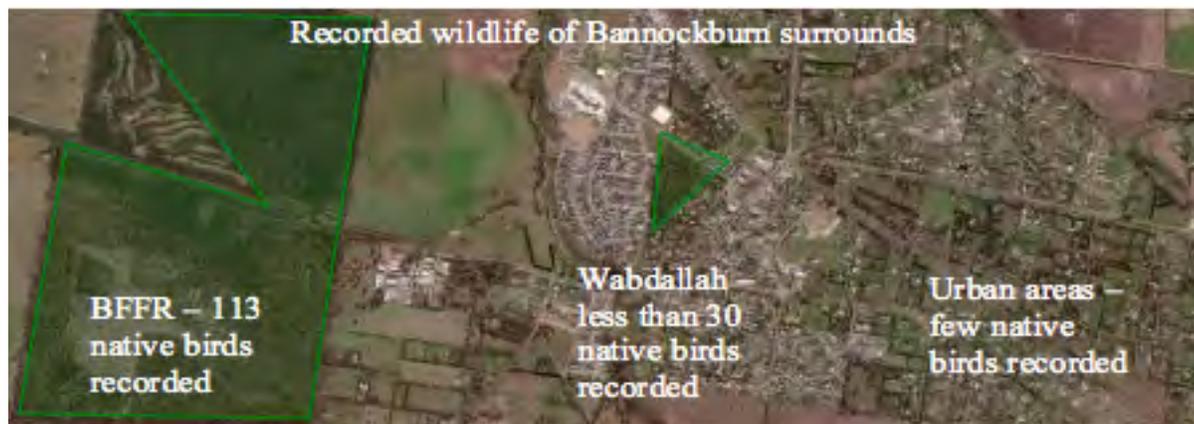
migrating. To continue the chain reaction effect of light pollution on native animals, it exposes them to easy predation to introduced fauna, including cats and dogs.



Human mindset regarding urban development

The human mindset that perceives associated costs, threats and compromises imposed upon nature by urban development as low priority is deemed the most significant threat to the security of habitat provided by the BFFR. DELWP's 2037 Biodiversity Strategy (2017) openly acknowledges that Victoria's biodiversity is still on the decline, in spite of all the revegetation works going on throughout the state.

The negative correlation between expansive urban development and viability of biodiversity is profound, evidence-based, and yet to be fully acknowledged by those managing urban development. The lack of awareness of and sympathy for wildlife by urban developers presents a suite of highly threatening and potentially irreversible actions and processes.



The intention of this submission is to highlight for the VPA the long-term negative effects of development upon biodiversity and wildlife, and to consider strategies to reduce the pressure on the vulnerable and exposed wildlife of the BFFR. The illustration above exemplifies the effects of development upon bird numbers, where it can be seen that as urban development intensifies, bird numbers significantly decrease.

Section D: Recommendations for harm minimisation

Introduction.

“There are ecological impacts that are overlooked by standard impact evaluations. These ‘enigmatic’ impacts can be cumulative, offsite, cryptic, or secondary. Enigmatic impacts can act synergistically and are hard to detect and mitigate. Potential solutions include strategic assessments and insurance schemes. Identifying the deleterious ecological effects of developments, such as roads, mining, and urban expansion, is essential for informing development decisions and identifying appropriate mitigation actions. However, there are many types of ecological impacts that slip ‘under the radar’ of conventional impact evaluations and undermine the potential for successful impact mitigation (including offsets). These ‘enigmatic’ impacts include those that are small but act cumulatively; those outside of the area directly considered in the evaluation; those not detectable with the methods, paradigms, or spatiotemporal scales used to detect them; those facilitated, but not directly caused, by development; and synergistic impact interactions. Here, we propose a framework for conceptualising enigmatic impacts and discuss ways to address them.” Raiter, et. al., 2014.

Invasive weeds

Three recommendations are proposed:

- That intense urban development is not permitted within a zone designated by expert consultants as being at risk to the habitat of the BFFR. Larger land-holdings ought to be the preferred zoning for the zone between smaller land-holdings and the interface buffer.
- That prospective landholders be appropriately informed prior to purchase, of the prescribed plant species that provide suitable habitat for wildlife, and the weed species that might spread to invade the BFFR and negatively affect wildlife habitat.
- That council impose restrictions on highly invasive weeds throughout the entirety of the south-west and north-west precincts.

Feral pests

It is recommended that:

- Cat ownership is prohibited within a zone designated by expert consultants as being subject to medium to high threat of predation of native wildlife by cats (for example within 400 meters).
- Cat curfews are imposed for all land west of Bruce’s Creek.
- Council support the installation of cat enclosures.
- Comprehensive cat regulation programs are prioritised fully resourced and actively policed, in perpetuity. Failure to do so will result in immediate decline of wildlife.

Toxic Chemicals

There are many effective ways to minimise the need for rodenticides. Information ought to be available for prospective residents regarding the effects of using toxins, and ways to make bird-friendly changes to their home and garden. Such as:

- Make your house and garden less friendly for rodents:
 - seal potential roof/wall cavity access points that rodents might be using
 - pick up any fallen fruit,
 - ensure excess pet food isn't accessible,
 - rodent-proof chook pens and aviaries,
 - replace rat-friendly palms with owl-friendly natives, and
 - tidy up garden waste and limit access to compost heaps
- Encourage native predators:
 - plant native trees, and
 - install nest boxes for owls to breed in.
- Reduce dependence on poison baits:
 - consider other, non-poison pest control, like snap traps,
 - only put out baits when you actually need to,
 - read the labels on any poisons you buy and make the change to first generation anticoagulant rodenticides (FGARs) or other alternatives. Look for active ingredients like Warfarin and Coumatetralyl or natural constituents like Sodium Chloride, and
 - leave second generation anticoagulant rodenticides (SGARs) on the shelf.

Rubbish and waste management

Bird proof rubbish bins should be placed throughout Bannockburn and at all entrances to the BFFR to allow for users to dispose of their rubbish responsibly. The responsibility for clean-up costs associated with the dumping of litter and rubbish should be borne by council. Provision must be made for more stringent ongoing regimes of rubbish bin emptying.

Lighting

More than best practice light design should be utilised within 20km of the Bannockburn Bushland reserve to protect and preserve the critical habitat that it provides to species (Department of the Environment and Energy, 2020). This should include using lighting that is low intensity, low to the ground, insect friendly colour, installed with timers and motion sensors, uses light shades to minimise light spill and finally, the use of lights with reduced or filtered blue, violet, and ultra-violet wavelengths (Adams, et. al., 2019, p. 5).

Human mindset regarding urban development

It is deemed imperative that parity exists across all stakeholders and sectors in relation to the development and refinement of the Growth Plan. The Ballarat Environment Network in this case, is advocating for the all-to-often relegated status of the wildlife in the region. We seek to have this voice present at the table of discussion and decision.

To this end, the many groups, clubs, community organisations, businesses, organisations and agencies involved in the benefits, protection and preservation of the integrity of the BFFR habitat and wildlife, would seek all parties involved in the design of the Growth Plan condescend to appreciate the possible irreparable self-defeating actions that result from

uninformed, poor and expedient decision making, driven by the momentum of traditional urban development mindsets that maximises profitability. The dissemination of information, and the provision of education and awareness-raising programs will be pivotal to optimise community driven sustainable outcomes into the future. The traditional processes of planning decisions left unchecked will result in the destruction of one pillar of the Growth Plan – the protection of the environment. Successful protection of the wildlife will only occur if to do so is intentional and strategic and not incidental and ad hoc. Therefore, a high degree of intentionality must be present immediately in council policy, plans and resourcing, sufficient for the preservation of all wildlife of the BFFR for the long term.

Additional opportunities

Attending to the land use conflicts mentioned earlier will create a raft of reciprocal benefits for the developing Bannockburn population as well as the wildlife that we hope will be not forced to leave or who's lives will be at risk from the threats that accompany intense urban development. These opportunities can be created by the Growth Plan planning for a substantially larger buffer interface zone than the minimum scheduled size as listed in Table 9 of the Growth Plan. [REDACTED] recommends at least 150 meters eastward of the north-south line marked by Old Base Road. These opportunities include:

- ongoing facility for the kangaroos that breed within the reserve to graze upon traditional grasslands that provide established regimes of safety and food, and the consequent boost in amenity for the Bannockburn community, who can boast of passive recreational opportunities frequented by wildlife.
- The amenity of grazing by native animals will assist in the reduction of fuel loads upon the expanded interface buffer zone.
- An expanded interface buffer zone will provide essential refuge for wildlife in the case of needing a safer space as humans do to seek safety in the event of a wildfire event.



- significantly increased security for Bannockburn community, assets and infrastructure in case of wildfire,
- greater control in land management practices that engage traditional owners to undertake traditional burns that optimise protection of vulnerable habitat like hollow bearing trees and logs, the protection of which relies on optimum conditions for cool burning.

- the reduced likelihood that land management agencies responsible for BFFR will ever have to compromise the rich biodiversity values present right up to its eastern boundary that abuts the north-west and south-west precincts. While traditional burns in partnership with the Wadawurrung are a feature of the BFFR management plan moving forward, the designated Committee of management are reluctant to bear the brunt imposed by urban development for more harsh fuel reduction measures to ameliorate public perception of risk.

Section E: Submission Summary.

It is an established trend, that over time, urban development is followed by the decline of native habitat and the numbers of native species formerly present in the surrounding area. Pristine habitats have been laid to waste, devoid of what we all intrinsically value – nature itself. This is an global trend.

It is plausible to deduce therefore that this occurs due to the possible combination of: humans not caring, planners not knowing how to balance the conflicting needs associated with urban development, the failure to plan for the long term, or the principle of death by a thousand cuts, where the suite of decisions and actions taken over time, none of which on their own bear catastrophic consequences for biodiversity, but collectively produce irreversible damage to nature.

This submission is made with these premises in mind. This submission is written in the hope that the reality of habitat degradation and compromise due to urban development is vigorously attended to during planning in order that the established trend of decline may be countered.

We believe that it is possible to manage the outcomes where all parties, social, commercial, governmental and wild, benefit. When it comes to assessing any respective costs of decisions, it will inevitably boil down to where that cost is absorbed. What this submission is proposing is that the rich habitat value of the BFFR not bear the costs that other stakeholders are not willing to embrace.

We therefore present this submission on the basis of holding this reality front and centre as the VPA determines that optimum conditions for the ongoing development of Bannockburn, and the realistic risk of the ‘death by a thousand cuts’ to the local biodiversity, native wildlife, and the habitat upon which they depend for shelter, food, nesting and breeding.

May the Bannockburn Flora and Fauna Reserve prosper from the VPA’s deliberation.

On behalf of the [REDACTED] and [REDACTED].

[REDACTED]

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Section F: References

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