



# **Best practices in Finland: Experiences with HPAI in animals and humans (One Health approach, biosecurity, vaccination)**

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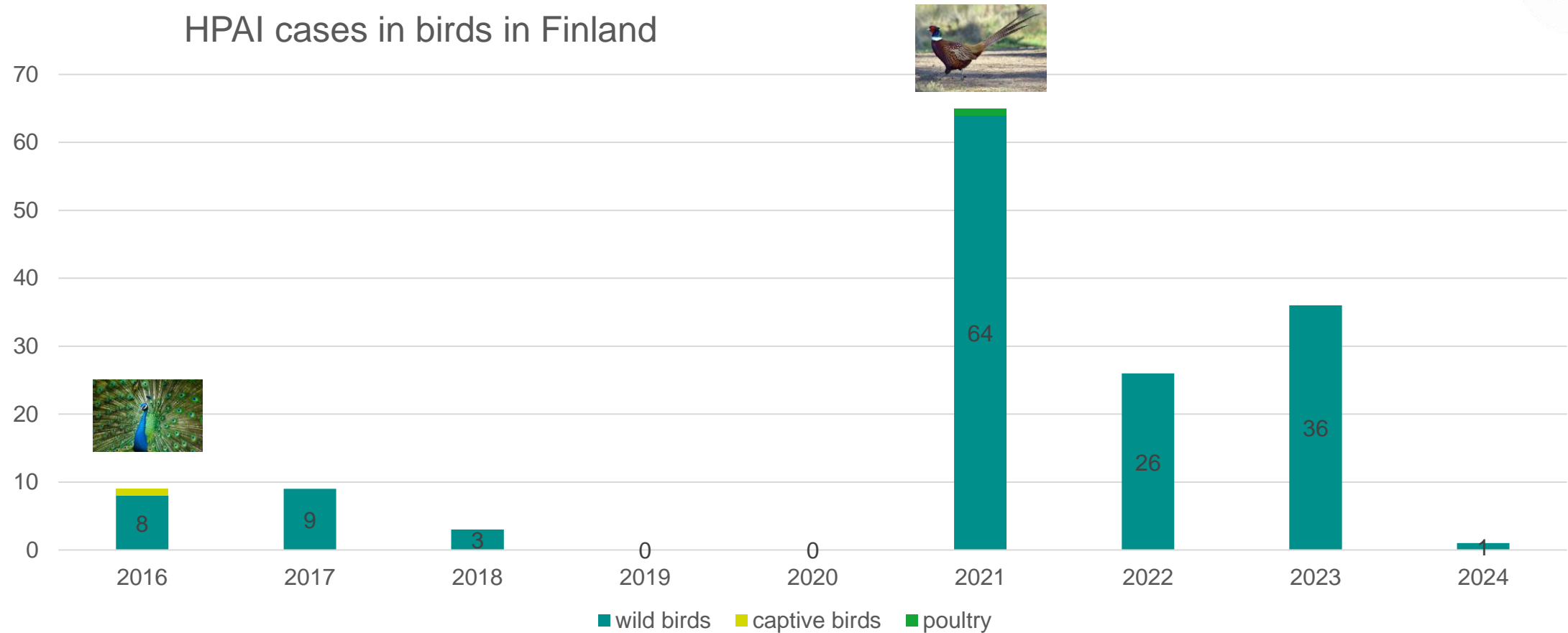
Ministry of Agriculture and Forestry

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# HPAI cases in Finland 2016-2024



HPAI cases in birds in Finland



# HPAI-epidemic at fur farms in Finland, in 2023



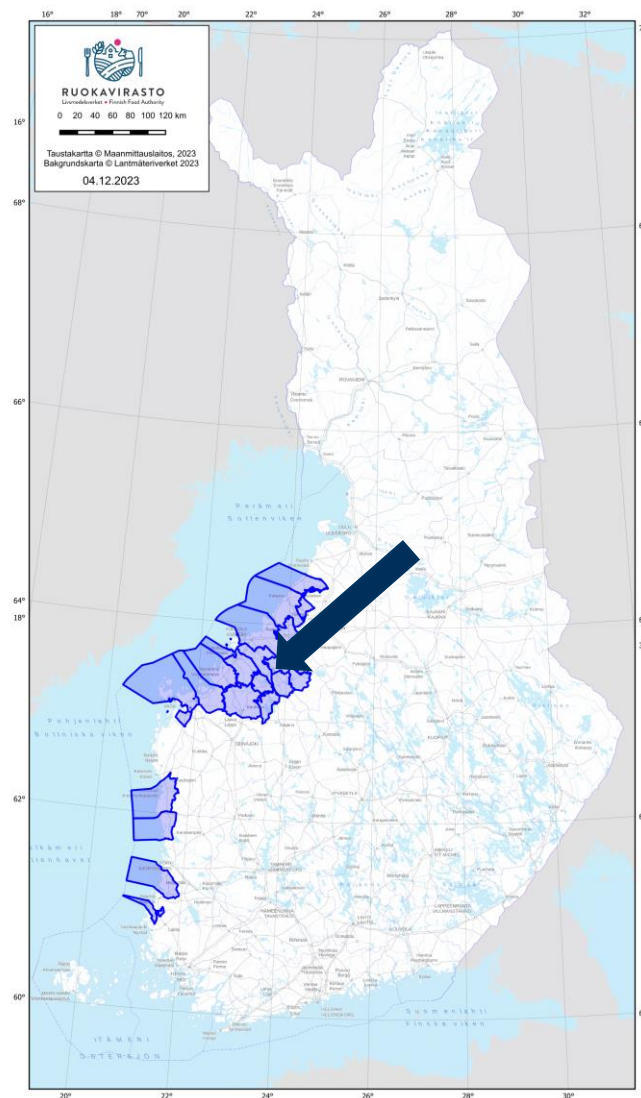
- Passive surveillance for HPAI in fur animals added to the surveillance plan of animal diseases in spring 2023
  - Based on the outbreak of minks in Spain and recommendations of EFSA and Risk Assessment Unit of the Finnish Food Authority (FFA)
- Several HPAI-outbreaks in wild birds in June and July, eg. mass mortality of the black-headed gulls
- Increased mortality and disease symptoms in fox puppies in June/July → farmers sent carcasses for autopsy to FFA
- First H5N1 positive arctic foxes on the 13<sup>th</sup> and 14<sup>th</sup> of July 2023
- Farmers advised to contact the official veterinarian in case of symptoms or increased mortality.
- Surveillance changed from passive to active and once mutations of concern (eg. PB2-E627K and PB2-T271A) were detected, a decision to sample all fur farms was made:
  - Surveillance finished in December 2023
  - 71 positive farms (out of about 400 fur farms altogether)
  - Culling and disposal of all animals in the infected farms



Photo: Turkiskasvattajat.fi

# Source of infection

- Based on genetic analyses of the viruses (clade 2.3.4.4b), the most probable source were infected gulls
- Black-headed gulls breed in colonies and mass deaths were recorded: in Lake Ullava over 1000 dead birds were collected in two days
- The positive farms were most likely infected in summer or early autumn
- Fur farms had already in the past had difficulties with seagulls that came to farms for food → new requirements in the legislation 2024

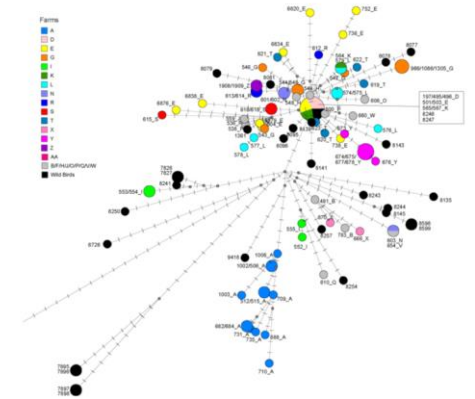




# One health aspect: decision making and laboratory co-operation



- Cooperation between authorities immediately after the confirmation of HPAI in fur animals
- Multidisciplinary meetings at first twice a week (and when necessary):
  - Finnish Food Authority (FFA) and regional veterinary authorities
  - Finnish Institute for Health and Welfare (THL)
  - Finnish Institute of Occupational Health
  - Ministries of Agriculture and Forestry and Social Affairs and Health
  - Wellbeing services counties (responsible for organising health, social and rescue services)
- Decisions and policies aligned together
- The public health authority gave official statements requested by FFA for support of proposed policies
- THL supported FFA to set up whole genome sequencing to track any mutations of the virus. Viral evolution was monitored by FFA and data shared with THL to continuously assess the potential human health impacts.
- Whole genome sequencing was carried out on outbreak viruses and shared as soon as available with the scientific community through the GISAID EpiFlu database.
- Research: University of Helsinki researchers took samples for further virological studies



# One health aspect: exchange of information



- For officials
  - via the Extranet of the Finnish Food Authority
  - Eg.laboratory results, epidemiological surveys, minutes from the meetings
- With fur farmers
  - Weekly meetings with FFA, MAF, also public health authorities
  - Regional and local veterinary authorities
- With environmental authorities
  - Handling of manure from infected farms
  - Enquiry of possible places for burial of carcasses in landfills or incineration possibilities in heat power plants
  - Member from the Ministry of Environment invited to the national expert group of avian influenza
- For public via web pages:
  - Finnish Food Authority
  - Finnish Institute of Health and Welfare
  - Finnish Institute of Occupational Health
  - Wellbeing services counties shared information for public about preventing contact with dead birds

# One health aspect: testing and protection



- Information of the potentially exposed people
  - From regional veterinary authorities to the Institute of Health and Welfare and regional Wellbeing services counties
- Farm workers of affected farms were offered testing, which was recommended 6-8 days post exposure
  - More than 400 exposed were tested, no human cases detected
- the Institute of Health and Welfare shared information about the disease for local health care units and surveillance of influenza A was intensified (particularly in hospitalized patients)

# Biosecurity of workers at fur farms



- Workers' Personal Protective Equipment (PPE):
- Institute for Occupational Health advised workers' protection
- Regional veterinary officers arranged the supply of required equipment
  - Veterinarians, fur farmers, farm workers, incineration plant workers, truck drivers, researchers..
  - Motorized respirators were used

-> A joint effort of several authorities to provide fur farm workers PPE and guidance for their use





# Biosecurity in carcass disposal



- Transport of carcasses and at the incineration plant
  - Drivers do not exit the truck cabin
  - Disinfection of the vehicle when leaving the fur farm or affected establishment
  - Cleaning and disinfection of the vehicle after unloading
  - Dirty and clean areas separated at the plant, permanently
- Route planning aimed at avoiding vicinity of poultry establishments
- Prohibition to keep poultry outside in western parts of Finland during the epidemic, unless sufficiently protected from wild birds



Photo: Honkajoki Oy (Cat.1 plant)

# Biosecurity: wild birds



- Dead wild birds
  - Category 1 processing plant (Honkajoki Oy) provided containers for temporary storage of dead birds in areas with mass deaths
    - approved for handling by-products suspected of being infected with diseases communicable to humans or animals in accordance with the EU legislation (reg.1069/2009),
  - Carcass collection done by city maintenance and the rescue services
    - PPE of the workers
    - Disposal in sealed containers
  - Collection of containers and destruction of birds by Cat.1 plant
  - Single dead birds buried
- Bird hunting recommendations:
  - Not to hunt waterfowl in places where HPAI has been found
  - Use gloves and good hygiene when cleaning birds
  - Not to use dead/shot wildbirds from infected areas in dog training
  - Notify mass deaths and symptoms of serious diseases



Photo: Maunu Hotakainen



# Biosecurity requirements from 15.4. 2024

In all active fur farms:

- All fur animals, their drinking water and fodder must be protected from contact to birds
- Shadow houses must have doors and netting all over, (mesh size max 25 mm)
- Extra netting during seagull season from the 15th of April until the 31st of October
- No fodder residues in the farming area that would attract birds or rodents
- Pest control, cutting grass
- Clean working clothes and shoes
  - clean shoes in fodder warehouse,
  - possibility to wash hands,
  - cleaned and disinfected equipment if used in another fur farm,
  - carcass storage in cool and protected from other animals.



Photo: Maria Lassus-Jensen

Photo: turkiskasvattajat.fi

# Vaccinations against HPAI



- In absence of a tailored avian influenza vaccine, people at increased risk were offered a seasonal influenza vaccine during autumn 2023.
  - This could prevent reassortment between HPAI and seasonal influenza, should a simultaneous infection of seasonal and HPAI occur in the same individual
- Finland purchased H5N1 -vaccines for people with an increased risk to be exposed to HPAI in their occupation, vaccinations started June 2024
  - Problem: fur farms situated in the area with some resistance against any vaccination → interest towards vaccination has been lower than expected.
- Seasonal influenza vaccination still recommended



# For more information:

- Description of the start of the outbreak:

<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2023.28.31.2300400>

- Thorough description of the outbreak:

<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2024.29.25.2400063>

- Description of vaccination policy:

<https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2024.29.25.2400383>







**Thank you for your  
attention!**