# Submission to Australian Government Department of Agriculture, Water, and the Environment: Gang-gang Cockatoo Listing Assessment

August 2021

The Conservation Council ACT Region is the peak non-government environment organisation for the Canberra region. Since 1981, we have spoken up for a healthy environment and a sustainable future for our region. We harness the collective energy, expertise and experience of our more than 40 member groups to promote sound policy and action on the environment.

We campaign for a safe climate, to protect biodiversity in our urban and natural areas, to protect and enhance our waterways, reduce waste, and promote sustainable transport and planning for our city. Working in the ACT and region to influence governments and build widespread support within the community and business, we put forward evidence-based solutions and innovative ideas for how we can live sustainably.

At a time when we need to reimagine a better future, we understand that the changes we need will only happen with the collective support of our community.

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# Introduction

The Conservation Council ACT Region, welcomes the opportunity to provide a submission to the listing assessment of *Callocephalon fimbriatum* (Gang-gang Cockatoo), and supports the listing of the Gang-gang Cockatoo in the endangered category. The research behind the listing is of accepted methodology and we broadly agree with the conclusions. We would like to take this opportunity to provide further information on the species within the ACT Region, specifically identifying concerns of population and unrecognised threats.

# Gang-gang Cockatoo populations in the ACT

Population records of Gang-gang Cockatoos within the ACT region are likely not to be accurately representative of the breeding population. Any indications of a safehold population within the ACT Region should not be used as a mitigating factor in the listing assessment for Gang-gang cockatoos. Indeed, the uncertainty presented by the conflicting data should be a summons for additional research into Gang-gang Cockatoo populations in the ACT Region.

For example, the 15,000 records of Gang-gang Cockatoos in the ACT Region reported on the Atlas of Living Australia,[1] which might be considered to support healthy populations, may not tell the whole story. Research into nesting hollows across the ACT Region provides additional and useful information about Gang-gang Cockatoo populations that could shed light on the bird's reality.

Specifically, recent surveys show that there is a scarcity of Gang-gang Cockatoo nesting hollows in the ACT region with only 34 being identified to date.[2] Of these 34 nesting hollows, a mere 12-16 were used by Gang-gang Cockatoos during the last breeding season.[3] This suggests that Gang-gang Cockatoo populations in the ACT Region are concerningly low despite many records in the Atlas of Living Australia.

There are several possible reasons for the conflicting data:

a) The same birds are being observed multiple times in the Atlas of Living Australia records.
b) Birds are not nesting at the same time.
c) Birds aren't recruiting in the ACT Region.

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[1] Ibid.
[2] Davey, C., Mulvaney M., Tyrrell, T. Rayner, L., (in press) Gang-gang observations during the 2020-21 breeding season, Canberra, ACT. Canberra Bird Notes.
[3] Ibid.

Nesting hollows research may not identify every nesting hollow however, our member groups have done extensive surveys of Gang-gang Cockatoos in the ACT and can reasonably expect to have identified 30-50% of nest sites due to the large number of sites surveyed and the use of local knowledge.

Regardless of the underlying reasons for the conflicting data, it is evident from the above that further research is required within the ACT Region to more accurately understand the true population of Gang-gang Cockatoos.

### Recommendation

1. Funding for further research into Gang-gang Cockatoo populations in the ACT should be granted to research organisations such as the ANU and CSIRO, these organisations should be supported by local citizen science groups such as the Canberra Ornithologists Group.

## Threats to Gang-gang Cockatoos

We support the listing of the species as endangered on the basis that the identified threats have had a significant impact on the population, and that these threats will be ongoing.

In addition to the threats listed in the consultation document, research undertaken by our member groups indicates that the additional threats of extreme heat and flooding should be recognised in the listing advice.

### Overheating in hollows

As Gang-gang Cockatoos are cool temperate birds[4], it is reasonable to assume that they will be particularly vulnerable to climate change. During the end of the 2019/2020 breeding season, Canberra experienced record daytime temperatures and high levels of smoke haze. During this period unusual Gang-gang Cockatoo chick behaviours and mortality occurred that had not previously been observed.[5]

It was reported that two chicks died in nests during times that coincided with record day temperatures.[6] The chicks did not seem to be injured and heat exhaustion was the most likely cause of death. It should be noted that both deaths occurred in manually planted

[4] Higgins, P. J. (Ed) (1999) *Handbook of Australian, New Zealand and Antarctic Birds.* Vol. 4: *Parrots to Dollarbirds.* Oxford University Press, Melbourne.
[5] Davey, C, and Mulvaney, M. (2020) Report on a survey of breeding activity of the Gang-gang Cockatoo within urban Canberra 2019-2020. *Canberra Bird Notes* 45: 224-231.
[6] Ibid.

trees (as opposed to naturally occurring remnant wild trees). This may have had an impact as the hollow formation in these trees is different from that in remnant wild trees. Specifically, the hollows are created by splits in limbs as opposed to being hollowed out by termites. Once there is a split in the limb, fungus softens the wood and parrots then chew out the softened wood to create a hollow. It has been hypothesized that hollows formed in this way are less well-insulated than those formed from within remnant trees, augmenting the effects of overheating.

It was also recorded that four chicks left or attempted to leave their hollow prematurely.[7] One female chick was stranded halfway out of a small entrance and three chicks were found helpless on the ground. A male was able to manoeuvre the stranded chick back into the nest after several hours, while two of the other chicks were able to be placed back up into hollows from which they later successfully fledged. A third chick was not able to be replaced and was later predated. Modelling of these occurrences against the daily temperature reveals a correlation.

This research demonstrates that a relationship between heat and Gang-gang Cockatoo mortality is highly likely. The threat of extreme temperatures will become increasingly pertinent in efforts to protect this species as the effects of climate change see higher mean temperatures. The issue of heat impacts should be addressed in the conservation advice for the Gang-gang Cockatoo should it be uplisted.

## Flooding of nesting hollows

It is predicted that across much of the Gang-gang Cockatoos range summer rainfall will increase, and there will be an increase in the intensity and occurrence of summer storms due to climate change. Most Gang-gang chicks fledge from late December to early February. Increased and heavier summer rainfall may result in increased flooding of nesting hollows. Of 16 hollows used in the ACT Region during the 2019/2020 season, three were flooded in the next season, though none of the three were utilised in the 2020/2021 season.[8] This issue is planned to be a focus of ongoing research by our member groups, however, it should also be noted in the listing advice for the Gang-gang Cockatoo as it is likely to have a great impact on the species in the future.

### Recommendation

2. Conservation advice should be amended to include extreme heat and nest hollow flooding as threats to Gang-gang Cockatoo populations.

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[7] (n7).

[8] Davey, C., Mulvaney, M., Fogerty, J., Tyrrell, T., and Tyrrell, J. (2019) Breeding of Gang-gang Cockatoo in suburban Canberra. Canberra Bird Notes 44: 210-220; Davey, C., Mulvaney, M., Tyrrell, T. and Rayner, L. (2021); Gang-gang observations during the 2020-21 breeding season, Canberra, ACT. Canberra Bird Notes (in Press).

# Summary

The Conservation Council supports the listing of the Gang-gang Cockatoo in the endangered category. The Gang-gang Cockatoo is particularly significant to the ACT Region as it is the faunal emblem of the Territory, and well known and loved by the community.

While we largely agree with the conclusions of the *Callocephalon fimbriatum* (Gang-gang Cockatoo) consultation paper, we are concerned that populations in the ACT Region are not as robust as some records may indicate and as such recommend further research is undertaken, preferably through an already established group within the region, such as the Australian National University (ANU) or CSIRO. In addition, the specific climate-related threats of heat stress and nest hollow flooding, not discussed in the consultation document, should also be addressed in the conservation advice.