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Re. Senate inquiry into the effectiveness of threatened species and ecological communities' protection in Australia

Zoos Victoria is a 'zoo-based conservation organisation' committed to the delivery of tangible conservation outcomes for wildlife populations, as supported by our 20 year strategic plan. Consequently, we are focussed on the care of our captive collection, and the condition of the wild populations that they serve.

In terms of delivering tangible conservation outcomes, native threatened species are a clear priority for Zoos Victoria, and form one of the central elements to a more holistic conservation approach (integrating field conservation and social science tools to achieve biodiversity outcomes) that we have developed under the banner of 'Fighting Extinction'.

Zoos Victoria has extensive experience in the field of native threatened species recovery, with captive-breeding programs spanning two decades for several species. Our investment in threatened species recovery currently amounts to approximately 2.5 million dollars per annum.

To create greater transparency around when we will initiate captive-breeding programs for threatened species, we have prioritised Victorian species of terrestrial vertebrates according to their likelihood of extinction in the wild over the next 10 years. Assessment of extinction risk was driven by qualitative determinations focusing on population size and trend, extent of distribution and key threatening processes. Following this review, Zoos Victoria has arrived at a priority list of 20 native threatened species. This list will be reviewed periodically, and species added or removed as new data becomes available and/or circumstances in the wild changes. Under our criteria, *ex situ* intervention is not triggered for species that are in decline within Victoria, but have strongholds in other States or Territories. The extinction risk must apply across a species' entire range. Having a clear understanding of why we are focused on certain species and not others has created much greater clarity in where Zoos Victoria directs resources.

Three of Victoria's highest profile threatened species highlight the important role that zoos can play in conservation. The mainland Eastern Barred Bandicoot would be extinct if it were not for the breeding and release program undertaken by Melbourne Zoo. Similarly Victoria's bird emblem, the Helmeted Honeyeater would almost certainly be extinct if it were not for the breeding and release program undertaken by Healesville Sanctuary. Lastly, the Orange-bellied Parrot is predicted to go extinct in the wild within the next five years, its survival now resting on a large insurance population established in captivity. It is clear that all the recovery potential for these Victorian species rests on successful captive-breeding and release programs. Conversely, each breeding program has been in place for about 20 years and yet wild populations for each species are still at risk. Thus, some significant adjustments are required to the recovery models being applied.

In recognition of the need to increase the effectiveness of captive-breeding and release programs, Zoos Victoria has made several changes in its approach to threatened species recovery. These include the following:



- criteria to prioritize and guide when we will initiate captive-breeding programs for native threatened species;
- closer integration between *in situ* and *ex situ* recovery measures;
- measures of success that are tied to the condition of wild populations;
- establishment of captive–wild metapopulations to minimize the loss of genetic diversity and maintain appropriate behaviours in captive populations;
- research programs directed at improving the quality of individuals bred in captivity;
- major focus on increasing community understanding and engagement with our threatened species programs. This includes use of the Connect–Understand–Act model to promote behaviour change in our visitors.

Notably, the measure of success for our captive-breeding programs is now tied to the condition of wild populations. Specific five-year and 20-year recovery objectives have been developed for each species in the wild and captivity, resulting in greater integration of *in situ* and *ex situ* approaches.

Melbourne Zoo, Werribee Open Range Zoo and Healesville Sanctuary attracted more than 1.9 million visitors in 2011. Zoos have a unique opportunity to bridge this gap, connect people with the species and issues, and provide them with simple things they can do to assist. In recognition of this, Zoos Victoria has developed specific ‘visitor objectives’ to sit alongside our breeding and release targets. These are delivered through initiatives such as our ‘Love your locals’ community engagement program, designed to specifically engage the wider Victorian community in recovering our threatened native species.

Below we provide some specific comments to the terms of reference of the Senate Standing Committee on Environment and Communication’s enquiry.

(a) Management of key threats to listed species and ecological communities

- There is scope to better integrate and coordinate programs targeting threatening processes and those focused on population recovery for a particular species. In Victoria, an integrated ‘alpine biodiversity program’, for example, would generate greater benefits to a range of threatened taxa than the current single species approaches to protect Mountain Pygmy Possum and Alpine She-oak Skink (part of Zoos Victoria’s 20 Fighting Extinction species), and habitat protection such as removal of the introduced hawkweeds. Indeed, this could have a wider bio-regional focus, given that Victoria’s alpine region is contiguous with similar habitat in NSW and the ACT. This could reduce duplication if agency resources and enhance biodiversity outcomes.
- We would emphasize that many threatened species share common threats (e.g. chytrid fungus impacting numerous frog species and predation on small mammals and ground-dwelling birds by foxes), and thus effective threat management will benefit multiple threatened species and other biodiversity.
- We believe that recovery programs focused on single species recovery have a major role to play in biodiversity conservation. The Red-tailed Black-Cockatoo recovery program in western Victoria/south-eastern South Australia provides a great illustration of the role an iconic threatened species can play in promoting habitat conservation at a landscape scale. Moreover, the use of iconic threatened species to promote improved environmental management can be an extremely powerful tool to generate community support and involvement.
- Zoos have a vital role to play in not only raising the profile of threatened species programs but also influencing conservation sensitive attitudes, knowledge and behaviours. Zoos Victoria’s visitors and members now far exceed the membership numbers of any other conservation organization in Victoria (with more than 120,000 members). Recovery efforts that harness the reach of organization such as zoos to drive social changes that compliment environmental strategies are welcomed by our organization because human behaviors drive many of the processes threatening wildlife.



- When it comes to on-ground action, we would also highlight that single-species and landscape-scale approaches both essentially employ the same site-based methodologies (i.e. both involve management targeting a collection of discrete sites). Thus, the dichotomy that has sometimes been highlighted between the two approaches is often a false one. Moreover, the trend in recent years to take a landscape or habitat approach to biodiversity conservation, at the expense of species conservation, is leaving many species dangerously vulnerable when now viewed in the context of severe reductions to wildlife agency budgets.

(b) Development and implementation of recovery plans

- We support the development of recovery plans that specify recovery models and targets based around sound science and monitoring. What does success look like? Is our current plan adequate to lead us there? Are we on track? These are questions that Zoos Victoria believe every recovery program should be able to communicate in simple terms so that our community have a clear understanding of the state of our environmental and what further efforts are needed
- It is important that recovery teams undertake an annual review of progress against measurable targets.
- The format of recovery plans is not conducive to them being updated easily. To maintain their relevance, these documents should be capable of incorporating new information as soon as it comes to light. The impacts of the Black Saturday fires on Leadbeater's Possum populations is a good example of a case where the latest field results have not been adequately captured in a recovery plan (or Action Statement) to date.
- Given the threats posed by climate change and increasing fire frequency in south-eastern Australia, it is important that recovery plans include risk-spreading strategies.
- Zoos Victoria urges our government and scientific communities to be brave and bold at times when action is required urgently. There is often greater risk associated with inaction, or favouring recovery methods that have been employed for years (often unsuccessfully). There is a desperate need for the conservation community to take some big, bold steps forward and conservation organizations such as Zoos often have the science communication capacity to assist with community engagement so that adequate community support is secured.

(c) Management of critical habitat across all land tenures

- Effective habitat management is an essential foundation to achieve threatened species recovery. We would highlight that 'habitat protection' in itself is inadequate to conserve threatened species, and that ongoing site management is a key requirement. Yellingbo Nature Conservation Reserve, the last locality where a wild population of Helmeted Honeyeaters and lowland Leadbeater's Possums occur, highlights this point. The locality is fully protected, but not managed effectively for either species. As a consequence, ongoing habitat degradation and the limited availability of high quality habitat are the major threats for both species.

(d) Regulatory and funding arrangements at all levels of government

- The extinction of the Christmas Island Pipistrelle (*Pipistrellus murrayi*) was preventable. In that case, we knew what to do, the scientific data was available, however intervention was left too late. Similarly, during the mid 90's the Queensland Government refused to respond to repeated calls from scientists to take action for the Sharp-snouted Torrent Frog (*Taudactylus acutirostris*), until the wild population was down to less than 100 individuals. At that late stage, zoos (including Melbourne Zoo) and universities were asked to help. But it was too late and the species is now considered Extinct. A good



example of where zoos have been active stakeholders from the beginning and are currently preventing species extinction is captive-breeding inputs of Zoos Victoria and the Taronga Conservation Society for the Southern Corroboree Frog – these are likely to be the critical factor in ensuring the recovery of this species.

- To be effective, threatened species recovery programs require sustained and long-term funding. Securing funding for longer time periods (e.g. 3+ years) will improve the quality and effectiveness of recovery programs.
- A sustained funding model will better ensure that species such as the Tasmanian Devil do not suffer the same fate as the Christmas Island Pipistrelle and Sharp-snouted Torrent Frog as these cases highlight the need to act quickly when the evidence for intervention is clear. A 2012 paper (Martin et al, 2012¹) makes three globally relevant recommendations to minimize species extinction that especially pertinent to this Enquiry;
 - (1) informed, empowered and responsive governance and leadership is critical;
 - (2) processes that ensure institutional accountability should be in place; and
 - (3) decisions must be made whilst there is an opportunity to act.
 The key message is that, unless responsive and accountable institutional processes are in place, decisions will be delayed and extinctions will follow.
- We would emphasize that with appropriate resourcing, the extinction of additional vertebrates in Victoria is entirely preventable. Moreover, the recovery actions applied during the past two decades have been very effective at preventing species loss. We do acknowledge however, that population recovery has proven far more challenging, and this is directly related to the difficulty in effectively eliminating key threatening processes across the landscape.
- In our experience, the most effective threatened species recovery programs have had a dedicated project officer to drive implementation of on-ground actions. There has been a shift away from funding these positions in recent years to the direct detriment of some recovery programs. We urge that the value of such positions are recognized and supported in the future.

(e) Timeliness and risk management within the listings processes

- Early intervention dramatically improves the likelihood of achieving population recovery.
- Listing threatened species and ecosystems is an essential first step towards their conservation. However, the development and delivery of an action plan that responds in a timely manner is an essential next step.
- Notwithstanding the importance of listing, however, the precautionary principle suggests that a lack of listing for a threatened species should not necessarily prevent action to conserve it. The challenges inherent in a bureaucratic process should not be seen as a barrier to preventing extinction.

(f) The historical record of state and territory governments on these matters

- Threatened species recovery programs in regional areas greatly expanded with increased Federal funding that became available under the Natural Heritage Trust. This funding source has subsequently declined under Caring for Our Country (i.e. in terms of the funding allocation specific to threatened species). Zoos Victoria believes that this has reduced the effectiveness of recovery programs in delivering on-ground actions and it would be timely for a review of federal funding mechanisms.

¹ Martin, T.G., Nally, S., Burbidge, A.A., Arnal, S., Garnett, S.T., Hayward, M.W. and Linda F. (2012). Acting fast helps avoid extinction. Conservation Letters 5 (2012) 274–280



(g) Any other related matter.

- Alignment of priorities between wildlife management agencies, land management agencies and zoos will result in more effective conservation of threatened species.
- In his recent Quarterly Essay Tim Flannery has highlighted the extinction crisis facing Australia. We believe that the prevention of further extinctions in Australia is entirely achievable with appropriate political support and resourcing. Conversely, without time-critical interventions to secure some species, further extinctions are inevitable.
- We strongly support the application of innovative approaches to secure populations of threatened species (e.g. the use of 'assisted colonization' in special circumstances).
- Zoos are uniquely placed to increase the profile and support for threatened species recovery programs in the community (and especially amongst urban populations displaced from the species and issues). Increasing the familiarity and connection that the wider public have with these species should be a key objective of recovery programs. Many forums in recent years have referred to 'mainstreaming biodiversity' – with our large visitation and membership base, and innovative approaches such as Zoos Victoria's '*Love your locals*' campaign, zoos are arguably better situated than any other group to enable this goal to be achieved.
- Zoos Victoria look forward to working with relevant state and federal government agencies, in addition to our non-government partners, to secure a bright future for the incredible species that make this country the dynamic, vibrant and exciting landscape that it is.

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