

FREQUENTLY ASKED QUESTION ON AVIAN INFLUENZA

http://www.birdlife.org/action/science/species/avian_flu/index.html

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1. WHAT IS HIGH PATHOGENICITY AVIAN INFLUENZA H5N1?

There are numerous different strains of avian influenza, but only a very few of these are a serious health concern for animals or people. Most strains circulate in wild birds, especially waterbirds, at low levels, and at worst cause only mild disease. These 'Low Pathogenicity Avian Influenza' (LPAI) viruses also have only mild effects on poultry.

In contrast, some variants of the H5 and H7 'subtypes' can cause massive mortality in poultry. These are designated 'High Pathogenicity Avian Influenza' (HPAI). HPAI viruses do not normally occur in wild birds. They arise in poultry, where intensive rearing and crowded conditions allow the virus to evolve to a highly pathogenic form. Hence HPAI is also called 'poultry flu'.

Wild birds can also be infected with, and killed by, HPAI viruses. They appear to acquire the virus through contact with infected poultry or with facilities used by them.

The H5N1 virus currently circulating is a High Pathogenicity Avian Influenza (HPAI). This strain of the virus first appeared in Hong Kong in 1997. It evolved in poultry from Low Pathogenicity Avian Influenza (LPAI) viruses that were probably acquired from wild birds.

Conditions in poultry flocks (such as crowding, especially in mixed species groups, and prolonged contact with faeces, saliva and other bodily secretions) keep the viruses circulating as they evolve. The current series of outbreaks began in 2003 in South-east Asia, where a dramatic increase in intensive poultry production is sometimes combined with poor hygiene and bio-security in small "backyard" enterprises.

2. WHY IS THERE SO MUCH CONCERN ABOUT THIS VIRUS?

The scale of the current outbreak of high pathogenicity avian influenza in poultry is unprecedented. H5N1 is causing huge economic damage. The virus can spread very quickly among domestic poultry, such as chickens, ducks and turkeys, and kills nearly all birds. Many more birds have to be killed to try and stamp out infections. This, with the necessary restrictions on movement and trade of birds, causes serious losses to farmers, businesses and national economies.

At present, H5N1 is not easily transmitted to humans. Many people have been exposed to infected birds in the present outbreak, but just 147 people (as of 10 January) have caught the disease. Nevertheless, more than half of them (78) have died. If contracted, it is a serious illness.

H5N1 is also not easily transmitted from human to human. However, this may change since the virus is constantly evolving. A form of H5N1 that is transmitted easily between people would cause a global influenza pandemic, in which many millions of people might die. Such a virus could arise through 'reassortment' (when human and avian influenza viruses exchange genetic material, during co-infection of a human or a pig) or through a more gradual process of adaptive mutation. Continued outbreaks of H5N1 increase the chances of this happening.

3. HOW ARE WILD BIRDS LINKED TO AVIAN INFLUENZA?

3.1 Can wild birds catch H5N1?

Yes. The current strain has caused deaths in a number of wild bird species, mostly waterbirds. Most of these flock or nest in colonies on waterbodies or nearby farmland. Others are birds that often feed and scavenge in polluted waterways near towns and farms. Yet others are scavenging species that are likely to forage around poultry farms, such as crows and magpies.

3.2 Are migrating wild birds spreading High Pathogenicity Avian Influenza H5N1?

Possibly – but this is unproven and (evidence suggests) unlikely. If wild birds have any role, it is minor compared to other mechanisms.

While a few outbreaks are consistent with the direction and timing of wild bird migration, most are not. The 2005 autumn migration came and went without migrating waterbirds spreading H5N1. The virus has not so far been reported from the birds' wintering areas in India, the Philippines, the Pacific and Africa.

The detailed pattern of outbreaks is also inconsistent with what would be expected from the movements of wild birds. All the evidence suggests that H5N1 is highly lethal to migratory wild bird species, and kills them quickly; that infected migrants cannot move long distances; and that the virus is most likely to be contracted locally, close to the site of deaths.

In short, wild birds could possibly have been involved in some H5N1 outbreaks (more likely in none) but other factors appear to be much more important – and should be the first focus of control efforts.

3.3 Can 'healthy' wild birds carry the HPAI H5N1 virus?

Well over 100,000 healthy wild birds have been tested across South-east Asia in the last two years. Out of 16,000 living wild birds (mainly migratory) tested at the Mai Po Nature Reserve in Hong Kong between 1997 and 2004, none tested positive for HPAI H5N1. Of 850 samples (mainly faecal) from living wild birds

tested at Lake Erhel, Mongolia in August 2005 (after an H5N1 outbreak), none was positive. In Eurasia, just 13 apparently healthy wild migrant birds have "tested positive" for HPAI H5N1—but doubts have been raised as to whether any of these birds was healthy, or indeed actually carrying HPAI H5N1.

In currently uninfected areas, many thousands of migratory waterbirds have recently been tested in Korea, New Zealand, Australia, Alaska and Europe. All were found to be negative for HPAI H5N1.

On the other hand, Mallard ducks inoculated in the laboratory with certain high-pathogenicity H5N1 variants showed few clinical symptoms of infection. Tree Sparrows from Henan in China have also been found with a new variant of H5N1 that did not seem to make them ill (but proved lethal to chickens). So, while wild birds do not appear to carry and spread the HPAI H5N1 virus at present, it is possible that they could do so in future.

3.4 Is H5N1 a conservation threat?

Up to 10 % of the world population of Bar-headed Geese died at Lake Qinghai in China. Globally Threatened Birds could be at risk when they have small populations concentrated in areas where the virus has become established, especially when poultry use the same water and food supplies. In South-east Asia and South-east Europe there are a number of Globally Threatened waterbirds whose populations have already been reduced by habitat loss and over-hunting, and which could be at threat from H5N1.

3.5 What further research is needed?

There are many significant gaps in our knowledge about H5N1 in wild birds. We need better information on how wild birds contract the infection, how long the incubation period is, when and for how long they shed the virus (and in what quantity), how ill it makes them (and how this varies among individuals, and affects their ability to migrate), and which species are affected.

We also need better systems of monitoring and surveillance for migrants – both for conservation purposes and to help predict and control the spread of H5N1 should migrant birds be found to carry it in the future.

3.6 Should wild birds be culled to stop the disease spreading?

This would be a highly misguided response. The World Health Organisation, Food and Agriculture Organisation and OIE (the World Organisation for Animal Health) agree that control of avian influenza in wild birds by culling is not feasible, and should not be attempted. Juan Lubroth, FAO senior officer responsible for infectious animal diseases, has commented: "[Culling] is unlikely to make any significant contribution to the protection of humans against avian influenza. There are other, much more important measures to be considered that deserve priority attention."

In the event that wild birds were found to be carrying HPAI H5N1, any attempts at culling would spread the virus more widely, as survivors dispersed to new places, and healthy birds became stressed and more prone to infection.

3.7 Should wetlands be drained to deter waterbirds?

Absolutely not. Apart from their extremely high conservation value, wetlands provide vital ecosystem services like flood control, water purification and nutrient recycling, and the livelihoods of many communities depend on them.

Draining wetlands is not only environmentally disastrous, but also likely to be counterproductive — for the same reasons that culling would be more likely to spread the Avian Influenza virus than control it. Birds would seek alternative staging places on their migration routes, and wildfowl forced to fly further and endure more crowded conditions along their migration route would become stressed and exhausted, and more prone to infection.

2. CAN I STILL GO BIRDWATCHING? SHOULD I STOP FEEDING WILD BIRDS IN MY GARDEN?

Wild birds are very important in the lives of many people. Fortunately, there is no reason to be afraid of them! Birdwatching remains safe, though you should avoid touching sick or dead birds, their droppings or water near them. Similarly, it is safe to continue feeding garden birds. The birds that visit feeders and bird tables are most unlikely to carry the H5N1 virus. Observe normal, sensible hygiene precautions: wash hands after handling equipment that has been splashed with bird faeces, and clean and disinfect feeders and bird-tables regularly.

So far there is only one, unconfirmed, report (from Turkey) of a person contracting the virus from a wild bird. All other cases have been linked to intimate exposure to infected poultry.

3. HOW IS THE VIRUS SPREAD, IF NOT BY WILD BIRDS?

There are at least three likely transmission routes:

- **Movements of untreated poultry and poultry products, and the global trade in poultry**
- **The trade in wild birds**
- **Use of infected poultry manure as fertiliser in agriculture and agriculture, and as feed in fish-farms and pig farms**

Most outbreaks in south-east Asia can be linked to **movements of poultry and poultry products** (or infected material from poultry farms, such as mud on vehicles, or peoples' shoes). Live animal or 'wet' markets have played a major part in spreading the virus in south-east Asia: they were identified as the source of the H5N1 infection in chicken farms in Hong Kong in 1997 when approximately 20% of the chickens in live poultry markets were found to be infected.

There is also a huge international **trade in poultry**—legal, unregulated or illegal. Recently it was revealed that poultry meat is being illegally imported from Asia into the USA; in October 2005 3,000 chickens were intercepted by Italian customs after being smuggled into the country from China; and in November 2005 the UK authorities revealed that large quantities, possibly hundreds of tonnes, of chicken meat had been illegally imported from China.

The widespread illegal **trade in cage birds** has been demonstrated to have transported flu-infected birds over large distances. Customs in Taiwan recently intercepted two consignments of infected birds smuggled from mainland China. An outbreak of H5N1 at a bird quarantine station in the UK may also be attributable to smuggled birds 'laundered' into a legally imported consignment.

The most likely source of infection in captive birds is at live animal 'wet' markets, where domestic and wild-caught birds are kept in close proximity, posing a high-risk of bird flu cross-contamination.

The use of untreated chicken, duck and other **poultry manure as fertiliser and feed** for pigs, fish and other livestock is widespread in Asia and Eastern Europe. Birds infected with the H5N1 virus excrete virus particles in their faeces: putting untreated faeces from infected birds into fish ponds provides a new source of infection. The manure may be transported for long distances before being used or sold, a dangerously effective way of spreading the virus. The United Nation's Food and Agricultural Organisation recommends that "the feeding of poultry manure/poultry litter should be banned in countries affected by or at risk from avian influenza, even if correctly composted, ensiled or dried with heat treatment."

4. WHAT SHOULD BE DONE TO PREVENT THE SPREAD OF HPAI H5N1?

The current focus on migrating wild birds is misplaced and a potentially dangerous diversion of energy, effort and resources. Attempts to cull wild birds are even more misguided—the target is wrong and the approach is completely ineffective.

Rather, preventive measures need to concentrate on better bio-security—surveillance and testing of poultry, controlling the movements and sale of poultry, poultry products and cage birds, ensuring that all poultry manure used in aquaculture and agriculture is properly treated prior to application, and stepping up national and international efforts to control the illegal trade in poultry, poultry products and wild birds.

Some countries are now vaccinating their poultry flocks. Research has shown that vaccines can reduce the infectiousness of chickens with avian flu and the susceptibility of healthy birds to the virus. However, there are no international standards for the minimum amount of antigen contained in poultry vaccines. Birds immunised with poor quality vaccines look healthy, but spread the virus at high concentrations in their faeces for longer, and the virus keeps replicating, spreading and evolving. Bad vaccines may be contributing to antigenic drift, allowing the virus to evolve into new forms.