

A satellite view of New Zealand, showing the North and South Islands, with the surrounding ocean and parts of the Pacific and Indian Oceans visible. The image is oriented vertically, with the top of the page showing the top of the islands.

# *I'm as sick as Parrot*

Why Biosecurity  
surveillance is  
~~important~~ essential  
for you

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# A brief chat about Biosecurity Surveillance

- MAF Biosecurity NZ – who are we?
  - 54 seconds (+/- 23.4 seconds)
- What surveillance do we do?
  - 1.17 (p=00.5)
- What health related surveillance do we do?
  - 6.27 (upper CI 8.43, lower CI 3.22)
- Why do we do it & why you should do it to?
  - 2.02 (1.13 margin of error – probably)

'Ello, Miss I wish to register a complaint. What do you mean "miss"? I'm sorry, I have a cold. Anyway I wish to make a complaint! We're closin' for lunch.

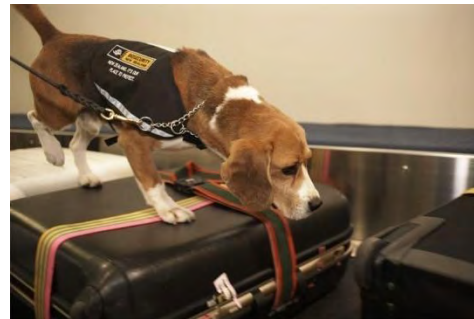
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# Surveillance Group, MAF Biosecurity NZ

## Who are we?

- MAF Biosecurity New Zealand
- Post Border Directorate
  - Surveillance Group: two teams
    - Plants, Environment and Marine
    - Animals



Never mind that, my lad. I wish to complain about this parrot what I purchased not half an hour ago from this very boutique.

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# The Biosecurity journey for exotic pathogens: Find, Identify, Eradicate

- Surveillance (look for it)

*In suspicion we trust*



- Incursion & Diagnostics (Investigate it)



- Response (Eradicate it)

*We kill because we care*



Oh yes, the, uh, the Norwegian Blue...What's,uh...What's wrong with it?

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# What is biosecurity surveillance?

Biosecurity surveillance is the collection, collation, analysis, interpretation and timely dissemination of information on ***presence, distribution or prevalence of risk organisms.***



I'll tell you what's wrong with it, my lad. 'E's dead, that's what's wrong with it!

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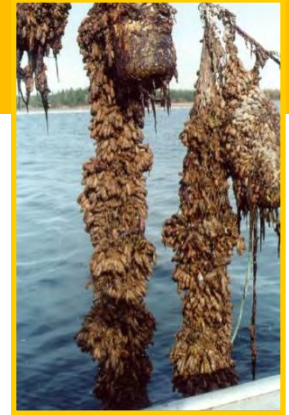


# Why we undertake surveillance

- Detect incursions of exotic risk organisms early
  - to allow optimal management
- Demonstrate freedom from risk organisms
  - to aid international trade
- Monitor emerging risk organisms and threats
  - to mitigate risks to New Zealand
- Describe the distribution and prevalence of risk organisms within New Zealand
  - to assist biosecurity decision making

# Surveillance context – how do risk organisms get here?

- Risk organisms can be introduced on/in:
  - animals and animal products
  - humans and their baggage
  - inanimate objects
  - plants and plant products,
  - On and in vessels arriving by sea or air.
- Primarily surveillance post border focus on non indigenous pests/diseases



Look, matey, I know a dead parrot when I see one, and I'm looking at one right now.

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# **Current animal disease surveillance programmes**

**Passive reporting**

**Active searching**

No no he's not dead, he's, he's restin'!  
Remarkable bird, the Norwegian Blue, Beautiful plumage!

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# Passive animal disease surveillance

- Awareness programme of significant exotic diseases
  - Notifiable Organisms under the Biosecurity Act 1993
- Reporting using the exotic disease and pest hotline
  - Free phone (0800 80 99 66)
- Investigation and Diagnostic Centres (IDC)
  - Incursion investigators
  - Animal Health Laboratory
- Syndromic and diagnostic information from MAF approved veterinary laboratories
- Independent expert advice
  - Eg Academic research, Massey University Wildlife & Epi Centre

# Active Animals Surveillance Programmes .1

- Transmissible Spongiform Encephalopathy (TSE), neurodegenerative diseases comprising:
  - Bovine Spongiform Encephalopathy (BSE) in cattle
  - Chronic Wasting Disease (CWD) in deer
  - Scrapie in sheep
- Sampling from animals exhibiting clinical signs
  - Farmer reports to veterinarian
- Tissue samples sent to approved veterinary diagnostic laboratories



# Active Animals Surveillance Programmes .2

- Avian influenza surveillance

- Viruses of interest: H5 and H7 avian influenza virus subtypes
- Sampling in Migratory Waterfowl



- Ruminant Protein Control Programme

- Ruminant feed (stopping TSE transmission)
- Auditing feed mills



# Active Animals Surveillance Programmes .3

- Arbovirus surveillance programme
- Organisms of interest:
  - *Culicoides spp.* (biting midges)
- Diseases of interest:
  - Bluetongue virus (multiple serovars)
  - Epizootic haemorrhagic disease virus
  - Akabane viruses
- Method:
  - Blood samples from sentinel herds
  - Light traps to capture midges



There, he moved! No, he didn't, that was you hitting the cage! I never!!  
Yes, you did!

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# Active Animals Surveillance Programmes .4

- Domestic and International Reporting
  - International reporting to the OIE
  - Surveillance magazine  
<http://www.biosecurity.govt.nz/publications/surveillance/index.htm>
- Short term targeted programs
  - Eg *Mycoplasma Bovis* in dairy cattle
- Design of future programs
  - Avian influenza sentinel surveillance - Scenario tree modelling



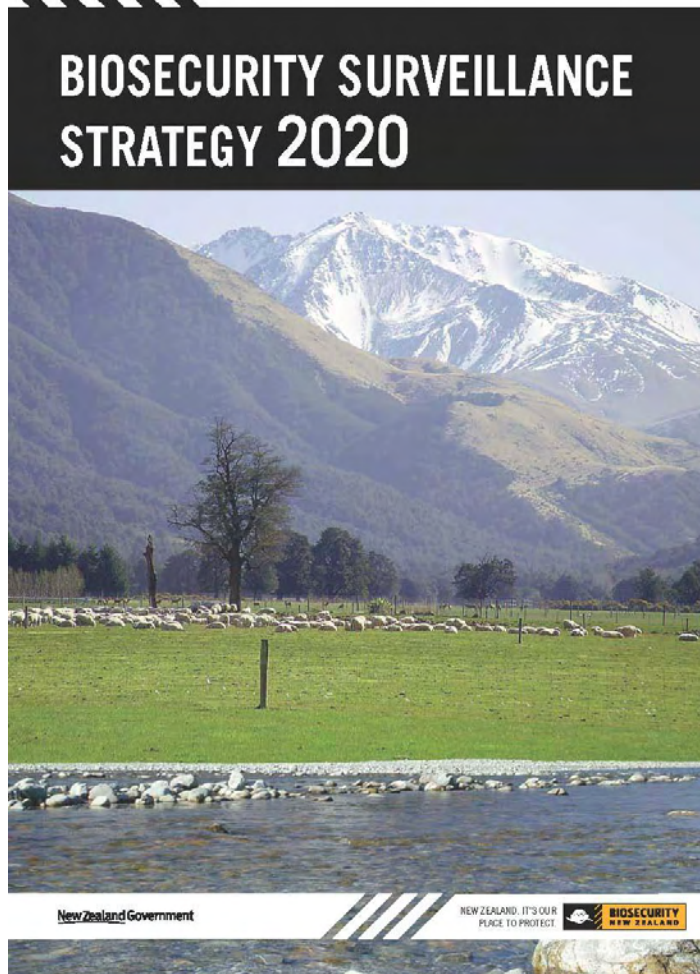
'ELLO POLLY!!!! Testing! Testing! Testing! Testing! This is your nine o'clock alarm call!

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# Biosecurity Surveillance Strategy

*“Working together to achieve efficient and effective surveillance”*



The implementation of this strategy will change the way surveillance is led, planned, delivered and communicated.

Now that's what I call a dead parrot.

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# Benefits: The Biosecurity surveillance strategy, and its implementation, is expected to result in:

1. Developing a prioritisation system
  - more efficient use of resources
2. Clarification of the needs, roles and responsibilities
  - improved collaboration and greater integration
3. Consistent quality measures
  - high quality biosecurity surveillance outputs that give improved confidence in New Zealand's biosecurity surveillance systems
4. Governance and resourcing models for working together
  - improved decision-making and increased resourcing options

# Benefits: The Biosecurity surveillance strategy, and its implementation, is expected to result in:

5. Improved handling and sharing of data
  - increased information value
6. Identifying future needs and developing capability
  - appropriate supporting infrastructure
7. Identification and closing of knowledge and science gaps
  - biosecurity surveillance programmes using the most appropriate available science and technology

# Where are we?

- Surveillance Strategy launched by Minister 16 February 2010
- Surveillance strategy implementation
  - Governance
  - Biosecurity Surveillance Decision making and Prioritisation
  - Identifying High Priority Biosecurity Surveillance Needs

Now look...now look, mate, I've definitely 'ad enough of this. That parrot is definitely deceased, and when I purchased it not 'alf an hour ago, you assured me that its total lack of movement was due to it bein' tired and shagged out following a prolonged squawk.

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# So why do we do it?

Why is biosecurity surveillance important ? ...

... and why it is becoming more important ?

- **The Risks are increasing:**
  - Increasing volume of trade goods arriving
  - Increasing volume of international passengers arriving
  - Increasing diversity in source regions
  - Environmental changes



Well, he's...he's, ah...probably pining for the fjords.

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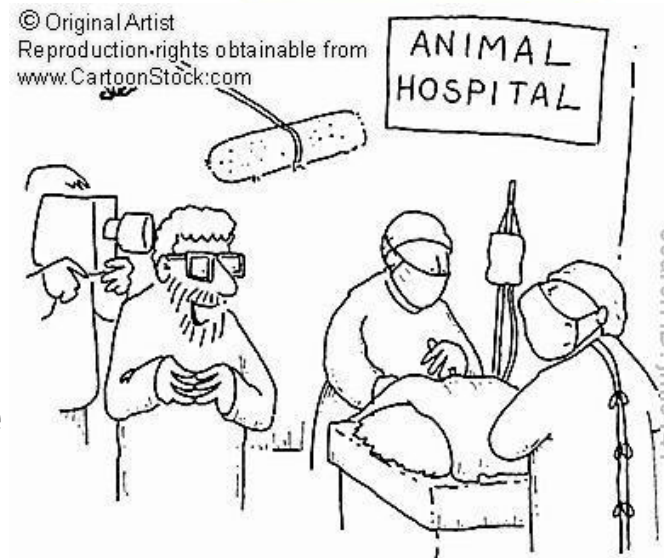
# >30 emerging diseases in the last 30 years, many zoonosis, and they continue:

- Avian influenza (LPAI), poultry - Denmark: H7, OIE
- Avian influenza, human (22): Egypt
- Avian influenza, human (23): Viet Nam (HN)
- Chronic wasting disease, cervid - USA (06): (UT)
- Chronic wasting disease, cervid - USA (07): (KS)
- Influenza pandemic (H1N1) (23): WHO Update
- Influenza pandemic (H1N1) (24): mutation analysis
- Malaria - USA ex Uganda
- Rabies, canine, human - Indonesia: (BA)
- Salmonellosis, salami - USA (07): black & red pepper
- Staph. aureus (MRSA), porcine - Canada
- Undiagnosed illness, water-borne - India: (MC), RFI

# Communicable disease threats are Increasing

## How are we and YOU going to do something about this?

- Carry on as we are
  - Silos are nice, safe, its what we do, we know them
- Surveillance by sticking your head in the sand
  - It is sustainable – but does it work?
- Recent history suggests we're not good at crystal ball gazing
  - SARS. Caught us by surprise
  - HPAI. We planned for this, it never came
  - Influenza A (H1/N1) 09. Caught us by surprise
    - Low pathogenic, questionable zoonotic component



"Can you tell what it is yet?"

# So we need to join up more. This may be obvious – but in practice it isn't straightforward

- There are practical challenges for 'One-world-one-health' surveillance when human and animal health priorities differ
  - *"The human/animal disease interface is fraught with competing agendas"*  
Nature 459, 889 (18 June 2009)
- Who owns health?
- Right is not a constant
  - What we do surveillance for is a jigsaw puzzle
    - For which we will never have all the pieces
    - The picture evolves continuously
  - Depends on where you are in the biosecurity continuum
    - Central vs local agencies
    - Health vs other Government Depts
  - Depends on where you are in the outbreak/monitoring stage
    - before, during and after

Look, I took the liberty of examining that parrot when I got it home, and I discovered the only reason that it had been sitting on its perch in the first place was that it had been NAILED there.

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# We Need to Share ... *Yeah Right!*

- Shared risk
  - Greater interdisciplinary engagement
  - Greater interagency engagement
- Shared funding
  - Pooling of limited resources
  - Joint prioritisation - decision making processes
- Shared thinking
  - Joint policy and research agendas
- Why, because surveillance will **ALWAYS** be a compromise
  - Trade off: how complete/how accurate vs how timely
  - So the more the better because jigsaw puzzles have many pieces

Well, o'course it was nailed there! If I hadn't nailed that bird down, it would have nuzzled up to those bars, bent 'em apart with its beak, and VOOM!  
Feeweewee!

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# The Challenge to 'Institutionalised' Sharing

- Willingness to change
  - Traditions (human vs veterinary medicine)
- Functional/operational changes
  - Avoid unnecessary bureaucratic structures
  - Ministry of Everything

"VOOM"?!?! Mate, this bird wouldn't "vroom" if you put four million volts through it!  
'E's bleedin' demised! No no! 'E's pining!

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# So how might we do this .....

- Establish the OWOH link
  - Getting all on board
- Agreeing to a common agenda
  - Scope, diseases of interest
- Creating a policy environment to support it
  - Aligning policy, generating funding etc
- Building an infrastructure to deliver it
  - Training/education, Govt Depts able to implement

'E's not pinin'! 'E's passed on! This parrot is no more! He has ceased to be! 'E's expired and gone to meet 'is maker! 'E's a stiff! Bereft of life, 'e rests in peace!

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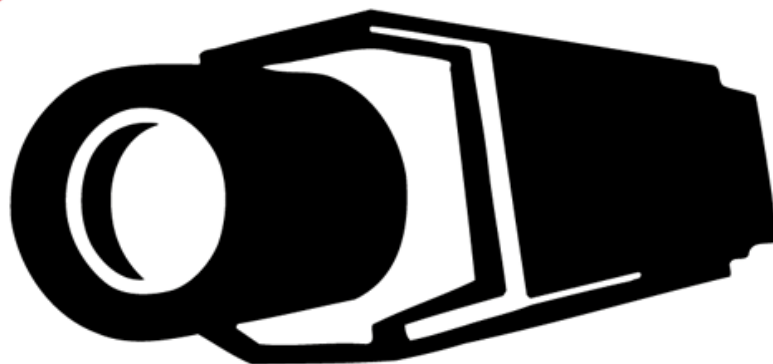
# Why joined up Surveillance is a Must and not a nice to do. The Pathogen's Perspective

- Pathogens don't worry about boundaries
  - Species, political, geographic, disciplinary or Ministerial
- From a pathogen's perspective we are all the same
  - A meal ticket – any warm body will do
  - It doesn't matter if it has two legs or four

If you hadn't nailed 'im to the perch 'e'd be pushing up the daisies! 'Is metabolic processes are now 'istory! 'E's off the twig! 'E's kicked the bucket, 'e's shuffled off 'is mortal coil, run down the curtain and joined the bleedin' choir invisible!!  
THIS IS AN EX-PARROT!!

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WHEREVER YOU GO, WHATEVER YOU DO, WHOEVER YOU ARE,

# YOU ARE UNDER SURVEILLANCE

BECAUSE YOU ARE A POTENTIAL CRIMINAL. PERHAPS YOU SECRETLY DOUBT THE SANCTITY OF CORPORATE PROPERTY, OR THE VALIDITY OF LAWS MADE BY THE RICH TO GOVERN THE POOR, OR THE SOUNDNESS OF CAPITALISM ITSELF—WE CAN'T AFFORD TO ASSUME YOU DON'T. THAT'S WHY THERE ARE VIDEO CAMERAS POINTED AT EVERY CASHIER AND POLICE CARS CIRCLING EVERY BLOCK. LEFT TO ITSELF, A STATE OF DISORDER AND INEQUITY RETURNS TO EQUILIBRIUM; OUR JOB IS TO PERPETUATE THIS ONE INDEFINITELY.

*in suspicion we trust*

INTRODUCING BIOSECURITY NEW ZEALAND