

GENERAL CONCERNS WITH RESPECT TO THE NEW ACT

From last century on, Australia has been a world leader in mammalian species extinction rates, with reptile and insect extinctions now also occurring at rates greater than anywhere else in the world. The Black Summer bushfires absolutely decimated many of our most vulnerable animal and plant species including the **greater glider** and **mountain pygmy-possum** populations, for example. In fact, Victoria has the worse conservation record of any state, with poor and inadequate protection of our flora, and fauna. The new Act must reverse Victoria's appalling conservation record.

Furthermore new research shows Victoria risks breaching its international commitments to preserve critical wetlands, with many fish and bird species facing extinction. Peer-reviewed papers by researchers at the Australian National University have identified critical problems in how state and federal governments have met obligations laid out in the Ramsar Convention, a global pact to protect wetland. Consideration of the ecological character of Ramsar wetlands has been marginalised by governments when managing environmental water flows, despite the statutory requirements to maintain these wetlands. Drought-breaking rains are no longer enough to boost wetland species for flow-dependent threatened species of birds and fish. It is simplistic to presume that restoring environmental flows will be enough to protect many of our endangered mammal, bird and fish species. The **Australian painted snipe** showed statistically significant declines and another five species showed no changes, indicating no benefits from environmental water flows. The approach to conservation of threatened species has been simplistically and badly managed. It is not just a case of adding water and assuming this will be adequate to protect vulnerable species. There are other issues such as floodplain harvesting, poor protection of environmental flows until recently, climate change and the building of new dams and weirs that undermine the benefits of the Basin Plan, also affecting many Ramsar sites. The new Act must do more to protect Victoria's wetlands (and the Victorian government should also exert greater pressure on the Federal government to stop wetland reduction). Wetland wildlife is in grave danger of serious population decline.

One of the problems that has led to the mismanagement and lack of adequate protection for indigenous species is that many species may be much more vulnerable to climate change than researchers realise, because up to now researchers have been focusing on the point when animals and plants perish rather than when they stop reproducing. This has meant the scientists who manage our vulnerable native species have been underestimating the seriousness of the decline. The new Act must take account of the serious effects of climate change as these are likely to keep increasing in severity.

Indeed that potential underestimation of the likely effects of a warming world is a key finding by an international team of scientists who examined 43 species of flies for tolerance to extreme heat. They found that almost half of the **Drosophila**, or small fruit flies, showed a delayed male fertility loss after heat stress. For about one-in-five of the species, fertility dropped 80 per cent immediately after the heat exposure.

The fly species, widely used around the world for a range of genetic and other scientific work, offer an insight often overlooked, that has implications for the effects of heat on other species. Warmer temperatures don't need to kill and knock a colony of bats out of a tree or to trigger mass coral bleaching to have a deleterious effect.

Sublethal temperatures cause losses in fertility in plants, insects, fish, corals, birds and mammals, including humans.

Consequently the effects being brought about by climate change are likely to be more subtle than most people realised and indicate the need for longer-term studies that can detect fertility shifts.

For example, the **zebra finch**, a desert-dwelling organism with naturally high body temperature and good thermoregulation, shows substantial damage to sperm at temperatures it regularly experiences in nature. Those scientists who are responsible for implementing a threatened species management plan for our state of Victoria need to be more aware of the temperature-driven fertility losses that may be a major threat to biodiversity during climate change,

Up to now, Victoria's historical practices, along with its regulations, legislation and policies, have not sufficiently protected our unique species of flora and fauna. Indigenous species continue to show declining population numbers, and their distribution also continues to decrease, as wildlife habitats are reduced greatly in area and distribution. And, as habitats become ever more fragmented and separated from each other, problems occur with the genetics of isolated populations. This means there is a greater need for adequate and well-distributed wildlife corridors and the new Act must allow for this.

Hence the new Act must provide a legislative tool, soundly based in scientific research and findings, that actually protects our endangered wildlife into the future. The old Act has not adequately cared for our wildlife and so the new Act must rely more strongly on an empirical and ecological foundation that should underpin any proposed new regulation. The focus should be on developing an effective Native Wildlife Act and all native vertebrae fauna need to be included in such regulation. Previous Acts have not cared enough for our wildlife and a crisis situation now applies.

As with wetlands, other habitats are crucial to indigenous species protection. Ecosystems have extensive and complex networks occurring within them, from food webs to shelter requirements. If habitats are not preserved, our indigenous species will be driven to extinction even more rapidly. The new Act must allow for this and protect habitats as well as individual species, through clear and rigid regulation encompassed within the Act. Regulation must also consider wildlife corridors along with the need for habitat areas large enough to support viable populations within them.

In order for the new Act to sufficiently protect our wildlife, new methods and tools must be developed along with more traditional ones being strengthened. '**Wildlife protection zones**' should be included in legislation and the present weakness of the regulation about how individuals are "not to damage, disturb or destroy any wildlife habitat" must be made into a more effective tool, through greater legislative power, monitoring, and enforcement.

Indeed, after habitat protections have been put in, legislation and regulation needs to then cover the protection and status of individual species (with their status being their classification within the threatened species advisory lists).

The latest empirical data must also be used to constantly update a species status and the new Act should be aware of this and include it in legislation and regulation. In fact it is vital the new Act includes steps to adequately monitor habitat areas and wildlife populations. Offset use must be monitored so important conservation areas are not simply replaced by ones that do not equally support our wildlife resources.

Legislated control authorisations also need to be worded in such a way that they are clearly understood and used, and the Act should include regulation for better and more public monitoring.

Very importantly the new Act must create an independent statutory body so that any new regulation and legislation is more effectively monitored and enforced. The lack of such a body is reflected in Victoria's dismal conservation record. Public scrutiny of actions made in accordance with regulation must be available at all times, preferably before such actions are undertaken, and penalties need to be more rigorous if they are to act as a deterrent. The creation of a website (similar to SES ones) and also the development of 'Wildlife Protection Orders' would help protect our wildlife.

One good example of how such Wildlife Protection Orders could act for conservation purposes would be to have strict penalties that could be enforced to prevent the use of second-generation rodenticides. First-generation baits with active ingredients such as Warfarin and Coumatetralyl work more slowly and break down more quickly, and our wildlife has a higher capacity to cope with ingesting these products. On the other hand, Second Generation baits with active ingredients including Brodifacoum, Bromadiolone and Difenacoum are more potent, with a lethal dose delivered in a single feeding. But when ingested, rodents still take days to die and when eaten by wildlife may contain many doses – it's those second-generation baits that cause the real problems for non-target animals. Non-target native animals like bush rats, quenda and possums will eat rat baits, and ingesting this has the obvious impact of poisoning them. But, with many of our native animals, including owls, it is the 'secondary poisoning' from these second-generation products that causes the issues. If an owl eats a poisoned rodent, the results can be deadly – if they aren't killed by internal haemorrhaging, they are more likely to hunt unsuccessfully, be killed on the roads or become incredibly ill.

An important feature of the new Act would be to legislate for funding which is fit for purpose. Funding cuts can be used to prevent conservation efforts from occurring, whilst governments pretend to care. An example of this, in NSW, is given by the way environment staff working to save NSW's most endangered species have been told to consider jobs in other sections after the Berejiklian government slashed the '**Saving Our Species program**' by a quarter in the state budget. Indeed, employees were briefed by senior managers on what the cut from \$20 million a year to \$15 million would likely mean for the projects that support the state's 1000-plus at-risk plants, ecological communities and animals, like the brush-tailed rock-wallaby.

Funding should also allow for the creation of biodiversity officers permanently associated with the major habitat areas. This would enable them to know any local conditions and changes applying.

The new Act should also re-consider protection exclusions that apply under the old Act. Duck shooting for recreation should be stopped, given our declining wetlands and the way that duck numbers are plummeting (Kingsford 2019 states a 90% decline). Community expectations as to the protection of our waterbirds have also changed – overall people do not want them shot for pleasure. Furthermore, each duck-shooting season, endangered waterbirds are also illegally shot and left to suffer. “Unprotected” indigenous species is now an outmoded concept. Other states have already stopped the recreational shooting of water birds and it is time Victoria also did. Climate change will make it harder and harder for our water birds to survive.

The ability of loggers to remove themselves from considering all wildlife protections and regulations also need to be stopped in the new Act. VicForests has a poor historical record of protecting our endangered species in old growth forests. Moreover the catastrophic bushfires of 2019 to 2020, and the recent extreme weather, show old growth logging needs to phased out more quickly than by 2030. The business arrangements that push VicForests into illegal logging must be immediately reviewed – such long-term deals, from last century, should no longer apply given the changed environmental conditions.

Finally I consider the new Act should also review current arrangements with respect to invasive pest species. At the moment, deer are protected and regulation concerning invasive pests species do not apply to them as they are

seen as game. Yet they are wreaking havoc in both natural habitat and agricultural areas. They also form a health hazard to both humans and indigenous species of fauna and flora. Not only are car-deer collisions dangerous to people, deer also act as hosts to various parasitic protozoa (from their faecal deposits). The new Act should place deer firmly in the invasive pest category!

In summary, I submit that the new Act must provide much better protections for our wildlife than the old Act, which has been a dismal failure. The new Act must be based upon science and follow the duty of care which the Victorian government has towards our indigenous species and habitats.

The new Act must allow for more stringent regulation, so better monitoring and enforcement of wildlife protections occur, and it should also create an independent statutory body, whose sole focus is the conservation of Victoria's natural heritage. Funding must be greatly increased and protected into the future.

There have been enough consultations and submissions made by the Victorian government over the last few decades. **EFFECTIVE ACTION IS REQUIRED.**

Michael James Hardiker
(B.Sc, Dip.Ed. M.Ed, EdD, La Trobe University)

