

Environmental Biosecurity & Forest Health

An introduction to biosecurity and forest health

Part 1

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Workshop outline

- **Part 1 - Biosecurity overview**
 - Environmental biosecurity priority lists
 - Significance of biosecurity
 - How do things get here
 - Reducing the risk & what happens when they do arrive
- **Part 2 – What are we protecting?**
 - K'gari
- **Part 3 – Forest health & biosecurity**
 - plant pests and pathogens
- **Part 4 – What can I do to help?**
 - Surveillance & reporting
 - Symptoms and signs





Key message

Biosecurity is a shared responsibility – we can all contribute to protect our unique environments and valuable industries

Key outcome

Increased awareness and capacity to detect and report on forest health and biosecurity threats

Activity

Photograph pest and disease symptoms in the gardens

20 minutes



What is biosecurity & why is it important?

- What does the term “biosecurity” mean to you?
- Why is it important?
- Group activity – 4 tables of 4 with Rangers helping lead discussions on tables
 - 15 minutes



What is biosecurity?

Biosecurity is ...the protection of the economy, the environment, social amenity or human health from negative impacts associated with invasive species (including diseases) and contaminants

- A pest or disease may damage or destroy our native fauna or flora or agricultural industries
- The ‘great outdoors’ may not be that great anymore if serious pests or weeds infest recreational areas
- A pest or disease outbreak could jeopardise major international and interstate markets overnight with serious economic losses

What is environmental biosecurity?

- Protection of the environment from weeds, pests and diseases entering, emerging, establishing or spreading in Australia:
 - Ecosystems – Terrestrial, Freshwater, Marine
 - Social amenity
 - human health and wellbeing,
 - cultural values,
 - dependent industries (tourism);
- Environmental Biosecurity is distinct from Agricultural Biosecurity, which focuses on pests and diseases that could have an economic impact on agricultural industries, including forestry.



New Zealand

- **Māori Biosecurity, protecting our taonga for future generations**
 - Our place, our taonga, Our unique land, waters, and the life they sustain are New Zealand's taonga (treasures).
 - The country's prosperity and sustainability depend on its premium biosecurity status and the relatively unspoiled state of its natural environment. Free from many of the pests and diseases that afflict other places, these assets are New Zealand's great enablers – helping grow our economy, enhancing our lifestyle and strengthening our sense of national identity.



Environmental biosecurity pest list – things not present in Australia

Aquatic animal diseases	Fresh water invertebrates	Marine pests	Native animal diseases & their pathogens
Bonamiosis	Asian clam	Asian green mussel	Duck viral enteritis
Crayfish plague	Chinese mystery snail	Black-striped false mussel	Exotic West Nile virus
Megalocytivirus	Japanese mystery snail	Carpet sea squirt	Pacheco's disease
White spot syndrome virus	Golden apple snail	Chinese mitten crab	Proventricular dilatation disease
Yellow head disease	Quagga mussel	Lady crab / Asian paddle crab	White nose syndrome of bats
	Quilted melania		

Environmental biosecurity pest list – things not present in Australia

Plant diseases & their pathogens	Terrestrial invertebrates	Vertebrates	Weeds & freshwater algae
Ceratocystis wilt	Asian gypsy moth	Asian black-spined toad	Didymo
Exotic strains of myrtle rust	Formosan subterranean termite	Boa constrictor	Manchurian wildrice
Polyphagous shot hole borer associated fusarium wilt	Giant African snail	Climbing perch	Mikania
Ramorum shoot dieback and leaf blight	Harlequin lady beetle	Corn snake	Mouse-ear hawkweed
Teratosphaeria leaf blight and canker	Invasive ants: red imported fire ant, electric ant	Red-eared slider turtle	Spiked pepper
Xylella		Silver carp	

How do they get here?



What can happen if exotic pests establish?

	Environment	Amenity	Agriculture
Weeds	<ul style="list-style-type: none"> • Transform ecosystems • Eliminate/replace native species - competition • Reduce the ecological values of natural areas 	<ul style="list-style-type: none"> • Reduce access to amenity and scenic values of natural areas • Cause health issues • Reduce function and values of community open space areas 	<ul style="list-style-type: none"> • Reduce productivity • Increase costs of production • Contribute to loss of production/income
Feral animals	<ul style="list-style-type: none"> • Displace and/or prey on native species • Degrade natural ecosystems 	<ul style="list-style-type: none"> • Destroy infrastructure • Cause traffic hazards • Prey on native and domestic animal species 	<ul style="list-style-type: none"> • Outcompete livestock • Contribute to loss of production • Prey on and threaten livestock • Carry diseases and parasites that can impact on livestock
Insect pests and diseases	<ul style="list-style-type: none"> • Transform ecosystems • Eliminate native species • Reduce the ecological values of natural areas 	<ul style="list-style-type: none"> • Cause health issues • Reduce function and values of community open space areas 	<ul style="list-style-type: none"> • Production losses and associated financial impact • Market access – international and interstate

What is being done to reduce the risk?

- **Prevent arrival and establishment**
 - ***Pre-border*** – identify risk pathways to prevent arrival or introduce treatments to eliminate the threat
 - ***At border*** – Inspection/treatment of goods, aircraft, ships and people arriving into Australia
 - ***Post border*** – High risk site surveillance activities and incursion response
 - Detection triggers a biosecurity response



What happens when things do arrive?

- **Detection**

- Eradication

- Biosecurity response to a detection or report and activities implemented where eradication is seen as being feasible

- Contain

- Restrict the spread of the pest/disease/weed
- Interstate/regional movement restrictions – e.g. myrtle rust – no Myrtaceae allowed into WA; Red Imported Fire Ant; European House Borer

- Manage

- Long term strategies to reduce the impact



Invasion curve

Dependent on good post-border early detection systems

Dependent on quarantine agencies being alert to industry-specific risks

Best value for money

