Invasive Species Regulatory Improvement Study

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Victorian
Competition & Efficiency
Commission

The Invasive Species Regulatory Improvement Study Report was prepared as a joint activity by the Victorian Competition and Efficiency Commission and the Department of Environment and Primary Industries. The study was led by Dr Matthew Butlin, Chair.

Disclaimer

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This study differs from the Commission's standard public inquiry process. The study team's analysis and recommendations are based on desk-based research and limited consultation with stakeholders.

Abbreviations

AO	Authorised officer
APRA	Australian Prudential Regulation Authority
BEF	Biosecurity Evidence Framework
CaLP Act	*Catchment and Land Protection Act 1994* (Vic)
CMA	Catchment Management Authority
DEDJTR	Department of Economic Development, Jobs, Transport and Resources
DEPI	Department of Environment and Primary Industries
IEP	Invasive Plants and Animals Program Improved Enforcement Implementation Plan
IGAB	Intergovernmental Agreement on Biosecurity
IPAPF	Invasive Plants and Animals Policy Framework
ISC Bill	Invasive Species Control Bill 2014 (Vic)
MERF	Monitoring, Evaluation and Reporting Framework
NBC	National Biosecurity Committee
RPW	Regionally prohibited weed
SGCWT	South Gippsland Community Weeds Taskforce
SoE	Ministerial Statement of Expectations for the Regulation of Biosecurity Matters under Victorian Legislation
SPW	State prohibited weed
VBT	Victorian Blackberry Taskforce
VGT	Victorian Gorse Taskforce
VSTWP	Victorian Serrated Tussock Working Party
WRA	Victorian Weed Risk Assessment Method

Preface

On 7 January 2014, the Victorian Competition and Efficiency Commission (the Commission) received, from the former Victorian Treasurer, terms of reference for two regulatory improvement studies with the Department of Environment and Primary Industries (DEPI). This report is the outcome of one of those improvement studies — invasive species compliance. The study commenced in August 2014 as a joint study between the Commission and DEPI, and was completed on 27 January 2015.

During the course of the study, the Victorian election (held on 29 November 2014) resulted in a change of Government, and subsequent Machinery of Government changes that restructured functions and responsibilities relevant to this study. At the time this study was completed, the full implications of these changes, and thus their impact on the content of this report, were unclear.

That said, it is expected that some of the discussion in this report will be superseded by new institutional arrangements. In particular, from 1 January 2015, lead responsibility for invasive species regulation and compliance has been assumed by the Department of Economic Development, Jobs, Transport and Resources. Accordingly, the convention has been adopted of referring to DEPI for matters occurring prior to 31 December 2014, and to 'the Department' for post-2014 matters.

Key messages

About the study

In January 2014, the Victorian Competition and Efficiency Commission received terms of reference for a joint study into invasive species compliance with the Department of Environment and Primary Industries (DEPI). The study assesses DEPI's approach to the risk-based regulation of invasive species and identifies opportunities for improvement in the regulator's productivity. The study commenced in August 2014, and was completed in January 2015.

During the course of the study, the Victorian election (29 November 2014) resulted in a change of Government, and subsequent Machinery of Government changes. At the time the study was completed the full implications of the changes were unclear.

That said, it is expected that some of the discussion in this report will be superseded by new institutional arrangements. In particular, from 1 January 2015, lead responsibility for invasive species regulation and compliance has been assumed by the Department of Economic Development, Jobs, Transport and Resources (DEDJTR). Accordingly, the convention has been adopted of referring to DEPI for matters occurring prior to 31 December 2014, and to 'the Department' for post-2014 matters.

There is a need to clarify the risk-based policy framework

Various studies indicate that invasive species inflict significant economic, social and environmental harms on the Victorian community. Using a risk-based approach, the Victorian Government uses a range of regulatory and non-regulatory tools to reduce the risk of these harms.

There is scope for the Department to clarify and raise stakeholder awareness of its objectives and how it uses a risk-based framework to pursue them, through a succinct and clear 'risk statement'. This should:

- state that regulation cannot remove all harms associated with invasive species

- explain how the Department intends to prioritise its efforts, by analysing the probability of harm occurring and the consequences of harm

- state that effort will be targeted at activities likely to achieve the greatest net benefit.

The development of a risk statement can be used to guide the prioritisation of invasive species for Departmental compliance action, using risk assessment and cost-benefit analysis techniques.

The declaration process needs guiding principles and review points

Certain types of invasive species have been declared under the current legislative framework. Declaration places regulatory obligations on public and private land owners to eradicate or control invasive species. The current declaration process does not fully reflect risk-based principles and is perceived by some stakeholders to be slow and cumbersome.

In the event that the legislative framework is amended, the Department has an opportunity to apply risk-based principles to produce a new, shorter declared list. This list should be reviewed regularly in light of new information.

There are opportunities to improve the use of compliance tools

A draft Compliance Strategy has been developed to guide the risk-based approach to compliance and enforcement. The Strategy could be improved by:

- clarifying how two potentially competing considerations are weighed up and

resolved: treating the highest risks and responding to community concern about invasive species

- providing specific guidance to Departmental officers on how to assess the impact or consequence of non-compliance with regulation.

To inform its choice of compliance tools, the Department needs a better understanding of how the unique characteristics of different groups, such as primary producers, public land managers and lifestyle-based landholders, contribute to the risk of spread of invasive species. The Department needs to issue updated guidance to its staff on the drivers of compliance and non-compliance for regulated parties, in terms of the barriers they face to compliance, their incentives for non-compliance and the impact their actions have on pathways of spread.

There is a need to improve monitoring and evaluation processes

Limited evaluation has occurred of whether invasive species compliance activities have achieved desired outcomes in a cost-effective manner. A systematic, proportionate evaluation process is needed, whereby cost-benefit analysis techniques are used to evaluate the economic, social and environmental outcomes of:

- all high cost projects
- a sample of lower-cost projects.

Summary report

1   Context and scope of the study

Various studies indicate that invasive species inflict significant economic, social and environmental harms on the Victorian community. Costs include losses in agricultural output, loss of biodiversity and impacts on social amenity. For example, weeds have been estimated to cost the Victorian economy around $900 million per annum in lost agricultural production and management costs.

Government uses a range of regulatory and non-regulatory tools to reduce the risk of these harms. The main regulatory instrument is the *Catchment and Land Protection Act 1994* (Vic) (CaLP Act). It imposes obligations on public and private land managers to eradicate and control certain (declared) noxious weeds and pest animals. Government also uses a variety of non-regulatory tools, such as extension (awareness and education) and support for community-based groups to address the harms resulting from invasive species.

The former Victorian Government expected the Department of Environment and Primary Industries (DEPI) to adopt a risk-based approach to the regulation of invasive species, as expressed in the June 2014 Ministerial *Statement of Expectations for the Regulation of Biosecurity Matters under Victorian Legislation* (SoE). This study — a joint project between the Victorian Competition and Efficiency Commission and DEPI — seeks to support the move towards a more risk-based approach to regulation, in a way that improves the efficiency of invasive species regulation whilst maintaining or improving overall outcomes.

The study focuses on two areas of invasive species regulation:

- preventing the introduction of, and eradicating, new invasive species (particularly weeds)
- protecting assets from the impacts of widely-established invasive species, particularly high-impact weeds and rabbits.

A key aim of the study is to identify improvements within the existing regulatory framework. That said, the study has taken into account some important proposed changes to the legislative framework, that would flow if the Invasive Species Control Bill 2014 (Vic) (ISC Bill) is reintroduced to Parliament and enacted. The study also builds on DEPI's work in adopting a risk-based approach to regulating invasive species, such as *the Invasive Plants and Animals Policy Framework* (IPAPF) and the draft *Compliance Strategy*.

The study proposes a number of reforms to strengthen the Department's risk-based approach to invasive species management. Areas for improvement were identified based on consultation with selected stakeholders, lessons from other VCEC projects and from risk-based regulation literature more broadly. Recommendations are made in four areas:

(1) Clarifying the risk-based policy framework (chapter 2)

(2) Improving the declaration process (chapter 3)

(3) Informing the use and selection of compliance tools (chapter 4)

(4) Enhancing monitoring and evaluation processes (chapter 5).

2 There is a need to clarify the risk-based policy framework

The legislative framework, the SoE and the IPAPF guided DEPI's approach to managing the risks posed by new and established invasive species. The legislative objectives for invasive species regulation are necessarily broad. The generally understood goal of policy is, however, to seek a reduction in the economic, environmental and social harms resulting from invasive species.

The previous Government indicated that it expected DEPI to develop a risk assessment framework for prioritising actions to reduce the harms from invasive species. How DEPI goes about prioritising actions is set out in the IPAPF. The IPAPF does this by laying out broad guiding principles and goals. For example, it acknowledges that it is not feasible, cost-effective or desirable for Government to enforce control of all declared invasive species, and that Government investment will be prioritised for areas where public benefit is likely to be highest.

While the IPAPF outlines the intent to move to a more risk-based approach, it is unclear to some stakeholders how the principles and goals outlined in the IPAPF are applied in practice. It is difficult to assess the extent and impact of these stakeholder concerns, due to the limited extent of consultation undertaken. They do, however, suggest there is scope for the Department to clarify and raise stakeholder awareness of its objectives and how it uses a risk-based framework to pursue them. This can be done by developing a succinct and clear 'risk statement'. The risk statement should reflect the objectives of reducing economic, environmental and social harm and should:

- state that regulation cannot remove all harms associated with invasive species
- explain how the Department intends to prioritise its efforts — with the focus on risks and harms where it can have the greatest effect on achieving risk reduction
- explain how priorities will be informed — by analysis of the probability of harm occurring and the consequences of harm
- state that the Department will only undertake those activities (such as targeted compliance projects), that are likely to deliver the highest net public benefit.

The study team has not attempted to draft a specific risk statement for invasive species regulation, as such a statement will need to reflect specific research, analysis and consultation with stakeholders. There are, however, several examples of risk statements from other regulators that the Department could base its risk statement on. These are summarised in the report (chapter 2).

Recommendation 2.1

That the Department revise the *Invasive Plants and Animals Policy Framework* to include a specific risk statement that reflects the objectives of reducing economic, environmental and social harms. The statement should:

- state that regulation cannot remove all harms associated with invasive species
- explain how the Department intends to prioritise its efforts — with the focus on risks and harms where it can have the greatest effect in achieving risk reduction
- explain how priorities will be informed — by analysis of the probability of harm occurring and the consequences of harm
- state that the Department will only undertake those activities (such as targeted compliance projects) that are likely to deliver the highest net public benefit.

In developing the risk statement, the Department needs to effectively engage with, and communicate to, staff and external stakeholders. This will likely entail engagement with staff and stakeholders in ways that not only enable their involvement in the development of the Department's approach to invasive species management, but communicate the risk statement and its implications effectively.

Recommendation 2.2

That the Department communicate the practical implications of the revised risk-based framework for invasive species regulation to:

- departmental staff, such as authorised officers

- external stakeholders, in particular, private landholders and public land managers.

2.1 The process for prioritising species for action needs to be transparent and reflect risk-based principles

The development of an effective risk statement is intended to lead to a clear sense of Departmental priorities for reducing the harms associated with invasive species and the method for doing so.

In choosing which species to prioritise, particularly established species, the Department will be initially guided by the list of declared species. The act of declaration provides a basis for regulatory action (see below) and thus is an important means of priority setting. However, the current declared list is too large and has not been reviewed using risk-assessment principles.

In practice, DEPI was unable to prioritise all declared species and so attempted to maximise the public benefits from its resources by focusing its regulatory efforts on a subset of declared invasive species, particularly for established species. This process of prioritising invasive species for action by the Department can be improved and made more transparent to staff and stakeholders.

DEPI's approach to prioritising widespread, established species for regulatory action was set out in the *Invasive Plants and Animals Program Improved Enforcement Implementation Plan* (IEP). The IEP outlined a number of principles for identifying priorities for compliance action, including supporting community-led action and protecting priority agricultural, environmental and social assets. The IEP also targeted a number of priority species (five weed species and rabbits) for action. DEPI advised that community concerns about the relative importance of species also played an important role in the selection of these priority species. This appears to be reflected in some differences between the five priority weeds identified for action under the IEP and the priorities implied by technical risk assessment (such as 'Weed Risk Assessment' rankings). It therefore is not clear that taking action on the identified species is delivering the greatest possible reduction in the risk of harm from invasive species.

This does not suggest that reflecting community concerns in the prioritisation process is unwarranted. Reflecting strong community views in determining priorities can play an important role in encouraging support for, and compliance with, the regulatory framework. This is effectively another type of risk for the Department to manage, which implies a need to give some weighting to 'significant community concern' in setting Departmental priorities. However, it is not clear how community concern was balanced against the results of formal risk assessment in setting priorities, or whether this was done consistently.

One way to improve clarity about the role of community concern in setting priorities is for the Department to be transparent about the circumstances where there is a mismatch between priorities established through formal risk assessment and priorities identified in response to community concern. Over time, if responding to particular community concerns about invasive species is expected by Government, this expectation should be transparently communicated, for example, through the Minister's SoE for the Department.

Another key task associated with prioritising species for action by the Department is to communicate these priorities, including the basis on which they were selected, to staff, external stakeholders and the wider community. Increased transparency about how prioritisation decisions are made can improve accountability, which can assist in promoting confidence and support for the regulatory framework. It can also facilitate voluntary compliance with invasive species requirements.

> ## Recommendation 2.3
>
> Where invasive species are prioritised for action, the Department needs to communicate these priorities to its staff, regulated parties and the wider community, including the basis for their selection.

2.2 The selection of projects needs to be informed by cost-benefit analysis techniques

Having identified priority species for action, the Department needs to determine how to allocate its resources across specific projects that are intended to reduce harms resulting from invasive species. The types of project to be undertaken range from supporting community-led initiatives through to undertaking property inspections and enforcement in cases of non-compliance. This approach also recognises that there are differences in priority species across regions.

DEPI had regard to the 'invasion curve' model (figure 1), to help determine the balance between different types of projects:

(1) 'Prevention' focuses on guarding against the entry of new species.

(2) 'Eradication' is the elimination of every individual of a species from a geographic area that is sufficiently isolated to prevent re-invasion.

(3) 'Containment' aims to eradicate outlying 'satellite' infestations and prevent the spread beyond the boundaries of core infestations (those that are too large and well established to eradicate).

(4) 'Asset protection' aims to protect and restore valued assets against established invasive species.

Figure 1   Generalised invasion curve
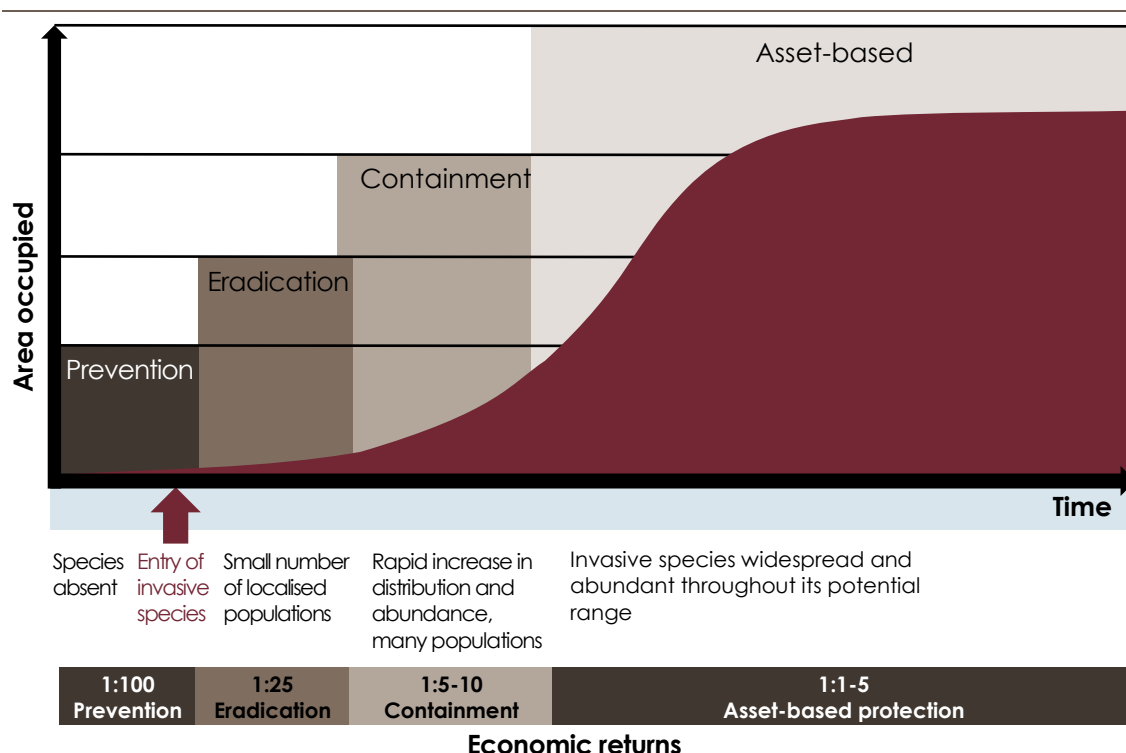
Source: DEPI 2010.

DEPI advised that, as a result of various factors (including expressed community preferences) about 40 to 60 per cent of its investment in invasive species management has historically focused on the right-hand side of the invasion curve — that is, on the management of established species. As noted above, this partly reflects community concern about the relative importance of species.

An important assumption underpinning the invasion curve is that returns on investment are expected to be highest for those projects on the left-hand side of the invasion curve (particularly those involving prevention and eradication of new species).

While the invasion curve provides a useful way of highlighting how current priorities have been determined, it is not a substitute for careful targeting of resources using risk-assessment techniques and cost-benefit analysis to select projects that deliver the greatest possible reduction in the harms caused by invasive species, given the resources available to the regulator. Recognising that risk-assessment and cost-benefit analysis will be subject to significant uncertainties and information gaps, project selection should also be informed by formal ex-post evaluations of selected projects. This is useful for gathering evidence about the actual costs and benefits of projects to inform estimates of the expected benefits and costs of future projects.

Adoption of these techniques helps to refine and complement the initial risk assessment (as undertaken during the declaration process) by identifying which projects are most likely to be efficient and effective and which will therefore contribute to the goal of maximising the public benefits of intervention. These techniques should be applied to inform decisions about which species to target in particular areas, and how resources should be allocated between individual projects, to address a given species across different regions.

> ## Recommendation 2.4
>
> That the Department systematically apply cost-benefit analysis techniques, in addition to risk-assessment processes, to guide the selection of invasive species regulation and compliance projects.

2.3   Roles and responsibilities need to be clear

The effectiveness of risk-based regulation depends not only on how priorities are determined. It also depends on how roles, responsibilities and accountabilities are allocated, particularly when there are multiple parties responsible for achieving outcomes. The allocation of roles, responsibilities and accountabilities is particularly important in the area of invasive species policy because a variety of public and private entities are involved in managing the harms associated with invasive species. These include DEPI, Parks Victoria, Catchment Management Authorities (CMAs) and linear reserve managers such as V/Line and VicRoads. This complex institutional environment creates significant potential for problems to emerge in the regulation and management of invasive species, due to inadequate coordination between these various entities.

The study team found examples of well-coordinated activity between DEPI, Parks Victoria, CMAs and other land managers in the delivery of projects, such as the Grampians Ark fox control project and the Otways-Eden new and emerging weeds project. These efforts reflect the general desire of various agencies to work together towards a common goal of managing the impact of an invasive species.

However, stakeholder consultations also identified opportunities for improvement. One linear reserve manager, for instance, noted that a different Victorian government department directed it to deal with weeds to manage bushfire risk, but specified a method (slashing) that was not considered best practice in terms of invasive species control.

The recently announced changes to departmental structures will result in significant changes to roles and responsibilities. It will be particularly important that roles and responsibilities for managing harms caused by invasive species are clearly defined and communicated to stakeholders.

3   The declaration process needs guiding principles and review points

Both the CaLP Act and the ISC Bill provide for declaration of a species as the principal mechanism for imposing regulatory obligations on Victorian landholders. Declaration of an invasive species provides the authority for undertaking formal compliance and enforcement activities to promote control of declared invasive species. The administration of the declaration process can therefore have a major impact on how the Department sets priorities, and thus on its risk-based approach to regulation.

In consultations undertaken by the study team, stakeholders identified several problems with the declaration process. It was considered by some stakeholders to be slow and cumbersome. Others stated that the nomination process, and the criteria for declaration, are poorly understood by stakeholders. As noted above, the declaration process also lacks formal review points to ensure that the regulatory framework remains relevant in the face of changes in the operating environment. This has contributed to perceptions that the current declared list is excessively long, in terms of practicability.

If the ISC Bill is reintroduced to Parliament and enacted, the Department has an opportunity to apply risk-based principles to the declaration process to produce a new declared list that only targets prioritised risks, as informed by risk-assessment processes, within the Department's capacity to manage them.

The study team has developed some draft principles to assist the Department to determine how nominations should be assessed and whether a nominated species should, or should not, be listed as a declared invasive species. The draft principles cover whether the species is within the scope of the legislation, the likely harms (based on risk assessment), the feasibility and cost-effectiveness of control efforts and the level of community support for declaration.

Recommendation 3.1

That the Department publish principles to guide decision making about nominations to declare a species under the relevant legislation. These principles should reflect a risk-based approach so that declaration becomes embedded as a central plank in the Department's overall risk-based framework for invasive species regulation.

These principles should incorporate assessment of:

- the combined 'invasiveness' and 'impact' of a species as measured through formal risk assessment (or, where not available, expert opinion)

- the detectability of a species

- whether achievement of declaration objectives is feasible and cost-effective

- the level of community support for declaration

- the likelihood that the overall public benefits from declaration would outweigh the costs.

To support the implementation of the declaration principles, the Department will also need to engage with stakeholders about how it will administer the declaration process. This should cover how to make a nomination, an outline of the principles used and their practical implications, and the expected timeframes for making a decision on declaration. This information should be provided both through targeted stakeholder consultation and through the Department's website. Such information would not only promote efficient decision making, but also support the perceived legitimacy of regulatory arrangements, which in turn can help promote compliance.

Recommendation 3.2

That the Department publish guidance for staff and stakeholders on how it will administer the declaration process. The guidance should cover:

- information required for making a nomination, and the process for lodging it

- an outline of the principles used to assess species for declaration

- expected timeframes for declaration decisions.

Over time, the risks posed by invasive species, and the cost-effectiveness of managing them, are likely to change. This implies that the risk posed by a declared species should be subject to periodic review to ensure that declarations (and therefore management responses) remain relevant. DEPI did not, however, have a systematic review process for declared species.

The Department therefore needs to establish a process for periodic review of the status and priority of declared species to ensure that declarations (and therefore management responses) are up-to-date in light of new information. To support such a process, the Department will need to ensure it has adequate baseline information and systems for recording the status of declared species (for example, location and extent of infestation for established species), as well as information on the nature and effectiveness of control efforts. Over time, the benefits of regular review should outweigh the costs — review and revocation of declarations for low-risk species will ensure the list is relevant and manageable for the Department, and will reduce compliance costs for landholders.

> ### Recommendation 3.3
>
> That the Department develop systems and processes for periodic review of the status and priority of declared species to ensure that declarations (and therefore management responses) are up-to-date in light of new information.

4 There are opportunities to improve the selection and use of compliance tools

The Department has a range of policy tools — ranging from a low to high level of intervention — that can be used to encourage and monitor compliance, and to respond to non-compliance. DEPI made a number of advances in developing and implementing a risk-based approach to its compliance activity, including the development of a draft Compliance Strategy.

The study team identified several opportunities to improve the draft Compliance Strategy. The first is to improve guidance for decision makers by clarifying how to weigh up the competing considerations of focusing on the highest risks (that are feasible and cost-effective to treat) and managing community concern and expectations (as a business risk). This guidance could take the form of a list of factors to consider when deciding on a regulatory response to community concern about invasive species. These factors could include considering how a response or non-response to a low-risk event would affect the community's willingness to participate in voluntary compliance.

Second, the study team found that the Strategy could provide quantitative benchmarks to help Departmental officers determine the level of 'consequence' or 'impact'. For example, while the strategy distinguishes between impacts at the local, regional or state-wide level, there are no data or information about the magnitude of these impacts. The Department's risk-based approach would benefit from the Strategy including quantitative benchmarks to guide its officers in assessing whether a consequence is insignificant, minor, moderate, major or severe. For example, economic impacts could be measured based on estimates of the dollar value of lost agricultural production per hectare. A similar approach can be applied to environmental and social benchmarks, noting there is likely to be some subjectivity in the measures.

Recommendation 4.1

That the Department amend the draft Compliance Strategy to clarify how it weighs up and resolves two potentially competing considerations: treating the highest risks (with the highest net benefit from intervention) and responding to community concern. When these do not align, factors to be considered include:

- the opportunity costs of allocating scarce compliance resources to events of high community concern, where these pose low risks of harm

- how its actions would affect confidence in the regulatory framework and/or the community's willingness to undertake voluntary compliance.

Recommendation 4.2

That the Department provide more specific guidance about how it assesses whether a consequence or impact is 'insignificant', 'minor', 'moderate', 'major' or 'severe' under its draft Compliance Strategy. For example, quantitative benchmarks may be used for economic impacts, such as the estimated value (in dollars per hectare) of agricultural impact when invasive species are not managed.

4.1 There is a need to better understand drivers of compliance and non-compliance

To inform its approach to the choice of compliance tools, the Department needs a sound understanding of how the unique characteristics of different types of regulated parties contribute to the risk of spread of an invasive species. Non-compliance in any area or by individual landholders can reduce the overall effectiveness of efforts to manage invasive species. Given that much of the management effort is undertaken through third parties, it is important that the Department understand the drivers of the risks of non-compliance. This can be achieved by analysing regulated parties in terms of three main drivers: pathways and vectors of spread, barriers to compliance and incentives to comply.

The study team understands that in practice the Department has a good understanding of its stakeholders in terms of the above drivers, with authorised officers playing a particularly important role in day-to-day liaison. However, the study team has heard that there are gaps in its understanding of these factors and considers that the Department could benefit from developing formal guidance for analysing the drivers of compliance and non-compliance amongst regulated parties.

Recommendation 4.3

That the Department issue updated guidance to its staff on the drivers of compliance and non-compliance for regulated parties, in terms of the:

- barriers they face to compliance (and how to remove or manage them where possible)

- incentives they have for voluntary compliance (and how to align these with regulatory objectives)

- impacts their actions have on pathways and vectors of spread

- how tools will be prioritised for different types of landholders.

4.2 There are low-cost opportunities to improve the contribution from community-based groups

Community-based invasive species action groups engage with private landholders to address infestations of established invasive species, including blackberry, serrated tussock and gorse. Their activities include community awareness and education, advice on control techniques and signing up landholders to voluntary land management agreements. The study team heard that community-based groups can be an effective, low-cost means of fostering and coordinating compliance, by addressing issues such as awareness and capability. DEPI has supported these groups, including through modest financial and administrative support.

The study found opportunities for the Department to lift the contribution from community-based groups by developing a strategy to support the model of community-led action. This may include building the administrative capacity of such groups (by providing training in governance, for example), providing opportunities for groups to share learnings and encouraging groups to promote awareness of their activities within the broader community.

> ### Recommendation 4.4
> That the Department develop a strategy to support the model of community-led action on invasive species. The strategy should identify areas of key focus (where community-led action is likely to be most cost-effective) and identify the types of support available, such as financial, administrative and training support.

4.3 There may be an opportunity to use new compliance tools

If the ISC Bill is reintroduced to Parliament and enacted, compliance guidance for Departmental staff will also need to cover several new compliance tools outlined in the Bill, including voluntary management plans, control area arrangements, declared carrier provisions and codes of practice. As part of identifying improvement opportunities, the study team was asked to identify considerations to inform the development of any future guidance on the use of these new tools.

A number of considerations should inform use of the compliance tools contained in the ISC Bill. Considerations include an assessment of how the tools are likely to impact administrative efficiency, landholder incentives to control invasive species and barriers to landholders' compliance with their statutory obligations. For example, voluntary management plans appear to be a promising way of addressing known causes (vectors) of spread that are within the control of public and private land managers. However, the ISC Bill does not limit their use to particular types of landholders. Given the administrative costs associated with establishing, reviewing and monitoring compliance with these plans, their use should probably be limited to major public and private land managers (for example, VicRoads and V/Line). Accordingly, the study team considers that Departmental staff and stakeholders would benefit from clear guidelines about which types of landholders should be encouraged to adopt these plans.

5 There is a need to improve monitoring and evaluation processes

To implement a risk-based approach effectively, the Department needs data and information to support decisions about targeting harms, declaring species, and selecting projects and policy tools. Good baseline data is also required to support monitoring and evaluation activities, to obtain ongoing feedback on whether the regulatory framework is necessary, effective and efficient.

The study team found few examples of cost-benefit analysis techniques being used to evaluate whether DEPI's invasive species activities had achieved desired outcomes in a cost-effective manner. Going forward, the Department needs to systematically use cost-benefit analysis techniques to evaluate the outcomes of its projects. Evaluation is especially important for high-cost projects, which need to be stringently evaluated reflecting the value of resources used. The outcomes of lower-cost projects should also be evaluated. However, as evaluation itself is costly, it is reasonable to use a proportionate approach. This could mean greater use of qualitative techniques, reliance on fewer data sources and/or evaluation of only a sample of lower-cost projects.

> ## Recommendation 5.1
>
> That the Department undertake systematic, proportionate evaluation of the outcomes of its invasive species projects across the 'invasion curve'. In particular, that it evaluate using cost-benefit analysis techniques for:
>
> - all high-cost projects
> - a sample of its lower-cost projects.

1   Introduction

1.1   Context

An invasive species is a species occurring, as a result of human activities, beyond its accepted normal distribution and which threatens valued environmental, agricultural or other social resources by the damage it causes. Addressing the impacts of invasive species is a complex and dynamic problem, reflecting the ongoing introduction of new plant and animal species to Australia, including some with unknown impacts. Other influences on the invasive species operating environment include changing land use and demography, climate change, changing consumer preferences and expectations that affect both the spread and impact of invasive species and the approaches used to manage them (DEPI 2014a).

Various studies have found that the economic, environmental and social costs of invasive species to the Victorian community are significant (DEPI 2014b; Gong et al. 2009; ABS 2007). For example, weeds have been estimated to cost the Victorian economy around $900 million per annum[1], while vertebrate pest animals have been estimated to result in losses to the Victorian and Tasmanian beef, wool and lamb industries of around $35 million per annum (Gong et al. 2009, 25). In terms of environmental impacts, weeds and pest animals can 'out-compete' and prey on native species respectively, which leads to a destruction of natural habitat and a loss of biodiversity (DEPI 2014d). Social costs include costs related to loss of amenity and enjoyment of the natural environment (DEPI 2014b).

1.1.1   The objectives of government regulation

The overarching objective of government regulation of invasive species is to reduce the risk of environmental, economic and social harm associated with the increase and spread of invasive species (DEPI 2010; Minister for Agriculture and Food Security 2014). That is, regulation aims to avoid the costs to the community of invasive species by preventing the establishment of new and emerging species and by protecting economic and environmental assets from the impacts of widespread (or established) species.

The need for regulation stems mainly from externality and public good issues, whereby the:

- failure of a landholder or entity to manage invasive species on their property, or in transit, can undermine the management efforts of surrounding landholders
- benefits from investment in invasive species management, particularly for new and emerging species, accrue across landholder boundaries, leading to incentives for free-riding on the management efforts of others or underinvestment (DEPI 2014b; Marbuah, Gren, and McKie 2014, 504).

That said, while there may be sound reasons for regulation, this activity is not costless. There is also a risk that government intervention displaces private management efforts. For these reasons, from a community-wide perspective, the expected benefits of intervention need to outweigh the costs, and government expenditure needs to focus on achieving the highest net public benefits.

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[1] This estimate represents the value of lost agricultural production and management costs, and not environmental costs (Commissioner for Environmental Sustainability Victoria 2013, 97; DEPI 2014c).

1.2   Purpose and scope of the study

The former Victorian Government expected the Department of Environment and Primary Industries (DEPI) to adopt a risk-based approach to regulating invasive species, as expressed in the 2014 Ministerial *Statement of Expectations for the Regulation of Biosecurity Matters under Victorian Legislation* (Minister for Agriculture and Food Security 2014, 3). Prior to 2015, DEPI administered the invasive species provisions of the *Catchment and Land Protection Act 1994* (Vic) (CaLP Act), which imposes obligations on public and private sector parties to eradicate and manage certain declared noxious weeds and pest animals. From 1 January 2015, these responsibilities were assumed by the Department of Economic Development, Jobs, Transport and Resources. An overview of the 2014 Victorian regulatory and institutional framework for invasive species is at appendix B.

This study — a joint project between the Commission and DEPI — seeks to support the implementation of risk-based regulation by recommending opportunities to improve the regulator's productivity and to reduce regulatory burden.

The terms of reference (appendix A) stipulate that this study will:

- assess how the regulator deals with risk in a specific area of their operations, including the extent to which current practices are risk-based

- identify opportunities and make recommendations to improve the efficiency of associated regulations, including through greater use of risk-based approaches to regulation within existing legislative and regulatory frameworks

- identify and make recommendations on priorities for addressing any impediments to adopting more efficient regulatory approaches, and identify those requiring legislative or other changes outside the regulator's direct control

- identify and make recommendations on regulator savings opportunities

- quantify in preliminary terms the impacts of its recommendations, including initial estimates of cost savings to businesses and households, where possible.

In interpreting the terms of reference, the study team has focused on two areas of invasive species regulation:

- preventing the introduction of and eradicating new invasive species, in particular, weeds

- protecting assets from the impacts of widely-established invasive species, focusing on high-impact weeds and rabbits.

1.3   The study's approach

The study team focused on assessing and identifying opportunities to improve DEPI's risk-based approach to the regulation of invasive species. The study identified areas for improvement based on consultation with selected stakeholders, lessons from other Commission projects, recent developments in other jurisdictions (appendix C) and insights from the risk-based regulation literature more broadly (box 1.1). A list of organisations consulted is at appendix D.

> **Box 1.1   Risk-based regulation**
>
> Risk-based regulation stems from the idea that some harms that a regulator treats are more likely to occur, or may impose greater costs on the community, than others. This idea is captured in the concept of 'risk', which includes both the probability of harm and the potential consequences of that harm.
>
> Risk assessment analyses the probability and consequence of harm to guide the allocation of resources to the areas of greatest risk reduction. Another relevant consideration is to invest scarce regulatory resources in delivering public, rather than private benefits. This helps regulators maximise the value they deliver to the community.
>
> Focusing on the highest risks, cost-effectiveness and public benefit implies a risk tolerance, which sets a threshold below which certain risks are not treated — for example, infrequent and/or low-impact risks, and risks that are too costly to treat.
>
> A risk-based approach to regulation applies to all stages of the regulatory cycle and requires a focus on both external and internal risks:
>
> - External risks — risks of harm to third parties which exist independently of the regulator. The regulation of external risks requires the application of risk-based approaches at all stages of the regulatory cycle — this involves, for example, the use of risk-assessment tools to prioritise the highest risks, and cost-benefit analyses to identify the most efficient options for reducing risk.
>
> - Internal risks — the management of internal or implementation risks involves ensuring that complementary systems and structures necessary to make risk-based regulation work are considered and put in place. This includes such requirements as effective governance, clear role descriptions and accountabilities and the effective use of data and evaluation tools.
>
> *Source: Sparrow 2008; Black 2010; Peterson and Fensling 2011; Freiberg 2010 and Commission analysis.*

The study focused on the clarity of DEPI's risk-based framework and its approaches to risk assessment, the choice of compliance tools for promoting regulatory objectives and monitoring and evaluation. In doing so, it considered departmental decision-making processes at the state and regional levels, and how stakeholder input and consultation are used to inform key decisions.

The study has also taken into account some important proposed changes to the legislative framework that would flow from the Invasive Species Control Bill 2014 (Vic), if it was reintroduced into Parliament and enacted (chapter 3).

1.4   Structure of the report

The remainder of the report focuses on opportunities for improving DEPI's risk-based approach to invasive species regulation, focusing on:

- clarifying the risk-based policy framework (chapter 2)

- improving the declaration process (chapter 3)

- improving processes for selecting compliance tools (chapter 4)

- improving monitoring and evaluation processes (chapter 5).

2   Clarifying the risk-based policy framework

Establishing the risk-based policy framework is the first step in applying risk-based regulation. This involves consideration of the policy framework in which decisions are being made, including the objectives of invasive species regulation and determination and prioritisation of the specific risks that regulation is intended to address. In addition, organisational structures, roles, and accountabilities need to be clear and support risk-based decisions.

2.1   Clarifying objectives and the risk statement

The current regulatory framework provides only broad guidance on the objectives of invasive species regulation and the risks that are to be targeted. For example, an objective of the *Catchment and Land Protection Act 1994* (Vic) (CaLP Act) is to 'provide for the control of noxious weeds and pest animals' (s 4). In the Invasive Species Control Bill 2014 (Vic) (ISC Bill), the purpose is 'to provide for monitoring, surveillance and control of invasive species in Victoria'. Not only are these statements broad, but they refer to *actions* that are to be undertaken in relation to invasive species, rather than setting a clear objective for *why* these actions should occur. The Explanatory Memorandum for the ISC Bill provides more specific guidance in relation to purpose:

> The Bill aims to provide a framework for more effective monitoring and surveillance of invasive species and management or mitigation of the risks posed by invasive species to Victoria's economy, community and environment including Victoria's land and waters. (Parliament of Victoria 2014, 1)

Further guidance on the objectives of invasive species regulation is provided in the former Government's *Ministerial Statement of Expectations for the Regulation of Biosecurity Matters under Victorian Legislation* (SoE). This stated that the Department of Environment and Primary Industries (DEPI) was to apply a risk-based approach to the management of compliance responsibilities. It also specifically required DEPI to publish a Biosecurity Compliance Strategy that:

> includes a risk assessment framework for identifying high biosecurity risks and for undertaking enforcement activities. (Minister for Agriculture and Food Security 2014, 3)

To express how it intends to achieve the Government's broad objectives for invasive species regulation, DEPI developed a risk-based policy framework titled the *Invasive Plants and Animals Policy Framework* (IPAPF). The IPAPF does not identify the specific risks that DEPI intends to address but instead lays out the following broad guiding principles and goals:

- it is not feasible, cost-effective or desirable for government to enforce control of all currently declared invasive species

- government investment will be prioritised for areas where public benefit is likely to be highest — the Framework states that government intervention should only occur where benefits are likely to outweigh the costs

- prevention and eradication of new, rather than established, invasive species will be prioritised, reflecting generally higher expected returns on investment

- for established invasive species, the emphasis will shift from eradication to the more cost-effective options of containment and asset protection (DEPI 2010).

While the IPAPF and other DEPI documents (such as the draft Compliance Strategy (chapter 4)) outline the intent to move to a more risk-based approach, the risk-based policy framework is still unclear and could be improved. The risk principles are dispersed throughout the lengthy IPAPF document, which also contains background and other information. There is an opportunity to further clarify the risk-based policy framework for staff and stakeholders. This could be achieved by creating a single, succinct policy document containing only the information that staff and stakeholders require to identify the specific risks that invasive species regulation is targeting, and to understand how resources are to be allocated to address the harms arising from invasive species.

It is also somewhat unclear how the principles and goals outlined in the IPAPF are applied in practice. One linear reserve manager, for example, commented that the annual control notices it received from DEPI in recent years — which require the land manager to take action to control infestations of selected declared species — did not appear to reflect a risk-based approach. Moreover, the land manager was unclear as to why certain invasive species were targeted for control action in any given year. The new (draft) Compliance Strategy may help to address these issues (chapter 4).

Some stakeholders (including linear reserve managers) also stated that they are unsure how DEPI takes into account the economic, environmental and social harms caused by invasive species in its risk-assessment processes, especially in making decisions about whether to declare a species under legislation (chapter 3). In particular, some stakeholders considered that the environmental harms from invasive species do not receive adequate attention in the regulation of invasive species.

It is difficult to assess the extent and impact of these stakeholder concerns, due to the limited extent of consultation undertaken. They do, however, suggest there is scope for the Department to clarify and raise stakeholder awareness of its objectives and how it uses a risk-based framework to pursue them. This can be done by developing a succinct and clear 'risk statement'. The risk statement should reflect the objectives of reducing economic, environmental and social harm and should:

- state that regulation cannot remove all harms associated with invasive species

- explain how the Department intends to prioritise its efforts — with the focus on risks and harms where it can have the greatest effect on achieving risk reduction

- explain how priorities will be informed — by analysis of the probability of harm occurring and the consequences of harm

- state that the Department will only undertake activities (such as targeted compliance projects) that are likely to deliver the highest net public benefit.

The study team has not attempted to draft a specific risk statement for invasive species regulation as such a statement will need to reflect specific research, analysis and consultation with stakeholders. There are, however, a number of examples of risk statements from other regulators that the Department could draw on in developing its own risk statement (box 2.1).

Box 2.1   Developing a risk statement

The implementation of risk-based regulation across regulators varies. Outlined below are some extracts taken from statements about risk by various agencies.

Transport Safety Victoria (TSV)

The TSV Corporate Plan 2013-14 contains comments on risk such as:

> TSV aims to maximise public value by … identify[ing] safety-critical transport system risks and work[ing] collaboratively with duty holders to eliminate or control those risks.

> While the different areas we regulate have some similarities, we recognise that each has its own unique risk profile and level of regulatory maturity and tailor our regulatory approach accordingly.

> In the bus and rail sectors, our primary focus is on catastrophic risk: low-probability, high-consequence events that have the potential to result in significant loss of life and damage to property ... In the maritime sector … we have a stronger focus on events of higher probability and lower consequence, for example vessel disablements, as these are the key drivers of risk.

Australian Skills Quality Authority (ASQA)

The ASQA states that it applies a risk-based approach to regulation and that, in practice, this means that:

> ASQA primarily focuses its efforts on assessing, and where necessary responding to, risks that may arise if a learner is judged competent without possessing the necessary skills and knowledge.

> ASQA-regulated providers are assigned a risk rating as an indicator of the level of risk they present, based on known data and regulatory history. A rating informs ASQA about how much regulatory scrutiny it needs to commit to the provider.

> ASQA also applies a risk-based approach when responding to complaints about providers.

> ASQA assesses risks to the vocational education and training system as a whole and mitigates heightened risk exposures through targeted and effective actions.

Australian Prudential Regulation Authority (APRA)

In its *Supervision Blueprint*, APRA states that:

> APRA aims to reduce the likelihood and impact of financial sector losses but does not guarantee zero failure. As supervisors, we increase the intensity of supervisory intervention in line with a supervised institution's risk profile to ensure that any issues are addressed before they pose a threat to the institution or its beneficiaries. The supervisory actions and responses we take are designed to ensure that the safety and stability of the institution is maintained and that intervention and enforcement occurs as necessary (and on a timely basis) to ensure this is the case.

Box 2.1   Developing a risk statement (cont.)

Environment Protection Authority Victoria (EPA)

The EPA's *Compliance and Enforcement Policy* explains that:

> EPA's regulatory model is based on risk. EPA will prioritise compliance and enforcement activity, and allocate resources where it can, to make the biggest difference to Victoria's environment by addressing the biggest risks to environment and health …

> EPA's regulatory model and this policy explain how we enforce the legislation we administer, and prioritise our compliance and enforcement activity. They outline the strategies we will apply when dealing with those industries and businesses we regulate …

> EPA will allocate our resources where the biggest difference can be made, or where the biggest risks to environment, health, safety or wellbeing can be managed.

> We have adopted a risk-based model in which our targeting of enforcement and our responses to incidents, compliance requirements, level of non-compliance and pollution reports will change depending on the risk or harm to health and the environment.

> EPA prioritises its compliance monitoring and inspection efforts towards the biggest risks of harm to the environment and to those people and businesses that are less likely to comply.

> EPA defines risk as a combination of two elements: consequence (the risk or harm to health and environment) and likelihood (the chance that non-compliance will occur).

Sources: (ASQA 2014; TSV 2013, 10; EPA Victoria 2014; APRA 2010b)

The study team also concluded that the Department should review and consolidate the numerous existing policy and guidance documents that exist under the auspices of the IPAPF. This would aid in reducing potential confusion about the Department's risk-based framework. Steps would include reviewing the various modules of the Framework[2], and information provided on the Department's website about the regulatory and institutional framework and the obligations for landholders, with a view to presenting a more succinct, consolidated and consistent statement about the risk-based framework.

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[2] For example, the Weeds and Vertebrate Pest Module.

> **Recommendation 2.1**
>
> That the Department revise the *Invasive Plants and Animals Policy Framework* to include a specific risk statement that reflects the objectives of reducing economic, environmental and social harms. The statement should:
>
> - state that regulation cannot remove all harms associated with invasive species
> - explain how the Department intends to prioritise its efforts — with the focus on risks and harms where it can have the greatest effect in achieving risk reduction
> - explain how priorities will be informed — by analysis of the probability of harm occurring and the consequences of harm
> - state that the Department will only undertake those activities (such as targeted compliance projects) that are likely to deliver the highest net public benefit.

In developing the risk statement, the Department needs to effectively communicate with staff and external stakeholders. This could involve engagement with staff and stakeholders in ways that not only enable their involvement in the development of the Department's approach to invasive species management, but also communicates the risk statement and its implications effectively. For external stakeholders, it is necessary to effectively communicate the risk statement and risk-based framework so that regulated parties have greater clarity about their legislative obligations — which can help promote compliance — and about the Department's specific roles and responsibilities with respect to invasive species management. This includes predictability about how the Department will address instances of non-compliance (chapter 4).

Effective engagement with the community about the risk-based framework is also necessary to promote understanding of, and confidence in, regulatory arrangements overall. This can mitigate the risk that informed and deliberate inaction by the Department on low-risk species may be perceived as regulatory failure. A risk-based regulatory approach is unlikely to be successful if there is insufficient investment in educating the community about the changed regulatory landscape that results from a risk-based approach. When engaging with the community about these changes in regulation, it will be important to be aware that many people naturally tend to focus on the practical implications of any changes for local management of particular established invasive species (for example, that enforcement activity may be less than was previously the case or may only be provided in a more restricted set of circumstances). Openness about these consequences and the rationale for them is essential to maintain trust in the regulatory framework.

Staff such as authorised officers (AOs) need specific guidance on how to make decisions under different risk scenarios, including applying compliance and enforcement tools. This includes training staff in the general risk-based policy framework, as well as producing detailed and practical operational guidance documents and processes that will enable AOs to consistently, predictably and equitably implement DEPI's risk-based framework 'on the ground' with regulated parties. The draft Compliance Strategy should guide this task (chapter 4).

> ## Recommendation 2.2
>
> That the Department communicate the practical implications of the revised risk-based framework for invasive species regulation to:
>
> - departmental staff, such as authorised officers
> - external stakeholders, in particular private landholders and public land managers.

2.2 Prioritising invasive species for action

As noted, the development of an effective risk statement is intended to lead to a clear sense of Departmental priorities for reducing the harms associated with invasive species. In choosing which species to prioritise the Department will be initially guided by the list of declared species, whereby declaration provides a basis for regulatory action (chapter 3). Declaration can usefully narrow down the scope of potential candidates for regulatory action from *all* invasive species to those that pose the highest risk, provided they can be effectively managed. However, if the current declared list is any indication, it is possible that the total number of species declared, and hence potentially subject to regulatory attention, may still be too large to be practicable as a management task, particularly for widespread, established species (chapter 3).

This implies that the Department needs to further focus the bulk of its regulatory efforts on a subset of *declared* invasive species to maximise the returns on its investment, particularly for established species. There are opportunities to improve the prioritisation process to achieve a greater reduction in risk.

2.2.1 New and emerging species

The key management goal for declared new and emerging invasive species is eradication from the State. Under the CaLP Act, there are about 25 invasive plants — classified as State prohibited weeds (SPWs) — that are subject to eradication requirements (appendix B). However, despite changes in weed distribution and improved understanding of factors influencing the probability of successful eradication (such as cost and feasibility) no SPWs have been removed from the declared list. This outcome also suggests that some SPWs are less of a threat than first thought and that some are too widespread for eradication to be feasible. In recognition of this, DEPI chose to focus on a subset of SPW species that are considered high risk, feasible and cost-effective to eradicate. This approach is broadly consistent with a risk-based approach to regulation.

In the absence of a review of the list of SPWs, a continued focus on high-risk (rather than all) SPWs appears sound. If and when the new legislative framework reintroduced to Parliament and enacted, there is an opportunity to use the declaration process to ensure that only those new and emerging species that represent the highest risks (that are cost-effective to eradicate) are subject to eradication requirements (chapter 3). Under the new legislation these species would be characterised as category 1 species.[3] There should be no need to prioritise within this (relatively short) declared list.

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[3] Under the ISC Bill, for an invasive species to be considered for Category 1 declaration, it would not be known to be present in the wild in Victoria or, if it is present, it is reasonable to expect that it can be eradicated from the State. It would also have or may have significant adverse effects on the economy, environment and/or social amenity in Victoria or in another Australian jurisdiction. Alternatively, its potential adverse effects are unknown (Victorian Parliamentary Debates - Legislative Assembly 2014, 2929).

In addition, regular review of the declared list would facilitate removal of species for which eradication is no longer cost-effective or feasible. These species would still be eligible for declaration under the established species category (category 2). Further discussion about improving the declaration process to support the Department's risk-based approach to regulation is in chapter 3.

2.2.2   Widespread, established species

The key management goal for declared widespread, established species is preventing further spread (rather than eradication).[4] At a state-wide level, DEPI prioritised action on established species through the *Invasive Plants and Animals Program Improved Enforcement Implementation Plan* (IEP). The IEP (developed in 2011-12) stated that DEPI compliance and enforcement resources would focus on the following six widespread, established invasive plant and animal species: blackberry, gorse, serrated tussock, ragwort and Paterson's curse and rabbits.[5] The IEP stated that DEPI may undertake compliance and enforcement activity — mainly property inspections and issuing of notices by AOs — where doing so would:

- support community-led action — where the community can demonstrate it has been working in a defined geographic area for at least two years in a coordinated manner, and the work has been demonstrated to be effective and uses legal methods of control

- protect agricultural, environmental and social assets in priority areas — typically assets identified by Catchment Management Authorities (CMAs) in Regional Catchment Strategies

- address a significant and demonstrable impact on the public good through a land owner failing to act on their legal responsibility to control weeds or pests on their land.

The IEP principles incorporate some consideration of risk, for example, the risk to community assets from invasive species. However, it is not clear to the study team that taking action on the six selected species is delivering the greatest possible reduction in the risk of harm from invasive species. Arguably, in selecting priority species, a risk-based approach would generally place greater weight on the outcomes of formal harm assessment processes. For invasive plants, the Weed Risk Assessment (WRA) process is a methodology for systematically making comparative assessments of the risk represented by invasive plants (box 2.2). For invasive animals, the risk of harm is assessed through the Reptile and Amphibian Model, which ranks establishment risk for exotic reptiles and amphibians introduced to Australia (Bomford 2008).

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[4] In some cases it may be possible to eradicate an established species from a particular region for a certain period of time.

[5] While the IEP helps prioritise DEPI's effort, it does not preclude DEPI dedicating resources to other declared and undeclared species (for example, wild dogs and foxes).

Box 2.2   Victorian Weed Risk Assessment (WRA) methodology

The WRA provides a methodology for systematically and consistently making comparative assessments of the risk represented by invasive plants. Around 550 WRAs have been undertaken in Victoria. The method uses qualitative and quantitative data to compare three risk factors across plant species. Each risk factor is weighted according to its importance:*

(1) The plant's invasiveness (weighted at 0.12)

(2) A comparison of the plant's present and potential distribution (0.32)

(3) The plant's impact on social, economic and environmental values (0.56).

In regard to (3), the plant's impact score is weighted to account for the relative impacts on social values (0.10), environmental impact on natural resources (0.25) and flora and fauna (0.425), and economic impact on agriculture (0.225).

The values are added to produce a single figure score that can be used to rank the plant by placing it in a risk category (from low to high).

Notes: *As determined by the Cooperative Research Centre for Australian Weed Management (Weeds CRC) and DEPI.

Source: DPI 2005.

The study team found there was not always a close correlation between the five priority weeds identified by the IEP and the risk of harm as represented by WRA relative rankings of scores of established weeds in CMA regions (table 2.1).

Table 2.1   Weed Risk Assessment relative rankings for priority weeds — CMA regions

CMA	Serrated Tussock	Blackberry	Gorse	Ragwort	Paterson's Curse
Corangamite	2	3	9	75	51
East Gippsland	1	4	5	68	60
Glenelg Hopkins	1	2	25	56	74
Goulbourn Broken	1	7	18	11	71
North Central	1	3	36	43	56
North East	1	3	4	25	78
Mallee	6	11	42	32	62
Port Philip and Westernport	8	13	36	66	75
West Gippsland	1	3	11	79	58
Wimmera	1	6	31	81	32

Notes: Excludes State prohibited weeds. A lower rank reflects a higher relative risk in a CMA region.

Source: DEPI correspondence.

The table above shows WRA rankings of declared priority weeds across CMA regions, excluding State prohibited weeds. While the WRA 'score' is only one factor for selecting priority species for regulatory attention (as it does not account for other relevant information, such as feasibility of controlling the species), the data above implies

potential to target other higher risk species in some CMA regions. For example, serrated tussock features highly across all CMA regions, whereas the results for Paterson's Curse are mixed.

DEPI advised that, in the past, much of its compliance activity has also been driven by 'community concern' about the relative importance of species. Responding to strong community views in determining priorities may be important if doing so supports compliance with the regulatory framework by encouraging community acceptance and support for DEPI's regulatory activities. This is effectively another type of risk for the Department to manage, which implies a need to give some weighting to 'significant community concern' in setting Departmental priorities. Ideally, community concern will be demonstrated by consistent action by the community on a particular species over time (as currently required under the IEP). However, it is not clear how DEPI has balanced 'community concern' against the results of formal risk assessment in setting priorities, or whether this was done consistently. This illustrates one of the problems in incorporating community concern as a factor for setting Departmental priorities. It is not clear that species of significant concern to a particular community will always correlate with priorities identified through formal risk assessment, in combination with an assessment of the feasibility of control.

One way to improve clarity about the role of community concern in setting priorities, is for the Department to be transparent about the circumstances where there is a mismatch between priorities established through formal risk assessment and priorities identified in response to community concern. Over time, if responding to particular community concerns about invasive species is expected by Government, this expectation should be transparently communicated, for example, through a Ministerial Statement of Expectations for the Department.

Another key task associated with prioritising species for action by the Department is to communicate these priorities, including the basis on which they were selected, to staff, external stakeholders and the wider community. Increased transparency about how prioritisation decisions are made can improve accountability, which can assist in promoting confidence and support for the regulatory framework. It can also facilitate voluntary compliance with invasive species requirements (chapter 4).

> **Recommendation 2.3**
>
> Where invasive species are prioritised for action, the Department needs to communicate these priorities to its staff, regulated parties and the wider community, including the basis for their selection.

2.3   Selecting individual projects

Having identified priority species for action, the Department needs to determine how to allocate its resources across specific regulation and compliance projects that are intended to reduce harms resulting from invasive species. The types of project to be undertaken range from supporting community-led initiatives through to undertaking property inspections and enforcement in cases of non-compliance (chapter 4). This recognises that there are differences in priority species across regions.

DEPI had regard to the 'invasion curve' model, to help determine the balance between different types of projects:

(1) 'Prevention' focuses on guarding against the entry of new species.

(2) 'Eradication' is the elimination of every individual of a species from a geographic area that is sufficiently isolated to prevent re-invasion.

(3) 'Containment' aims to eradicate outlying 'satellite' infestations and prevent the spread beyond the boundaries of core infestations (those that are too large and well established to eradicate).

(4) 'Asset protection' aims to protect and restore valued assets against established invasive species (figure 2.1).

Figure 2.1 Generalised invasion curve
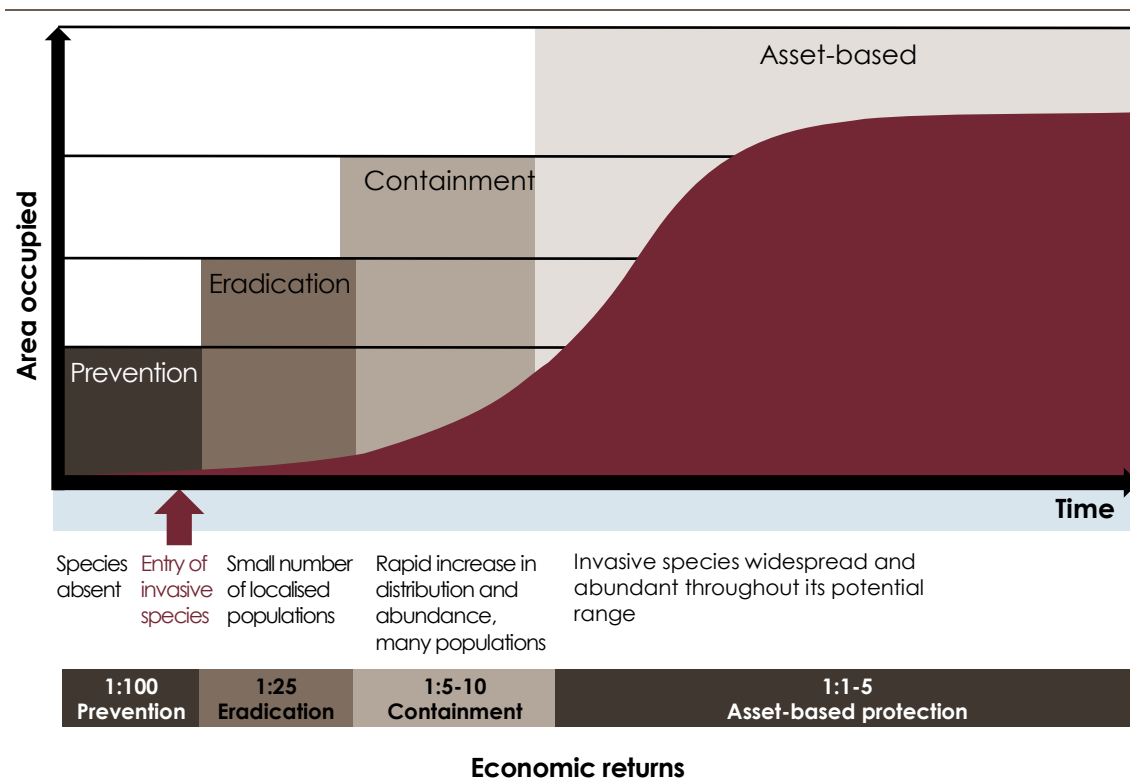

Source   (DEPI 2010)

An important assumption underpinning the invasion curve is that returns on investment are expected to be highest for those projects on the left-hand side of the invasion curve (particularly those involving prevention and eradication of new species). Eradication projects for newly detected invasive species can be relatively cost-effective as 'it is far more cost-effective than managing a weed once it is widespread' (NSW Government Natural Resources Commission 2014, 52).[6] Returns are considered to be significantly lower on the right-hand side of the invasion curve (containment and asset-based protection for established invasive species).

DEPI advised that, as a result of various factors (including expressed community preferences) about 40 to 60 per cent of its investment in invasive species management has historically focused on the right-hand side of the curve — that is, on the management of established species (figure 2.2). A significant part of this expenditure represents the costs to DEPI compliance and enforcement projects. These projects involve AOs visiting landholders to encourage or enforce the control of weeds and rabbits (Steel and Weiss 2014, 95). Although DEPI has not set a specific target for

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[6] Costs may, however, depend on the 'detectability' of the species (Marbuah, Gren, and McKie 2014, 512).

resource allocation across prevention, eradication, containment and asset protection for new and established threats, the IPAPF suggests that it intended to place an increasing priority on prevention and eradication of new and emerging species, reflecting the higher expected return on investment.

Figure 2.2   Allocation of expenditure across invasion curve — 2007-08 to 2013-14
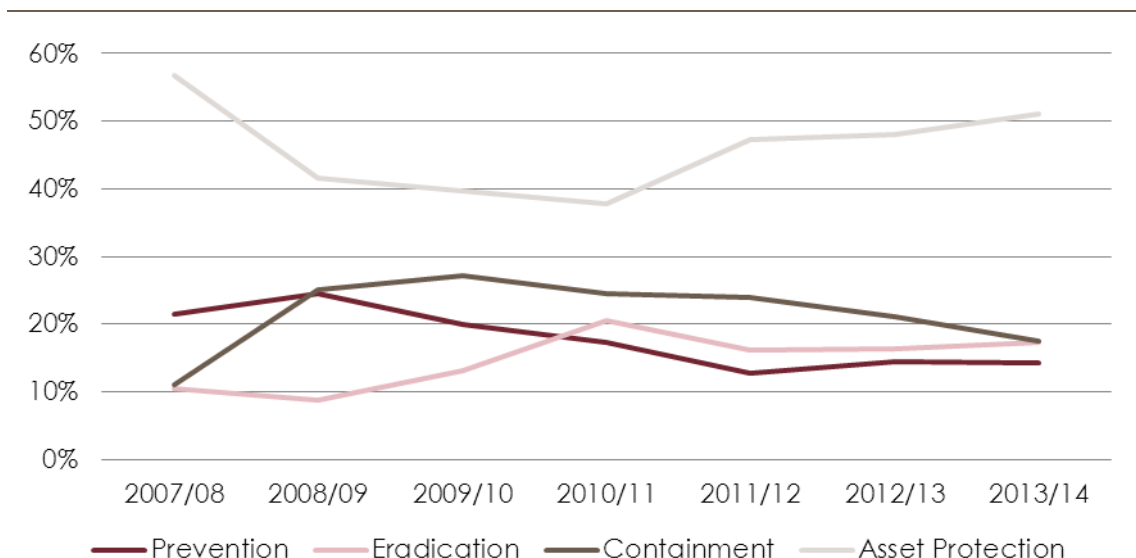
Notes: Data only includes former Department of Primary Industries expenditure and almost exclusively reflects expenditure on private land (with the exception of wild dogs and new and emerging plants and animals). This means that a high proportion of expenditure would be for enforcement activities, rather than direct control activities.

Source: DEPI correspondence.

While the invasion curve provides a useful way of highlighting how current priorities have been determined, it is not a substitute for careful targeting of resources using risk assessment and cost-benefit analysis techniques to select projects for reducing the harms caused by invasive species. Adoption of these techniques helps refine and complement the initial risk assessment (as undertaken during the declaration process (chapter 3)) by identifying which projects are most efficient and effective and therefore most likely to maximise the net benefits of intervention. These techniques should be applied to inform decisions about which species to target in particular areas, and how resources should be allocated between individual projects to address a given species across different regions (for example, Port Philip versus Grampians).

Recognising that risk assessment and cost-benefit analysis will be subject to significant uncertainties and information gaps, project selection should also be informed by formal ex-post evaluations of selected projects. Ex-post evaluation is useful for gathering evidence about the actual costs and benefits of projects that can form the basis for estimating the expected benefits and costs of future projects, and for drawing broader lessons about the applicability of different policy tools and the factors determining their success or otherwise (chapter 5).

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Recommendation 2.4

That the Department systematically apply cost-benefit analysis techniques, in addition to risk assessment, to guide the selection of invasive species regulation and compliance projects.

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2.4   Clarifying roles, responsibilities and accountabilities

The effectiveness of risk-based regulation depends not only on how priorities and projects are selected. It also depends on how roles, responsibilities and accountabilities are allocated, particularly when there are multiple parties responsible for achieving outcomes. The allocation of roles, responsibilities and accountabilities is particularly important in the area of invasive species policy, because a variety of public and private entities are involved in managing the harms associated with invasive species. An overview of institutional arrangements is in appendix B.

Prior to 2015, DEPI was responsible for administering the principal legislation relating to invasive species, as well as areas of environmental legislation containing obligations to protect the environment from the adverse effects of some invasive species (such as the *Flora and Fauna Guarantee Act 1998* (Vic)). DEPI was also responsible for meeting legislative requirements that apply to public land under its direct management. This means that invasive species management actions within DEPI were distributed across the following areas:

- The Biosecurity Division, with lead responsibility for invasive species and animal welfare legislation.

- Land, Fire and Environment Group, focused on the impacts of invasive species on public land, including managing DEPI's relationship with Parks Victoria. The Group also addressed invasive species threats to biodiversity on private land.

- Regional Services Group, focused on coordinating and implementing all of DEPI's regulatory activities, and on managing DEPI's relationship with other land managers (public and private), at a regional and local level.

Several other entities are involved in selecting and delivering invasive species control projects and research. Agencies such as Parks Victoria, V/Line or VicRoads undertake invasive species management activities for a range of reasons, including:

- to comply with other regulatory obligations — such as conserving environmental values under the *National Parks Act 1975* (Vic) or ensuring the humane treatment of invasive animals under the *Prevention of Cruelty to Animals Regulations 2008*

- to protect the value of infrastructure assets (for example, from the risks posed by fire or rabbits).

The complex institutional environment for regulating and managing harms resulting from invasive species creates significant potential for problems to emerge in the regulation and management of invasive species due to inadequate coordination between these various entities.

The study team found examples of well-coordinated activity between DEPI, Parks Victoria, CMAs and other land managers in the delivery of projects, such as the Grampians Ark fox control project and the Otways-Eden new and emerging weeds

project. These efforts reflect the general desire of various agencies to work together towards a common goal of managing the impact of an invasive species.

However, stakeholder consultations also revealed some opportunities for improvement. For example, a linear reserve manager noted that a different Victorian government department requires it to deal with weeds to manage bushfire risk, but it is not clear whether the control method specified is also considered best practice in terms of invasive species control (for example, slashing to control some weeds can promote their spread). Some stakeholders also referred to a need to provide clarification to public land managers, such as Parks Victoria, about how their invasive species responsibilities under the CaLP Act (and if passed, the proposed new legislative framework) are to be discharged, given their broader environment protection responsibilities.

These issues highlight the need to ensure that organisational structures, roles and accountabilities are clear, particularly if invasive species responsibilities are spread across multiple agencies as a result of Machinery of Government changes. Some issues to be considered are identified below.

As noted in section 2.3, the prevention and early intervention phase of invasive species regulation involves taking a species-led approach to regulation and compliance activities. Returns on investment in prevention and early intervention activities are considered to be generally higher than for ongoing management to reduce the harmful impacts of species that are established. Investment in regulation and compliance to prevent the introduction and establishment of species that are determined to be high risk invasive plants and animals may best lend itself to a Department of Economic Development, Jobs, Transport and Resources (DEDJTR) biosecurity focus.

The asset-protection phase of invasive species regulation involves taking a more holistic, land-based approach to protect the integrity of a high value asset (for example, a national park or major water body) against all threats, not only invasive species. This approach is undertaken when invasive species spread and are determined to be no longer eradicable or containable. In this regard, investment in asset protection for widespread established invasive species on private and public land may best lend itself to a public/private land manager focus.

The 'containment' phase of invasive species regulation and compliance essentially functions as a transition phase between a prevention and early intervention approach and an asset-protection approach. As such, the focus would transition from DEDJTR to public/private land managers. The transition phase may vary greatly in duration depending on the invasive plant or animal species involved.

3 Improving the declaration process

Both the *Catchment and Land Protection Act 1994* (Vic) (CaLP Act) and the Invasive Species Control Bill 2014 (Vic) (ISC Bill) provide for declaration of a species as the principal mechanism for imposing regulatory obligations on Victorian landholders. Declaration of a species provides the Department with authority to undertake formal compliance and enforcement activities to promote control of declared species.[7] The administration of the declaration process can therefore have a major impact on how the Department sets priorities, and thus on its risk-based approach to regulation.

In consultations undertaken by the study team, stakeholders identified several problems with the declaration process. It was considered by some to be slow and cumbersome. Others stated that the nomination process, and the criteria for declaration, are poorly understood by stakeholders. The declaration process also lacks formal review points to ensure that the regulatory framework remains relevant in the face of changes in the operating environment. There are also perceptions that the current declared list is excessively long, in terms of practicability.[8]

The ISC Bill is intended to make the declaration process easier to understand, in particular by reducing the number of declaration categories from eight (under the CaLP Act) to two:

- **Category 1 species**: where eradication is expected to be feasible and the species is expected to have significant adverse effects on the economy, environment and/or social amenity in Victoria or another state or territory, or the potential adverse effects are unknown.

- **Category 2 species**: a species is present or believed to be present and eradication is not feasible although ongoing management would be required to prevent further increase or spread; species also has, or may have, significant adverse effects on the economy, environment or social amenity in Victoria or another state or territory.

If the ISC Bill is reintroduced to Parliament and enacted, and the relevant provisions of the CaLP Act repealed, the Department can apply risk-based principles to the declaration process to effectively produce a new declared list for category 1 and category 2 species. This presents an opportunity to develop a declared list that is informed by risk-assessment and cost-benefit analysis, and that only targets prioritised risks (chapter 2).

3.1 Ensuring declaration supports regulatory objectives

As declaration imposes obligations to undertake management actions against declared species, it imposes costs on private landholders and public land managers. However, declaration alone will not achieve the intended reduction in harm arising from a particular invasive species, unless landholders believe that compliance and enforcement will be undertaken. Due to the resource costs associated with declaring invasive species, and the limited budget available to the Department to administer and

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[7] The absence of declaration does not prevent the Department from using other (non-regulatory) policy tools available to it to address the harms caused by invasive species. Non-regulatory policy tools can be effective and lower-cost options for achieving Departmental invasive species objectives (chapter 4).

[8] About 600 species have been declared, including around 120 plants and seven species of established pest animals (red foxes, European hares and wild or feral populations of goats, pigs, dogs, dingo-dog hybrids and European rabbits) (DEPI 2014g).

enforce regulation, there is a strong imperative for declaration decisions to be informed by risk assessment and cost-benefit analysis. Several issues associated with the declaration process, and its administration, are highlighted below:

- To function usefully as a tool for prioritising the allocation of Departmental resources to invasive species management projects, the list of declared species must be manageable (in terms of the number of species listed). As the list grows, it becomes more complex and costly for the Department to regulate, monitor and evaluate the outcomes of regulation across a large number of diverse geographic locations. In general, only relatively high-risk species, posing significant harm, should be declared to keep the list manageable. This would not preclude declaring species that pose a lesser risk if there is an effective, low-cost method to reduce their rate of spread. This would help the Department focus on priority species with the highest return in terms of risk reduction and cost-effectiveness.

- A very long list of declared species is likely to impose a significant regulatory burden on regulated parties by increasing complexity, and by placing multiple and varying management requirements on landholders. Given practical limits to the amount of invasive species management that any landholder could undertake in practice, additional listing of species would increase regulatory burden on some landholders without necessarily resulting in additional control of invasive species and reduction in harms.

- There may be a perception amongst regulated parties that all declared invasive species are the 'same', that is, that they have equal weight or 'status' in terms of Departmental priorities for regulation. This would not be consistent with a risk-based approach and suggests a need to clarify and/or educate the regulated community about the purpose of the declared list.

- There is a need for periodic review of the declared list to ensure that it remains up-to-date (for example, some threats may diminish due to successful eradication, or because new information results in a downward revision of potential harm).

As government resources for invasive species regulation are limited, it is essential that the Department maximises the net public benefits derived. Maximising net public benefit of government management efforts is therefore one principle for determining whether a species is suitable for declaration. The next section outlines additional declaration principles that the Department could use (or further develop) to ensure a more consistent, robust, transparent and risk-based approach to determining whether a particular species should or should not be declared. While the principles outlined below have been developed with reference to the declaration framework contained in the ISC Bill, they could be adapted to operate under the CaLP Act framework.

3.2 Proposed principles to guide declaration decisions

If the ISC Bill is reintroduced to Parliament and enacted, the Department will need to make two key decisions in response to a nomination for a species to be declared:

- Should the species be declared at all?

- If declared, should the species be declared under category 1 or category 2?

To answer these questions, the Department could consider the following threshold or 'screening' issues to relatively quickly establish whether a specific nomination warrants further deliberation. This could improve the timeliness and efficiency of processing nominations for declaration by rapidly eliminating those that are clearly not suitable. A

'no' response to the following conditions would indicate that additional consideration is not required, while 'yes' would result in further consideration of a nomination.

3.2.1   Screening questions

(1) Is the species within the scope of the legislation — that is, is it a non-native species that is also invasive in nature (as evidenced by experience elsewhere)?

(2) AND if the species has been recently considered, and rejected, for declaration (within the last 6 months), is there new evidence available?

(3) AND have non-regulatory policy tools been considered, or implemented, but shown to be insufficient on their own to achieve species-management objectives (that is, 'prevention or eradication' for category 1 or 'reducing the spread/protecting assets' for category 2)?

(4) AND is there an expected high net public benefit from government involvement in managing the species to achieve the objectives of category 1 or category 2 declaration?

In addition to the above, a further initial screening condition is that, notwithstanding conditions 2, 3 and 4, a species would be considered for declaration if it is within the scope of the legislation (meets condition 1) and declaration is required to meet obligations for national harmonisation of invasive species management (appendix B).

Once it is established that a nomination warrants further consideration, a further condition is whether the species should be considered for potential declaration as a category 1 or category 2 species. This involves an assessment of whether the species is established in Victoria to the extent that eradication from the State is not feasible. If the answer is 'yes', the nominated species may be considered for category 2 declaration. If 'no', the nominated species may be considered for category 1 declaration.

3.2.2   Further factors for assessing the net benefit of declaration decisions

For nominated species that 'pass' the initial screening conditions outlined above, tables 3.1 and 3.2 identify factors that could be considered by the Department in determining whether declaration would provide a net public benefit. It may be desirable to tailor the analysis for different species (for example, plants versus animals) or the environment in which they occur. In essence, the factors are intended to enable assessment of the:

• extent or risk of harm attributed to the species, informed by tools such as the Weed Risk Assessment (WRA) (chapter 2; table 3.1)

• feasibility or practicality of reducing the risk, including that the benefits of declaration are likely to outweigh the costs (table 3.2).

The factors listed below are intended to help guide decisions on whether to declare an individual species. As such, no individual factor in isolation would determine the overall decision. This would provide some flexibility in applying the factors to reach an overall conclusion on declaration. A degree of flexibility may be necessary in some cases. For example, there can be cases where landholders cannot readily identify an invasive species (as it is almost indistinguishable from other species) which makes it hard for them to meet control obligations. In such instances, declaration is unlikely to be an effective regulatory tool. However, other factors (for example, that the species may have a very high impact) may provide a compelling reason to declare and find a solution to the problem of identification (by, for example, providing regulated parties

with access to diagnostic services). Another example is where an animal species is considered a high risk, but declaration is not appropriate as the only cost-effective control option currently available is inhumane and raises animal welfare objections.

Table 3.1   Factors for determining potential harm

Factor relevant to decision	Category 1 declaration	Category 2 declaration
Combined invasiveness (tendency for spread in suitable environments) and impact (harm where the species exists) is 'high' — according to an accepted formal methodology (for example, WRA, if available), otherwise by expert opinion.	✓	✓
Potentially affected area is large OR, if small, the area has significant environmental, economic or social values that will be affected.	✓	✓
Current distribution is much less than potential distribution (hence there is potential for control to protect large un-infested areas from future impacts).		✓

Note: a tick means the factor is relevant to the decision to declare for that category.

Table 3.2   Factors for determining the feasibility and net benefits from declaration

Factor relevant to decision	Category 1 declaration	Category 2 declaration
Species can be readily detected and identified by regulated parties so that compliance is possible.	✓	✓
Implications of declaration in terms of management actions required by regulated parties are clear.	✓	✓
Sufficient Departmental intervention to achieve the objective of declaration is feasible, considering likely resources and priority of action relative to other declared invasive species.	✓	✓
Effective legal control methods (that is, technological solutions) exist, and the costs of these methods to the regulated parties are not excessive or unreasonable.	✓	✓
The expected level of community support for declaration is sufficient that non-compliance rates, and therefore enforcement costs, are not likely to be excessive.	✓	✓
The overall public benefit of Departmental intervention likely outweighs the costs.	✓	✓
Best available information suggests that: EITHER eradication from the whole State is achievable; OR where this is unclear, declaration provides the best means of obtaining the additional necessary information; OR, if not currently present, the species can be reliably excluded from Victoria.	✓	

Note: a tick means the factor is relevant to the decision to declare for that category.

Recommendation 3.1

That the Department publish principles to guide decision making about nominations to declare a species under the relevant legislation. These principles should reflect a risk-based approach so that declaration becomes embedded as a central plank in the Department's overall risk-based framework for invasive species regulation.

These principles should incorporate assessment of:

- the combined 'invasiveness' and 'impact' of a species as measured through formal risk assessment (or, where not available, expert opinion)
- the detectability of a species
- whether achievement of declaration objectives is feasible and cost-effective
- the level of community support for declaration
- the likelihood that the overall public benefits from declaration would outweigh the costs.

To support implementation of the declaration principles, the Department will need to engage with stakeholders about how it will administer the declaration process. This should cover how to make a nomination, an outline of the principles used and their practical implications, and the expected timeframes for making a decision on declaration. This information should be provided both through targeted stakeholder consultation, and through the Department's website. Such information would not only promote efficient decision making, but would also support the perceived legitimacy of regulatory arrangements, which in turn can help promote compliance (Roberts Evaluation Pty Ltd 2014, 10).

Recommendation 3.2

That the Department publish guidance for staff and stakeholders on how it will administer the declaration process. The guidance should cover:

- information required for making a nomination, and the process for lodging it
- an outline of the principles used to assess species for declaration
- expected timeframes for declaration decisions.

3.3   Review period for declarations

Over time, the risks posed by invasive species, and the cost-effectiveness of managing them, will change for reasons such as:

- lessons learned from successes and failures in eradicating or containing invasive species
- availability of more up-to-date information about the invasiveness, or harm, associated with various species
- the presence of new incursions of species that are considered more harmful than some existing declared species
- changes in the availability, or cost, of effective and humane treatments.

These factors imply that the risk posed by a declared species should be subject to periodic review to ensure that declarations (and therefore management responses) remain relevant.

To support a process for reviewing existing declarations, the Department will need to ensure it has adequate baseline information about the status of declared species (for example, location and extent of infestation for established species), as well as information on the nature and effectiveness of control efforts. Recognising that such information can be prohibitively costly to obtain, particularly for new and emerging species, means that the benefits of obtaining additional information need to outweigh the costs of collection. One way of maximising the benefits of the information collected is to review declarations relatively frequently so that this information is reflected in decision making. Over time, the benefits of regular review should outweigh the costs — review and revocation of declarations for relatively low-risk species will ensure the list is relevant and manageable for the Department, and will reduce compliance costs for landholders.

While review of the declared list is necessary, the Department will need to develop, and communicate to regulated parties and the community more generally, some guidelines or 'trigger points' for when the status of a declaration will be reviewed. This will avoid actual or perceived ad hoc removals and re-classifications of declared species, which is important for maintaining confidence in the regulatory system.

Recommendation 3.3

That the Department develop systems and processes for periodic review of the status and priority of declared species to ensure that declarations (and therefore management responses) are up-to-date in light of new information.

4 Selecting compliance tools

4.1 Introduction

The purpose of regulation is 'to alter the behaviour of others according to defined standards' to produce outcomes that meet the regulator's objectives (Black in Freiberg 2010, 4). Compliance tools are an important means available to a regulator to do this. To promote compliance and deter non-compliance, regulators typically engage in three types of activity:

(1) 'encouraging compliance — through education, information, support and incentives and controls such as licence and permit conditions'

(2) 'monitoring compliance — through regular and random inspections, audits, patrols, information and intelligence gathering'

(3) 'responding to non-compliance — by investigating suspected breaches of the law, and enforcing the law by imposing sanctions such as warnings, prosecution and cancelling licences' (VAGO 2012, iv).

For each type of activity, the Department needs to choose the right compliance tool at 'the right time, in the right place, for the right job' (Sparrow in NSW IPART 2006, 89). In broad terms, this means selecting and implementing compliance tools to give effect to the regulator's overarching objective of reducing the risk of environmental, economic and social harm caused by invasive plants and animals (chapter 2). The Department of Environment and Primary Industries (DEPI) pursued this objective through two complementary strategies: preventing new and emerging invasive species from becoming established and protecting high value assets from established invasive species.

DEPI made significant advances in developing and implementing a risk-based approach to its compliance activity. While the study team has not undertaken a comprehensive review of DEPI's approach to compliance, it has identified some areas for further improvement. Sections 4.2 and 4.3 provide a general overview of compliance tools and DEPI's draft Compliance Strategy. Section 4.4 then identifies opportunities for improving the Department's approach to compliance.

4.2 Tools

The Department has a graduated range of tools that can be used to encourage and monitor compliance and to respond to non-compliance. At a base level, this enables the Department to engage with landholders and provide them with advice and guidance materials, or organise education campaigns. At a medium level, it can issue pre-inspection letters, conduct inspections and audits, and issue control notices requesting specific compliance actions from landholders. At a high level of intervention, in response to non-compliance, the Department can issue warning letters, infringement notices, conduct compliance entries, revoke permits and commence criminal prosecutions. Figure 4.1 summarises the range of compliance tools available for widespread, established species, under current legislation and as proposed under the Invasive Species Control Bill 2014 (Vic) (ISC Bill).

In addition to the above tools, the Secretary of the Department has responsibilities under the *Catchment and Land Protection Act 1994* (CaLP Act) for the eradication of certain categories of weed and pest animals across the whole State. For example, the Secretary 'must take all reasonable steps to eradicate State prohibited weeds from all land in the State' (s 21(1)). The CaLP Act provides a range of regulatory tools and

powers for discharging this responsibility. Under the ISC Bill, category 1 invasive species take the place of State prohibited weeds and restricted pest animals. The Department's authority to take responsibility for their eradication continues under the proposed legislation, although the duty to eradicate is removed.

To use regulatory tools, a species must be declared under the CaLP Act (chapter 3). Non-regulatory tools such as extension and supporting community groups can be used without making a declaration. The study team understands, however, that the effectiveness of these non-regulatory tools can depend on the capacity to enforce obligations against recalcitrant landholders. This enforcement can only be done for declared invasive species.

Figure 4.1   Compliance tools for established species
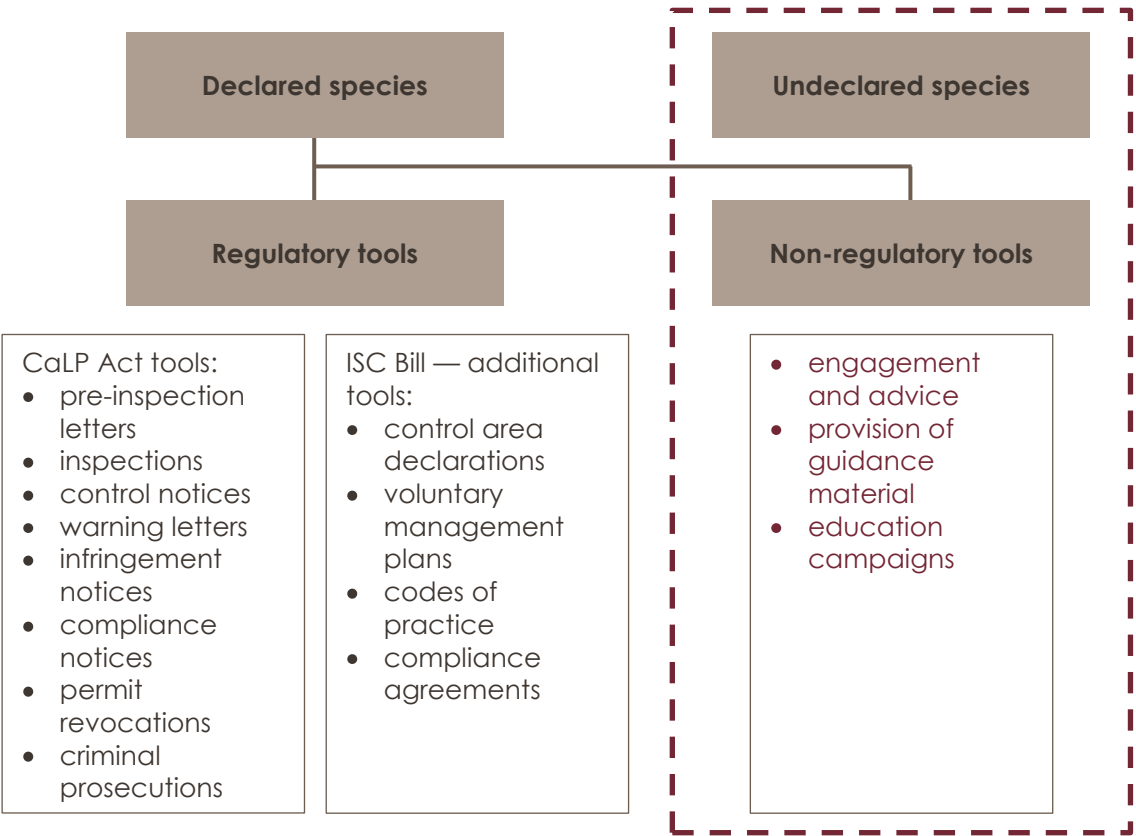
Source: Commission analysis

Councils may also be required to prepare roadside weed and pest animal management plans covering periods of two to four years. DEPI also focused on improving voluntary compliance through partnerships with industry and community groups (particularly in relation to blackberry, gorse and serrated tussock).

The ISC Bill provides additional instruments that would allow for greater tailoring of responses:

- Certain areas can be declared for the purposes of eradicating a category 1 species (infested place and restricted area declarations), which provides further powers to order disposal, destruction, treatment of carriers and control of movement.

- Control areas can also be declared for category 1 and/or category 2 species to vary obligations, such as movement restrictions, to account for larger-scale climactic, landscape and demographic factors which can affect the spread of a

declared invasive species — for example, restrictions on a weed that thrived in the Mallee could be increased by means of a control area.

- Further opportunities for co-management arrangements:

  – Similar to roadside management plans under the CaLP Act, voluntary management plans for category 2 species apply to land. These allow for the Department and the landholder or land manager to agree to a detailed set of long-term obligations and monitoring requirements. A person with an approved plan is not required to comply with infested land and control notices for category 2 species included in the plan (ISC Bill, cl 67(3)).

  – Codes of practice apply to category 1 and 2 species, and are designed to specify standards or procedures for meeting obligations under the legislation (there is no penalty or proceedings for failing to observe a provision of a Code, provided there has been compliance with the legislation).

These additional regulatory tools in the ISC Bill are discussed further in section 4.4.4.

4.3   Compliance Strategy

To guide the use of tools under the CaLP Act, DEPI developed a risk-based draft Compliance Strategy.[9] The draft Compliance Strategy aligns with the former Minister's *Statement of Expectations for the Regulation of Biosecurity Measures under Victorian Legislation* (SoE) by outlining a risk-based approach for selecting from a range of regulatory and non-regulatory tools to achieve compliance.

The draft Compliance Strategy (the Strategy) also seeks to take into account principles outlined in the *Invasive Plants and Animals Program Improved Enforcement Implementation Plan* (IEP), which focuses compliance action for established invasive species on five weeds (blackberry, gorse, serrated tussock, ragwort, Paterson's curse) and rabbits. The IEP outlines the intention to focus compliance efforts on:

- supporting community-led action — where the community can demonstrate it has been working in a defined geographic area for at least two years in a coordinated manner, and the work has been demonstrated to be effective and uses legal methods of control

- protecting agricultural, environmental and social assets in priority areas — typically assets identified by Catchment Management Authorities (CMAs) in Regional Catchment Strategies

- addressing a significant and demonstrable impact on the public good through a land owner failing to act on their legal responsibility to control weeds or pests on their land.

The Strategy sets out a decision-making framework that uses risk assessment (emphasising the likelihood and consequence or impact of non-compliance) to guide the selection of compliance and enforcement tools to maximise public benefit. The principles outlined in the SoE and the IEP are operationalized in a two-stage risk assessment process for selecting the appropriate compliance tool to address confirmed or suspected instances of non-compliance.

Stage one ('static risk assessment') of the Strategy incorporates the SoE principle of focusing on the greatest risks. It assesses the state-wide impact of non-compliance with CaLP Act obligations on environmental, economic and social values, and considers the

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[9] The application of this strategy to the new tools under the ISC Bill is discussed in section 4.4.4.

probability of non-compliance. Under the CaLP Act, the category under which the species has been declared is taken to represent the impact or consequence of non-compliance. For example, a regionally prohibited weed is considered a greater threat than a regionally controlled weed. If the ISC Bill is reintroduced to Parliament and enacted, then a new approach to assessing impact would need to be developed.

Stage two ('dynamic risk assessment') adapts the initial state-wide risk assessment to local settings to take account of factors relating to a particular case of non-compliance. Further detail on the Strategy is in box 4.1.

Box 4.1   Draft Compliance Strategy

DEPI developed the draft Compliance Strategy to guide its approach to compliance and enforcement activity. The Strategy uses a two-stage risk assessment process to guide decision-making.

Stage one ('static risk assessment') assesses the state-wide impact of non-compliance with CaLP Act obligations on environmental, economic and social values, and considers the probability of non-compliance. Static assessment tends to prioritise State prohibited weeds and restricted pest animals because they represent the greatest threat to these values. Stage one culminates in a 'static risk assessment matrix' that uses the variables of likelihood (rare to almost certain) and consequence (insignificant to severe) to rank risks of non-compliance from low to extreme.

Stage two ('dynamic risk assessment') adapts the initial state-wide risk assessment to local settings to take account of factors relating to a particular case of non-compliance. It considers the local risk profile of the species, the risk profile of the offender, and business or implementation risks such as interoperability with other programs (for example, those run by Catchment Management Authorities, Parks Victoria or Landcare groups) and the effectiveness of previous investment in the issue. Stage two also incorporates, as an additional consideration, *the Invasive Plants and Animals Improved Enforcement Implementation Plan* principles of focusing on established weeds that are associated with the majority of community concern, supporting community-led action, and protecting high value environmental and agricultural assets.

Stage two culminates in a dynamic risk assessment matrix that guides the selection of one of three response options: taking no or low level action, advice and education, and compliance action leading to enforcement (for example, control and infringement notices). This guides the use of the compliance and enforcement tools described earlier, ranging from low-level interventions (such as engagement and advice) through medium-level (inspections and warning letters) to high-level interventions (infringement notices, permit revocations, criminal prosecutions).

Source: DEPI draft Compliance Strategy

4.4   Opportunities for improving the approach to compliance

The study sought to build on the risk-based approach set out in the draft Compliance Strategy by identifying opportunities for improving the selection and use of compliance tools. These areas are:

(1) Improving the guidance for staff in the draft Compliance Strategy.

(2) Using stakeholder analysis to inform the selection of compliance tools.

(3) Developing the potential inherent in the current community-led approach.

(4) Developing considerations to guide the use of new regulatory tools under the ISC Bill.

While these considerations are relevant for both new and emerging and for widespread and established species, they are most important for the latter group. This is because the Department's ability to take sole responsibility for eradication efforts significantly reduces the considerations which apply to new and emerging species compliance. This means, for example, far less reliance on building relationships with regulated parties to foster voluntary compliance. Stakeholders also generally supported DEPI's approach to prevention and eradication of State prohibited weeds and restricted pest animals under the CaLP Act, whereby DEPI officers, rather than landholders, have management responsibilities. Stakeholders were keen for the Department to continue this role under the proposed legislative framework for invasive species management.

4.4.1   Improving guidance in the Compliance Strategy

A key feature of the draft Compliance Strategy is the statement of a partial risk tolerance and the use of risk assessment to give this practical effect, particularly in relation to compliance with established species obligations. That is, the strategy states that it 'is not feasible, cost-effective or desirable' to enforce compliance for all declared species. In lieu of a review of declarations (chapter 3), it uses risk assessment to improve the targeting and proportionality of compliance efforts. The two-stage risk assessment balances the assessment of state-wide, species-based risk factors with a localised assessment of species, compliance, and business risks.

Another feature is the Strategy's focus on managing a further core business risk: that the failure to respond to community concern, following concerted community effort, may erode the community's confidence in the regulation, and thus its willingness to comply voluntarily. This acts as a moderating influence on the Strategy's risk tolerance.

That said, the study team identified several opportunities to improve the practical value of the Strategy for departmental staff. The first is to improve guidance for decision makers by clarifying the competing considerations of focusing on the highest risks and managing community concern and expectations (as a business risk). Under the Strategy and the IEP, there is the potential to deflect compliance activity away from the highest risks (that are feasible and cost-effective to treat) towards lesser risks about which communities are more concerned. The study team found only a limited explanation of how DEPI addressed these conflicts.

Further guidance on dealing with community concerns could take the form of a list of factors to consider when deciding on a regulatory response to community concern about invasive species. These factors could include considering how a response or non-response to a low-risk event would affect the community's willingness to participate in voluntary compliance. If this risk is low, or manageable by other means (such as education, or communication of the rationale for a risk-based approach), then the preferable risk-based decision may be not to allocate resources to community priorities in preference to resourcing activities that are more likely to reduce harms or focus on higher risks.

Second, the study team found that the Strategy lacked quantitative data to help DEPI officers determine the level of 'consequence' or 'impact.' For example, while the strategy distinguishes between impacts at the local, regional or state-wide level, there are no data or information about the magnitude of these impacts. One exception is the 'significant impact' category, which includes loss of human life. That said, the study team found few public examples of the use of quantitative data or benchmarks to

inform compliance decision-making. An exception is the Australian Prudential Regulation Authority (APRA), which operates in a significantly different regulatory context. APRA uses each entity's total Australian assets as one input into a decision as to whether to assess the impact of failure of a regulated financial institution as either low, medium, high or extreme (APRA 2010a, 22).

Looking forward, the Department's risk-based approach would benefit from the Strategy including quantitative benchmarks to guide its officers in assessing whether a consequence is insignificant, minor, moderate, major or severe. For example, economic impacts could be measured based on the dollar value of lost agricultural production per hectare. Based on a 2012 Department of Primary Industries evaluation of regional weed projects, suitable benchmarks could be $80 per hectare for minor impacts, $160 per hectare for medium impacts and $240 per hectare for high impacts (Morfe 2012). Environmental impacts could be measured based on the environmental benefits index developed for DEPI's BushTender and EcoTender projects (Stoneham et al. 2003). The Department should also have regard to work done at the national level, for example, on the National Environmental Biosecurity Response Agreement, that has attempted to define 'significant' impacts.

Recommendation 4.1

That the Department amend the draft Compliance Strategy to clarify how it weighs up and resolves two potentially competing considerations: treating the highest risks (with the highest net benefit from intervention) and responding to community concern. When these do not align, factors to be considered include:

- the opportunity costs of allocating scarce compliance resources to events of high community concern, where these pose low risks of harm

- how its actions would affect confidence in the regulatory framework and/or the community's willingness to undertake voluntary compliance.

Recommendation 4.2

That the Department provide more specific guidance about how it assesses whether a consequence or impact is 'insignificant', 'minor', 'moderate', 'major' or 'severe' under its draft Compliance Strategy. For example, quantitative benchmarks may be used for economic impacts, such as the estimated value (in dollars per hectare) of agricultural impact when invasive species are not managed.

4.4.2   Improving understanding of regulated parties

Infestations of invasive species cross boundaries between different landholders and land managers, the jurisdictions of different government bodies and various land users. Non-compliance in any area or by individual landholders can reduce the overall effectiveness of efforts to manage invasive species. Because much of the management effort is undertaken through third parties, it is important that the Department understand the drivers of the risks of non-compliance. This can be achieved by analysing stakeholders in terms of three main drivers: vectors of spread, barriers to compliance and incentives to comply:

- A vector is an entity or an area of land that spreads an invasive species to another area.

- A barrier inhibits the ability of a regulated party to comply — for example, due to a lack of information about appropriate treatment techniques or diminished physical capacity.

- An incentive is a cost or benefit that in this context motivates a regulated party to comply (or not comply) with their invasive species obligations.

Each of these drivers has the capacity to increase or decrease the distribution of an invasive species. That is, they shape the risk profile of a particular invasive species on the ground. An unmanaged vector — for example, an infested building site — could increase the spread of an invasive species into a new region of Victoria, while weak or strong incentives have the capacity, respectively, to accelerate or slow the spread of an invasive species. The degree of coordination of compliance activities, discussed in section 4.4.4, can have similar consequences.

The study team understands that in practice DEPI has a good understanding of its stakeholders in terms of vectors, incentives and barriers, with authorised officers (AOs) playing a particularly important role in day-to-day liaison. That said, the study team has heard that there are gaps in DEPI's understanding of these factors and considers that the Department could benefit from formal guidance for analysing stakeholders. The following sections explain how a formalised understanding of these drivers can inform the selection and use of compliance tools.

Vectors

Understanding vectors highlights the areas where the risk of spread is greatest and therefore which regulated parties compliance activity must target. For example, trucks transporting produce or the vehicles of contractors employed to eradicate invasive species may sometimes spread invasive plants to new locations. New residential developments on the urban fringe can be a significant vector for the spread of invasive species to regional Victoria. Roads and other linear reserves like train lines are also significant vectors.

DEPI introduced some important changes to its compliance approach as a result of its analysis of vectors, including by developing:

- compulsory roadside weed and pest animal management plans — introduced into the CaLP Act in 2013 to clarify municipal councils' responsibility for managing local roads, in part because of roads acting as pathways of spread

- Industry Engagement in Prevention project — a 'weed spread pathway' risk assessment identified high-risk businesses (in aquatic trade, agricultural seed, civil earthmoving, fodder and landscaping) for education, engagement and monitoring

- voluntary management plans — modelled on the roadside plans and included in the ISC Bill, most suited to linear reserve and other public land managers to clarify obligations for managing significant vectors of spread, such as major roads, parks and regional railway lines (section 4.4.4).

Incentives

Choosing the right policy tool partly depends on understanding landholder incentives to manage invasive species. Where incentives are strong — for example, due to the need to protect the economic value of production — tools such as education or awareness may be more appropriate than regular inspection activity. Weak incentives, by contrast, may warrant increased regulatory scrutiny, including inspections and

enforcement. Incentives to comply are also a function of the expected cost of non-compliance, that is, the probability of detection and the size of any penalty.

The Department needs to have regard to three types of incentives:

- economic — where invasive species have a significant impact on agricultural values, the incentive to control depends on factors such as the private cost and benefits of control, reflecting the species, extent of infestation, the cost-effectiveness of control activity and the expected cost of non-compliance

- environmental — some landholders are motivated to manage invasive species to protect environmental values, such as native flora and fauna, or to protect related aesthetic values

- social — social pressure or perceived social obligations such as 'not letting the community down' or a desire to be seen as a 'good' land manager can be significant motivating factors for some individuals to manage invasive species (Roberts Evaluation Pty Ltd 2014, 5).

These incentives are reflected in the ISC Bill's triple bottom line approach to protecting the economy, the environment and social amenity in Victoria from adverse consequences caused by invasive plants or animals.

Barriers

The choice of policy tool is also partly driven by understanding and reducing the barriers to invasive species management facing landholders. The study team understands that the main barriers to complying with invasive species regulation are poor awareness and limited capabilities.

Poor awareness of invasive species, management techniques and landholders' obligations have been identified as barriers to effective management (Roberts Evaluation Pty Ltd 2014, 7). The complexity of regulation can also hamper awareness. The study team found that some stakeholders are not aware of their obligations. A 2002 survey, for example, found that 51 per cent of landholders had little or no awareness of their obligations under the CALP Act (Roberts Evaluation Pty Ltd 2014, 4).

Extension or 'empowerment' — for example, information, education and general support — can be a relatively cost-effective policy instrument to increase landholder compliance through better decision making and more effective land management (Pannell 2008). That said, extension needs to be managed carefully, as raising awareness of an invasive species can lead to increased demand by the community for more costly enforcement action. The draft Compliance Strategy identifies engagement and advice, provision of guidance materials and education campaigns as non-regulatory interventions intended to overcome awareness barriers and thereby support incentives to comply.

Willing and knowledgeable landholders may also lack the capability to comply. For instance, they may lack the time, equipment, management techniques, or the financial or physical capacity to comply (Roberts Evaluation Pty Ltd 2014, 7). The study team heard from several sources that some older primary producers lack the physical capability to treat invasive species growing on challenging terrain. Formalising the understanding of these types of barriers promotes a tailored application of regulatory and non-regulatory compliance tools.

Table 4.1 illustrates how the Department could use information on drivers (vectors, incentives and barriers) to select the appropriate compliance tool(s) for different groups affected or controlled by the regulation. The table includes tools that are not

currently available under the CaLP Act but that would be available if the ISC Bill is reintroduced to Parliament and enacted.

Table 4.1 **Example of stakeholder and regulated parties analysis**

Stakeholder	Vectors, incentives and barriers	Choice of tool
Parks Victoria	Parks can be a vector of spread to adjacent land. Strong incentives to control invasive species to protect managed park assets. Other statutory obligations interact with invasive species obligations.	Voluntary management plan
Linear reserve managers	Waterways, roads and railways are significant vectors. Strong incentives to manage invasive species to protect infrastructure and the environment, for example, for bushfire mitigation. May need guidance on how to control invasive species.	Voluntary management plan
Lifestyle-based landholders	Properties can be a vector of spread to adjacent land. Generally low economic incentives to understand and manage the impact of invasive species. Absentee landholders may be difficult to contact and coordinate.	Extension (information and education) to improve awareness of obligations. Consider use of control notices and enforcement measures where extension has been unsuccessful and risks of spread are high.
Residential land developers	New developments on the urban fringe can be a significant vector of spread into regional Victoria. Economic incentive to manage invasive species may be low.	Extension (information and education) to improve awareness of obligations. Consider use of control notices and enforcement measures where extension has been unsuccessful and risks of spread are high.
Contractors*	Vehicles can be a vector of spread due to poor hygiene. Some contractors may lack incentive to perform work at required standard. Some contractors may be unaware of best-practice treatment methods.	Vehicle hygiene code of conduct for guidance on how to achieve vehicle hygiene; audits of weed and pest treatments for contractors.

Stakeholder	Vectors, incentives and barriers	Choice of tool
Transport industry	Can be a vector of spread. May have low economic incentive to maintain adequate vehicle hygiene or to ensure transported material is free of invasive species. May be unaware of how to mitigate risk of spread.	Vehicle hygiene code of conduct. Declaration of carriers.
Local government	Local roads a significant vector of spread. Strong incentive to address community priorities, but these priorities may not always align with Departmental priorities. May experience technical capability issues with regard to knowledge of best-practice treatment methods, especially in regional and rural areas.	Roadside management plans. Voluntary management plans for other council-owned lands.
Primary producers and corporate landholders	Can be a vector of spread to neighbouring land. Generally have strong economic incentives to manage impact on crops, grazing and other primary industries. However, incentives may be stronger for cropping industry relative to grazing industry, as control of invasive species is more closely integrated with core business activity. May have an incentive to control invasive species to protect environmental values.	Voluntary management plans an option for large corporate landholders. Broaden community-based approach, supported by efficient and visible enforcement.

Notes: *Although not a regulated party under the CaLP Act, contractors accept contractual obligations to treat invasive species.

Source: Commission analysis.

Dealing with recalcitrant landholders

Recalcitrant landholders are a particularly difficult group in the context of established weed and rabbit control. This group makes up about one to two per cent of private landholders. They are notable not only for their direct effect on the spread of invasive species but also for their indirect effect on other landholders. Poor invasive species compliance can indirectly weaken the incentive of neighbouring landholders and result in a 'downwards spiral of rule-breaking' that spreads throughout the community (Roberts Evaluation Pty Ltd 2014, 3; Office of the Auditor General Western Australia 2013, 28).

To promote the overall effectiveness of invasive species management, adequate resources must be devoted to enforcing compliance by recalcitrant landholders (Office of the Auditor General Western Australia 2013, 27–8). This is broadly reflected in the draft

Compliance Strategy and in the IEP, which support enforcement action 'where there is a significant and demonstrable impact on the public good through a land owner failing to act' on their legal obligations. The study team understands that DEPI devoted considerable time and thought to enforcement against recalcitrant landholders.

However, some stakeholders considered that DEPI's enforcement against recalcitrant individuals has been inadequate. Given the scope of this study, the study team has been unable to validate the veracity and extent of these claims. However, it would be advisable for the Department to follow up on this issue, given its potential to undermine the incentives of compliant individuals and confidence in the regulatory framework (Roberts Evaluation Pty Ltd 2014, 20). The Department could examine whether:

- the effectiveness, efficiency and/or visibility of enforcement could be improved in order to strengthen the incentives of both generally compliant and recalcitrant parties — this could include analysis of the impact on incentives of the size of fines for non-compliance[10]

- concerns about inadequate enforcement reflect dissatisfaction with DEPI's risk-based approach (rather than inadequate enforcement), which could indicate the need to improve communication of the Department's regulatory objectives in order to increase the level of stakeholder acceptance (chapter 2).

Recommendation 4.3

That the Department issue updated guidance for its staff on the drivers of compliance and non-compliance for regulated parties, in terms of the:

- barriers they face to compliance (and how to remove or manage them where possible)

- incentives they have for voluntary compliance (and how to align these with regulatory objectives)

- impacts their actions have on pathways and vectors of spread

- how tools will be prioritised for different types of landholders.

4.4.3   Supporting community-based groups

In addition to setting out a strategic approach to dealing with potential non-compliance, the draft Compliance Strategy promotes voluntary compliance by supporting community groups through modest funding allocations and by providing staff to attend meetings and liaise closely with the groups. For example, in 2012-13, DEPI provided funding of $130 000 each for the Victorian Blackberry and Gorse Taskforces and $268 000 for the Victorian Serrated Tussock Working Party. Appendix B contains a detailed overview of these groups, which fall into three categories: Landcare groups, community-led weed groups with a single-species focus and local community weed groups that focus on numerous invasive species in an area.

The study team heard that community groups can be an effective, low-cost means of fostering and coordinating compliance, by addressing issues such as awareness and capability. They also operate in a non-adversarial way that promotes self-help and greater community ownership and empowerment, and which generates synergies through partnerships with government and industry (Roberts Evaluation Pty Ltd 2014, 22).

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[10] The ISC Bill contains a revised system of fines for new offences and for offences similar to those found under the CaLP Act.

Alternative funding models for community or industry-based groups have been used in other jurisdictions — for example, recognised biosecurity groups and industry compensation schemes — but these do not currently operate in Victoria.

Stakeholders advised the study team that high levels of compliance activity had previously crowded out, rather than complemented, community efforts on established species. When DEPI (and its predecessor agencies) scaled down its compliance activity in relation to weeds like blackberry, gorse, and serrated tussock, community groups apparently emerged to fill the gap. DEPI leveraged the advantages of these groups by providing them with administrative and financial support.

The study team considers that this model could be extended beyond blackberry, gorse and serrated tussock to other species, and beyond the presently limited geographical coverage to other parts of Victoria. Specific opportunities for improvement may be:

- facilitating more widespread adoption of the community-based approach by actively promoting community-based compliance to the communities in which the Department operates (rather than just waiting for groups to emerge)

- encouraging groups to promote awareness of their activities through web and social media channels

- identifying barriers inhibiting existing groups from increasing their effectiveness and, where feasible, removing them, including by offers of modest financial or administrative support or training volunteers (in areas such as governance and succession planning)

- promoting and providing opportunities for shared learnings across groups.

Pursuing these opportunities will lead to some challenges. For example, there may be a public perception that the Department is shifting its responsibilities to the community. Also, supporting community-led initiatives risks diverting focus away from more damaging invasive species. Finally, the community approach may be undermined if compliance and enforcement efforts are not effective.

Recommendation 4.4

That the Department develop a strategy to support the model of community-led action on invasive species. The strategy should identify areas of key focus (where community-led action is likely to be most cost-effective) and identify the types of support available, such as financial, administrative and training support.

4.4.4   Considerations for selecting new regulatory tools

If the ISC Bill is reintroduced to Parliament and enacted, guidance for Departmental staff will also need to cover the new compliance tools (section 4.2). As part of identifying improvement opportunities, the study team was asked to identify considerations to inform the development of any future guidance on the use of these new tools.

Many of the ISC Bill's compliance and enforcement powers for established species are similar to those found under the CaLP Act. The ISC Bill's new compliance and enforcement tools address additional factors, such as significant geographical variations affecting the spread of a declared species, 'carriers' of declared species, or the capacity of larger land managers to enter into co-regulatory arrangements. In this

way, the ISC Bill provides a more tailored approach than the CaLP Act to the unique demands of invasive species regulation. These new tools are described in table 4.2.

Table 4.2   Proposed new compliance and enforcement tools

Compliance tool	Description
Declared carriers	Anything — plant, animal, object — may be declared a carrier of a declared invasive species for the purposes of controlling spread.
Control areas	Allows obligations regarding a declared invasive species to be varied in an area within Victoria (the control area) to prevent the spread, increase or movement of an invasive species within that area. May vary strictness of obligations between people in the control area.
Infested land and control notices	Allow additional prohibitions and restrictions when an invasive species or carrier is known or suspected to be present on land.
Voluntary management plans	Similar to CaLP Act roadside management plans. Plans are voluntary, for two to five years duration, apply to land rather than roadsides, and feature a less involved public consultation process. Plans include a detailed set of long-term obligations and monitoring requirements and may be suspended or revoked due to non-compliance. A person with an approved plan is not required to comply with infested land and control notices for those category 2 species included in the plan (ISC Bill, cl 67(3)).
Codes of practice	Specify standards or procedures for meeting any obligations under the Act. No penalty for failing to observe Codes unless that failure amounts to a breach of the legislation. The drafting process for Codes includes open calls for submissions.
Compliance agreements	Legally binding document that requires party to abide by specified requirements for the purposes of, for example, releasing a declared species or carrier from detention.

Source: ISC Bill

To promote the efficient, effective and proportionate use of these compliance tools, relevant considerations are:

- *Impacts on administrative efficiency*: could the tool do the job of another compliance tool more efficiently — for example, could a voluntary management plan help linear reserve managers to incorporate invasive species management requirements into their annual budget and planning processes? Would the benefits of the tool outweigh additional administrative costs for the Department?

- *Impacts on incentives*: would the tool strengthen (or weaken) the incentives of the regulated party to comply?

- *Impacts on barriers to compliance*: would the tool remove a compliance barrier — for example, would a code of practice improve compliance by raising regulated parties' awareness of best practice?

- *Interaction with other tools*: would the tool complement or subtract from the effectiveness of other compliance tools which are used alongside it to achieve regulatory objectives — for example, would a three year voluntary management plan complement or subtract from the short-term use of control notices to address unforeseen infestations?

- *Impact on accountabilities*: would the tool encourage compliance activity to be undertaken at the right level of the Department? For example, agreeing to a voluntary management plan with a linear reserve manager at the state level may relieve AOs of monitoring and inspection duties at the regional level.

- *Duration and scope*: is the tool suited to large areas for long periods of time (for example, control areas and voluntary management plans) or to smaller areas for shorter periods of time (for example, infested land and control notices)? Is the tool suited to a loosely defined regulated population (for example, those living in a control area) or a tightly defined population (contractors who might benefit from a vehicle hygiene code of conduct)?

The study team examined how these considerations could apply to control areas and voluntary management plans. First, control areas promise an improved capacity to tailor obligations for declared species to take account of significant, large-scale variations in conditions. However, control area declarations also run the risk of increasing regulatory complexity. This is because control area declarations can vary obligations for individual landholders within a control area. This means that a landholder may need to know three sets of obligations for a particular species:

(1) On their property.
(2) Off their property and inside the control area.
(3) Off their property and outside the control area.

Control area declarations can increase regulatory complexity in additional ways. For instance, it is possible that they will apply to some species but not others — for example, to address climactic conditions that only affect the spread of some species within a particular part of Victoria. In addition, control area declarations must fit in with landholders' obligations for the same or other declared invasive species under different subordinate instruments, such as infested land notices and voluntary management plans. When considering control area declarations, the Department needs to consider whether doing so would increase the complexity of invasive species regulation and thus undermine its overall effectiveness.

Second, voluntary management plans appear to be a promising way of addressing known vectors of spread that are already under the control of public land managers. These plans have the potential to reduce administrative costs for the Department and compliance costs for landholders by creating long-term obligations (two to five years) that substitute for the short-term use of infested land and control notices. However, the considerable administrative effort needed to establish, maintain and monitor these plans suggests that it would be counterproductive for their use to become widespread beyond major public land managers, where efficiency gains are likely to be highest (for example, VicRoads and V/Line). As the ISC Bill does not limit the use of voluntary management plans to particular landholders, the study team considers that the Department would benefit from setting clear guidelines about which types of landholders should be party to these plans. This could be part of guidance developed by the Department about the drivers of compliance and non-compliance (recommendation 4.3).

5   Improving monitoring and evaluation processes

In implementing a risk-based approach, the Department needs data and information to support decisions about targeting harms, declaring species and selecting projects and compliance tools. This may require commissioning research. Good baseline data is also required to support monitoring and evaluation activities, with the aim of obtaining feedback about whether the regulatory framework is necessary, effective and efficient (Lattimore et al. 1998, 114). This chapter assesses data collection, monitoring and evaluation processes in relation to the Department of Environment and Primary Industries' (DEPI) invasive species activities and identifies opportunities for improvement.

DEPI collected a range of data to support its invasive species regulatory activities and fulfil its statutory reporting obligations. This included data collected to support reporting on Commonwealth-State biosecurity agreements, State Budget Paper 3 performance measures and for its Monitoring, Evaluation and Reporting Framework (MERF) (see below).

In 2014, DEPI commenced a review of its biosecurity information systems, with a view to developing a new performance monitoring and evaluation process — the Biosecurity Evidence Framework (BEF). As part of this process, the Department intends to undertake a gap analysis to determine what data is collected and where the gaps are. Where gaps are identified, the Department intends to undertake further analysis to ensure that the costs of obtaining data do not outweigh the benefits that the data generates in the form of improved evaluation. The remainder of this chapter looks at how data can support the improvement of the Department's monitoring and evaluation processes.

DEPI's 2013 MERF report focused on the effectiveness and efficiency of regulatory and non-regulatory actions undertaken by the former Department of Primary Industries across the invasion curve between 2010 and 2012.

Table 5.1 provides examples of the types of achievements reported in the MERF across prevention and eradication, containment and asset protection activities. Achievements were reported predominantly on the basis of inputs, for example, number of properties visited, or outputs, such as progress towards eradication or containment of an invasive species. A number of case studies were also presented to highlight the achievements of specific projects, such as the eradication of high-risk plant and animal species and the use of community-based weed action groups to support compliance activities.

**Table 5.1   Monitoring and Evaluation Framework –
                   examples of reported achievements (2010-12)**

Category	Examples of reported achievements
Prevention and eradication	• Improved capability to assess risk of, and plan for, exotic pest animal incursions. • Partnerships formed with local and interstate agencies to increase awareness of emerging plant threats. • Progress towards eradicating high-risk plant and animal species, including the removal of the last known Karoo thorn tree. • Improvements in passive surveillance, for example, increases in registered weed spotters.
Containment	• Treatment of satellite serrated tussock infestations, with a reduction in the average area of infestations. • Containment of serrated tussock within the containment line, for example, 40 per cent of infestations within the containment zone have been reduced. • Eradication of regionally prohibited weeds to support containment.
Asset-based protection	• Improved community involvement and voluntary compliance, for example, an increase in voluntary Victorian Blackberry Taskforce management agreements. • Wild dog community baiting program, which reduced threats to sheep and cattle and reduction in stock lost.

Source: DEPI 2013.

The MERF also reported three examples of the use of cost-benefit analysis techniques to evaluate the outcomes of projects and programs targeting established species such as wild dogs and declared weeds. However, these studies only quantified the costs and benefits to agricultural production, while social and environmental costs and benefits were discussed qualitatively (box 5.1) (Lightfoot 2010; Morfe 2012).

**Box 5.1   Evaluation of the Regionally Prohibited Weed
                Project (2012)**

The Regionally Prohibited Weed (RPW) Project was a four-year, $6.8 million initiative aimed at building partnerships with landowners, public authorities, industry and public land managers to search and treat RPWs. The project invested in surveillance and treatment to eradicate RPW species at the early stage of establishment and spread. The study quantified benefits in terms of potential (avoided) damage to agricultural production and compared these to surveillance and control costs. The study found an average gain to agricultural industries of around $6.20 for every dollar invested by the government. It also suggested focusing detection and treatment activities on readily detectable, fast-growing and high impact species.

While the study did not quantify environmental and social benefits and costs, it suggested these could include:

• social and environmental benefits from more enjoyment of public land areas due to less weeds and the increased preservation of biodiversity

• costs of damage caused by extra herbicide use having unintended effects on non-target species.

Source: Morfe 2012.

In addition to these studies, there has been some recent work by DEPI staff in evaluating the outcomes of selected weed eradication activities using statistical methods. For example, a 2014 review of around 400 Victorian State prohibited weed infestations treated for eradication over a 20 year period found that eradication could only be declared 'successful' for 16 per cent of infestations.[11] The study highlighted the need for DEPI to direct resources to projects where eradication is most likely, and allow for a long time period (in many cases, decades) of eradication activity (Dodd et al. 2014, 10).

DEPI staff have also developed a plant growth and dispersal model to assist with comparing the costs and benefits of different weed control measures over time. The model aims to overcome the limitations of existing evaluation processes of weed incursions, which only report on the number and proportion of treated infestations, rather than the costs and benefits of intervention. The model has initially been applied to predict the spread of serrated tussock and compare outcomes of different management strategies, such as containment focused on older core infestations or newer satellite infestations (Steel and Weiss 2014, 102).

The study team found that there is an opportunity for the Department to better monitor and evaluate its invasive species activities through more systematic use of cost-benefit analysis techniques. These techniques can also be used to inform decision making about which declared species to prioritise and which projects to undertake (chapter 3). For example, the evaluation of the costs and benefits of regionally prohibited weed projects found that benefits of government investment in weed treatment would be higher where the species infestation is believed to be small (for example, one hectare), readily detectable, fast growing and highly damaging to agricultural production (Morfe 2012). Another reason for evaluation is to feed into regular adjustment of the overall risk-based framework and priorities (chapters 2 and 3).

The BEF seeks to support a consistent approach to monitoring, evaluation and reporting on performance against strategic outcomes across the biosecurity portfolio. As part of this Framework, the Department could systematically use cost-benefit analysis techniques to evaluate the outcomes of its high cost projects. A sample of lower-cost projects could also be evaluated in terms of their qualitative and quantitative impacts, such as an increase in voluntary compliance agreements. The Victorian Guide to Regulation has guidance on applying a proportionate approach to the evaluation of regulatory proposals, which the Department could adapt to its evaluation framework (DTF 2014, 34–36).

Given the objectives of invasive species regulation, one way of measuring net benefits would be in terms of avoided economic, social and environmental impacts relative to the cost of intervention. While assigning values to social and environmental impacts is challenging, there are various analytical techniques available to assist with such valuations (for example, hedonic pricing and contingent valuation techniques) (DTF 2014, Toolkit 2, 5). Alternatively, cost-effectiveness analysis may be used where there is a need to choose between projects with similar expected outcomes and where it is difficult to assign dollar values to benefits. In such cases, benefits are expressed in terms of physical units, while costs are expressed in dollar terms (DTF 2014, Toolkit 2, 13).

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[11] Around 50 per cent of projects were classified as 'ongoing'. Around 30 per cent were classified as 'abandoned' when the species present at the site was subsequently discovered at too many other sites, and thus eradication from Victoria was deemed too costly.

> **Recommendation 5.1**
>
> That the Department undertake systematic, proportionate evaluation of the outcomes of its invasive species projects across the 'invasion curve'. In particular, that it evaluate using cost-benefit analysis techniques for:
>
> - all high-cost projects
> - a sample of its lower-cost projects.

5.1 Longer-term opportunities

In the longer term, the more systematic use of cost-benefit analysis techniques may enable the Department to develop more outcome, rather than input and output, focused performance measures. This would align with Victorian Government requirements that departments demonstrate to the community how their performance is effective, efficient and sustainable (VAGO 2014, 5). A recent Victorian Auditor-General Office report on public sector performance measurement found ongoing shortcomings in Victorian public sector performance reporting, including weaknesses in defining objectives and linking them to outputs and outcomes (VAGO 2014, vii).

There is a lack of public information and guidance about how regulators should measure their performance under a risk-based regulation framework. The study team also notes that, as part of developing the BEF, DEPI was intending to define a number of key evaluation questions, which include the extent to which its invasive species activities have contributed to outcomes. As noted in the previous section, analysis of existing data and identification of gaps will be an important part of supporting the measurement of outcomes.

Appendix A: Terms of reference

Regulatory improvement studies with the Department of Environment and Primary Industries

I, Michael O'Brien MP, Treasurer of Victoria, pursuant to section 4 of the State Owned Enterprises (State Body – Victorian Competition and Efficiency Commission) Order ('the Order') hereby direct the Victorian Competition and Efficiency Commission ('the Commission') to conduct regulatory improvement studies with the Department of Environment and Primary Industries (DEPI).

Background

Improving Victoria's competitiveness and productivity growth is a key strategy for growing living standards for Victoria as a whole. Ensuring Victoria's body of regulations and the work of its regulators are efficient and avoid unnecessary regulatory burdens is a key part of that strategy. Despite continued attempts to reduce regulatory burdens and red tape there is a widely held perception among business that the cost of regulation continues to grow.

The Victorian Government has implemented several initiatives to reduce regulatory burdens and increase productivity, including through its regulatory burden reduction and better services agendas. These measures set out expectations for overall reform, leaving to agencies the task of identifying the specific initiatives.

Regulatory improvement studies conducted by the Commission with DEPI will complement these initiatives. It is expected that these studies, coupled with effective implementation by the regulators, will lead to sustained, measurable reductions in regulatory burdens and improvements in regulator productivity. These studies will focus on high value opportunities for regulatory improvement, and is not confined to opportunities arising from better risk-based regulation.

Regulatory improvement studies are a joint activity between the Commission and the regulators, with all parties providing resources and staff to the study team. The study team will be led and directed by the Commission.

Scope of study on invasive species compliance

This regulatory improvement study will:

(1) assess how the regulator deals with risk in a specific area of their operations, including the extent to which current practices are risk-based;

(2) identify opportunities and make recommendations to improve the efficiency of associated regulations, including through greater use of risk-based approaches to regulation within existing legislative and regulatory frameworks;

(3) identify and make recommendations on priorities for addressing any impediments to adopting more efficient regulatory approaches, and identify those requiring legislative or other changes outside the regulator's direct control;

(4) identify and make recommendations on regulator savings opportunities; and

(5) quantify in preliminary terms the impacts of its recommendations, including initial estimates of cost savings to businesses and households, where possible.

The expected outcome of the study will be a set of specific, practical recommendations aimed at achieving improvements in the regulator's productivity and reducing regulatory burdens.

Study process

In undertaking the study, the Commission is to have regard to the objectives and operating principles of the Commission, as set out in section 3 of the Order.

The Commission should draw on the knowledge and expertise of relevant Victorian Government departments, offices and agencies in undertaking the studies.

The Commission is to provide to me, and the Minister for Agriculture and Food Security a final study report as soon as possible, but no later 12 months after receipt of the terms of reference.

Publication of the final study report by the regulators and the Commission will be at my discretion, in consultation with the Minister for Agriculture and Food Security. If publication is agreed to, it should occur within six months of receipt of the final report.

Implementing the Commission's recommendations is the decision and responsibility of the Minister for Agriculture and Food Security.

HON. MICHAEL O'BRIEN MP
Treasurer

30 December 2013

Appendix B: Overview of the regulatory and institutional framework

This appendix summarises the regulatory and institutional framework for invasive species management in Victoria in 2014. It does not reflect amendments arising from the Machinery of Government changes which took effect on 1 January 2015.

B.1 Regulatory arrangements

The Victorian Government uses a range of regulatory and non-regulatory tools for the management of invasive species. This section summarises the complex framework governing the use of regulatory tools, focusing on:

- intergovernmental arrangements
- key Victorian regulations, including proposed changes to the legislative framework.

B.1.1 Intergovernmental arrangements

All three levels of government are involved in managing the risks posed by invasive species:

- The Australian Government's primary duty in relation to invasive species is to manage national pre-border and at-the-border biosecurity issues, with a coordination and leadership role for achieving national biosecurity outcomes.[12]

- State and territory governments are primarily responsible for managing the risks of invasive species that are already present within their respective jurisdictions as well as addressing new, high-risk incursions.

- Local governments have a general duty as landholders to manage invasive species and protect land and water resources on the land they manage (DEPI 2014e).

The 2012 Intergovernmental Agreement on Biosecurity (IGAB) guides the division of biosecurity responsibilities, including invasive species management, between Australian jurisdictions.[13] Box B.1 further describes intergovernmental arrangements relevant to invasive species management, including the National Environmental Biosecurity Response Agreement.

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[12] Relevant Australian Government legislation includes the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), which provides for the recognition of invasive plants and animals as threats to native species (DEPI 2014e).

[13] All jurisdictions with the exception of Tasmania have signed the IGAB.

B.1.2   Victorian regulations

The *Catchment and Land Protection Act 1994* (Vic) (CaLP Act) is the main legislation covering invasive species management in Victoria. Under s 20 of the CaLP Act, all land owners (public and private) have duties in relation to the eradication and control of declared noxious weeds and pest animals. About 600 species have been declared by the Governor in Council on the recommendation of the Minister for the Environment and Climate Change, including around 120 plants and seven species of established pest animals (red fox, goats, pigs, dog, dingo-dog hybrids and European hares and rabbits) (DEPI 2014f).

The CaLP Act includes eight categories of declared weed and pest species that specify obligations for control. These obligations relate to whether the focus of control for a particular category of declared weed or pest is prevention, eradication, containment or asset-based protection. Box B.2 sets out these categories and the associated obligations for land owners and/or managers. Declaration of regionally prohibited, regionally controlled and restricted weeds is based on Catchment Management Authority (CMA) areas.

The *Catchment and Land Protection Regulations 2012* (Vic) prescribe measures that can be included in weed and pest control notices (for example, directions notices and land management notices). For noxious weeds, these are either application of herbicide, cultivation (tilling), removal or mulching (reg 7). For rabbits, the methods prescribed are ripping of the earth and fumigation of the warren (reg 8).

Box B.2 Declaration categories under the CaLP Act

Invasive plants and animals are divided into one of eight categories for each catchment region in Victoria.

Declared noxious weeds

- **State prohibited weeds (SPW):** either do not occur in Victoria but pose a significant threat if they invade, or are present, pose a serious threat and can reasonably be expected to be eradicated. If present, infestations of a State prohibited weed are relatively small. There are around 25 SPWs.

- **Regionally prohibited weeds:** are not widely distributed in a region but are capable of spreading further. It is reasonable to expect that they can be eradicated from a region and they must be managed with that goal.

- **Regionally controlled weeds:** usually widespread in a region. To prevent their spread, ongoing control measures are required.

- **Restricted weeds:** pose an unacceptable risk of spreading in this State and are a serious threat to another State or Territory. Trade in these weeds and their propagules (seeds), either as plants, seeds or contaminants in other materials, is prohibited.

Declared pest animals

- **Established pest animals:** these animals, such as rabbits, are established in the wild in Victoria and are a serious threat to primary production, Crown land, the environment or community health in Victoria. Land owners have the responsibility to take all reasonable steps to prevent the spread of, and as far as possible eradicate, established pest animals on their land.

- **Restricted pest animals:** these animals did not occur naturally in the wild in Australia before European settlement and are not established in Victoria. There are three types of restricted pest animal, distinguished by the nature of the threat they pose (to primary production, Crown land, the environment or community health) and by corresponding restrictions:

  - prohibited pest animals: serious threat outside Victoria or an unknown threat in Victoria — importation, keeping or sale should be banned

  - controlled pest animals: high potential to become a serious threat in Victoria — should only be kept in high security collections approved by the Minister

  - regulated pest animals: are or have the potential to become a serious threat in Victoria — should be kept in collections or at premises approved by the Minister.

Sources   (DEPI 2014g; DEPI 2014h, CaLP Act).

Other relevant legislation

While the CaLP Act is Victoria's main legislation covering noxious weeds and pest animals, a broader legislative framework influences the management of invasive species. For example, the *Conservation, Forests and Lands Act 1987* (Vic) provides a framework to make necessary administrative, financial and enforcement provisions under relevant laws such as the CaLP Act. Other legislation impacts on the declaration process and the use of control measures. For example, the *Flora and Fauna Guarantee*

Act 1988 (Vic) and the *Wildlife Act 1975* (Vic) constrain the impact of declarations made under the CaLP Act, while the *Aboriginal Heritage Act 2006* (Vic) constrains the use of on-ground control measures.[14]

Some weeds and pests animals impacting on the environment have not been declared under the CaLP Act but are still subject to management and control activity. For these types of weeds and pests, relevant Acts include the *Flora and Fauna Guarantee Act 1988* (Vic), *National Parks Act 1975* (Vic) and the *Sustainable Forests (Timber) Act 2004* (Vic) (DEPI 2014b). The impact of weeds and pest animals on the environment is recognised through several listings under the *Flora and Fauna Guarantee Act 1988* (Vic) (DEPI 2014c).

Proposed new legislative framework for invasive species management

In August 2014, after a 2011 review of the noxious weed and pest animal provisions of the CaLP Act, the Victorian Government introduced to Parliament a new Bill for the control of invasive species (Parliament of Victoria 2014). The Invasive Species Control Bill (Vic) 2014 (ISC Bill) provides an enabling framework, unconstrained by land tenure and aimed at managing the threats posed by invasive species to economic, environmental and social assets. However, the Bill was not debated by the last sitting week before the 2014 Victorian election. The future of new legislation for the management of invasive species in Victoria will be a decision for the incoming government.

Of particular relevance to this study is a new two-category system for declaring invasive species, replacing the eight categories in the CaLP Act. The proposed new categories are:

- **Category 1 species**: where eradication is expected to be feasible and the species is expected to have significant adverse effects on the economy, environment and/or social amenity in Victoria or another state or territory, or the potential adverse effects are unknown.

- **Category 2 species**: a species is present or believed to be present and eradication is not feasible although ongoing management would be required to prevent further increase or spread; species also has, or may have, significant adverse effects on the economy, environment or social amenity in Victoria or another state or territory.

The Bill also enables the establishment of several different types of subordinate rules and instruments, including the creation of two types of management plan for category 2 species, namely:

- compulsory municipal roadside plans

- voluntary management plans for other types of land managers, which set out the action a land manager will undertake to comply with their invasive species management obligations (ISC Bill).

B.2   Institutional arrangements

This section describes institutional arrangements for managing invasive species. Responsibility for regulating invasive species rests with the Department of Environment and Primary Industries (DEPI). This includes the duties of the Secretary under the CaLP Act for eradicating certain categories of weed and pest animals across the whole State. DEPI also has a major role as a manager of public land in managing weeds and

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[14] A list of relevant Acts can be found at http://www.depi.vic.gov.au/agriculture-and-food/pests-diseases-and-weeds/protecting-victoria-from-pest-animals-and-weeds/weeds-and-vertebrate-pests.

pest animals. A number of other Victorian Government bodies are involved in invasive species management, in particular, CMAs, Parks Victoria, water authorities and linear reserve managers. Local governments also have responsibilities for declared weeds and pest animals on land that they manage, including municipal roadsides.

A unique feature of the institutional framework is the involvement of community-based non-government organisations in the management of invasive species. These community-based groups aim to educate and assist landholders to comply with their invasive species legal obligations. Figure B.1 summarises the roles and responsibilities of the key parties involved in the management of invasive species.

Figure B.1   Invasive species roles and responsibilities

NATIONAL

Australian Government

Australian Government
- national pre-border and at-the-border biosecurity issues
- coordination of national matters and agreements
- national legislation
- manage federal land

STATE

Department of Environment and Primary Industries

Department of Environment and Primary Industries
- primary policy and regulatory responsibility for invasive species
- eradication of certain types of noxious weeds and control of certain pest animals
- manager of State public land

REGIONAL

Victorian Catchment Management Council

Catchment Management Authorities

Victorian Catchment Management Council
- provide advice to the Minister on catchment management issues

Catchment Management Authorities
- develop regional invasive species strategies to address threats on public and private land
- advise the Minister on proposals to declare or revoke a pest plant
- prioritise action needed to address invasive species monitoring, evaluating and reporting
- manage invasive species associated with waterways

LOCAL

Local Government

Landholders, Community Groups

Local Government
- manage local land including declared weeds on municipal roadsides
- ensure actions do not exacerbate weed and pest problems

Landholders, Community Groups
- comply with all legislative, regulatory and by-law responsibilities
- contribute, where applicable, to adjoining landholders' efforts
- coordinate local involvement in invasive species management

OTHER

Public Land and Linear Reserve Managers

Public Land and Linear Reserve Managers (Parks Victoria, V/Line, VicRoads)
- manage Victoria's parks, marine reserves and infrastructure
- directly undertake invasive species management

B.2.1 Role of the Department of Environment and Primary Industries

In 2014, DEPI was the lead agency responsible for invasive species policy, regulation, funding and service delivery. DEPI described its role as:

- directly managing public land and water to fulfil required legislative responsibilities and responsibilities to adjoining landholders

- setting the state-wide strategic direction for invasive species

- providing preparedness, prevention, eradication and containment for invasive species[15]

- regulation and enforcement duties to ensure compliance with legislation, including issuing notices that require a landowner or a person to take specified actions to control or prevent the spread of specified invasive species

- engaging with the community and other stakeholders — including through education, provision of guidance materials and enforcement action — in pursuing coordinated action against widely established invasive plants and animals (DEPI 2014b).

DEPI's invasive species responsibilities have regard to the *Statement of Expectations for the Regulation of Biosecurity Matters under Victorian Legislation* issued by the Minister for Agriculture and Food Security (box B.3). This includes publication of a risk-based biosecurity compliance strategy and regional compliance plans.

Box B.3 Statement of Expectations for the Regulation of Biosecurity Matters

In June 2014, the then Minister for Agriculture and Food Security issued a *Statement of Expectations for the Regulation of Biosecurity Matters under Victorian Legislation* to the Secretary of DEPI. In relation to invasive species, the Statement sets out the expectation that a Biosecurity Compliance Strategy will be published that:

> … includes a risk assessment framework for identifying high biosecurity risks and for undertaking enforcement activities … [and demonstrating] how risk-based strategies have been used to prioritise monitoring, compliance and enforcement activities. (Minister for Agriculture and Food Security 2014, 3)

The Secretary of DEPI responded by committing to:

- publishing a Biosecurity Compliance Strategy that includes a risk-assessment framework by 1 December 2014

- using case studies to demonstrate how the risk-assessment framework has been used to prioritise biosecurity activities

- producing Regional Compliance Plans by 31 March 2015

- considering the findings of the VCEC-DEPI improvement study (this study) into risk-based compliance for invasive species (DEPI 2014i, 3).

Source: DEPI 2014i; Minister for Agriculture and Food Security 2014, 3.

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[15] For example, the Secretary of DEPI had specific responsibilities under the CaLP Act to take all reasonable steps to eradicate State prohibited weeds from all land in the State and control restricted pest animals on any land in the State.

DEPI's *Invasive Plants and Animals Policy Framework* (IPAPF) guides the approach to the Victorian Government's management of invasive species and states that:

> The general principle of government involvement in invasive species management will be that government invests to maximise public benefit. This investment may be necessary due to market failure or to the role of government as manager of public land and waters. Intervention will only occur where the benefits outweigh the costs (DEPI 2010).

B.2.2   Roles of other key Victorian Government entities

Catchment Management Authorities

The role of CMAs is to improve land productivity and conserve the environment by managing land, water and biodiversity in catchment areas. CMAs receive funding from different Australian and Victorian government programs and work with community-based groups to undertake improvement and conservation projects. Each of Victoria's 10 CMAs is responsible for a separate geographic areas (in contrast to the six DEPI regions).

In regards to invasive species, CMA responsibilities include:

- in accordance with regional catchment strategies and state frameworks, developing and implementing regional invasive plant and animal strategies to address threats on public and private land

- advising the Minister on proposals to declare or revoke a pest plant (under the proposed new legislation, this role would become optional rather than compulsory)

- prioritising action needed to address invasive plants and animals and monitoring, evaluating and reporting (to the extent achievable given available resources) on delivery of these actions by relevant agencies

- managing invasive plants and animals associated with waterways (DEPI 2014b).

Other types of public land and water managers

Aside from CMAs, three other key groups of Victorian Government land managers affected by current invasive species regulation are Parks Victoria, water authorities and linear reserve managers. Parks Victoria is responsible for managing Victoria's parks and marine reserves. For Parks Victoria, the key legislation that applies to invasive species is the CaLP Act and the *National Parks Act 1975* (Vic).

Water authorities often undertake invasive species management in conjunction with surrounding landholders. Some water authorities also provide financial incentives for surrounding landholders. For example, Melbourne Water offers funding to landholders or managers to undertake works to protect and enhance riverbanks, such as weed control (Melbourne Water 2014).

Linear reserve managers include entities managing the State's infrastructure assets, such as VicRoads and V/Line. These entities are required to comply with the requirements of the CaLP Act, including notices to address invasive species.

Should the ISC Bill be reintroduced to Parliament and enacted, the broadening of the scope of the legislation to include marine and invertebrate pests will increase the range of regulated public land managers.

B.2.3   Role of local government

Local governments are required to fulfil all their invasive species obligations as landholders, including by ensuring that their actions do not exacerbate weed and pest problems (DEPI 2014b). Councils are also required to undertake management of invasive species on local roadsides, a key pathway for the spread of invasive species. Under the CaLP Act, councils must prepare and submit for Ministerial approval a Roadside Weed and Pest Management Plan (Minister for Agriculture and Food Security 2013).

Some councils also choose to:

- offer incentives, in the form of rate rebates, to private landholders that commit to undertake invasive species management

- provide education to their communities in better weed and pest management, including informing landholders of their responsibilities and providing removal advice

- create local laws relating to weed and animal species that are not declared under the CaLP act,[16] but that are of concern to their community.[17]

B.2.4   Role of private landholders

Private landholders are required to comply with the invasive species provisions of the CaLP Act and any local laws with respect to declared invasive species (DEPI 2014b). There are different types of private landholders affected by invasive species regulation, such as:

- primary producers, including the cropping and livestock industries

- residential land developers

- agribusiness entities, such as large-scale timber companies

- lifestyle-based landholders, such as hobby farmers.

B.2.5   Role of community-based groups

There are three types of community-based groups involved in supporting action on invasive species:

- community-led action groups focused on a single species, namely the Victorian Blackberry Taskforce, the Victorian Serrated Tussock Working Party and the Victorian Gorse Taskforce

- local weed action groups that focus on a range of invasive species

- Landcare groups.

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[16] That said, local laws should not contradict or be inconsistent with existing legislation (DPCD 2010).

[17] For example, the City of Cardinia has a local law that states that 'the owner or occupier of land of 2 hectares or less must not allow or permit the land or adjoining nature strip to be a haven for noxious or environmental weeds or pest animals' (Cardinia Shire Council 2005, 31). Cardinia's local law defines environmental weed as 'those weeds listed under the Cardinia Planning Scheme from time to time as such (for example, bridal creeper, ivy, cherry laurel, honeysuckle, sweet pittosporum and willows)'(Cardinia Shire Council 2005, 3).

Box B.4 summarises the activities of these groups in relation to invasive species.

> ## Box B.4   Activities of community-based action groups
>
> ### *Victorian Serrated Tussock Working Party (VSTWP)*
>
> Established in 1995, the VSTWP's vision is to 'control the spread of serrated tussock in Victoria to reduce the impacts on the economy, society and environment'. To achieve this, the VSTWP provides incentives and resources to landholders in a target area, including education and serrated tussock management advice (VSTWP 2014a). DEPI provided $268 000 in funding to the VSTWP in 2012-13.
>
> ### *Victorian Blackberry Taskforce (VBT)*
>
> The VBT was established in 2001 to collaborate with Victorian communities and Government agencies to control blackberry. The VBT articulates its three roles as: representing and advocating for community interests; providing operational support for and community representation of blackberry issues; and providing a strategic framework and outlook for investment decisions and planning across Victoria (VBT 2014). DEPI provided $230 000 in funding to the VBT in 2012-13.
>
> ### *Victorian Gorse Taskforce (VGT)*
>
> The primary role of the VGT is to oversee the coordination and implementation of the Gorse Control Strategy. Activities include the provision of advice, grants for weed control and voluntary land management arrangements (VGT 2014). DEPI provided $230 000 funding to the VGT in 2012-13.
>
> ### *South Gippsland Community Weeds Taskforce (SGCWT)*
>
> Established in 2006, the SGCWT focuses on achieving better weed outcomes through education, assistance and advice, documenting landholder weed or pest issues and by referring non-compliant landholders to DEPI for compliance and enforcement action (Uren and Williams 2014).
>
> ### *Landcare*
>
> Landcare focuses on protecting, restoring and sustainably managing Australia's natural environment and its productivity. Each group is unique and reflects the particular concerns and priorities of a given community. Some Landcare groups are involved in the management of invasive species, both declared and undeclared, through participation in community weed action groups, CMA projects and through their own projects (Landcare Victoria 2014).
>
> *Sources:* (VBT 2014; VGT 2014; VSTWP 2014a; Landcare Victoria 2014; Uren and Williams 2014; VSTWP 2014b, 3)

B.3   Summary

The regulatory and institutional framework for invasive species management is complex, reflecting the involvement of multiple parties and a changing operating environment. A risk-based approach to regulation of invasive species needs to take account of this context to help ensure that resources are generally targeted at areas of greatest risk and return, compliance activity is coordinated across a range of landholders and community resources are appropriately leveraged.

Appendix C: Recent developments in other Australian jurisdictions

This appendix sets out recent developments in other Australian jurisdictions relevant to the study.

In accordance with their obligations under the National Environmental Biosecurity Response Agreement, other Australian jurisdictions also undertake extensive invasive species control and management. These jurisdictions commonly use a declaration process for invasive species that imposes obligations on landholders to control invasive species. That said, the process the criteria used for declaration and the number and type of species declared varies significantly. For example, jurisdictions use:

- a range of different declaration processes, which is reflected in varying numbers of pest categories: three for Queensland and South Australia, five for Western Australia and eight for Victoria.

- different criteria and risk assessment tools for declarations, resulting in varying numbers of declared plants and animals: over 100 plants in South Australia and Queensland, about 65 plants in New South Wales and about 170 plants and animals in Western Australia (NSW Department of Primary Industries; Biosecurity Queensland 2013; DEPI 2014e; Government of South Australia 2014; Office of the Auditor General Western Australia 2013, 7).

- different approaches to enforcement activity — for example, Western Australia conducts 'little or no enforcement activity to ensure landholders control pests on their land,' while a recent New South Wales review reported that 'current enforcement mechanisms are insufficient to effectively create compliance' (Office of the Auditor General Western Australia 2013, 8; NSW Government Natural Resources Commission 2014, 96).

As in Victoria, some other jurisdictions' biosecurity frameworks have been subject to review. Relevant recent developments include:

- South Australia's 2013-14 declared plant review, which proposed changes to notification requirements for some declared plants, an additional 24 plants for declaration and the removal of five declared plants (SA Department of Environment Water and Natural Resources 2013).

- In Queensland, the *Biosecurity Act 2014* (Qld) (to commence by 1 July 2016) has some similarities with Victoria's ISC Bill. For example, it increases the flexibility of regulatory powers and tools and allows for compliance agreements and management plans.

- In 2013, the Western Australia Auditor General found that Western Australia's invasive species framework would benefit from ensuring that the declaration process is transparent for stakeholders and periodically reviewed. Greater data and information collection and sharing and state-wide planning should also be implemented. A recommendation was also made to develop effective prioritisation processes that ensure operational resources are directed to combating the highest threats (Office of the Auditor General Western Australia 2013, 9–10).

- A 2014 New South Wales review of weed management recommended improving the transparency of the declaration process, improving the coordination of service delivery and focusing efforts on new and high-risk invasive species activities (NSW Government Natural Resources Commission 2014, 3–5).

Appendix D: Consultation

The study team has undertaken targeted consultation with stakeholders who have had direct experience with the Victorian invasive species regulatory framework.

Stakeholder consultation
Department of Environment and Primary Industries
Glenelg Hopkins Catchment Management Authority
Landcare
Melbourne Water
Municipal Association of Victoria
Parks Victoria
South Gippsland Community Weeds Taskforce
Trust For Nature
V/Line
VicRoads
Victorian Blackberry Taskforce
Victorian Farmers Federation
Victorian Serrated Tussock Working Party

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