Avian influenza: overview of the epidemiological situation and other EFSA activities

Lisa Kohnle
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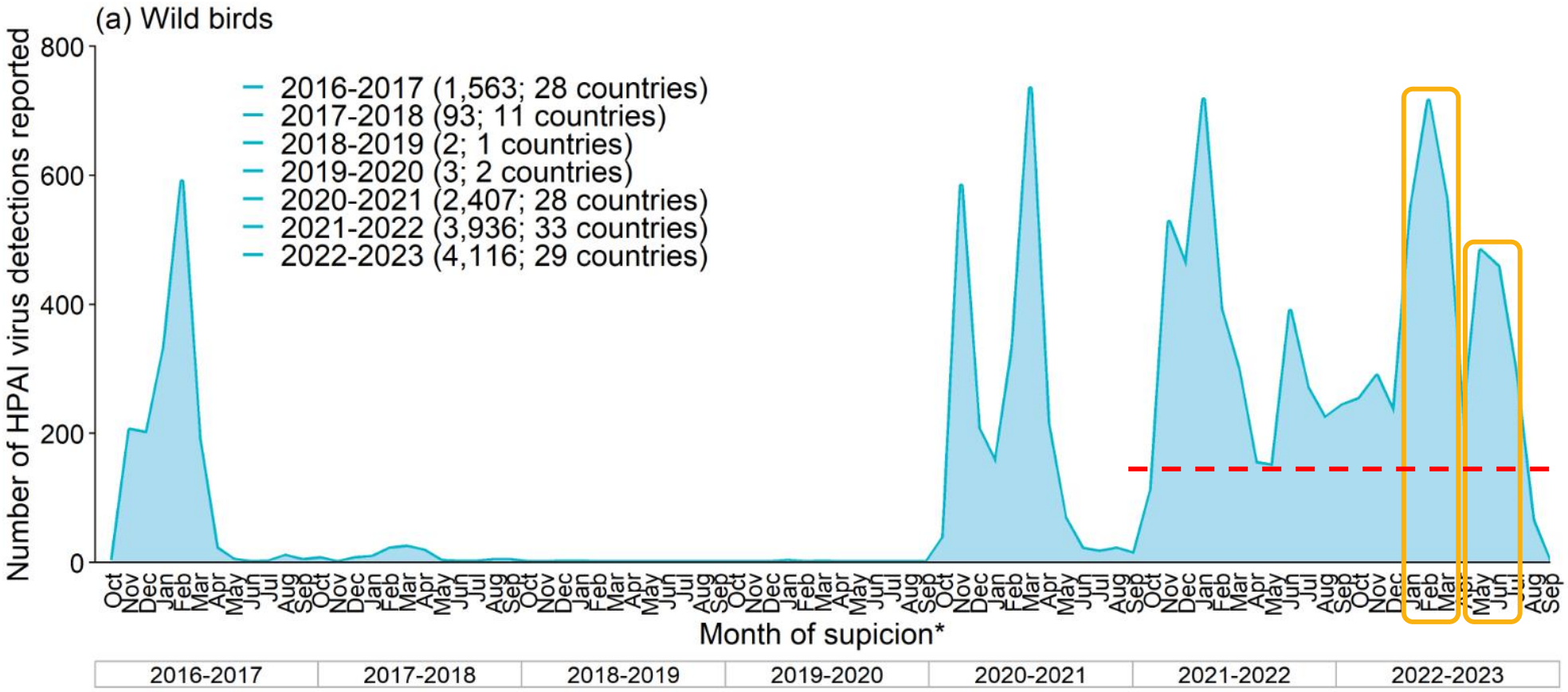
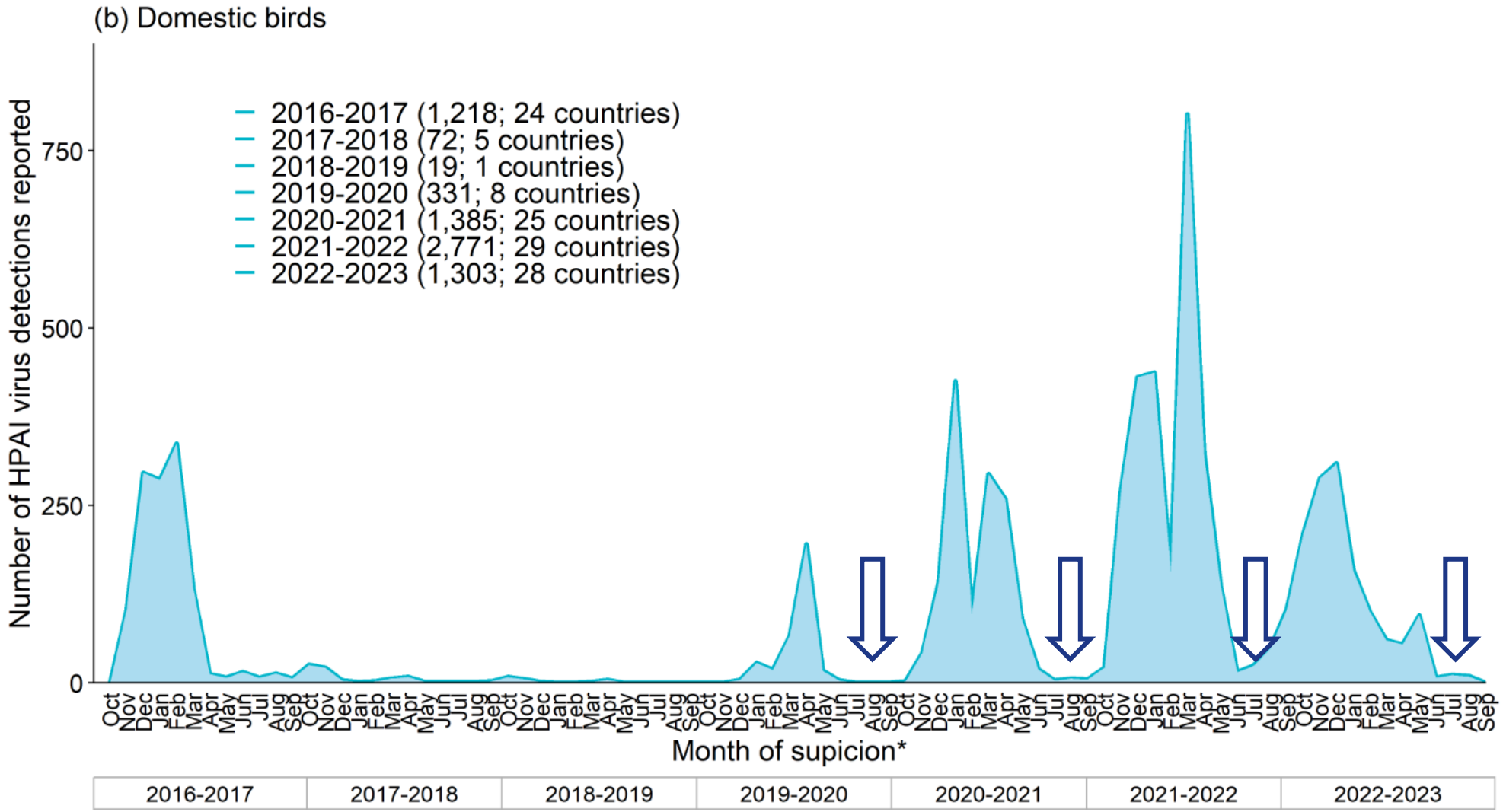
EUROPEAN FOOD SAFETY AUTHORITY

HPAI IN WILD BIRDS IN EU/EEA + UK



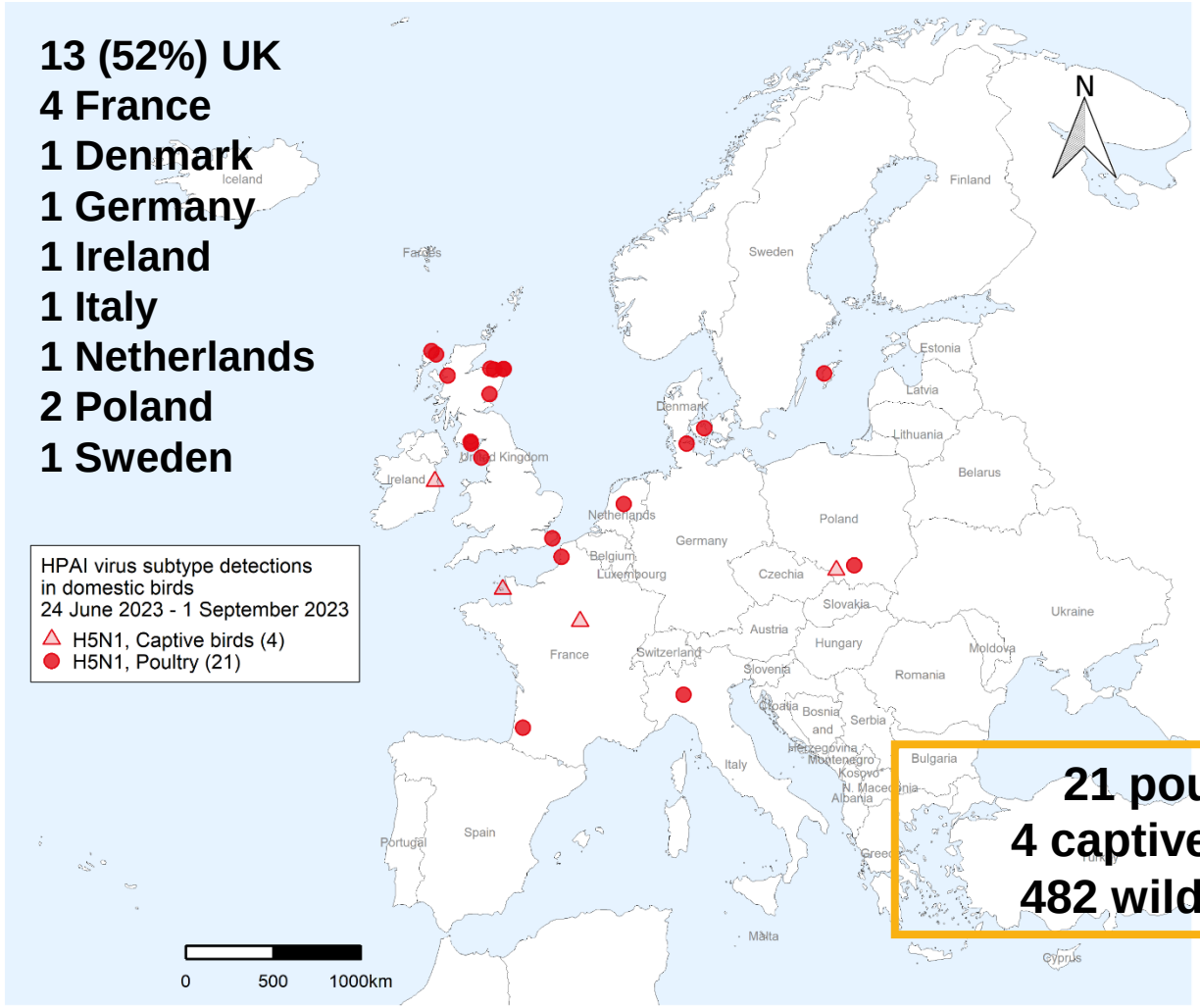
HPAI IN DOMESTIC BIRDS IN EU/EEA + UK



HPAI IN BIRDS | JUNE – SEPTEMBER 2023

DOMESTIC BIRDS

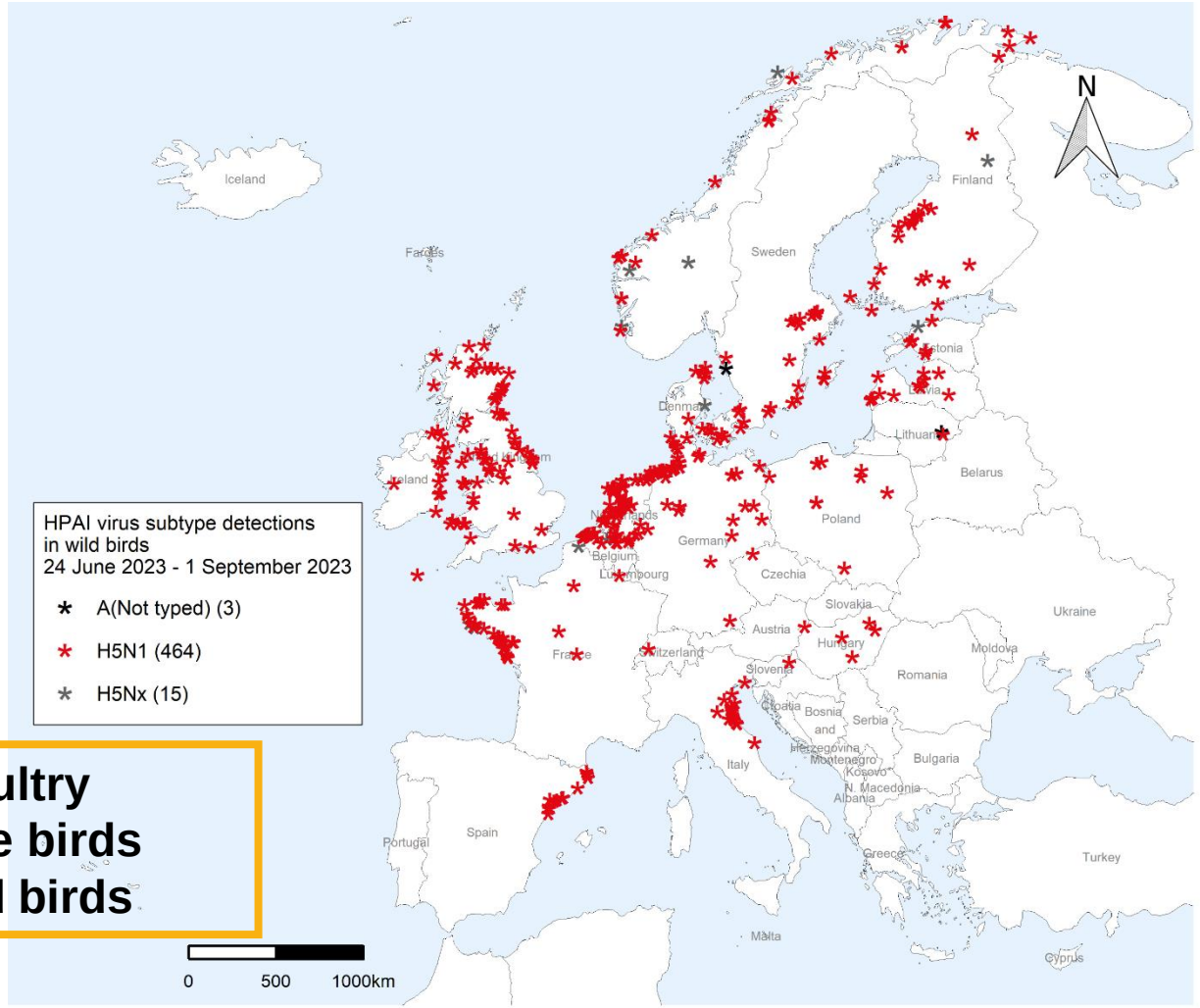
13 (52%) UK
4 France
1 Denmark
1 Germany
1 Ireland
1 Italy
1 Netherlands
2 Poland
1 Sweden



21 poultry
4 captive birds
482 wild birds

Author: EFSA
Data sources: ADIS, WOAH
Date updated: 01/09/2023

WILD BIRDS



Author: EFSA
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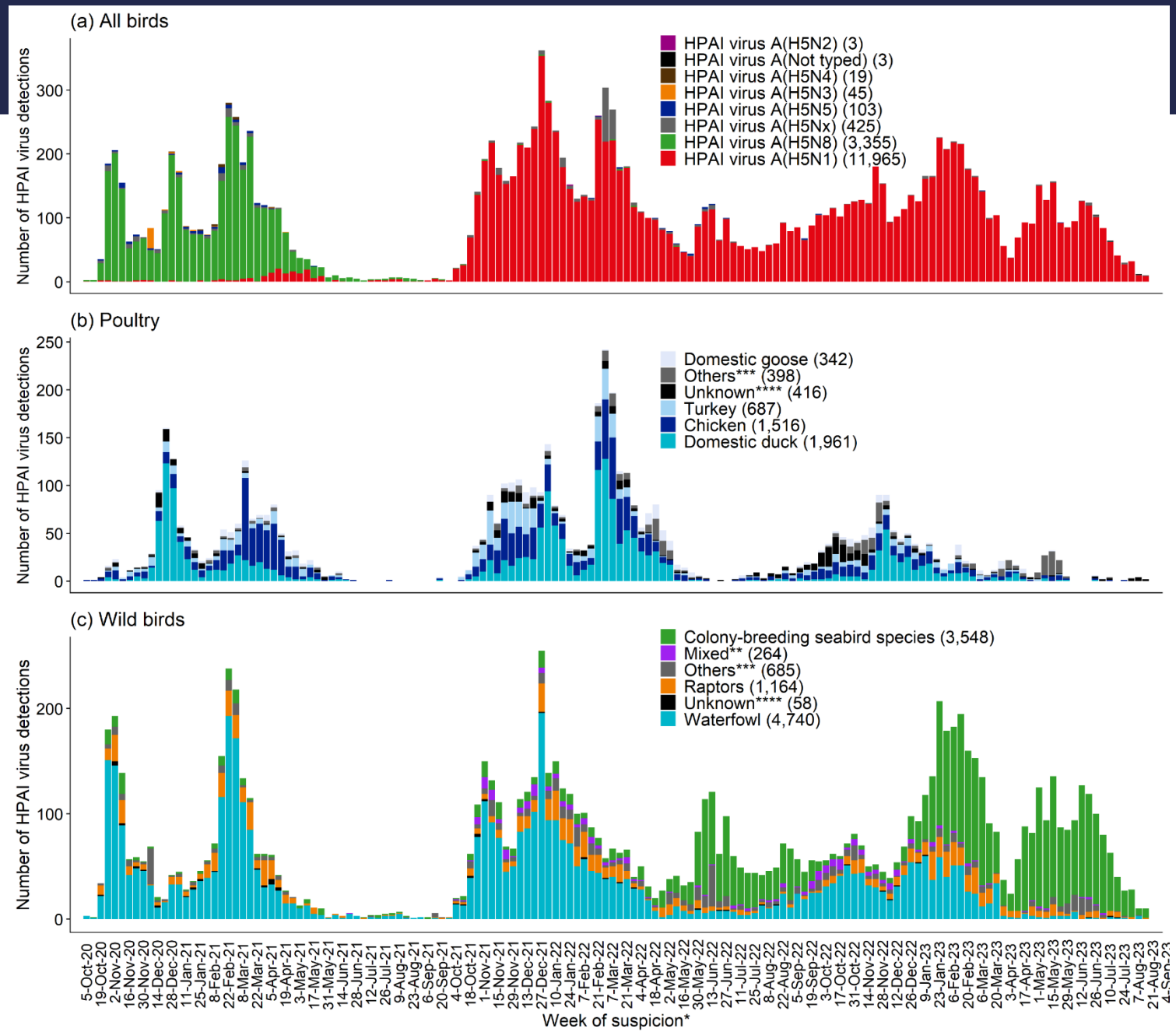
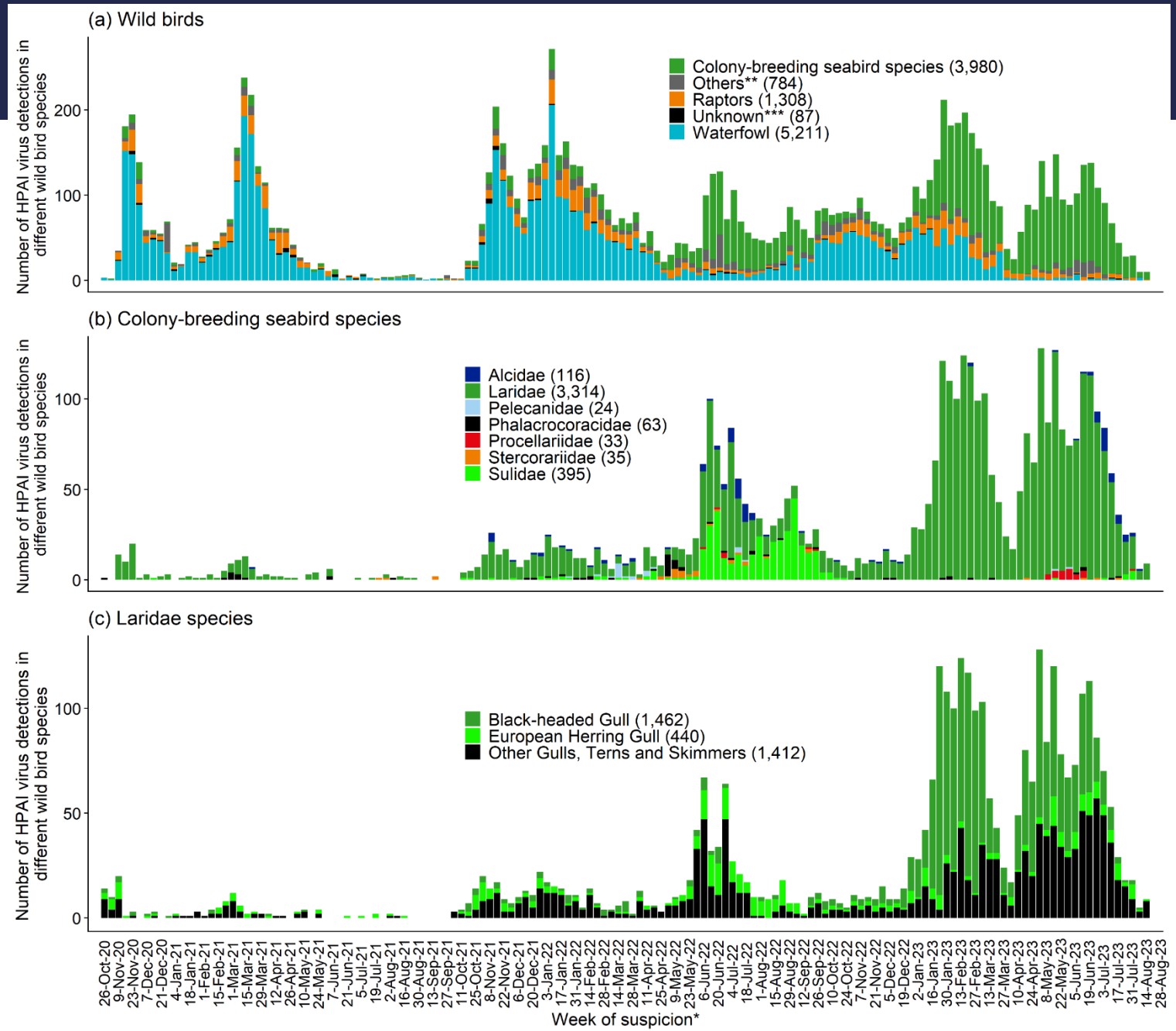


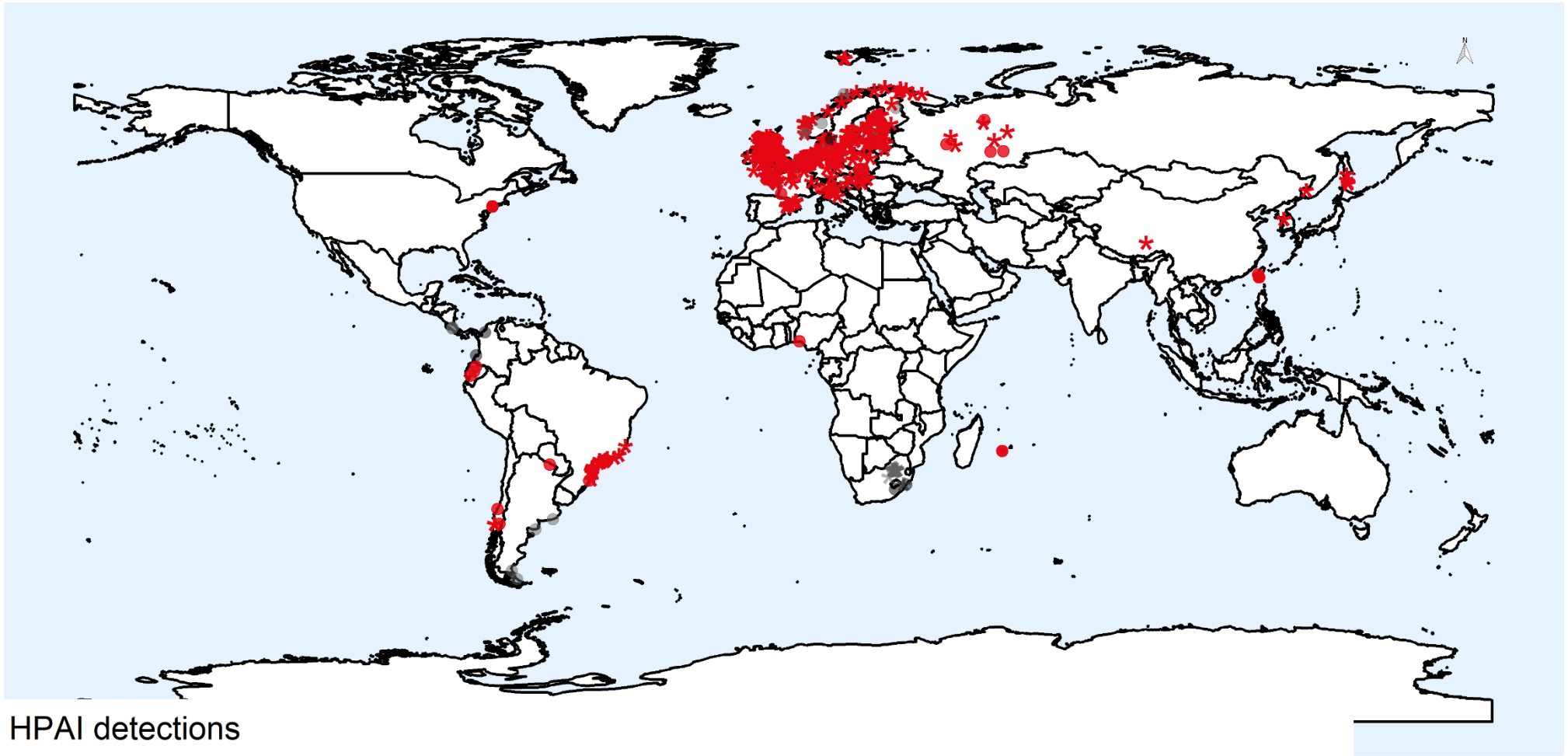
Temporal distribution in poultry and wild birds

a) HPAI virus subtypes
b) Poultry categories
c) Wild bird categories



Temporal distribution of wild bird species involved

HPAI IN BIRDS | JUNE – SEPTEMBER 2023



HPAI detections

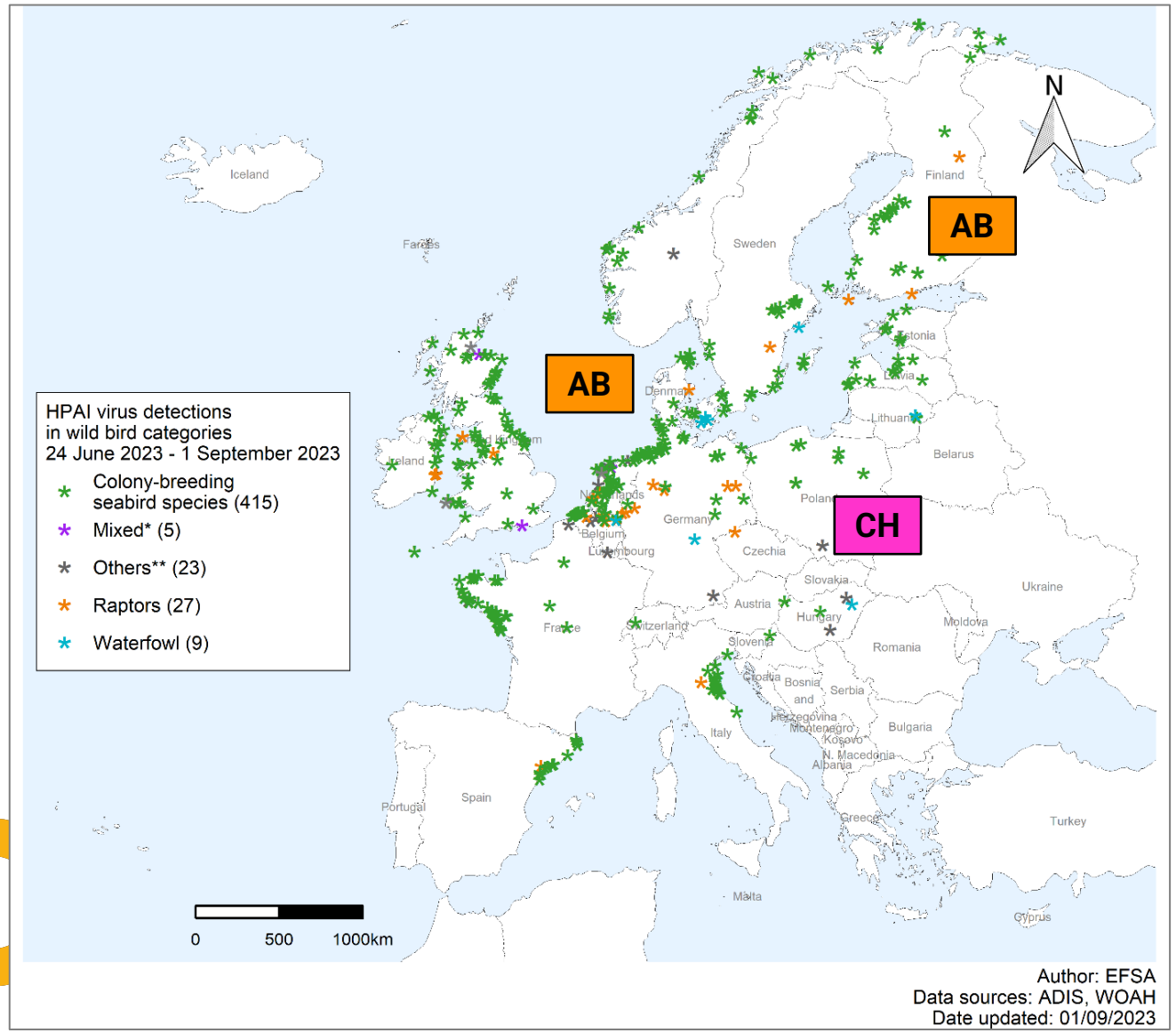
- A(H5N1), domestic birds (44)
- A(H5N1), wild birds (515)
- A(H5Nx), wild birds (21)
- A(Not typed), domestic birds (27)
- A(Not typed), wild birds (7)

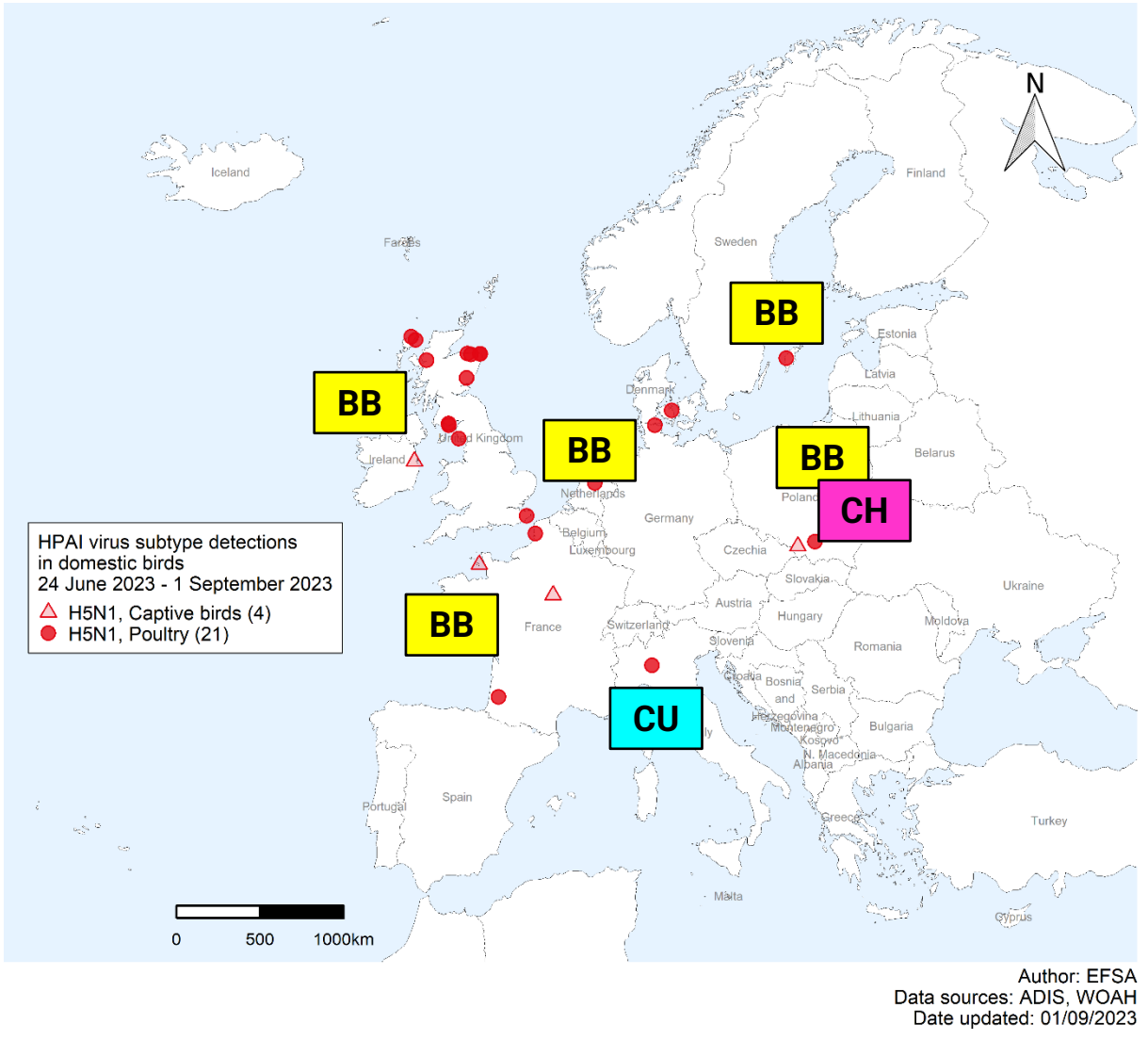
Author: EFSA
Data sources: ADIS, WOAH
Date updated: 01/09/2023

HPAI IN MAMMALS | JUNE – SEPTEMBER 2023

FARMED	PET	WILD
▪ Fur farms (Finland): Arctic fox, red fox, common raccoon dog, American mink ▪ Dog (China)	▪ Cat (Rep. of Korea)	▪ Red fox: Finland, Latvia, Norway, Sweden, UK ▪ Eurasian otter: Finland ▪ Harbour seal: Denmark, Germany, USA ▪ Northern fur seal: Russia ▪ South American sea lion: Argentina, Uruguay ▪ South American fur seal: Uruguay ▪ Southern elephant seal: Argentina

GENETIC CHARACTERISTICS OF HPAI VIRUSES





GENETIC CHARACTERISTICS OF HPAI VIRUSES

- Most of the currently circulating viruses in birds in Europe belong to the **BB genotype** (most of the H5N1 viruses collected and genetically characterised are from Laridae.
- To date, **no key mutations associated to the switch in the virus binding preference from avian to human-type receptors** have been identified in the H5 collected in Europe. However, matter of concern is the detection of a mutation that could change the receptor binding preference from avian to human in a H5N6 virus of clade 2.3.4.4b collected in farmed dogs in China.
- **Molecular markers of mammalian adaptation** in the **PB2 protein** can be rapidly acquired by the virus during infection in mammalian species. Viruses containing such mutations may have a greater zoonotic potential.

AVIAN INFLUENZA IN HUMANS

Subtype	Cases detected in 2023	Total cases (deaths)	Countries reporting human cases
A(H3N8)	1 case, China	3 (1) Since 2022	China
A(H5N1)	8 cases/detections: **clade 2.3.4.4b:** United Kingdom (4), Chile (1), China (1) **clade 2.3.2.1c:** Cambodia (2)	**880*(460)** Since 2004 *includes detections due to suspected environmental contamination in 2022 from Spain (2) and the United States (1), and in 2023 from the United Kingdom (3)	**23 countries, including one EU/EEA country: Spain*.**
A(H5N6)	4 cases, China	88 (34) Since 2014	No EU/EEA country; China (84), Laos (1)
A(H9N2)	6 H9N2 cases, China	126 (2) Since 1998	No EU/EEA country; China (113), Egypt (4), Bangladesh (3), Cambodia (2), Oman (1), Pakistan (1), India (1), Senegal (1)

WHAT TO EXPECT

- In the coming weeks, **more HPAI outbreaks** are expected to occur **in poultry** in Europe due to the beginning autumn migration of several waterfowl species.
- It is expected that **HPAI outbreaks in wild birds will continue** and involve more waterfowl species than during the summer months. During this reporting period, mostly seabird species (Laridae, Alcidae, Sulidae) were affected.
- **Asymptomatic H5 infections** in mammalian species, including pets, has been demonstrated (Moreno et al., 2023; Chestakova et al. 2023). This raises concerns over the possibility of subclinical infections with emerging viruses with increased zoonotic potential in animals in close contact with humans.

OPTIONS FOR RESPONSE (WILD BIRDS)

- Targeted **active surveillance** in **wild birds**, particularly in waterfowl
- Enhanced **species identification**
- Preparedness and prevention strategies in poultry production systems
- Timely **generation** and **sharing** of **viral sequence data** (promptly detection of viruses with mutations associated with increased zoonotic potential, resistance towards antiviral drugs or other antigenic properties)

OPTIONS FOR RESPONSE (MAMMALS)

- **Preparedness and prevention** strategies in fur animal production systems
- **Prompt culling** of all farmed mammals present on affected fur animal farms
- Increased **passive surveillance** in **wild and free-roaming domestic carnivores**, especially in areas with extensive HPAI virus spread in the wild bird population and reported outbreaks in poultry
- Particular focus on domestic mammals present **in or around HPAI-affected poultry establishments**
- Close **monitoring** of **unusual mortality** and **specific clinical signs** in those species
- Timely reporting of HPAI virus detections in mammals
- **Avoid exposure** of domestic cats and dogs, and in general carnivore pets, to **dead or diseased animals** (mammals and birds), and **avoid feeding** **offal and raw meat** from **wild or kept birds**

OPTIONS FOR RESPONSE (HUMANS)

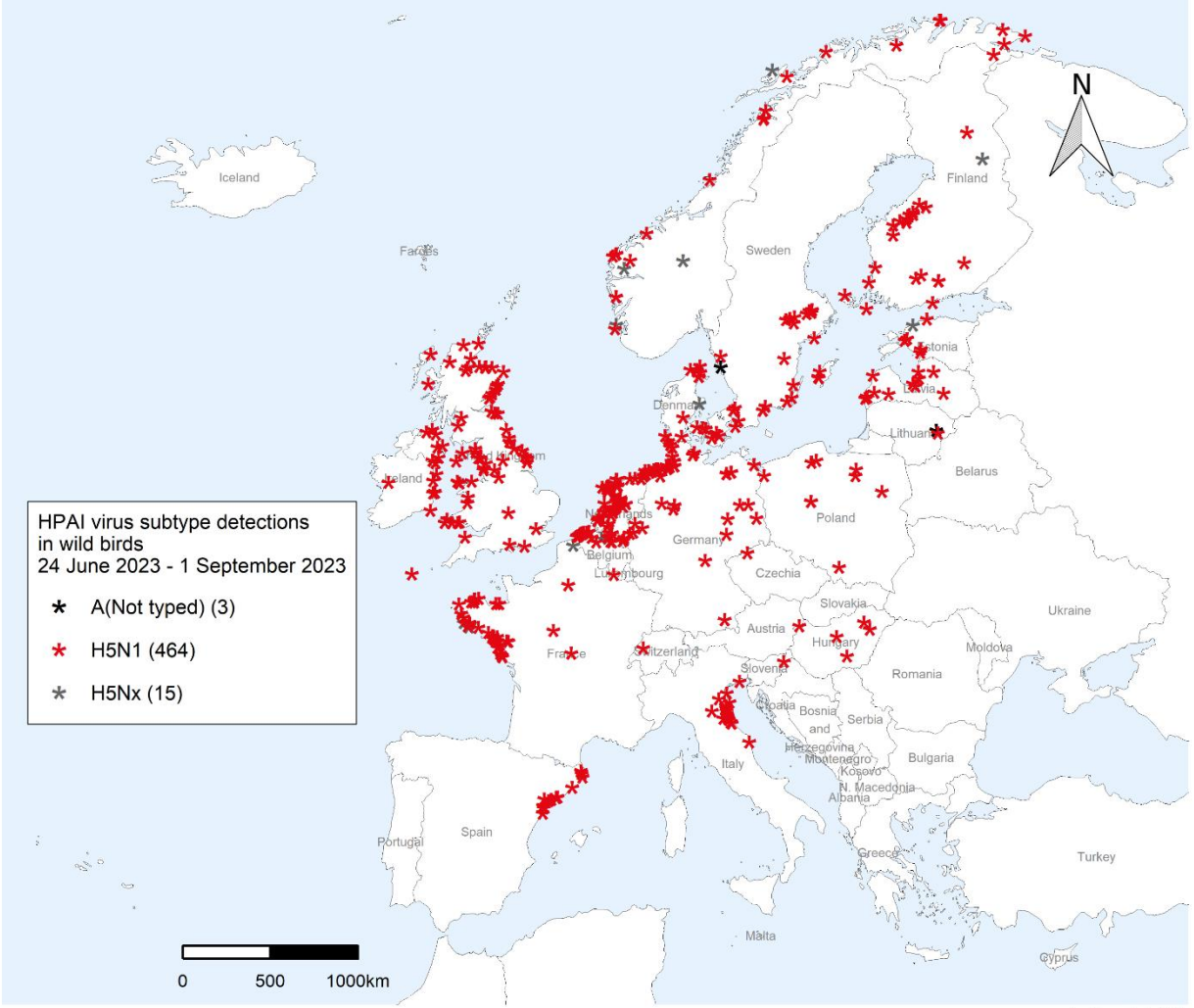
- **Avoid contact** with **sick or dead animals** and **inform** authorities or veterinarians if a dead bird or other animal is seen
- Use of **personal protective equipment**
- People exposed to **sick or dead birds**, **infected mammals** and **contaminated environment** should be **followed up for 10–14 days after last exposure** and **tested immediately** following the **onset of respiratory or any other symptoms** to identify transmission events early. Following exposure to infected mammals, testing can also be considered without indications of onset of symptoms in the exposed people.

- During winter months, testing and subtyping approaches for avian influenza virus need to be proportionate to the epidemiological situation and the capacities of reference laboratories. Therefore, in areas with ongoing avian influenza outbreaks in poultry and detections in wild birds and other animals, a **risk-based targeted approach**, focusing on **outbreaks** and **severe respiratory or unexplained neurological disease**, is proposed.

EFSA’s upcoming call on the establishment of an active surveillance network in wild birds in Europe

EUROPEAN FOOD SAFETY AUTHORITY

SCOPE, TIMELINE AND TASKS



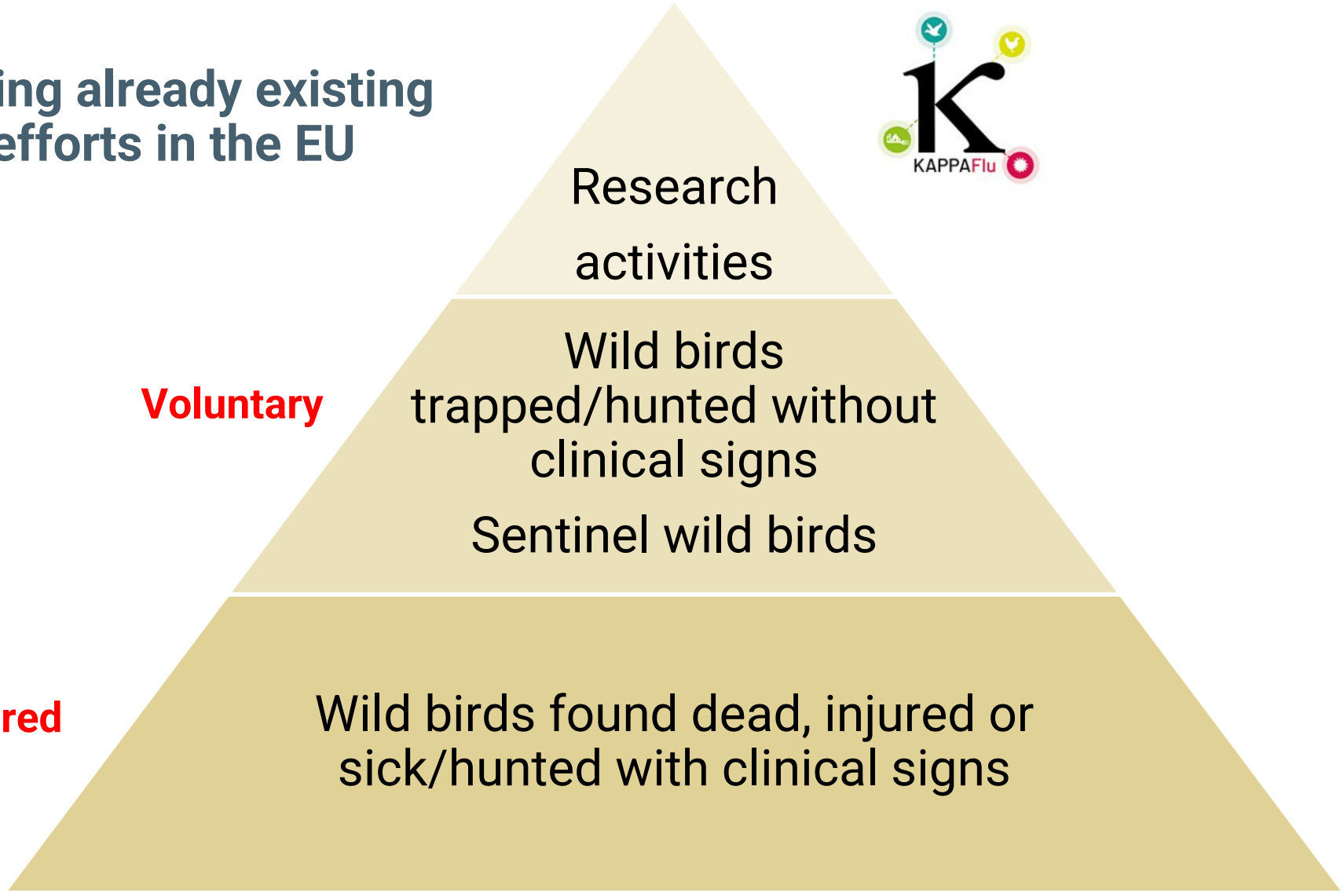
Author: EFSA
Data sources: ADIS, WOAH
Date updated: 01/09/2023

Rationale for this call

- Continuously **high number of** HPAI **cases** in wild birds
  - ➢ Geographic extent
  - ➢ Mass-mortality events
  - ➢ Often reason for primary introductions into poultry establishments
- Need for a better understanding of avian influenza viruses (i) **persistently circulating** in wild birds in Europe and (ii) **regularly being introduced** by wild birds from outside Europe
- Testing the **added value** of active wild bird surveillance in complementing already existing surveillance efforts

SCOPE, TIMELINE AND TASKS

Complementing already existing surveillance efforts in the EU



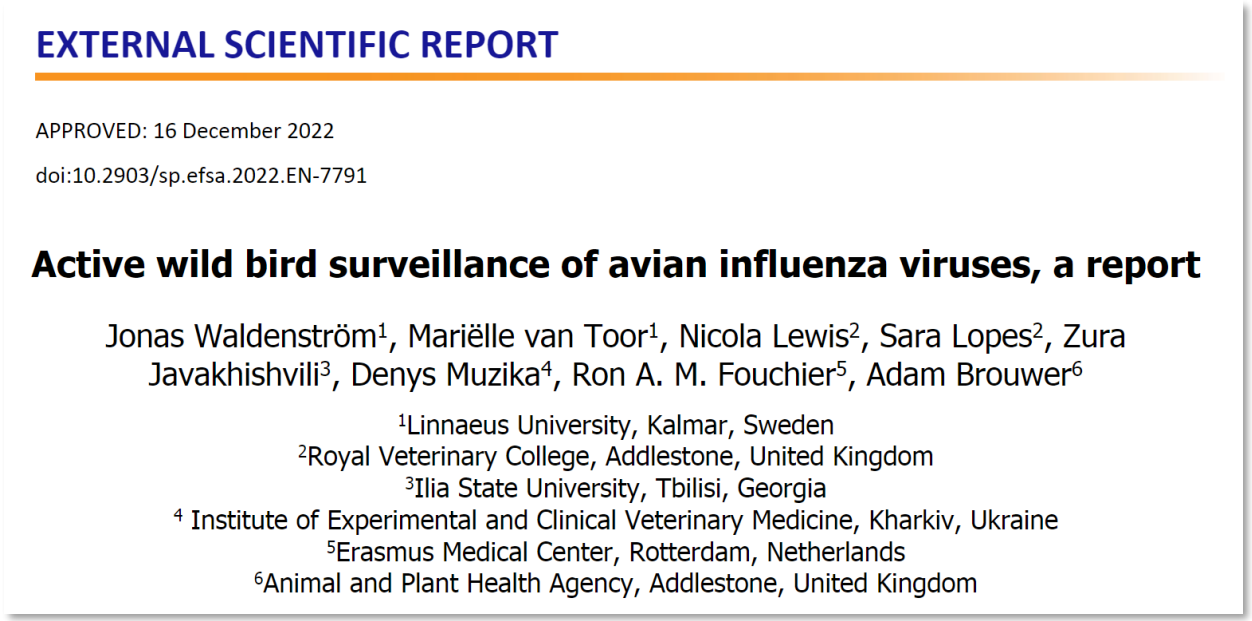
Voluntary

Legally required

SCOPE, TIMELINE AND TASKS

Background

- Extensive analysis of data available from Europe and worldwide in combination with pilot studies in Ukraine and Georgia
  - ➢ Target **hosts**, **locations** and **times of the year** for active surveillance
  - ➢ **Rapid detection and identification** of avian influenza viruses
  - ➢ **Early warning** system
- Main conclusions:
  - ➢ Sampling site selection should be informed by ornithological and virological data
  - ➢ Operational flexibility in terms of hosts, sample matrices and times of the year should be guaranteed



EXTERNAL SCIENTIFIC REPORT

APPROVED: 16 December 2022

doi:10.2903/sp.efsa.2022.EN-7791

Active wild bird surveillance of avian influenza viruses, a report

Jonas Waldenström[1], Mariëlle van Toor[1], Nicola Lewis[2], Sara Lopes[2], Zura Javakhishvili[3], Denys Muzika[4], Ron A. M. Fouchier[5], Adam Brouwer[6]

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[3]Ilia State University, Tbilisi, Georgia
[4] Institute of Experimental and Clinical Veterinary Medicine, Kharkiv, Ukraine
[5]Erasmus Medical Center, Rotterdam, Netherlands
[6]Animal and Plant Health Agency, Addlestone, United Kingdom

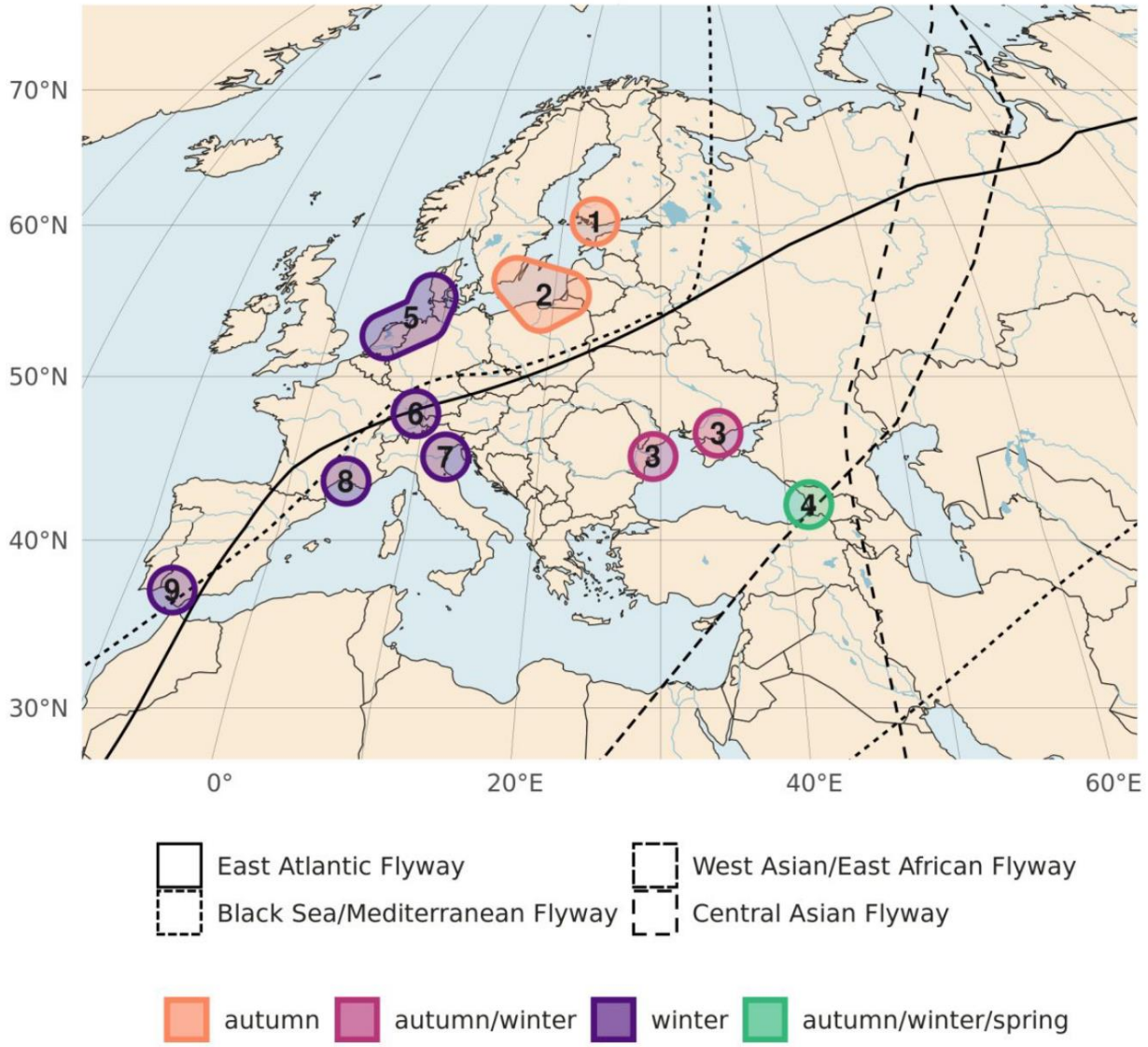
https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/sp.efsa.2022.EN-7791

SCOPE, TIMELINE AND TASKS

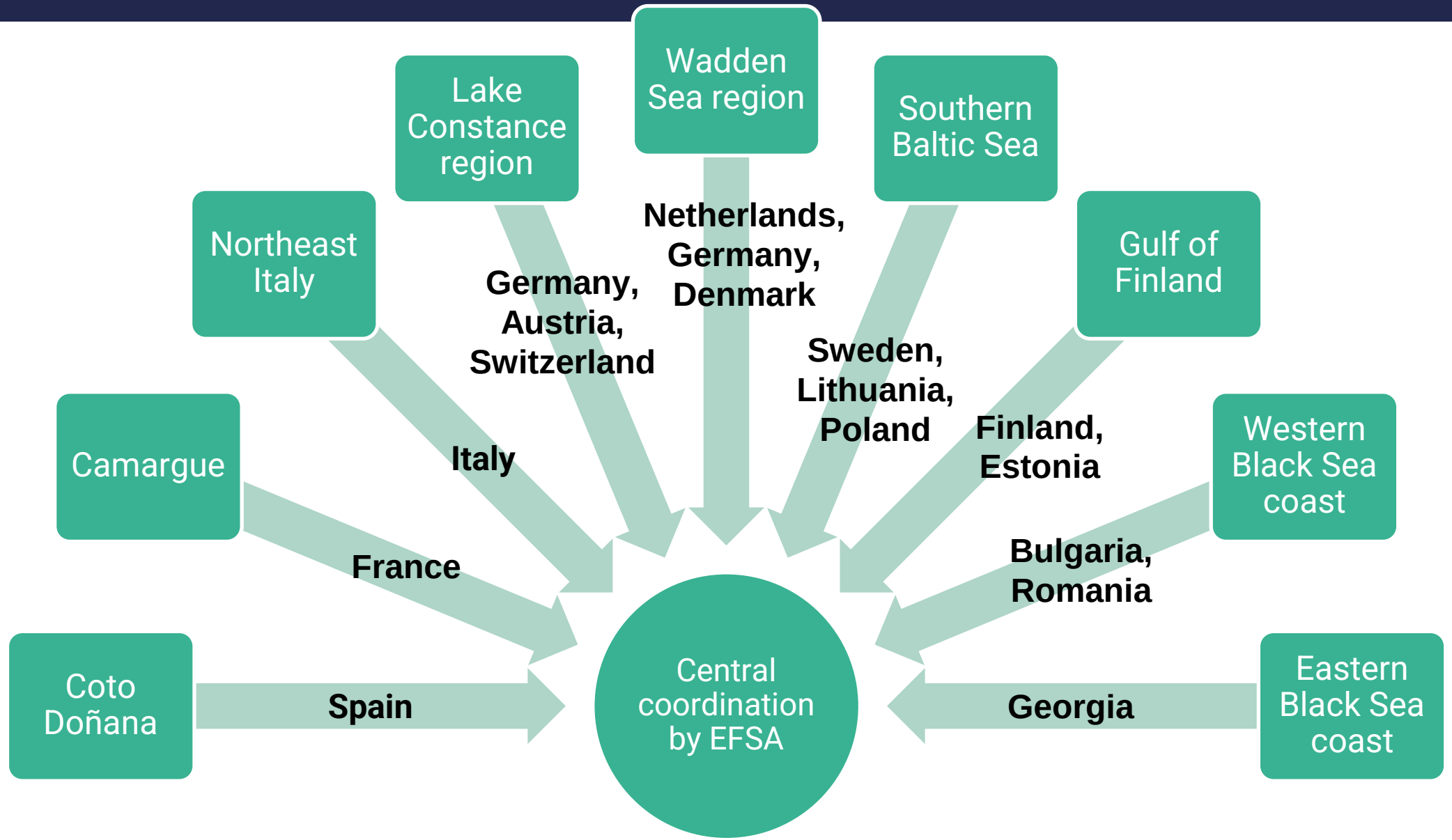
Scope

- Aims:
  - Establishment of a coordinated **network of surveillance nodes** across Europe
  - Building **capacities** and **long-term partnerships** for active wild bird surveillance of HPAI in those locations
  - Getting a fuller picture
  - **Preparedness** and **early warning**

- **9 surveillance nodes** (geographic locations to be covered)



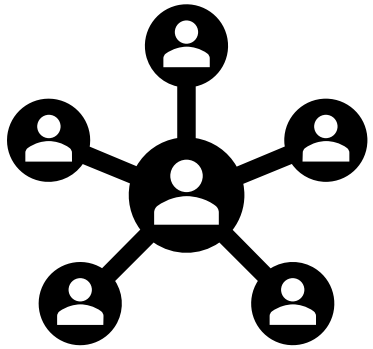
SCOPE, TIMELINE AND TASKS



SCOPE, TIMELINE AND TASKS

Tasks

- **Establishment** and **maintenance** of **infrastructure** (e.g. wild bird traps, transport vehicles) and **capacities** (e.g. manpower, laboratory benches, IT systems)
- Active **participation** in the **network** (e.g. training, annual meetings)
- Following a harmonised **sampling plan** and **data collection/sharing** framework developed together with the central coordinating body



SCOPE, TIMELINE AND TASKS

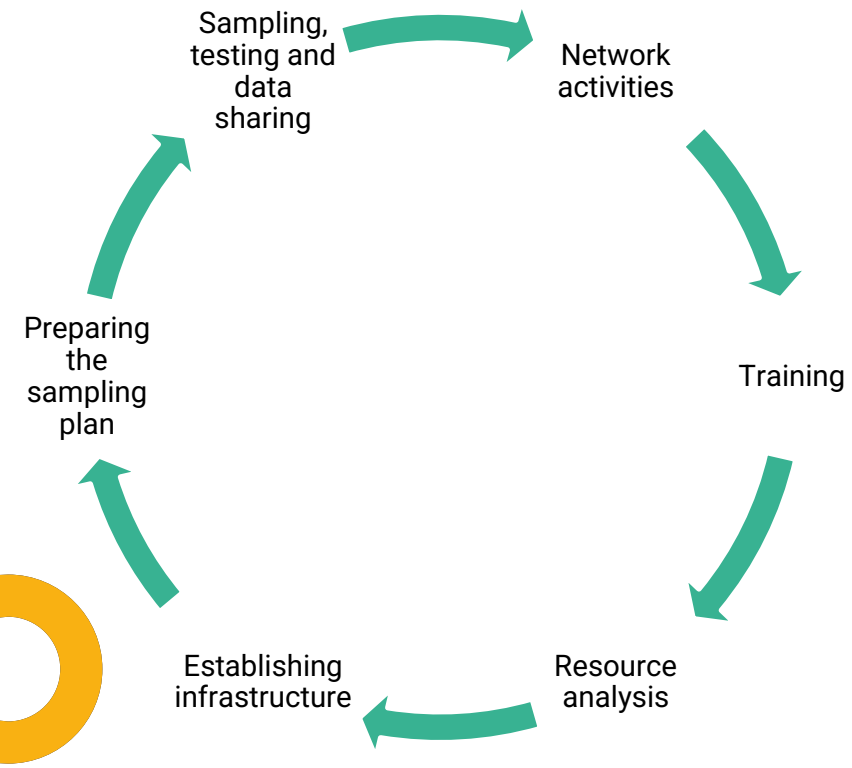
Tasks

- Evaluating the established surveillance node by sampling and testing according to the developed sampling plan (hosts, sampling volumes, times of the year)
  - **Field work** (i.e. trapping/hunting and sampling wild birds)
  - **Screening** for HPAI viruses by rapid diagnostic methods (e.g. PCR)
  - **Whole genome sequencing**
- Real-time **data collection**, **collation** and **submission** to the central coordination body
- Preparation of a communication plan to keep national authorities involved and/or informed

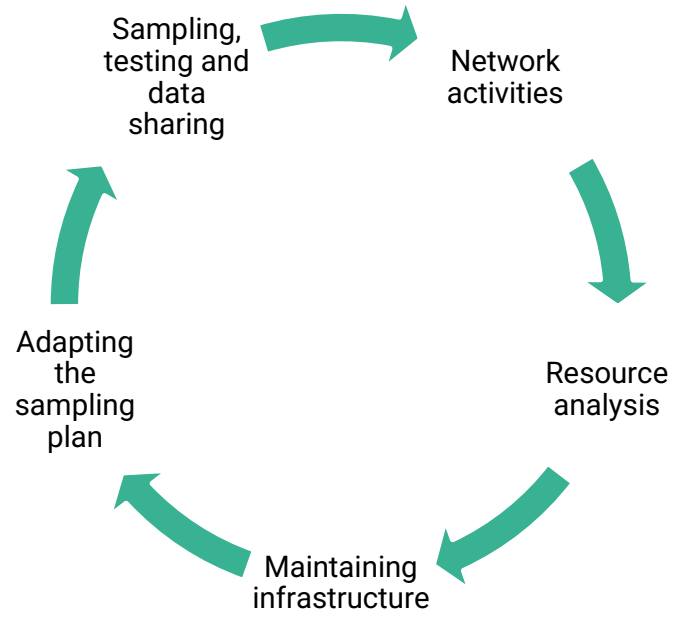
SCOPE, TIMELINE AND TASKS

Timeline

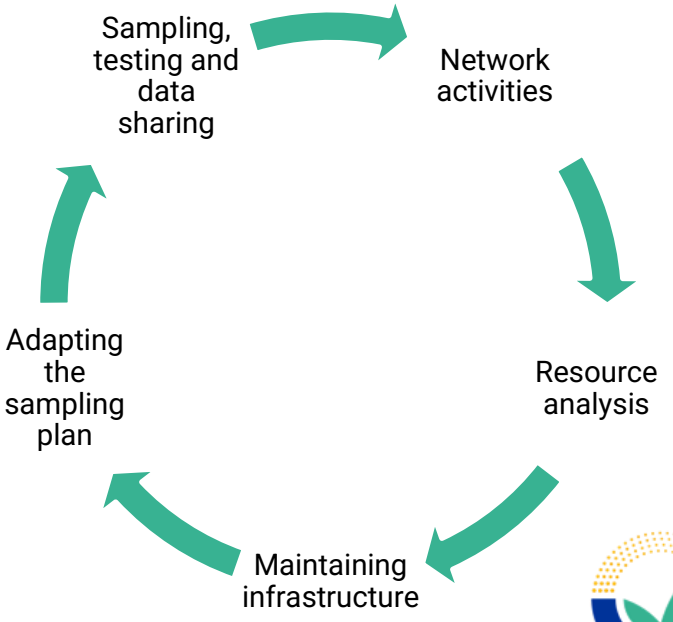
Year 1



Year 2



Year 3



SCOPE, TIMELINE AND TASKS

Coordination by EFSA's experts

- Management of network exchange and communication
- Organisation of annual network meetings
- **Training** and **guidance**
- Support in preparing **sampling plans**
- **Harmonisation** of sampling, testing and data collection across all surveillance nodes
- **Interpretation** and **communication** of **surveillance results**
- Regular **publication** of outputs on an open-access online platform

CALL FOR PROPOSALS

Call to be launched on **15 November 2023** as a Framework Partnership Agreement (FPA) divided into **9 Lots**

Overall estimated budget: **EUR 2 million**

Finance Not Linked to Costs: no need to justify incurred costs

Time to prepare proposals: **~12-14 weeks**

Aim to start activities in **May 2024**

Applications in **consortium** from several Art. 36 organisations advisable for some Lots involving more than one country

Estimated FPA duration: **36 months**

Only **Art. 36 organisations** can apply as partners – full list here

CALL FOR PROPOSALS

Next steps

Start considering partners to be involved in your area for this call for proposals

Launch of the call in **November 2023**

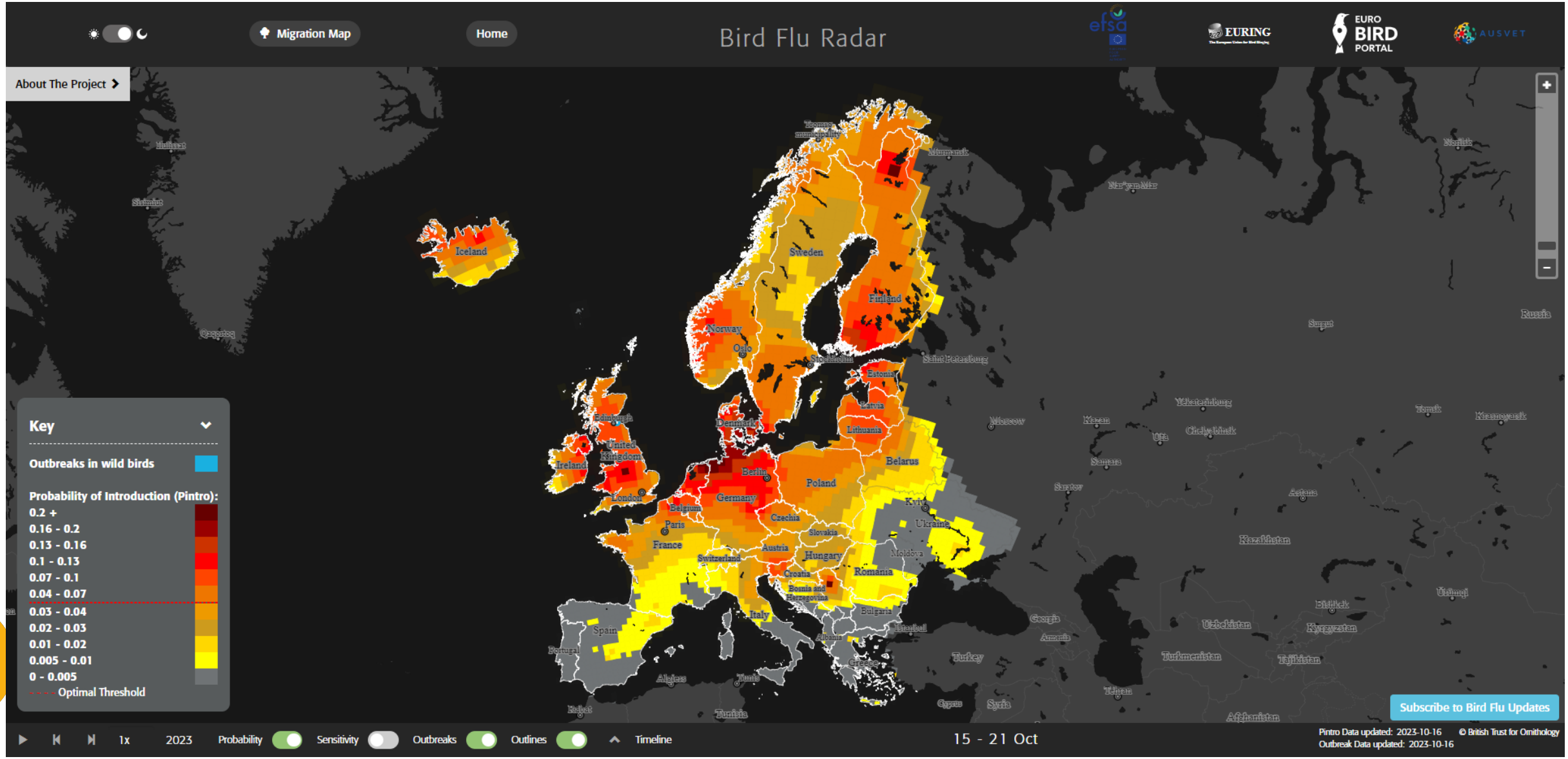
The call will be published on EFSA's website and on the EU Funding and Tender Opportunities portal

N.B.: any organisation can access the portal and its "Partner search announcement" section, but remember **that only Art. 36 organisations (**full list here) can apply to this call as partners (other organisations can be involved as subcontractors for non-core tasks).

EFSA’s upgraded Bird Flu Radar

efsa
EUROPEAN FOOD SAFETY AUTHORITY

ACCESS: https://app.bto.org/hpai



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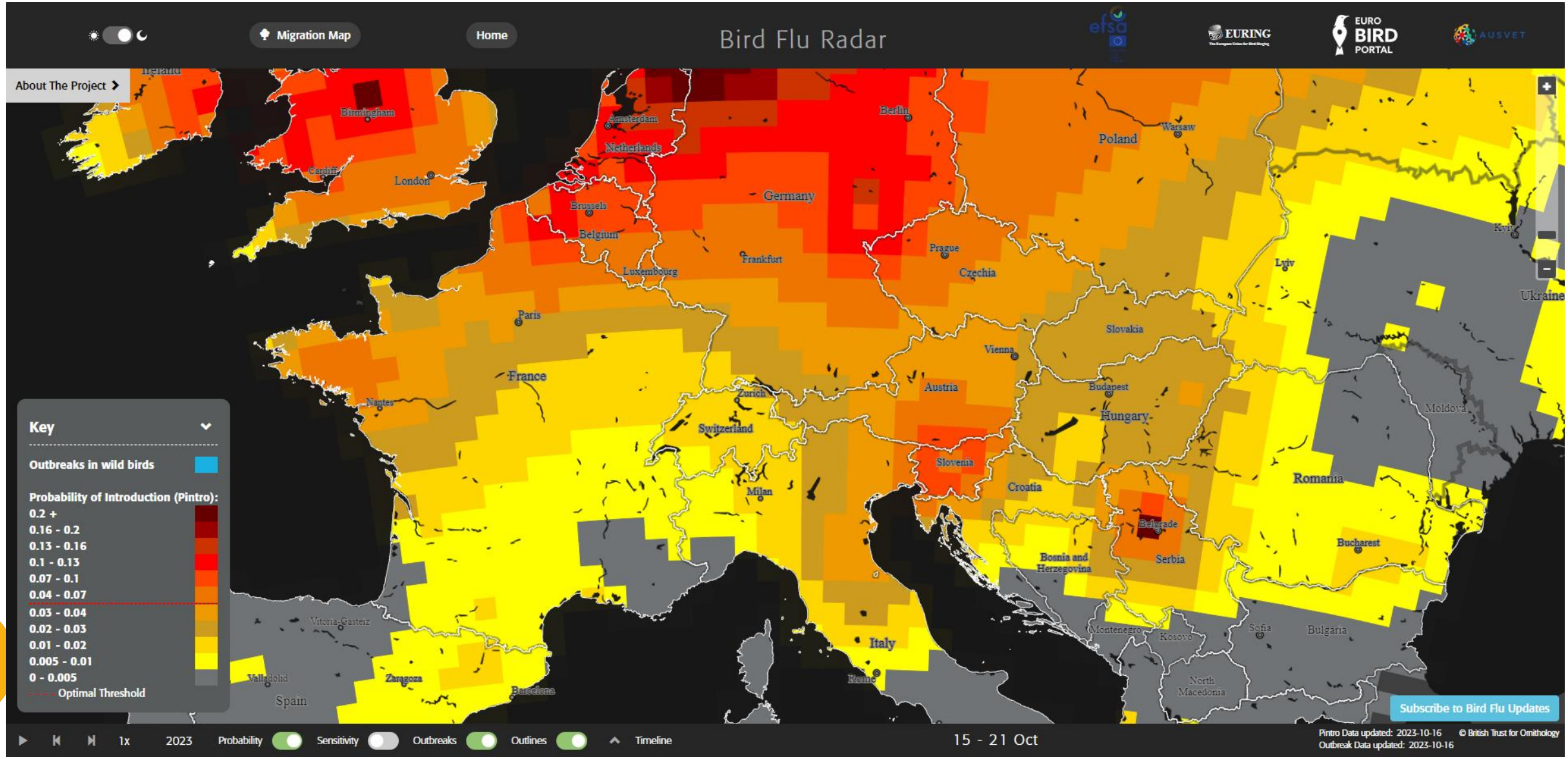

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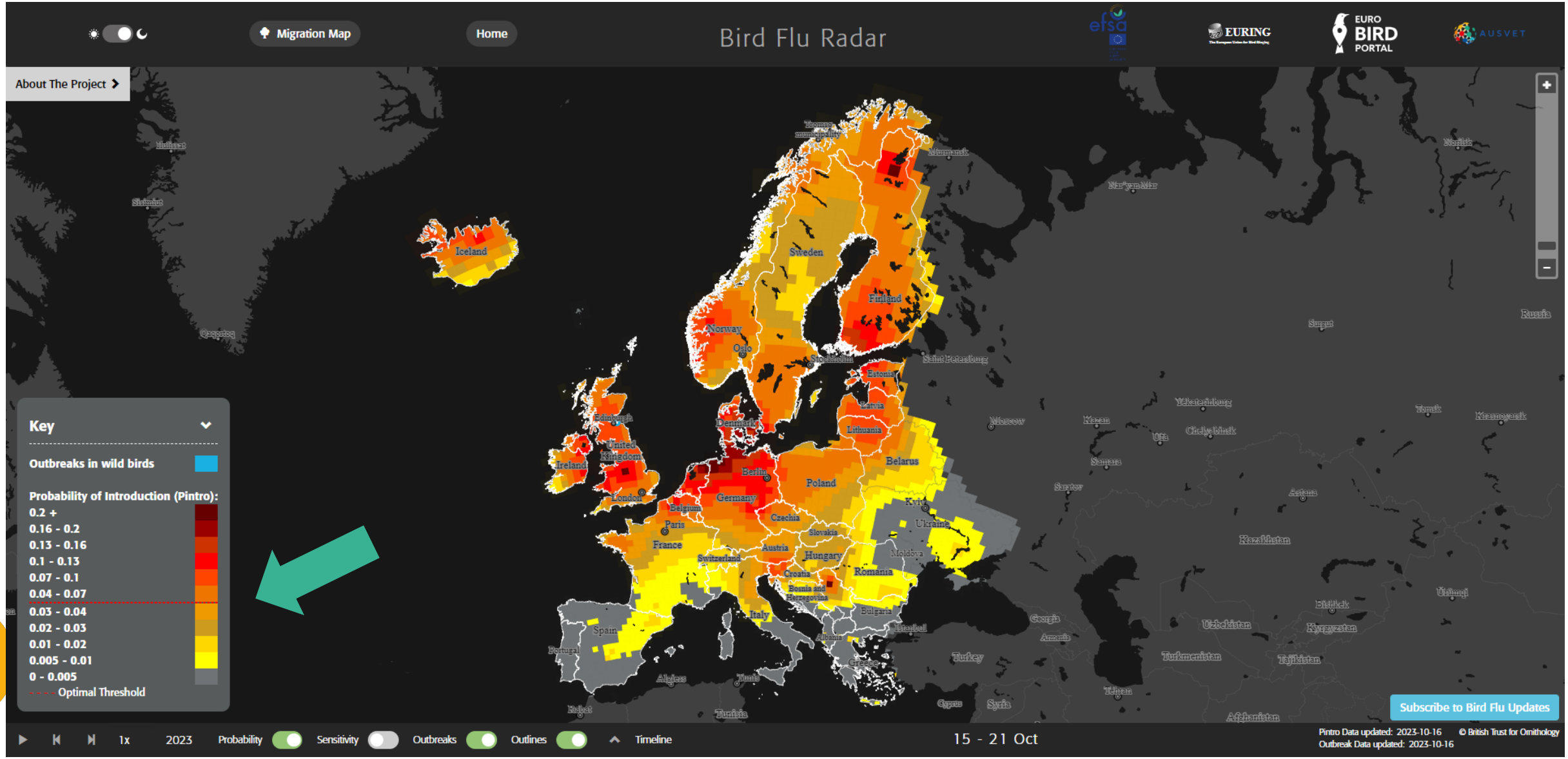

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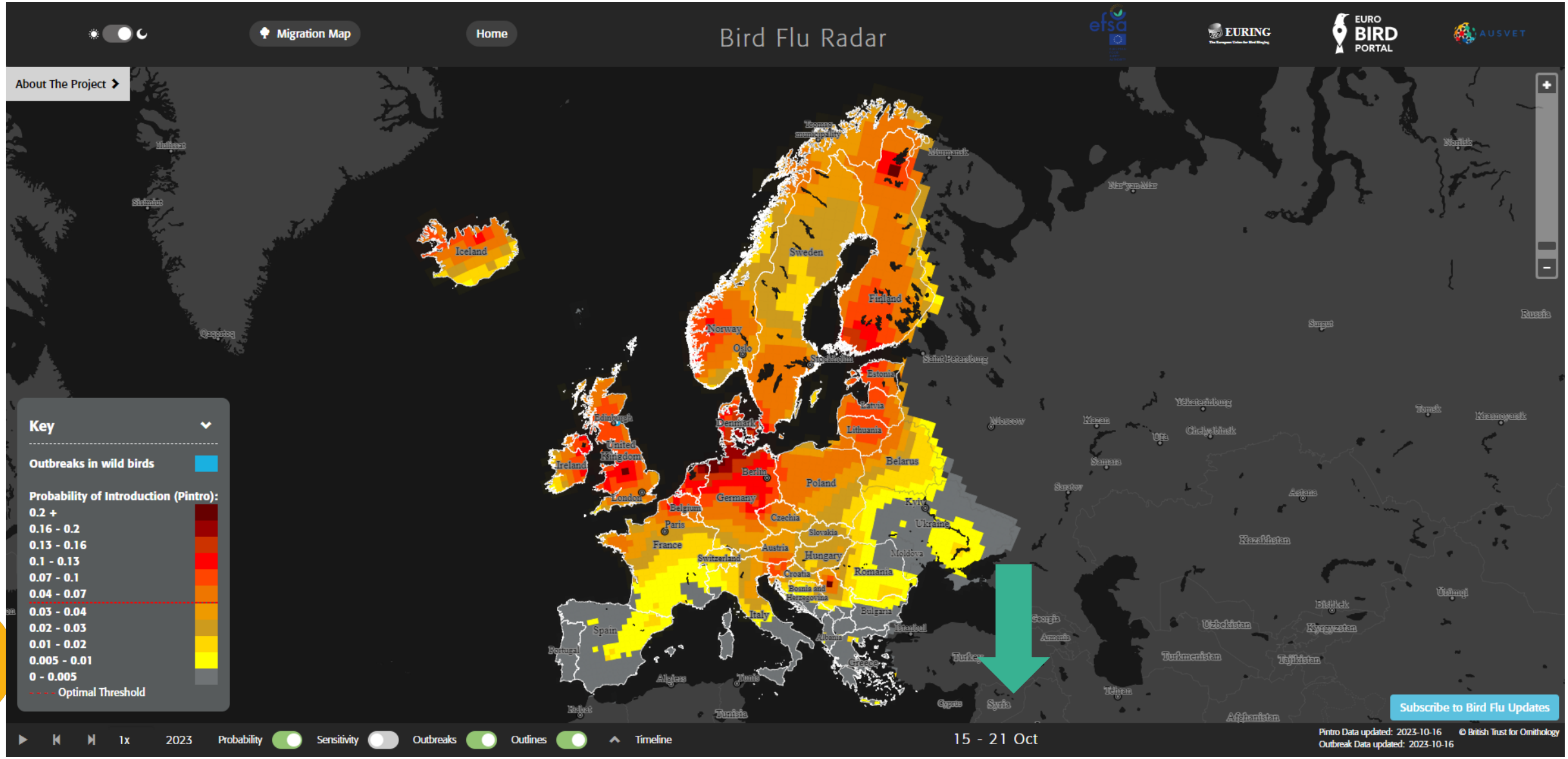

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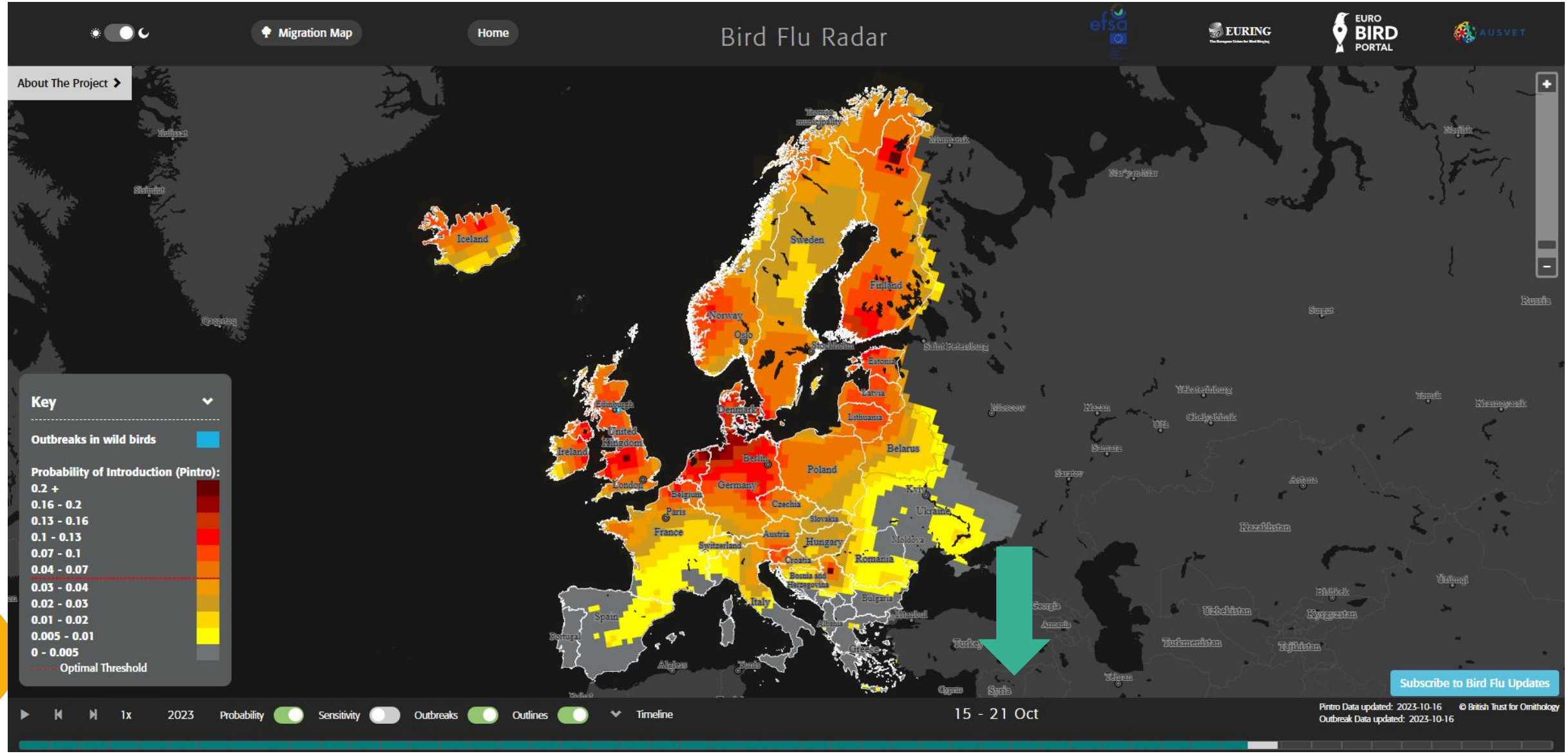

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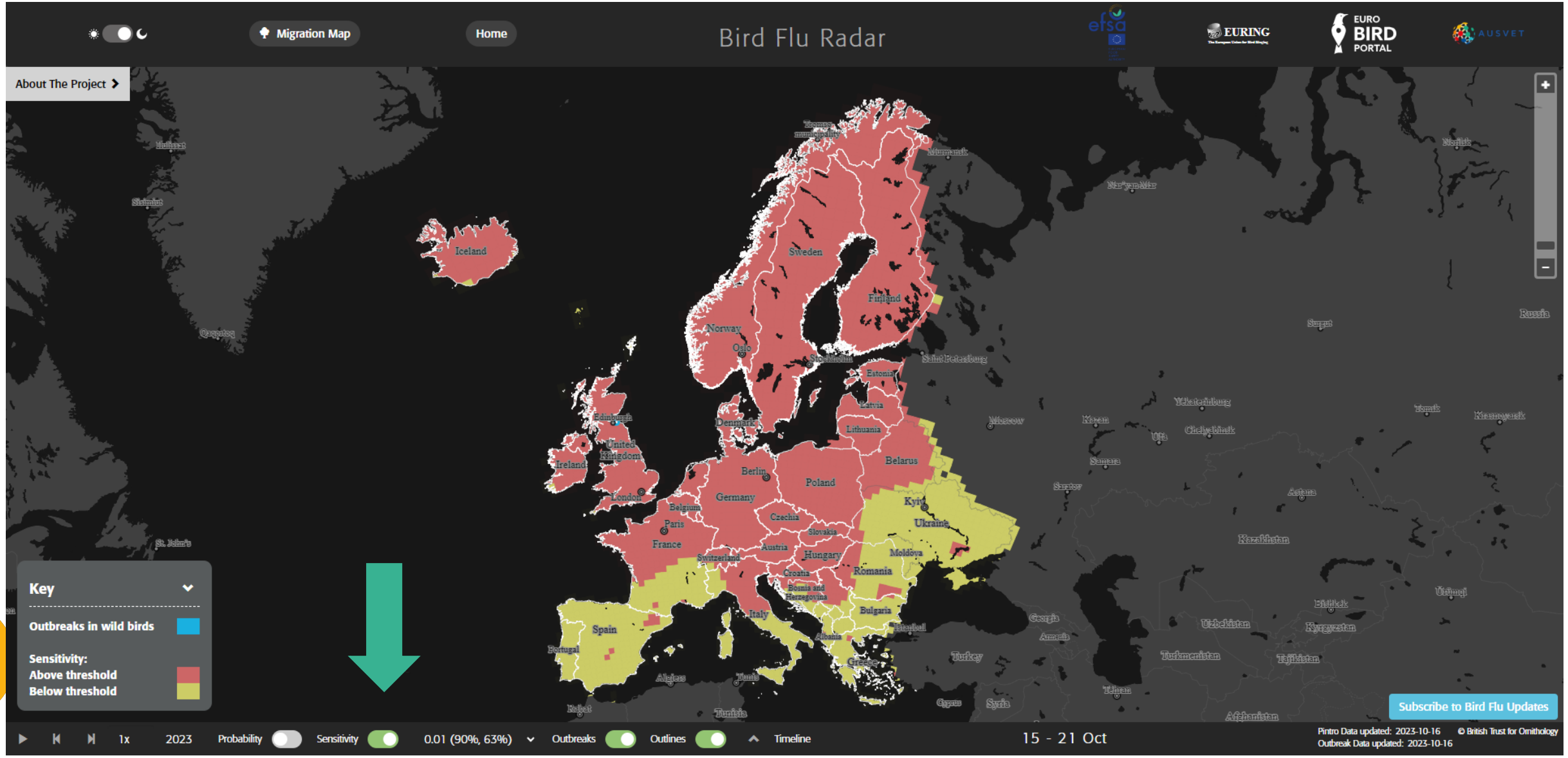

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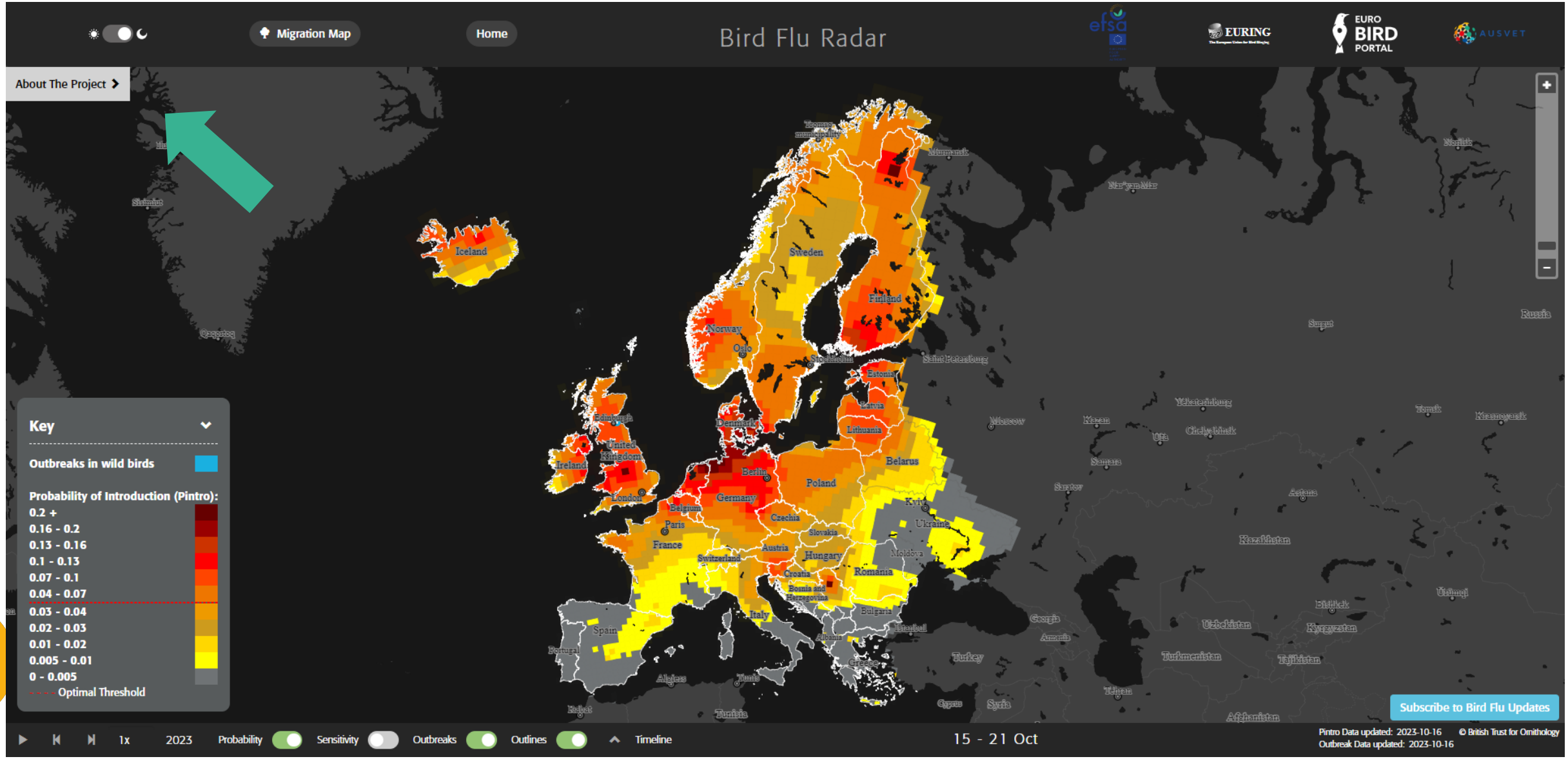

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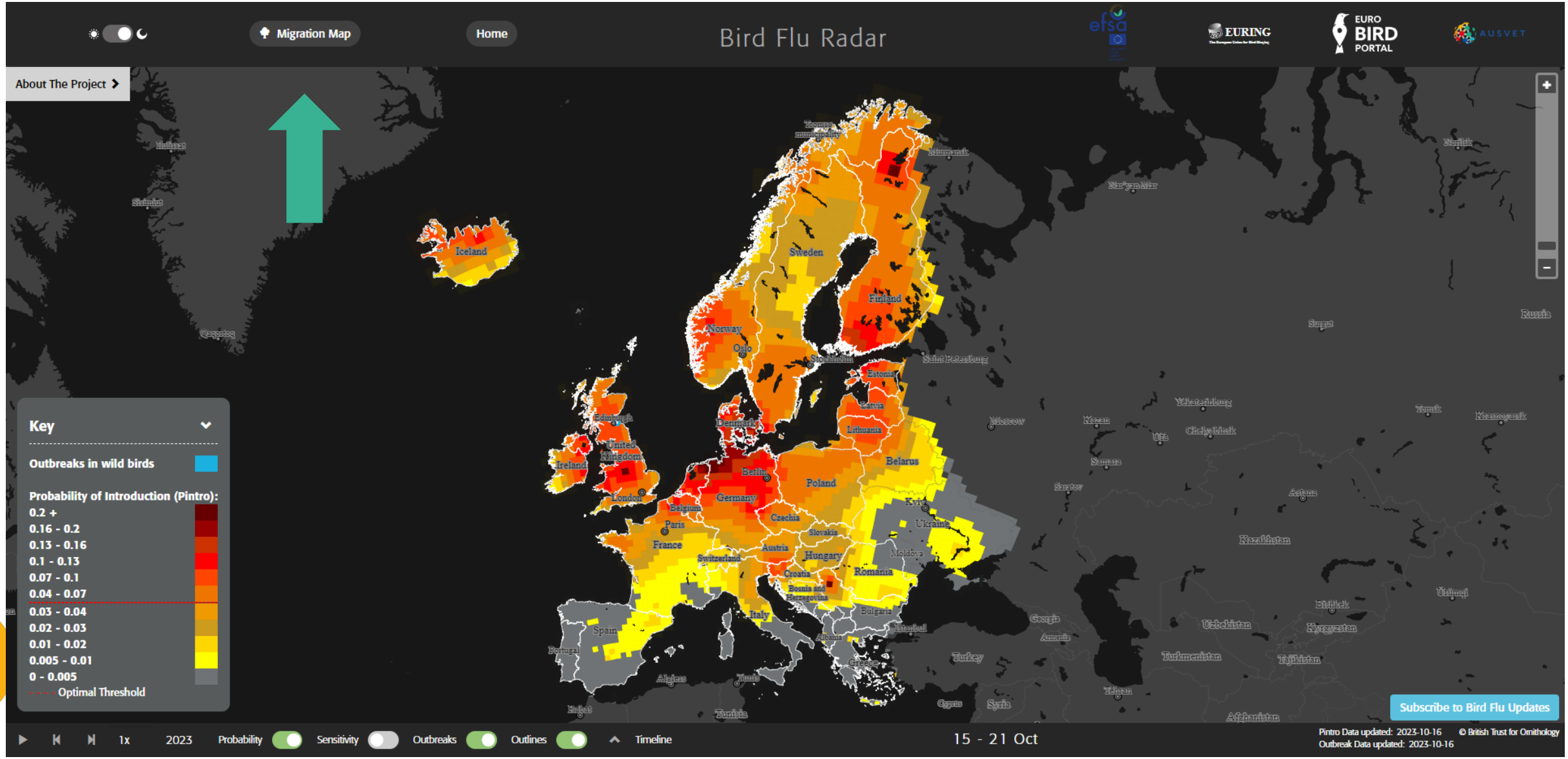

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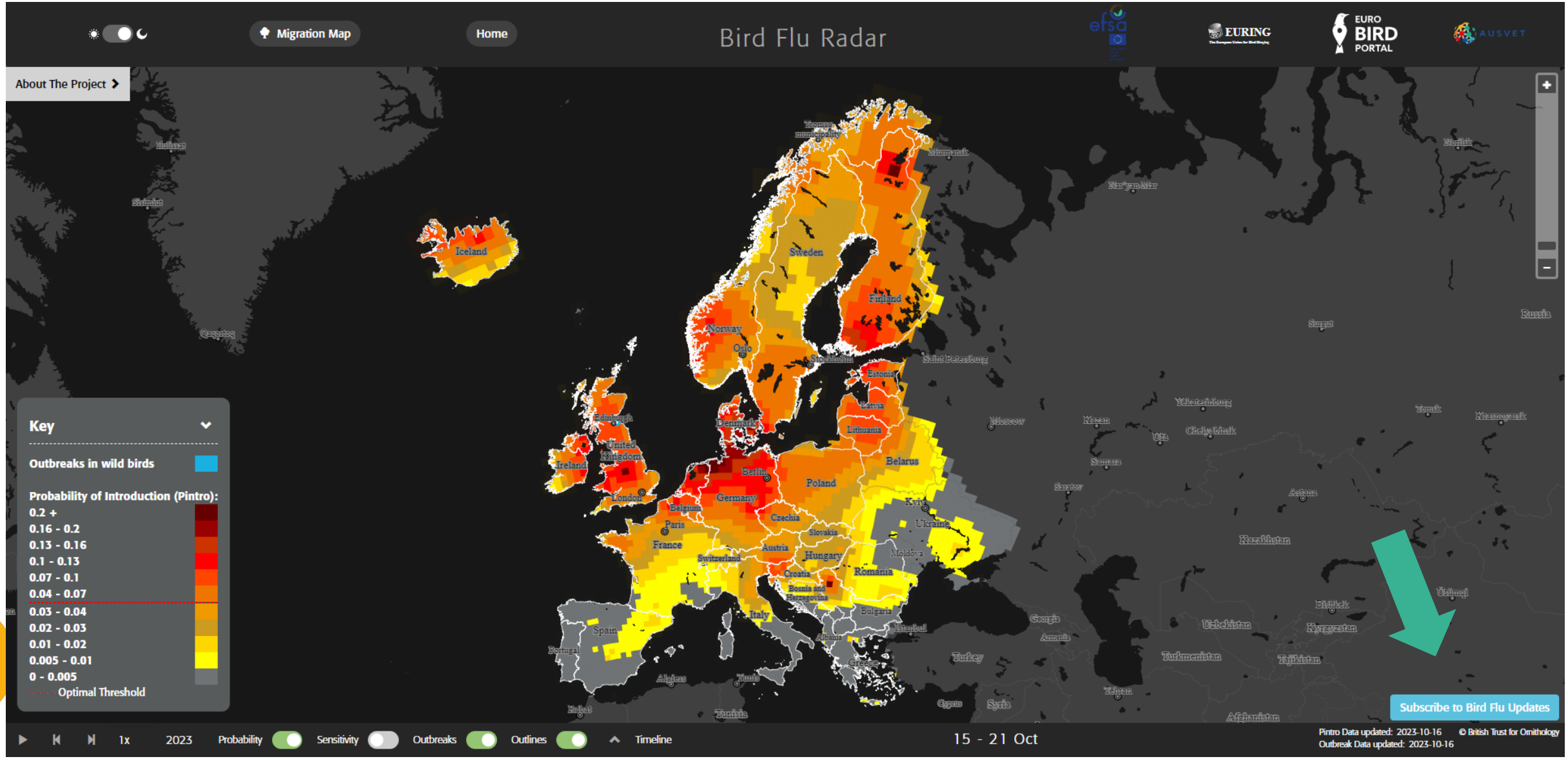

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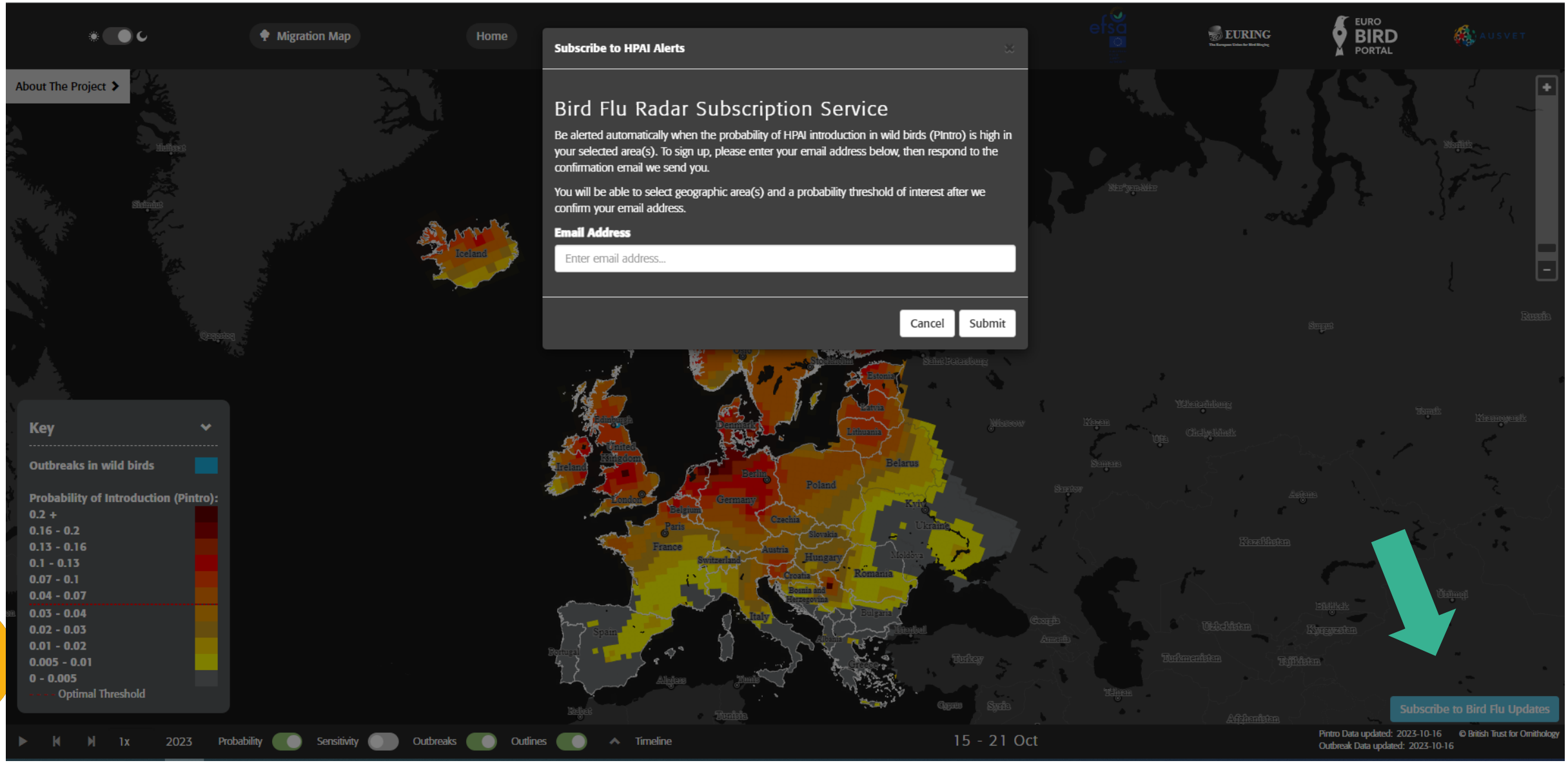


WEEKLY ALERTS

From: noreply@bto.org
Sent: Monday 16 October 2023 04:00
To: KOHNLE Lisa
Subject: EFSA's Bird Flu Radar: 16-Oct-2023 - 22-Oct-2023

Bird Flu Radar

Dear subscriber,
Please find below this week's statistics for the area(s) you follow. All values reported represent the chance of HPAI A(H5/H7) introduction into wild birds (probability of introduction - Pintro).

Deutschland

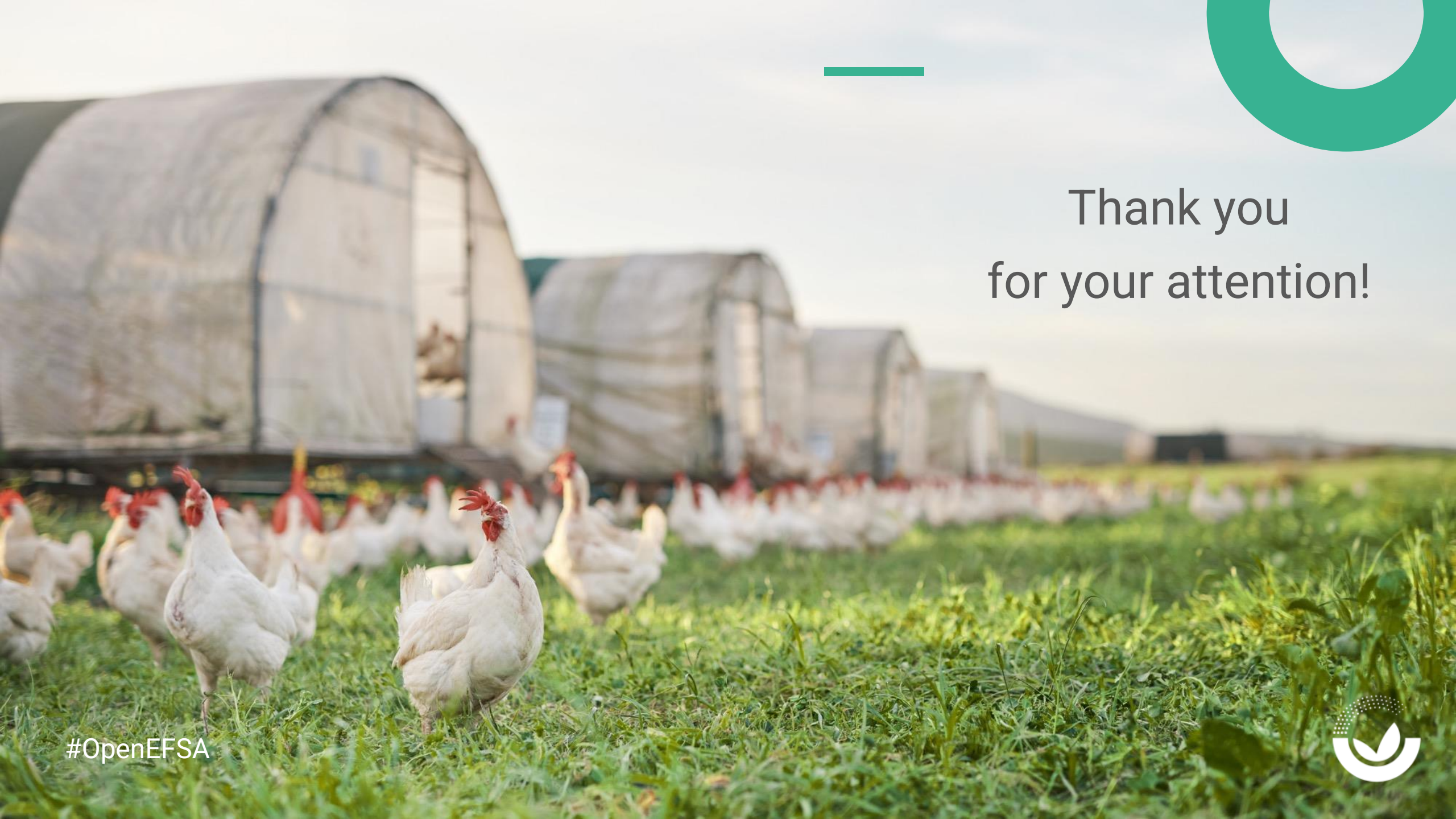
- Median Pintro: 0.085[1] (Lower: 0.041, Upper: 0.206)
- Maximum Pintro: 1.0
- Number (percentage) of cells with Pintro of at least 0.04[2]: 146 out of 193 (76%)
- Confirmed outbreaks in wild birds reported to have started in this area last week: 0
- To view an interactive map of this region, Click Here.

Baden-Württemberg (Deutschland)

- Median Pintro: 0.028[1] (Lower: 0.022, Upper: 0.054)
- Maximum Pintro: 0.054
- Number (percentage) of cells with Pintro of at least 0.04[2]: 3 out of 26 (12%)
- Confirmed outbreaks in wild birds reported to have started in this area last week: 0
- To view an interactive map of this region, Click Here.

Bayern (Deutschland)

- Median Pintro: 0.039[1] (Lower: 0.034, Upper: 0.113)
- Maximum Pintro: 0.117
- Number (percentage) of cells with Pintro of at least 0.04[2]: 22 out of 49 (45%)
- Confirmed outbreaks in wild birds reported to have started in this area last week: 0
- To view an interactive map of this region, Click Here.


Thank you
for your attention!
#OpenEFSA