Wildlife Health AUSTRALIA

Photo: © Eric J Woehler

# High Pathogenicity Avian Influenza (HPAI) and Wildlife in Australia

## A RISK MITIGATION TOOLBOX FOR WIDLIFE CARE PROVIDERS WITH A FOCUS ON H5 HPAI (H5 BIRD FLU)

Version 2.0 March 2026

# Table of Contents

# High Pathogenicity Avian Influenza (HPAI) and Wildlife in Australia

**Risk mitigation toolbox for wildlife care providers with a focus on H5 HPAI (H5 bird flu)**

If sick or dead wildlife are observed, or you suspect an animal is infected with H5 HPAI:

- **AVOID** – keep yourself and others safe. Always maintain good biosecurity and hygiene practices, and record & report (as below) before proceeding.
- **RECORD** – make a note of what you observe. Take photos or videos if safe to do so.
- **REPORT** sick or dead wildlife via the Emergency Animal Disease Hotline on 1800 675 888. Avian influenza is a nationally notifiable disease.

*The advice in this document is focussed on the increased risk to Australia from H5 HPAI. Other strains of HPAI have not caused such widespread disease in wild birds and mammals, but the general principles within these documents can be applied to other HPAI strains, while also considering and adjusting for any known differences in epidemiology.*

# PART A INTRODUCTION AND BACKGROUND

## 1 Introduction to the toolbox

### 1.1 Aim and purpose of this toolbox

**Wildlife care provider (hereafter WCP) refers to a facility or individual that undertakes care activities for wildlife that are sick, injured, orphaned or otherwise require human intervention**. WCPs may include wildlife hospitals and rehabilitation centres, individuals (who may be part of a larger rehabilitator group or network) and veterinary clinics. These WCPs should be appropriately licenced as per the requirements in their jurisdiction.

This toolbox is intended as a guidance document to assist WCPs in Australia in developing plans to mitigate the risk of high pathogenicity avian influenza (HPAI) to their operations. It aims to:

- enhance early detection of HPAI in wildlife
- enhance biosecurity measures for WCPs to reduce the risk of introduction, establishment and spread of HPAI
- reduce the risk to human, animal and environmental health posed by HPAI in wildlife
- prepare WCPs for the response to and recovery from an outbreak of HPAI in wildlife.

This toolbox provides guidance in line with Australia's existing emergency management arrangements and other guidance material (as described in Section 2.5). It is not intended to provide definitive advice or to replace direction from government authorities, individual site assessments or veterinary advice. Every WCP works within different circumstances, and this document cannot predict all eventualities for all situations.

It is important to note that any decisions before or during an emergency response need to be made in line with current legislation and government legal orders or advice. It is up to individual WCPs to ensure they are following the most up-to-date jurisdictional legislation, legal orders and guidance relating to biosecurity, wildlife protection and conservation, animal welfare, emergency management and workplace health and safety. WCPs should contact the government authorities in their jurisdiction to clarify legal responsibilities and refer to the AUSVETPLAN documents.

The advice in this document is focussed on the increased risk to Australia from H5 HPAI (also referred to as H5 bird flu). It includes the serious and highly contagious H5N1 clade 2.3.4.4b strain which has been spreading globally since 2021. Other strains of HPAI have not caused such widespread disease in wild birds and mammals, but the general principles within these documents can be applied to other HPAI strains, while also considering and adjusting for any known differences in epidemiology.

## 1.2 Why should this toolbox be used?

HPAI presents risks to animal, human and environmental health, and these can be reduced by risk mitigation plans. Since 2021, H5 HPAI has caused significant illness and deaths in wild birds, mammals (both wild and domestic) and poultry in all geographical regions except Oceania (which includes Australia and New Zealand). The current global situation means an increased level of risk to Australia via the movements of infected wild birds from other areas into Australia (see Section 2.2 and 2.4). **Given the increased risk to Australia, there is a need for enhanced preparedness and risk mitigation plans across various stakeholder groups and levels of government, including WCPs.** The Australian Government is currently investing in enhancing national preparedness and response capability, with activities underway across state and territory governments, industries and the non-government sector. You can find further information and read more about the government response here.

The urgent need for risk mitigation plans is supported by the Scientific Task Force on Avian Influenza and Wild Birds statement on H5N1 High pathogenicity avian influenza in wild birds - unprecedented conservation impacts and urgent needs and the WOAH/FAO Network of Expertise on Animal Influenza (OFFLU) statement Global overview of the spread and impact of H5 clade 2.3.4.4b high pathogenicity avian influenza virus in wildlife, 2020-2024. Both highlight the need for collaborative programs in preparedness and response for HPAI.

## 1.3 Who should use this toolbox?

This document is designed for use by all **facilities and individuals that undertake wildlife care activities in Australia**, including wildlife hospitals and rehabilitation centres, individuals (who may be part of a larger rehabilitator group or network) and veterinary clinics. These facilities or individuals must be appropriately licenced as per the requirements in their jurisdiction.

The toolbox provides strategies for **HPAI risk mitigation in wild birds as well as wild mammals**.

Only **wildlife that present to a WCP** will be specifically considered by these guidelines. A risk mitigation toolbox targeted to managers of free-ranging wildlife populations is also available on the Wildlife Health Australia (WHA) website, and shares common information with these guidelines.

The management of HPAI risk for wildlife held in captivity permanently (e.g. in zoos, fauna parks, wildlife parks), semi-permanently (e.g. captive breeding programs) or for domestic animals will not be considered specifically, although the principles and processes may be of some relevance to these situations. See Appendix 5 for biosecurity resources relevant to domestic animals and wildlife held in captivity.

## 1.4 How should this document be used?

This document contains three parts (Figure 1):

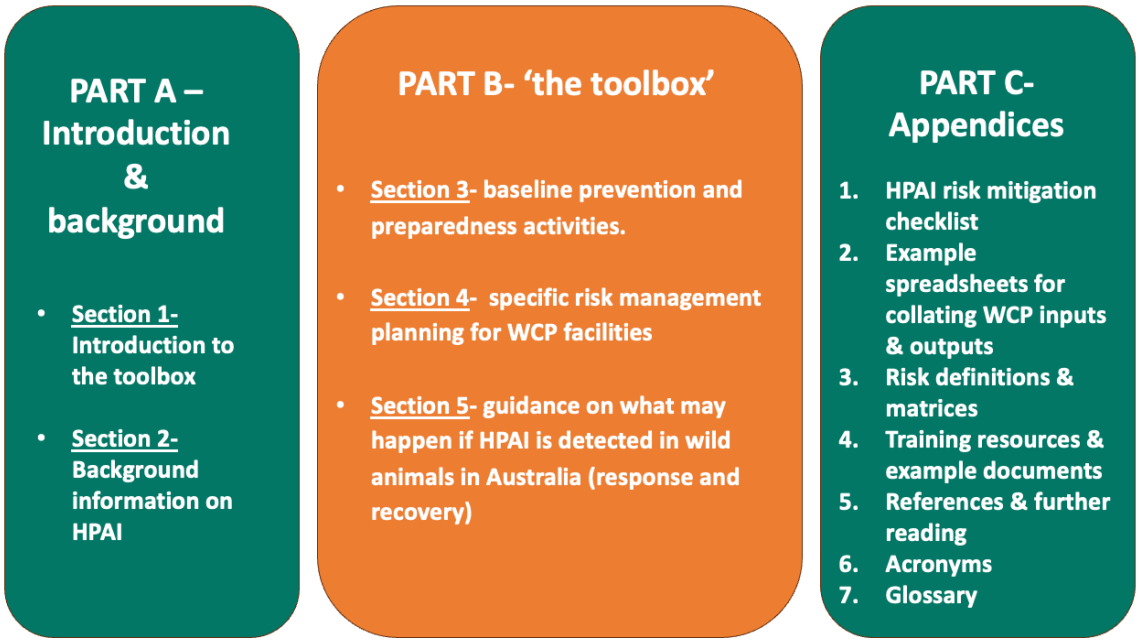


*Figure 1: Structure of this document*

**WCPs should work through Part B, 'the toolbox' in a stepwise fashion (as shown in Figure 7) and use the resulting information to develop a HPAI risk mitigation plan tailored to their site and consider other relevant preparedness activities such as outreach and training activities, and equipment and facility considerations. WCPs should consult with their relevant jurisdiction's biosecurity, environment and human health departments during the development of these plans.**

Text within grey boxes (example below) indicates actionable items, which are consolidated as an overall checklist in Appendix 1. Ideally, risk mitigation plans should be implemented alongside (and where appropriate, integrated into) any other existing management plans or procedures for the WCP.

**Text within these boxes indicates items that WCPs should consider in their HPAI risk mitigation planning and preparedness.**

# 2 Background information on HPAI

## 2.1 What is HPAI?

Avian influenza (AI), also known as bird flu, is a viral disease caused by influenza A virus. Strains of AI are categorised as either low pathogenicity (LPAI) or high pathogenicity (HPAI) depending on the potential severity of disease caused in poultry. Influenza A viruses are also categorised according to the serological subtypes of their surface glycoproteins, haemagglutinin (HA) and neuraminidase (NA). To date, 17 HA (H1–16, H19) and 9 NA (N1–9) subtypes are recognised in birds and are found in different combinations (Figure 2).

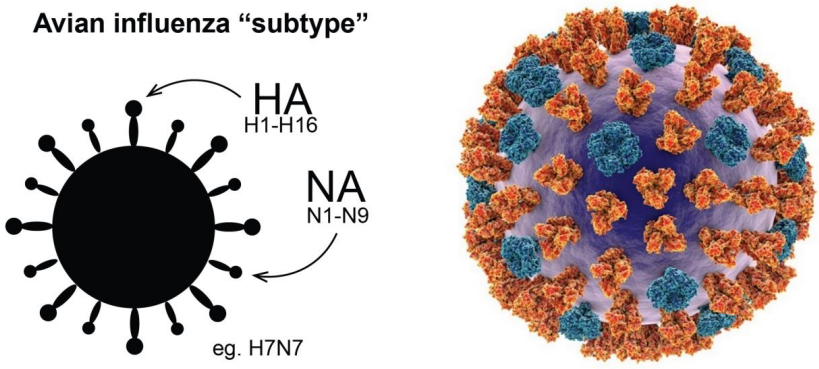


*Figure 2: AI viruses are classified according to the serological subtypes of their surface glycoproteins (courtesy of Michelle Wille)*

Avian influenza viruses (AIVs) constantly evolve, resulting in the ongoing emergence of new lineages and strains that are classified based on sequence analysis and distribution of the viruses in hosts, geographic locations and time.

Around the world, including in Australia, LPAI viruses occur naturally in wild birds, notably waterfowl (ducks, geese and swans) and shorebirds. LPAI viruses typically do not cause severe disease in wildlife. Some specific LPAI subtypes (subtypes H5 and H7) can evolve to HPAI following spillover and circulation in poultry. HPAI infections typically causes severe disease in poultry and may also impact other species including wild birds, humans and other mammals. See Section 2.2 for information on H5 HPAI and how it is different from other HPAI strains and Section 2.4 on how HPAI outbreaks could occur in Australia.

Although AIVs do not normally infect humans, some subtypes have been associated with disease in humans ranging from mild illness to severe disease and death. Human infections are generally associated with close contact with infected animals or their environments (see Australian Centre for Disease Control (CDC) website).

AIVs are most often transmitted via direct contact with respiratory secretions and faecal material, predation or scavenging, and indirect exposure to contaminated environments or objects (e.g. clothing, boots, equipment, etc.). Likely pathways of transmission of AIVs through wildlife populations and environments with a focus on H5 HPAI are illustrated in Figure 3.

AI is a nationally notifiable disease, meaning that it must be reported to agricultural authorities (see Section 3.2). For more information on AI in wildlife, see the Wildlife Health Australia (WHA) Fact Sheet.

## 2.2 Current global status - the emergence of H5 HPAI strain 2.3.4.4b

Currently, the AIVs of most concern worldwide belong to the H5 subtypes of the "A/goose/Guangdong/1/96" lineage. This lineage has been present in various parts of Asia for the past three decades, evolving constantly and causing HPAI outbreaks in both wild birds and poultry overseas, mostly in Asia and Europe. **In 2021, a new strain from this lineage emerged, H5 HPAI strain 2.3.4.4b. The emergence of H5 HPAI has been a 'game changer', causing a global panzootic characterized by a significant increase in the frequency and geographic range of HPAI outbreaks in both wild birds and poultry overseas. H5 HPAI has now caused unprecedented outbreaks of HPAI in wild birds, mammals (both wild and domestic) and poultry in all geographical regions except Oceania (which includes Australia and New Zealand).**

At least 560 species from more than half of all bird orders have been affected by H5 HPAI worldwide, with over half being newly reported species since 2021. More than 100 mammalian species have also been affected, with over half being newly reported species since 2021. See the WHA Technical Issues Update for more information and the FAO's list of species in which H5 HPAI has been detected. Figures 3-5 illustrate the significant increase in frequency, geographic range and range of bird species and mammals impacted by HPAI in recent years.

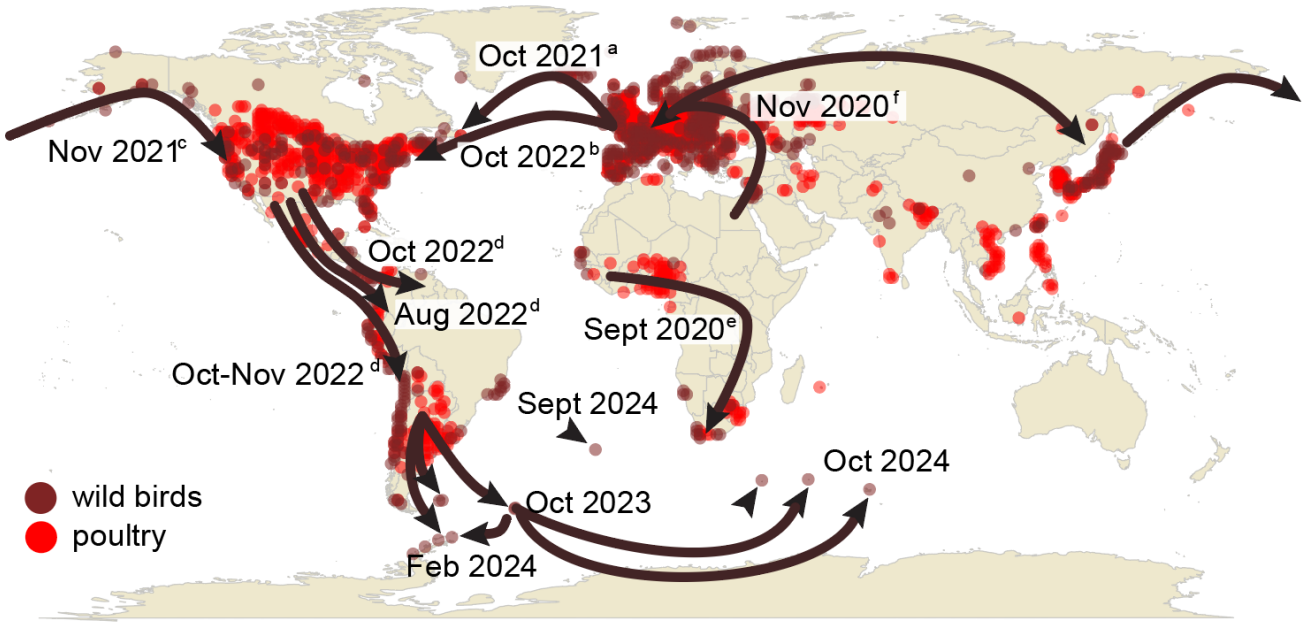


*Figure 3: H5 HPAI outbreaks in poultry and wild birds in recent years. Arrows and dates indicate the approximate timeline of geographic spread (courtesy of Michelle Wille).*

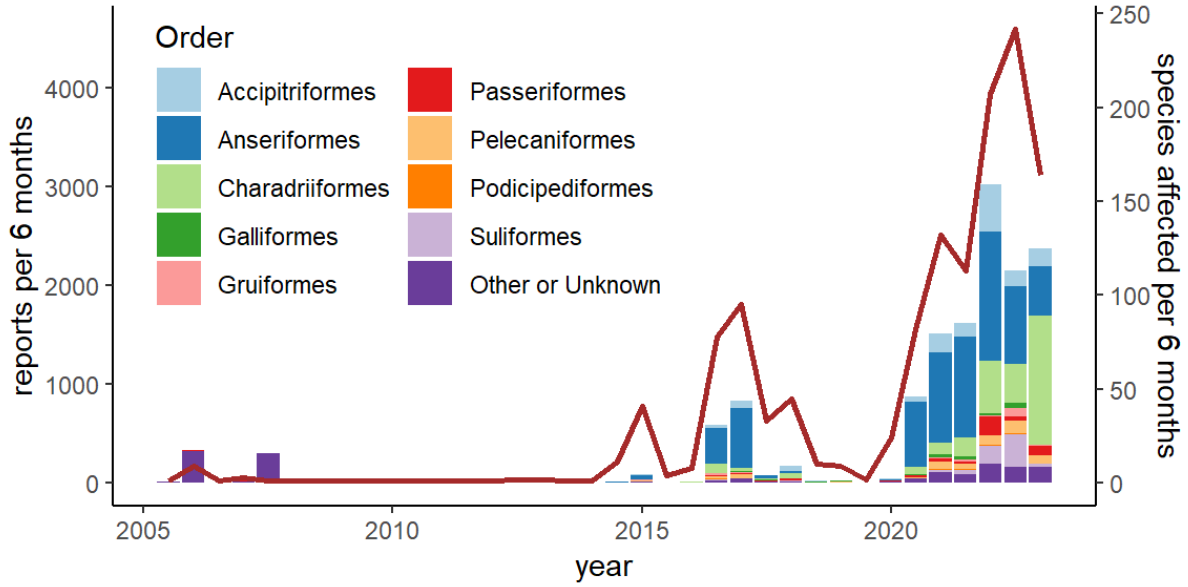


*Figure 4: Total number of wild bird HPAI cases reported (stacked bars) and number of species involved (brown line) as a function of time (half yearly periods). The different colours denote the order to which the various species of birds belong. Data from World Animal Health Information System. From Klaassen and Wille (2023).*

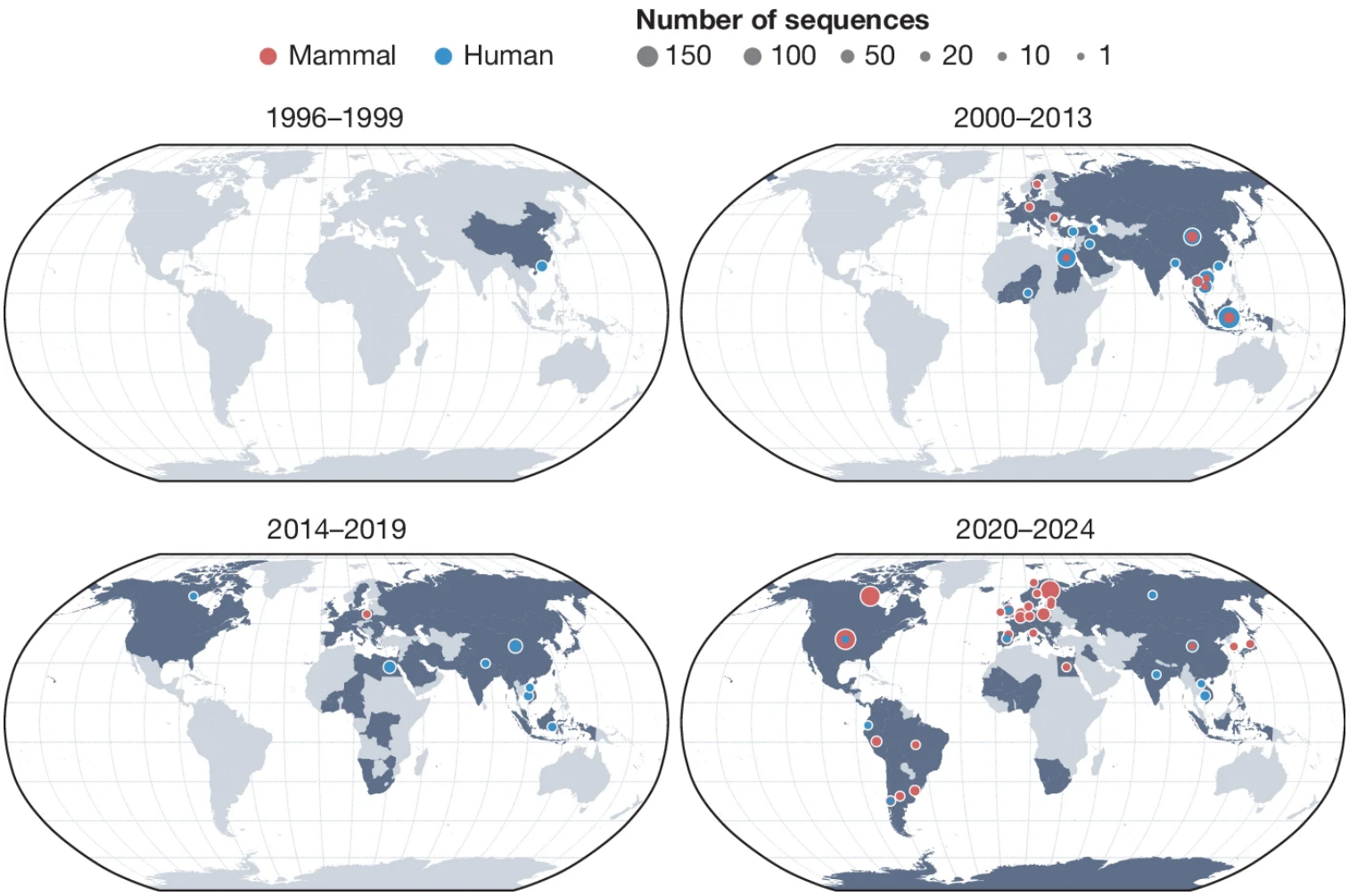


*Figure 5: HPAI H5 virus detections since 1996. From Peacock et al., 2024*

## 2.3 Occurrence of HPAI in Australia

**HPAI H5 viruses have not been detected in animals in Australia.**

In Australian poultry enterprises, multiple outbreaks of HPAI H7 strains have occurred between 1976 and 2025. Most recently, in 2024 and 2025, premises across Victoria, NSW and ACT were affected by outbreaks caused by three separate HPAI H7 strains. Outbreaks in poultry in Australia were most likely due to LPAI viruses being transmitted to poultry from wild birds, followed by mutation to HPAI.

HPAI has never been detected in free-ranging Australian wild birds. However, during a 1985 HPAI outbreak, HPAI H7 was detected in a feral Eurasian starling (*Sterna vulgaris*) trapped inside an affected poultry shed.

LPAI viruses are considered part of the natural viral community in wild birds in Australia, with almost all LPAI subtypes (H1-13, H15-16) having been detected. LPAI viruses have been

identified in Australian Gruiformes, Pelecaniformes, Procellariiformes, Anseriformes and Charadriiformes.

The National Avian Influenza Wild Bird Surveillance (NAIWB) program collects and screens samples from Australian wild birds for AI viruses and the data generated are used to monitor and understand AI in wild birds in Australia. Sequence analysis of AIVs detected in wild birds through the NAIWB program contributes to tracking Australian virus evolution and dynamics, maintaining currency of diagnostic tests, and maintaining a virus sequence library allowing comparison of Australian and overseas strains.

## 2.4 Risk of HPAI to Australia

The risk of HPAI to Australia is dependent on the likelihood of entry, establishment and spread of the virus, as well as the potential consequences of this to Australia, including impacts on animal, human and environmental health.

HPAI could occur in Australia by the following means:

- transfer of local LPAI viruses from asymptomatic waterfowl to susceptible poultry flocks via close contact, including direct contact or contamination of poultry feed and water by wild bird droppings or secretions, followed by mutation to HPAI in poultry
- introduction into Australia from overseas (followed by transmission to location animal populations) via
    - seasonal migration of HPAI infected wild birds on established flyways.
    - nomadic movements of HPAI infected wildlife within the Australo-Papuan (year-round) or Antarctic/sub-Antarctic regions (seasonal)
    - the importation of HPAI virus-contaminated poultry products, equipment or other materials. Strict biosecurity controls for importation mitigate this risk.

A formal HPAI incursion risk assessment for the risk (likelihood and consequence) of HPAI H5N1 clade 2.3.4.4b HPAI incursions into Australia via wild birds was undertaken in 2023. This risk assessment found an **increased risk to Australia, due to the increase in the likelihood of entry into Australia via wild bird movements, and anticipated increased consequences if it were to enter, including consequences to poultry industries, wild bird and mammal populations, and potentially humans.**

## 2.5 HPAI response arrangements in Australia

The Australian approach to managing emergencies recognises four phases of emergency management: **prevention, preparedness, response and recovery**. At the current time, where HPAI has not been detected in wildlife, activities should focus on **prevention and preparedness**. **Response and recovery** activities are those that occur if HPAI were to be detected in wildlife in Australia.

Response to avian influenza outbreaks in Australia is described in the nationally-agreed AUSVETPLAN Response Strategy: Avian Influenza. The National Management Agreement – H5 HPAI in wildlife (the H5 NMA) was established in 2025 as a national arrangement for responding to incursions of HPAI in wildlife, where eradication or containment of the disease is unlikely.

There are several other AUSVETPLAN manuals of relevance to HPAI for managers of wildlife populations including:

- AUSVETPLAN Operational Manual: Wild Animal Response Strategy (WARS) describes the overall framework for the management strategies and control procedures for wildlife during an EAD incident in Australia.
- AUSVETPLAN Operational Manual: Decontamination provides guidelines for the decontamination of premises where animals infected with emergency animal disease (EAD) agents have been held.
- AUSVETPLAN Management Manual: Control Centres Part 1 and 2 describes how EAD incidents are managed across animal authorities at national, state and local levels, including how decisions are made, the roles and responsibilities of the groups involved, and coordination of the scientific, logistic, managerial and financial resources.

Broad decisions on response and recovery activities will be made at a national level by government authorities, depending on the specifics of the outbreak. Implementation of these activities, including on-the-ground response activities, is the responsibility of the relevant government authorities in each jurisdiction.

**The role of WCPs is to support these activities and provide information to decision-makers in government authorities as required through the established EAD response framework.**

The EAD response arrangements and roles and responsibilities of various groups during a response to disease in wildlife are described in greater detail in Emergency Wildlife Disease Response Guidelines.

WCP engagement with the biosecurity agency in their jurisdiction **before** an HPAI outbreak is recommended. Sharing a completed risk management plan and other preparedness activities with jurisdictional authorities will help promote understanding and integration of WCP knowledge and expertise into overall incident management planning where appropriate.

☐ **Ensure that WCPs have a basic understanding of how emergency animal diseases such as HPAI are managed in Australia and the role they might play during an HPAI response. Consider:**

- ⇨ **training, such as the EAD foundation course (see Appendix 4)**
- ⇨ **engagement with the biosecurity agency in the relevant jurisdiction.**

## 2.6 Diagnostic testing for notifiable animal diseases in Australia

HPAI is a notifiable disease, therefore laboratory testing and diagnosis for HPAI is the responsibility of the biosecurity agency in each jurisdiction. While WCP activities are important for detecting and reporting signs of disease in wildlife (see Section 3.2), sample collection and **diagnostic testing for notifiable diseases (including HPAI) must not be undertaken without the oversight and approval of the biosecurity agency in the relevant jurisdiction**.

Point of care diagnostic testing (or pen-side testing) refers to the use of test kits in the field (outside of authorised laboratories), to test animals for specific diseases. The use of point of care testing for animals is regulated by the animal biosecurity authority in each jurisdiction. There are no point of care diagnostic tests for HPAI currently approved for use in Australia. See the Department of Agriculture, Fisheries and Forestry for more information.

☐ **Ensure that WCPs are aware that they must not undertake diagnostic testing for HPAI without the oversight of the biosecurity agency in the relevant jurisdiction. Consider:**

- ⇨ **training**
- ⇨ **engagement with the relevant biosecurity agency.**

# PART B HPAI RISK MITIGATION TOOLBOX

Figure 6 summarises the recommended stepwise approach to using the risk mitigation toolbox (RMT). At all points of development, ongoing communication with the relevant staff, agencies and other key stakeholders is an important component of effective risk management.

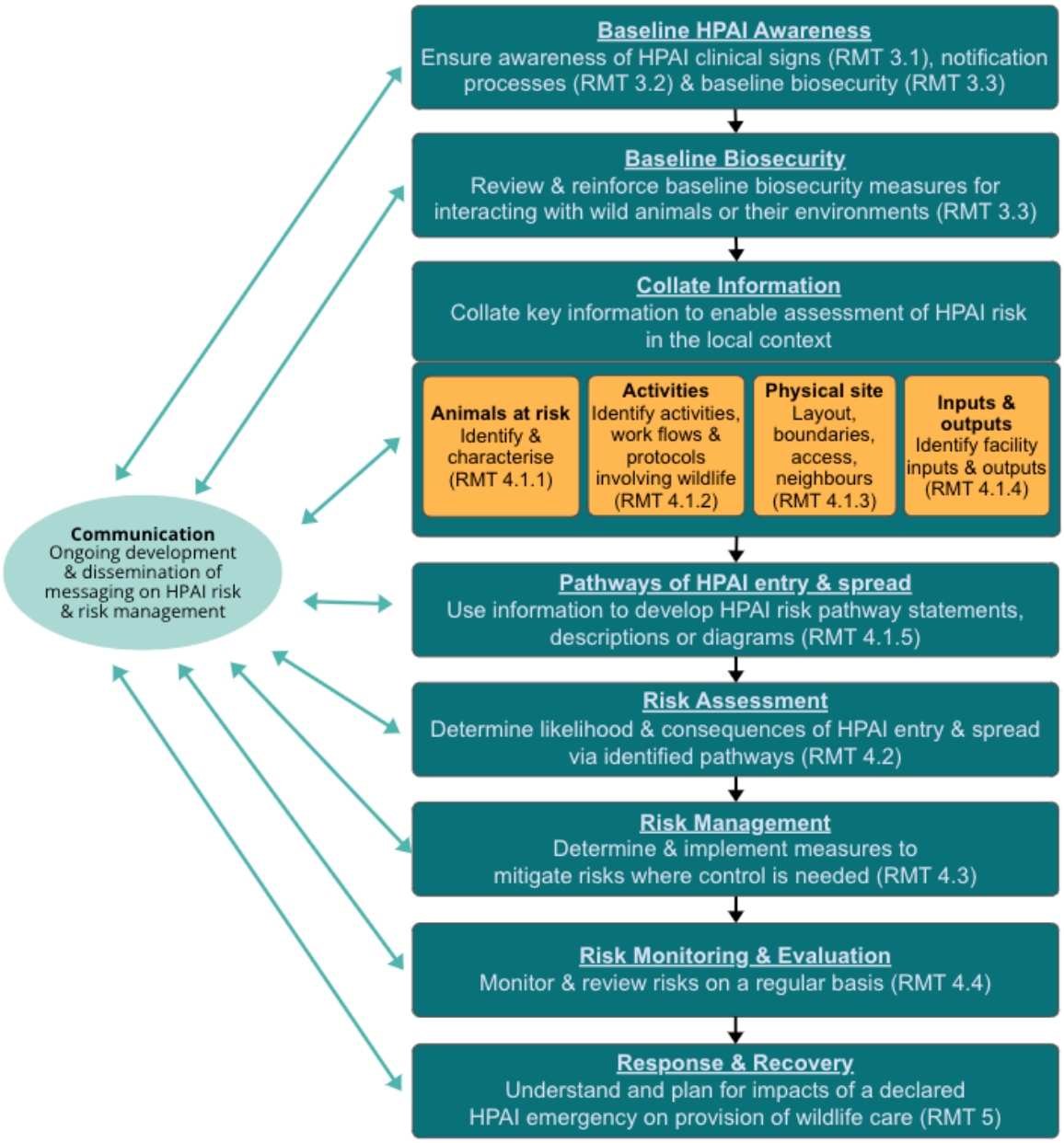


*Figure 6: The recommended stepwise approach to using the toolbox.*

# 3 Prevention and preparedness for HPAI: baseline strategies

The following information sets out baseline strategies that should be employed by all stakeholders that interact with wildlife to reduce the likelihood and consequence of HPAI entry and spread:

- Be aware of clinical signs of HPAI (Section 3.1).
- Report signs of HPAI (Section 3.2).
- Practice good baseline biosecurity (Section 3.3).

**These strategies should be employed at all times, even when HPAI is not present in Australia.**

## 3.1 Be aware of clinical signs of HPAI

### 3.1.1 Wild birds

A wide range of wildlife species can be infected with H5 HPAI. Overseas, the most commonly affected bird groups have been waterfowl, shorebirds, seabirds and birds of prey. However, **it should be assumed that all bird species are potentially susceptible to H5 HPAI virus.** A wide range of mammals can be infected with H5 HPAI, particularly those that prey or scavenge on birds, and marine mammals. See the FAO's list of species in which H5 HPAI has been detected.

Infection with H5 HPAI in birds and mammals can lead to a wide range of clinical signs including:

- Neurological (ataxia, paralysis, seizures, tremors, abnormal posture, twisted necks, head tilt, circling, inability to stand or fly, behavioural abnormalities);
- Respiratory (conjunctivitis, nasal or oral discharge, excessive lacrimation, cloudy eyes, coughing, sneezing, dyspnoea, tachypnoea, oedema of the head);
- Gastrointestinal (diarrhoea);

Some species may not show any signs of disease or show only very mild signs. In some cases, wildlife may die suddenly without displaying any signs or be found dead (including the potential for mass mortality events). See Appendix 4 for links to videos of wild birds affected by HPAI.

☐ **Ensure WCPs are familiar with the clinical signs of HPAI. Consider:**
- ⇨ **training (see Appendix 4)**
- ⇨ **communications materials for visitors to the site (where applicable)**
- ⇨ **documenting clinical signs as part of HPAI risk mitigation plans.**

## 3.2 What should I do if I suspect HPAI?

### 3.2.1 AVOID, RECORD and REPORT signs of HPAI

- **AVOID** – keep yourself and others safe. Do not make direct or indirect contact with sick or dead wildlife or their immediate environment. Do not handle or remove sick or dead wild birds or mammals unless instructed to do so by government authorities.
- **RECORD** – make a note of what you observe, including: number of animals affected (dead and sick), species/type of animal, capture and current location (address or GPS reading), date and time signs were first noticed and/or reported. Take photos or videos if safe to do so. A sample reporting form for disease incidents is available on the WHA website.
- **REPORT** multiple sick or dead wild animals via the **Emergency Animal Disease Hotline** on 1800 675 888. **Avian influenza is a nationally notifiable animal disease, meaning that anyone who suspects an animal might be infected has a legal responsibility to report it to their jurisdiction.**

In **facility settings**, where WCPs may be routinely presented with sick or dead wildlife, or where wildlife already in care may develop clinical signs, avoiding contact with wildlife may not be practical. WCPs should operate with an increased awareness of the potential risk of HPAI in wild animals and always maintain good biosecurity and hygiene practices as described in Section 3.3. If HPAI is suspected, WCPs should **REPORT** it before proceeding with any, or further, intervention. Include in your report additional information such as details of treatment provided, housing arrangements for affected animals, others animals in care and staffing arrangements.

**☐ Ensure that WCPs are aware of are aware of what to do if sick or dead wildlife are observed (AVOID, RECORD and REPORT), and what information to collect when reporting signs of disease. Consider:**

**⇨ training**

**⇨ documenting HPAI disease reporting procedures as part of the HPAI risk mitigation plan, including:**

- **contact details for the Emergency Animal Disease hotline.**
- **what should be done if HPAI is suspected.**
- **what information should be collected and reported.**

### 3.2.2 What will happen following reporting of signs of disease?

The biosecurity agency in the jurisdiction in which the event is occurring will determine whether further investigation is needed and whether any other activities are required. Samples may be sent to the laboratory to investigate HPAI as the cause of disease. The reporting WCP will be advised on the next steps and should await further direction.

Whether further investigation is undertaken will consider multiple factors including the number of sick or dead animals, species affected, clinical signs, and ability to collect appropriate samples for laboratory testing. There may be circumstances in which a decision is made not to undertake AI sampling and testing, e.g. if related investigations are underway in the vicinity, if no suitable samples can be obtained, or if samples cannot be obtained safely. Even if testing is not undertaken, all reports help to inform understanding of the disease and how to manage it.

☐ **Ensure that WCPs are aware that following reporting of suspicion of HPAI in wildlife, WCPs should wait for further direction from the biosecurity agency in the jurisdiction in which the event is occurring before undertaking any further activities.**

## 3.3 Practice good baseline biosecurity

During routine wildlife care activities, operate with an increased awareness of potential risks of disease in wildlife. If the WCP suspects animals may be infected with HPAI at any time, they must immediately follow the notification processes in Section 3.2, before proceeding with any, or further, intervention.

**To prevent spread of disease and protect the health of wildlife, domestic birds and humans, good hygiene and biosecurity practices should be maintained before, during and after working with wildlife. These practices should be undertaken even when HPAI is not present in Australia and when animals appear to be healthy. The biosecurity and hygiene practices listed in this section should always be followed when interacting with wildlife and are considered "baseline biosecurity measures".**

Measures should be tailored to the specific activities and facilities, following a risk assessment (see Section 4). In the event that HPAI is present in Australia, or animals are displaying signs of HPAI, heightened biosecurity and hygiene practices may be needed (see Section 5.4).

### 3.3.1 Prior to and arriving at a field site for rescue of wildlife

Prior to arriving at a field site for the purpose of rescuing wildlife, the WCP should attempt to collect as much information as possible about the situation and any clinical signs that the animals are displaying. Any suspicion of HPAI must be reported as described in Section 3.2.

In all cases, WCPs should prepare the appropriate personal protective equipment (PPE) to take to the field, as described below.

Where possible, before undertaking any activities or interventions, observe the animals for any unusual signs of sickness or deaths from a distance. Any suspicion of HPAI must be reported as described in Section 3.2. Do not handle or remove animals suspected to have HPAI unless instructed to do so by government authorities.

### 3.3.2 Personal protective equipment (PPE) and biosecurity measures during wildlife handling (in the field, veterinary clinic or rehabilitation centre)

During handling of wildlife:

- Wear appropriate PPE (e.g. disposable waterproof gloves, facemasks and eye protection), and ensure PPE is removed properly to avoid self-contamination (see Appendix 5 for resources).
- Particular attention should be given to hand washing after handling wildlife, after contact with potentially contaminated materials and after removal of gloves. Hands and arms should be washed with abundant soap and warm water, then dried thoroughly, even if gloves are used. Hand sanitizer (gel with 60 to 90% ethanol concentration) can be applied to reinforce disinfection but should not replace proper handwashing.
- Avoid rubbing eyes or touching the mouth, eating, drinking, or smoking while working with animals or their products.
- Where practicable, handle animals in a well-lit and well-ventilated area to minimise the possibility of inhaling dried faecal or other material.
- Use new or appropriately cleaned and disinfected equipment and PPE for handling of each animal.

Any suspicion of HPAI must be reported as described in Section 3.2.

### 3.3.3 PPE and biosecurity measures after wildlife handling (in the field or WCP facility)

After handling of wildlife:

- Clothing, shoes, vehicles and equipment (e.g. used for capture, handling, marking, treatment, holding [e.g. transport boxes/bags]) should be thoroughly cleaned after use, followed by disinfection. There are a range of cleaning and disinfectant agents that are effective against AI viruses which are listed in AUSVETPLAN Operational Manual: Decontamination. The WOAH & IUCN Wildlife Health Specialist Group Avian Influenza and Wildlife: Risk management for people working with wild birds document also contains succinct information on cleaning and disinfectant agents for HPAI.
- Waste material (e.g. disposable equipment or PPE) should be disposed of appropriately.
- Anyone who has handled wildlife should avoid contact with domestic birds and poultry for 48 hours, and should avoid visiting multiple sites in one day.
- Maintain a record of activities (e.g. treatments, husbandry), including the date and time, what activities were undertaken and who was involved.

### 3.3.4 Biosecurity considerations for WCP facilities

As well as the PPE measures, hand hygiene and equipment hygiene measures described above, wildlife care facilities (including those in private homes) should also consider facility hygiene measures, facility design and workflow practices to minimise the risk posed by infectious diseases such as HPAI. **Baseline measures** include:

- Quarantine or isolation facilities for new admissions or wildlife suspected of having an infectious disease.
- The work environment should be kept clean and tidy.
- Cleaning spills of blood and other bodily substances.
- Cleaning and disinfecting (or safely disposing of) equipment after use.
- Appropriate management and disposal of waste material (including animal, food, water and clinical waste).
- Appropriate management of laundry (bedding, towels and worker clothing).
- Safe use and disposal of sharps such as needles and scalpel blades, as well as knives for food preparation.
- Managing accidental exposures to blood and body substances, as well as animal bites, scratches and sharps injuries.

Facilities should develop and maintain a set of operational protocols and guidelines relating to these baseline biosecurity measures.

**For further information see the National Wildlife Biosecurity Guidelines and AVA Veterinary Personal Biosecurity and PPE.**

**☐ Ensure that WCPs are aware of baseline biosecurity and hygiene measures for HPAI and have the resources to implement them in the field and in facilities. Consider:**

**⇨ training** (see Appendix 4)
**⇨ communications materials for visitors**
**⇨ developing procedures and guidelines covering PPE, biosecurity and hygiene measures in the field and in facilities**
**⇨ ensuring availability of appropriate PPE, soap and disinfectants, equipment washing facilities and disposal sites for waste materials.**
**⇨ maintaining a record of activities.**

# 4 Prevention and preparedness for HPAI: WCP facility-specific risk management plan

This section sets out a suggested framework for developing a WCP facility-specific risk management plan for HPAI, including undertaking a simple risk assessment. Alternatively, WCPs may prefer to use any established risk assessment processes. For further information on undertaking risk assessments and risk management plans, see the WHA's National Wildlife Biosecurity Guidelines , the World Health Organisation's Joint Risk Assessment Operational Tool and the International Union for Conservation of Natures Manual of Procedures for Wildlife Disease Risk Analysis.

The HPAI risk for a particular WCP facility will not be static, and may change following changes to the animal populations, the AI strains circulating in the area at the time, environmental factors, and changes to activities undertaken at a site. Most importantly, the HPAI risk for wildlife populations in Australia will change significantly from its current level if H5 HPAI were to enter Australia**. It is recommended that site or population risk management plans should be developed based on the current situation (where HPAI is not present in Australia) and frequently reviewed and updated as required.**

Jurisdictional environment or biosecurity agencies may have undertaken risk assessments and management plans and should be consulted in the development of site or population specific risk management plans for HPAI.

## 4.1 Establishing the context

This section identifies key features of the WCP facility that will inform the likelihood of entry of HPAI, as well as the consequence if it does enter.

### 4.1.1 Identify and collate information on the animals at risk

The details of animals that typically require rescue or enter and are held for treatment at the WCP facility should be identified and documented. As described in Section 3.1, all wild bird species should be assumed to be susceptible to HPAI. A wide range of wild mammals are also susceptible, particularly marine mammals and mammals that prey or scavenge on birds.

Types of information that should be collected includes:

species of animals accepted for rescue and at the facility, including (if known):

- **conservation status** of the species and any species-specific recovery plans currently applicable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) or jurisdictional legislation.
- whether that species is known to have been affected by HPAI (see FAO species list)

- where the species demonstrates **behaviours that increase their risk of infection** with HPAI, such as colony nesting, communal feeding, communal roosting, scavenging or having close association with seabirds or waterfowl
- **other key features of the species or population** from which the animal came (or individual animals in the population) in terms of public interest, value to tourism, research, First Nations Communities etc.
- approximate numbers of animals accepted for rescue by the facility (by species or other taxonomic group), age groups typically admitted to the facility, including any seasonal patterns to admissions
- any other animals typically held at the facility such as other wildlife under care, wildlife held permanently (e.g. for educational purposes), or domestic animals (e.g. in private veterinary clinics).

### 4.1.2 Document activities undertaken at the facility, workflow practices and biosecurity operational protocols

Types of information that should be collected includes:

procedures and protocols for admission to the facility including:

- initial examination and triage protocols including location
- whether a veterinary examination is involved as part of the routine admission process
- any defined period of isolation/quarantine for newly arrived animals

- procedures or protocols for categorising animals at the facility for biosecurity and workflow purposes, such as:
  - newly-arrived wildlife rescue cases for treatment and rehabilitation
  - wildlife cases suspected or confirmed to be suffering from contagious disease such as HPAI
  - wildlife cases confiscated from captivity with unknown history
  - captive-bred or wild-caught wildlife prior to and immediately following translocation
  - any species-specific categories
- post-admission biosecurity measures, including:
  - PPE, cleaning and disinfection of people, clothing, equipment and facilities, between individual animals and between categories/groups of animals or different areas of the facility
  - workflow practices according to biosecurity status of individuals or groups of animals at the facility, including classification of work situations by level of biosecurity risk, quarantine processes and designing work days or sessions to commence in “clean” work areas, progressing to “dirty” areas

- procedures for individually identifying animals that enter the WCP, and processes for recording the animals entering / leaving the facilities, their original source and onward movements to facilitate traceability if required
- routine monitoring and observation of animals for signs of disease
- availability of onsite veterinary treatment or surgical services and facilities
- activities other than wildlife care or rehabilitation undertaken at the facility, such as off-site educational visits for the general public, teaching, research
- carcass and waste disposal protocols, including food, water, bedding, equipment
- food sources for carnivorous animals
- details of individuals who also work with conservation critical animals or those with poultry or pet birds at work or home.

### 4.1.3 Document physical details about the facility

The following key natural and built features of the site should be documented to inform disease risk pathways, as well as informing response activities set out in Section 5:

- layout of the facility, including locations of animal housing, treatment or isolation areas, entry and exit points into different areas of the facility
- connectivity of animals, enclosures, or areas of the facility such as direct animal contact, water sources, waste, ventilation, order of service etc.
- facility boundaries, including any natural or built barriers at the perimeter of, or within the site
- facility access, into and out of the facility and its surrounds, and around the facility, including public and private roads, maintenance tracks, walking trails
- details of neighbouring properties, including proximity to commercial or backyard poultry
- proximity to or access to free-ranging wildlife (describe species, numbers and type of contact where applicable), details of habitats accessible to free-ranging wildlife and ability to reduce or limit contact with free-ranging wildlife.

### 4.1.4 Document facility inputs and output

In a facility, pathogens such as HPAI may enter or leave via a number of routes. Any animal, human, biological product, vehicle, equipment or other product entering (an **input**) or leaving a facility or a geographic location (an **output**) should be seen as a possible route for disease transmission. Figure 7 summarises inputs and outputs from facilities that are possible pathways of HPAI transmission.

An example spreadsheet of how this information can be captured is shown in Appendix 2. This spreadsheet is also provided as a separate attachment on the WHA website.

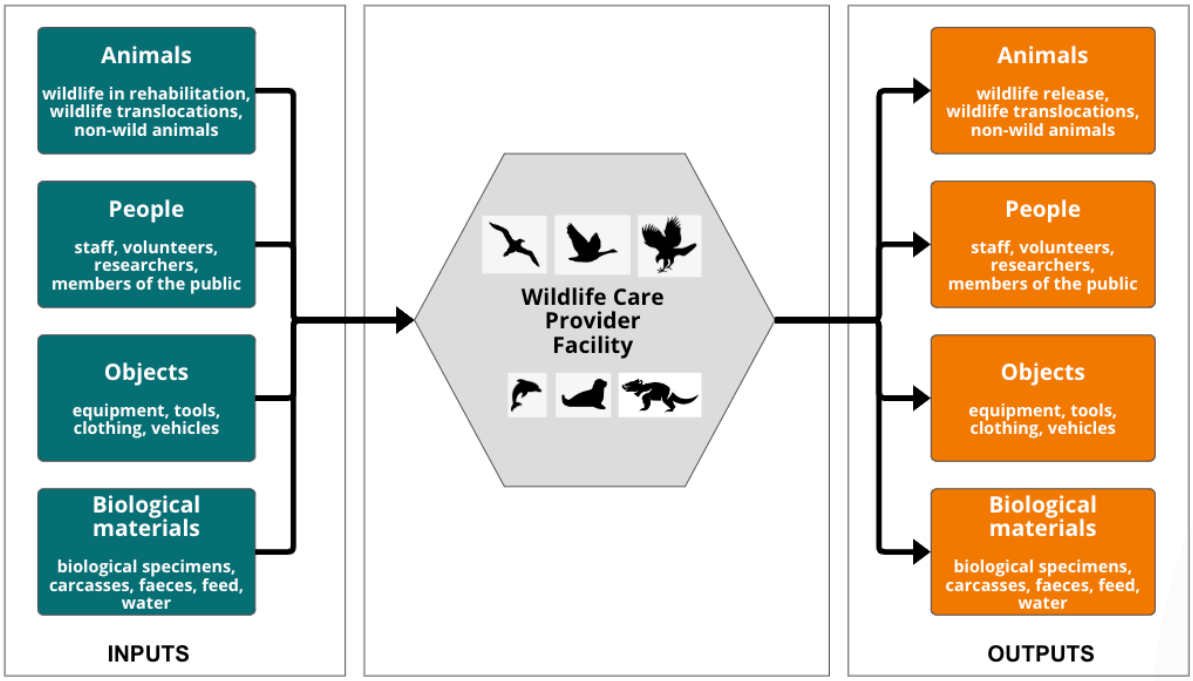


*Figure 7: Inputs and outputs of HPAI to and from WCP facilities*

### 4.1.5 Document disease risk pathways (disease entry to the facility, spread within the facility and out of the facility)

All of the potential pathways of HPAI entry into the facility, spread within the facility and spread from the facility should be documented. The information on inputs and outputs collected in 4.1.4 should help to identify key pathways. It may be useful to compile a list of HPAI risk pathway statements, for example:

Example 1:

**Type of facility:** Rehabilitation facility for seabirds

**HPAI risk pathways statement:** HPAI could enter the facility through admitting seabirds that are infected with HPAI.

Example 2:

**Type of facility:** Rehabilitation and education facility for all native bird species

**HPAI risk pathways statement:** If an HPAI infected bird was admitted to the facility, it could spread to the birds kept permanently at the facility for educational purposes through animal handling equipment becoming contaminated with virus and being shared between infected and non-infected birds.

*(Continued over page)*

Example 3:

**Type of facility:** Private veterinary clinic

**HPAI risk pathways statement:** If an HPAI infected bird was admitted to the clinic, clinic staff could spread HPAI to any cage birds or backyard poultry that they have at home, if they are wearing virus-contaminated clothing and footwear home.

Example 4:

**Type of facility:** Rehabilitation facility for birds of prey

**HPAI risk pathway statement:** HPAI could enter the facility and potentially infect birds of prey through infected food items (e.g. poultry or wild bird carcasses).

Example 5:

**Type of facility:** Home-based rehabilitation in a private residence for all native species (including birds and mammals)

**HPAI risk pathways statement:** If HPAI infected wildlife was admitted for rehabilitation, HPAI could enter the facility and spread to other wildlife, pets or backyard poultry kept at the home through direct contact between animals or viral contamination of food, bedding, clothing or equipment.

## 4.2 HPAI risk assessment

Using the information gathered in Section 4.1, for each of the disease risk pathways described above, consider the likelihood and consequence of that HPAI transmission pathway occurring, and assign an overall risk rating (see Appendix 3 for example likelihood and consequence definitions, and risk overall matrices). There will be **many factors** that impact on the likelihood and consequence of the risk pathways occurring, and in many cases not all of the information to make an assessment may be available. It is recommended that WCP facilities conduct as thorough an HPAI risk assessment as possible, to help identify key risk pathways and populations.

For the example scenarios in 4.1.4, some example questions to consider when assigning risk ratings are included as follows:

Example 1:

**Likelihood:** What is the likelihood that seabirds admitted to the facility are infected with HPAI?

**Consequence:** If HPAI-infected birds were to be admitted to the facility, what would be the impact on the health of other animals at the facility, and potential risks to human health?

*(Continued over page)*

Example 2:

**Likelihood:** What is the likelihood that animal handling equipment could transmit live HPAI virus between these two categories of birds?

**Consequence**: If birds kept permanently at the facility for educational purposes became infected with HPAI virus, what would be the impact on their health, potential risks to humans and impacts on the educational activities undertaken at the facility?

Example 3:

**Likelihood:** What is the likelihood that the clothing and footwear of staff members become contaminated with HPAI virus if there was an infected HPAI bird in the clinic? What is the likelihood that staff members leave the clinic wearing contaminated clothing and footwear? What is the likelihood that staff members wearing contaminated clothing and footwear have contact with cage birds and backyard poultry that they have at home?

**Consequence:** What is the impact on the health of the cage birds and backyard poultry if they became infected by HPAI?

## 4.3 Risk control measures

Consider measures that could be put in place to reduce the risk. Measures could reduce either the likelihood or consequence components to risk, or both. The baseline strategies discussed in Section 3 should be considered in light of the risk assessment, and some of the measures in Section 5 may also be appropriate (e.g. 5.3, 5.4).

It will not always be possible to eliminate risk when working with wildlife, but everyone should work to an agreed acceptable level of risk (or a safe or minimum risk level). An acceptable level of risk is the maximum overall exposure to risk that can be accepted, based on the benefits and costs involved. This may be determined by the authorities, by an organisation or by an individual.

## 4.4 Monitoring and evaluation

Once the risk assessment has be undertaken and any risk control measures determined and implemented, they should be monitored and reviewed on a regular basis. Monitoring and evaluation aim to make sure that risks have not changed, that control measure are being properly implemented, that the control measures are continuing to appropriately minimise the risk, that no additional control measures need to be implemented and that the controls are not causing any new problems. **A key trigger for review of the risk assessment will be if H5 HPAI were to enter Australia**.

☐ **Undertake an WCP facility-specific HPAI risk assessment, which is reviewed and updated frequently as required, and particularly if H5 bird flu enters Australia.**

☐ **Consult with relevant state/territory environmental departments during the development of the risk assessment.**

# 5 Response and recovery from HPAI in wildlife

As described in Section 2.5, the pre-agreed national response arrangements following a detection of HPAI in Australia are set out in *AUSVETPLAN Response Strategy: Avian Influenza.* This section of the toolbox describes **potential** approaches to **response and recovery activities**, following a detection of HPAI in Australia and is based on current national guidance and policy.

Response and recovery aims and activities may change over the course of the outbreak, particularly if it is determined that the disease is not able to be eradicated from Australia or contained.

Activities may be relevant to WCPs even if no HPAI has been detected at the site. Action items for WCP facilities listed in this section are designed to support decision making and on the ground response activities **if they are required** under the response framework as discussed in Section 2.5. In addition to any required response and recovery activities, WCPs may elect at any time to implement some of the following activities, to mitigate their HPAI risk, based on their risk assessment undertaken in Section 4.

## 5.1 Investigation - source of the outbreak

If HPAI is detected at a WCP facility, an investigation may be undertaken by government authorities to determine how the animals came to be infected. This will help identify other animals or wildlife populations that may be infected or at risk of infection.

☐ **Ensure that the WCP facility is able to rapidly provide information to government authorities that will inform how the animals came to be infected.**

⇨**This information will be collected during the risk assessment process in Section 4.**

⇨**Ensure that records of animals entering the facility are maintained.**

## 5.2 Investigation- other animals at risk of infection

If HPAI is detected at a WCP facility, an investigation may be undertaken by government authorities to determine what other animals may be at risk of infection, including animals

currently at the facility, animals that have recently left the facility, or animals in the surrounds of the facility. This will help inform decisions around whether risk mitigation actions are needed.

☐ **Ensure that the WCP is able to rapidly provide information to government authorities about other animals that may be at risk of infection, including animals currently at the facility, animals that have recently left the facility, or animals in the surrounds of the facility.**

⇨**This information will be collected during the risk assessment process in** Section 4.

⇨**Ensure that records of animals at the facility and leaving the facility are maintained.**

## 5.3 Restrictions on activities

There may be need for prohibition, reduction or restrictions on visitors and activities at WCP facilities or at field sites accessed by WCP individuals, as directed by government authorities. Restrictions may be implemented to reduce the risk to human, animal or environmental health, such as reducing the likelihood of disease introduction or spread. Activities that may be subject to restriction may include, but are not limited to:

- access by WCP to free-ranging wildlife populations and their environment
- access of non-essential staff to WCP facilities
- wildlife rescue and rehabilitation of some or all species
- wildlife rescue and rehabilitation of animals that are suspected or confirmed to have HPAI.

Government authorities will ultimately determine the minimum required restrictions on activities, but WCPs should consider what activities they would regard as being essential, and the associated rationale, so that they are able to provide this information to government authorities if required. Permits or restriction exemptions may be required for certain activities if deemed appropriate by government authorities.

WCP facilities and individuals should also consider if it is appropriate to voluntarily suspend, reduce, or restrict their activities during a response to HPAI in Australia based on assessment of risk, even if it is not mandated by government authorities. For example, WCP facilities, groups or individuals may decide to halt new admissions or suspend certain rehabilitation activities, due to potential risk for other animals (e.g. existing patients, educational animals) or people. Early discussion and planning of such scenarios is an important aspect of preparedness. WCPs should consider also discussing any proposed voluntary suspension, reduction, or restriction to normal wildlife care activities with the

relevant licensing body in their jurisdiction, especially where it may affect large scale service provision or animal welfare.

☐ **Ensure that any restrictions on visitors and activities at the facility can be quickly and effectively implemented if required. Consider:**

- **⇨documenting the usual visitors and activities undertaken at the facility as set out in Section 4.**
- **⇨maintaining contact lists of stakeholders that usually visit the facility to ensure that any restrictions can be easily communicated**
- **⇨identifying any essential activities that WCPs think should not be subject to restriction and the reason why**
- **⇨documenting the entry and exit points to the facility and how general access may be restricted (e.g. locking gates, barriers)**

☐ **Document the impact of a reduction or cessation in animal rescue and rehabilitation activities, and discuss any changes to normal wildlife care activities with the relevant licensing body in that jurisdiction.**

## 5.4 Enhanced hygiene and biosecurity measures

In the event that HPAI has been detected in Australia, there may be a recommendation or requirement for enhanced biosecurity and hygiene measures by WCPs in addition to the baseline measures in Section 3.3. Enhanced hygiene and biosecurity measures will also be required if HPAI is detected in a WCP facility.

Enhanced measures may include:

- increased vigilance in implementing the baseline measures as determined in Section 3.3
- enhanced PPE for both human and animal health protection, such as disposable overalls, rubber/polyurethane boots, safety goggles, heavy duty rubber gloves, facemasks with increased protection levels or full-face respirators. Personnel using enhanced PPE will require specific training in its use. For more information on how to stay safe when handling wildlife suspected or confirmed to be infected with H5 HPAI, see Australian Centre for Disease Control (CDC) website, Advice for people in contact with wild birds (e.g., hunters and wildlife carers), CDNA national guidelines for avian influenza – protecting people who work with birds and wildlife, and the Bird flu toolkit for people who work with birds.
- enhanced hygiene and biosecurity measures for new animal admissions, such as:
    - including a veterinary examination of the animal as part of the initial assessment of new animal admissions

- establishment of an area for initial examination and admission to the facility that is separate to the rest of the facility
- quarantining of new admissions into the facility for a designated time period in a dedicated area of the facility, with frequent monitoring for signs of disease during the quarantine period (contact the relevant biosecurity agency for information on recommended quarantine protocols)
- using dedicated equipment for animals in quarantine that is not shared with other animals in the facility
- alternative management strategies for animals with clinical signs consistent with HPAI on admission (e.g. euthanasia)

- post-admission biosecurity measures, such as:
  - PPE, cleaning and disinfection of people, footwear, clothing, equipment and facilities between individual animals and between categories/groups of animals (the range of cleaning and disinfectant agents that are effective against AI viruses are listed in AUSVETPLAN Operational Manual: Decontamination)
  - workflow practices according to biosecurity status of individuals or groups of animals at the facility, including classification of work situations by level of biosecurity risk, and designing work days or sessions to commence in "clean" work areas, progressing to "dirty" areas
  - restriction of access or increased biosecurity requirements for individuals who also work with conservation critical animals or those with poultry or pet birds at work or home

- biosecure disposal of animal carcasses, animal waste, food, water, bedding and equipment. Biosecure disposal methods are listed in the AUSVETPLAN Disease Strategy for Avian Influenza and the AUSVETPLAN Operational Manual: Disposal.

**☐ Ensure that any enhanced biosecurity and hygiene measures can be quickly and effectively implemented if required. Consider:**

**⇨ developing a site-specific standard operating procedure (SOP) for baseline hygiene and biosecurity measures in WCP facilities (as per Section 3.3)**

**⇨ documenting potential options for enhanced biosecurity and hygiene measures that could be realistically implemented at the facility**

**⇨ documenting local suppliers of appropriate PPE and disinfectants**

**⇨ engaging with the biosecurity agency in the relevant jurisdiction as part of HPAI preparedness to discuss quarantine and biosecure disposal options at WCP facilities.**

## 5.5 Enhanced disease surveillance

Response activities may include enhanced disease surveillance as directed by government authorities for early detection of disease and to monitor its spread. Disease surveillance strategies that could be undertaken by government authorities include:

- implementing a regular schedule of observation of animals held by WCPs for signs of disease
- collection of samples from apparently healthy live animals being held by WCPs for HPAI testing
- collection and archiving of samples from any animals that die or are euthanased at the WCP facility, even if HPAI is not suspected.

**☐ Ensure that any enhanced disease surveillance measures required by government authorities can be quickly and effectively implemented if required. Consider:**

**⇨ ensuring that there are procedures and systems for identifying individual animals and maintaining records of animal health observations.**

**☐ Ensure that WCPs are familiar with the clinical signs of HPAI. Consider:**

**⇨ training (see Appendix 4)**

**⇨ documenting clinical signs as part of HPAI risk mitigation plans.**

## 5.6 Euthanasia of free-ranging wildlife

Australia's policy is that no destruction or culling of free-ranging healthy native wildlife will occur as part of a response to HPAI, because it is not practical or environmentally sound and may be counterproductive in stopping spread of the disease. This is reflected in advice from the joint CMS and FAO's Scientific Task Force on Avian Influenza and Wild Birds.

Euthanasia of individual sick wildlife may be undertaken on considerations of individual animal welfare, consistent with the animal welfare legislation in the relevant jurisdiction.

## 5.7 Euthanasia of wildlife in care

Any requirements to euthanase animals at an WCP facility to control the spread of HPAI during a response will be determined by government authorities based on a risk assessment. It is recommended that WCPs engage with their jurisdictional biosecurity agency and wildlife licencing agency as part of their HPAI preparedness activities to discuss the possible outcomes for animals in WCP facilities when HPAI is present in Australia.

Euthanasia of individual sick wildlife in WCP facilities, in line with existing WCP decision-making processes, may take place based on evaluation of individual animal welfare, consistent with the relevant animal welfare legislation in the relevant jurisdiction.

☐ **Policy and procedures should be in place for euthanasia of individual wildlife if required. Consider:**

- ⇨**documenting this policy and procedures as part of the site HPAI risk mitigation plan**
- ⇨**ensuring appropriate PPE is available and staff are trained in its use.**

☐ **Engaging with the biosecurity agency in the relevant jurisdiction as part of HPAI preparedness to discuss likely outcomes for wildlife in care when HPAI is suspected or confirmed.**

## 5.8 Vaccination of wildlife

Australia's current preferred policy is to control an outbreak of HPAI without the use of vaccination. However, vaccination may be considered under certain circumstances, such as to protect rare, protected and valuable native birds, or in poultry if the outbreak has become widespread (see AUSVETPLAN Avian Influenza and AHC Policy Decision- Use of Avian Influenza Vaccines for the Protection of Rare, Protected and Valuable Avian Species).

Although vaccination has not been required in previous Australian HPAI outbreaks, it has proven useful in some overseas HPAI outbreaks to supplement other biosecurity and control measures. **Nonetheless, broadscale vaccination of free-ranging wild birds is not considered appropriate, feasible or practicable.**

Decisions around implementing vaccine programmes will be made by government authorities. A policy has been endorsed (Avian Influenza Vaccination Policy for Rare, Protected and Valuable Avian Species) to provide guidance on vaccination in the event of an incursion or a significant threat of incursion of a strain known to be a high risk to priority native bird species, particularly threatened species. This policy outlines eligible populations and the requirements for record keeping and outcome monitoring. Mammals are not covered by this policy. Any vaccination under this policy requires approval from the relevant Chief Veterinary Officer.

In response to the threat of H5 HPAI, the Australian Government has procured inactivated H5 HPAI vaccines and is currently undertaking trials to provide safety data for its use in Australian bird species (non-poultry). See the Preparing for H5 avian influenza: Vaccination of priority native bird species factsheet. A small number of authorised pilot studies have also been conducted in a limited number of native and non-native wild bird species held in captivity in Australia, providing further data on safety and efficacy. As of March 2026, further vaccination pilot studies are being considered by Animal Health Committee. See Avian influenza vaccination pilot studies in non-poultry species for more information.

Overseas, vaccination in wildlife continues to be explored given the ongoing threat of H5 HPAI. Advice from the joint CMS and FAO's Scientific Task Force on Avian Influenza and Wild

Birds is that vaccination could be considered for key localised wild bird populations, however there are a number of constraints to the use of vaccination as a risk mitigation tool for HPAI in free-ranging wildlife. WOAH has produced a guidance document on Considerations for emergency vaccination of wild birds against HPAI in specific situations to assist decision-makers. Overseas experiences of vaccination in wildlife include the California Condor Recovery Program, the Bird flu vaccination trial in Aotearoa New Zealand, Hawaiian Monk Seal trials and King Penguin trials.

☐ **Be aware that the broadscale vaccination of birds in the wild is not considered appropriate, feasible or practicable. Consider:**

- ⇨**staff awareness**
- ⇨**documenting this policy as part of the site HPAI risk mitigation plan.**

# PART C APPENDICES

## Appendix 1 HPAI risk mitigation checklist

| | TOOLBOX REF. | Y | N | N/A | COMMENT<br>e.g. what do you currently do, what document currently exists? | FOLLOW UP ACTION REQUIRED?<br>Describe what action is required. |
|---|---|---|---|---|---|---|
| **HPAI AWARENESS, TRAINING AND OUTREACH** | | | | | | |
| Do you have a **basic understanding of how emergency animal diseases such as HPAI are managed in Australia** and what role WCP individuals and facilities might play during an HPAI response? | 2.5 | ☐ | ☐ | ☐ | | |
| Have you **engaged with your relevant state/territory agriculture, environment and human health departments** to discuss HPAI prevention, preparedness and response? Please read the entire toolbox and complete the checklist before reaching out. | 2.5<br>2.6<br>5.4<br>5.6 | ☐ | ☐ | ☐ | | |
| Are you, your staff and anyone regularly interacting with wildlife, **familiar with the clinical signs of HPAI** in wildlife? | 3.1 | ☐ | ☐ | ☐ | | |
| Are you and your staff aware of **how to report** suspicious signs of HPAI including what situations warrant reporting, who to report signs to, what information to collect and what to do following reporting? | 3.2 | ☐ | ☐ | ☐ | | |

| | TOOLBOX REF. | Y | N | N/A | COMMENT<br>e.g. what do you currently do, what document currently exists? | FOLLOW UP ACTION REQUIRED?<br>Describe what action is required. |
|---|---|---|---|---|---|---|
| Are you aware that WCPs **must not undertake any kind of diagnostic testing for HPAI** without oversight of the biosecurity agency in your jurisdiction? | 2.6 | ☐ | ☐ | ☐ | | |
| Are you, your staff and anyone regularly interacting with wildlife **aware of baseline biosecurity procedures and hygiene measures** to follow in the field and in WCP facilities? | 3.3 | ☐ | ☐ | ☐ | | |
| Are you and your staff aware of the **response activities that are <u>not</u> currently supported** by Australia's AI response frameworks? Specifically: euthanasia or culling of wildlife and broadscale vaccination of wild birds. | 5.6<br>5.8 | ☐ | ☐ | ☐ | | |
| **PLANS AND PROCEDURES** | | | | | | |
| Do you have a documented **WCP facility-specific HPAI risk assessment?** | 4 | ☐ | ☐ | ☐ | | |
| Do you have a **documented plan or procedure for how to report suspicion of HPAI** in wildlife, including:<br>• clinical signs that should raise suspicion for HPAI<br>• contact details relevant to your jurisdiction<br>• information to be collected for reporting<br>• actions to take following reporting | 3.1<br>3.2 | ☐ | ☐ | ☐ | | |

| | TOOLBOX REF. | Y | N | N/A | COMMENT<br>e.g. what do you currently do, what document currently exists? | FOLLOW UP ACTION REQUIRED?<br>Describe what action is required. |
|---|---|---|---|---|---|---|
| Do you (or your organisation) have a **documented plan or procedure for baseline biosecurity measures,** to be undertaken by anyone interacting with wildlife in the field and in WCP facilities? | 3.3 | ☐ | ☐ | ☐ | | |
| Have you (or your organisation) documented potential ways in which **biosecurity measures could be enhanced** beyond baseline in the event of an HPAI outbreak? | 5.4 | ☐ | ☐ | ☐ | | |
| Do you have a **system for recording individual animals that enter and leave** the WCP facility? | 5.1<br>5.2 | ☐ | ☐ | ☐ | | |
| Do you **maintain contact lists of stakeholders** that usually visit the facility, to ensure that in the event of an HPAI outbreak, any restrictions on activities can be easily communicated? | 5.3 | ☐ | ☐ | ☐ | | |
| Have you identified and documented **any activities undertaken at the facility that you would regard as being essential to the health and welfare of the animals at the site?** | 5.3 | ☐ | ☐ | ☐ | | |
| Have you documented the likely impact of a **reduction or cessation in animal rescue and rehabilitation activities?** | 5.3 | ☐ | ☐ | ☐ | | |
| Have you identified and documented the **entry and exit points** to the facility and how vehicle or pedestrian access could be | 5.3 | ☐ | ☐ | ☐ | | |

| | TOOLBOX REF. | Y | N | N/A | COMMENT<br>e.g. what do you currently do, what document currently exists? | FOLLOW UP ACTION REQUIRED?<br>Describe what action is required. |
|---|---|---|---|---|---|---|
| restricted in the event of an HPAI outbreak (e.g. locking gates, barriers)? | | | | | | |
| Do you have procedures and systems for **identifying individual animals** and **maintaining records of animal health observations?** | 5.5 | ☐ | ☐ | ☐ | | |
| Do your (or your organisation's) HPAI preparedness plans and procedures make it clear that euthanasia or culling of healthy free-ranging wildlife and broadscale vaccination of wild birds **do not form part of the planned response** to an outbreak of HPAI in Australia? | 5.6<br>5.8 | ☐ | ☐ | ☐ | | |
| Do you (or your organisation) have established procedures for **euthanasia of individual sick wildlife** if required to mitigate animal welfare risks? | 5.7 | ☐ | ☐ | ☐ | | |
| **EQUIPMENT AND FACILITIES** | | | | | | |
| Do you **have PPE, soap and disinfectants, equipment washing facilities and disposal sites for waste materials** appropriate to the **baseline biosecurity** measures for your site? | 3.3 | ☐ | ☐ | ☐ | | |
| Have you (or your organisation) identified **suppliers** of PPE and disinfectants? | 5.4 | ☐ | ☐ | ☐ | | |

# Appendix 2 Example spreadsheet for collating WCP facility inputs and outputs

This image demonstrates the layout of a spreadsheet for recording WCP facility inputs and outputs. An electronic version is available on the Wildlife Health Australia website: [High Pathogenicity Avian Influenza Information](#).

**HPAI WCP Facility Assessment - Inputs and Outputs** Date:

WCP Facility Information: Initials of contributors:

| INPUTS | | | OUTPUTS | | |
|---|---|---|---|---|---|
| | Y/N | DETAILS | | Y/N | DETAILS |
| ANIMALS | | | | | |
| Wild birds | | | Wild birds | | |
| Marine mammals | | | Marine mammals | | |
| Other free-ranging wildlife | | | Other free-ranging wildlife | | |
| Domestic poultry | | | Domestic poultry | | |
| Domestic birds (other) | | | Domestic birds (other) | | |
| Domestic carnivores | | | Domestic carnivores | | |
| Domestic mammals (other) | | | Domestic mammals (other) | | |
| Other | | | Other | | |
| PEOPLE | | | | | |
| Staff | | | Staff | | |
| Volunteers | | | Volunteers | | |
| Researchers | | | Researchers | | |
| General public | | | General public | | |
| | | | | | |
| Other | | | Other | | |
| OBJECTS | | | | | |
| Equipment | | | Equipment | | |
| Tools | | | Tools | | |
| Clothing | | | Clothing | | |
| Vehicles | | | Vehicles | | |
| | | | | | |
| Other | | | Other | | |
| BIOLOGICAL MATERIALS | | | | | |
| Biological specimens | | | Biological specimens | | |
| Carcasses | | | Carcasses | | |
| Faeces | | | Faeces | | |
| Feed | | | Feed | | |
| Water | | | Water | | |
| Other | | | Other | | |

# Appendix 3 Risk definitions and matrices

The following definitions are provided as an example of ways in which likelihood, consequence and overall risk could be evaluated for the entry and spread of HPAI to a given population. The matrix in Table 3 demonstrates how the likelihood and consequence can be combined to give an overall risk estimate.

**Table 1: Likelihood definitions**

| Likelihood level | Definition |
|---|---|
| Negligible | Almost certain not to occur except in exceptional circumstances |
| Low | Unlikely to occur |
| Moderate | May occur |
| High | Likely to occur |

**Table 2: Consequence definitions**

| Description | Definition |
|---|---|
| Insignificant | - No deaths or euthanasia of animals held at the facility.<br>- No impact on activities normally undertaken at the facility.<br>- No impact on resources (e.g. financial, staffing, capacity). |
| Very minor | - Death or euthanasia of a single animal held at the facility.<br>- Delays or temporary suspension to small numbers of the activities held at the facility.<br>- Very minor impact on resources (e.g. financial, staffing, capacity). |
| Minor | - Deaths or euthanasia of a small number of animals held at the facility.<br>- Cancellation, delays or temporary suspension to small numbers of the activities held at the facility.<br>- Minor impact on resources (e.g. financial, staffing, capacity). |
| Moderate | - Deaths or euthanasia of a moderate number of animals held at the facility.<br>- Cancellation, delays or temporary suspension to a significant number of the activities held at the facility.<br>- Moderate impact on resources (e.g. financial, staffing, capacity). |
| High | - Deaths or euthanasia of a large number of animals held at the facility.<br>- Cancellation or permanent suspension of most of the activities held at the facility.<br>- Major impact on resources (e.g. financial, staffing, capacity). |
| Catastrophic | - Deaths or euthanasia of all of animals held at the facility.<br>- Closure of the facility.<br>- Severe impact on resources (e.g. financial, staffing, capacity). |

### Table 3: Overall risk ratings

| | | Consequences of HPAI entry and establishment | | | | | |
|---|---|---|---|---|---|---|---|
| | | **Insignificant** | **Very minor** | **Minor** | **Moderate** | **High** | **Catastrophic** |
| **Likelihood of entry and exposure** | **Negligible** | Negligible risk | Negligible risk | Negligible risk | Negligible risk | Negligible risk | Very low risk |
| | **Low** | Negligible risk | Negligible risk | Low risk | Low risk | Moderate risk | High risk |
| | **Moderate** | Negligible risk | Very low risk | Low risk | Moderate risk | High risk | High risk |
| | **High** | Negligible risk | Very low risk | Low risk | Moderate risk | High risk | Extreme risk |

Note that the following lists are not comprehensive, and include resources, information and advice from official and unofficial sources from Australia and overseas. Information contained in these links has not been assessed for accuracy.

# Appendix 4 Training resources and example documents

### Training material - Australia's emergency management arrangements

- Animal Health Australia's Emergency Animal Disease foundation course

### Training material - clinical signs of HPAI

Links to videos of wildlife affected by HPAI:

SANCCOB social media 1

SANCCOB social media 2

International Bird Rescue social media

Sweet Briar Nature Centre social media

Rocky Mountain Wildlife Alliance social media

### Example outreach material and contingency planning documents

- Wildlife Health Australia's H5 bird flu resources
- The Australian Government's resources for H5 avian influenza (bird flu) preparedness
- Northern Australia Biosecurity Strategy - Avian influenza awareness: Keep a TopWatch! (video)
- The interim Australian Centre for Disease Control has a bird flu (communication) toolkit for people who work with birds.
- World Organisation for Animal Health - Animation about how avian influenza threatens wild birds.

### Example HPAI training and education

- Australian Registry of Wildlife Health - resources

# Appendix 5 References and further reading

### Wildlife Health Australia

- The H5 bird flu resources webpage includes a range of information on HPAI in wildlife targeted to different stakeholder groups.
- Biosecurity & Management provides links to relevant documents related to wildlife

### Australian Department of Agriculture, Fisheries and Forestry

- The birdflu.gov.au webpage is the key Australian government webpage for information relevant to avian influenza prevention and preparedness

- Outbreak.gov.au provides details on how to prepare for and respond to animal pests and diseases.

### Response Documents

- AUSVETPLAN documents are available from the Animal Health Australia website.
- The National Management Agreement – H5 HPAI in wildlife is national arrangement for responding to incursions of HPAI in wildlife, where eradication or containment of the disease is unlikely

### Human Health and Personal Protective Equipment

- The Australian Centre for Disease Control (CDC) website
- The Communicable Diseases Network Australia developed the National guideline for avian influenza: protecting people who work with birds and wildlife.
- The Australian Dept of Health and Aged Care Avian influenza in humans
- WOAH & IUCN Wildlife Health Specialist Group Avian Influenza and Wildlife: Risk management for people working with wild birds
- Australian Veterinary Association's Veterinary personal biosecurity & PPE

### Environmental Health

- The H5 avian influenza (bird flu) webpage provides information and current activities away in response to the risk of H5 HPAI on Australia's biodiversity.

### World Organisation for Animal Health (WOAH)

WOAH monitors and reports animal diseases worldwide, collects and shares animal health data and supports countries in controlling outbreaks. Relevant information includes:

- WOAH website on avian influenza
- WOAH Considerations for emergency vaccination of wild birds against HPAI in specific situations
- WOAH Practical guide for authorised field responders to HPAI outbreaks in marine mammals, with a focus on biosecurity, sample collection for virus detection and carcass disposal

### Other resources

- Joint OIE-FAO Scientific Network on Animal Influenza (OFFLU) publications
- Food and Agriculture Organisation of the United Nations (FAO) Global AIV with Zoonotic Potential situation update
- Convention on the Conservation of Migratory Species of Wild Animals Scientific Task Force on Avian Influenza and Wild Birds
- Michelle Wille Avian influenza resources and Highly pathogenic avian influenza panzootic and the threat to wildlife and ecosystems (video)
- AviFluMap – a H5 bird flu model tool for Australia's wild birds.

## Appendix 6 Acronyms

| | |
|---|---|
| AI | Avian influenza |
| AUSVETPLAN | Australian Veterinary Emergency Plan |
| CCEAD | Consultative Committee on Emergency Animal Disease |
| CMS | The Convention on Migratory Species |
| EAD | Emergency Animal Disease |
| FAO | Food and Agricultural Organisation of the United Nations |
| H5 NMA | National Management Agreement – H5 HPAI in wildlife |
| HPAI | High pathogenicity avian influenza |
| LPAI | Low pathogenicity avian influenza |
| NAIWB program | National Avian Influenza Wild Bird program |
| PPE | Personal protective equipment |
| WCP | Wildlife care provider |
| WHA | Wildlife Health Australia |
| WOAH | World Organisation for Animal Health |

## Appendix 7 Glossary

| | |
|---|---|
| Biosecurity agency | Any government agency responsible under law for managing biosecurity in Australia or part thereof. This is generally the Department of Primary Industries or Agriculture in each jurisdiction. |
| H5 HPAI | H5 high pathogenicity avian influenza, which includes the serious and highly contagious H5N1 clade 2.3.4.4b strain which has been spreading globally since 2021. You may also see it referred to as H5 bird flu. |
| Pathogen | Any organism causing disease. |
| Spillover | An event during which a *pathogen* which occurs naturally in one species moves into another species; such movement can result in a disease outbreak. For example, LPAI viruses known to occur naturally in wild birds in Australia can spillover to poultry, resulting in outbreaks of disease. |

| | |
|---|---|
| Strain | A distinct category of virus characterised by its genetic lineage and ability to cause disease. For example, the new AI strain causing unprecedented outbreaks of disease worldwide is the H5Nx 2.3.4.4b strain, which evolved from the A/goose/Guangdong/1/96 lineage. |
| Subtype | A categorisation of influenza viruses according to the characteristics of the haemagglutinin (HA) and neuraminidase (NA) surface glycoproteins. |
| Surveillance | A systematic program of investigation designed to establish the presence, extent or absence of a disease, or of infection or contamination with the causative organism. It includes the examination of animals for clinical signs, antibodies or the presence of the *pathogen*. |
| Wildlife or wild animal | An animal that is found in the natural environment and does not live under human supervision and control. The species may be native to Australia or an introduced species. An introduced species may be a feral or invasive species. |
| Wildlife care activities | Any direct intervention on sick, injured or orphaned wildlife by humans including their rescue, transport, treatment and rehabilitation. |
| Wildlife care facility | Any place which provides care to wildlife. These facilities may range from large, staffed wildlife hospitals or veterinary hospitals to the private homes of rehabilitators. |
| Wildlife care provider | A facility or individual that cares for wildlife that are sick, injured, orphaned or otherwise require human intervention. |