



# Environmental Health at the sharp end Managing responses in NZ

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*Growing and Protecting New Zealand*



[www.mpi.govt.nz](http://www.mpi.govt.nz)

# Welcome to New Zealand 😊

**“New Zealand is the most trusted source of high value natural products in the world”**

- Responses have the potential to damage this trust and have huge financial impact on the economy.
- Employed by MPI who are responsible for protecting NZs borders and eradicating or managing pests that get through the border

# What types of responses do we cover?

Different types of responses:

- **Biosecurity responses** (pests and diseases)
- **Food responses** (Hepatitis A in berries)
- **Adverse events** (Floods/Droughts/ tropical storms)
- **Business disruption (earthquakes)**
- **Trade responses** (labelling issues)
- **Bio terrorism** (Operation Concord)
- Plus a great deal of **readiness** work (FMD and BMSB)

# Different layers of protecting New Zealand's borders

## THE MULTIPLE LAYERS OF NEW ZEALAND'S BIOSECURITY SYSTEM

Biosecurity pressures on the border



Passengers



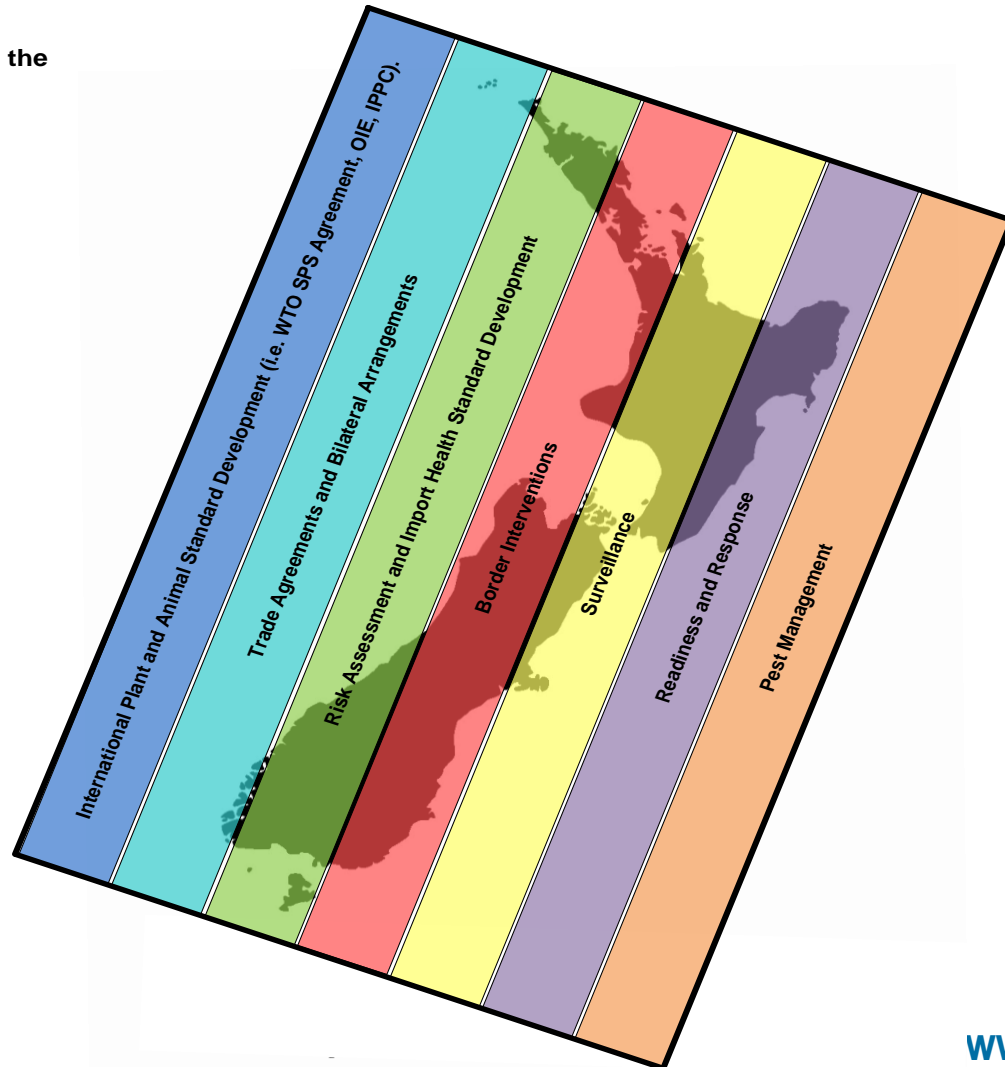
Cargo & Mail



Craft

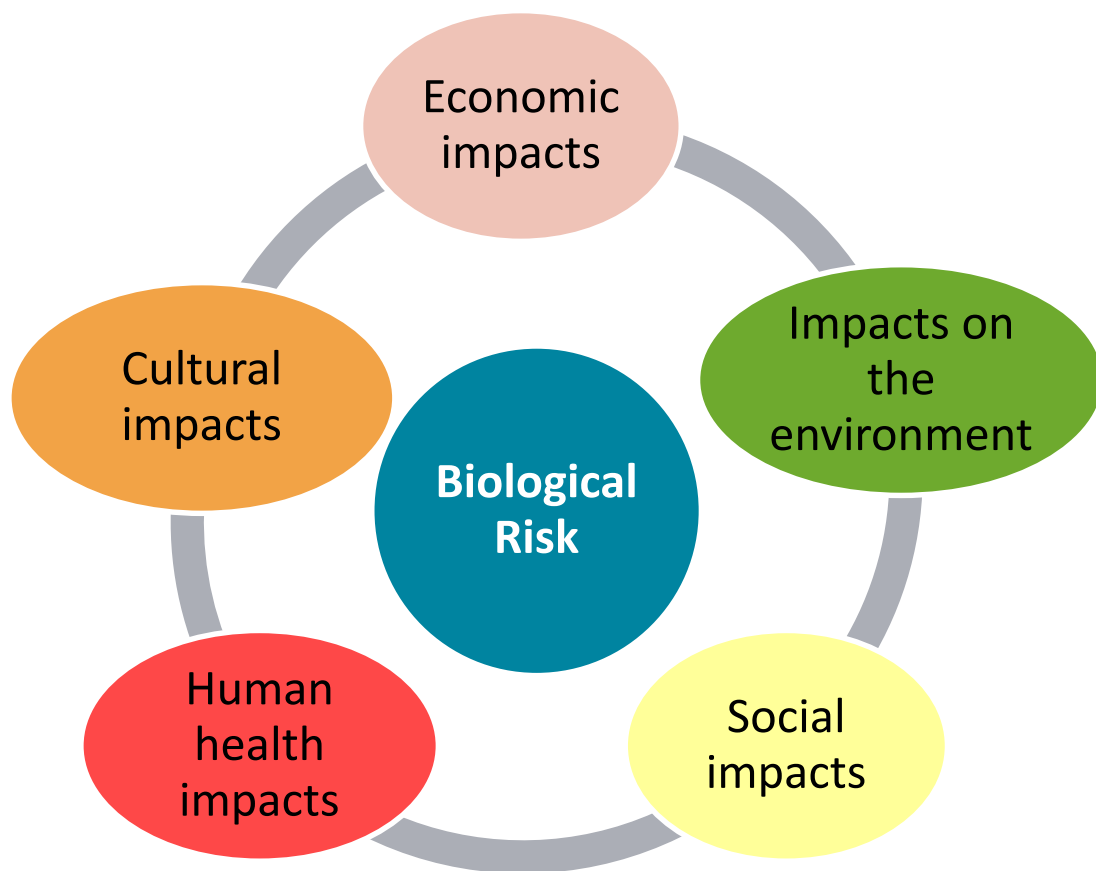


Wind, tidal currents, rain



'Assured' New Zealand Exports

# What do we consider when deciding to respond?

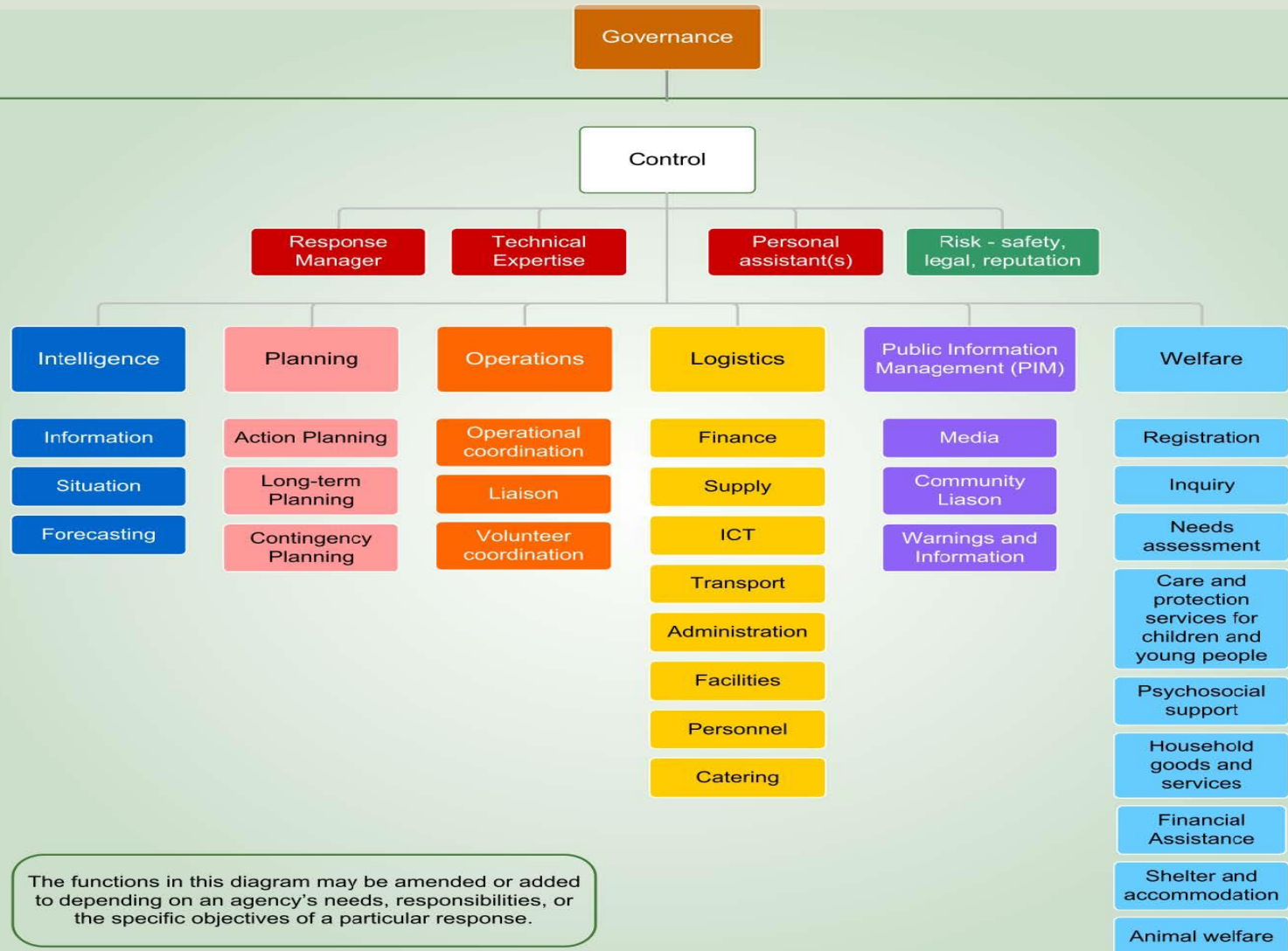


# Inputs into a response



# How do we structure a response team ?

## CIMS / SSRM



# What are the benefits of using CIMS?

- Very similar to AIMS, and NIMS
- Is flexible and scaleable
- Gives a consistent approach to managing each response
- Gives staff on responses a clear expectation of their roles and responsibilities
- Used across government allowing use of staff from a range of departments

# Examples of responses mounted

- Mycoplasma bovis
- Velvetleaf
- Queensland Fruit Fly





# Mycoplasma bovis



# What is *Mycoplasma bovis*?

- ***Mycoplasma bovis* is a bacterial disease that causes illness in cattle including mastitis, abortion, pneumonia, and arthritis.**
- **It occurs commonly in most cattle producing countries around the world.(only Norway does not have the disease)**
- **Unusual in that the bacteria can sit in cow, but not trigger any autoimmune response and be undetectable until it starts shedding cells.**
- **It does not infect humans and is not a food safety risk.**
- **If allowed to establish in NZ increase farming overheads to the dairy and cattle industry..**

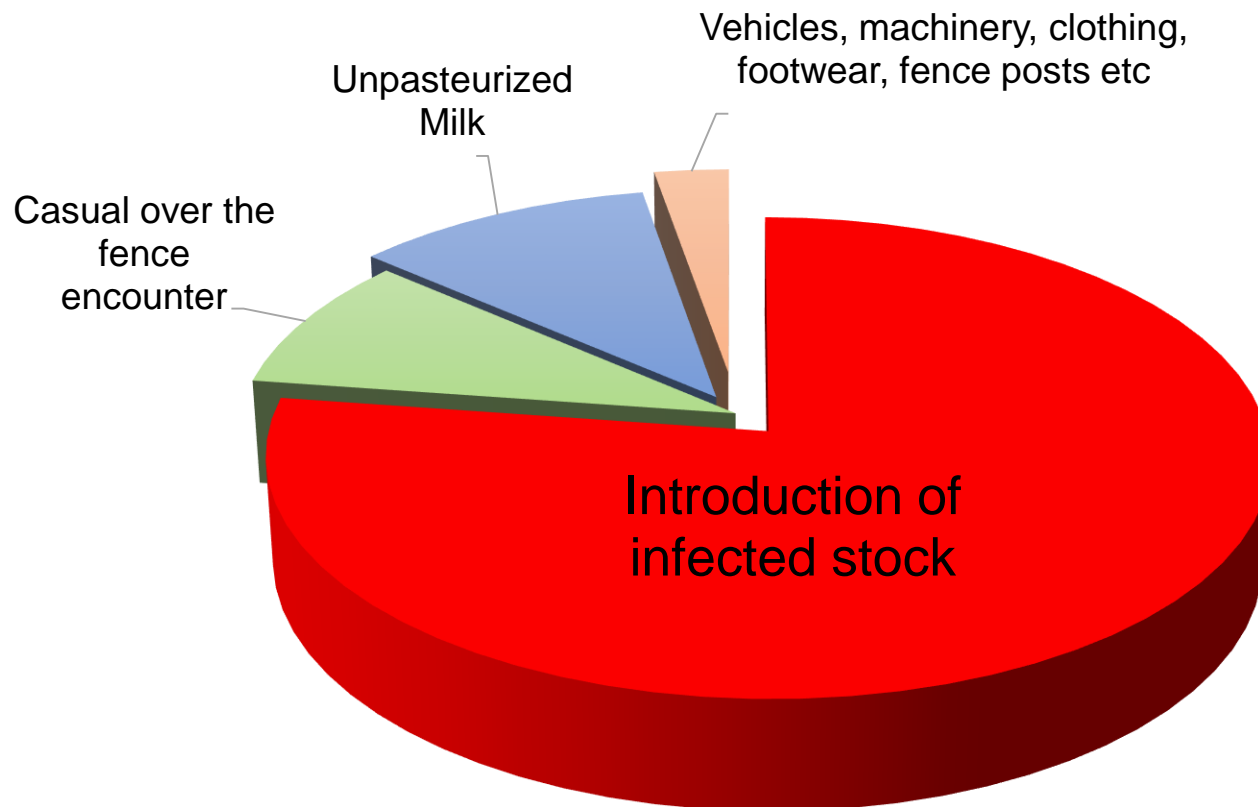
# What have we done so far?

## **Disease first detected on 21 July 2017:**

- 150-200 staff involved in response to *Mycoplasma bovis*
- Over 120,000 tests completed - national, regional, district and local levels including a national milk surveillance programme
- Looked at more than 1100 trace properties
- 24 infected properties around NZ
  - In clusters in Southland, Otago, Canterbury and Hawkes Bay.
- Seven infected herds so far culled (around 4,800 cattle)

**Aim is still to eradicate this disease, if at all possible.**

# How does the disease spread?



# The importance of tracing

- Classical epidemiological approach
- Trace backwards and test to identify where disease came from
- Trace forwards to test farms that received animals.
- Proving problematic as inadequate movement records kept

# These investigative principles are not new!



# How are we testing?

- Blood tests based on serology – require very large numbers per herd to give confidence
- PCR testing of bulk milk and mastitic milk (rolled out nationally to 12000 dairy farms)
- Swabbing (nasal and tonsillar) but difficult to do and often easier to do at abattoir when heads cut off

# How long will eradication attempt continue?

- Until there is evidence that the disease has spread to a point where we cannot achieve this aim.
- If it is considered technically infeasible
- If the cost of eradication exceeds the cost benefit analysis
- THEN move to attempts to control the disease and mitigate the risks.

# Velvetleaf 2016/17



# What is velvetleaf?

- Weed found in Europe, Asia and North America
- Produces up to 17000 seeds per plant
- Seeds may last in soil for 50 years
- Out-competes crops for light and nutrients
- Estimated up to 30% crop losses



# Why worry about it?

Year 1: *Minimal velvetleaf*

2-3 plants that seeded in 1 to 2 hectares

Year 2: *Rapid spread*

10-20 thousand plants

Year 3: *Widespread*

Hundreds of thousands of plants over 34 hectares



# Background

- Late February - MPI first made aware of velvetleaf found in fodder beet in Canterbury
- MPI notified by seed importers of further four cases
- MPI stood up a response in conjunction with industry partners



# How did it get here?

- Tracing identified 6 seed lots delivered to over 300 farms across the country (and possibly many more)
- These were certified free by importing country
- Tracing records of sales often incomplete
- Notice of direction served on seed merchants to recover contaminated seed lines



# How difficult can it be to find?



# Urgent Measures phase of the response

- To control further spread and preserve response options
- Focus on seed testing and search & destroy programme
- **National eradication** is unlikely to be achievable in short to medium term
- Focus is now on containing spread and working towards **local elimination** in lesser infected areas- particularly by raising farmer awareness

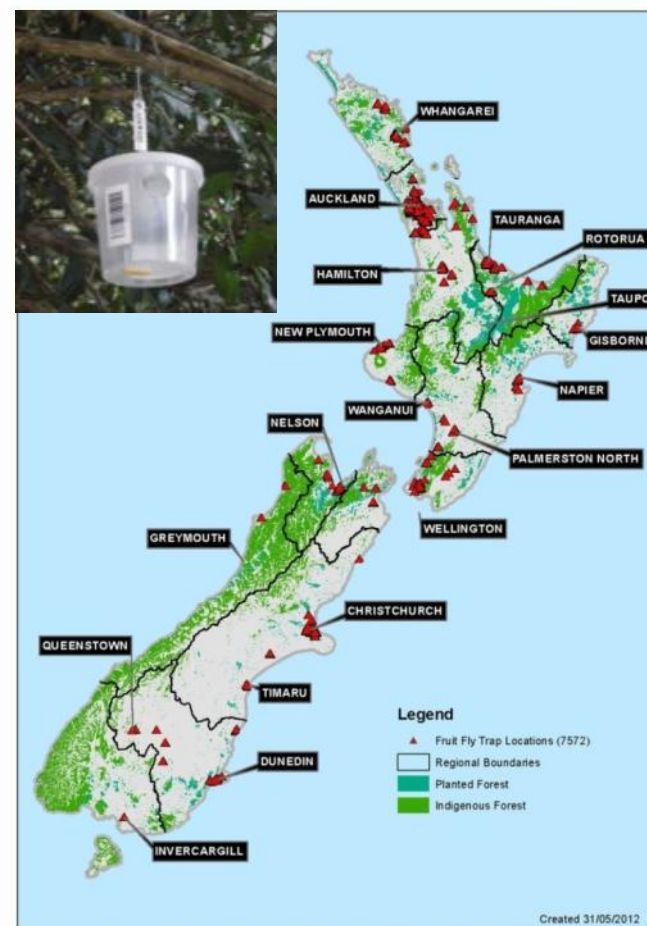


# Queensland fruit fly



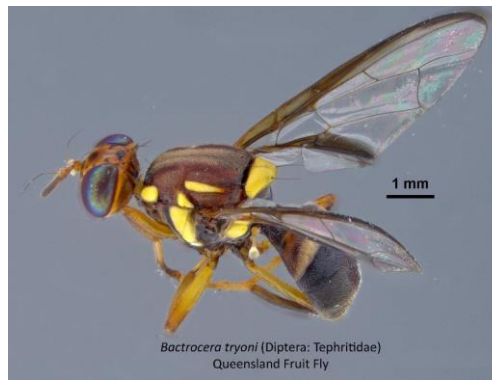
# Fruit fly surveillance in New Zealand

- 7572 fruit fly traps in NZ
- 400m grid in urban areas
- Auckland has most traps
- Traps cleared fortnightly
- Brief winter stand down of surveillance programme



# Fruit fly detection 2015

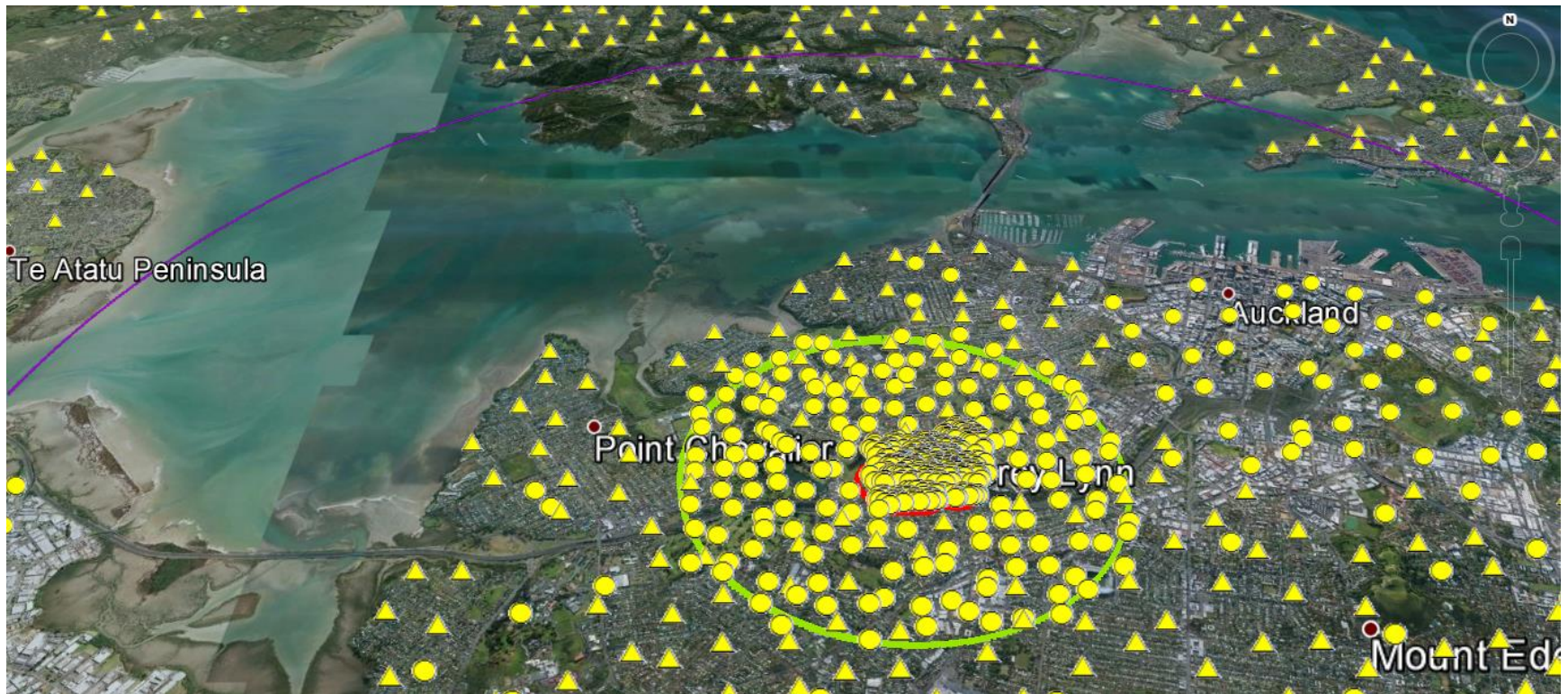
- 16 February – 6 March 2015 – 13 males trapped in Grey Lynn
- 20 Feb – female submitted by member of public
- Detection of larvae in fruit provided evidence of a small establishing population
- An eradication programme was initiated



# Routine Surveillance Traps



# Response traps



# Infested properties



# Response activities

- Movement controls
- Communications
- Trapping
- Host monitoring
- Organism management
- Welfare
- Fruit collection



## QUEENSLAND FRUIT FLY

A single male Queensland fruit fly has been found in the Auckland Suburb of Grey Lynn. If established this insect could have serious consequences for New Zealand's horticultural growers.

A Controlled Area has been placed around the location of the find, taking in parts of Grey Lynn, Western Springs, Mt Albert, Ponsonby and Kingsland.



**Controlled Area**

**YES can leave zone** ✓

**NO cannot leave zone** ✗

**Root vegetables and leafy vegetables**

**Whole fruit and some vegetables**

For more information visit [www.mpi.govt.nz](http://www.mpi.govt.nz) or call 0800 80 99 66

New Zealand Government  
Ministry for Primary Industries  
Manatū Ahu Matua

# FHQ Entomology Laboratories



- Purpose built laboratories with diagnostic and rearing facilities

# Incubation Lab set up



# Close-out

- Reduced activities over winter
- Some activities resumed in spring
- Eradication declared in December 2015 based on no further finds and generation modelling

**Thank you**

**Any questions ?**

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