

Avian Influenza Preparedness for Kiwi Practitioners

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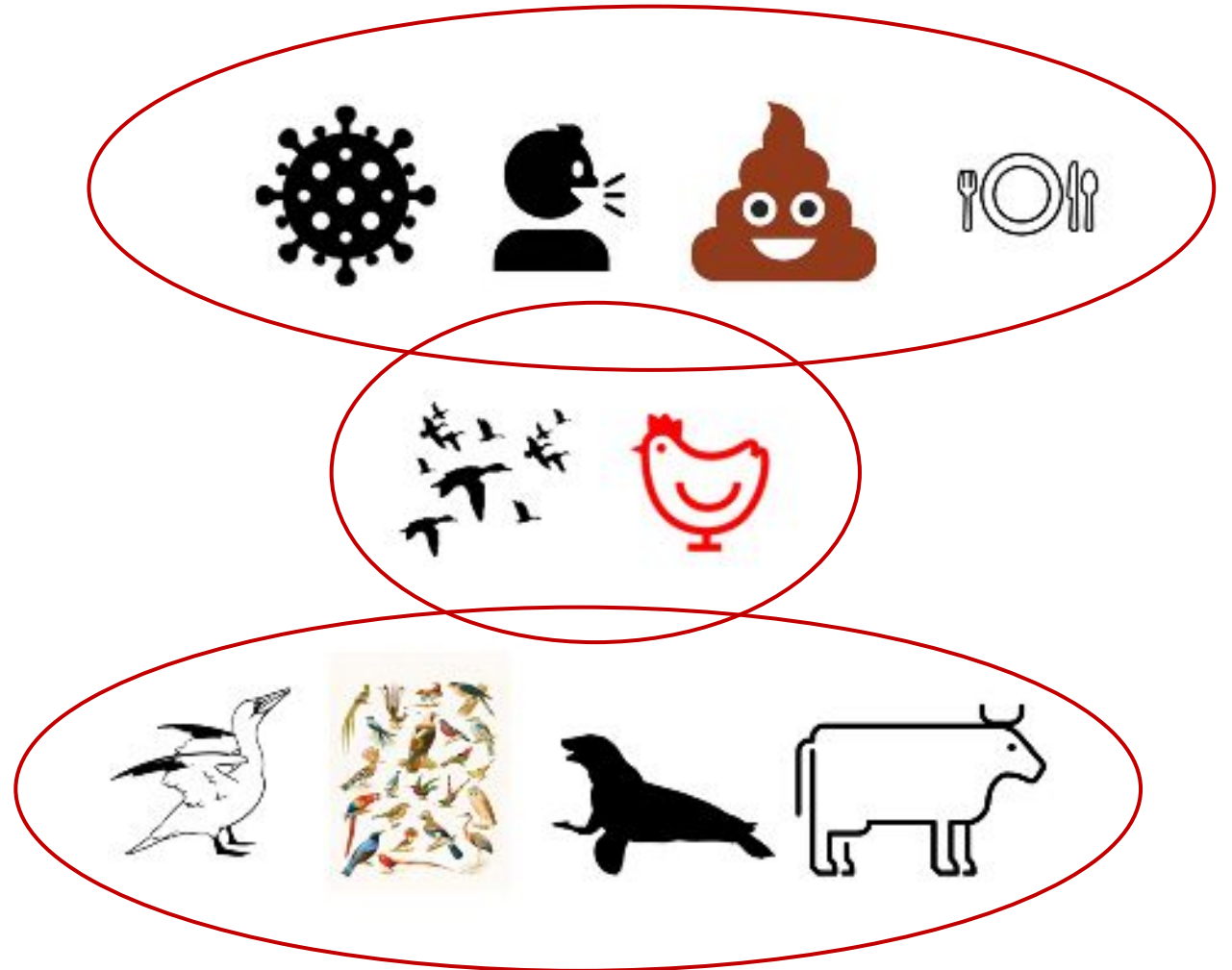
Rowi: Image courtesy of DOC

Overview

- What is HPAI?
- Global situation
- Key groups of animals affected and how this has changed over time
- Risk to NZ and what will happen if it reaches NZ
- Biosecurity Planning and Risk Pathways
- Surveillance and Reporting
- DOC Preparedness and the AI Vaccine Trial

What is High Pathogenicity Avian Influenza (HPAI)?

- High vs Low Path Strains
- Historical outbreaks vs now
- **H5N1 Clade 2.3.4.4.b**
- How is it spread?
- Clinical signs
- [Video - Google Photos](#)



Global Situation: HPAI H5N1 clade 2.3.4.4.b

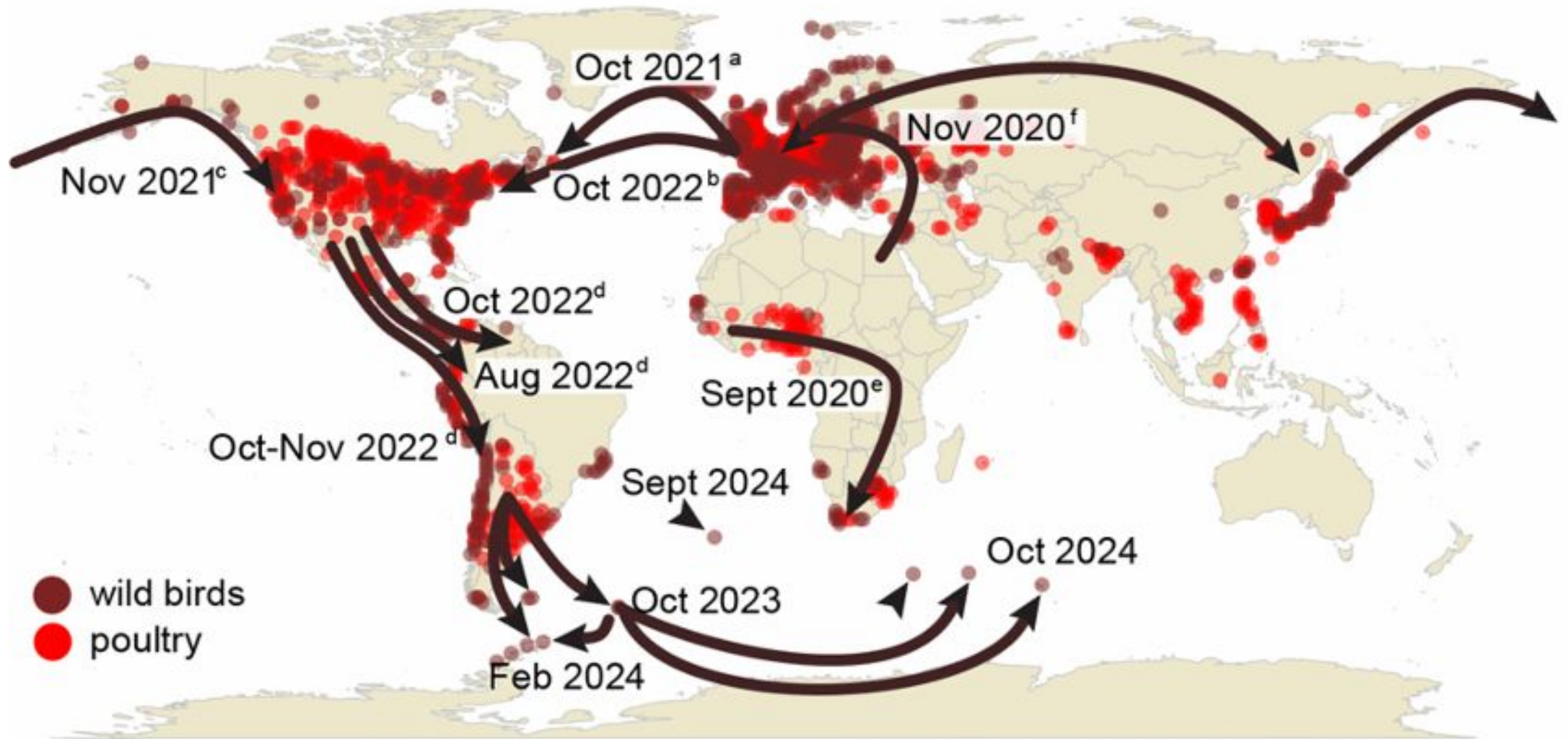


Figure 3: H5 HPAI outbreaks in poultry and wild birds in recent years. Arrows and dates indicate the approximate timeline of geographic spread (courtesy of [Michelle Wille](#)).



Key Bird Groups Affected



- **Waterfowl:** Ducks, geese, swans, and grebes are the primary natural reservoirs and carriers of the virus, though many species suffer high fatalities.
- **Seabirds:** Gulls, terns, gannets, albatrosses, and penguins. Species that breed in dense colonies face rapid transmission rates.
- **Shorebirds:** Plovers, stilts, sandpipers, and godwits.
- **Birds of Prey:** Raptors, including peregrine falcons, bald eagles, and owls, are highly susceptible. They typically catch the virus by feeding on infected, sick or dead wildlife



HPAI in m

HPAI in m
New December 2022 – March 2



H5N1 HPAI detec
▲ Birds (domestic)
● Birds (wild)
■ Mammals



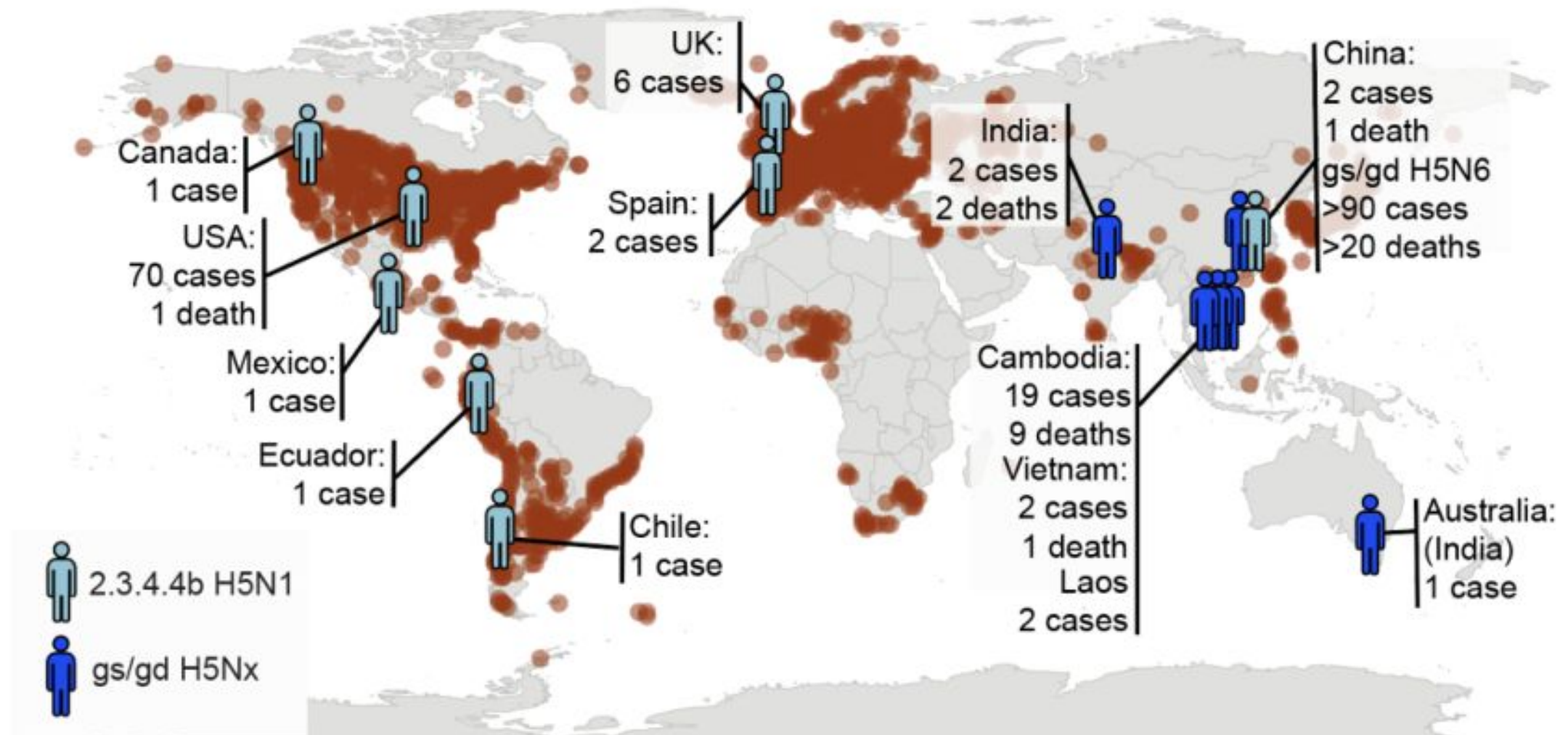
What You Need To Know About Bird Flu in Dairy Herds

frican
frican mark (Neogale vison)
r leopard (Panthera pardus)
r tiger (Panthera tigris)
cat (Lynx rufus)
lenose dolphin (Tursiops truncatus)
m bear (Ursus arctos)
(Felis catus)



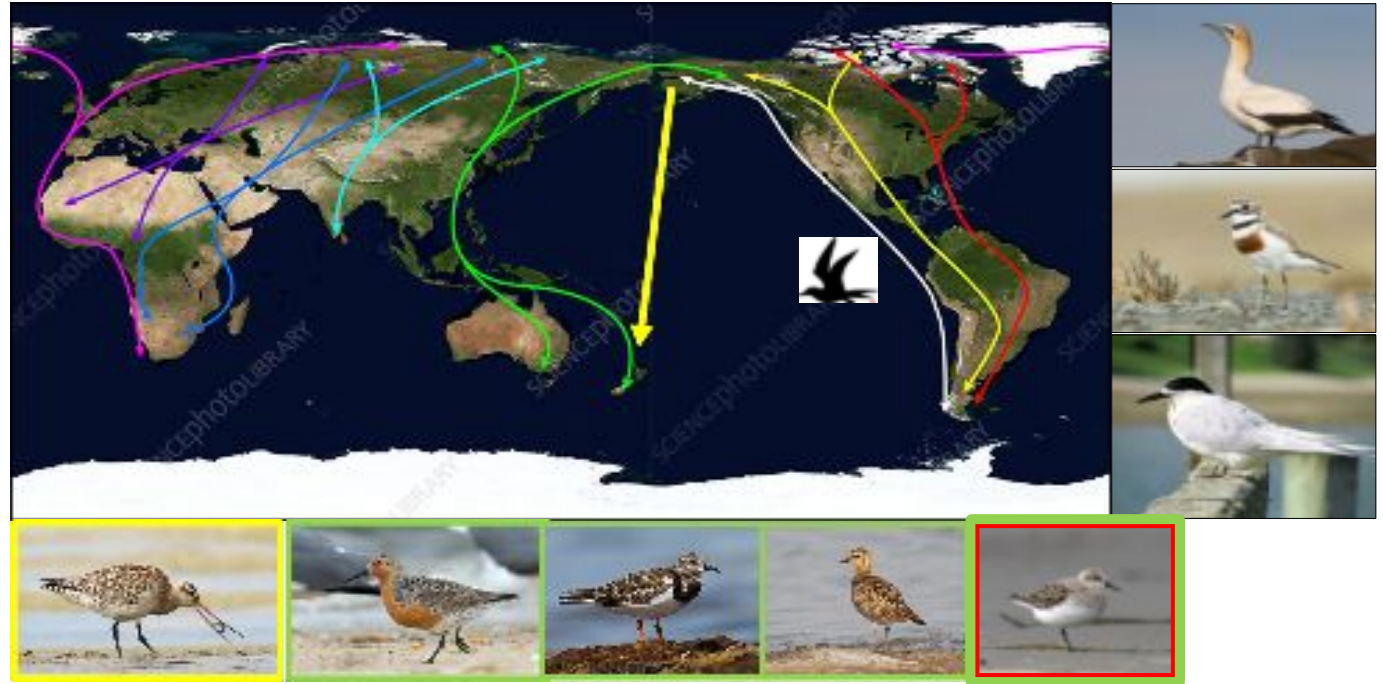
Urhart : Image Courtesy bioRxiv/Cold Spring Harbor Laboratory.

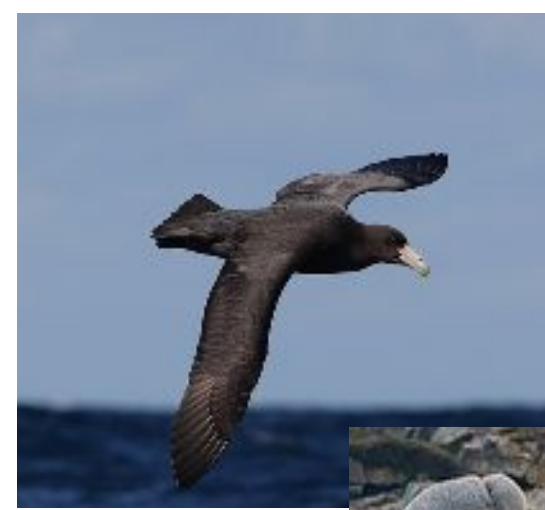
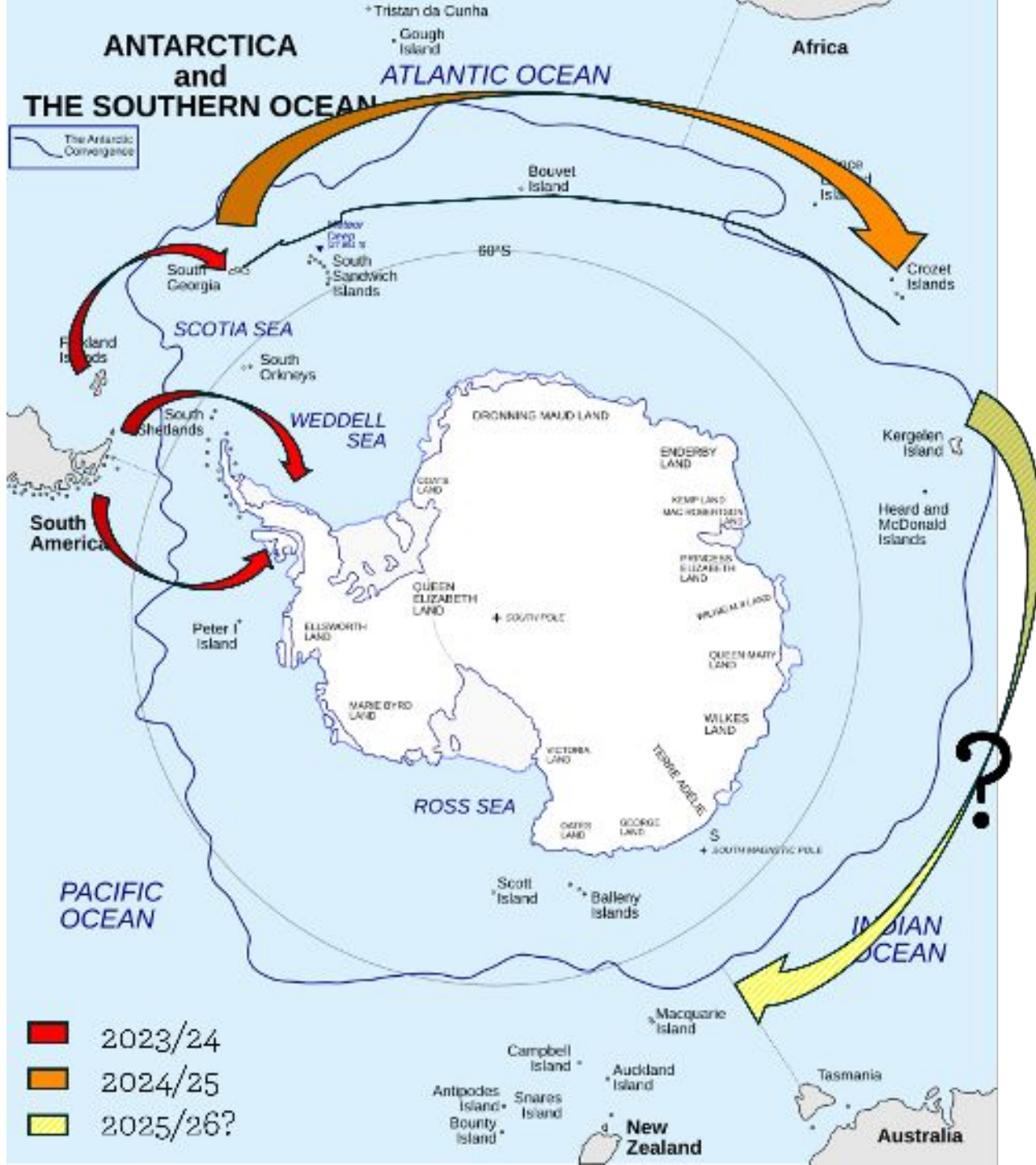
HPAI in humans



Risk to NZ

- **Migratory birds**
 - No waterfowl
 - 4-5 seasons; not arrived
- **Poultry Trade**
 - Strict border controls
 - Biosecurity
- **Dispersal of Sub-Antarctic birds**





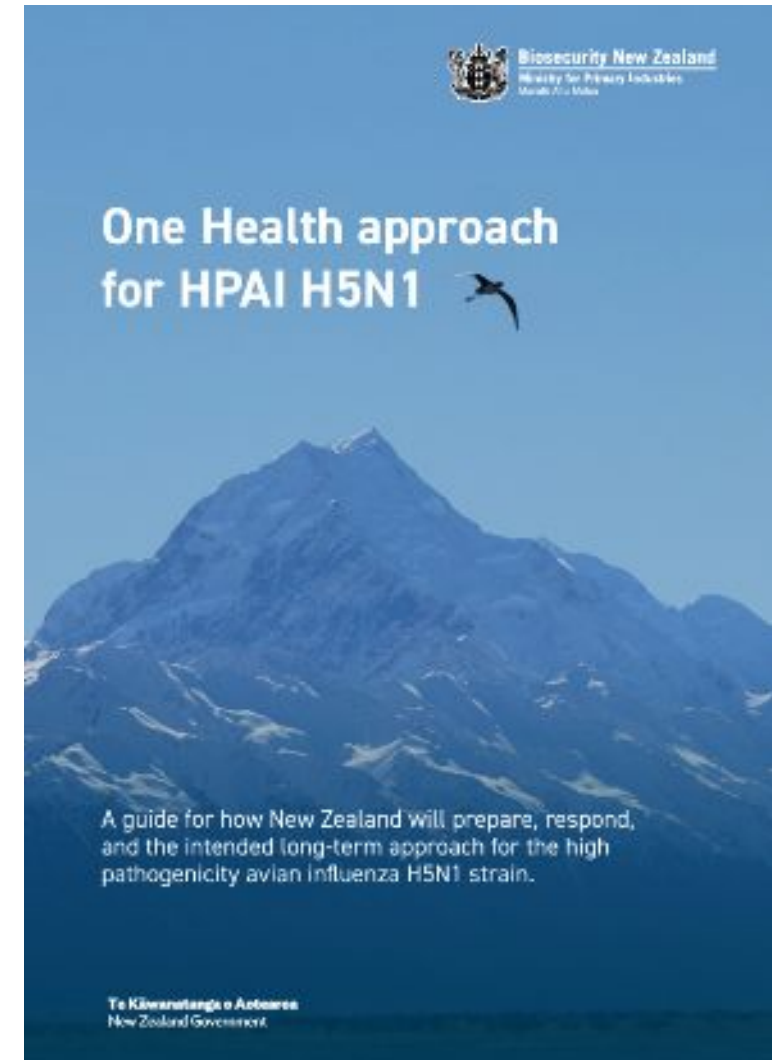
What will happen if HPAI reaches NZ?

- ONE Health Approach:
 - MPI/BNZ lead agency
 - MoH
 - Health NZ
 - DOC

Health New Zealand
Te Whatu Ora

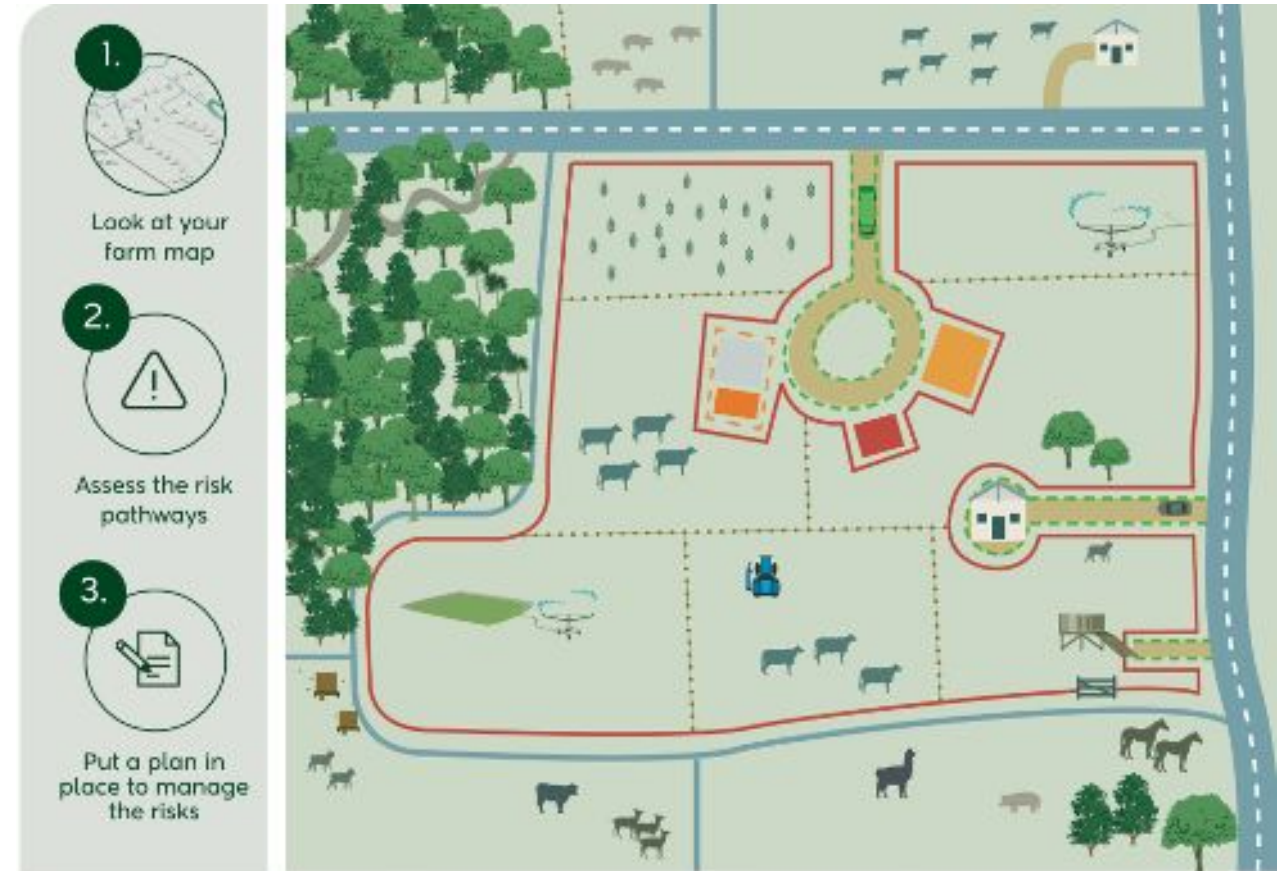


Department of
Conservation
Te Papa Atawhai

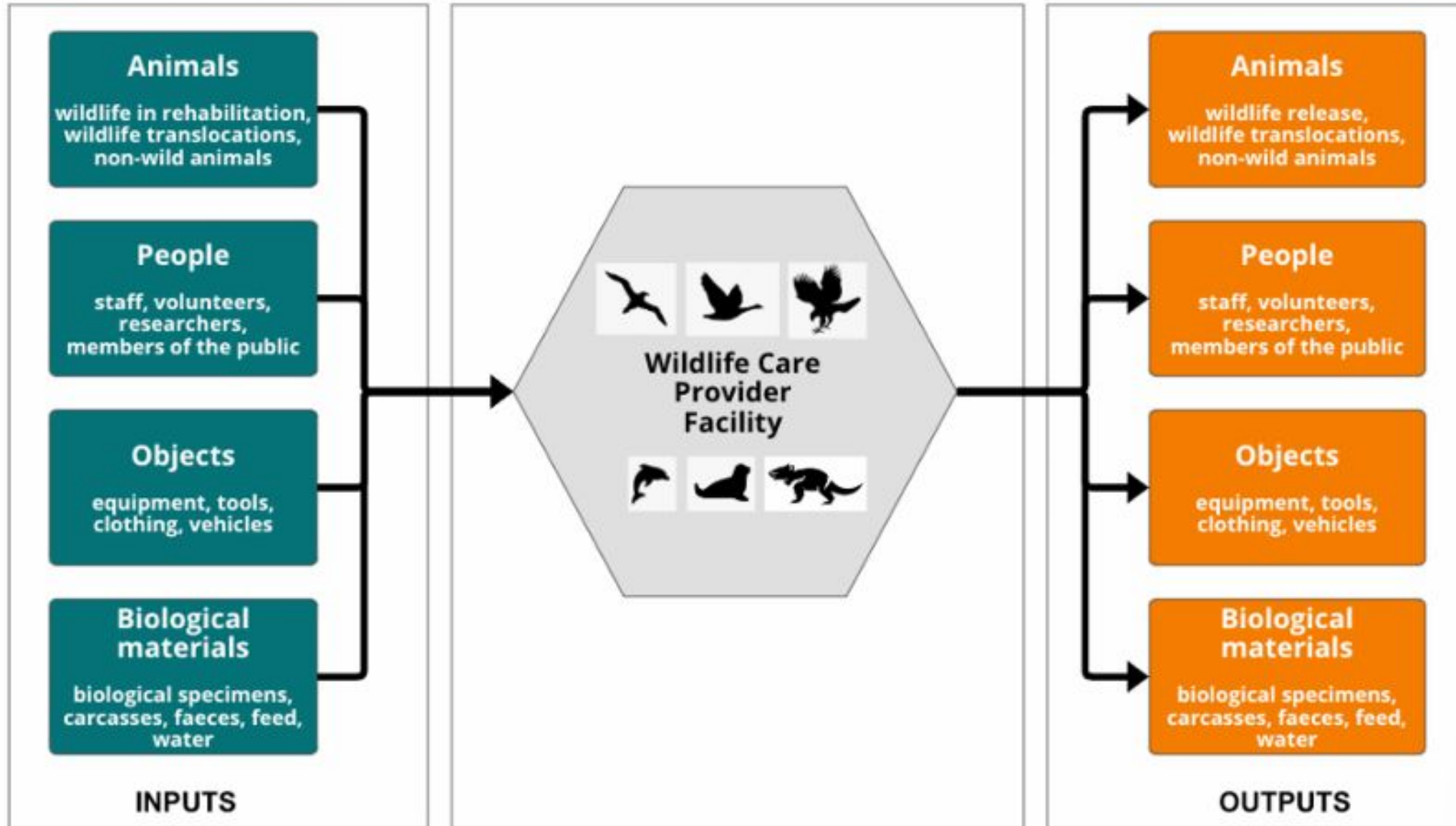


Biosecurity and Risk Pathways

- **Biosecurity**
 - Keeping it out
 - Surveillance aka looking out for it
 - Stopping it spreading if it gets in
- **Biosecurity Plans**
 - Every facility/ project
 - Look at the individual risk pathways
 - Measures to lower the risk
 - Hygiene
 - Work flow changes
- **Record keeping and traceability**



DairyNZ Biosecurity planning



Avian Flu Precautions



Essential deliveries only

No visitors without prior notification



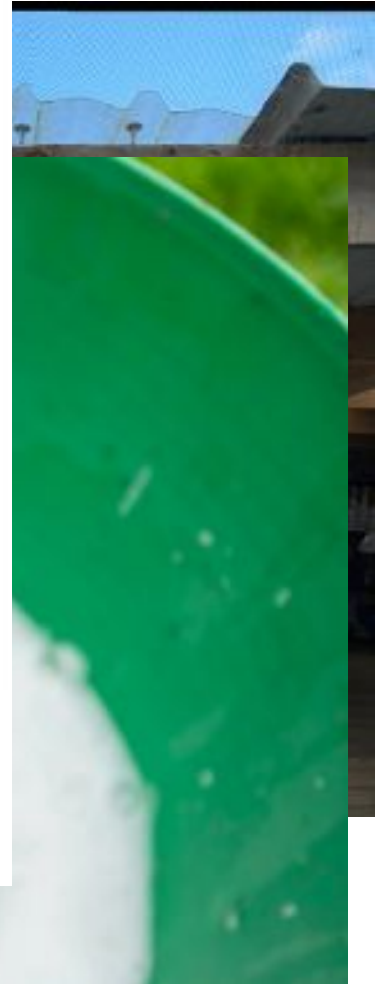
No dogs or pets on site



Do not enter if you have been in contact with poultry or game birds within the last 24 hours



All visitors must sign in at the site office



Surveillance and Reporting

- The most obvious sign of bird flu is the **sudden or unexpected death of multiple birds or marine mammals in a group.**
- If you see **three or more** sick or dead wild birds, marine mammals or other wildlife, report it. **DO NOT** handle or move the birds
- **Call the exotic pest and disease hotline on 0800 80 99 66.**
- **Provide as much detail as you can, including:**
 - A GPS reading or other precise location information
 - Photographs and videos of sick and dead birds
 - Species name and estimate of the numbers affected
 - How many are sick or freshly dead, and the total number of birds present
 - They will note the details and an incursion investigator will contact you
- **Signs of HPAI (Other than sudden death):**
- Neurological: Weakness and trembling, paralysis, lack of coordination, blindness
- Respiratory: Breathing difficulties
- Gastrointestinal: Diarrhoea

[illegible]

Preventing spread: Key Points

- **Incubation can be 14-21 days**
 - Quarantine of new birds
 - Testing
 - Managing translocations
- **100m possible aerosol spread**
 - Barriers/ separate air spaces
- **Fomite spread is important – shoes, clothes, equipment**
 - Clean zones
 - Aviary porch/ air lock
 - PPE
 - Staff with birds at home
- [avian-influenza-health-safety-guidance.pdf](#)



Photos: Liz Brown



Photos: Liz Brown

Preventing spread

- Very environmentally resistant
>100 days, withstands freezing
- Destroyed by heat >72°C
- Many effective disinfectants

Disinfectant	Concentration	Directions	Contact Time	Other
Safe4 (Halogenated tertiary amine)	10% 1:10	1 part concentrate to 10 parts warm or cold water	5 minutes	No rinsing required Dry before reusing or animal contact Irritant to skin Lasts 7 days once diluted
SteriGene (Halogenated tertiary amine)	0.5% 1:200 dilution	1 part concentrate to 200 parts water (25mls into 5 litres) For general cleaning of unsoiled areas	General use 5 minutes Equipment <u>soak</u> 20 minutes	Rinsing and drying required Can cause allergic skin reaction and irritation when inhaled.
	1% 1:100 dilution	1 part concentrate to 100 parts water (50mls into 5 litres) if the item has been previously soiled and cleaned	Fabrics soaked 30 minutes or use 50ml SteriGene per 4kg load of washing	Non-corrosive
	5% 1:20 dilution	1 part concentrate to 20 parts water (250mls in 5 litres) in the presence of blood or bodily secretions		Lasts 6 months made up with tap water, 12 months made up with deionized water
Virkon S (Oxidizing agent)	1%	1 tablet per 500 mL of water OR 10g of powder per litre of water for solution a 1% solution. Warm or cold water	10 minutes For clothing use a 3.5%	Rinsing required Very corrosive and irritant to skin Lasts 7 days once diluted
Bleach (with 5-6% sodium hypochlorite)	10%	1 part bleach +9 parts water. Cold water only For clothing: 35mls bleach made up to 1 litre with cold water	10 minutes	Rinsing required Irritant to skin. Check product concentration to ensure correct dilution rate Lasts 24 hours once diluted
Prevail (Hydrogen peroxide)	2.5% 1:40	25mls Prevail in 1 litre cold water	5 minutes	No rinsing required Do not use undiluted. Biodegradable. Once diluted, lasts 30 days
F10 SC (Quaternary ammonium)	1%	10mls in 1 litre water	10 minutes contact time	No rinsing required. Less irritant to skin than other disinfectants
Ethanol	60-90%		15 seconds	No rinsing required
Isopropyl alcohol	60-90%		15 seconds	No rinsing required

conditions and in water

Work flow and staff risks

- **Identify high risk tasks**
- **Daily tasks should be organised in the following order:**
 - Low biosecurity risk tasks before high biosecurity risk
 - Clean tasks before dirty tasks
 - More vulnerable birds attended to before less vulnerable birds
- If possible have separate staff assigned to different tasks
- Think about alternative plans for breeding season, translocations etc.

'Yer a hazard, Harry'



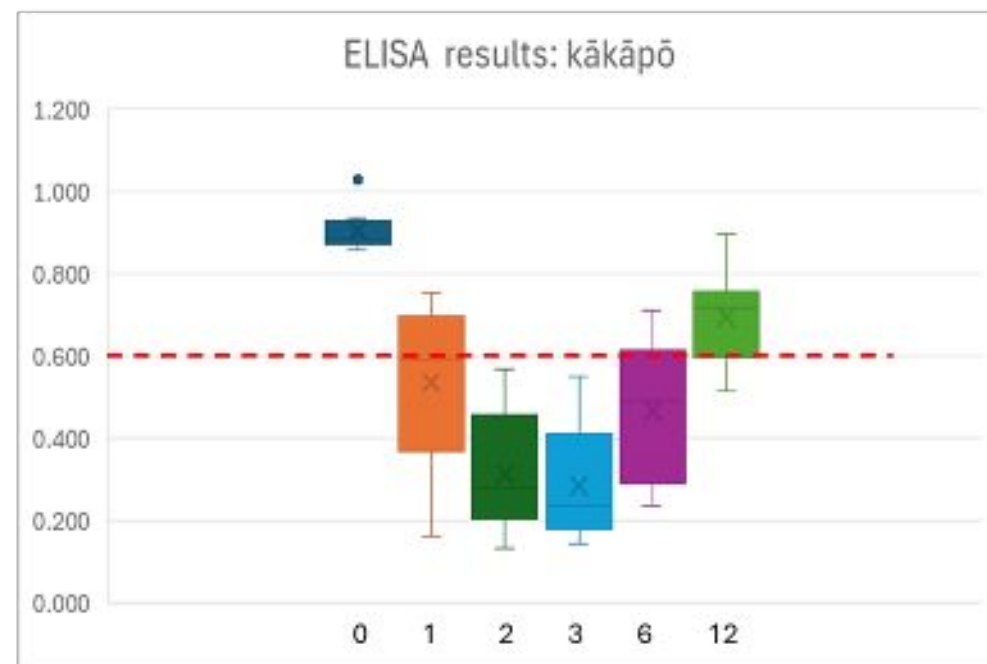
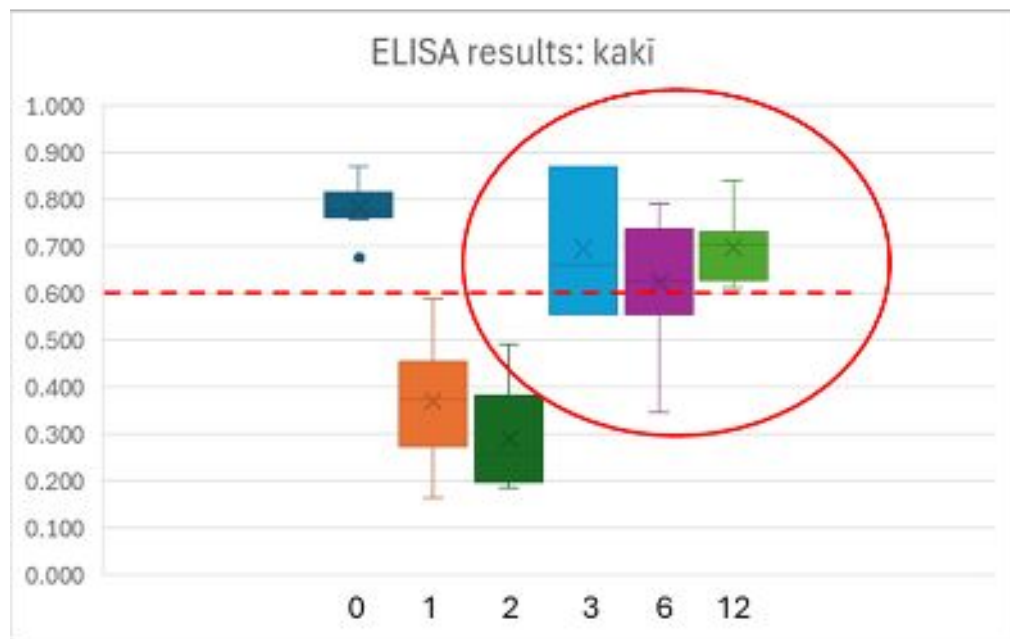
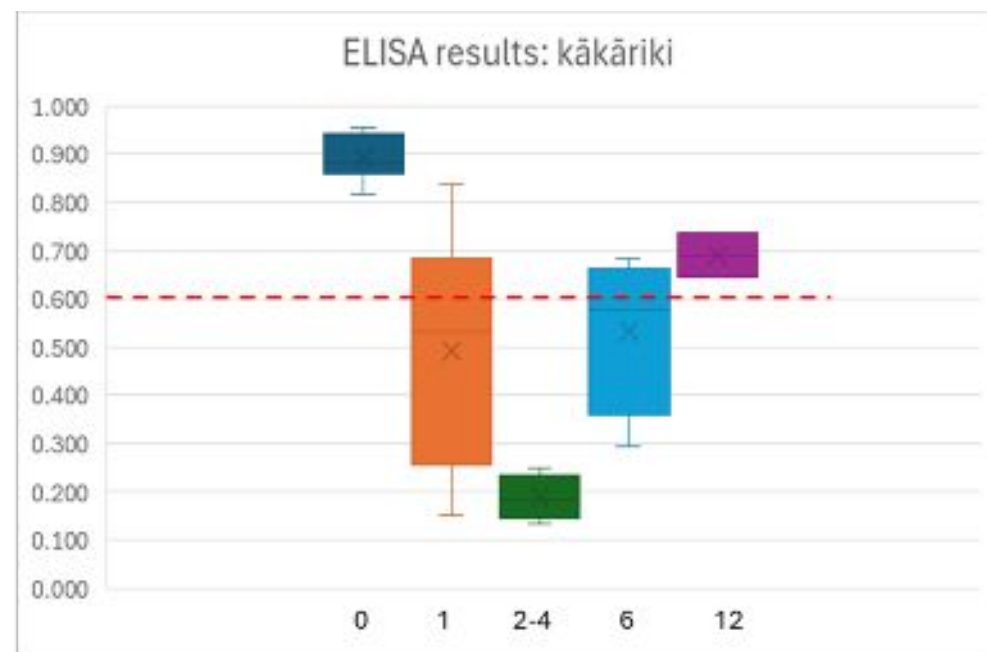
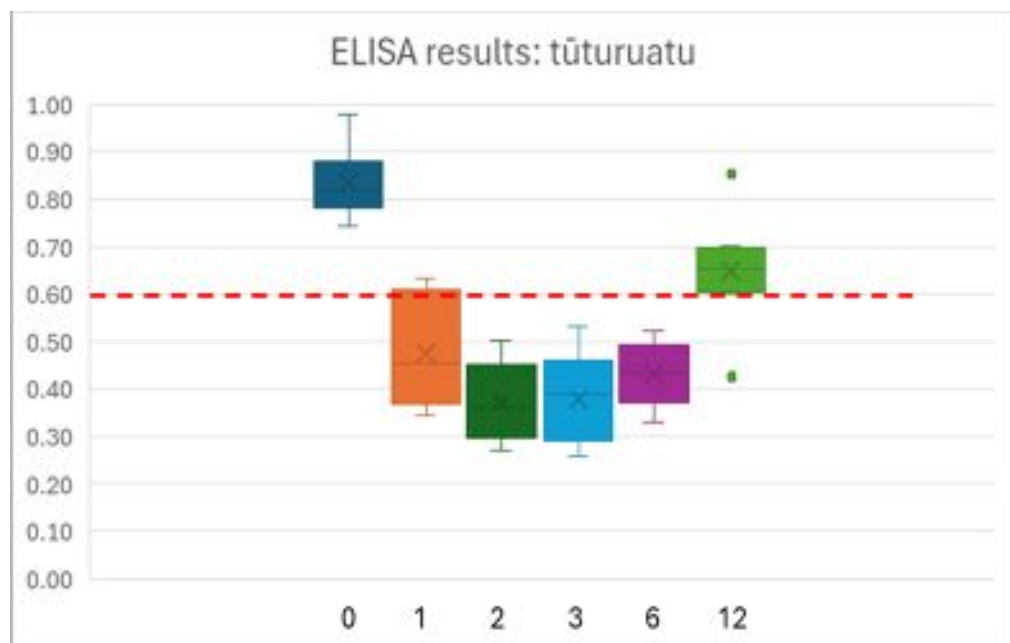
Summary

- Prepare now
- Create a biosecurity plan
- Communicate with all involved groups
 - Volunteers
 - Community groups
 - Your vet and rehabber
 - Local council
 - Local DOC Office

DOC Avian Influenza Vaccine Trial

- 2024-2025
- Research permit – heavily regulated
- 5 species with intensive/captive management
 - Kākāpō, takahē, kakī, kākāriki, tūtuarutu
- Up to 10 birds from each species
- Commercial poultry vaccine
 - Injection under skin
 - 2 x 4 weeks apart





Challenges

- **Recapture**
- **Capture related injuries**
- **Other illnesses**



Next steps...

- **Development of vaccine plan WITH MPI for species that are most at risk of extinction:**
 - Access x2 for vaccinations
 - Follow up monitoring and surveillance
 - Individually identifiable for life
 - Traceability and records
- **Training programme for vets and some DOC staff**
- **Vaccination is not the magic bullet.... but may be a critical tool to help prevent extinction in certain species in certain situations**