

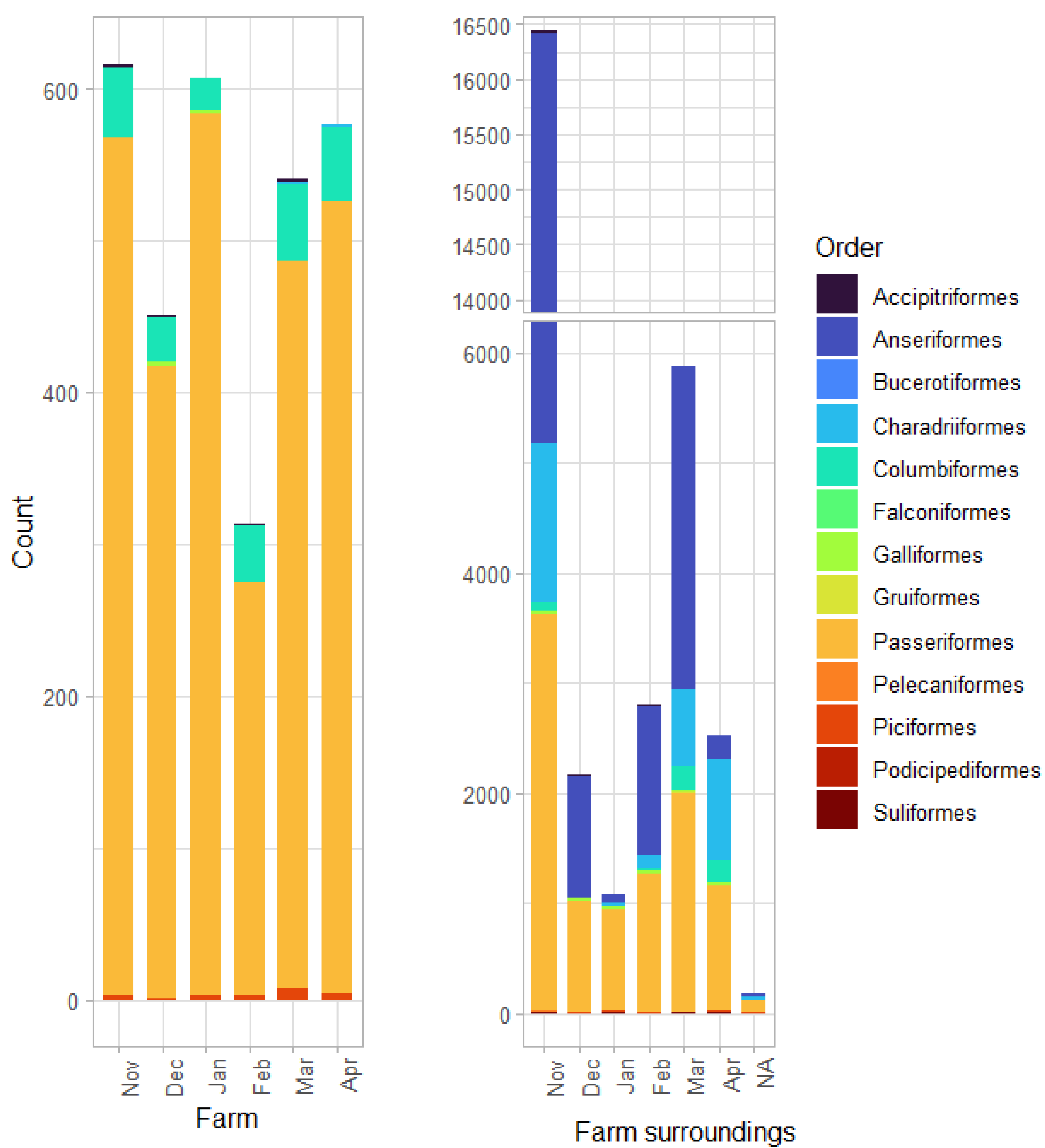


Interface between wild birds and Swedish poultry from a disease spread perspective

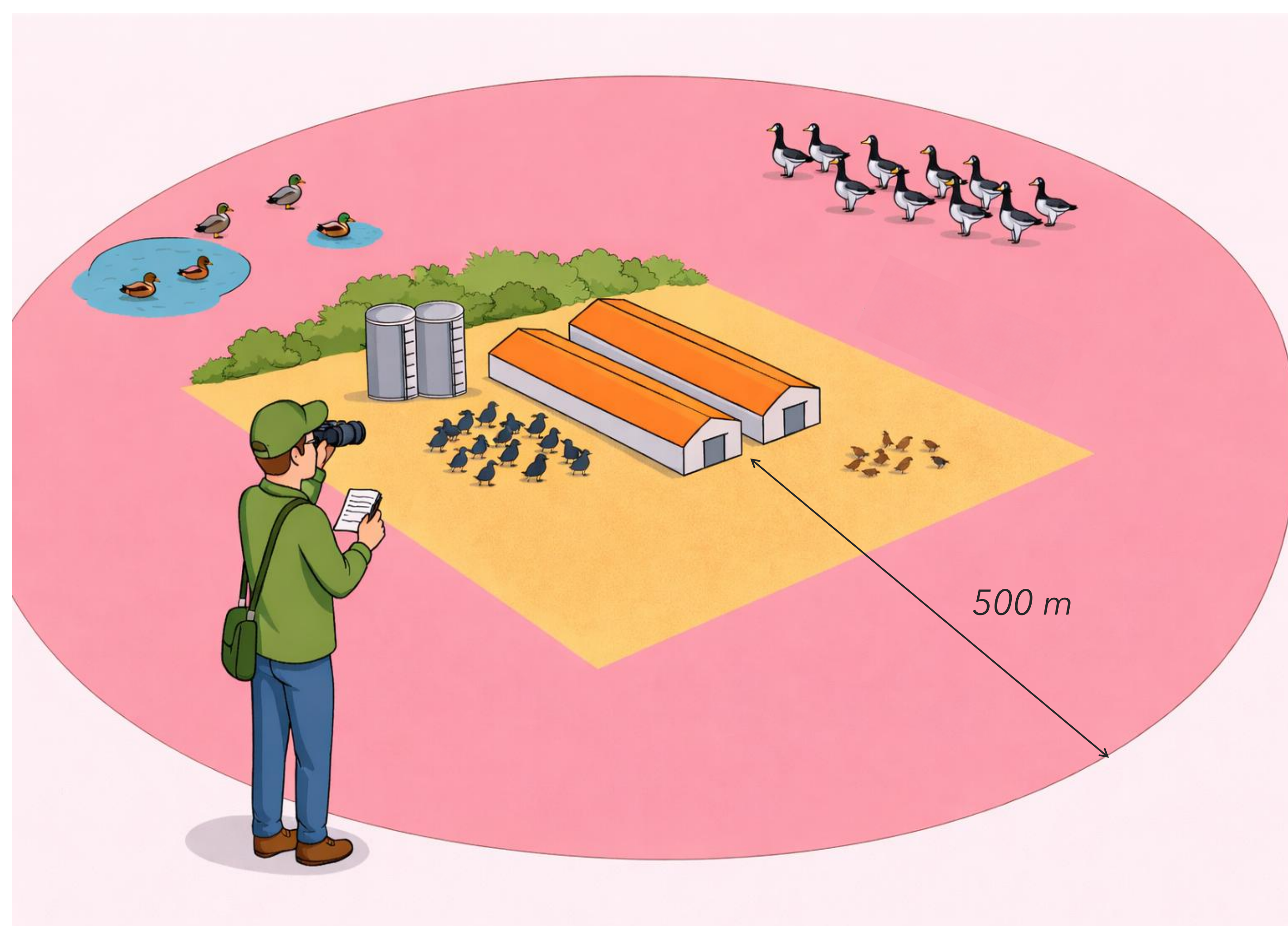
Virus transmission between wild birds and poultry plays a critical role in the epidemiology of Highly Pathogenic Avian Influenza (HPAI). For prevention measures to be effective, a better understanding of the mechanisms at this wild bird to poultry interface is needed. This study aims to **inform HPAI prevention strategies** in poultry to prevent outbreaks, reduce spillover to mammals, limit spillback to wild bird populations, and enhance poultry welfare.



Mallards underneath a feed silo on poultry farm.
 Photo: Fredrik Haas, Lund University



Total wild bird counts by month and order for all visits in 2023-2024 (n=218).
 Left panel: data from detailed farm surveys ("Farm")
 Right panel: data from the surrounding 500-meter area ("Farm surroundings")



Wild bird census carried out on a poultry farm and surrounding areas.
 Illustration generated using ChatGPT (OpenAI), 2026

Results

- » 218 survey occasions on 22 commercial poultry farms
- » 14 wild bird orders and 93 species observed within the inclusion criteria
- » 80 % of observations were species on EFSA's target list of species for HPAI surveillance
- » Western Jackdaw (*Coloeus monedula*) most abundant species on the farms and Barnacle goose (*Branta leucopsis*) on the areas surrounding the farm
- » Marked variation in wild bird abundance among farms
- » More birds around certain farm structures such as feed silos
- » In preliminary analyses, farms with prior HPAI outbreaks showed a trend toward higher numbers of waterfowl in the farm surroundings

Methods

- » Survey protocol for wild bird census on poultry farms was developed
- » 9 farms with HPAI-outbreaks during 2020/2021, and 13 controls were included
- » Each farm was visited 10 times by an ornithologist between November 2023 and April 2024
- » Poultry categories: broilers, layers, pullets, chicken breeders and turkeys
- » Data included species, count, georeferenced location, activity, position and weather parameters
- » Data analysis ongoing, including exploratory inferential analyses investigating both HPAI outbreak status and wild bird abundance as dependent variables
- » Explanatory variables for wild bird abundance include poultry category, biosecurity level, other farm characteristics, landscape characteristics, month, and weather parameters.
- » Wild bird abundance, separated into species groups, is analysed for potential association with outbreak

