

The logo for the Invasive Species Council (ISC) features the letters 'ISC' in a bold, white, sans-serif font, set against a dark orange rectangular background.

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AUSTRALIA

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Submission on Green Paper - Land and Biodiversity in a Time of Climate Change

The Invasive Species Council is an environmental NGO which campaigns to prevent the establishment and spread of invasive species in Australia. We are part of the Victoria Naturally Alliance.

In general, the Green Paper appropriately acknowledges that invasive species are a major threat to biodiversity, as well as agriculture. Invasive species have wreaked havoc on biodiversity in Victoria, and despite collective regret about some introductions (eg. foxes and gorse) harmful introductions continue to occur. At least two-thirds of Victoria is mostly or predominantly covered in exotic vegetation and about 28% (>1200) of the plant species listed in *Flora of Victoria* are exotic (Carr 1993). Weeds are a major threat to native species and ecosystems.¹ As the Green Paper notes, foxes and cats have already caused extinctions. Along with rabbits and trout they continue to threaten the survival of rare and threatened species; deer, carp and rabbits degrade habitats and displace native species; and exotic marine organisms dominate Port Phillip Bay. Climate change will exacerbate many of these threats.

One glaring gap in the Green Paper, however, is invasive pathogens, which are barely mentioned but are causing significant environmental harm. Dieback fungus (*Phytophthora cinnamomi*) kills native plants and chytrid fungus threatens frogs. The invasive orange pore fungus has recently appeared in Melbourne reserves.

Another gap is exotic invertebrates. For example, a large number of exotic earthworms in Victoria are being actively spread, with unknown consequences. Insects, spiders, and crustaceans are becoming more popular as pets, with the inevitable consequence that they will be released into the wild when people tire of them. Invertebrates are being introduced and spread through trade.

It is also important to focus specifically on invasive species threats to marine and aquatic environments, as they are often ignored in invasive species policies.

¹ A NSW assessment found that 419 listed threatened species were threatened by weed invasion, particularly by exotic grasses (Coutts-Smith and Downey 2006) - it is likely that the threat in Victoria is of a similar magnitude.

The Green Paper acknowledges that climate change will worsen weed and pest problems, in particular by influencing 'the ability of species that are not currently a problem to become established in Victoria.' However, it is remiss for there to be no mention of invasive species in the section devoted to proposed climate change responses. Many of the greatest harms of climate change will be mediated by those species that benefit from climate change, many of which will be weeds, pests and pathogens (Low 2008; Dunlop & Brown 2008). The Victorian Department of Primary Industries has produced a report, *The Impacts of Climate Change on Biosecurity*, that assesses crop pests expected to benefit from climate change, and a similar review should be undertaken on pests that harm biodiversity.

As well as ensuring that invasive species threats are considered in plans to adapt to climate change, the Green Paper should consider the full suite of damaging interactions between global warming and invasive species. In particular, more frequent and/or severe weather events, such as droughts and floods, will promote weed invasion, as they have in the past. And invasive pathogens whose spread is facilitated by climate change could also cause great ecological harm, especially where their hosts may be under climate-related stress. For example, the first documented climate change extinctions – of numerous frog species in South America – are attributed to disease (chytrid fungus) facilitated by climate change.² Dieback fungus (*Phytophthora cinnamomi*) is another pathogen that will increase in virulence if wet periods and warm temperatures increasingly coincide.

The Green Paper recommends that climate change projections be used to 'inform risk assessments for new pest and weed incursions, as well as rates of spread of established invasive species.' This is important and should be supported. The Paper should also consider strategies to protect native species against climate-facilitated invasions – for example restoration after extreme weather events, and hygiene protocols to prevent fire-fighting equipment introducing weeds to fire operations areas, on all tenures but especially in national parks. Climate change will require more intensive management of invasive species to protect some threatened species and climate refuge areas. It will also be important to ensure that responses to climate change – the planting of more drought-hardy crops or biofuels, for example – do not add to the list of problematic, invasive species. Weed risk assessments that properly account for the uncertainty and risks associated with climate change should be conducted before the introduction of new species for any purpose. A highly precautionary approach is warranted.

Commendably, the Green Paper recognizes that reactive approaches to pest and weed management are largely ineffective, and stresses the importance of prevention and early intervention. It signals the intention to improve risk assessments and develop 'new tools' and a 'more robust investment framework' (whatever that means). However, the Green Paper fails to recommend approaches that will be effective in preventing future invasions. It proposes that communities be trained to recognize and deal with weeds and pests early and that legislation be reviewed. But there is no mention of the major role played by the nursery trade in introducing new weeds. The need for more

² Links between chytrid fungus and climate change are debated. The link postulated for the South American extinction of about 70 frog species is climate change causing more cloud cover over their mountain habitats, which is making nights warmer and days cooler, and creating more favourable conditions for the disease (Pounds et al 2006). Specific to Australia (although with evidence only for northern Australia) is a correlation between multiyear intervals of high minimum temperatures and chytrid infections (Laurence 2008).

controls over sale of weedy garden plants is recognized by government weed experts, but the Green Paper skirts around this issue. There is also no mention of what is the only sensible approach to prevention, which is to introduce a ban on new exotic species – those new to the state or particular regions – unless they have been assessed as low risk and are placed on a permitted list. Currently, Victoria takes the opposite approach, which is to allow all species in unless they have been specifically prohibited. This means that invasive species management is inevitably reactive, resource-intensive and often ineffective. The government can never keep up with the pace of new introductions, and by the time it gets around to assessing a species it is often too late for eradication or politically difficult. WA adopted a permitted list approach in 1997, and Victoria should follow their lead.

The Green Paper also fails to give due emphasis to the drivers and conflicts of interest underpinning invasive species issues – where a few people benefit from the use of invasive species but the environment and the public bear the costs. The focus of the Green Paper is predominantly on education and cooperation – 'In some instances there may be the need to increase awareness and understanding across the community about the impacts of invasive species and actions needed to manage them.' But unless there are also clear legislative and policy commitments to preventing new introductions of potentially harmful species and controlling established harmful species, especially garden and pasture plants, the charm and information approach will be ineffectual.

Nurseries have been the source of most of Victoria's current environmental weeds, and continue to sell existing and potential weeds without being required to even label them as such. Deer are a major threat to Victorian forests and are spreading, but they are managed for the benefit of hunters rather than for conservation because of the power of the hunting lobby in Victoria. Tall Wheat Grass is invading wetlands, but because it is a productive grass that tolerates salt it is being promoted for rehabilitation rather than banned as a weed. These are the sorts of conflicts that need a more considered response in the development of the White Paper.

As well as more rigorous risk assessments and cost-benefit analyses which properly account for environmental risks and costs, there should be application of 'polluters pay' principles for invasive species. Legislation should be amended to require that those who introduce and use invasive species take responsibility for resulting harm. One such approach used in Florida for some crops deemed risky is the payment of a bond by landholders/managers to cover clean-up costs should the plant escape cultivation.

The Green Paper proposes that risk assessments should be extended to include 'freshwater species, additional pest animals, diseases and pathogens that impact native biodiversity and other values.' This is important. It also proposes to improve the management of invasive species in marine environments by improving surveillance and increasing awareness. However, it neglects prevention, which requires better practices with ballast water and hull fouling of boats (reforms here will require working with the federal government and quarantine).

The classic 'elephant in the room' issue that is ignored is that of funding. We certainly hope that the mooted 'more robust investment framework' for managing invasive species translates to 'sufficient' funding. There is a strong focus in the 'tools' section of the Green Paper on prioritizing government investments. While essential, this needs to be coupled with a long-term commitment to properly

fund priority work. Unfortunately, a mania for prioritization often emerges as an alternative to proper funding.

Reform recommendations

1. As part of adaptation to climate change, accord high priority to reducing the risk of invasive species to indigenous species and ecosystems. This should include:

- ◆ Conduct a review of the impact of climate change on invasive species, to identify which ones are likely to develop increased invasive potential, and develop strategies to minimize the harm this may cause.
- ◆ Develop climate change adaptation strategies for all harmful interactions between climate change and invasive pests (i.e. not just expansion in the range of pest species), including strategies to limit domination by invasive species after severe weather events and fire.
- ◆ Ensure invasive pest risk assessments are conducted before permitting or supporting the development of new crops in a region (e.g. more drought-hardy pastures, biofuels or plants for rehabilitation). These assessments must be precautionary and rigorous, and account for the risks and uncertainties of invasive species under climate change conditions.

2. Implement prevention and early intervention approaches to prevent new weed, pest and disease problems arising. This should include:

- ◆ Replace the current Prohibited List system with a Permitted List system for non-native species (i.e. those not native to the state or region, including those native to elsewhere in Australia), which permits the entry into the state or region only those species assessed as low-risk.
- ◆ Ensure that weed risk assessments are sufficiently rigorous and precautionary to limit permitted species to those that represent a low risk to the environment and agriculture.
- ◆ Ensure that only those species assessed as low risk are approved and supported as new commercially cultivated species or used for rehabilitation.
- ◆ Require that nurseries sell only low-risk species, and that all products with potential for spread carry appropriate warnings.
- ◆ Develop strategies to minimise the risk of accidental introductions of invasive pest animals, plants and pathogens (including through introduction of pests in ballast water, on fouled boat hulls, contaminated seed, plant materials or machinery etc).

3. Manage existing invasive species assessed as a high environmental risk to reduce the risks to biodiversity. This would include:

- ◆ Appropriately declare and control populations of harmful invasive species to prevent spread into new areas.
- ◆ Control populations of harmful invasive species to minimise threats to threatened species or ecosystems and protected areas.

- ◆ Ensure that only non-invasive species are approved and promoted by the government and related agencies for commercial use or rehabilitation.

4. Implement a 'polluter-pays' duty of care approach, which requires that those who cause harm are held responsible for it. This would include:

- ◆ Develop a legislated general duty of care to prevent the spread of invasive species.
- ◆ Provide for legal recourse (including third party rights) against those who cause environmental harm by their use of invasive species.
- ◆ Implement a system of bond payment for those who are permitted to introduce and/or use high-risk species for commercial reasons; the amount of the bond should reflect the risk of widescale outbreaks and potentially catastrophic impacts on the environment and biodiversity.

5. Provide funding commensurate to the extent and scale of threat of invasive species, and sufficient to implement the recommended measures. Ensure that program funding is guaranteed over a number of years rather than subject to annual budgetary negotiations and readjustments. Seek bipartisan support for reformed policy directions to guarantee their survival beyond the term of one government.

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