PROTOTYPE OF EARLY WARNING SYSTEM FOR HPAI IN THE EU

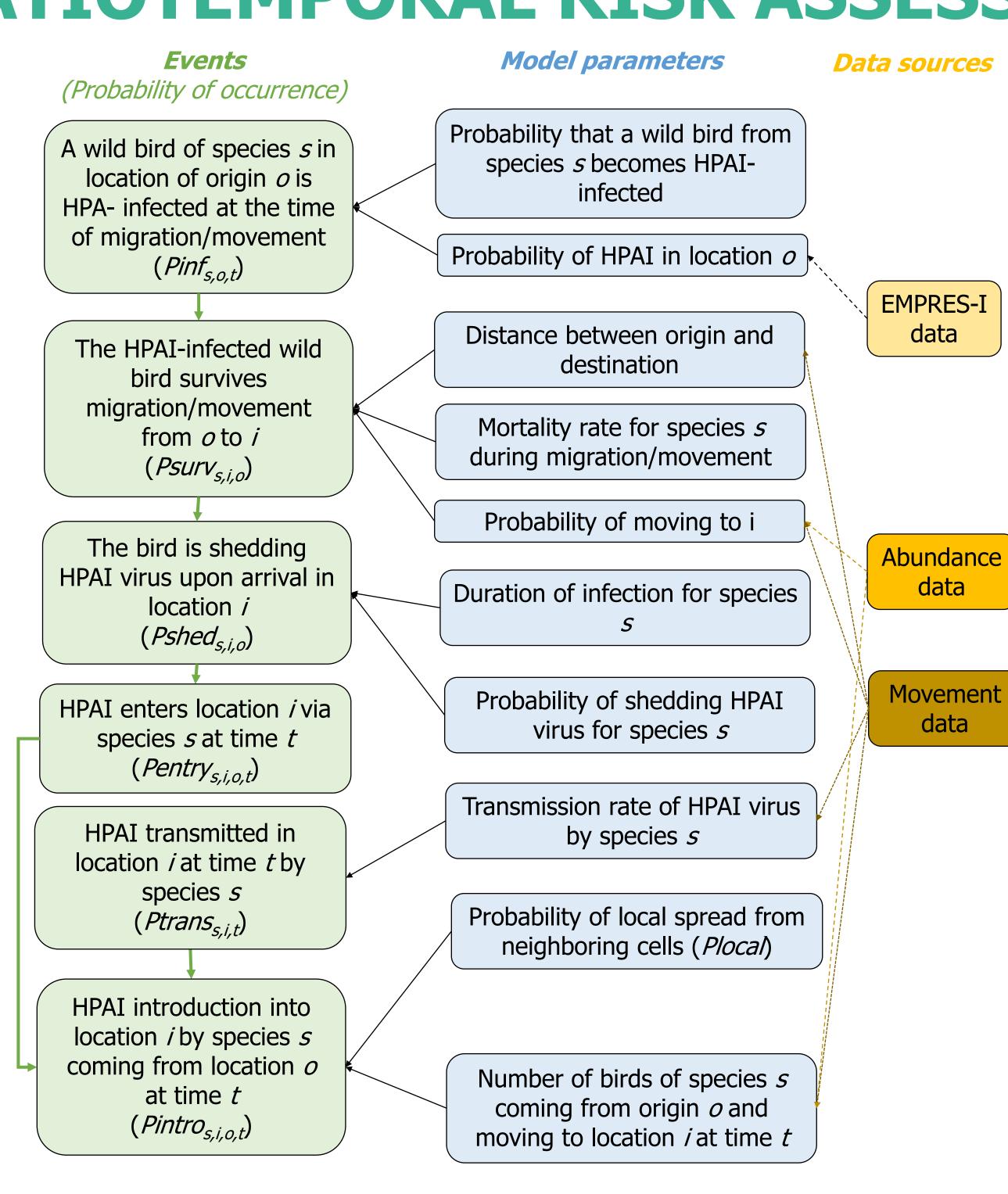
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SPATIOTEMPORAL RISK ASSESSMENT MODEL



A spatiotemporal risk assessment model based on the import risk assessment methodology was performed to estimate the probability of a Highly Pathogenic Avian Influenza (HPAI) outbreak in wild bird population by spatiotemporal unit across the European Union (EU). The weekly output is aggregated on a 50x50km grid cell.

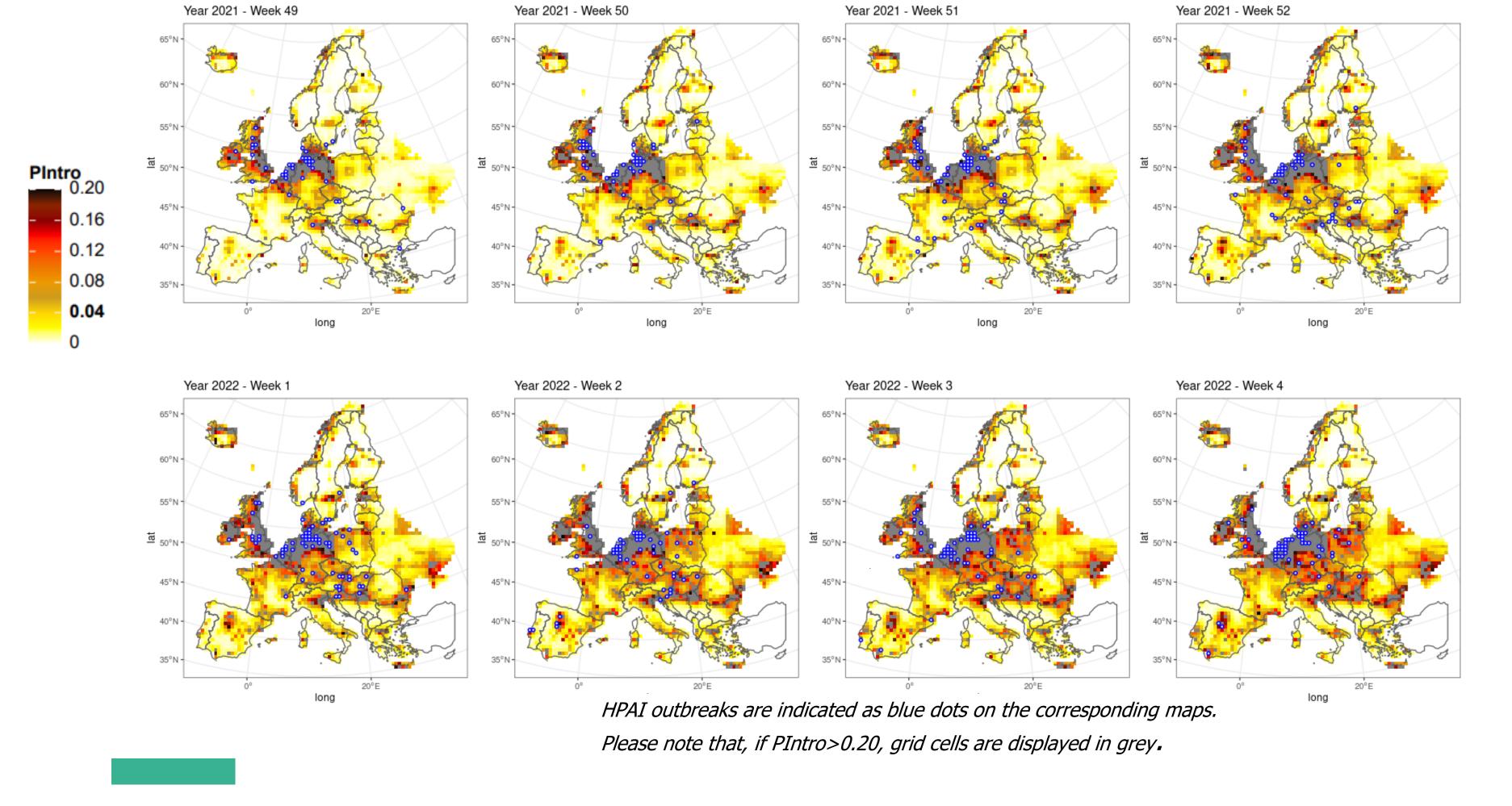
The input data are:

- Expected abundance of 12 wild bird species
- Long-distance movement of migratory populations
- Short-distance movement of migratory populations
- EMPRES-i data on HPAI outbreaks (H5 and H7) in wild birds

REAL-TIME UPDATE IN THE REAL PROPERTY OF THE P



The spatiotemporal risk assessment model is updated on real time based on the latest HPAI outbreaks reported in wild birds in Europe. A Shiny graphical user interface (GUI) has been developed to show the model results. By autumn 2023 the model will be incorporated in the Migration Mapping Tool (MMT).



ALERT SYSTEM (®)



Early warning of highly pathogenic avian influenza (HPAI) in the EU Probability of introduction of HPAI A(H5/H7) in wild birds in Italy from 2023-03-06 to 2023-03-13 Please note that, if Plntro>0.20, grid cells are displayed in grey The overall median probability of introduction for Italy from 2023-03-06 to 2023-03-13 is 0.001 [95%CI: 0-1], while the maximum is 1. Out of 193 cells in Italy, 39 have a probability of HPAI introduction in wild birds higher than 0.04,

which represents 20% of the country. Please note that 0.04 is the optimal cut-point value at which model sensitivity and specificity are maximized (see EFSA's External Scientific Report). Model results should be interpreted with caution due to

the model limitations, delay in outbreak reporting in wild birds and delay in data transmission, which leads to an underesti-

mation of the probability of introduction. For more information on how to interpret these data you may have a look at this video. For the previous week, the total number of HPAI outbreaks reported in wild birds in Italy was 0 according to the Food

and Agriculture Organization of the United Nation's EMPRES-i. Estimated probabilities of introduction in wild birds for the

previous weeks and for other EU countries are available through the Migration Mapping Tool.

Country-specific weekly reports are sent to the EFSA's contact points for Avian Influenza.

NEXT STEPS

Integrate the model into the MMT (EURING)

Add more wild bird species









2025

Test different data sources for data on **HPAI**

Include risk for poultry

outbreaks













DISCLAIMER: The present document was produced and adopted by Sovon, ICO, BTO, EuroBirdPortal and Ausvet Europe in the context of a contract with the European Food Safety Authority (EFSA), awarded following a public procurement procedure. It aims at informing stakeholders on the probability of highly pathogenic avian influenza outbreaks occurring in the EU, based on the output of spatiotemporal risk models. The information reflects the state of knowledge available on the date of dispatch. EFSA cannot be held liable for any errors, inaccuracies or inconsistencies with regard to text and/or data contained therein. Therefore, EFSA accepts no responsibility or liability arising out of, or in connection with the information provided. The present document is not to be considered an output adopted by EFSA.