Review of the Victorian Wildlife Act 1975 – Melbourne Veterinary School submission

Dear Dr Peterson, Associate Professor Beausoleil, Dr Pascoe, and Emeritus Professor Freiberg,

Thank you for the opportunity to contribute to this important review.

SUMMARY

This submission from the Melbourne Veterinary School focuses on the critical need to include policies in a revised Victorian Wildlife Act to manage wildlife health. Wildlife health can be defined as the physical, physiological, behavioural and social wellbeing of free-ranging animals at an individual, population and wider ecosystem level, and their resilience to change.

In the past, disease has been neglected as a conservation issue, due to an assumption that infectious and other disease cannot cause population declines. However, recent emerging diseases (e.g. frog chytridiomycosis, White Nose Syndrome in American bats, Tasmanian Devil Facial Tumour Disease) have demonstrated severe conservation and welfare impacts, to the extent that it is no longer acceptable for environment departments not to take direct responsibility for managing wildlife health.

The basic approach to wildlife health and disease management starts with surveillance and outbreak response capability, underpinned by the capacity to detect, diagnose and control emerging problems. Regulations and capacity around biosecurity to reduce risk of spreading disease (e.g. during translocations) are also key. A more comprehensive approach includes studies to determine baseline disease levels, and to develop and test management and interventions to improve health. At a minimum, every state needs a government wildlife veterinarian – Tasmania, NSW and Queensland are leading the way in this regard. We have attached Tasmania's wildlife health plan from 2008.

In addition, we want to raise a specific problem with current policy and procedures, regarding State approval and permitting systems that cause major delays and obstacles during urgent wildlife disease outbreak investigations. There is an obvious need for diagnostic samples to have a blanket approval to be sent to the most appropriate specialist laboratory, and for collection and pathological investigations and use of samples for full diagnosis and further research to be conducted without complicated approval processes and the extended timeframe for a permit to be granted. Under the Veterinary Practice Act 1997, veterinarians are obligated to examine and treat sick animals, while current wildlife policies can obstruct this process causing detriment to welfare, conservation and biosecurity.

BACKGROUND

Our focus at the Melbourne Veterinary School (MVS) is on improved endemic wildlife and biodiversity conservation with increased capacity for wildlife health management and a One Health approach in Victoria. Wildlife health and One Health are our areas of expertise and the MVS has significant capacity. Wildlife Health and its management is a multidisciplinary field that requires expertise in disease and ecology, which are not currently found in a single government department. We recognise that current Victorian legislation and accountability for wildlife health keeps ' falling between the cracks' and there is an urgent need for a more comprehensive and integrated cross-departmental approach and clearer accountability.

The growing importance of wildlife health is internationally recognised, including by the World Organisation for Animal Health (OIE) who stated in 2020 *' Today more than ever, the international health community recognises the importance of maintaining a global perspective and foresight on wildlife health and their inextricable connection with veterinary and human public health. '* As an example, in 2008 the Tasmanian Department of Primary Industry and Water published their 'Strategy for Managing Wildlife Disease managing wildlife disease in the Tasmanian Wilderness World Heritage Area' (A. Philips, M. Driessen, DPIW Tasmania 2008 - attached). In their overview they stated: "Wildlife disease has affected biodiversity, ecosystem integrity, human and livestock health and economies around the world on an ascending scale in recent times. In the first six months of 2003, diseases with a wildlife reservoir were second only to war in claiming attention and causing expenditure by governments around the world (Environment Canada, 2004)." (There were 251 suspect cases of SARS coronavirus in Canada 2002-2003).

In Victoria, DELWP has also recognised that disease is a key threat to biodiversity and there is a need to better understand and respond to it. DELWP's 2017 Protecting Victoria's Environment-Biodiversity 2037 List of Priorities (Appendix 2, p61) states:

"Priority 17. Deliver excellence in management of all land and waters.

- Better understand and respond to key threats and opportunities for biodiversity conservation, such as control of weeds and pest animals, fire regimes (both too frequent and too infrequent), **disease**, the role of apex predators, and climate change."

'Conservation and management of wildlife as public land managers is a responsibility of DELWP and Parks Victoria' (Issues paper, Appendix A, p36). However, DELWP and Parks Victoria have limited expertise and capacity in wildlife disease management.

'Managing biosecurity issues as they relate to wildlife is a responsibility of DJPR Agriculture Victoria.' Issues paper Appendix A, p36. However, Agriculture Victoria's focus is not biodiversity conservation and preventing wildlife from becoming extinct.

Wildlife diseases can impact, and be impacted by, the four key areas of human, domestic animal, wildlife (endemic and feral, introduced species) and ecosystem health. These can be efficiently managed using a One Health framework. One Health is the collaborative effort of multiple health science professions, together with their related disciplines and institutions – working locally, nationally, and globally – to attain optimal health for people, domestic animals, wildlife, plants and our environment (Figure 1)
https://www.onehealthcommission.org/en/why_one_health/what_is_one_health/

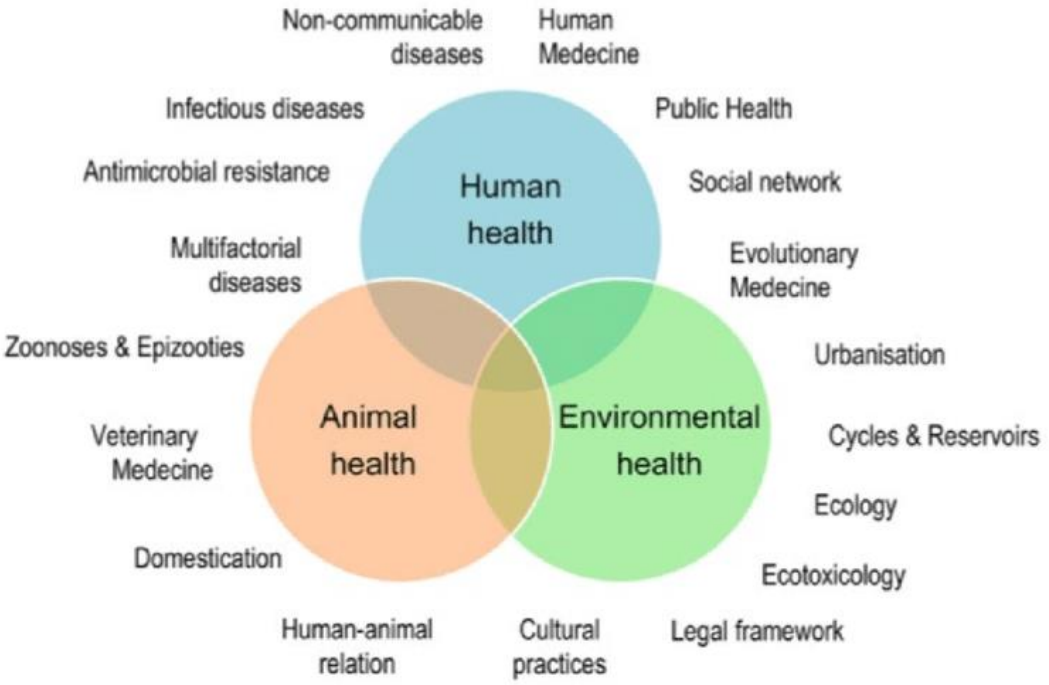

Figure 1: The One Health concept: a holistic, transdisciplinary, and multidisciplinary approach to Health (Delphine Destoumieux-Garzon et al 2018 The One Health Concept: 10 years old and a long road ahead. Frontiers in Vet Science 5 Article 15, 1-13)

These areas are not well addressed under the Wildlife Act 1975.

1. **Human health can be impacted by zoonotic diseases from wildlife reservoirs.**
   "Victoria's Department of Jobs Precincts and Regions' (DJPR)/ Agriculture Victoria manage biosecurity issues as they relate to wildlife – such as wildlife or zoonotic diseases". (Independent Review of the Wildlife Act 1975: Issues paper, p36 Appendix A: Roles and responsibilities of government agencies under the Wildlife Act).
   The Victorian Department of Health and Human Services (DHHS) is also involved with zoonotic diseases with wildlife reservoirs such as Buruli ulcer caused by *Mycobacterium ulcerans* bacteria, arboviral diseases – Ross River, Barmah Forest and Murray Valley Encephalitis, Q fever, psittacosis, etc.
2. **Domestic animal health can be impacted through wildlife-domestic animal interfaces (infections can spread in both directions.)**
   "DJPR/ Agriculture Victoria is responsible for managing biosecurity issues as they relate to wildlife", but their key focus and expertise is managing biosecurity of domestic animals. "DJPR is also responsible for policy relating to recreational hunting, animal welfare, agriculture and biosecurity." Issues paper p9. This overlap is problematic and requires careful consideration in drafting the new Wildlife Act.
3. **Wildlife populations and their health can be impacted by wildlife diseases.**
   The Victorian Department of Environment, Land, Water and Planning (DELWP) is responsible for developing and coordinating wildlife emergency responses, including health emergencies such as bushfires or oil spills. However, their role in managing endemic diseases (such as sarcoptic mange, chronic Phalaris toxicity in macropods or chlamydia in koalas) is less clear, although these diseases can have significant impacts on populations, both from a conservation and animal welfare impact point of view.
4. **Ecosystem health affects wildlife health and human health**

Ecosystem health is known to significantly impact wildlife health both directly (e.g. through toxicity) and indirectly. Fragmented ecosystems, and those with less genetic diversity, are less resistant to disease outbreaks, and are more likely to be associated with extinctions or severe population declines. (e.g. Bell et al. 2020). In addition, lower biodiversity has been associated with greater risk of zoonotic disease transmission to humans. (e.g. Keesing and Ostfeld, 2021). Once identified, e.g. due to a disease outbreak, toxicity issues in wildlife are addressed through DELWP and EPA Victoria (where there is an identifiable source), but there is little active or passive surveillance for disease or the levels or impacts of environmental toxins in wildlife, so there is no ability to prevent such outbreaks or address more silent underlying issues. These subacute toxicity issues such as effects on reproduction, immune function, disease resistance, and fitness may have a cumulative impact with other factors such as drought, habitat loss, and loss of genetic diversity. The current lack of government surveillance and baseline knowledge makes it impossible to understand and manage the effects of these and a cumulative impact with other factors.

Some wildlife species are international migrants and biosecurity risks require surveillance for early detection and identification of infection and management.

Models and requirements for wildlife health management

Wildlife health management is a developing collaborative, multidisciplinary field (Wildlife Health Australia, Nov 2020, 'National Guidelines for Management of Disease in Free-ranging Australian Wildlife'). Much of wildlife management is a state responsibility but there is need for a participatory model that includes all stakeholders. A proven and highly successful system from Canada since 1990 uses university veterinary schools collaborating with environment departments to provide wildlife disease surveillance initially and research capacity, training including First Nations etc., as required (Canadian Wildlife Health Cooperative - http://www.cwhc-rcsf.ca/). We have seven veterinary schools in Australia, distributed throughout most of the country (other than central Australia the Northern Territory and ACT) and which, in collaboration with others working in the wildlife health and ecology area, would be ideally placed to provide a similar service within this country.

Wildlife Health Australia (WHA) is tasked to act as the peak coordinating body for wildlife health surveillance and communication in Australia. This important role is currently undertaken by a relatively small team of highly skilled and motivated people, and WHA ought to receive more substantial funding to increase its capacity to work nationally with federal, state and territory governments, universities, zoos and other organisations on biosecurity and management where wildlife is part of the ecology (zoonoses, interactions with domestic and feral animals, and ecosystems).

Wildlife are mobile and not usually restricted to land managed by public land managers (DELWP, Parks Vic, Australian Department of Defence, Local Governments, Melbourne Water, other water catchment or waste agencies, etc). Wildlife need to live and disperse and migrate across Victoria's landscapes through habitat corridors and other connectivity including across private land for genetic, resilience and evolutionary reasons. Similarly, jurisdictional borders with NSW, SA and elsewhere do not impact natural movements of wildlife so strong links are needed with environment departments elsewhere. Some wildlife species are international migrants and biosecurity risks require surveillance for early detection and identification of infection and management.

There is also strong need and opportunity to recognise and work with Traditional Owners and Aboriginal Victorians in wildlife health management. The Melbourne Veterinary School could contribute to/participate in working together and training.

In summary, wildlife disease risks and management should be considered by the Panel and included in the new Act.

INDEPENDENT REVIEW OF THE WILDLIFE ACT 1975: ISSUES PAPER

1.1.1 In what ways does the Act succeed or fail in representing contemporary expectations for, and values relating to, wildlife in Victoria? Please provide examples

There is strong and growing support across the Victorian community for wildlife and the ecosystems they require for long-term conservation. Members of organisations such as LandCare, Birdlife Australia, Wildlife Carer and rescue groups, Field Naturalist Clubs, Friends of National Parks, etc., have a growing understanding and expectations of wildlife management, including wildlife health management; many of these groups have partnered with MVS's Wildlife Health Victoria: Surveillance since 2008. We have also met with Lake Tyers Aboriginal Trust staff and are keen to partner with other Traditional Owner and Aboriginal Victorian communities.

The public expect government to be responsible for detecting and managing wildlife disease and for there to be clarity over accountability. The Act needs to include government responsibility for protecting wildlife from disease and managing disease. At present, there seems no accountability for this issue. Environment departments deliberately exclude it when addressing "ecological values".

An example is amphibian declines: population crashes due to mortality from the spread of chytrid fungus began in the 1980's in Victoria but took more than 15 years to be diagnosed, indicating a faulty wildlife surveillance system. There has been little improvement and wildlife surveillance remains severely under-resourced and ad hoc. Even in-kind support for pro bono surveillance activities have not been approved by DELWP in 2020.

Individual and population wildlife welfare issues need to be responded to, prevented where possible and better managed.

1.2.1 Are the current purposes of the Act satisfactory?

The current objectives are too narrowly focused. The long-term biodiversity conservation of (endemic) wildlife and their habitats/ecosystems should be the primary purpose, which includes the prevention and management of disease. "Prevention from becoming extinct" as a purpose is not strong or proactive enough for current and future needs i.e. the aim should be for wildlife populations to remain sustainable, resilient and in adequate abundance and distribution to ensure their health and welfare for future generations. Health and disease in feral introduced wildlife also needs to be included and managed as these species can be important reservoirs of infectious disease.

The current permitting system delays research into understanding cause and impact of disease. For example, we recently undertook a survey on sarcoptic mange in Victoria (especially in wombats and koalas) and had reports of suspect mange in deer. The next step will be to obtain

and test samples from hunter-killed or road-killed deer and other animals to look for and possibly identify *Sarcoptes scabiei* mites.

A DELWP Wildlife Research permit is required for collection and retaining of samples from dead animals as part of surveillance activities where the activity is not directly related to the diagnosis of disease in an individual or as part of a disease outbreak. It is important that the turn around time for such permits is optimised; in 2020, we waited 9 months for our combined Parks Victoria/DELWP Research Permit to be renewed, to allow us to retain samples opportunistically collected from dead animals across Victoria. These samples are important for longer term research activities related to surveillance (e.g. to determine patterns in disease occurrence or causes of disease over time), and to retain samples so they can be accessed down the track in case there are new outbreaks (e.g. to investigate how prevalent a specific disease was in a population in the past in order to determine whether a disease is emerging). This type of permit delay makes responsive, collaborative research unworkable.

The administrative work associated with wildlife research is now mind boggling; it slows down research and potentially discourages it. For example, a wildlife research permit is required to transfer samples that were collected by someone else as part of a different project, with full ethics approval and research permit, to a different location just so they can be analysed. It discourages sharing of samples and getting the most value out of research. Field-based wildlife research is extremely resource intensive, complex and impacts on the wildlife involved. It makes sense to facilitate use of these samples for as many projects as possible. Similarly, it is not possible to get a permit to obtain or retain samples from wildlife that is killed as part of an "Authority to control wildlife" permit – this means we are missing out on many valuable samples for disease surveillance and important baseline data.

1.2.1 What should the outcomes, objectives or purposes of the Act be?

A key objective should be to promote optimal health of wildlife. With increasing habitat disturbance and spread of exotic disease, and the additional pressures of climate change, this objective requires monitoring and intervention. A further objective should be clearer accountabilities for wildlife health. Wildlife health can be defined as the physical, physiological, behavioural and social wellbeing of free-ranging animals at an individual, population and wider ecosystem level, and their resilience to change.

1.2.1 How should the objectives and purposes of the Act relate to the desired outcomes?

Optimising the health of wildlife populations requires the prevention and management of disease and clear departmental accountability for management of wildlife health beyond emergency diseases so that endemic diseases are included. Wildlife health surveillance provides understanding of baseline health in order that changing patterns can be detected, investigated and responded to quickly, and also monitoring of zoonotic infections where wildlife may be reservoirs.

*1.*2.1 *How would they ensure desired outcomes are achieved?*

Clear accountabilities and purposes that extend beyond the protection and management of wildlife health beyond emergency disease will be critical for optimising health and provide a basis for addressing other actions discussed above such as timely intervention. A really important first step would be to clearly assign the responsibility for managing wildlife diseases that do not qualify as an emergency to one government department, rather than having it sit

somewhere between Agriculture Victoria and DELWP, with neither department taking full responsibility. Another important step would be to employ a full-time veterinarian in the role of state wildlife veterinarian with responsibility– that person could be responsible for developing and administering a strategic plan on how to manage wildlife health issues, including coordinating and collaborating with various stakeholders, including non-government organisations and private land holders that are involved in wildlife management, government departments, Wildlife Health Australia and universities. That person would also be a first point of contact for wildlife disease outbreaks.

1.3.3 - Should the Act prescribe a role for Traditional Owners and Aboriginal Victorians as key partners in decision making about conserving wildlife? What could that role look like?
TO involvement in decision-making should be prescribed and balanced by academic ecological expertise; decisions should still require consensus decision-making of all stakeholders.

1.4.1 Should the Act prescribe a general duty of care related to wildlife conservation or biodiversity protection more broadly?

The Act should prescribe a general duty of care related to wildlife and biodiversity conservation - not taking this path would be at odds with contemporary understanding and best practice legislation. It will raise the baseline of respect for the environment and wildlife if accompanied by appropriate education and regulation. This would work in practice by enabling reporting of behaviour/activities that were in breach of the general duty, and by funding a small amount of regulation to periodically remind key stakeholder groups of the consequences of non-compliance. There is problematic interaction/confusion in relation to animal welfare management, which will be aided by both new acts (i.e. wildlife and prevention of cruelty to animals) prescribing a general duty.

Why or why not?

There is an expectation from the general public that wildlife is managed by the government, and this includes being accountable for both the administrative and financial aspects of wildlife health. However, with the current system, it is not really reasonable to expect the public provide most of the funds to care for wildlife rehabilitation via wildlife carers.

It is also unreasonable for government departments to avoid the responsibility of administering strategic monitoring of health of at least key wildlife species across the state. As an example, we are not able to answer the question whether the prevalence of sarcoptic mange is increasing in common wombat populations, or whether there are indeed localised wombat population declines, simply because there is no routine, comprehensive monitoring program of that species (or any other wildlife species at a state level). Tasmania is well ahead of Victoria in this regard, with regular state-wide surveys of a number of important species, such as wombats, macropods and Tasmanian devils. The Victorian environment needs more funding, strategic management and develop partnerships with key stakeholders including universities. DELWP's Protecting Victoria's Environment-Biodiversity 2037 identifies disease on page 61 'Priority 17 Deliver excellence in management of all land and water', and partnerships but does not mention universities.

How could it work in practice?

Having such clear accountabilities as described above would provide the basis for more, and targeted, funding and strategic management.

2.1.1 Do you have any comments on the interactions between the Wildlife Act and other legislation?

There is a lack of clarity around when wildlife samples can be transferred between facilities/laboratories with and without a permit. For example, samples relevant to disease outbreaks may need to be sent to other laboratories, within or outside of Victoria – but it is often not clear at what point these would be counted as veterinary diagnostic vs research samples (i.e. require permits), and whether or not they require permits to be sent to other states.

Eastern grey kangaroos are protected, can be killed by landowners with permit, killed for commercial harvest, and may also be suffering from disease such as chronic Phalaris toxicity (from an introduced pasture) with significant individual welfare impacts. This example demonstrates the potential for crossover and overlap of issues involving wildlife management and health, as well as administrative complexity.

As stated above, there is problematic interaction/confusion in relation to animal welfare management, with some scenarios falling between the gaps of the POCTA Act and the Wildlife Act, creating administrative burden and enabling inappropriate behaviour in the community. Animal welfare, and wildlife welfare, does not just require management of cruelty offences – it requires maintenance of appropriate living conditions in the wild and captivity, and this must be a holistic approach that DELWP embraces, in consideration of contemporary societal expectations. Many wildlife welfare problems are a result of human actions following colonization, such as introduced species bringing in new infections (chlamydia in koalas, sarcoptic mange) etc.

2.2.1 How do regulatory differences between states help or hinder wildlife management? Please provide examples for your experiences.

Every effort should be made to ensure consistency with neighbouring states.

Wildlife Health Australia could be contracted to help explore the best way to harmonize wildlife health management between jurisdictions but would need additional funding.

State permitting systems cause major delays during urgent outbreak investigations. There is an obvious need for urgent diagnostic samples to have a blanket approval to be sent to the most appropriate specialist laboratory research on mortality events (see comments under 1.2.1 and 2.1.1 on retaining and moving samples) Export and import permits and reporting back about sample movement are complex and time consuming to manage. Disease surveillance work is helping DELWP with wildlife disease diagnosis and management, significant results are entered into Wildlife Health Australia's national data base, which is accessible and used by DELWP.

2.3.1 In what ways does the Act succeed or fail in protecting and conserving wildlife habitat? Please provide examples from your own experience.

Contiguity is important for wildlife dispersal and population genetics – corridors of habitat need to be created and protected and named as required/essential elements of local landscapes. e.g. If koalas could more easily disperse, they would be less likely to suffer from local overpopulation crashes.

2.3.3 Should the Act prescribe duties for landowners about protecting and conserving wildlife and wildlife habitat on their land?

Yes – these duties could include a baseline requirement to maintain habitat, with penalties for altering or removing habitat without permission, and incentives for increasing habitat.

2.4.1 Do property rights related to wildlife need clarifying? If so, how?

Yes – wildlife should be specifically protected as property of the Crown – and there should be fundamental obligations on the Crown (i.e. DELWP) to ensure sustainable management of wildlife and their habitat for the benefit of current and future generations. Property rights could include a baseline requirement to maintain habitat, with penalties for altering or removing habitat without permission, and incentives for increasing habitat.

2.4.2 Should private landowners have greater rights to use of wildlife on their property?
No – the wildlife should still by default belong to the Crown, but landowners may require access to permits that are slightly different/flexible when compared to the general public.

2.4.3 Should the Act recognise sentience of some wildlife and, if so, what would this achieve? How would this recognition affect the rights and responsibilities of governments, businesses and individuals?
Yes, of course, the Act should align with contemporary animal welfare science, which recognises the sentience of animals, in this context all wildlife (including fish) other than invertebrates (but including cephalopods). To do otherwise would be a retrograde step. It will be important for DELWP to align with the approach in the new Prevention of Cruelty to Animals Act being written by Agriculture Victoria. This would increase the respect for wildlife and enable more proactive management. This would not affect the rights of governments, businesses and individuals if properly drafted, as to recognise the sentience of animals just means they must be treated humanely.

3.1.1 Should the Act include statements of principle and criteria to guide regulators, duty holders and the public? Why are such principles important? If you do support including principles, what do you think they should be and why?

Yes – statements of principle such as those provided as examples from the new environment protection act are important to support the intent and purpose of the wildlife act. For example, the following principles would be relevant:

- responsibility should be shared by all levels of Government and industry, business, communities and the people of Victoria
- actions or decisions are to be based on best available evidence in the circumstances that is relevant and reliable
- where threats of serious or irreversible harm to human health or the environment, lack of full scientific certainty should not be used as a reason for postponing measures to prevent or minimise those threats (the precautionary principle)

3.2.3 Are there current barriers to private sector actors having meaningful involvement in wildlife management and conservation in Victoria? What are those barriers and what problems do they create for achieving the objectives of the Act? How might any such barriers be removed or minimised?

Regulations inhibit voluntary contributions, for example the paperwork to receive diagnostic samples during mortality events.

3.3.1 Should the Act enable wildlife management plans? What provisions should be included for such plans?

Yes, and the provisions should be similar to those examples provided from the Fisheries Act, and should define, enable and require well thought out management, and evaluation of such management.

In Victoria, we have a number of known significant endemic wildlife diseases, such as Burelli ulcer caused by *Mycobacterium ulcerans*, psittacine beak-and-feather disease avian botulism and diseases that have probably resulted from spill-overs from introduced animals or other actions following colonization (sarcoptic mange, chlamydiosis in wombats and koalas, toxoplasmosis, chytrid fungus, chronic Phalaris toxicity etc).others. There should be strategic plans for the management of these diseases within the state, including acquisition of the required baseline data (prevalence and impact), mitigation of impacts, and monitoring of any interventions. These actions can be guided by a Disease Risk Analysis (DRA) to identify priorities, mitigation strategies and gaps and These actions may be achieved in collaboration with stakeholders, such as government and non-government agencies, private wildlife managers and universities; but the responsibility for ensuring that these plans are developed and administered should lie with the Victorian government, as they are ultimately responsible for Victorian wildlife. As outlined earlier, clarifying who is responsible for wildlife health, and employing a state wildlife veterinarian, would be an important first step.

3.5.2 Is full cost recovery appropriate, or should fees for some licences and activities be subsidised? What role is there for user pays or beneficiary pays principles? What, if any changes, should be made and why?

Full cost recovery does not seem appropriate – tax payers have the right to assume that their environment is regulated as a baseline, without having to pay extra. However, if private entities/business are going to benefit from an activity, this should involve full cost recovery.

3.6.1 Should the Act contain provisions that allow for issuing mandatory codes of practice, standards or guidelines?

Yes – definitely.

3.6.2 What activities could most benefit from the development of mandatory codes or standards?

Activities such as animal handling, euthanasia/destruction of animals, care of animals in captivity (including those in wildlife rehabilitation, but also those held privately), etc. Zoos Victoria have significant expertise in the captive management of Australian wildlife, in clinical and preventative medicine of individual wildlife, and the role of breeding in captivity, DRAs and translocation as part of biodiversity conservation and can provide advice to the Committee.

4.2.1 Should the Act include provisions that require and enable establishment of a scientific advisory committee or advisory panels to provide expert guidance to key decision makers such as the Minister, the Secretary or the regulator on specific matters relating to wildlife?

Yes, a scientific advisory committee specifically on wildlife health is essential. It could include representatives from universities, zoos, and departments of agriculture, environment and health.

Why or why not?

DELWP etc has limited expertise to advise on wildlife health management, while Agriculture Victoria has limited experience with wildlife disease. Melbourne University Veterinary School (MVS) have expertise on wildlife disease surveillance, pathological diagnosis, agent identification, epidemiology, disease risk analyses and population health management. Zoos Victoria has expertise in individual wildlife animal medicine, captive management and rehabilitation and emergency management of wildlife. Combining the expertise and knowledge of all of these organisations would provide Victorian wildlife with the best possible outcomes, and provide the Victorian public with confidence that wildlife health is taken seriously and addressed appropriately.

Advisory committees should be required as this recognises that the department will not always have the appropriate expertise for all decisions, and the process of appropriately governing a scientific advisory committee maintains transparency and ensures currency in decision-making. Expert committees should hold more weight than public consultation.

5.1.1 Should the Act include other offences?

Yes – the examples included from other states sound highly appropriate and should be included e.g. it should be an offence to damage the habitat of threatened species or ecological communities.

5.2.1 Are the maximum penalties in the Act adequate to punish and deter offenders? If not, what should they be?

Penalties are definitely not adequate to punish and deter offenders, and should be closer to those examples provided for NSW. The penalty units applied to the majority of offences listed in Appendix B are so low they are concerning, and definitely not enough of a disincentive.

5.3.1 Should the Act contain general provisions creating continuing offences and allowing for additional penalties?

Yes – the example provided from SA sounds reasonable, but those incremental dollar figure increases per animal seem like they should be higher.

5.4.2 Should the Act contain specific provisions to guide sentencing of offenders convicted under the Act?

Yes – at the moment it relies too much on the legal team voluntarily "educating" the legal system/judge and it shouldn't be this subjective or haphazard.

5.5.1, 5.5.2 and 5.5.3 –

Yes, the Act should allow civil penalty provisions and allow for infringement notices, and enforceable undertakings. Approaches could be discussed with Agriculture Victoria, who would have intelligence on how these elements have worked in the *Livestock Disease Control Act* that they regulate.

5.5.5 Should the Act contain provisions allowing for the making of costs orders? Are there examples from other jurisdictions (both in Australia and internationally) that could also apply in Victoria?

Yes – because the cost of legal proceedings should not be a disincentive for the regulator to take action.

5.5.8 Does the Act contain adequate regulatory tools, sanctions and remedies to punish and deter wildlife crime?

No – the act does not contain adequate tools for this.

ADDITIONAL COMMENTS RE: INVERTEBRATES

1.5.2 Should any additional animal species or taxa (groups of species) be included in the definition of 'wildlife' or 'protected wildlife'?

The Act should cover fish as they require protection and management from a health and welfare perspective that is not offered elsewhere. Prevention of overlap with fisheries could be managed through appropriate collaboration during drafting of the new act.

We also raise the issue of protection for invertebrates. Invertebrates are only recently becoming recognised as a significant conservation concern, but there is growing evidence that invertebrate populations are facing declines in many parts of the world and within Australia. The primary causes of invertebrate declines are believed to be habitat loss and degradation, the widespread use of pesticides and fertilisers in intensive agriculture, and biological factors such as invasive species and disease. Invertebrates make up the vast majority of multicellular life forms on earth, and therefore play crucial roles in almost all ecosystems and food webs, as well as providing critical services to humankind including pollination, pest control and ecosystem support. Invertebrates face many of the same pressures as other wild animals but are also sensitive to additional stressors such as co-extinction, the loss of narrow habitat niches that may not support larger animals, and the intensive and recurrent use of pesticides and fertilisers in agriculture. Without considering these additional pressures on invertebrates we may allow invertebrate populations to significantly decline or vulnerable species to become extinct without realising the impacts we may be having, both on invertebrates directly and upon the animals and ecosystems that rely upon healthy invertebrate biodiversity. Given these factors, it would be extremely prudent to significantly consider invertebrates in any wildlife legislation and biodiversity initiatives going forward, and they should therefore be included in a significant capacity within the new Wildlife Act. By including invertebrates appropriately in our legislation, research, funding, and planning, we will benefit overall biodiversity and encourage healthy ecosystems.

ADDITIONAL COMMENTS RE: BUSHFIRE AND MARINE POLLUTION

It is of potential concern that the Panel will not consider "arrangements for declared wildlife emergencies, such as … **bushfire** and marine pollution regulated under the Emergency Management Act 2013". This could mean that preparedness and response for bushfire and marine pollution affected wildlife would fall through the cracks, which will undermine the good

work already done by DELWP in this space. Animal health and welfare cannot be left to EMV – this must remain the responsibility of DELWP even if some logistics will be managed under the EMA.

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Appendix:

Wildlife Health at Melbourne Veterinary School in Victoria since 1975

Wildlife disease has been an emerging issue affecting wildlife protection and conservation since about 1975 in Victoria when veterinary scientists at the Melbourne Veterinary School (MVS) were funded and worked with colleagues in the Fish and Wildlife Department's Arthur Rylah Institute led by Keith Dempster and Ian Norman on:

- seasonal die-offs of juvenile Eastern Grey Kangaroos at Sugarloaf Reservoir due to an endemic blood-sucking intestinal worm (Arundel, Dempster, Beveridge),
- male Antechinus die-offs due to immunosuppression and infections (IK Barker),
- botulism in waterbirds and mortalities in juvenile penguins (K. Harrigan),
- leptospirosis in possums (P. Presidente),
- pathological description of reproductive disease in koalas due to chlamydia,
- investigation of Eastern Barred Bandicoot mortalities in Tasmania due to toxoplasmosis (D. Obendorf),
- blood parasites of ducks (FI Norman, PL Whiteley) etc.

MVS research and surveillance has also contributed to increased understanding about:

- Herpesvirus Herpevirus infection and disease in marsupials (Devlin, Vaz),
- chlamydia and retrovirus infections in koalas including evidence of spill-over of chlamydia infection from introduced domestic animals to koalas (Legione),
- toxoplasmosis (Hufschmid, Traub),
- bacterial infection in endangered stick insects (Marenda)
- zoonotic infections from birds (Amery-Gale) and possums
- the role of wildlife in Q fever (Tolpinrud, Stevenson).

The MVS now have a very strong Wildlife Health One Health group led by MVS Head, Professor Anna Meredith, and Associate Professors Lee Skerratt and Lee Berger whose research contributes to the Threat Abatement Plan for Chytrid fungus impacting amphibian populations in

Victoria, Australia and internationally. A/Prof Skerratt is currently co-ordinating a national initiative to develop an Australian Wildlife Health Institute.

Drs Jasmin Hufschmid and Clare Death documented the impacts of fluorosis from an industrial source on macropods, koalas, and possums. Prof Anna Meredith is part of an NHMRC Partnership Project looking at the role of possums in the epidemiology of Buruli Ulcer in Victoria. Two PhDs are currently working on immunization to reduce reproduction in feral cats. The MVS imaging team are working on improved forensic wildlife investigations. MVS has partnered with colleagues at DELWPs Arthur Rylah Institute in PhD research into disease in endangered southern Horseshoe bats and with Wildlife Health Australia on a disease risk analysis about introduction of White nose syndrome fungus to Australia (Hufschmid, Lumsden, Holz, Cox-Witton).

The MVS has significant expertise and interest in wildlife health and disease (endemic and introduced/feral mammals, birds, reptiles, amphibians, fish, invertebrates) pathology, diagnosis, pathogenesis, agent identification (virus, bacteria, fungi, protozoa, internal and external parasites), toxicology, clinical pathology, forensic imaging, epidemiology, disease risk analyses etc., and contributes to wildlife health management in Victoria, Australia and internationally.

General wildlife health surveillance is key to understanding what's happening to wildlife health. Since 2008 the MVS Wildlife Health Victoria: Surveillance project has detected and described many wildlife health problems, some of which have resulted in research projects. Examples of these problems include sarcoptic mange and oxalate nephrosis in koalas at multiple sites and populations across Victoria and SA (Speight, Whiteley) and widespread chronic Phalaris (an introduced pasture) toxicity (CPT) in eastern grey kangaroos (Bacci, Whiteley). Both diseases are a result of human actions (colonisation) and have significant animal welfare impacts. Parks Victoria is now partnering with MVS on a PhD into CPT and its management. Avian Cholera has been detected in two waterbird mortality events in 2013 and may have spilt over from chicken, duck or turkey industry. This MVS surveillance project collaborates with DELWP and Agriculture Victoria on exposure and toxicity of owls and diurnal raptors from anticoagulant rodenticides, testing for avian influenza and paramyxovirus infections, and reports this data into Australia's national wildlife health data base managed by Wildlife Health Australia. Other important outcomes from MVS surveillance, epidemiology and research include the July 2018 Wildlife health management response workshop, March 2020 Disease Risk Analysis for Birds at Ramsar Wetlands in Port Phillip Bay (western shoreline) and Bellarine Peninsula and contributing the DELWP Victorian Koala Management Strategy. **It is important to note, however, that this surveillance project runs with minimal funds and support from government, and is largely carried by a single person (Pam Whiteley), who is only paid for a fraction of the time she invests in this, and thus volunteers large amounts of her time.** Considering the value of this program from a wildlife health, domestic animal health and human health point of view, this is not a sustainable situation. The Victorian Government needs to assist this type of work to become permanent and properly funded, and legislate the appropriate management of wildlife, if we are to manage wildlife health into the future.

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