Wild Bird News

National Avian Influenza Wild Bird Surveillance Newsletter - Dec 2024 (interim version)

Avian Influenza Virus

Avian influenza virus (AIV) is a member of the complex group of Influenza A viruses and can be classified according to their surface proteins. To date, 17 haemagglutinin (HA; H1-H16, H19) and 9 neuraminidase (NA; N1-N9) AIV subtypes are recognised in birds in various combinations. AIVs are constantly evolving, with the emergence of new lineages and strains defined by genetic analysis and distribution by host species, location and time. **Waterfowl and shorebirds are the main natural reservoirs and rarely show signs of disease.** AIVs may demonstrate varying pathogenicity as determined by the severity of disease caused in poultry.

Of global concern is the capacity of AIV subtypes H5 and H7 to mutate from Low Pathogenicity (LPAI) into **High Pathogenicity (HPAI) forms which can cause significant losses of poultry and potential health issues in wildlife, domestic animals, and people.** While previous outbreaks of HPAI overseas have resulted in deaths and mass mortality events in numerous avian species, the recent global circulation of HPAI H5 clade 2.3.4.4b poses unprecedented risks to wildlife.

AIV in Australia

As at 31st December 2024, Australia has experienced 11 outbreaks of HPAI in poultry since 1976, all due to HPAI H7 viruses [1-8]. All have been successfully contained and eradicated.

Mortality due to AIVs have not been reported in wild bird populations in Australia to date [9]. Various **LPAI viruses have been detected as incidental findings in wild birds in Australia, and there have not been any detections of HPAI H5.**

Studies have shown that Australia's geographic isolation and unique ecology mean **assumptions about AIV epidemiology from studies in Asia, Europe or North America are less relevant in an Australian context [9-21].**

More info: WHA FACT SHEET

NAIWB Surveillance Program

The National Avian Influenza Wild Bird (NAIWB) surveillance program collates and reports on data relating to surveillance for the diverse range of avian influenza viruses (AIVs) found in wild birds around Australia. This knowledge contributes to risk assessments in support of the health of wildlife, people, and the poultry industry.

Sooty Oystercatchers - Photo by David Clode on Unsplash

Data for this program is sourced from two components:

- Targeted surveillance – samples are collected from apparently healthy birds through collection of faecal environmental swabs or swabbing of live or hunter-shot birds, with a focus on species known to be reservoirs for AIVs (such as waterfowl and shorebirds). Sample collection is undertaken by state and territory government agencies, university researchers, and the Northern Australia Quarantine Strategy. Samples then undergo testing to detect and characterise AIVs that may be present. Between July 2005 and December 2024, more than 155,000 samples have been tested through this component of the program.
- General surveillance – information is collected from investigations into significant or unusual morbidity and mortality events of wild birds, including captive and wild bird populations within zoos. These investigations may include testing to detect or exclude avian influenza viruses and are reported to WHA's national electronic Wildlife Health Information System (eWHIS) by WHA Coordinators and sentinel surveillance partners in zoos, veterinary clinics and universities.

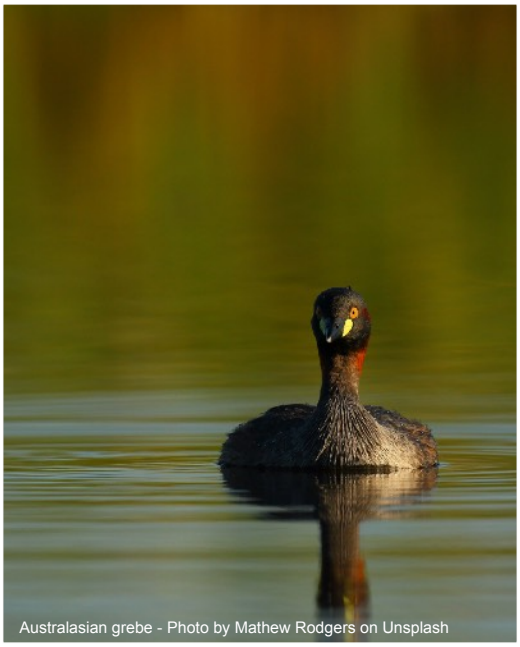
The program is co-ordinated and administered by Wildlife Health Australia (WHA), who facilitate co-operation and collaboration through a Steering Group comprised of Federal and jurisdictional government biosecurity agencies, university researchers, veterinary laboratories, industry partners, and biodiversity experts. Funding is provided through the Australian Government Department of Agriculture, Fisheries and Forestry, with substantial in-kind support from members of the Steering Group.

Data provided in this document is correct at the time of publication however may be subject to change.

Almost all LPAI virus HA subtypes (H1-H16, excluding H14 and H19) have been detected in wild birds in Australia without apparent signs of disease, including strains of H5 and H7 viruses. Importantly, there have been no detections of HPAI viruses in wild bird populations in Australia to date, including HPAI H5 2.3.4.4b. Based on existing genetic analyses, it can be concluded that LPAI viruses in Australia tend to occur as distinct Australian lineages [12, 16, 22]. However, incursions of LPAI viruses into Australia from overseas do occur occasionally [12-14, 19, 23-27]. Recent research suggests these viruses may subsequently circulate among Australian wild bird populations, with some strains going extinct and a small number persisting [13, 14].

HPAI H7 outbreaks and LPAI H9N2 in Australian poultry in 2024

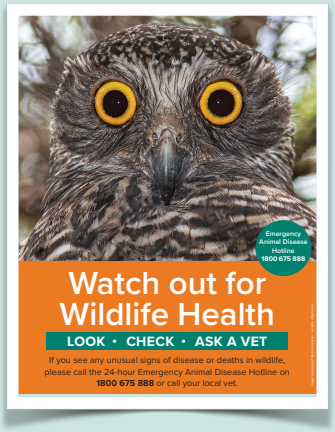
Australia experienced its most severe outbreak of HPAI in commercial poultry in 2024, with three separate events affecting poultry farms across two states and one territory. Two outbreaks were detected in Victoria in May 2024 (HPAI H7N3 in Meredith, affecting 7 properties, and HPAI H7N9 in Terang, affecting one property), whilst one outbreak was initially identified in NSW in June 2024 (HPAI H7N8 in western Sydney) and contact tracing of a single commercial property in the ACT. All three outbreaks were successfully eradicated with co-operation between biosecurity agencies and industry partners. These events are summarised in the **June 2024 issue of Animal Health Surveillance Quarterly**.


Australasian grebe - Photo by Mathew Rodgers on Unsplash

Surveillance of wild birds was an important focus in the response and management of these outbreaks. Targeted surveillance and opportunistic testing of wild birds was used to monitor for potential spread of HPAI to local wild bird populations, with no evidence of spread to wild birds. Genetic comparison of viruses from the poultry outbreaks with findings from the NAIWB program indicated the poultry viruses likely originated as LPAI virus from wild birds and emerged as three independent spillover events.

As well as these HPAI outbreaks, a LPAI H9N2 virus was detected in sick poultry on a mixed poultry farm in Western Australia in May 2024. This event was managed by biosecurity authorities and industry partners. Genetic analysis identified this was a likely spillover event from wild birds.

These outbreaks are an important reminder of the need for best practice biosecurity measures to protect poultry flocks from virus spillover. They also highlight the value of the data and analysis from the NAIWB Surveillance Program for understanding and responding to avian influenza outbreaks.



AVIAN INFLUENZA IS A NATIONAL NOTIFIABLE DISEASE AND REQUIRES REPORTING TO THE CHIEF VETERINARY OFFICER (CVO) AT THE APPROPRIATE AUSTRALIAN STATE OR TERRITORY

If you would like information about Avian Influenza testing and sample collection, please seek advice from your local **WHA Coordinator** or call the **Emergency Animal Disease Hotline** (**1800 675 888**).

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Global HPAI H5 update and preparedness in Australia

Meanwhile, HPAI H5 2.3.4.4b continued to cause widespread impacts around the world, becoming the most severe panzootic disease event in recorded history and proving a powerful example of the need for a One Health approach in managing this disease. The impacts on domestic animals, production animal industries, and food security have been substantial, with estimated losses of over half a billion poultry, ongoing impacts on the dairy industry in the USA, infection of domestic cats and captive big cats, and detection in pigs [28-36]. Impacts on wildlife populations have also been significant, with some wild bird and wild mammal populations experiencing devastating losses [6, 37, 38], though these can be more difficult to quantify [29].The consequences of these impacts may be wide reaching, with potential implications on species conservation, disruption of ecosystem life-support functions and services, economic losses from effects on natural resources, trade and tourism, and the subsequent science and policy needs required to support action and mitigate these impacts [39].

As an example, HPAI H5 has continued to impact wildlife in the Antarctic region. Mortalities have been reported in a range of wild bird and marine mammal species around the Antarctic Peninsula and nearby islands (**https://scar.org/library-data/avian-flu**, accessed 15/3/2025). Cases have also been identified in pelagic seabirds, king penguins and southern elephant seals from islands south-east of South Africa, highlighting the capacity for this virus to be moved large distances by infected birds. The Antarctic Wildlife Health Network (part of the Scientific Committee on Antarctic Research) released an updated Biological Risk Assessment and Recommendations for High Pathogenicity Avian Influenza in Antarctica in December 2024 [40], summarising knowledge on identified cases since 2023, reviewing risks and scenarios through different Antarctic regions, and providing updated recommendations for surveillance, prevention and management of outbreaks. The Agreement on the Conservation of Albatrosses and Petrels also released a guidance document for working with these species in consideration of HPAI H5 risks [41]. In response to the ongoing global developments, the Food and Agriculture Organization of the United Nations and World Organisation for Animal Health released a joint update to the Global Strategy for the Prevention and Control of High Pathogenicity Avian Influenza (2024-2033) [42]. This strategy presents a range of actions for sustainable poultry production activities and emphasises the need for a One Health approach in managing and preventing current and future HPAI outbreaks.

As at December 31st, 2024, Australia remained free of HPAI H5. However, work continued on a series of high priority activities to be best prepared for the potential arrival of this disease, including:

- Exercise Volare – led by the national Australian Government HPAI Preparedness Taskforce, a series of 3 scenario-based desktop exercises were held online, based on a hypothetical detection of HPAI H5 in Australian wildlife. **Find out more about Exercise Volare here**, including an information webinar.
- Commitment of more than **$100 million by the Australian Government** for a range of activities to enhance national capabilities for HPAI H5 surveillance, preparedness and response measures. These measures bring a One Health focus, with activities focussing on mitigating impacts of a potential HPAI H5 outbreak on Australian agriculture, environment and human health.
- WHA participated in a national HPAI symposium, hosted by the Australian Chicken Meat Federation, to discuss risks and mitigations of HPAI H5 to poultry industries, which included a presentation from WHA on the NAIWB Surveillance Program and involvement in a discussion panel on biosecurity.
- NAIWB surveillance partners undertook enhanced targeted surveillance projects focussing on long distance migratory shorebirds and seabirds to contribute data for further understanding of risk around HPAI H5 incursion through movement of these species (see below for more detail).
- Australia's **Animal Health Committee** progressed work on a policy for potential vaccination of rare, threatened and valuable collections of birds.
- The Australia Department of Health and Aged Care Communicable Diseases Network Australia (CDNA) published **National guidelines for avian influenza: protecting people who work with birds and wildlife**.
- The interim Australian Centre for Disease Control published information on bird flu, international travel tips and annual flu vaccine advice on their **website**, including a **personal safety toolkit for people who work with birds**.
- WHA continued to participate in working groups associated with national and jurisdictional preparedness activities, providing presentations and workshops on HPAI preparedness to a range of audiences, including an educational webinar developed for government wildlife managers which is publicly available as a **video presentation** and a **series of frequently asked questions on HPAI H5**. Find out more on the **WHA H5 bird flu incident information page**.

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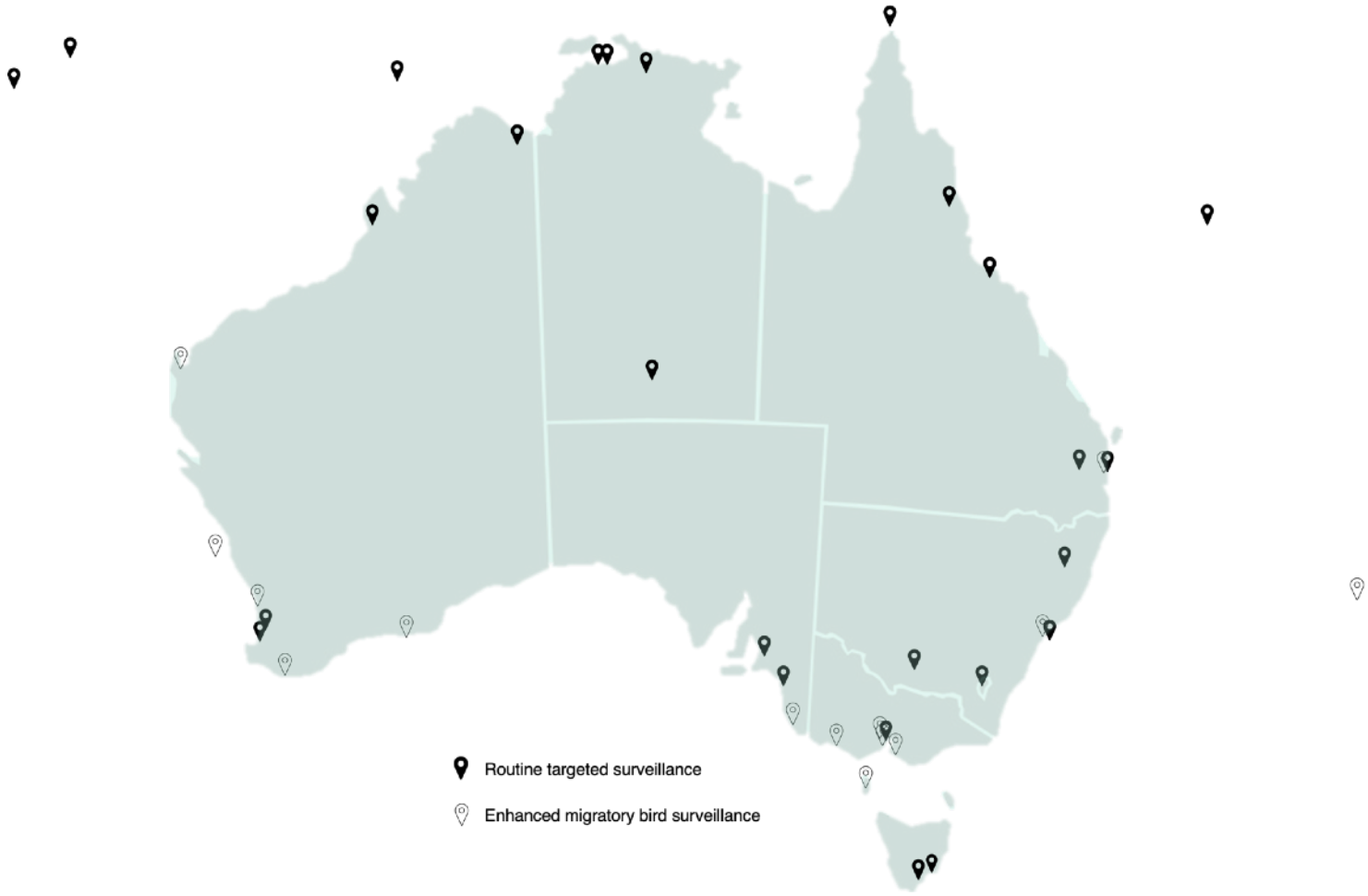
Targeted surveillance - Jul to Dec 2024

NAIWB surveillance partners completed sampling and testing programs for 2024, with a summary of the data from July to December 2024, presented below. In 2024, NAIWB surveillance activities were expanded to include additional sampling locations (see figure below), more frequent sampling, and expansion of targeted species, building on previous work focussed specifically on long-distance migratory shorebirds and seabirds [43, 44]. This resulted in an increase of over 65% in the number of samples subjected to AIV screening in 2024 (10,477 samples in 2024 versus 6,191 samples in 2023), with the detection of a diversity of LPAI viruses, including rare subtypes like H16 and ongoing circulation of a Eurasian lineage of LPAI H5, which was first detected in Australia in 2023 [14]. This work also promoted further engagement with bird ecologists and wader study groups, enhancing capacity for awareness around HPAI risks to Australian wild bird populations.



This map shows principal sites of routine and enhanced targeted surveillance sampling. Markers outside main landmass represents island locations. Locations sampled irregularly or where small numbers of samples are collected are not represented on the map.

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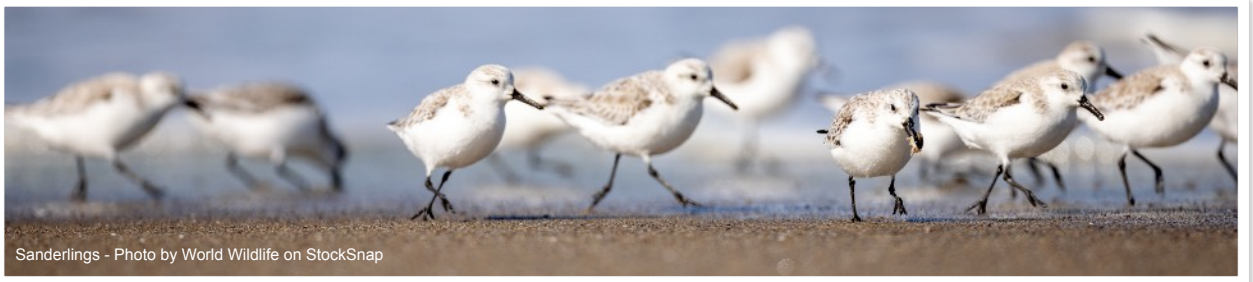
Sanderlings - Photo by World Wildlife on StockSnap

Interim results of testing of targeted surveillance samples are presented below, with cloacal, oropharyngeal and faecal environmental swabs collected and tested from 7,543 apparently healthy and hunter-shot waterbirds. Samples were tested using qRT-PCR for AIV M (matrix) gene detection. Influenza A reactors (positives) to the influenza A matrix gene PCR were tested using specific qRT- PCRs for influenza A H5 and H7. Samples for which H5/H7 subtypes were detected by qRT-PCR were dispatched to the CSIRO Australian Centre for Disease Preparedness (ACDP) for confirmatory and further testing.

Targeted surveillance - Influenza A virus detections (Jul - Dec 2024)

State / Territory[a]	# Individual Swabs Collected and tested[a,b]	# Positives[c]	H5 LPAI	H5 HPAI	H7 LPAI	H7 HPAI	Other LPAI HA Subtypes[d]
ACT	263	0					
NSW	1,169	9	0	0	0	0	H4, H12
NT	900	6	0	0	0	0	H4, H11
Qld	1,543	21	4	0	0	0	H3, H4, H6, H11
SA	467	8	1	0	2	0	H6
Tas	260	4	0	0	1	0	
Vic	1,204	47	1	0	1	0	H1, H3, H4, H11
WA	981	7	0	0	0	0	H1, H9, H16
External Territories[e]	756	4	1	0	0	0	H9
Total	**7,543**	**106**	**7**	**0**	**4**	**0**	

[a] Sample collection in some jurisdictions is undertaken by multiple partner organisations/agencies

[b] Swabs include faecal environmental and cloacal swabs.

[c] A number of swabs were tested as a pooled sample (up to 3 swabs in one pool). A positive pool represents one AIV positive. A sample is considered AIV positive if either: a) Positive at original lab; b) Indeterminate at original lab and subsequently tested positive; c) Indeterminate at original lab and subtyped at any lab.

[d] When positive AIV samples (not identified as H5 or H7) are submitted for subtyping and successful.

[e] Includes samples collected in Ashmore Reef, Christmas Island, Cocos Island and Coral Sea.

Between July and December 2024, no HPAI viruses were identified through targeted surveillance activities. However, a wide range of low pathogenicity virus subtypes, including LPAI H5 and H7, continue to be detected [11,13, 17]. There were no detections of H5 lineage 2.3.4.4.

Molecular analysis of AIVs detected through targeted surveillance activities contribute to: tracking Australian virus evolution and dynamics, maintaining currency of diagnostic tests, maintaining a virus sequence library allowing comparison of Australian and overseas strains. This information informs risk to industry and response to detections in poultry.

From July to December 2024, species targeted for sampling were primarily from orders Anseriformes, Charadriiformes and Procellariformes.

Other bird orders may have been present during sample collections. The great majority of samples collected during this period were faecal environmental swabs. A small proportion of cloacal from hunter-shot birds were also collected.

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General surveillance - Jul to Dec 2024

Wild bird morbidity and mortality investigation are reported into the Australia's electronic wildlife health information system (eWHIS) via a network of state and territory WHA Coordinators and Environment Representatives, sentinel surveillance partners (zoo-based wildlife hospitals, wildlife veterinary clinics and universities), the Northern Australia Quarantine Strategy (NAQS), researchers, wildlife rehabilitators and the public. The NAIWB program extracts relevant data from eWHIS to include as part of the broader wild bird surveillance program and is summarised below.

In this reporting period, WHA received 500 reports of wild bird mortality or morbidity investigations from around Australia which were tested for AIV by PCR for influenza A (see below). These events may involve a single animal or multiple animals of the same or multiple species (e.g. mass mortality event). Three events revealed detection of avian influenza viruses in this period and are described below.

General surveillance - summary of mortality and morbidity events according bird order in which birds were tested for Influenza A viruses (Jul - Dec 2024)

Bird Order	Common Names for Bird Orders [45]	Number of Events AIV Tested via PCR[a]	Number of Events AIV Positive[b]
Accipitriformes	Osprey, hawks and eagles	8	0
Anseriformes	Magpie Goose, ducks, geese and swans	41	0
Caprimulgiformes	Frogmouth and nightjars	8	0
Charadriiformes	Shorebirds	33	0
Columbiformes	Doves and pigeons	47	0
Coraciiformes	Bee-eater and kingfishers	4	0
Cuculiformes	Cuckoos and koels	1	0
Galliformes	Brush turkeys and quails	1	0
Gruiformes	Rails, coots and cranes	8	0
Passeriformes	Passerines or perching birds	86	0
Pelecaniformes	Ibis, herons, spoonbills and pelicans	44	2
Podicipediformes	Grebes	4	0
Procellariiformes	Petrels and shearwaters	63	1
Psittaciformes	Parrots and cockatoos	95	0
Sphenisciformes	Penguins	27	0
Strigiformes	Owls	15	0
Suliformes	Gannets and cormorants	40	0
Unknown	Unknown	5	0

[a] Disease investigations may involve a single or multiple bird orders (e.g. mass mortality event). Some events may be recorded in multiple lines in this table due to the involvement and testing of multiple species from different bird orders. During the reporting period, 28 events involved AIV testing of birds from multiple orders – three events involved three different orders and the other 25 involved two different bird orders each.

[b] Detections of AIV in wild birds are described below. All cases were considered incidental findings.

Egret - Photo by David Clode on Unsplash

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Incidental detections of AIVs in sick and dead wild birds

A royal spoonbill was taken to a veterinary clinic with signs of respiratory distress and discharge from its mouth. The bird was euthanased on welfare grounds. Testing detected an avian influenza virus which was not of H5/H7/H9 subtypes. Further testing was attempted but was unsuccessful due to low levels of virus load and the virus was considered an incidental finding. The cause of the illness remains unknown.

A single Australian white ibis from a mortality event in NSW was found to be carrying an influenza virus. Tests were unable to determine the subtype, however H5 and H7 AIV were not detected. AIV detection was considered incidental and the cause of the event is suspected to be intoxication.

High pathogenicity avian influenza was not identified as the cause of any wild bird morbidity or mortality event reported to eWHIS between July and December 2024.

There were no detections of H5 lineage 2.3.4.4

Recurrence of seasonal shearwater wrecks – Spring and Summer 2024

Large numbers of dead and debilitated migratory shearwaters were found along beaches and coastlines in eastern and southern Australia in 2024. The majority of the birds were short-tailed shearwaters (*Ardenna tenuirostris*), an abundant seabird species, with a worldwide population of many millions. In the Austral spring, they undertake a 15,000 km migration from their wintering grounds in the northern hemisphere to their breeding areas in Australia.

Mass mortalities or “wrecks” of migrating seabirds occur regularly along the coastlines of Australia, generally in spring. These mass mortalities are considered a by-product of long migration, starvation and exhaustion, exacerbated by severe weather conditions. Climatic conditions, ocean temperatures, food resources and ingestion of marine debris may also play a role in these events. Further information on this phenomenon is summarised in the WHA Fact Sheet: **Shearwater mass mortalities**.

Government agencies triaged reports of these wrecks to prioritise testing for avian influenza viruses, with no indication that any of the deaths were the result of HPAI H5 2.3.4.4b. A single detection of AIV H5 Australian lineage was reported in a shearwater from Queensland. The detection of AIV at very low levels in this case hindered further characterisation of the viral subtype though there was no indication this endemic strain of virus was involved in the death of this bird. Two other shearwaters from the same area tested negative to Influenza A matrix gene by PCR.

AVOID, RECORD, REPORT

Members of the public who find multiple sick or dead birds are advised not to touch them. Instead, observe by taking photos or a video, record your location and report it to the Emergency Animal Disease Hotline on 1800 675 888.

Rapid detection of sick or dead wild birds with avian influenza is a high priority for our national biosecurity, and reporting of these events is an important step in being best prepared for a potential incursion of HPAI H5.

There are many possible causes of illness and death of wild birds or other wild animals, so it is useful for people who encounter wildlife to be aware of potential signs of disease. Reporting will alert authorities to the event so they can evaluate the need for diagnostic testing or other investigation. Even if testing is not undertaken, all reports help inform our understanding of the disease and how to manage it.

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Disclaimer

This document was developed and approved by the National Wild Bird Avian Influenza (NAIWB) Steering Group for information purposes only. NAIWB Steering Group was established to ensure national coordination and collaboration of wild bird avian influenza surveillance activities. Wildlife Health Australia provides support to the NAIWB Steering Group and collates avian influenza surveillance data from wild birds sampled across Australia. Information contained in it is drawn from a variety of sources external to Wildlife Health Australia. Data is provided on an "as is" basis and may be changed periodically; these changes may or may not be incorporated in any new version of the publication. Although reasonable care was taken in its preparation, Wildlife Health Australia does not guarantee or warrant the accuracy, reliability, completeness, or currency of the information or its usefulness in achieving any purpose. To the fullest extent permitted by law, Wildlife Health Australia will not be liable for any loss, damage, cost or expense incurred in or arising by reason of any person relying on information in this document. You may download, display, print and reproduce this material in unaltered form only for personal, non-commercial use or use within your organisation, provided due acknowledgement is made of its source. For any other use of the material contained in this document (including, but not limited to any text, illustration, table, or any other material), written permission must be obtained with Wildlife Health Australia and the NAIWB Steering Group.

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