



14 September 2022

Standing Committee on Plants, Animals, Food and Feed
Section Animal Health and Welfare

EFSA's activities on avian influenza

Improving preparedness in the EU

Lisa Kohnle
Scientific Officer (EFSA)

Trusted science for safe food

July–September 2022



APPROVED: 29 September 2022

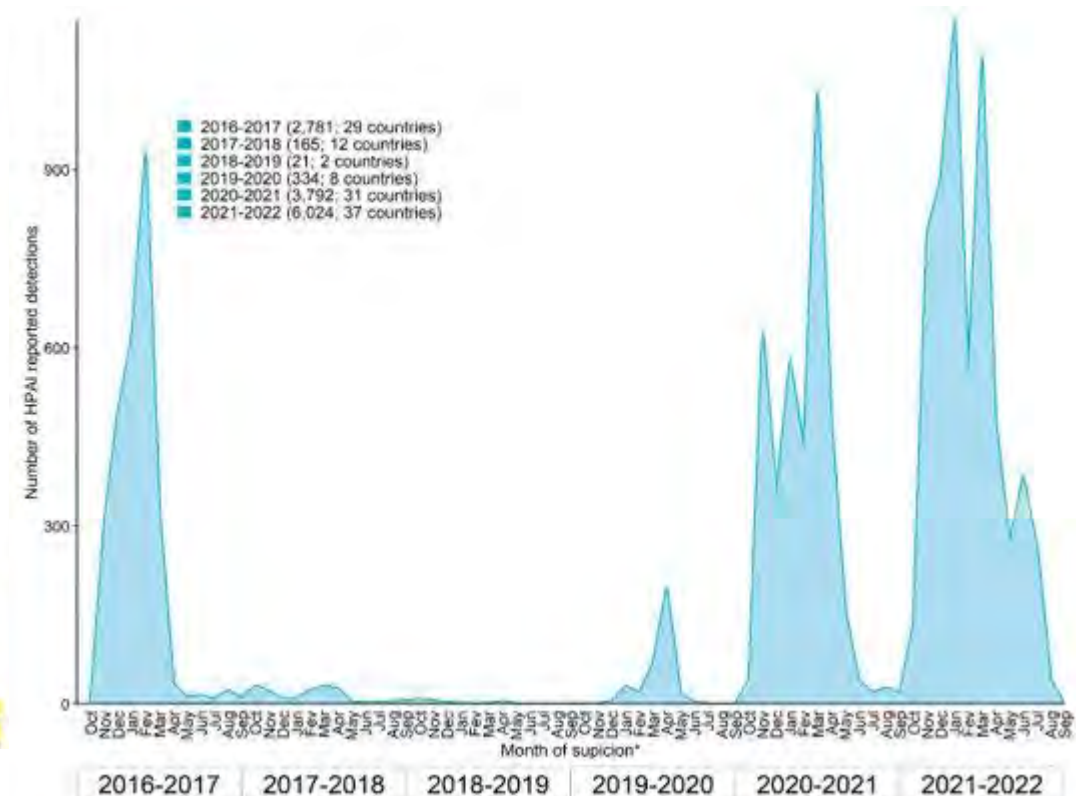
doi:10.2903/j.efsa.2022.xxxx

Avian influenza overview June – September 2022

European Food Safety Authority,
European Centre for Disease Prevention and Control,
European Union Reference Laboratory for Avian Influenza,
Cornelia Adlhoch, Alice Fusaro, José L Gonzales, Thijs Kuiken, Stefano Marangon,
Éric Niqueux, Christoph Staubach, Calogero Terregino, Inma Aznar, Irene Muñoz
Guajardo, Kateryna Chuzhakina and Francesca Baldinelli

Abstract

The 2021–2022 highly pathogenic avian influenza (HPAI) epidemic season is the largest epidemic so far observed in Europe with a total of 2,798 outbreaks in poultry, 46 million birds culled in the affected



Quarterly monitoring report – dashboard

Setting options

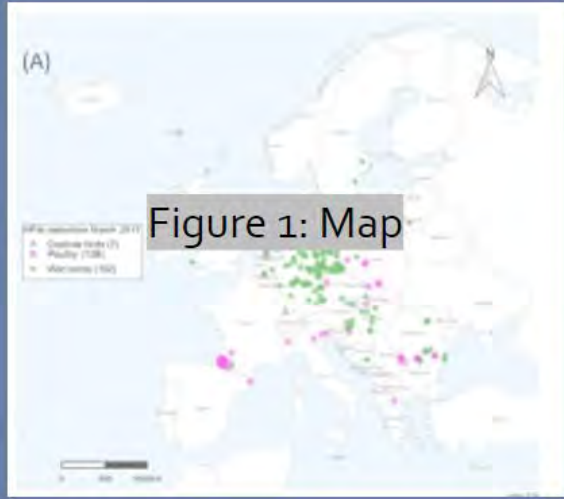


Figure 1: Map

Tables per country with results




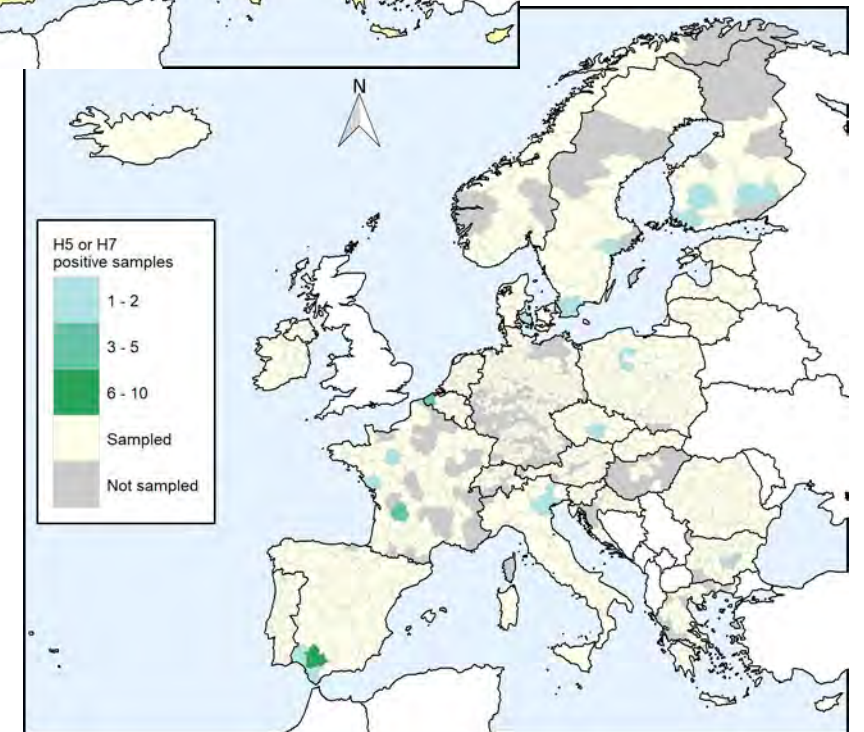
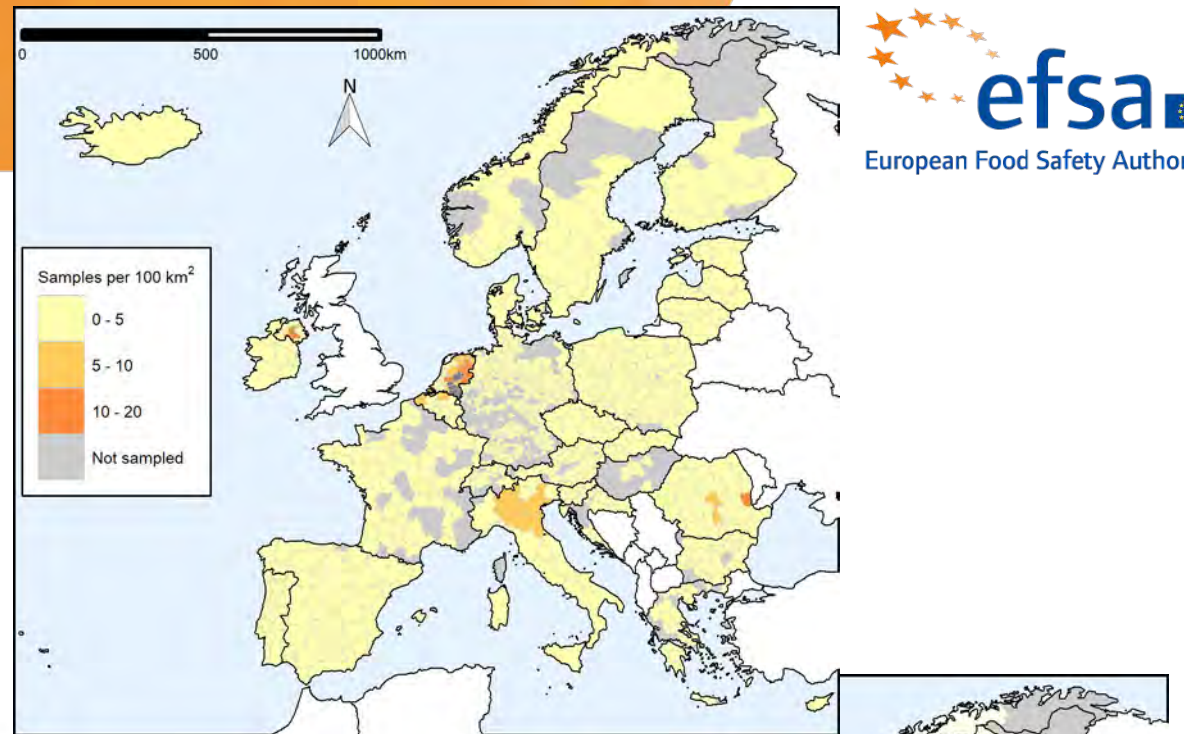
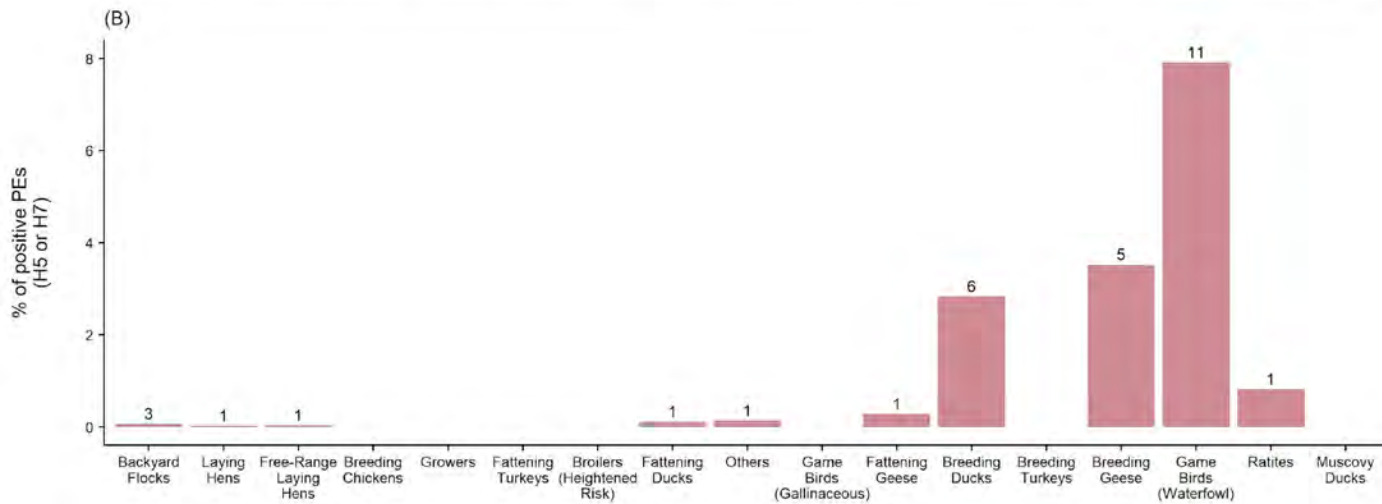
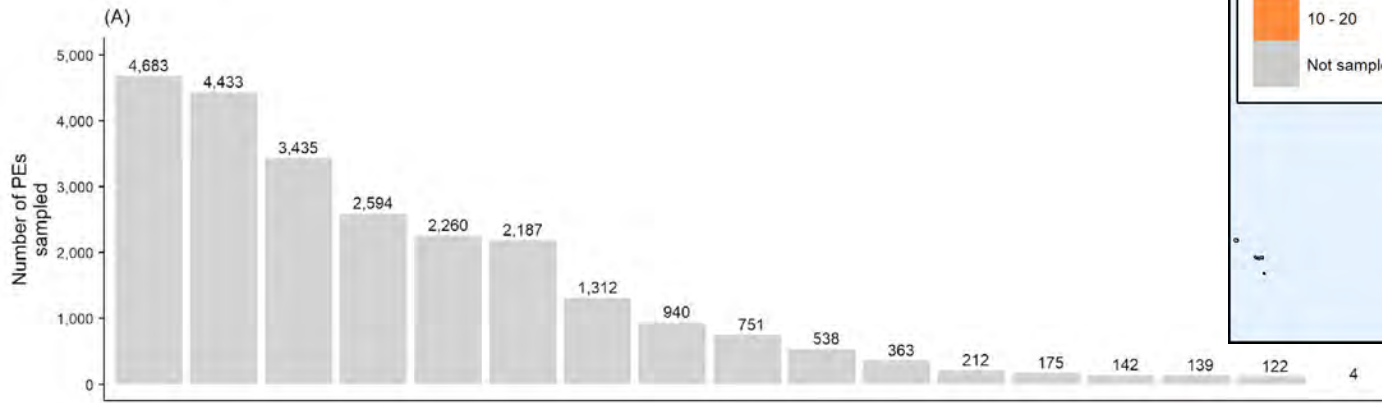
Figure 2: Time series as curve (total)

Menu level	Options			Main graphical representation
Bird sectors	General (poultry, captive and wildlife)	Poultry	Wildlife	X
Period	Time scale or a predefined period (quarter or epidemic season)			
Serotypes	H5N1, H5N2, H5N3, H5N4, H5N5, H5N8, H5Nx			Colour
Categories	Poultry Captive birds Wildlife	Chicken Domestic Duck Domestic Goose Turkey Other (include mixed) Unknown	Waterfowl Raptor Other Unknown	Shapes (+ shades of blue?)



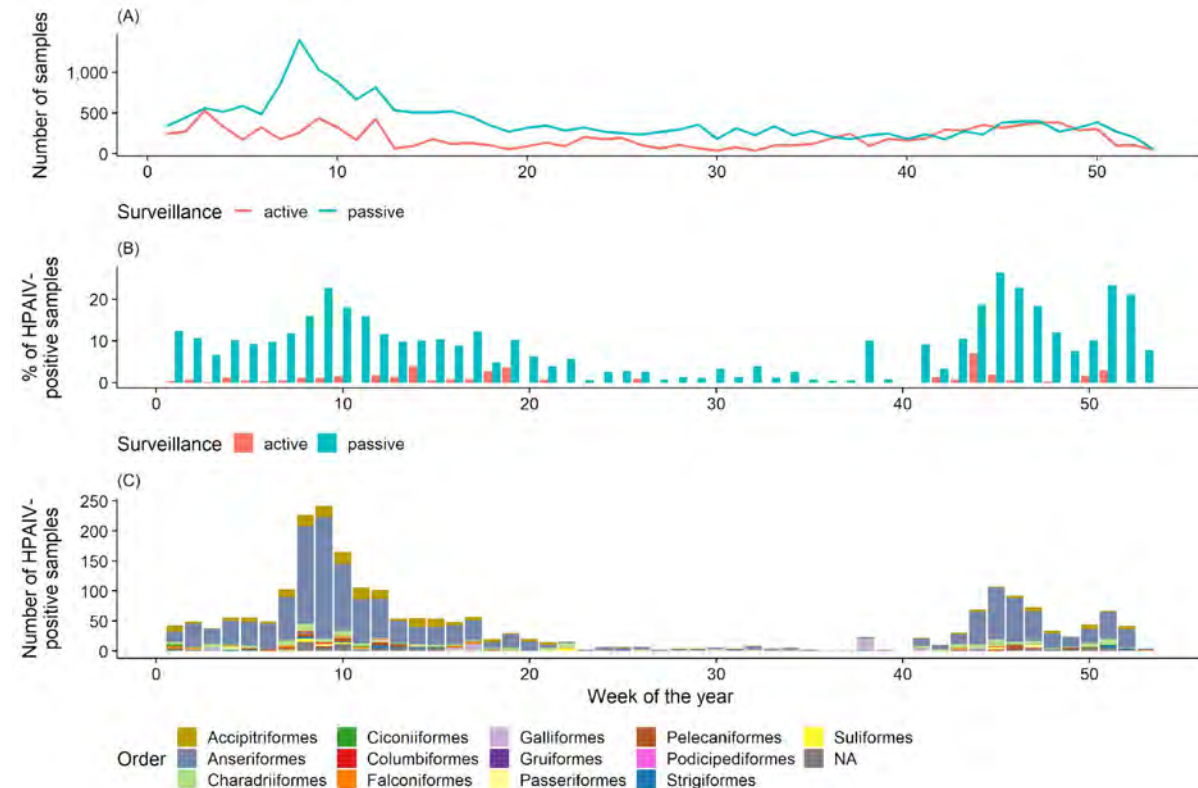
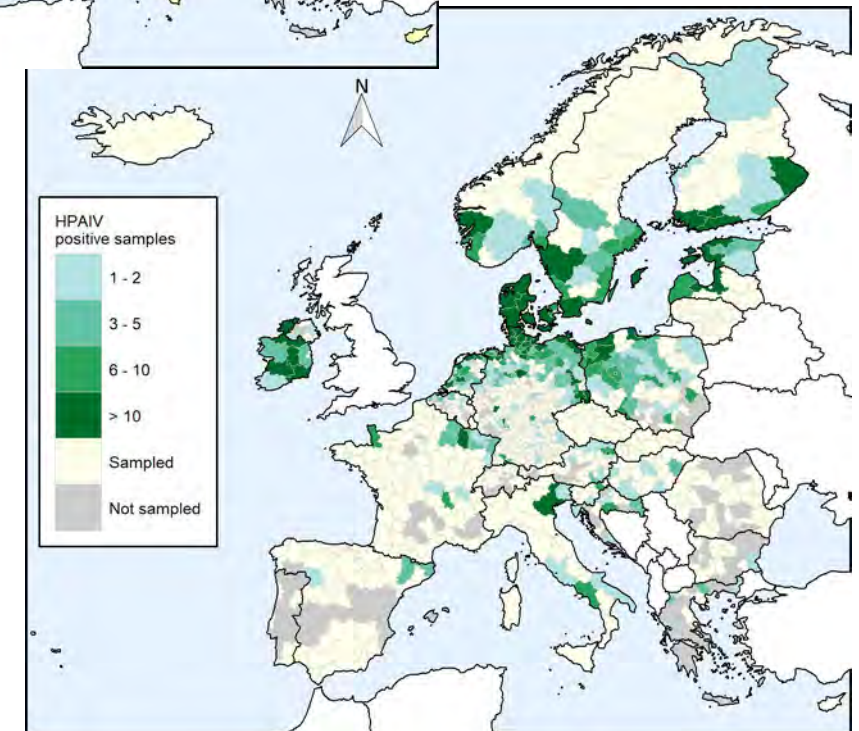
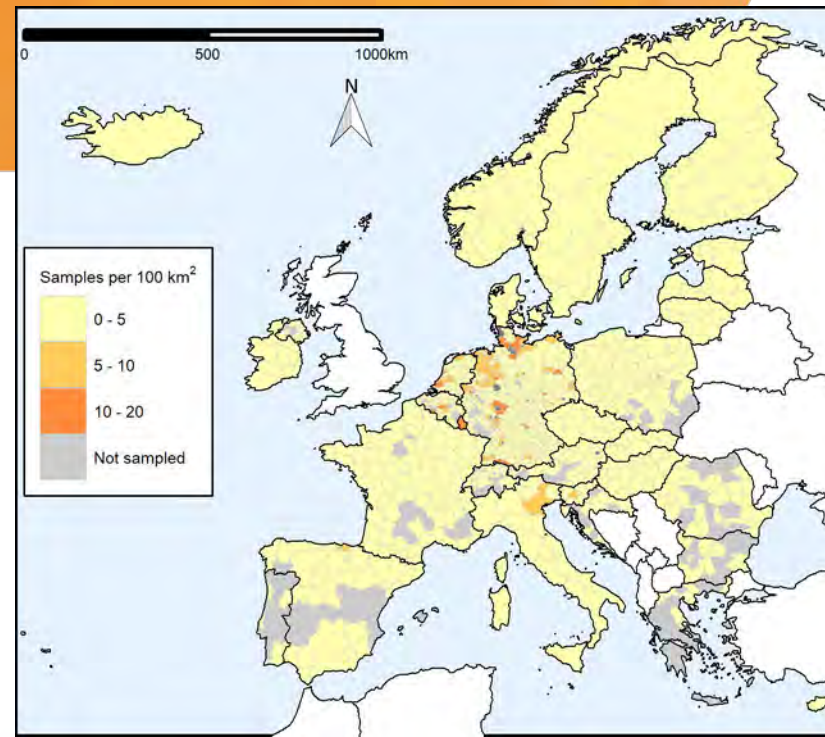
Annual surveillance report

Poultry



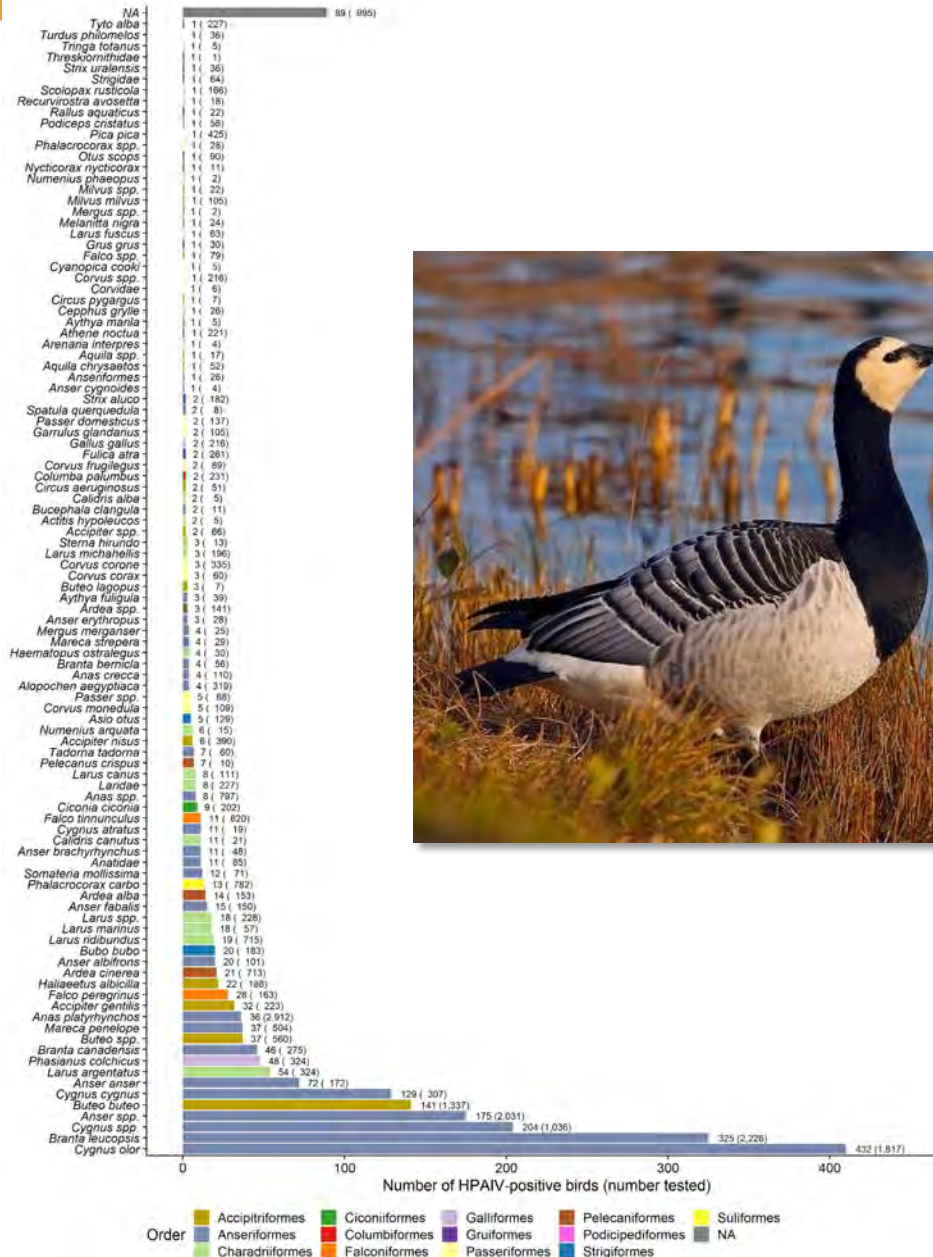
Annual surveillance report

Wild birds



Annual surveillance report

Wild birds



Migration Mapping Tool

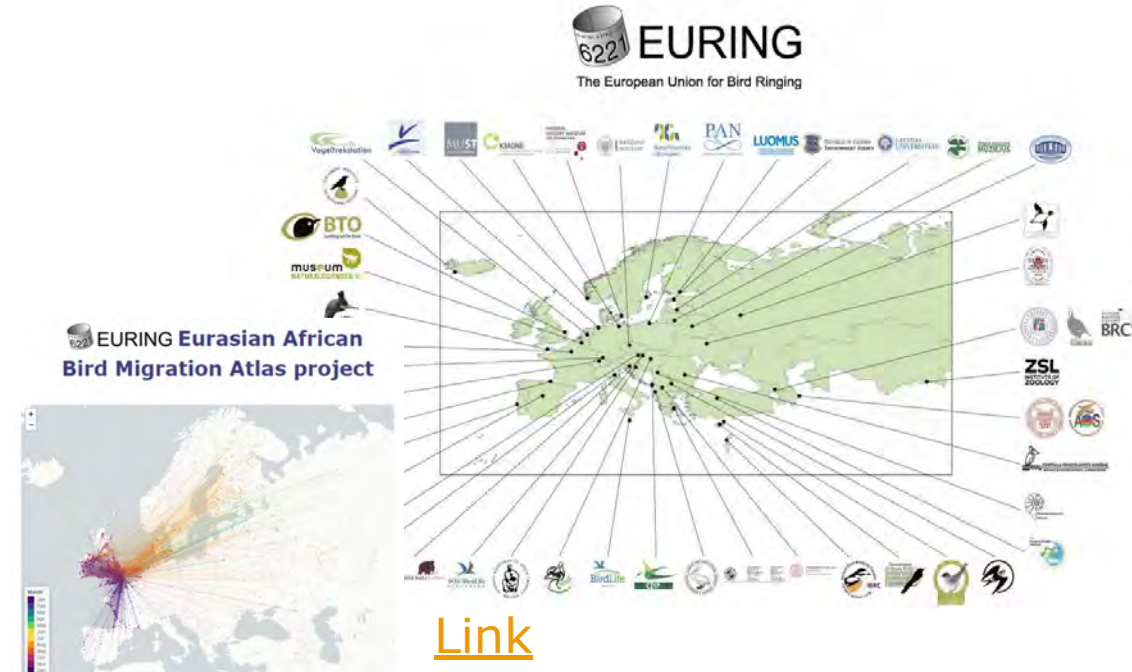


Aims

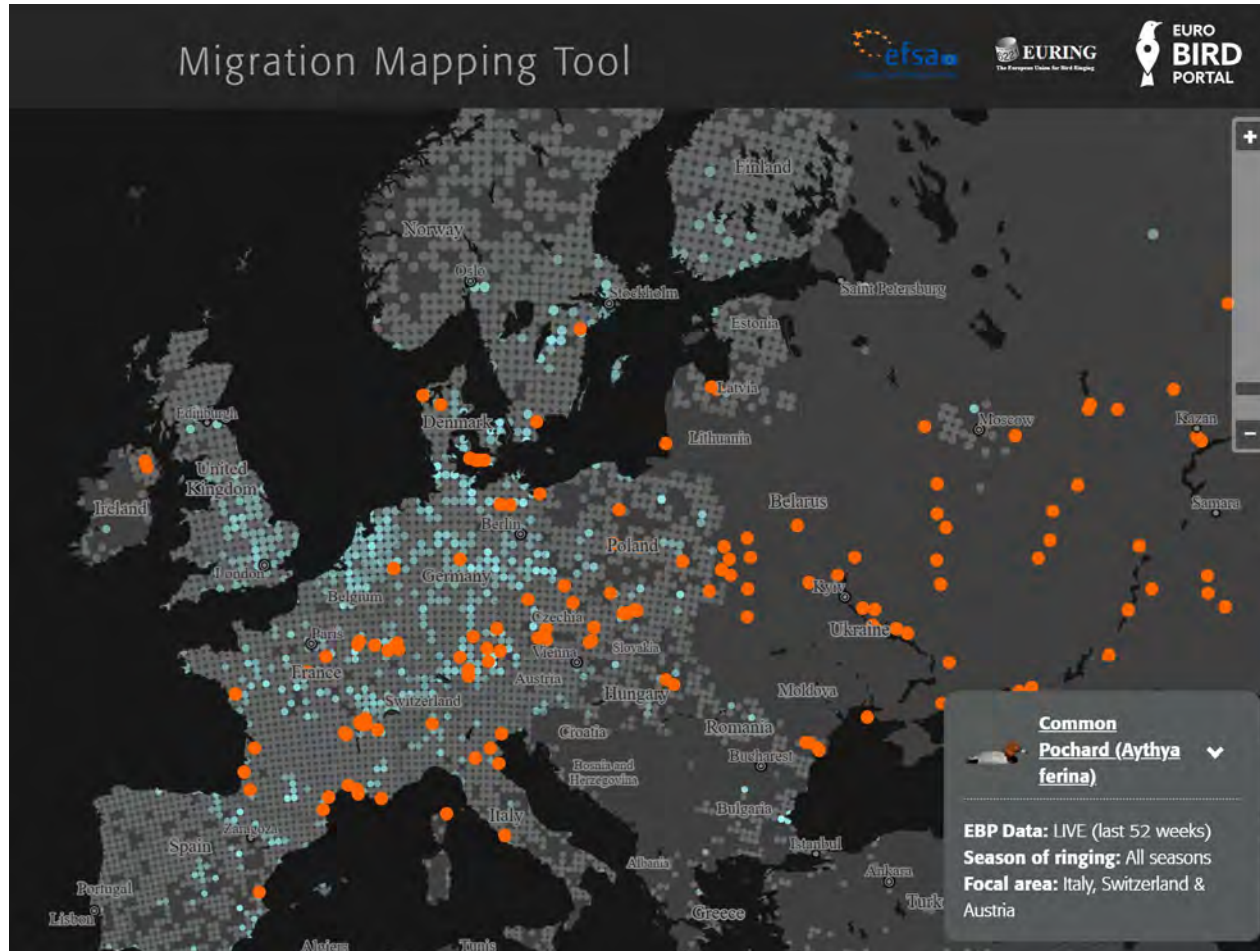
To describe spatiotemporal patterns of wild bird distributions (seasonal distributional changes, migratory patterns, phenology) and their changes over time

- ✓ **300 wild bird species**
- ✓ **Ringling and tracking data**
- ✓ **>100 years of accumulated data of bird recoveries**
- ✓ **46 ringing schemes**

- ✓ **135 wild bird species**
- ✓ **Week-by-week distributional patterns at a resolution of 30x30 km**
- ✓ **320 million wild bird records since 2010**
- ✓ **Updated with ~140,000 new wild bird records every day**



Migration Mapping Tool



- ✓ **Animated maps**
- ✓ **Distributional and connectivity patterns**
- ✓ **Updated weekly**
- ✓ **50 target wild bird species for surveillance of avian influenza**

[Link](#)

[Quick User's Guide](#)

Risk of **introduction and establishment** of highly pathogenic avian influenza (HPAI) in **wild birds** in the EU



Spatiotemporal risk assessment model to predict outbreaks


- Wild bird abundance and movement (12 wild bird species)
- Disease notifications at origin (outbreaks reported in wild bird in the last 10 years)



Catalan Ornithological Institute

Models of relative bird abundance based on EBP data for 12 key species (including Russian data)


Canada Goose, Greylag Goose, Pink-footed Goose, Greater White-fronted Goose, Taiga/Tundra Bean Goose, Mute Swan, Whooper Swan, Eurasian Wigeon, Mallard, Eurasian Teal, Common Pochard and Tufted Duck

 11/01/2022



Looking out for birds


Models of bird movements (long-distance & local) based on EURING data for the same 12 key species

 11/01/2022



Global consultancy specialized in veterinary epidemiology

Development of a spatiotemporal risk assessment model of HP avian influenza introduction and establishment in Europe based on EBP and EURING model outputs + other risk parameters

 11/05/2022

Risk of **introduction and establishment** of highly pathogenic avian influenza (HPAI) in **wild birds** in the EU

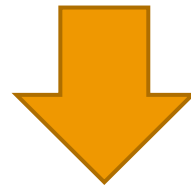


Spatiotemporal risk assessment model to predict outbreaks

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Greylag Goose
Pink-footed Goose
Greater White-fronted Goose
Taiga/Tundra Bean Goose
Mute Swan
Whooper Swan
Eurasian Wigeon
Mallard
Eurasian Teal
Common Pochard
Tufted Duck

Risk of **introduction and establishment** of highly pathogenic avian influenza (HPAI) in **wild birds** in the EU



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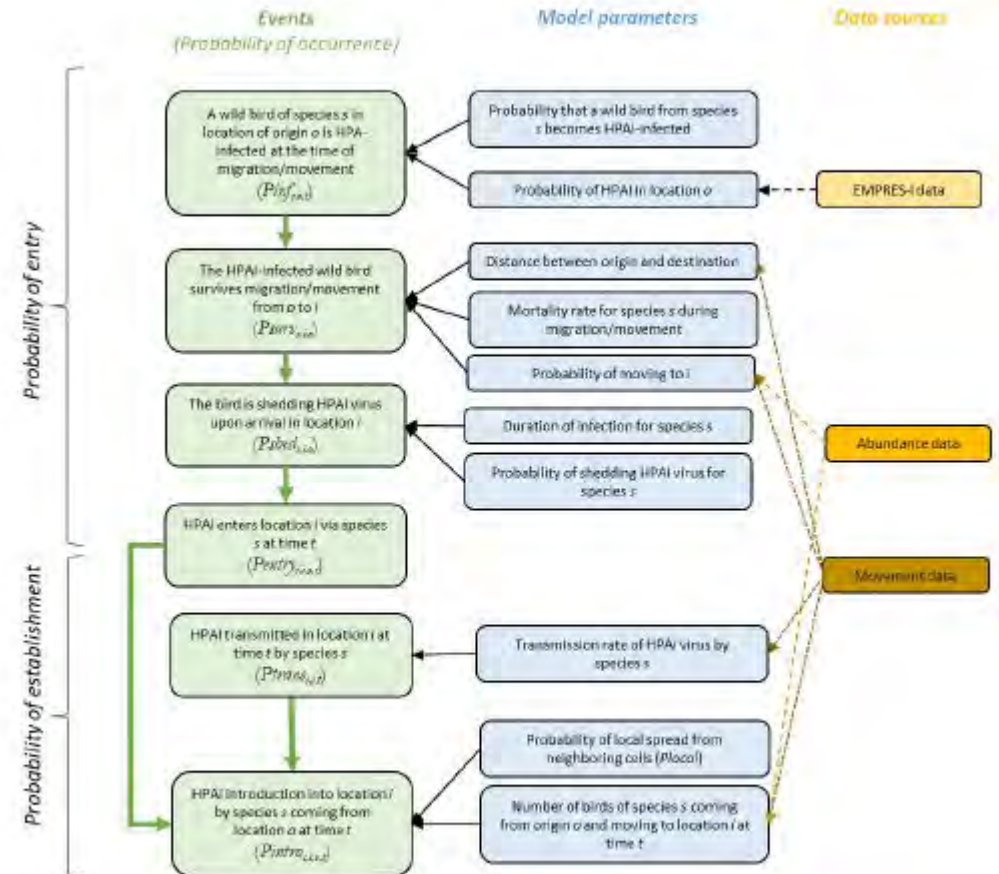
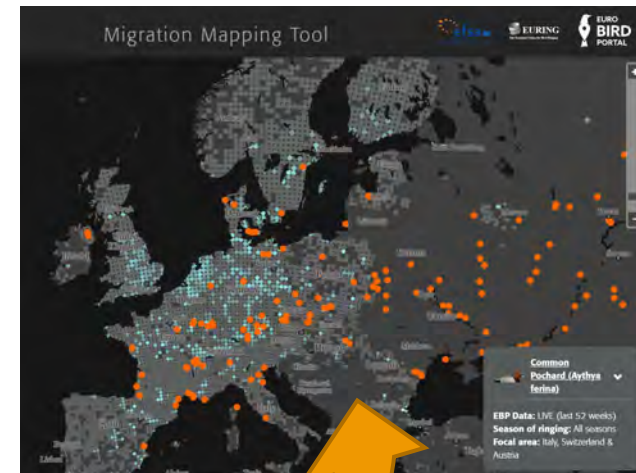
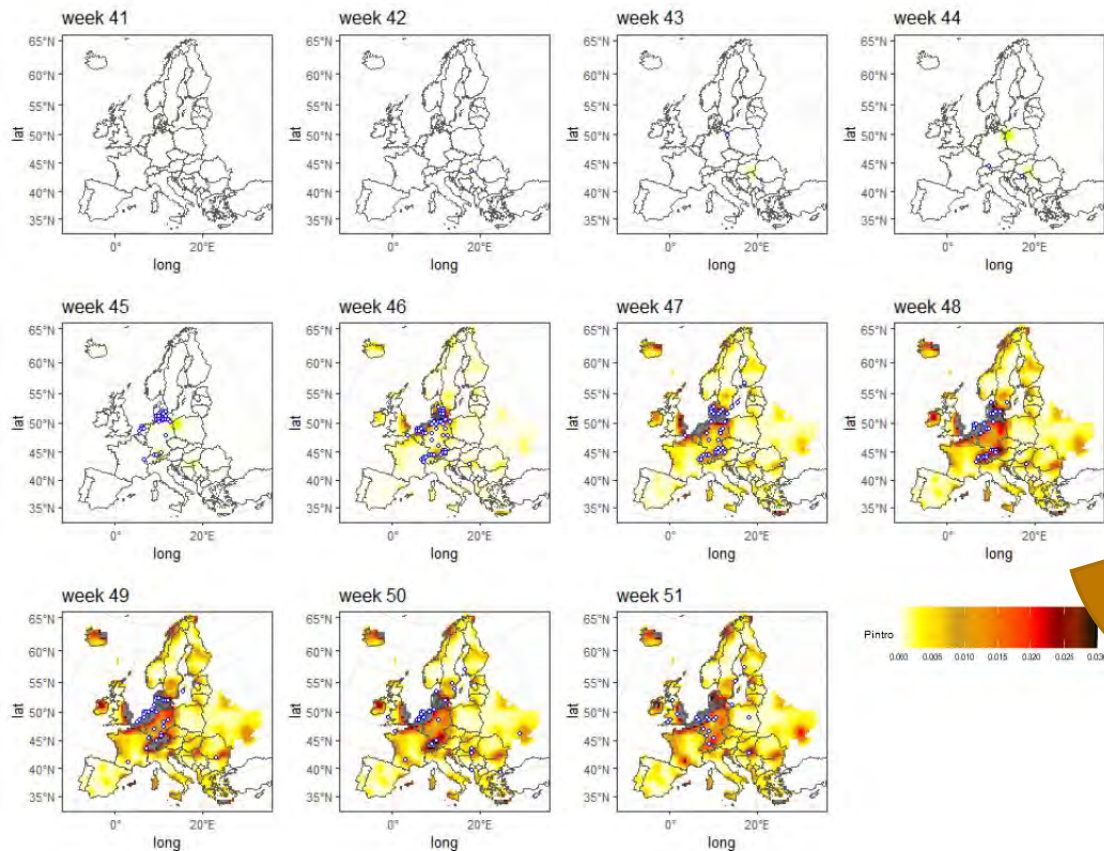
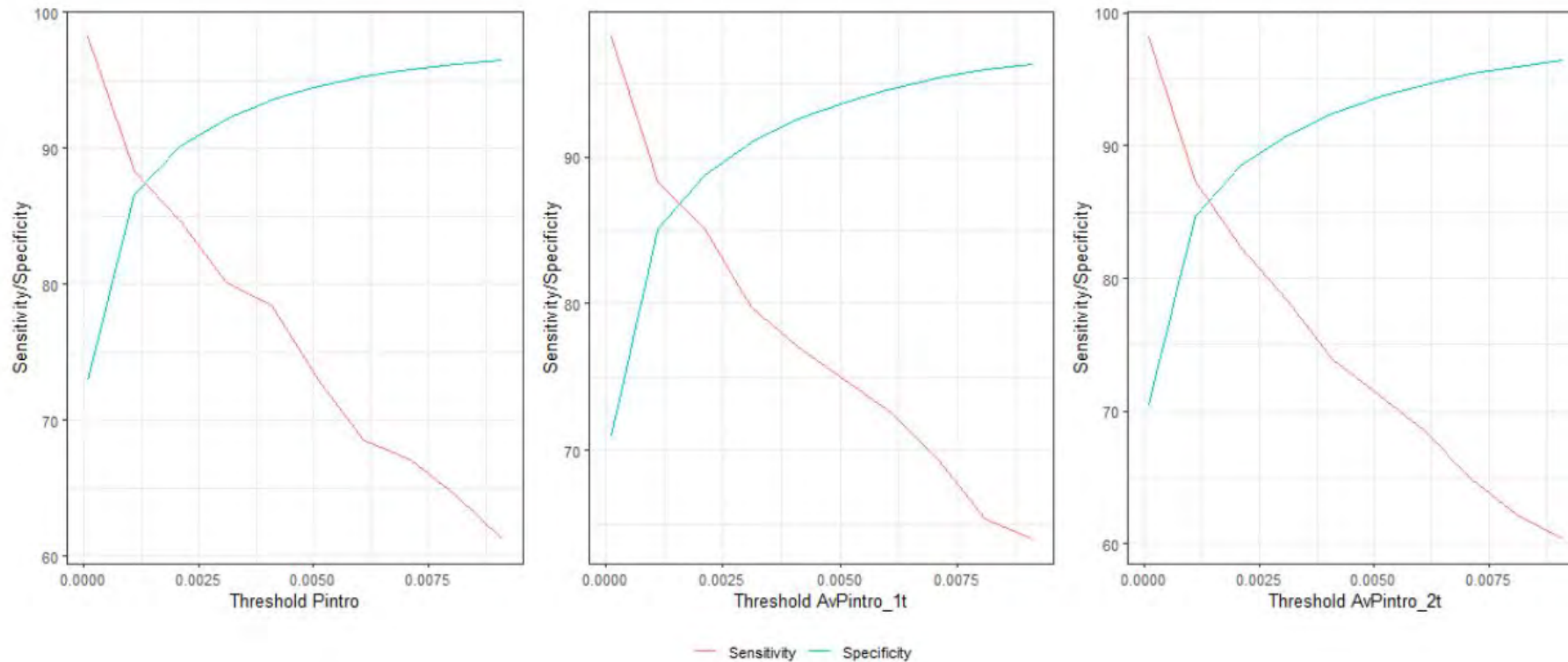


Figure 1 Proposed structure of the risk assessment model. "Abundance data" and "Movement data" refer to the datasets generated by EuroBirdPortal/EURING.

- Automated risk maps
 - Presented weekly at a resolution of 50x50 km



- Model validation
 - ~88% sensitivity and specificity



- Inclusion of **more wild bird species**
- Inclusion of **wild birds arriving from outside the EU**
- Exploration of **additional risk factors**
 - **Wild bird population** features (e.g. age, mingling)
 - **Anthropogenic** features (e.g. urbanisation)
 - **Ecological and climatic** features (e.g. presence of forests/lakes/rivers/wetlands, topography, temperature, precipitation)
- Assessment of the **risk of introduction and establishment in poultry** in the EU
- **Alert messages**



Aims

- Identify key hosts
 - Identify key areas
 - Identify key times
- ... for sampling



Animal &
Plant Health
Agency



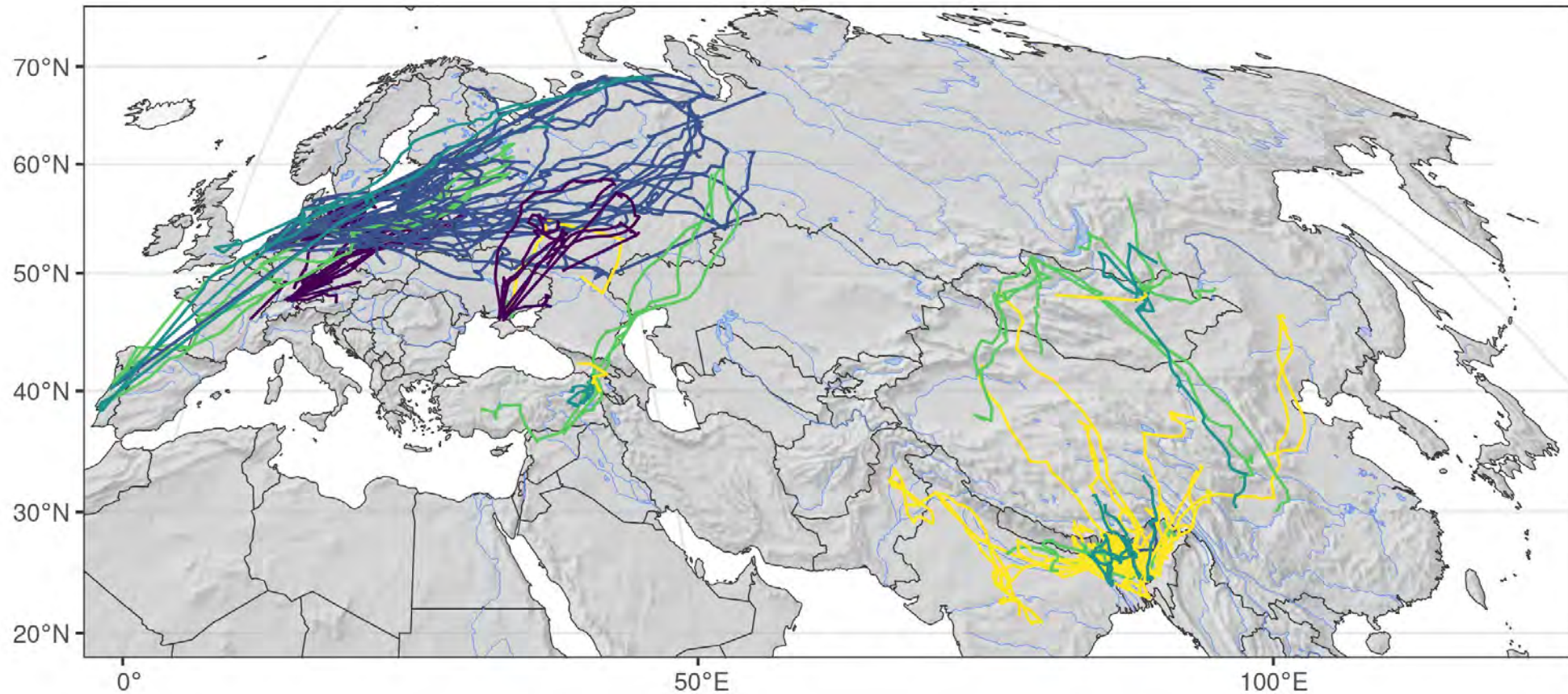


Areas where waterfowl aggregate along migratory flyways

Pilot studies in **Ukraine** and **Georgia**

Active surveillance outside the EU (*pilot*)

ΔELTA-FLU



- Are these projects useful for your work?
- How can we build up on and improve these projects to meet your needs?
- How can we help you increase your preparedness?
- Are you missing anything specific (e.g. data, information)?



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