

Avian influenza also can infect cetaceans

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Photo: Håkan Aronsson

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Avian influenza viruses

- Wild waterbirds are the natural reservoirs
- Reassortment and evolution can lead to strains that cause disease ("bird flu") in poultry and wild birds
- Spillover of some strains have caused mortality events in marine mammals, notably harbour seals
- Europe, and more recently the Americas, have been experiencing unprecedented influenza outbreaks in domestic poultry and wild birds

Summer 2022 in Northern Europe

DutchNews.nl

Large Sandwich tern colony on Texel wiped out by bird flu

BBC

NEWS

Avian flu hits world's largest gannet colony on Bass Rock

DAGENS NYHETER.

Nyheter Sverige Världen Ekonomi Kultur Sp

SVERIGE

**Massdöd av fåglar –
misstänkt utbrott av
fågelinfluensa**

BIRDCGUIDES
FIRST FOR BIRD NEWS

Bird flu kills thousands of Sandwich Terns at North Sea colonies

Thousands of Sandwich Terns and other species have perished in northern France and The Netherlands as this summer's outbreak of avian influenza continues to spread across northern Europe.

The Guardian

'The scale is hard to grasp': avian flu wreaks devastation on seabirds

Dozens of coastal sites in the UK closed to the public as H5N1 continues to sweep through wild bird populations across the world

sky news

Highly pathogenic bird flu killing hundreds of seabirds along Scottish coast
Over 1,000 gannets and hundreds of great skuas have been found dead across Shetland, Orkney and the Western Isles.

SVA

Unprecedented mortality in seabirds also in Sweden

- West coast
 - Northern gannets (*Morus bassanus*)
- Baltic Sea
 - Sandwich terns (*Thalasseus sandvicensis*)
 - Guillemots (*Uria aalge*)
 - Cormorants (*Phalacrocorax carbo*)

June 28, 2022, west coast

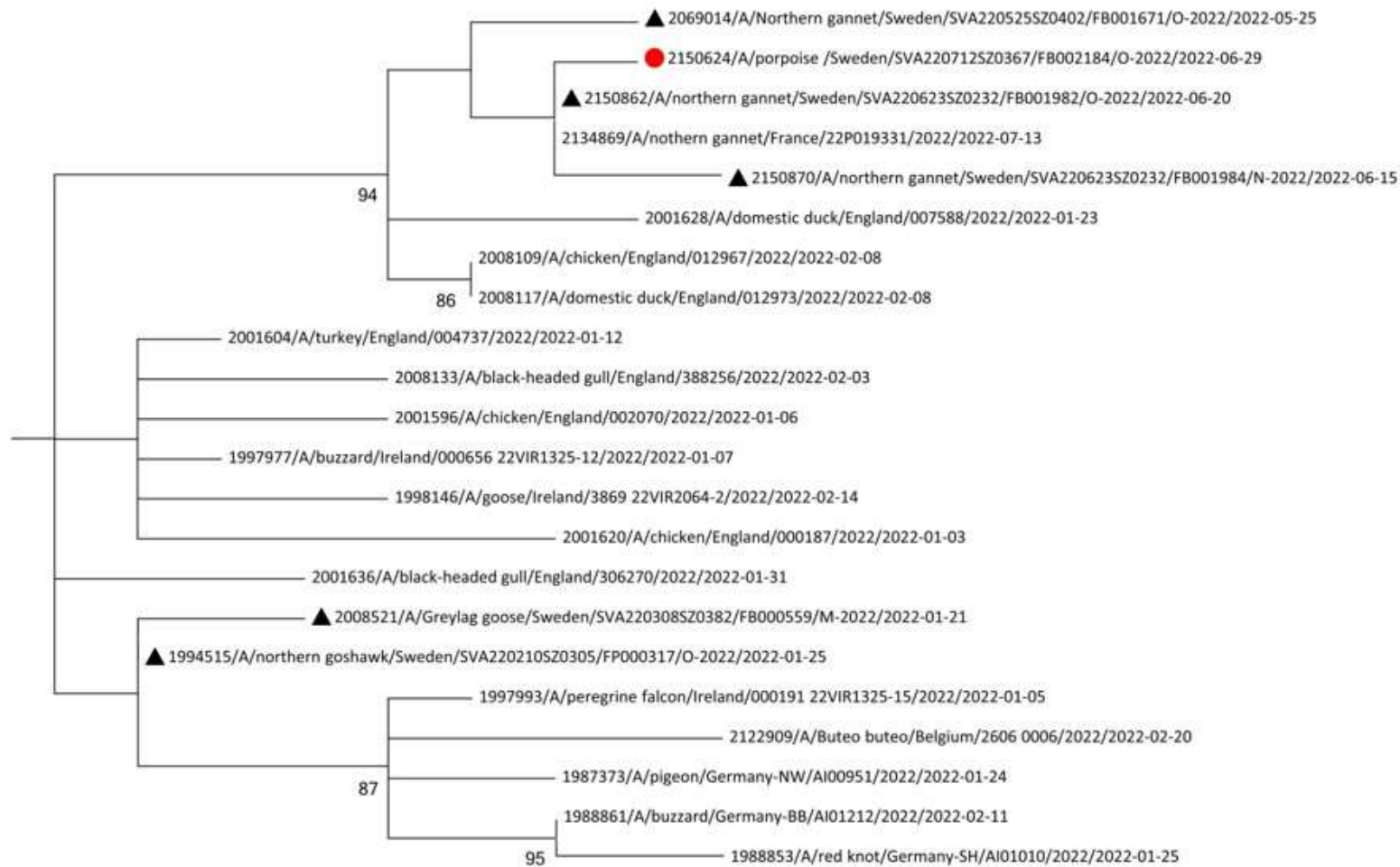
- Immature male harbour porpoise stranded alive showing abnormal behaviour, died shortly thereafter
- Transported to SVA for necropsy examination

Necropsy findings

- Nothing significantly macroscopically except for lung oedema (fluid) from drowning
- Microscopic findings: brain inflammation
- Molecular analysis: high levels of avian influenza virus in the brain, with lower levels in the lungs, kidney, liver and spleen
- First confirmed case of fatal infection in a cetacean

Thorsson et al. 2023. Emerging Infectious Diseases, 29(4), 852-855. <https://doi.org/10.3201/eid2904.221426>.

Molecular analysis: highly pathogenic avian influenza virus H5N1



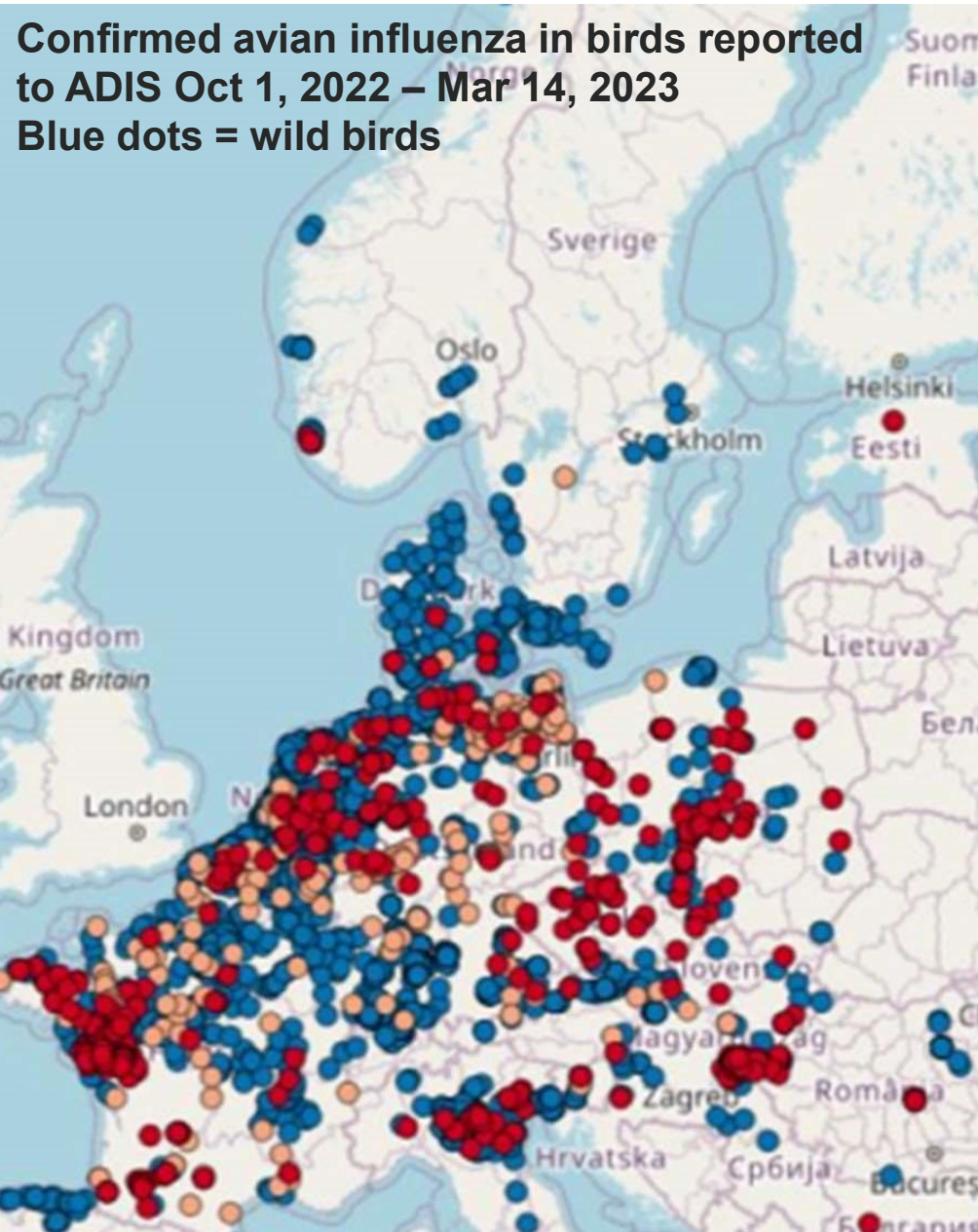
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Confirmed avian influenza in birds reported
to ADIS Oct 1, 2022 – Mar 14, 2023

Blue dots = wild birds



Avian influenza spill-over in cetaceans

- Bottlenose dolphin (*Tursiops truncatus*), USA
- White-sided dolphin (*Lagenorhynchus acutus*), Canada
- Preliminary reports in a harbour porpoise and two common dolphins (*Delphinus delphis*), United Kingdom



Avian influenza

- A biodiversity disease
- An animal production disease
- A public health threat
- Continued monitoring of infection and viral adaptation is warranted
- Examining stranded animals is an important tool to help identify potential new threats for porpoises, other animals including people and the environment

Porpoise health surveillance open data:
<https://www.dataportal.se/en> and search 'marine mammals'