## Invasive Alien Species (GBF Target 6)

Global Biodiversity Framework – Help Australia meet targets by 2030

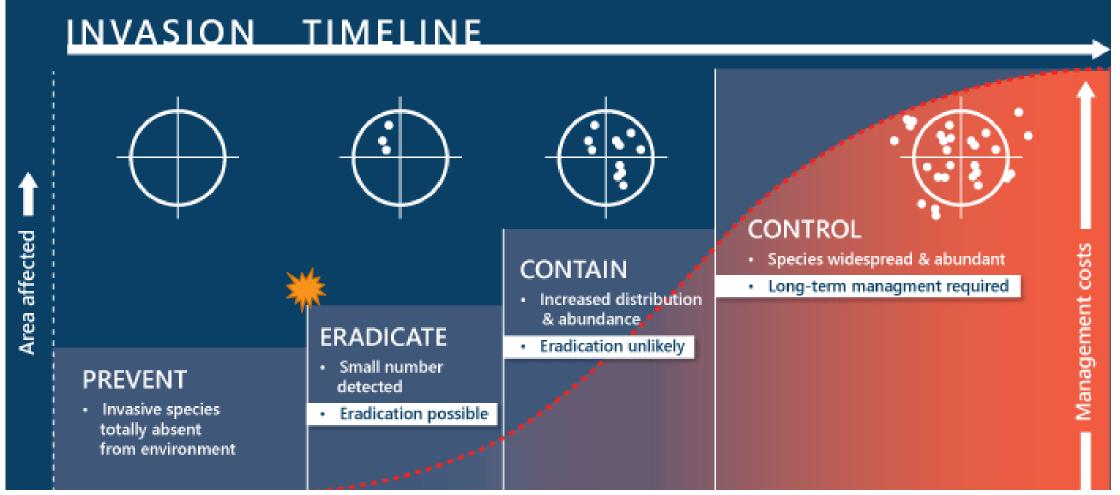
31 May 2023

James Trezise

**Conservation Director** 







### Invasive drivers of modern animal extinctions



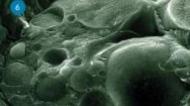
 Within about 20 years of arriving on Christmas Island as a ship stowaway, the wolf snake (native to Asia) wiped out a bat and 3 reptiles unique to the island. Photo: Thai National Parks

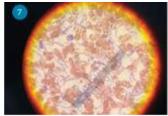












#### PRIMARY CAUSE OF EXTINCTION

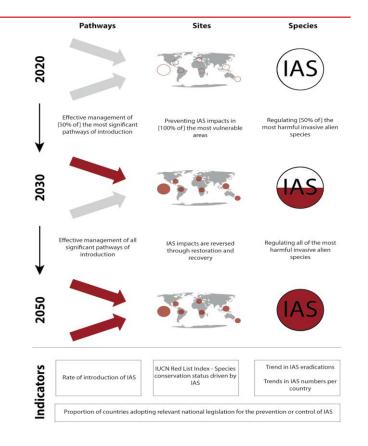
Decade of last record	Invasive species	Habitat destruction or degradation	Altered hydrology	Climate change	? Uncertain	
s0961	Yallara (Macrotis leucura)	Victorian grassland earless dragon (Tympanocryptis pinguicolla) (87%)				
19	Central hare-wallaby (Lagorchestes asomatus)	Divided darwinia (Darwinia divisa)				
970s	Desert bandicoot (Perameles eremiana)		Lake Pedder earthworm (Hypolimnus pedderensis)		Kuchling's long- necked turtle (Chelodina kuchlingi)	
19	Southern day frog (Taudoctylus diurnus)					
	Southern gastric brooding frog (Rheobatrachus silus)	Lyon's grassland striped skink (Austroablepharus barrylyoni) (77%)				
1980s	Northern gastric brooding frog (Rheobatrachus vitellinus)					
19	Gravel-downs ctenotus (Ctenotus serotinus) (72%)					
	Christmas Island shrew (Crocidura trichura) (92%)					
S	Mountain mist frog (Litoria nyakalensis) (85%, 93%)	Nielsen Park she-oak (Allocasuarina portuensis)*			Kangaroo River Macquarie perch (Macquaria sp.) (89%)	
1990s	Sharp-snouted day frog (Taudactylus acutirostris)					
	Pedder galaxias (Galaxias pedderensis)*					
S	Northern tinker frog (Taudactylus rheophilus) (86%, 90%)	Cronin's tetratheca (Tetratheca fasciculata)	Wingecarribee gentian (Gentiana wingecarribiensis)	Bramble Cay melomys (Melomys rubicola)		
2000s	White-chested white-eye (Zosterops albogularis)					
	Christmas Island pipistrelle (Pipistrellus murrayi)					
0.5	Christmas Island forest skink (Emoia nativitatis)					
2010s	Blue-tailed skink (Cryptoblepharus egeriae)*					
	Lister's gecko (Lepidodactylus listeri)*					

Figure 1. Probable animal and plant extinctions since 1960



### Target 6 (Invasive Alien Species)

Eliminate, minimize, reduce and or mitigate the impacts of invasive alien species on biodiversity and ecosystem services by identifying and managing pathways of the introduction of alien species, preventing the introduction and establishment of priority invasive alien species, reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50 per cent by 2030, and eradicating or controlling invasive alien species, especially in priority sites, such as islands





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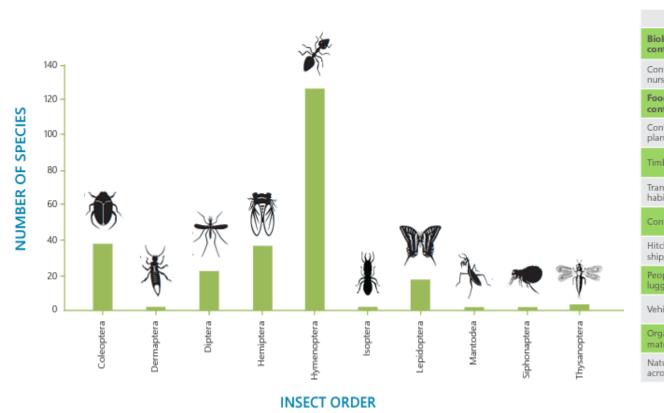


## Target 6 – Monitoring framework

Goal/ Target	Headline indicator	Component indicator	Complementary indicator
6 <sup>b</sup>	6.1 Rate of invasive alien species establishment	Rate of invasive species impact and rate of impact Rate of invasive alien species spread Number of invasive alien species introduction events	Number of invasive alien species in national lists as per the Global Register of Introduced and Invasive Species Trends in abundance, temporal occurrence, and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably in risk areas (in relation to the main vectors and pathways of spreading of such species) Red List Index (impacts of invasive alien species)

### **Priority Species and Pathways**





		*	*				M	
	Coleoptera	Dermaptera	Diptera	Hemiptera	Hymenoptera	Isoptera	Lepidoptera	Thysanptera
Biological control							•	
Contaminant nursery material	•	•	•	•			•	•
Food contaminant	•		•	•			•	
Contaminant on plants	•		•				•	
Timber trade				•			•	
Transportation of habitat material	•	•	•			•		
Container/bulk	•	•	•				•	
Hitchhikers on ship/boat	•	•	•			•	•	
People and their luggage	•			•			•	
Vehicles	•			•		•		
Organic packing material		•						
Natural dispersal across borders	•		•	•			•	•

Highest impact invasive insect species globally

Primary pathways for incursion into Australia

Source: McGeoch / ISC - Invasive Insects Pathway



## ARE EXPOSING US TO MORE RISK



Estimates of containers circulating the world range from

### 20 to 30 million

equating to approximately 800 million movements through global ports. These carry over 10 billion tonnes of goods (based on 2017 figures) In 2019, Australia received about:



2.5 million containers



122,000

air and sea vessels



22 million

international travelers



144 million

mail items (letter articles, packages and parcels)

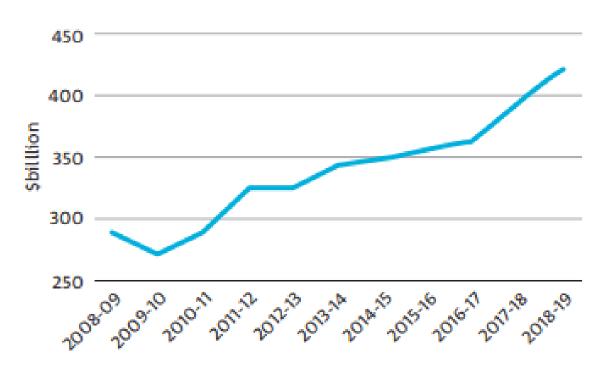


Figure 7: Australia's growing imports increase biosecurity risks Source: DFAT.94

Source: DAFF Source: CSIRO / CISS

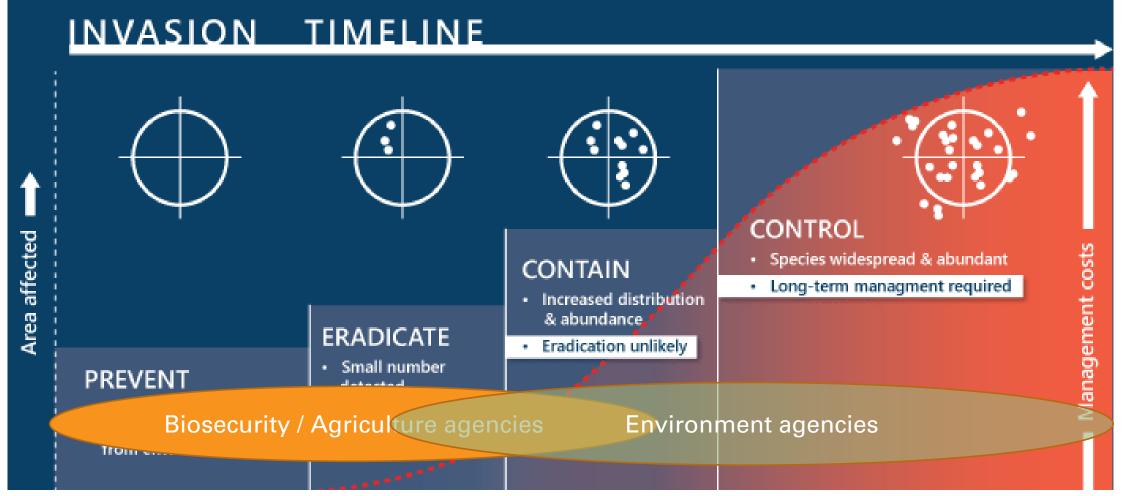


# Australia's Biosecurity System

- Australia's biosecurity system is inherently complex
- Primarily geared toward primary industry biosecurity responses
- Faces increasing pressures from growing trade and passenger movements.
- Requires long-term sustainable funding at national and subnational jurisdictions











### Priorities for Australia's biosecurity system

AN INDEPENDENT REVIEW OF THE CAPACITY OF THE NATIONAL BIOSECURITY SYSTEM AND ITS UNDERPINNING INTERGOVERNMENTAL AGREEMENT

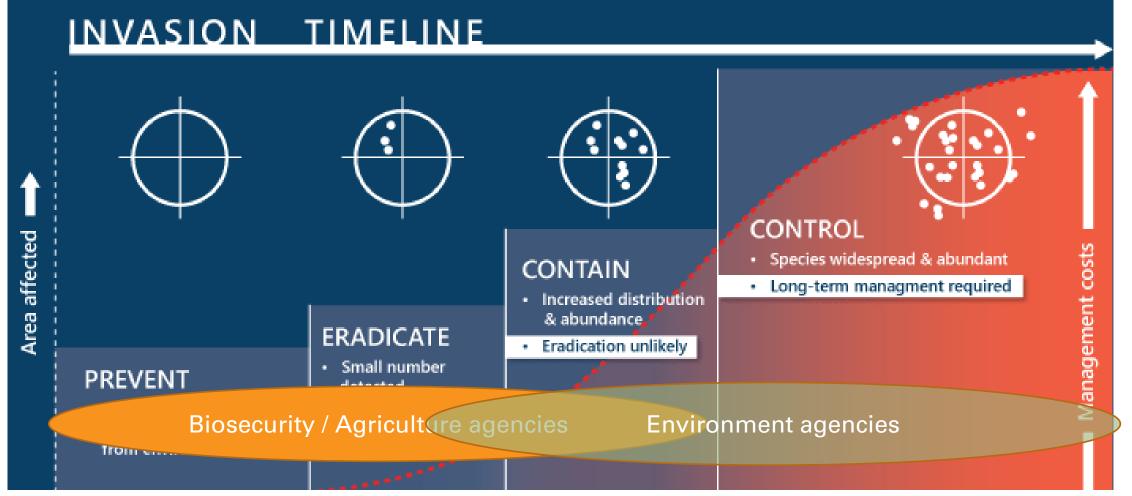
WENDY CRAIK, DAVID PALMER AND RICHARD SHELDRAY

#### Attachment 1)

With the streamlining of Council of Australian Governments (COAG) ministerial council arrangements in 2013, all Australian governments jointly tasked the Agriculture Ministers' Forum (AGMIN) and its subcommittee, the NBC, with national coordination of biosecurity. This effectively assigned agriculture portfolios with lead responsibility for biosecurity in each of the jurisdictions and, to a significant extent, appears to have let environment agencies 'off the hook'. At the Commonwealth and state and territory levels, there have been varied levels of engagement by environment agencies and a seeming willingness by them to let the agriculture portfolio have carriage of biosecurity.

While current arrangements can and do deal with environmental biosecurity matters, this does not occur on a systematic or transparent basis. The panel believes environment agencies and stakeholders must be more engaged in the formulation of national policy positions on biosecurity and provide agriculture agencies with the technical expertise on environmental risks.







# Control, Eradication & Priority places

- Protecting our most precious places and native species
- Target specifically mentions islands as they are most vulnerable to IAS impacts
- Component indicator is for Red List
   Species impacted by IAS (species as a proxy for place)
- GBF needs a framework for place based prioritisation



Photo: Daniel Gautschi & Luis Ortiz-Catedral.





Bowling Green Bay Ramsar Wetland

Mt Elliot (BGB NP) – Many ground dwelling endemic species -Mt Elliot Nursury Frog Mt Elliot mulch-skink



## Snapshot

#### Pathways and establishment:

- Australia has had 136 incursions of 106 species recorded since the year 2000
- More than 30 species, some with multiple incursions, are regarded as serious or potentially serious environmental invaders
- Biosecurity risks are increasing faster than capacity to deal with them and environmental biosecurity significantly lagging primary industry

### **Priority IAS:**

- In 2018 Australia established the National Priority Environmental Pest List (EEPL) – but not comprehensive
- Established Chief Environmental Biosecurity Officer within DAFF – but has limited resources

#### **Priority Sites**

- Threatened Species Action Plan identified priority species and sites, incl. some islands
- Threat abatement system under EPBC needs reform











E Company	Australian Government										
	Department of Agriculture, Water and the ABARES	Environment									
Nationa	al Priority List of Exotic Er	nvironmental Pests, \	Weeds and Diseas	es Dataset	t (Public Summary Ve	ersion 1.0)					
species_n	name	common_name	▼ hig	her_risk_💌 t	thematic_group	overall_risk	entry_likelih 🔻	establishme <sub>l</sub> 🔻	spread_likeli/	environment	social_ameni ▼ r
Euwallace	ea fornicatus complex	Shot hole borer	No	-	Terrestrial invertebrates	Medium	Low	Moderate	Moderate	Major	Noderate (
			di Netion	I				I			l) L







# What could get us there?



GBF Component	Steps
Manage pathways	<ul> <li>Significantly increase funding for environmental biosecurity, including pathway analysis, surveillance, interception, preparedness and responses</li> <li>Implement risk based funding models (eg container levy) so resources grow as risks do</li> </ul>
Preventing introduction of priority Invasive Alien Species	<ul> <li>Undertake more comprehensive environmental invasive species risk assessments</li> <li>Invest in research and development of new technologies and control measures (eg bio-controls)</li> <li>Establish an independent environmental biosecurity preparedness body</li> <li>Improve transparency, data sharing and community engagement</li> </ul>
Eradication, control & priority sites	<ul> <li>Systematic assessment and listing of IAS (and other) threats for abatement planning.</li> <li>Strengthen and streamline threat abatement planning frameworks under national law</li> <li>Increase funding for tackling major threats and protecting important places</li> <li>Develop strong national standards to drive improved management and protection of important places</li> </ul>

