Submission

Australian Government
Improving access to agricultural and veterinary chemicals

August 2021

Acute Toxic Environmental Hazard

Danger

H300: Fatal if swallowed [Danger Acute toxicity, oral]

H310: Fatal in contact with skin [Danger Acute toxicity, dermal]

H330: Fatal if inhaled [Danger Acute toxicity, inhalation]

H400: Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard]

Animal Justice Party

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The Animal Justice Party 2021

Images
Front cover: DOGGONE® 1080 Wild Dog Bait (https://animalcontrol.com.au/products/doggone-wild-dog-bait); Sodium Fluoroacetate (1080), Compound Summary - Safety and Hazards information (https://pubchem.ncbi.nlm.nih.gov/compound/Sodium-fluoroacetate)
This Page: Mount Ash Forest, Kinglake, Dr Nadine Richings © 2020

The Animal Justice Party acknowledges the First Nations peoples as the custodians of the land on which we live and work.

About the Animal Justice Party

The Animal Justice Party (the AJP) is a political party established in 2009 to secure the interests of animals and nature through Australia's democratic institutions of government. Our vision is a planet on which animals and nature have the right to live and thrive free from negative human interference and a human society which functions with kindness and compassion within its ecological limits as a responsible member of the Earth community. The AJP seeks to foster respect, kindness, and compassion towards all species particularly in the way governments design and deliver initiatives, and the manner in which these initiatives function.

In New South Wales the AJP has two elected representatives in the Legislative Council of NSW, Mark Pearson MLC and Emma Hurst MLC. In Victoria, the AJP has an elected representative in the Legislative Council, Andy Meddick MLC, and two councillors in Local Government, Councillors Julie Sloan and Charlie Vincent.

This submission was prepared by the National Submissions Working Group within the AJP. The working group makes this submission on behalf of the AJP with the approval and the endorsement of the Board of Directors.

Introduction

Human health and wellbeing are intricately connected to the health and wellbeing of other species, ecosystems and the planet as a whole. We require basic resources for survival; air, water, food, energy and shelter. These essential resources come from nature and they are part of nature's services to all species and individuals, *i.e.* ecosystem services[1,2], and they include:

- provisioning services, such as water, food and fibre;
- regulating services, such as climate regulation and flood regulation; and
- cultural services, such as spiritual, emotional, recreational and aesthetic benefits.

Our survival and the survival of other species depends on ecosystem services and, therefore, depends on a healthy environment. However, three major crises are threatening life on Earth -

[1] Birkhofer, K. et al (2015) Ecosystem services—current challenges and opportunities for ecological research. Frontiers in Ecology and Evolution. 12 January 2015. https://doi.org/10.3389/fevo.2014.00087
[2] IPBES. (2019). Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (Version 1). Zenodo. https://doi.org/10.5281/zenodo.3831674

biodiversity emergency, climate emergency and emerging diseases[3,4,5]. Animal agriculture and the way we use and abuse animals, nature and the planet's resources are at the centre of all three crises[6,7,8]. Global policy to tackle the three crises includes drastic changes to our food systems and agricultural practices [5,6,7,8,9,10]. In particular, a shift to biodiversity-sensitive practices and predominantly plant-based foods for human consumption. Australia must urgently develop and enact policies to address these three crises. Therefore, the AJP is opposed to any reform that facilitates current agricultural practices, including this proposed reform to improve access to agricultural and veterinary chemicals (*i.e.* AgVet chemical amendment). This reform fails to acknowledge, let alone address, the global emergencies that threaten life. It is ignorant, negligent and culpable, and indicates the government is failing to care for the health, safety and wellbeing of the Australian biodiversity, environment and people. In addition, the agriculture and veterinary amendment includes easier access to various agricultural and veterinary chemicals, thereby further exacerbating the negative impacts of animal agriculture.

This proposed amendment to improve access to agricultural and veterinary chemicals (*i.e.* AgVet chemical amendment) is described in the consultation paper[11] as follows:

The Department [of Agriculture, Water and the Environment] *is developing regulation amendments (Agricultural and Veterinary Chemicals Legislation Amendment (Miscellaneous Measures) Regulations 2021, the regulations) and a ministerial order (Agricultural and Veterinary Chemicals Code (Extension of Protection Periods and Limitation Periods) Order 2021, the order) to improve access to agricultural and veterinary (agvet) chemicals.*

The department is consulting on 5 proposed measures. There are 2 measures which support the Agricultural and Veterinary Chemicals Legislation Amendment (Australian Pesticides and

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[3] Grandcolas P. & Justine J-L. (2020) COVID-19 or the pandemic of mistreated biodiversity. *The Conversation* 30/4/2020 https://theconversation.com/covid-19-or-the-pandemic-of-mistreated-biodiversity-136447 accessed 11/8/2021

[4] Armstrong F. Capon A. & McFarlane R. (2020) Coronavirus is a wake-up call: Our war with the environment is leading to pandemics. *The Conversation* 31/3/2020 https://theconversation.com/coronavirus-is-a-wake-up-call-our-warwith-the-environment-is-leading-to-pandemics-135023 accessed 11/8/2021

[5] IPBES (2020) Workshop Report on Biodiversity and Pandemics of the Intergovernmental Platform on Biodiversity and Ecosystem Services. Daszak, P., das Neves, C., Amuasi, J., Hayman, D., Kuiken, T., Roche, B., Zambrana-Torrelio, C., Buss, P., Dundarova, H., Feferholtz, Y., Foldvari, G., Igbinosa, E., Junglen, S., Liu, Q., Suzan, G., Uhart, M., Wannous, C., Woolaston, K., Mosig Reidl, P., O'Brien, K., Pascual, U., Stoett, P., Li, H., Ngo, H. T., IPBES secretariat, Bonn, Germany, DOI:10.5281/zenodo.4147317

[6] IPBES. (2019). Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (Version 1). Zenodo. https://doi.org/10.5281/zenodo.3831674

[7] IPCC, 2021: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J. B. R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press. https://www.ipcc.ch/report/ar6/wg1/

[8] Pörtner, H, *et al.* (2021). Scientific outcome of the IPBES-IPCC co-sponsored workshop on biodiversity and climate change (Version 5). Zenodo. https://doi.org/10.5281/zenodo.5101125

[9] Ripple WJ, *et al.* (2020) World Scientists' Warning of a Climate Emergency, BioScience, 70(1): 8-12, https://doi.org/10.1093/biosci/biz088

[10] Secretariat of the Convention on Biological Diversity (2020) Global Biodiversity Outlook 5. Montreal. https://www.cbd.int/gbo/gbo5/publication/gbo-5-en.pdf

[11] Australian Government (2021) Proposed regulations and order to improve access to agricultural and veterinary chemicals: consultation paper. Available at: https://haveyoursay.awe.gov.au/agvet-reform

Veterinary Medicines Authority Board and Other Improvements) Bill 2019 (the APVMA Board and Other Improvements Bill), currently before parliament. In brief, these are:

1. *Incentivise the registration of certain uses of chemicals.*
2. *A simpler regulatory process for chemicals of low regulatory concern, to simplify the approval of certain active constituents and labels, and the registration of certain products.*
3. *Change the definition of "minor use" to implement an agreed approach by Australia's Agriculture Ministers to improve the harmonisation of off-label access to Ag-vet chemicals.*
4. *To allow the Australian Pesticides and Veterinary Medicine Authority (APVMA) to develop a standard for setting out the allowed differences between a constituent in a chemical product and what is recorded for the constituent in the Register.*
5. *Exclude a limited range of enzyme products from regulation as agvet chemicals*

Collectively the measures should improve users' access to agvet chemicals.

The AJP seeks clarification about the 5 measures and has the following questions:

1. Why is it necessary to "*incentivise the registration of certain uses of chemicals",* as all hazardous chemicals are required by law to be registered. Does this mean that there is currently non-compliance with this requirement? Also, if the intended purpose of this change is to prolong protection periods during registration to allow for more research into 'off label' uses, this research could continue even after the registration expires, which will create a more even playing field for competition.
2. How is "*low regulatory concern"* defined and decided?
3. How is "*minor use"* defined? Is it minor use if large quantities are used?
4. What are the "*allowed differences*" and how are they defined?
5. How is *"a limited range of enzyme products"* determined?

Farmers depend on access to various chemicals to maximise their financial returns and their sustainability. This may be to keep 'weeds' and 'pests' from destroying their crops, or to add nutrients to the soil. Pesticides and fertilisers can enable farmers to increase food productivity, but many of these chemicals are deleterious to the environment and to some animal life, and result in considerable damage to ecosystems. Pesticides affect biodiversity, contribute to the disappearance of pollinators such as bees, destroy bird and animal habitats, threaten fish, and can pollute the air, water and soil, and have negative impacts on human health[12,13]. Their effects include removing important floral resources and contaminating the food chain. They can persist in the environment for decades. The overuse of these chemicals means that some 'weeds' and

[12] Pesticide Info (2012) What Are the Disadvantages of Pesticides?. 18 Sep 2012. https://pesticideinfo.net/answers/what-are-the-disadvantages-of-pesticides

[13] Alavanja M. C. (2009). Introduction: pesticides use and exposure extensive worldwide. *Reviews on environmental health*, *24*(4), 303–309. https://doi.org/10.1515/reveh.2009.24.4.303

insects are becoming resistant to pesticides, while others are being driving to extinction[14]. The current response from some farmers is to use stronger chemicals.

The AJP's response includes a summary of the impact of agriculture, in particular animal agriculture, on planetary and human health. The AJP seeks to highlight our concerns regarding the Australian Government's plan to make it even easier to use chemicals 'off label', that is, when a registered chemical is used in a manner that is not specified on the product label. The AJP argues the use of agricultural and veterinary chemicals requires stricter and tighter control, not less control as proposed by this amendment. Some of the proposed changes appear to give the APVMA unfettered powers such as[15]:

- "*the ability for the regulator to permit an activity that would otherwise be unlawful*"
- the use of emergency use permits which "*supports primary producers during emergencies or impending emergencies, such as outbreaks of pests and diseases, by allowing the use of a chemical product or an active constituent if there is a genuine belief the use is required because of the emergency".*
- The use of a research permit "*which assists in the development, through experiments, of new uses for products".*
- The role of the Veterinary manufacturing permit which "*may be issued to authorise the carrying out of a step (or steps) of manufacture of veterinary product/s, that would otherwise be an offence or a contravention of a civil penalty provision set out in the Agvet Code, in relation to manufacture and licensing".*
- The role of the miscellaneous permit which "*may be issued for a circumstance not covered by the other permits (for example, a permit to possess or supply an unregistered chemical product for export; to oversticker an approved label; to supply specific batches of a registered product that do not comply with the product specifications; to supply a registered product with an unapproved label; or to extend the shelf life of a batch)".*

This submission is guided by the AJP's mission and vision and underpinned by our policies. The AJP has policies on animals, environment and human issues[16]; in particular, our policies on the environment[17], farming[18], introduced animals[19], wildlife care[20], and 1080 poison[21], are pertinent to this inquiry.

Thank you for the opportunity to contribute to this consultation.

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[14] Cardoso P, et al., (2020) Scientists' warning to humanity on insect extinctions. Biological Conservation, https://doi.org/10.1016/j.biocon.2020.108426
[15] Australian Government (2021) Proposed regulations and order to improve access to agricultural and veterinary chemicals: consultation paper. Available at: https://haveyoursay.awe.gov.au/agvet-reform
[16] Animal Justice Party *Policies* https://animaljusticeparty.org/policies/
[17] Animal Justice Party *Environment Policy* https://animaljusticeparty.org/policieslist/environment/environment/
[18] Animal Justice Party *Farming Policy* http://animaljusticeparty.org/wp-content/uploads/2017/11/farmingA4.pdf
[19] Animal Justice Party *Introduced Animals Policy* https://animaljusticeparty.org/wp-content/uploads/2021/05/IntroducedAnimalsMay2021.pdf
[20] Animal Justice Party *Wildlife Care Policy* https://animaljusticeparty.org/policieslist/animals/wildlife-care/
[21] Animal Justice Party *1080 Policy* https://animaljusticeparty.org/wp-content/uploads/2021/04/ten80-april2021.pdf

The impact of Animal Agriculture on Planetary and Human Health

Animal agriculture has had long-term negative impacts on planetary health since its beginnings about 10,000 years ago (Figure 1). Land clearing, which destroys forests and grasslands, became obvious about 400 years ago. The negative effects have greatly increased in the last 200 years[22] with intensive farming of animals to support an increased demand for animal-based food products. Almost half of the world's habitable land is currently used for agriculture.

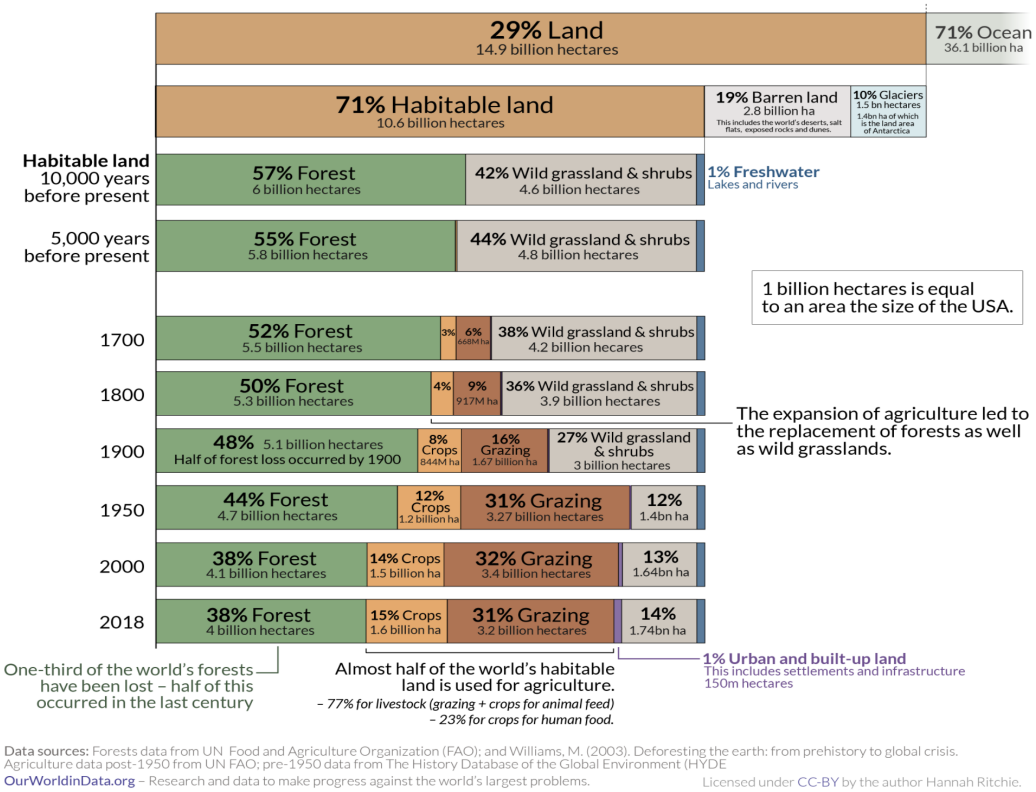

Figure 1 - The loss of forests and grasslands over time. Almost half of the world's habitable land is used for agriculture.
Source: Our World in Data (https://ourworldindata.org/deforestation)

The world's biodiversity (variation in life) is under intense stress and pressure, causing a loss of biodiversity that has led to a Biodiversity Emergency. This is recognised and reported by scientists around the world [23,24,25] and by leading global organisations such as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)[26] and the United Nations

[22] IPCC. (2019). Climate change and land. Geneva, Switzerland: The Intergovernmental Panel on Climate Change. https://www.ipcc.ch/srccl/
[23] Ceballos G *et al.* (2015) Accelerated modern human–induced species losses: Entering the sixth mass extinction Science Advances Vol. 1, no. 5, e1400253 (DOI: 10.1126/sciadv.1400253), https://advances.sciencemag.org/content/1/5/e1400253
[24] Ceballos G *et al.* (2020) Vertebrates on the brink as indicators of biological annihilation and the sixth mass extinction. Proceedings of the National Academy of Sciences Jun 2020, 117 (24) 13596-13602; (DOI: 10.1073/pnas.1922686117), https://www.pnas.org/content/117/24/13596#ref-list-1
[25] Waldon A *et al.* (2017) Reductions in global biodiversity loss predicted from conservation spending. Nature 551: 364–367. https://doi.org/10.1038/nature24295
[26] IPBES (2019): Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. 56 pages. https://ipbes.net/global-assessment

Convention on Biological Diversity[27]. It is an existential crisis and global emergency, since the health and wellbeing of the planet, environment, biodiversity and individual species, including humans, are interdependent and connected. Australia's biodiversity is in dire straits. The last federal State of the Environment Report[28] stated "*The outlook for Australian biodiversity is generally poor, given the current overall poor status, deteriorating trends and increasing pressures*", and the independent review of the federal environment laws, the Samuel Review[29], concluded that the law was an abject fail.

> ***"Australia's natural environment and iconic places are in an overall state of decline and are under increasing threat. The environment is not sufficiently resilient to withstand current, emerging or future threats, including climate change. The environmental trajectory is currently unsustainable."***
>
> **Samuel Review of the Environment Protection Biodiversity Conservation Act [28]**

The five main drivers of biodiversity loss are recognised scientifically and globally[30] and can be further categorised as follows:

1. Exploitation (use, abuse, disregard, over-exploitation): animals, habitats & ecosystems, resources (*e.g.* land, water, air)
2. Habitat loss (changed land use): terrestrial, freshwater, marine
3. Pollution: plastics, chemicals & pharmaceuticals, land, water, air
4. Climate Change: animal agriculture, land clearing & logging, fossil fuels. (N.B.: climate change is a massive issue, yet it is only one of the main drivers of biodiversity loss; one of the main outcomes of climate change is biodiversity loss and ecosystem decline, i.e. loss of life on Earth)
5. Introduced species: farmed animals, free-living animals, plants, micro-organisms

Many factors impact biodiversity loss, but animal agriculture deserves a special mention because it is under-recognised and frequently avoided in debate. In 2019, the International Union for Conservation of Nature Red List of Threatened Species (IUCN Red List) listed 28,338 species that were under threat of extinction; "agriculture & aquaculture" was listed as a threat for 85% (24,001) of these species[31]. One third of the Earth's land surface is used for farming animals (Figure 1); 77% of the land designated for agriculture is used for animal agriculture[32]. The most efficient animal agriculture is more detrimental to the environment than the least efficient plant agriculture; calories and protein are produced far more efficiently from plant agriculture than

[27] Secretariat of the Convention on Biological Diversity (2020) Global Biodiversity Outlook 5. Montreal. https://www.cbd.int/gbo/gbo5/publication/gbo-5-en.pdf
[28] Cresswell ID, Murphy H (2016). Biodiversity: Biodiversity. In: Australia state of the environment 2016, Australian Government Department of the Environment and Energy, Canberra, https://soe.environment.gov.au/theme/biodiversity, DOI 10.4226/94/58b65ac828812
[29] Samuel, G 2020, Independent Review of the EPBC Act— Final Report, Department of Agriculture, Water and the Environment, Canberra, June. CC BY 4.0. https://epbcactreview.environment.gov.au/resources/final-report
[30] IPBES (2020) Models of drivers of biodiversity and ecosystem change. https://ipbes.net/models-drivers-biodiversity-ecosystem-change
[31] IUCN (2020) International Union for Conservation of Nature Red List of Threatened Species (IUCN Red List). https://www.iucnredlist.org/
[32] Ritchie H & Roser M (2019) Land Use. Our World in Data. https://ourworldindata.org/land-use

they are from animal agriculture[33]. Animal agriculture contributes significantly to the drivers of biodiversity loss and ecosystem decline (Table 1). The *proposed AgVet amendments* directly support the driver of pollution, adding toxins to the environment, such as pesticides and poisons that kill native vertebrates (*e.g.* dingoes, birds of prey, quolls) and insects, and fertilisers that add nitrogen to the environment, disrupting the Earth's critical nitrogen cycle[34].

Table 1 - Animal agriculture contributes significantly against all of the drivers of biodiversity loss and ecosystem decline.

DRIVERS OF BIODIVERSITY LOSS		Animal Agriculture Impacts
EXPLOITATION: use, abuse, disregard, over-harvesting	Animals	Native animals: ATCWs; injured, killed or displaced by land clearing or methods to remove them from farmed land to facilitate Animal Agriculture, *e.g.* koalas, wombats, birds, amphibians, reptiles, invertebrates
		Dingos: ATCWs; Poisons (esp. 1080)
		Kangaroos & Wallabies: ATCWs; Commercial Killing,
	Habitats & Ecosystems	VVP Grasslands: now a critically endangered ecosystem since most has been used for Animal Agriculture through the Western Region of Victoria; only 5% remains.
		Various terrestrial habitats damaged or destroyed to facilitate Animal Agriculture
		Freshwater Habitats: damaged & destroyed as land is cleared and re-purposed, and water is diverted away to facilitate Animal Agriculture
		Marine habitats damaged by ocean acidification & cultural eutrophication (excessive load of nutrients, esp. N & P from animal effluent and fertilisers applied to feed crops)
	Resources	Land/environment: polluted with animal effluent and chemicals & pharmaceuticals used to support animal agriculture, *e.g.* antibiotics, exogenous hormones, poisons
		Water: polluted with animal effluent and chemicals & pharmaceuticals used to support animal agriculture, *e.g.* antibiotics, exogenous hormones; diverted away from natural water-bodies to support animal agriculture (including plant crops to feed animals)
HABITAT LOSS	Forests	Land Clearing: damaged or destroyed to facilitate Animal Agriculture
	Grasslands & Woodlands	Land Clearing: damaged or destroyed to facilitate Animal Agriculture
	Freshwater: ***Rivers, streams, lakes, ponds, marshes***	Water diversion: damaged & destroyed when water is diverted away to facilitate Animal Agriculture; cultural eutrophication (excessive load of nutrients, esp. N & P from animal effluent and fertilisers applied to feed crops)
	Marine: ***coast, estuaries, reefs, bays, open sea, sea bed***	Marine ecosystems damaged by ocean acidification & cultural eutrophication (excessive load of nutrients, esp. N & P from animal effluent and fertilisers applied to feed crops); damaged by rising ocean temperatures from global warming (GHG emissions)
POLLUTION	Plastic: *PET , HDPE, LDPE, PP, PS, EPS*	Animal ear tags; feed bail binding; syringes; containers, vessels & packaging for chemicals & pharmaceuticals
	Chemicals	Poisons (*e.g.* 1080), pesticides, herbicides, fertilisers (for crops for animal feed), bisphenols (*e.g.* from plastics)
	Chemical: Pharmaceutics - antibiotics, hormones	Pharmaceuticals such as antibiotics, other antimicrobials & hormones are administered to animals
	Land: General waste/land fill	Various waste that goes to land fill
	Water pollution	cultural eutrophication (excessive load of nutrients, esp. N & P from animal effluent and fertilisers applied to feed crops)
	Air Pollution: ***GHG emissions, VOCs***	Emissions from farmed animals (esp. ruminants) and farm machinery & animal transport trucks
CLIMATE CHANGE	Animal Agriculture	Methane emissions from animals, especially ruminants contributing to GHGs & Global Warming
	Land Clearing & Logging - *loss of carbon-sequestering plants (esp. large trees)*	Land Clearing: most Land Clearing is done to facilitate Animal Agriculture, including food crops: Loss of carbon-sequestering plants (esp. large trees) contributes to GHGs & Global Warming
	Fossil Fuels	fueling farm machinery and animal transport trucks; contributes to GHG emissions
NON-NATIVE (Introduced) SPECIES	Animals - farmed	Various non-native species have been introduced for farming (Animal Agriculture); native habitat is lost, ecosystems destroyed and wildlife killed, injured & displaced by land clearing for Animal Agriculture; introduced animals modify the land and many are now free-living
	Animals - free-living	Abandoned, lost or escaped farmed animals: they modify the land and compete with native species, *e.g.* horses (brumbies), goats, pigs, cows, camels, donkeys
	Plants	Introduced to feed farmed animals: they compete with native species and damage habitat & ecosystems
	Micro-organisms: ***bacteria, viruses,***	Introduced to manage animals that are considered to impede Animal Agriculture (*e.g.* Myxoma virus & Calicivirus for rabbits)

[33] Poore J & Nemecek T (2018) Reducing food's environmental impacts through producers and consumers. Science, 360(6392): 987-992. https://science.sciencemag.org/content/360/6392/987

[34] Canfield DE, Glazer, AN, falkowski PG (2010) The Evolution and Future of Earth's Nitrogen Cycle. Science 330 (6001): 192-196. DOI: 10.1126/science.1186120 Access article here: https://www.researchgate.net/publication/47369890_The_Evolution_and_Future_of_Earth's_Nitrogen_Cycle

The *United Nations Global Biodiversity Outlook 5* report recognises the biodiversity emergency and that we need to act with urgency to modify our actions in key areas[35]. It identifies eight critical transitions that are required to shift to a "sustainable coexistence with nature". ***Agriculture*** is directly or indirectly impacted by most of these transitions. If Australia can act with urgency to employ this plan, we will be well-placed to preserve biodiversity and ecosystems and support the health and well-being of all Australians, regardless of species. The eight transitions are:

1. The land and forests transition: conserve intact ecosystems, restore ecosystems, combat and reverse degradation, and avoid and reduce land-use change.
2. The sustainable fisheries and oceans transition: protect and restore marine and coastal ecosystems, and manage all ocean activities to ensure sustainability.
3. The sustainable freshwater transition: an integrated approach to guarantee water for nature and people, improve water quality, protect critical habitats, control introduced species and safeguard connectivity to allow the recovery of freshwater systems from mountains to coasts.
4. The sustainable agriculture transition: redesign agricultural systems through agro-ecological and biodiversity-sensitive practices.
5. The sustainable food systems transition: enable sustainable and healthy diets with an emphasis on diverse foods, mostly plant-based, and reduce consumption of animal products and production of waste.
6. The biodiversity-inclusive One Health transition: manage ecosystems, including agricultural and urban ecosystems and wildlife, through an integrated approach to promote healthy ecosystems and healthy people.
7. The sustainable climate action transition: employing nature-based solutions, alongside a rapid phase-out of fossil fuel use, to reduce the scale and impacts of climate change, while providing positive benefits for biodiversity and other sustainable development goals.
8. The cities and infrastructure transition: deploy 'green infrastructure' and make space for nature within built landscapes to improve the health and quality of life for citizens and to reduce the environmental footprint of cities and infrastructure.

> ***"Animal agriculture across all continents and income categories represents a profound trade-off when compared with potential GHG mitigation. If future dietary shifts do not occur, carbon trade-offs are expected to grow, even with large improvements in yields and optimized cropland distribution."*** [36]

[35] Secretariat of the Convention on Biological Diversity (2020) Global Biodiversity Outlook 5. Montreal. https://www.cbd.int/gbo/gbo5/publication/gbo-5-en.pdf

[36] Hayek, M.N., Harwatt, H., Ripple, W.J. *et al.* The carbon opportunity cost of animal-sourced food production on land. *Nat Sustain* 4, 21–24 (2021). https://doi.org/10.1038/s41893-020-00603-4

Animal agriculture impacts the environment and climate change through land clearing and the release of carbon dioxide, methane and nitrous oxide. In Australia, animal agriculture is the main cause of methane emissions[37]. Methane is a more potent greenhouse gas than carbon dioxide; 86 times more potent over 20 years and 28 times more potent over 100 years. Nitrous oxide is almost 300 times more potent than carbon dioxide and it has contributed to an imbalance in the critical nitrogen cycle[38]. This impact must be recognised. The *Intergovernmental Panel on Climate Change* (IPCC) states that methane levels have risen by 156% since 1750 and that they are higher than at any time in at least 800,000 years[39]. Globally, climate action policy includes changes to our food systems[40,41] to reduce animal agriculture and focus on plant-based agriculture to feed people, rather than feeding grain to animals which is highly inefficient.

> ***"...GMT [Global Mean Temperature] is currently approaching the upper limits of that experienced within the last 1.2 million years, and is beyond the range experienced by humankind since the invention of agriculture" - IPBES-IPCC report pg 27***

Animal agriculture and wildlife farming and trade, have created perfect conditions for microorganisms to move between individuals and species[42,43]. To an infectious microorganism (a pathogen), the next individual or species is simply the next host, the next stepping stone; a new habitat. Pathogens, including bacteria, fungi and viruses, do not discriminate. Humans are merely another animal, another host, and if pathogens can transfer to a human and thrive, they will. The transfer of infectious diseases between animal species is highly important; it facilitates the spread of infections by dramatically expanding and diversifying the potential habitat for the micro-organism. Infections weaken individuals; sometimes they cause long-term or permanent effects and sometimes they are fatal. Emerging infections that spread between species have the potential to decimate species, change ecosystems and drive biodiversity loss. Critical movements and developments that should be monitored are the ability of a pathogen to thrive in a new

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[37] Canadell P, *et al.* (2020) Emissions of methane – a greenhouse gas far more potent than carbon dioxide – are rising dangerously. The Conversation. 15 July 2020. https://theconversation.com/emissions-of-methane-a-greenhouse-gas-far-more-potent-than-carbon-dioxide-are-rising-dangerously-142522

[38] Chrobak, Ula (2021) Fighting climate change means taking laughing gas seriously - Agriculture researchers seek ways to reduce nitrous oxide's impact on warming. Knowable Magazine. 05 May 2021. https://knowablemagazine.org/article/food-environment/2021/nitrous-oxide-greenhouse-gas-agriculture

[39] IPCC, 2021: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J. B. R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. In Press. https://www.ipcc.ch/report/ar6/wg1/

[40] Secretariat of the Convention on Biological Diversity (2020) Global Biodiversity Outlook 5. Montreal. https://www.cbd.int/gbo/gbo5/publication/gbo-5-en.pdf

[41] Ripple WJ, et al. (2020) World Scientists' Warning of a Climate Emergency, *BioScience*, 70(1): 8-12, https://doi.org/10.1093/biosci/biz088

[42] Grandcolas P & Justine J-L (2020) Covid-19 or the pandemic of mistreated biodiversity. The Conversation, 30 Apr 2020. https://theconversation.com/covid-19-or-the-pandemic-of-mistreated-biodiversity-136447

[43] Armstrong F et al. (2020) Coronavirus is a wake-up call: our war with the environment is leading to pandemics. The Conversation, 31Mar2020. [Accessed 04Apr2020] https://theconversation.com/coronavirus-is-a-wake-up-call-our-war-with-the-environment-is-leading-to-pandemics-135023

animal system, *e.g.* movement from birds to mammals, or movement from any species to another species (not just movement to humans). Loss of habitat is forcing wildlife closer together, which is reducing the physical distancing between species and individuals. Animal agriculture and wildlife farming and trade facilitate the transmission of pathogens among individuals and species because of the close proximity - there is no "social or physical distancing". In agriculture, prophylactic antibiotic use is contentious and can lead to antibiotic-resistant microorganism (ARMs)[44]. The use of antibiotics in agriculture must be stringently managed, and at the very least *Australia's National Antimicrobial Resistance Strategy* must be followed[45].

Global climate policy recognises that changes to our food systems are critical actions, in particular, to reduce animal agriculture and focus on plant-based agriculture to feed people [39,40, 46]. Additionally, a substantial amount of independent research has been conducted on global diets[47] to determine which ones are healthiest for the human body[48]. The global EAT Lancet Commission recommends a 50% reduction in harmful products such as red and processed meats[49, 50, 51] and sugar. It is widely accepted that plant-based diets protect the human body against many lethal non-communicable diseases (NCDs), such as heart disease[52] that can be caused and exacerbated by consuming animal products. Also, a CSIRO survey from 2017 of almost 150,000 adult Australians revealed that only 24% of women and 15% of men ate the recommended amount of fruit and vegetables[53], and are therefore missing out on bioavailable micronutrients, minerals and antioxidants. The AJP advocates for a shift to plant-based diets to support planetary and human health.

The impact of animal agriculture on planetary health is being considered seriously by various academics[54]. Ethicists and public health researchers have outlined the five major ways that consuming meat is damaging the planet[55]. Conservation ecologists recognise the negative impacts of animal agriculture on biodiversity and they are evaluating ways to tackle human behaviour to

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[44] Carlet J, The World Alliance Against Antibiotic Resistance: Consensus for a Declaration, Clinical Infectious Diseases, Volume 60, Issue 12, 15 June 2015, Pages 1837–1841, https://doi.org/10.1093/cid/civ196

[45] Australian Government (2020) Australia's National Antimicrobial Resistance Strategy - 2020 and Beyond. https://www.amr.gov.au/resources/australias-national-antimicrobial-resistance-strategy-2020-and-beyond

[46] Hayek, M.N., Harwatt, H., Ripple, W.J. *et al.* The carbon opportunity cost of animal-sourced food production on land. *Nat Sustain* **4,** 21–24 (2021). https://doi.org/10.1038/s41893-020-00603-4

[47] EAT-Lancet Commission (undated) Healthy Diets From Sustainable Food Systems: Food Planet Earth. Summary Report https://eatforum.org/content/uploads/2019/07/EAT-Lancet_Commission_Summary_Report.pdf accessed 11/82021

[48] Walter W. Rockström J, et al. (2019) Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. The Lancet Commissions 393 (10170) p447-492

[49] Aune D, Chan D.S.M. et al. (2013) Red and processed meat intake and risk of colorectal adenomas: a systematic review and meta-analysis of epidemiological studies. Cancer Causes Control 24, 611–627

[50] WHO (2015) Cancer: Carcinogenicity of the consumption of red meat and processed meat World Health Organisation https://www.who.int/news-room/q-a-detail/cancer-carcinogenicity-of-the-consumption-of-red-meat-and-processed-meat accessed 11/8/2021

[51] Diallo A, et al. (2018) Red and processed meat intake and cancer risk: Results from the prospective NutriNet-Sante cohort study. Int. J. Cancer: 142, 230–237

[52] Turso P, et al. (2015) A Plant-Based Diet, Atherogenesis, and Coronary Artery. Disease Prevention. Perm J Winter; 19 (1):62-67

[53] Hendrie, G., Noakes, M. (2017). Fruit, Vegetables and Diet Score. https://www.totalwellbeingdiet.com/media/2129/2017-csiro-fruit-vegetables-and-diet-score.pdf

[54] Alliance of World Scientists (2021) Journal Articles Related to Scientists Warning. https://scientistswarning.forestry.oregonstate.edu/journal-articles-related-scientists-warning

[55] Vergunst F & Savulascu J (2017) Five ways the meat on your plate is killing the planet. The Conversation 26Apr2017. https://theconversation.com/five-ways-the-meat-on-your-plate-is-killing-the-planet-76128

reduce consumption of animal products[56]. In a plan to tackle the Climate Emergency, scientists have listed six critical and inter-related areas that must be addressed; food is one area, more specifically, reducing consumption of animal products and therefore reducing animal agriculture[57].

Around the world, sectors, organisations and corporations are developing strategic plans to tackle all three crises. In the public health sector, planetary health is being addressed through systems thinking[58]. Many Australian companies are planning for zero emissions by 2050 and the Australian Institute of Company Directors has set up a climate governance initiative[59]. Many organisations are using the Environment Social Governance (ESG) scheme to assess their awareness and capability against social and environmental factors, including greenhouse gas emissions, sustainability, biodiversity impacts and animal welfare[60,61]. This is seen in the law sector[62] and the finance and investment sector[63]. Disappointingly, the Australian government continues to ignore the evidence and fails to make the required changes to be a responsible global citizen and to protect the health and wellbeing of the Australian environment, biodiversity and people. This *AgVet amendment* significantly contributes to one of the major drivers of biodiversity loss and ecosystem decline - pollution, through the provision of chemical pollutants. The amendment also facilitates and supports an agricultural system that is a major driver of climate change. The AJP does not support the Agvet chemical amendment.

Destruction of the natural world is ***ECOCIDE***; the deliberate or negligent destruction of the natural world which threatens the health and survival of all species and ecosystems, including humans. International legal experts recently defined ecocide as "unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts."[64] A global organisation is lobbying the International Criminal Court to make ecocide the fifth international crime, alongside genocide, war crimes, crimes against humanity and crimes of aggression[65]. The AJP asserts that destruction of the natural world is an existential threat and that ecocide should be a crime.

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[56] Selinske MJ, Fidler F, Gordon A, Garrard GE, Kusmanoff AM, Bekessy SA. We have a steak in it: Eliciting interventions to reduce beef consumption and its impact on biodiversity. Conservation Letters. 2020;e12721. https://doi.org/10.1111/conl.12721

[57] Ripple WJ, et al (2020) World Scientists' Warning of a Climate Emergency. BioScience 70 (1): 8–12. https://academic.oup.com/bioscience/article/70/1/8/5610806

[58] Iyer, H. S., DeVille, N. V., Stoddard, O., Cole, J., Myers, S. S., Li, H., Elliott, E. G., Jimenez, M. P., James, P., & Golden, C. D. (2021). Sustaining planetary health through systems thinking: Public health's critical role. *SSM - population health*, *15*, 100844. https://doi.org/10.1016/j.ssmph.2021.100844

[59] ABC News (2021) Lendlease warns federal government not to miss net zero carbon emissions 'opportunity' at UN climate conference in October. ABC News online. 30Aug2021 https://www.abc.net.au/news/2021-08-30/climate-globalwarming-netzero-australia-companies/100406312

[60] Cohen Y (2021) Who cares, wins: ESG standards are taking over the investment sphere. The New Times. 06 Jul 2021. https://www.newtimes.co.rw/business/who-cares-wins-esg-standards-are-taking-over-investment-sphere

[61] Kell G (2018) The Remarkable Rise Of ESG. Forbes. 11 Jun 2018. https://www.forbes.com/sites/georgkell/2018/07/11/the-remarkable-rise-of-esg/?sh=388072b31695

[62] Uberoi L (2020) Who Cares Wins: Environmental, social and governance 15 years on. the Law Society. 11 Mar 2020. https://www.lawsociety.org.uk/en/topics/junior-lawyers/blogs/who-cares-wins-environmental-social-and-governance-15-years-on

[63] FAIRR Organisation(2021) The world's fastest-growing investor network focusing on ESG risks in the global food sector. https://www.fairr.org/

[64] Saddique H (2021) Legal experts worldwide draw up 'historic' definition of ecocide. The Guardian. 23 Jun 2021 https://www.theguardian.com/environment/2021/jun/22/legal-experts-worldwide-draw-up-historic-definition-of-ecocide

[65] Stop Ecocide: Change the law, protect the Earth. https://www.stopecocide.earth/

The only way to address the three existential crises is to tackle the main drivers, and this includes animal agriculture. Holistic approaches that respect and appreciate the health and wellbeing of the planet, environment, biodiversity and individual species, including humans, are critical for recovery; examples of such approaches are One Health, EcoHealth and Planetary Health[66]. The AJP implores the Australian Government to enact the recommendations listed below to reduce the impact of agriculture on planetary health and human health.

Recommendations:

1. Acknowledge and appreciate the importance of biodiversity and environmental health and integrity to the health and wellbeing of all species, including humans, and that the right to a healthy environment is a human right.
2. Declare a biodiversity emergency and recognise the five main drivers of biodiversity loss and ecosystem decline (*i.e.* exploitation, habitat loss, pollution, climate damage and introduced (non-native) species), acknowledge the way that human activities negatively impact these drivers and develop and enact a strategic system-based policy to effectively tackle biodiversity loss and ecosystem decline in Australia.
3. Declare a climate emergency, recognise the main contributors of greenhouse gas emissions and develop and enact a strategic system-based policy to tackle climate change and reach a zero emissions state.
4. Recognise ecocide as a serious criminal offence and create laws and penalties to reflect the seriousness of this crime.
5. Recognise that animal agriculture is a key component that drives biodiversity loss, ecosystem decline, climate change and emerging diseases, and includes effective strategies to reduce the impacts of animal agriculture in all these areas.
6. Develop and enact a comprehensive holistic health approach that incorporates environment health, biodiversity health and planetary health, *e.g.* One Health.
7. Phase out intensive animal agriculture to reduce greenhouse gas emissions, reduce water usage, and stop the majority of grain production being used to feed animals.
8. Rapidly transform Australian agriculture to employ biodiversity-sensitive farming practices and eco-agriculture/agro-ecology and to allow reforestation by reducing grazing.
9. Alter dietary guidelines to encourage a plant-based diet; the Australian dietary guidelines are currently under review and should include this critical dietary shift.

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[66] Lerner H & Berg C (2017) A Comparison of Three Holistic Approaches to Health: One Health, EcoHealth, and Planetary Health. Frontiers in Veterinary Science. 4: 163. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5649127/

The National Registration Scheme for Agricultural and Veterinary Chemicals

In Australia, the National Registration Scheme for Agricultural and Veterinary Chemicals (NRS) is regulated under both state/territory and commonwealth laws. The Department of Agriculture manages the legislation under which the National Registration Scheme operates. The APVMA sits within the Agriculture portfolio and is an independent authority that administers the Scheme. The APVMA evaluates, registers and regulates agricultural and veterinary (agvet) chemicals up to the point of sale[67].

The NRS is implemented, in part, through the Code Act. The Code Act contains, as a schedule, the Agvet Code. The Agvet Code operates in each state, the Northern Territory and each participating territory (the Australian Capital Territory and Norfolk Island) to constitute a single national Agvet Code which applies throughout Australia. The Agvet Code includes detailed provisions allowing the APVMA to evaluate, approve, register and reconsider active constituents and agvet chemical products and their associated labels. The provisions in the Agvet Code also allow the APVMA to issue permits for supply and use and to issue licences for the manufacture of chemical products. Other provisions in the Agvet Code provide for controls to regulate the supply of chemical products and ensure compliance with, and enforcement of, the Agvet Code, including suspending and cancelling registration of chemical products.

The Administration, Levy and Code Acts, including the Agvet Code and any regulations, orders or legislative instruments made under these laws, are collectively described as 'agvet chemical legislation'.

The Australian Pesticide and Veterinary Medicine Authority

The Australian Pesticides and Veterinary Medicines Authority (APVMA) is funded by fees, charges and levies imposed on the industry it regulates[68]. Applicants pay fees so the APVMA can evaluate their applications, and registrants pay a levy based on the wholesale value of chemical products sold. This creates a potential conflict of interest in that the APVMA has a financial incentive to approve products and to keep those products in production. This could be exacerbated by the proposed legislation to make the off-label use of chemicals more accessible.

[67] Australian Government (2021) Chemical Regulation The National Registration Scheme. Department of Agriculture, Water and the Environment. https://www.agriculture.gov.au/ag-farm-food/ag-vet-chemicals/regulation
[68] Australian Government (2021) APVMA cost recovery arrangements. Australian Pesticides and Veterinary Medicines Authority. https://apvma.gov.au/node/4161

There is also the possibility of the APVMA being pressured by special interest groups to approve chemicals. For example, Mr Martin of the NSW Farmers Association applied for the use of bromadiolone during a recent mouse plague in NSW, stating "*We need it now, and that's why I'm hearing from members they are enormously annoyed".* Fortunately, approval was not given in this instance[69].

Concerningly, the advisory board of the APVMA was abolished in 2015 by the Hon Barnaby Joyce MP, who was Minister for Agriculture and Water Resources at that time.

Recommendations:

10. Create more stringent legislation to govern off-label use of chemicals (rather than making access easier).
11. Remove incentives from The Federal Government for the APVMA to both approve, and allow the continued use of, chemicals which may have proved to be deleterious to health, the environment, or biodiversity.
12. Remove the APVMA from the Agricultural portfolio so that it can be truly independent of industry pressure, which might be applied to approve chemicals to assist agricultural financial interests.

Adverse Experiences Related to Chemical Products.

In the ***Ag-vet chemical review final report 2021***[70] there is damning evidence of 20,530 adverse experiences related to chemical use which were reported to the APVMA, all of which points to the fact that we should be reducing our use of chemicals, not trying to make access easier;

"Adverse experience reports (AERs) provide a valuable source of information to identify product related concerns and allow regulators to react to these concerns promptly. Reports come from the full spectrum of stakeholders that interact with pesticides and veterinary medicines, including veterinarians, farmers, and the public. Over the past 3 years, the APVMA alone has processed more than 20,530 adverse experience reports. These include duplicate reports of the same incident, reports unrelated to the registered product, and non-serious reports".[70]

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[69] Lysaght G-J, Woodburn J, Thackray L (2021) Bromadiolone poison rejected for use as bait to fight mouse plague, no 'silver bullet' to help farmers. ABC news, 26Jun2021. https://www.abc.net.au/news/2021-06-26/bromadiolone-poison-rejected-as-bait-on-mouse-plague-farms/100246264

[70] DAWE 2021, Final Report of the Independent Review of the Pesticides and Veterinary Medicines Regulatory System in Australia, Department of Agriculture, Water and the Environment, Canberra, April. CC BY 4.0. https://www.agriculture.gov.au/sites/default/files/documents/agvet-chemicals-review-final-report_0.pdf

Adverse experiences are reported to the APVMA through a node established on the federal website[71].

Another important issue is that although the APVMA controls chemical usage up to the point of sale, it is then up to state and territory legislation to manage their Directions for Use. The latter often varies state-to-state, for example, the directions for the use of 1080. In Queensland[72], for instance, '*No baits are to be laid within 5 km of a town without land protection officer approval.'* whereas in Victoria[73], the following applies:

1: Distance restrictions for bait laying and aerial application (carrots only) Feature Ground baiting minimum distance Aerial baiting minimum distance Dwelling 150 metres 200 metres Permanent or flowing water bodies 20 metres. 100 metres Domestic drinking water supply 20 metres 100 metres Boundary fences 5 metres 50 metres Edge of formed public roadways 5 metres 50 metres".

Reports of adverse events to the appropriate state or territory body do not appear to result in any meaningful action; the use of 1080 poison has resulted in the deaths of hundreds of working and companion dogs, causing families extreme grief and financial loss. One farmer, Paul Anderson, lost 15 dogs to 1080 poison, and many families in Queensland[74] have lost working Maremma dogs. 1080 use in Queensland is particularly concerning, as landholders and associated workers can now buy manufactured 1080 baits over the counter from rural merchant stores[75].

The state and territory organisations that oversee the directions for the use of 1080, and which deal with complaints of animal deaths, have an obligation to report these deaths to the APVMA, or, the individual whose animal died can report directly to the APVMA. The holder of the pesticide licence should also be informed of the death(s), and should self-report to the APVMA. (Personal conversation with Petronella at the APVMA on August 19, 2021)

In animals, an adverse event is one in which the following occurs:

- Farmed, domestic and/or native animal deaths
- Hospitalisation or more than one veterinary visit
- Welfare implications
- More than 10% morbidity in "livestock" (more than 5% increase in base mortality for poultry).

[71] Australian Government (2021) Adverse Experience Reporting Program. Australian Pesticides and Veterinary Medicines Authority. https://apvma.gov.au/node/86336
[72] Queensland Government (2009) Toxin 1080 - A guide to safe and responsible use of sodium fluoroacetate in Queensland. Department of Employment, Economic Development and Innovation. https://www.bulloo.qld.gov.au/downloads/file/970/1-ipa-1080-guidelines-fluoroacetatepdf
[73] Victorian Government (2021) Directions for use of 1080 and PAPP bait products. Agriculture Victoria. https://agriculture.vic.gov.au/farm-management/chemicals/requirements-for-using-1080-and-PAPP-animal-bait/directions-for-use-of-1080-and-papp-bait-products
[74] Lever C (2019) Maremma sheepdogs poisoned as regulators grapple with 1080 bait. ABC News Online. 9 Aug 2019. https://www.abc.net.au/news/2019-08-09/maremma-sheepdogs-poisoned-as-regulators-grapple-with-1080-bait/11383644
[75] Burton L (2014) QLD Government announces two initiatives to help landholders in the fight against wild dogs. ABC News Online. 30 Jul 2014. https://www.abc.net.au/news/rural/2014-07-30/mcveigh-wild-dogs/5635670

When companion or working dogs are killed, many people are too stressed by their grief and loss to consider making a report to the APVMA. Social media pages report stories of hundreds of dogs who have died from 1080 poisoning:

- Australians against 1080[76]
- Coalition of Australians Against 1080 Poison[77]

The APVMA have had evidence of these incidents presented to them on many occasions, but individuals whose animal(s) have died are not personally informed of any outcomes of investigation. Data of adverse events is published once a year on the APVMA website.

Recommendations:

13. State and territory bodies which oversee the directions for use of chemicals, must ensure there is appropriate action taken when adverse events occur, such as reporting these to the APVMA.
14. Increase transparency of reporting. The APVMA must make reports on adverse events more readily available and within an agreed time frame.
15. Ensure that when an individual person reports an adverse event to the APVMA, they are personally advised of the outcome within an agreed time frame.
16. Ensure that the APVMA must prepare a comprehensive review of any product which is subject to adverse event reports. This must be available to the public in their monthly report.

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[76] Australians against 1080. Facebook group. https://www.facebook.com/groups/188950611128432
[77] Coalition of Australians Against 1080 Poison. Facebook Group https://www.facebook.com/coalitionagainst1080/

Off-label chemical use

This proposed legislation is being introduced to make agricultural and veterinary chemicals more accessible. The primary method proposed to achieve this is to approve off-label use.

According to Agriculture Victoria, for example, you must have an off-label permit to use an agricultural chemical under the following conditions[78] :

- at a rate higher than the maximum application rate for that use, as stated on the label
- at intervals more frequent than the intervals for that use, as stated on the label
- in a way that is contrary to any specific label statement (for example, 'DO NOT' statements on the product label)
- if it's a restricted use chemical
- that is an unregistered chemical.

These current restrictions appear to be common sense and the AJP does not believe they should be altered. There are many disadvantages to making agricultural and veterinary chemicals more accessible, particularly as they are already causing enormous problems.

According to SEPA (Safe and Effective Pesticide Applications), pesticide use in Australia has been increasing since the 1990s. More than 8,000 pesticide products are registered for use in Australia, 75% of which are used in agricultural settings.

There are many types of pesticides; the term "-cide" meaning "to kill". Approximately 5.6 billion pounds of pesticides are used worldwide each year, and an estimated 25 million agricultural workers experience pesticide poisoning as a result. Pesticides are made up of a wide variety of substances, but toxicological testing is usually restricted to the main ingredient. The International Agency for Research on Cancer, a component of the World Health Organisation (WHO), classifies some pesticides as carcinogens[79]. An agricultural health study has produced some evidence of the increased incidence of cancer of the prostate, lung, colon, pancreas, bladder, and leukaemia and multiple myeloma with increased lifetime exposure to certain pesticides, such as arsenic[80].

Over 8,000 pesticide and veterinary products are registered for use in Australian agriculture, horticulture, "livestock", forestry, commercial premises, parks, homes, and gardens. More than 80 of these are prohibited in the United Kingdom, France, Germany, and the other 24 member countries of the European Union. In Europe, pesticides have to be proven safe – in terms of

[78] Victorian Government (2021) Off-label use of agricultural chemicals. Agriculture Victoria. https://agriculture.vic.gov.au/farm-management/chemicals/offlabel-chemical-use/off-label-use-of-agricultural-chemicals
[79] WHO (2021) Agents Classified by the IARC Monographs, Volumes 1–129. International Agency for Research on Cancer. https://monographs.iarc.who.int/agents-classified-by-the-iarc/
[80] Alavanja M. C. (2009). Introduction: pesticides use and exposure extensive worldwide. *Reviews on environmental health*, *24*(4), 303–309. https://doi.org/10.1515/reveh.2009.24.4.303

human health, residues in the food chain and the environment – in order to be allowed on the European market[81]. It is the responsibility of industry to provide the data showing that a pesticide can be used safely. Australia does not have the same system as Europe, and our national regulator, the Australian Pesticides and Veterinary Medicines Authority (APVMA), does not apply the same precautionary approach. Seventeen pesticides are known, likely or probable carcinogens, and 48 pesticides are flagged as potential endocrine (hormone) disruptors[82]. More than 20 of the listed pesticides are classified as either 'extremely hazardous' or 'highly hazardous' by the World Health Organisation. Three of the pesticides are subject to actions by International Conventions but are still used in Australia[83].

There are 12 chemical products or classes of chemical products which have been declared to be restricted chemical products in Schedule 4 of the Agricultural and Veterinary Chemicals Code Regulations 1995[84] (Table 1). At least four of these substances are used to poison so-called "pest" species; sodium fluoroacetate or 1080, 4-aminopropiophenone (also known as PAPP), Pindone concentrate, and a chemical product containing rabbit haemorrhagic disease virus (RHDV).

An agricultural chemical users permit (ACUP) is needed to authorise a person to purchase and use restricted-use chemicals. However, there have been multiple reports where these chemicals, such as 1080 poison, have been stored inappropriately[85], used maliciously, and concerningly, there is no central register of their use.

Even more concerning, is the proposal in this legislation to be able to use some of these restricted chemicals *"if there is a genuine belief the use is required because of the emergency"* - see below.

" ***Emergency use permit – supports primary producers during emergencies or impending emergencies, such as outbreaks of pests and diseases, by allowing the use of a chemical product or an active constituent if there is a genuine belief the use is required because of the emergency".***

The AJP strongly questions how this determination will be made. Will it be determined by the poison companies? Or by government departments whose budgets depend on "pest" management?

[81] European commission (2021) Pesticides Explained. Health and Food Safety. https://ec.europa.eu/assets/sante/food/plants/pesticides/lop/index.html
[82] US Government (2021) Endocrine Disruptors. National Institute of Environmental Health Sciences. https://www.niehs.nih.gov/health/topics/agents/endocrine/index.cfm
[83] Immig J (2010) A list of Australia's most dangerous pesticides. National Toxics Network. July 2010. http://ntn.org.au/wp-content/uploads/2012/05/FINAL-A-list-of-Australias-most-dangerous-pesticides-v27-1.pdf
[84] Agricultural and Veterinary Chemicals Code Regulations 1995. SR 1995 No. 27. Australian Government. https://www.legislation.gov.au/Details/F2020C00672
[85] Stock and Land (2021) Landholder fined for illegally storing 1080 baits. Stock and Land Online. 7 May 2021. https://www.stockandland.com.au/story/7242253/landholder-fined-for-illegally-storing-1080-baits/

Table 1 - Schedule 4 Restricted Chemical Products

Source: Agricultural and Veterinary Chemicals Code Regulations 1995

Number	Restricted chemical products
1	A chemical product containing ethylene dibromide (also known as EDB)
2	A chemical product containing 4-aminopropiophenone (also known as PAPP)
3	A chemical product containing sodium monofluoroacetate (also known as 1080)
4	A chemical product containing acrolein
5	A chemical product that is a pre construction termiticide product containing bifenthrin
6	A chemical product that is a pre construction termiticide product containing chlorpyrifos
7	A chemical product containing endosulfan
8	A chemical product containing pindone that is a concentrate and for which the relevant label instructions require further mixing with carriers before it is ready to use as a bait
9	A chemical product containing mevinphos
10	A chemical product containing rabbit haemorrhagic disease virus (RHDV) (also known as rabbit calicivirus) that is in injectable form and requires mixing with carriers such as oats or carrot before it is ready to use as a bait
11	A vertebrate pest control chemical product containing fenthion, alphachloralose or 4 aminopyridine
12	All chemical products with formulations containing, as active constituents, all 3 of the following in various chemical forms: (a) copper (b) chromium (c) arsenic

Moreover, who is going to determine what is classed as an emergency? Is the permit to use the chemical going to continue when the emergency finishes? For example, landholders in the Western region of NSW who wanted to control "feral" animals were encouraged to consider pig-strength meat baits, which are not currently available throughout wider NSW. A permit was issued by the Australian Pesticides and Veterinary Medicines Authority to use 500-gram meat bait containing 2.4 ml of 1080 poison in the Western Local Land Services region[86]. The permit was granted on 1 April 2019 and expires on **30 April 2024**, and comes with strict conditions for use. This is 12 times stronger than any "wild dog" bait and will kill all omnivorous species such as goannas, eagles and dingoes and also insectivorous birds feasting on any insects attracted to the baits or pig carcasses. Pig baits are not widely used because they are so deadly to all species; Pig baits are much more concentrated than other baits and will potentially kill hundreds of non-target species and in mammals, it causes birth defects, reduced fertility, and damage to the reproductive system, brain, heart, and other organs.

The AJP argues this is tantamount to ecocide, as 1080 is toxic to all living species, including microbes, plants, insects, birds, and humans. Destruction of the natural world is now regarded as "ecocide" – the deliberate or negligent destruction of the natural world, which threatens the health and survival of all species and ecosystems, including humans. The AJP asserts that destruction of the natural world is an existential threat and that ecocide should be a crime.

Some agencies such as the *Invasive Animals Cooperative Research Centre* have dangerous and scientifically incorrect information on their websites, which should be urgently amended before the government even contemplates making these restricted chemicals even more available, for example:

- *"1080 occurs naturally in over 30 species of Australian plants[87]"*

  Fact:
  - ***Potassium*** fluoroacetate is found in some Gastrolobium plants in a small corner of Western Australia.
  - There is no natural form of 1080 (sodium fluoroacetate). It is synthetically produced and "super toxic" according to the World Health Organisation[88]

[86] Mirage (2021) Western region landholders encouraged to consider pig strength meat baits. Mirage News Online. 23 Aug 2021. https://www.miragenews.com/western-region-landholders-encouraged-to-618226/
[87] Mifsud G (2017) Natural Australian toxin protecting plants and wildlife from predators. Landcare Australia. Feb 2017. https://landcareaustralia.org.au/project/natural-australian-toxin-protecting-plants-wildlife-predators/
[88] Whiting-O'Keefe, QE (2012) Testimony on 1080. 1080 Science. 24 Nov 2012. https://1080science.co.nz/testimony-on-1080/

- *" Being a natural toxin, 1080 biodegrades quickly and is broken down into harmless compounds"*[89].

  Fact:
  - "1080 can be very slow to decompose and poses serious environmental risks. "
  - "In contrast to living animals, residues tend to be persistent in carcasses" *APVMA review 2008 Page 47*

- *"Poison 1080 is the most environmentally sensitive and target-specific poison available to protect Australia's vulnerable wildlife"*[90].

  Fact:
  - 1080 blocks a critical energy-producing and metabolic process in all air-breathing organisms (The Tricarboxylic Acid Cycle) and is therefore non-selective and indiscriminate[91]
  - "This material is super toxic.", "Acute Toxic", "***Environmental Hazard***"[92]
  - a Schedule S7 (Dangerous Poison) in Australia[93]
  - a Class 1a pesticide (Extremely Hazardous) by the World Health Organisation[94]
  - "If anyone tells you that 1080 can discriminate between pests and native animals, they are talking complete and utter rubbish" - Ian Shaw, Toxicologist

- *1080 is tightly controlled*

  Fact:
  - The APVMA recommendations are often ignored, for example, "1080 should not be used in urban areas". *APVMA review of 1080 in 2008*
  - 1080 is used illegally and maliciously.
  - There is no central register of use.
  - 1080 has been stolen and never found.
  - It is sometimes disposed of inappropriately.

All of this information points to the premise that chemical use in Australia should be more controlled rather than be more readily available and accessible for off-label use.

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[89] PetSmart (2021) An environmentally responsible option for invasive species control. An environmentally responsible option for invasive species control

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Recommendations:

17. Phase out the use and sale of all restricted chemical products shown in Table 1, many of which are used to kill so-called "pest" species and which result in the death of both native, and non-target, species.
18. Recognise that humans are responsible for introducing non-native species to Australia and that these animals are just trying to survive in their new environment.
19. Stop the use of vilifying language to refer to introduced species.
20. Change the language - introduced and non-native species did not consent to be introduced; they were forcibly introduced; as a result of their adaptation to thrive they have been labelled "pests", "vermin" and "feral" This limits choices of strategies to address their greater ecological impacts.
21. Investigate, support and promote alternative, non-lethal control measures.
22. Consider that the removal or depopulation of an introduced species, which may have been established for hundreds of years, is complex and difficult, if not impossible, and can have negative impacts on the local ecosystem, including native wildlife[95].
23. Ensure that methods used to control introduced species or mitigate their damage are non-lethal, humane, effective and species-specific, and prevent further deliberate or accidental breeding, importation and releases.
24. Mandate that the Australian Pesticides and Veterinary Medicine Authority investigate the claims of "humaneness" when a product is introduced to the market. These claims need to be tested by independent authorities.
25. Invest in research for new, humane fertility and biological population control methods.
26. Ensure that there is an independent body that checks information on government websites so they have scientifically correct information about chemicals. (The dangers of some chemicals, such as 1080 poison, are widely misunderstood).
27. Reduce the impact of introduced animals by rewilding and restoring ecosystems.
28. Replace lethal population control methods currently used by city councils with humane methods centred on deterrence, care, contraception and relocation – whichever are most appropriate to a specific population.
29. Inform Australians, especially rural landowners, of the ecological benefits of dingoes who can act as apex predators and negate the use of lethal chemicals.
30. Increase penalties for killing dingoes for the reason listed above.

[95]GrrlScientist (2018) Does It Really Matter If Only One Species Goes Extinct? Forbes. 13 Oct 2018. https://www.forbes.com/sites/grrlscientist/2018/10/13/does-it-really-matter-if-just-one-species-goes-extinct/?sh=198e65b8610b

Proposed Changes to Permits

In relation to the permits which are going to be introduced, the AJP has concerns that they appear to give authorities unconditional authority, 'the complete freedom to act as they wish' in approving the use of off-label use. The proposed permits of most concern are:

· **Emergency use permit –** supports primary producers during emergencies or impending emergencies, such as outbreaks of pests and diseases, by allowing the use of a chemical product or an active constituent, if there is a genuine belief the use is required because of the emergency.

· **Research permit –** assists in the development, through experiments, of new uses for products. Note the APVMA does not issue permits to enable market research.

· **Veterinary manufacturing permit –** may be issued to authorise the carrying out of a step (or steps) of manufacture of veterinary product/s, that would otherwise be an offence or a contravention of a civil penalty provision set out in the Agvet Code, in relation to manufacture and licensing. This type of permit may only be issued for exceptional circumstances, where compliance with the APVMA's Manufacturing Principles can be demonstrated, and is restricted to a maximum period of 90 days.

· **Miscellaneous permit –** may be issued for a circumstance not covered by the other permits (for example, a permit to possess or supply an unregistered chemical product for export; to oversticker an approved label; to supply specific batches of a registered product that do not comply with the product specifications; to supply a registered product with an unapproved label; or to extend the shelf life of a batch).

Recommendations:

31. Do not permit restricted chemicals to be used under any special permit conditions unless the need is assessed by an independent body.
32. Preclude vested interests who benefit from chemical use, to make decisions about any special conditions for their use.
33. Research other methods of controlling introduced plants.
34. Investigate the use of fertility control such as ContraPest, which is used in the USA to render mice and rats infertile[96].

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[96] Senestech (2021) ContraPest. https://senestech.com/contrapest/

Conclusion

The Australian government has introduced legislation to make the off-label use of Agricultural and Veterinary chemicals easier to access. Given that many of these chemicals are intended to kill, they cause enormous problems for biodiversity. They often kill non-target species, for example, bees, and this is having an alarming effect on the pollination of plants and threatening our very existence. Groundwater can become affected and soil contaminants can accumulate.

This amendment is seeking to make chemical pollutants more accessible. Pollution, including from chemical pollutants, is one of the five major drivers of biodiversity loss and ecosystem decline. This amendment is intended to facilitate current practices of agriculture, yet animal agriculture is a major cause of each of the three existential crises that threaten life on Earth - biodiversity emergency, climate emergency, emerging diseases. The World's scientists are warning humanity about these crises and the negative impact of animal agriculture. Major global organisations are creating policy to tackle the three crises and it includes a shift to predominantly plant-based foods for human consumption and biodiversity-sensitive agricultural practices.

This proposal from the Australian government is therefore at odds with the scientific evidence and with policies of significant global citizens such as the United Nations, World Health Organisation, the Intergovernmental Panel on Climate Change and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

The Animal Justice Party asserts that natural solutions should be developed. Legislation to make the off-label use of chemicals easier is not required; quite conversely, legislation is urgently required to reduce the use of such harmful chemicals.

"If we pollute the air, water and soil that keep us alive and well,
and destroy the biodiversity that allows natural systems to function,
no amount of money will save us".

David Suzuki