



www.dunestrust.org.nz

Way Out West

Dunes Restoration Trust of NZ 2014 Annual Conference

11 - 13th March 2014

Fitzroy Surf and Lifesaving Club, New Plymouth



Presentation: Biosecurity in NZ - Sea spurge as a coastal example

Susanne Krejcek & Brad Chandler, Ministry for Primary Industries

The Dunes Trust has been given permission to make this document publically available from our website. However the information and images contained in the document belong to the presenter and presenter's organisation.

To obtain permission to use the information and/or imagery used in this document for any purpose please contact **the presenter or the Dunes Trust**.

Conference sponsors





Biosecurity in New Zealand

Sea spurge as a coastal example

Frances Velvin and Susanne Krejcek

11 March 2014 Dunes Trust Conference New Plymouth

Growing and Protecting New Zealand

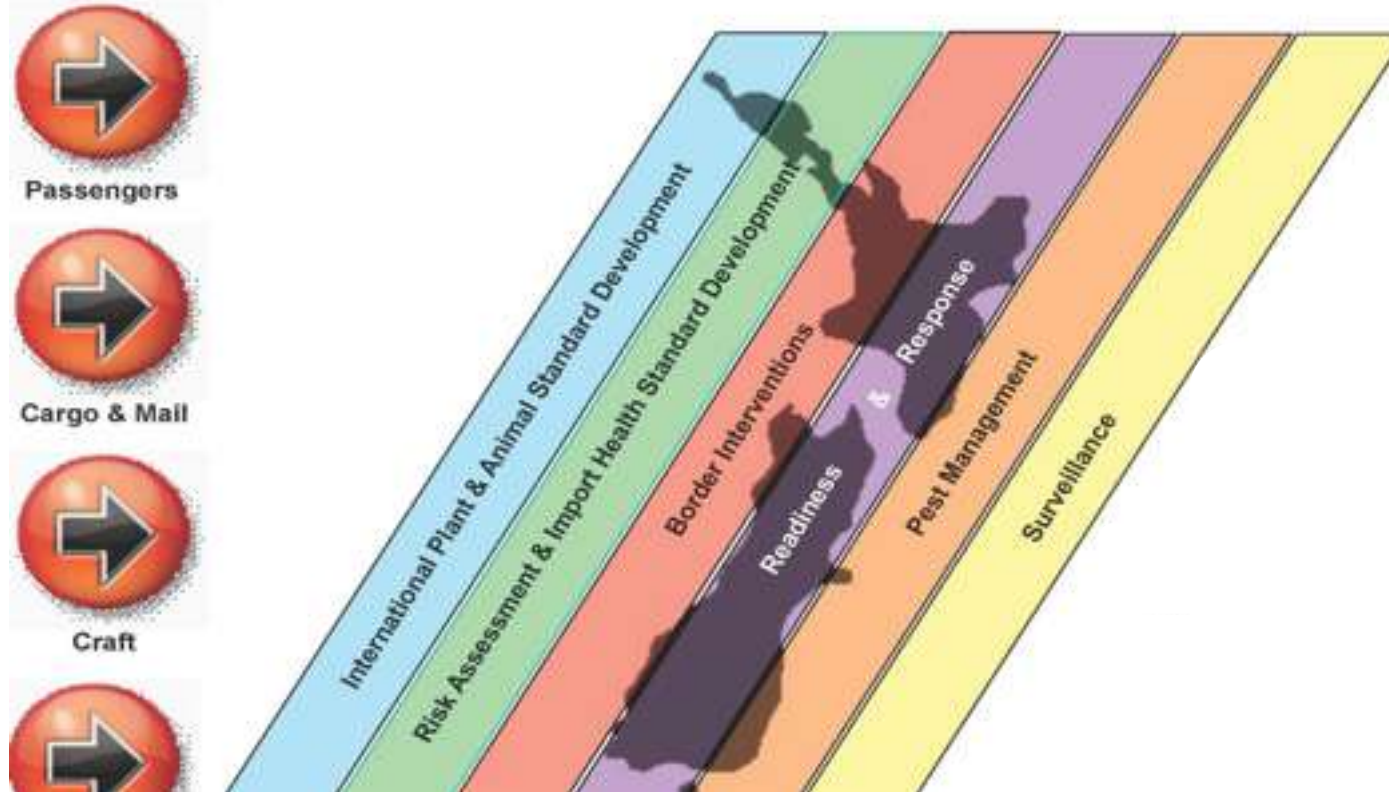


www.mpi.govt.nz

Biosecurity in New Zealand

THE MULTIPLE LAYERS OF NEW ZEALAND'S BIOSECURITY SYSTEM

risk pathways



Biosecurity in New Zealand



<http://www.nzta.govt.nz/vehicle/choosing/>



<http://www.daff.gov.au/animal-plant-health/pests-diseases-weeds/marine-pests/biofouling/biofouling-threat>

WHEN YOU FLY TO NEW ZEALAND

It's important to follow the rules to help protect New Zealand from pests and diseases. You must declare any goods you bring with you when you arrive in New Zealand. This includes:

- 1. Food and plants
- 2. Animal products
- 3. Medicines and other goods

WHAT WILL HAPPEN WHEN YOU ARRIVE AT A NEW ZEALAND BORDER

You will be asked to declare any goods you bring with you. If you do not declare any goods, you may be fined or your goods may be destroyed.

IF YOU ARE UNWELL, DECLARE

For a full list of risk goods for declaration see Passenger Animal Quarantine website.

RISK GOODS YOU MUST DECLARE:

Food and vegetables, fruit or drink

Medicines and other goods

Animal products

Plants and other goods

ALERT - Queensland Fruit Fly

If Queensland Fruit Fly has been found in the Portlands area, MPI has set up a Controlled Area around the two dotted lines on the map - Zone A (road 200 metres) and Zone B (out 1.5 km).

The Controlled Area affects the movement of any whole fresh fruit and vegetables (except for leafy vegetables and root vegetables).

Fruit and veg purchased in Zone A may not be taken out of Zone A.

Fruit and veg purchased in Zone B may not be taken out of the Controlled Area but may be taken into Zone A.

Ministry for Primary Industries
 Pōwhiri ki Te Kaitiaki

Visit www.mpi.govt.nz for maps and information.

New Zealand Government



Entry pathways of pests and diseases

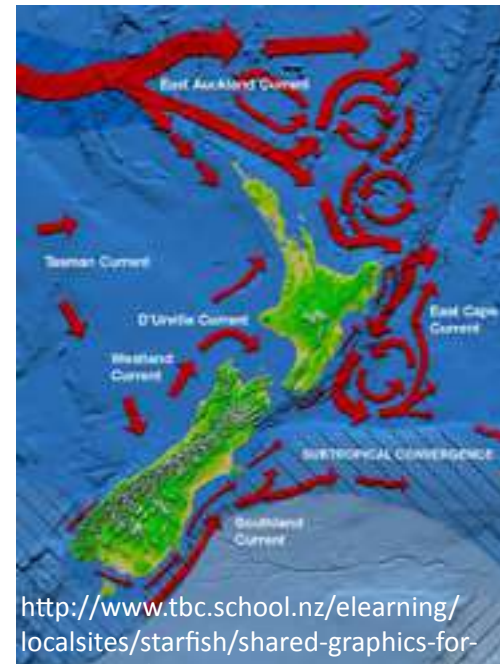
Managed pathways

- Passengers
- Cargo/mail, imported goods
- Craft



Uncontrollable pathways

- Jet streams
- Ocean currents



Risks and management

Biosecurity response is to manage the risk:

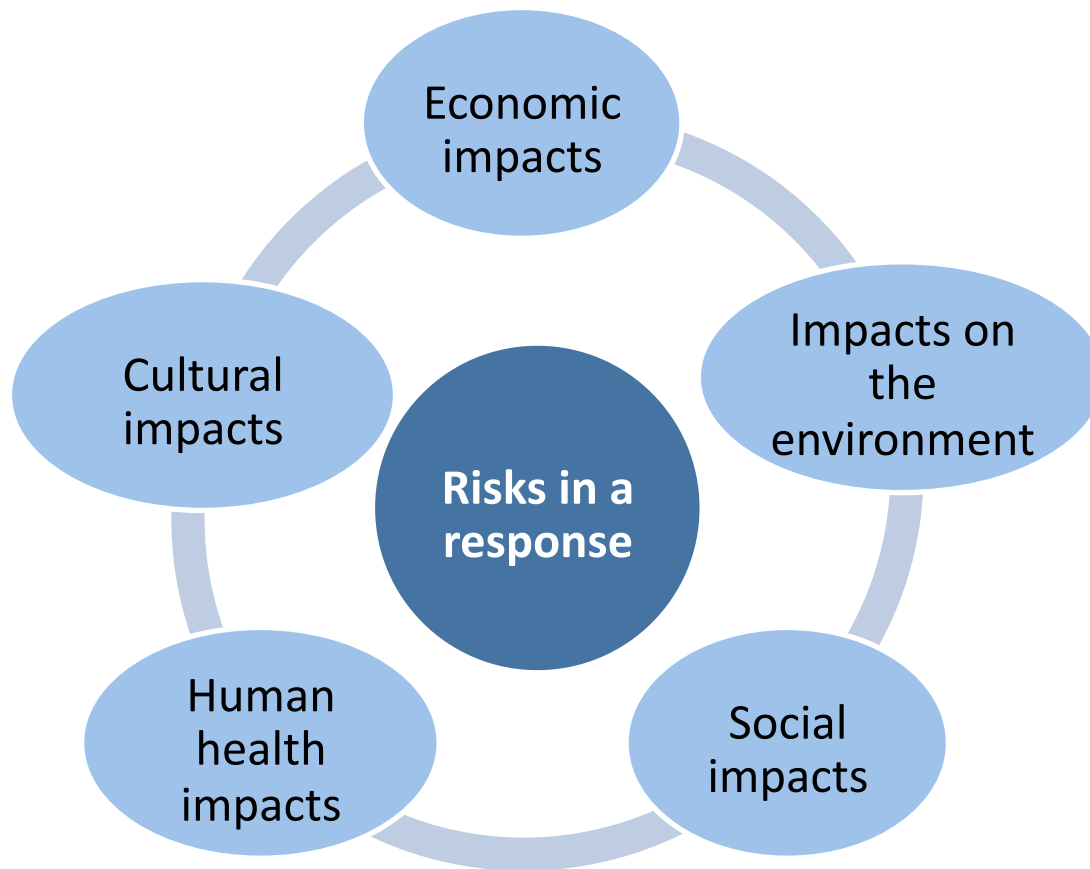
→ *Science based decisions*

- Risk assessment
- Management options
- Risk management



Modified from <http://intomillion.com/ideas-opinions/investment-finance/investments-with-zero-risk-true-or-false/>

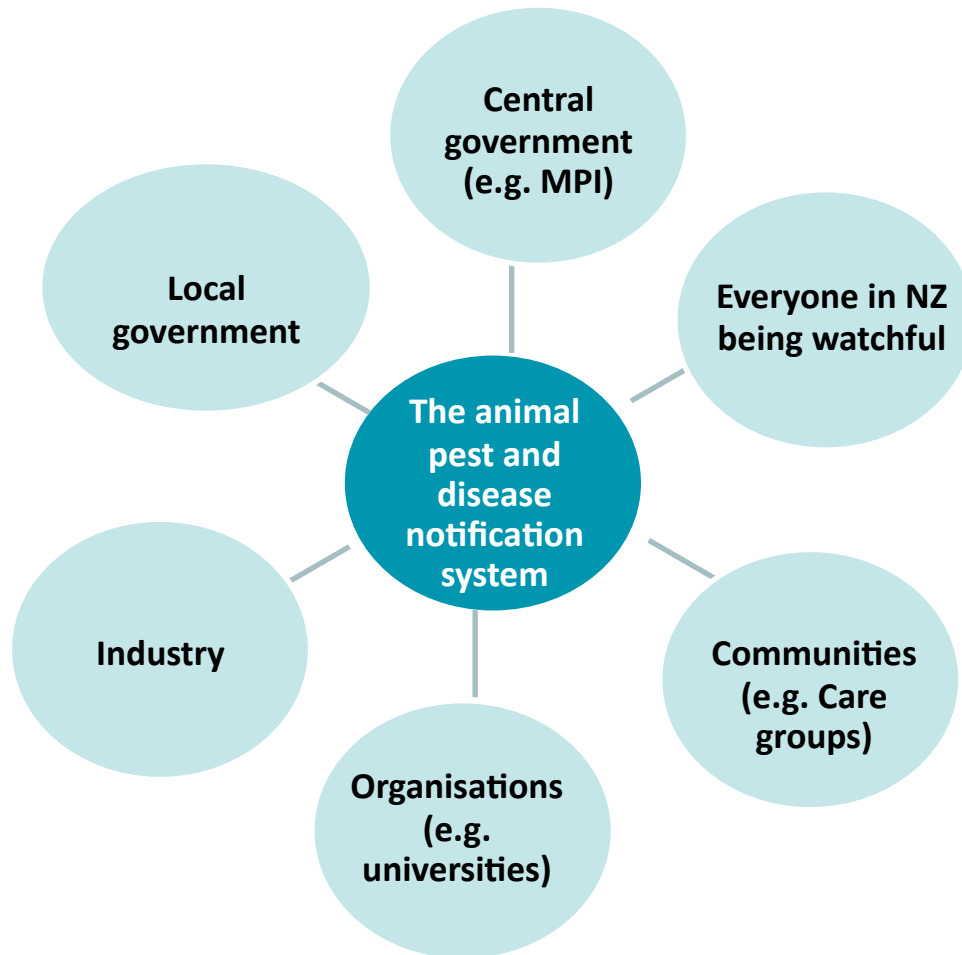
What risks do we consider in a response?



Risks associated with response activities



Biosecurity is a joint effort!



To report suspected exotic land, freshwater and marine pests, or exotic diseases in plants or animals, call:

0800 80 99 66

Ministry for Primary Industries
Manatū Ahu Matua



Prominent examples of responses



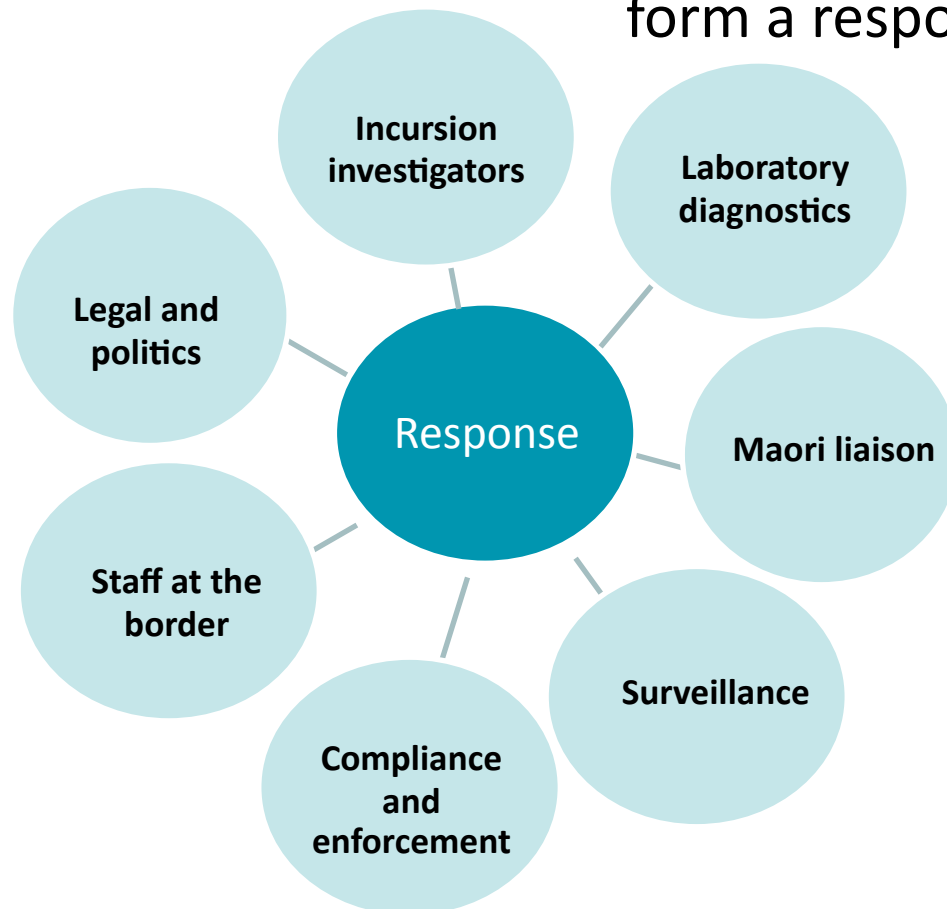
Undaria on monitoring rope in Sunday Cove. Photo: K. Blaemore, DOC



Pyp grass

Responses – When MPI is notified of a new pest or disease

People from across MPI come together to form a response team



Biosecurity response to sea spurge *Euphorbia paralias*



Aotea Heads near Raglan
Waikato west coast

Photo courtesy of Department of Conservation

Aotea Heads detection site



- Detection February 2012
- Population 3-4 years old
- First detection in NZ



Photo by Sarah Beadel

Response questions

- Potential impact?
- Entry pathway?
- Containment?
- Distribution?
- Risk management?

Eradication possible?



Photo by Sarah Beadel

Sea spurge: *Euphorbia paralias*

General characteristics

- Small coastal shrub
- Well adapted to establishment on sand dunes
- Propagation by seed
- Toxic sap
- Similar appearance to native *Euphorbia glauca*

Distribution

- Native to European Atlantic coast and Mediterranean
- First reports: Australia 1927
New Zealand 2012



Sea spurge habitat

- Coastal dunes
- Coastal gardens
- Sea walls
- Pebbly beaches
- Pasture
- Scrubland
- Tidal estuaries



Photo by A Neumann www.biopix.com



Potential Impacts

- Changes physical and ecological structure of sand dunes
- Threat to endangered species and nesting
- Reduced recreational quality
- Establishment: most of New Zealand coastline
- Spread: dunes, pasture, open scrub



Photo courtesy King Island National Resource Management Group Inc Tasmania 2010

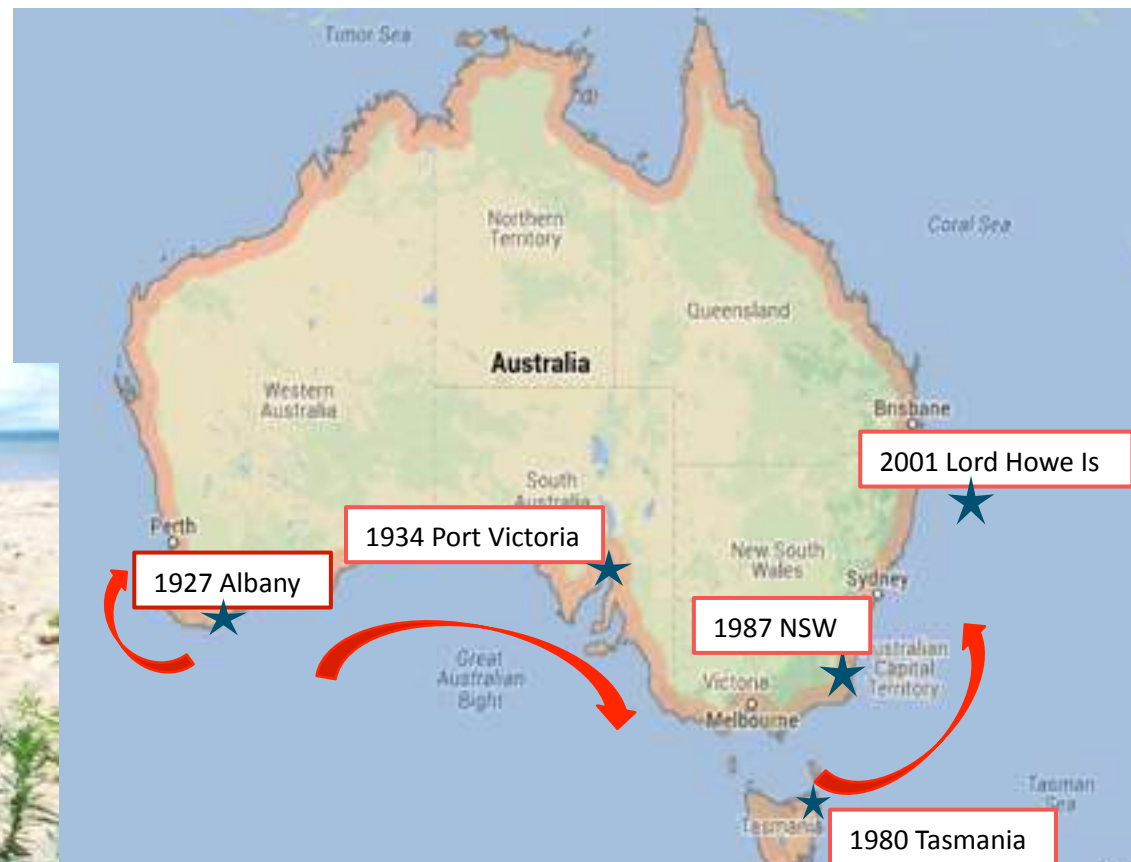
Wilson's Promontory National Park Victoria Australia

Entry pathway: Uncontrollable entry

Primary dispersal mechanism: seed floating on coastal and ocean currents

- Seeds float for up to 1000 days in sea water
- Seed survival:
 - 6 years in sea water
 - 10 years on land

More incursions possible!



Containment: not possible

- Erosion of detection site
- Seed dispersal on coastal current

Daughter populations possible



Distribution: Local survey

- 15km each side of detection site
- Harbours previous vegetation survey

No other populations found



Distribution: Waikato west coast

Aerial survey along Waikato west coast

High risk sites:

- Flotsam above high tide mark
- Vegetation on the incipient fore-dune
- Stream & creek mouths



**No other populations
detected**

Eradication possible?

Risk Management: eradication

Local surveillance: Prevent daughter populations establishing
Annual survey

Site Management: Prevent seed production
10 year programme



Photo courtesy of Trevor James



Risk Management: early detection

Raise awareness and promote early reporting

Where to look:

- Zone between high tide and highest storm surge
- Flotsam
- Coastal vegetation

Reporting:

- Call MPI exotic pest hotline
- Leave plants *in situ*
- Landmarks & GPS
- Photograph

To report suspected exotic land, freshwater and marine pests, or exotic diseases in plants or animals, call:

0800 80 99 66

Ministry for Primary Industries
Manatū Ahu Matua



Photo courtesy of Department of Conservation

Exotic *Euphorbia paralias* vs native *Euphorbia glauca*



E. paralias



Photo by Sarah Beadel

Invasive exotic weed

- Green flowers
- Small leaves
- Stems die after flowering



Photo by Phil Bendie www.terrain.net.nz

E. glauca



Photo by Phil Bendie www.terrain.net.nz

Threatened native species

- Red flowers
- Larger plant – leaves, stems
- Stems do not die after flowering

Acknowledgements

Sea spurge response working group:

DOC Waikato Area Office & Head Office
Waikato Regional Council
Ministry for Primary Industries

Kaitiaki from Aotea, Kawhia and Raglan

David Peacocke

Technical Advice

Peter de Lange DOC
Willem de Lange University of Waikato
Mike Hilton Otago University
Trevor James AgResearch
Jon Marsden-Smedley University of
Tasmania

Waikato west coast survey:

Richard Calvert AsureQuality
Sarah Beadel Wildland Consultants
Alister Boyd Heliworx

