

## 2030 GOALS, TARGETS & KEY PERFORMANCE INDICATORS

### 1. PREVENTION

By 2030, the establishment of new invasive species in Australia has substantially slowed and no new very-high-risk species have permanently established.

*KPI 1.1: The rate of establishment of new invasive species in Australia is reduced by at least 50% (compared to the 2012–2022 rate).*

*KPI 1.2: From 2022 to 2030, 100% of new, very high-risk invasive taxa arriving in Australia, escaping into the wild or transported to an island from the mainland are prevented from establishing in the wild or are subject to eradication.*

### 2. ERADICATION

By 2030, priority invasive species are being systematically eliminated from the Australian mainland and islands.

*KPI 2.1: 20 'sleeper' invasive species have been eliminated from the mainland or are the targets of well-resourced eradication programs.*

*KPI 2.2: Priority invasive species have been eradicated or are subject to eradication programs on 10 islands (additional since 2022) with high conservation values.*

### 3. CONTAINMENT AND CONTROL

By 2030, invasive species have not caused any more extinctions, high priority invasive species are being effectively contained or controlled, and priority biodiversity sites are being protected from the impacts of invasive species.

*KPI 3.1: Invasive species have not contributed to any new species extinctions between 2022 and 2030.*

*KPI 3.2: 10 priority invasive species are being effectively contained or controlled and the measurable impacts have been reduced.*

*KPI 3.3: The measurable impacts of invasive species have been reduced in at least 10% of Australia's protected area estate (public and private lands).*

### 4. THE BIOSECURITY SYSTEM

By 2030, Australia has a much stronger environmental biosecurity system.

*KPI 4.1: Sustainable funding mechanisms are in place, and public funding for environmental biosecurity is at least triple that of 2022 levels.*

*KPI 4.2: The level of funding needed to achieve effective environmental biosecurity has been assessed, sustainable funding and transparent prioritisation mechanisms are in place, and public funding for environmental biosecurity is at least triple that of 2022 levels.*

*KPI 4.3: All biosecurity agencies explicitly recognise the natural environment in their mission statements and have biodiversity-specific targets in their biosecurity strategies and plans.*

*KPI 4.4: The federal government invests at least an additional \$10 million a year (compared to 2022 levels) into biodiversity-focused biosecurity research and innovation across all stages of the invasion curve.*

*KPI 4.5: At least 70% of Australians are aware of the harmful impacts of invasive species and at least 50% support strengthening environmental biosecurity.*

*KPI 4.6: The Biosecurity Collective has fully implemented the Biosecurity 2030 Project Plan.*

# APPENDIX – Rationale, definitions, measuring KPIs

## 1. PREVENTION

### Rationale

An ambitious goal is needed to reflect the importance of prevention, with both a substantial overall reduction in new invasive species and concerted action to stop the establishment of new highly damaging species – the likes of myrtle rust and red fire ants. KPI 1.1 reflects the draft target 6 in the post-2020 global biodiversity framework under the Convention on Biological Diversity (July 2021). An early indicator of progress in this area would be better incorporation of environmental impacts into import risk assessments.

### Definitions & clarifications

'Very high risk' invasive species: We define these as species likely to have a massive or major environmental impact in Australia (as assessed by the IUCN's EICAT method), taking into account the precautionary principle. Massive = 'naturally irreversible local or global extinction of a native taxon (i.e. change in community structure)'. Major = 'native taxon local extinction (i.e. change in community structure), which is naturally reversible'.

'Escaping into the wild': This refers to species that are already in Australia but not established in the wild (e.g. because they are kept as pets or grown in gardens). It could also include species native to Australia that are introduced outside their native range.

### Measuring the KPIs & comments on feasibility

KPI 1.1: We do not currently have access to the data to measure this, but the adoption of the draft CBD target would necessitate reporting by the Australian Government on this measure. If a 50% reduction is adopted as the CBD target, achieving it will become much more feasible than it currently is.

KPI 1.2: It is often very hard to eradicate an invasive species unless it is detected soon after arrival. The window of opportunity for some species (e.g. wind-borne pathogens) may be no more than a few weeks. Although feasibility may be low for some potential new invaders, for the very high-risk species that are our focus in this KPI, every effort should be made to eradicate them (as would be the case for very high-risk threats to industry such as foot and mouth disease and the khapra beetle). When a decision is made not to eradicate, serious consideration must be given to containment and control to mitigate potential impacts.

## 2. ERADICATION

### Rationale

The eradication of invasive species, if feasible, is often the most desirable and cost-effective outcome because it eliminates the need for costly, never-ending management. The eradication of recent arrivals or escapees is covered under the prevention goal. Our focus here is on invasive species that have been established for years (sometimes decades) but not yet spread far ('sleepers'; see definition below) and invasive species on islands.

The frequently long lag period before invasive species 'take off' is an opportunity to prevent a problem that should not be squandered. It is becoming more urgent with climate change, which is likely to facilitate the spread of many more species. Eradications on islands are one of Australia's great success stories, protecting endemic island wildlife and creating havens for species threatened on the mainland. These 2 eradication categories should be the focus of national programs (with cost-sharing by the federal and relevant state/territory governments) that systematically identify, prioritise and pursue the eradication opportunities.

### Definitions & clarifications

'Sleeper' species: a non-native species with one or more established populations that are not yet widely invasive because they are limited by biotic or abiotic conditions, or for other reasons.

'Systematically' implies that the eradications are part of a program rather than occasional or ad hoc.

## Measuring the KPIs & comments on feasibility

KPI 2.1: Assuming a national program starts in 2025, this would require targeting 4 new species a year. Some species may take a large effort and many years to eradicate; others established in one small area may require minimal resources (e.g. pasture plants at former research stations). Most of the targets will be plants. Eradications could be undertaken by governments or NGOs.

KPI 2.2: Island Conservation has documented eradications on more than 200 Australian islands (328 species), so an additional 10 islands in 8 years is feasible based on the historical average. But the feasibility depends on the size and nature of islands (e.g. whether they are inhabited) selected as priorities. In some circumstances, mainland peninsulas could be treated as virtual islands.

## 3. CONTAINMENT AND CONTROL

### Rationale

Reducing the impacts of high-impact invasive species (those driving species declines and ecosystem degradation) and protecting high-biodiversity sites from the impacts of invasive species are both essential for conservation. The twin focus here on priority invasive species and priority places is consistent with the draft CBD target to reduce the impacts of invasive alien species, 'focusing on priority species and priority places'.

The KPI place focus on protected areas is in recognition of the extremely high values of many protected areas, the frequent deficiencies of management and the good potential for improving management on conservation tenures. We include a KPI on stopping extinctions in recognition that this should be fundamental to any improved management of invasive species. Since 2009, invasive species have been the primary cause of 2 extinctions (a bat and a lizard) and 2 extinctions in the wild (2 lizards). These extinctions were all of island endemic species, illustrating the particular susceptibility of islands and the need to improve biosecurity on priority islands.

### Definitions & clarifications

'Priority' invasive species will be priorities as determined by the Invasive Species Council based on the current and potential biodiversity impacts of species.

The 'protected area estate' (terrestrial only) includes Indigenous protected areas and private conservation reserves as well as government-managed properties, currently covering, in total, about 20% of Australia's land area. The KPI is therefore focused on about 2% of Australia.

It is extremely difficult to measure the effectiveness of management, as reflected in the draft KPIs. (The proposed CBD indicator is about the spread of invasive species.) Ideally, progress would be measured in terms of the recovery of threatened species and high-biodiversity sites impacted by invasive species, but this is not always feasible. Currently, there is insufficient monitoring, and in many cases recovery cannot be achieved for many years after effective management. That means we can mostly only measure progress by 2030 in terms of invasive species indicators such as density, population or distribution (if there is information about how that relates to recovery).

## Measuring the KPIs & comments on feasibility

KPI 3.1: The measurement of this may be limited by the time it often takes to confirm extinctions and it is possible that species will disappear without being noticed (e.g. invertebrates). However, the 4 recent extinctions were all rapidly confirmed. The KPI will cover the time period 2022 to 2030.

KPI 3.2: Given the number of invasive species threatening Australian biodiversity, a reduction in the impacts of 10 priority species is modest. But it is also very ambitious because of the time and resources needed to achieve impact reduction, particularly of widespread, highly threatening species such as cats and foxes. It is difficult to measure the effectiveness of management, particularly in terms of the meaningful biodiversity measures such as recovery of threatened species. A basic measure of management effectiveness could be the success of large-scale containment efforts, the availability of tools needed for effective control and the extent of widespread application of best-practice control measures. One important focus of this work will be improving monitoring and reporting on management effectiveness.

KPI 3.4: Due to the lack of public reporting on the management effectiveness on protected areas, measuring progress will be difficult. However, we will be advocating for adoption of an effective monitoring and reporting

regime in protected areas. Measurement may have to rely on inadequate proxies such as funding levels. Reducing impacts across about 2% (~15 million ha) of Australia will be very challenging in the 2030 timeframe and we may have to adjust the KPI after an assessment of feasibility.

## 4. THE BIOSECURITY SYSTEM

### Rationale

Because the prior prevention, eradication and management goals cannot be achieved without strengthening the overall biosecurity system, it is important to specify system improvement as a goal in its own right and, through the KPIs, identify and track some of the critical improvements needed. We have developed KPIs for the following elements of the biosecurity system: public funding, institutional focus, research and public awareness and support. The focus of KPI 4.5, the Biosecurity 2030 Project Plan, has the following 5 (some overlapping) objectives:

- setting 2020–2030 as the Decade of Biosecurity
- mobilising a 25-million strong biosecurity mass movement
- developing a national biosecurity strategy and sustainable investment plan
- designing an innovation-centred biosecurity system
- creating a formal national biosecurity partnership agreement between government, industry and the community.

Incorporating the environment more explicitly into the biosecurity system will more clearly demonstrate the public benefits of biosecurity and offer the opportunity to engage with a larger part of the community.

### Definitions & clarifications

The 'Biosecurity Collective' comprises the Invasive Species Council, Animal Health Australia, Plant Health Australia and the Centre for Invasive Species Solutions. The collaboration arose from the 2019 Australian Biosecurity Symposium and the resulting Biosecurity 2030 Project Plan that sets out an ambitious reform program to strengthen the biosecurity system to limit the agricultural and environmental impacts of invasive species.

### Measuring the KPIs & comments on feasibility

KPI 4.1: Insufficient funding is a major institutional barrier to more effective biosecurity. This KPI may have to be adjusted once we more fully assess the extent of public funding needed to achieve the prior goals. Given current budgetary trends, it will be very challenging to achieve this KPI. It is difficult to measure funding specifically for 'environmental' biosecurity as government budgets mostly do not distinguish it in this way and it is difficult to source detailed information about biosecurity spending. However, obtaining this information will be a key focus for the Invasive Species Council. A related unstated KPI is that funding for and the emphasis on environmental biosecurity is equivalent to that for industry biosecurity (the level of which is also currently unknown).

KPI 4.2: This KPI is feasible and measurable. It is intended to indicate whether the natural environment is a priority focus for biosecurity agencies, which currently have a predominantly agricultural focus. While it is an inadequate measure of institutional priorities, it will supplement the funding KPI as an indicator of a stronger environmental focus. Improved systems to monitor the effectiveness of the environmental biosecurity system are required across all jurisdictions.

KPI 4.3: This KPI is feasible and measurable (although it can be difficult to distinguish funding that is directed to environmental priorities). This KPI may be adjusted after a more detailed assessment of current levels of funding and the funding needed for priority research.

KPI 4.4: This KPI will be measured by independent surveys of public attitudes. We consider the community awareness and support KPIs to be feasible based on the results of a recent internal survey that put the current level of awareness of the harmful impacts of invasive species at 53%.

KPI 4.5: The Biosecurity Collective are likely to develop their own KPIs for the 5 objectives of the Biosecurity 2030 Project Plan and we will use their measures for this KPI. Otherwise, ISC will develop these for the collective.