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**Submission on the effectiveness of threatened species and ecological communities' protection in Australia**

Dear Committee Members,

I am writing to bring your attention to a peer-reviewed paper by myself and colleagues that will soon be published in the international journal *Animal Conservation*. The paper is titled: "Hollow futures? Tree decline, lag effects and hollow-dependent species", and it is of direct relevance to the subject of your inquiry. In this study, we modelled nest hollow resources for the superb parrot (*Polytelis swainsonii*) from south-eastern Australia (listed as vulnerable under the EPBC Act). The species is dependent on hollow bearing trees for nesting that have a very long generation time (> 120 years). Potential nest trees for the superb parrot are on a trajectory of decline. We modelled the future hollow resource for this species in one of its major breeding areas (the South-West Slopes of NSW) under different management scenarios including: (a) business-as-usual – that is, no further specific conservation action; (b) and (c) waiting until considerable further reductions (90 and 70%) in hollows before implementing conservation actions to redress loss of hollows; and (d) implementing enhanced conservation actions now to redress loss of hollows (see Figure 2). We found that all scenarios except (d), 'conservation action now', resulted in substantial declines in potential nest trees, and came at significant opportunity cost in terms of reducing tree mortality and increasing tree regeneration in the future. Delaying conservation action will greatly increase the long-term risk of extinction of hollow-dependent species such as the superb parrot. Predicting and slowing the decline in available hollows by early intervention and restoration management is critical, even where hollow-dependent species populations may appear to be secure in the short-term. In light of our findings, we emphasise the following critical considerations to the Committee:

- (1) That protection measures and assessment of status for threatened species and communities must consider long-term trajectories and drivers. Further, that short-term measures of population status should not take precedence over consideration of long-term negative ecological drivers;
- (2) That all listings and protection measures adequately identify any long-term lag effects;
- (3) That opportunity costs in the long-term, as a result of not acting in the short-term, are explicitly considered in listings and protections measures.

The committee may be aware that state vegetation clearing regulations are currently being reviewed, including within the range of the superb parrot. Some of the proposed changes could

have serious negative consequences for that species and other hollow-dependent species. You will observe from our modelling (Figure 2), that even under a 'business-as-usual' scenario most scattered trees will have disappeared in 200 years from now; with obvious consequences for dependent native species (the superb parrot being only one example of many). Relaxation of clearing regulations will exacerbate this situation. Therefore, it is imperative that the Commonwealth Government retains legislative powers in the area of protection of threatened species and communities. This is not only to prevent loss of threatened biodiversity, but also to ensure Australia can fulfil its international obligations to prevent extinctions in the future.

Yours sincerely,

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