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### **Australia's Extinction Crisis**

The Bats and Trees Society of Cairns thanks the committee for the invitation to make a further submission to this inquiry in for the opportunity to comment on broader trends and events that have affected our species of concern, the Spectacled Flying-fox, since our original submission.

We particularly commend the committee for including the wider scope of floral extinction and consideration of the independent Samuel Review of the *Environment Protection and Biodiversity Conservation Act 1999* (handed to government in October 2020), and the *State of the Environment Report 2021* (released July 2022).

Our 2018 submission was a case study on the Spectacled flying-fox, a species that existing threatened species legislation has failed. Since our submission, several events have happened relating to this species:

1. Nov 2018. HSE mass mortality 23,000 animals (~ one-third of Australian population)
2. Feb 2019 SFF up-listed to Endangered
3. Late 2020- SFF recovery team formed
4. July 2020- SFF at Nationally important camp, Cairns CBD dispersed with deterrent actions still continuing to date.

Our submission is jointly prepared with the Spectacled Flying-fox Recovery Team and includes information regarding these events that relate to the terms of reference and wider scope of the inquiry. This should be read and considered alongside our 2018 submission and our later 2019 submission.

Terms of reference:

**(a) *the ongoing decline in the population and conservation status of Australia's nearly threatened fauna and flora species;***

The population of the spectacled flying-fox has continued to decline even after uplisting to endangered in February 2019. No recovery or conservation actions have been instigated to mitigate the decline.

**(b) the wider ecological impact of faunal and flora extinction;**

The Spectacled Flying-fox is considered a keystone species of the Wet Tropics but the population has declined alarmingly (Westcott et al., 2018) in just a decade and a half, and is facing imminent further declines and functional extinction. This means that the species may no longer be fulfilling its function as a major distributor of rainforest fruits and as a key pollinator across the Wet Tropics and nearby forests, as has been discovered in catastrophic declines of other flying-foxes in the Tonga Islands (McConkey and Drake, 2006). Put simply, the Spectacled Flying-fox is one of the few animals that can transport large rainforest fruits any distance from the source trees, and as the population falls below a certain density level, animals competing for fruits are fewer and so don't fight for each others' harvested fruits and so they don't fly off to protect their wins. Additionally, the spectacled flying-fox is an important pollinator of rainforests and surrounding vegetation communities in Far North Queensland, moving pollen longer distances than other animal vectors. The loss of this function could impact the genetic health of wet tropics forests reducing the resilience of forest trees against the impacts of disease or climate change.

Functional extinction would affect the wet tropics forests' and many rainforest and forest species' long-term survival, and continued declines would tip the species into a new ecological state from which it is difficult to return.

**(c) the international and domestic obligations of the Commonwealth Government in conserving threatened species;**

Australia has committed to agreements such as the IUCN Red List of Species and the Aichi Targets of the Convention on Biological Diversity (CBD) (1992; <https://www.cbd.int/convention/>). These agreements commit governments to taking action to protect species. It is up to Australia to take action on meeting these agreements through legislative processes and adequate resourcing. There is much evidence to show that Australian governments have failed in this regard for the Spectacled Flying-fox which is listed as Endangered on the Red List. There has been no recovery action on the Recovery Plan (2010-2020) which has now expired. The only action taken has been by individuals in removing dangerous fences and picking up sick or dead animals, and counting populations of Spectacled Flying-foxes as their numbers have fallen catastrophically since counting began in earnest (Westcott et al., 2018; Westcott et al., 2015b).

The 2020 United Nations Summit on Biodiversity was predicated by a 'Leaders Pledge for Nature' (<https://www.leaderspledgefornature.org/>; accessed 26 May 2022) for each country to commit to 'an ambitious and transformational post-2020 global biodiversity framework' (CBD CoP 15; April-May 2022). As yet Australia has failed to sign up to this pledge. We urge Australia, as one of the world's most biodiverse countries, to sign up this pledge as such an action sends a signal that Australia cares for biodiversity and will do something about halting and reversing the extinctions and declines of species.

**(d) the adequacy of Commonwealth environment laws, including but not limited to the Environment Protection and Biodiversity Conservation Act 1999, in providing sufficient protections for threatened species and against key threatening processes;**

We urge the Australian government to implement the Samuel Review (Samuel, 2020). The EPBC Act needs substantial revision (Auditor General, 2020; Australian Panel of Experts on Environmental Law, 2017a; EDO NSW and Humane Society International Australia, 2018;

Hawke, 2009; Samuel, 2020). Adopting the recommended changes to the *EPBC Act* in the Samuel review (Samuel, 2020) is critical, and a robust framework produced by the Australian Panel of Experts on Environmental Law (2017b) provides valuable guidance in how this can be achieved.

In the specific case of the Spectacled Flying-fox, decisions by government caused the destruction of numerous habitat trees in Cairns CBD where over ¾ of a nationally important roosting site housing up to 16,000 animals at times was destroyed. This destruction seriously jeopardised the species' survival, although the long-term consequences are not known with certainty because no research has been done. The means by which these destructive activities were allowed, despite the Spectacled Flying-fox being listed as Endangered under the same EPBC Act that is supposed to protect it, was through administrative processes including the decision-maker "ticking all the right boxes" and "having regard to" negative consequences and been careful in writing reasons for decision, leading to a poor decision on the fate of this important roosting site (Australian Panel of Experts on Environmental Law, 2017c; McGrath, 2008, p353).

Specifically, assessment of significance at each referral to determine whether or not something is a controlled action led to the incremental destruction of the roosting habitat of the nationally important Cairns CBD camp. The assessment process should be looking at cumulative impacts when assessing a proposed action.

Additionally, the use of self-assessment of controlled action status by local government has enabled Cairns Regional Council to carry out ongoing dispersals of spectacled flying foxes and development of a hotel within 50m of a nationally important camp with no controls on construction activities and with no opportunity for public input or proper assessment process, as inadequate as that has been shown to be in any event.

As the actions by decision-makers were ostensibly legal, there is no means under the EPBC Act for concerned opponents to challenge the decisions. The decisions, however, appear to us to lack merit, and so we recommend that Revision of the *EPBC Act* should include a legislated merits review process. This would allow people to challenge decisions that lack merit.

***(e) the adequacy and effectiveness of protections for critical habitat for threatened fauna under the Environment Protection and Biodiversity Conservation Act 1999;***

We urge the government to revise the protections for critical habitat for species such as the Spectacled Flying-fox. Recent studies have shown that more than 86% of the roosts of the Spectacled Flying-fox occur outside protected areas (Timmiss et al., 2021) even though the species is critical to tree species inside protected areas. Recent analysis (N. Preece, unpublished) has shown that more than around two-thirds of these roosts are on private property and have inadequate or no security. We sought funding of \$250,000 to urgently assess, describe and quantify all known roosts (more than 75 are known) in the recent *Environment Restoration Fund* for the '100 Priority Species' program of the Department of Environment but were unsuccessful, despite meeting all the criteria. Giving protection to the critical habitat of the roost sites would provide greater protection and strengthen our case for desperately needed funding for this endangered species.

**(f) the adequacy of the management and extent of the National Reserve System, stewardship arrangements, covenants and connectivity through wildlife corridors in conserving threatened fauna;**

The National Reserve System cannot protect the habitat of the spectacled flying-fox as much of the roosting habitat is on private land. Flying-foxes use the entire landscape when foraging including protected land and private property.

**(g) the use of traditional knowledge and management for threatened species recovery and other outcomes as well as opportunities to expand the use of traditional knowledge and management for conservation;**

Indigenous ecological knowledge is essential to the protection and recovery of endangered species like the Spectacled Flying-fox. To this end the Recovery Team includes Indigenous representatives from the Rainforest Aboriginal Peoples' network and we have been negotiating with Traditional Custodians since the Recovery Team was convened in 2020. We need the resources to facilitate this engagement, as it costs money to contract Custodians.

**(h) the adequacy of existing funding streams for implementing threatened species recovery plans and preventing threatened fauna loss in general;**

Research and monitoring effort have declined significantly in part due to a 50% reduction in federal environment funding since 2013 (ACF, 2021; Preece and Fitzsimons, 2022; Wintle et al., 2019), equivalent reductions of state and territory environment funds (e.g. 20% cuts in Queensland environment budget in 2012; (Willacy and Blucher, 2017)) and the loss of periodic funding, such as the multi-billion dollar Biodiversity Fund that supported biodiversity survey and monitoring programs over the previous decade and provided valuable knowledge of endangered species trends. Some research on species trends is being conducted under the National Environmental Science Program, but funding is relatively low (AU\$149M in 2021 over six years), considering that the program covers all of Australia (Preece and Fitzsimons, 2022).

Funding for the Spectacled Flying-fox is desperately needed due to the species' plight and threats from global warming and habitat loss and damage. To date, no funding has been provided for actions under the previous and now expired Recovery Plan for Spectacled Flying-fox, and none to support the Recovery Team's operation and the Plan's implementation. Our application for funding under the *Environment Restoration Fund* for the '100 Priority Species' program competed against projects for other threatened '100 priority species'. Funding should be adequate for recovery of all threatened species.

We urge the Senate to review the changes to the *EPBC Act* that changed the requirements for recovery plans for threatened species. Recovery plans were mandatory instruments under the *EPBC Act* for all threatened species until 2006 when they became discretionary and were replaced with mandatory *Conservation Advice* documents, which provide only basic information about the grounds for listing, but do not provide detailed actions, entities committed to responsibility for actions, and budgets (Walsh et al., 2013). An important difference between the two is that the Government must '*not make declarations that are inconsistent with any recovery plan*' whereas there is **no such constraint** under a Conservation Advice. This change in 2006 has meant that political influences can change actions and commitments, even when affecting endangered species like the Spectacled Flying-fox. Recovery Plans are legislated and are in force for usually a decade, overcoming

political cycles and vagaries. This is essential for species that require at least a decade of consistent action and resourcing to effect recovery of populations. Excuses that were made that the government had to make some hard decisions on which species to protect and provide action and resources for due to inadequate resources do not stack up when the same government has cut the budgets for protection of species. The Spectacled Flying-fox Recovery Team had to fight to retain the rights to a Recovery Team and Recovery Plan under the '100 Priority Species' program of the previous government. Recovery plans help to drive recovery action and investment (Bottrill et al., 2011; Legge et al., 2018; Walsh et al., 2013; Woinarski et al., 2017), and lack of them contributes to extinctions (Legge et al., 2018).

Government should also require resourcing for actions that are needed to recover species. While resources are limited, other means of obtaining resources, such as philanthropic societies, are available in some cases and recovery plans provide the necessary information and plans for philanthropic investors to invest.

Recovery Plans should also mandate timely and open reporting and accountability for implementing actions and demonstrating that actions were effective.

Recovery Plans, which are generally implemented and in force for 10 years, may age and as new findings about threats arise, there may be a need to have contingency options to amend the Recovery Plan. For example, threats identified in the original Spectacled Flying-fox recovery plan (QDERM, 2010) included loss of habitat, conflicts with humans (e.g. targeted electrocution killed ~18,000 in 2000-01; McGrath, 2001), tick paralysis and others including 'natural events (cyclones)'. Global warming, which is now of existential concern to the Spectacled Flying-fox, was not mentioned as there had been no records of mass deaths of Spectacled Flying-fox from heat events at the time of publication and 'climate change' was ranked as only a minor (but unknown) threat to the SFF (Woinarski et al., 2014). There will be various means of addressing this contingency need, and Conservation Advices could be used effectively.

**(i) *the adequacy of existing monitoring practices in relation to the threatened species assessment and adaptive management responses;***

Regular monitoring of the Spectacled Flying-fox population is conducted, presently by CSIRO staff, although this is under threat due to closure of the CSIRO research station at Atherton in the Wet Tropics Bioregion, with all functions going to Brisbane and Townsville. Funding for this monitoring comes from various sources, especially biosecurity and agriculture, but is by no means secure in the long term.

Funding is needed to undertake more detailed monitoring of populations, habitat condition and demographic aspects of the Spectacled Flying-fox. At present we have very limited knowledge of many aspects of Spectacled Flying-fox conservation needs.

**(j) *the adequacy of existing assessment processes for identifying threatened species conservation status;***

As outlined in our 2018 submission, the assessment processes for identifying conservation status of threatened species are inadequate when Ministers can ignore advice from the Threatened Species Scientific Committee and delay decisions.

**(k) the adequacy of existing compliance mechanisms for enforcing Commonwealth environment law;**

As detailed in our original submission, existing compliance mechanisms are totally inadequate.

**(l) final report of the Independent Review of the Environment Protection and Biodiversity Conservation Act 1999 (the Samuel Review);**

We urge the government to implement the recommendations of the Samuel Review as soon as possible to strengthen protection of Australia's threatened species, including the Spectacled Flying-fox.

**(m) the Australia State of the Environment 2021 report;**

The State of Environment Report 2021 referred to the 2018 heat stress event affecting the Spectacled Flying-fox as an example of climate change and presented horrific rates of native vegetation clearing in Queensland in particular.

Vegetation clearing of foraging and roosting habitat has been identified by the Spectacled Flying-fox Recovery team as a major threat to the survival of the spectacled flying-fox, after climate change. We need stronger environmental laws to conserve flying-fox habitat and protect native vegetation particularly on private land.

The issue of climate change and global warming is expanded below.

**n) any related matters**

**Climate Change and Global Warming**

As shown by the mass deaths of 1/3 of the remaining population of Spectacled Flying-foxes in 2018 due to a single heat event, global warming is of existential threat to some species at least. This was the second largest flying-fox die-off in history (<https://theconversation.com/killer-climate>; accessed 23 Aug 2020), far higher than any reported previously (Westcott et al., 2018; Westcott et al., 2015a; Westcott and McKeown, 2014) and is likely to be repeated as world temperature extremes become more frequent, severe and of longer duration (Chesnais et al., 2019; IPCC, 2021) and Australia's Wet Tropics experience more intense cyclones and more heatwaves (McInnes et al., 2015). Tropical species are expected to be more affected than non-tropical species as they live closer to their thermal limits (Deutsch et al., 2008; Sheldon, 2019). Flying-foxes are highly vulnerable to temperatures above 42°C (Welbergen et al., 2008) and above 38°C with high humidity (Briscoe et al., 2019) and cyclones can destroy large colonies in their path (Shilton et al., 2008).

A recent alarming study has shown that

'the exposure to dangerous Heat Index levels will likely increase by 50–100% across much of the tropics and increase by a factor of 3–10 in many regions throughout the midlatitudes. Without emissions reductions more aggressive than those considered possible by our statistical projection, it is likely that by 2100, many people living in tropical regions will be exposed to dangerously high Heat Index values during most days of each typical year, and that the kinds of deadly heat waves that have been rarities in the mid-latitudes will become annual occurrences' (Vargas Zeppetello et al., 2022)

The study addressed the effects of global warming on humans, related to the heat index of combined temperature and humidity (Vecellio et al., 2022; Wolf et al., 2022) which is already known to affect Spectacled Flying-foxes and other mammal species.

It is essential that the committee address global warming in their deliberations as an existential threat to many species, and that the *EPBC Act* be amended, in accordance with the Samuel Review, to address global warming as a fundamental consideration in decisions on endangered species.

### Hearings

We are prepared to present our findings and considered expert opinion to any hearings should the committee wish us to.

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## Spectacled Flying Fox Recovery Team

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### About Bats and Trees Society of Cairns Inc

Bats and Trees Society of Cairns Inc. is a not-for-profit incorporated group (NGO) dedicated to the care and protection of flying mammals in the Cairns region.

We engage the community and educate people in FNQ about the vital roles bats play in maintaining the health of the Wet Tropics World Heritage Area.

Our aim is to enable people to live peacefully with bats.

We do this by carrying out education in schools and the community, through representation of, permitting and financial assistance to local wildlife carers who work with microbats and flying-foxes, cooperation with Landcare and other community groups to create and improve roosting and foraging habitat quality and through consultation, advocacy and working with governments on policy and legislation to improve conservation outcomes.

We are a founding member of the nationally registered Spectacled Flying-fox Recovery Team.

## About the Spectacled Flying-Fox Recovery Team

The Spectacled Flying-fox Recovery Team was formed in late 2020. The Team comprises leading scientists and flying-fox researchers and representatives of major regional and national conservation, management, advocacy and landcare organisations, flying-fox welfare and care groups, Traditional Owners and government, including the Australasian Bat Society, Humane Society International (HSI) Australia, Environmental Defenders Office, Wet Tropics Management Authority and Terrain NRM.

The remit of the team is to prepare a new recovery plan and guide the implementation of strategic actions to recover the species. The team was officially registered in 2022.

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