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Termőföldtől az asztalig

Animal disease control and regionalisation in the EU

Case study:

**Highly Pathogenic Avian Influenza
outbreak in Hungary
February 2015**

speaker: A.L. Vecsei, NFCSO



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Termőföldtől az asztalig

- Importance of Avian Influenza
- Legislation background
- EU AI surveillance
- European AI situation in winter 2014-2015
- Veterinary measures taken by the Hungarian authority (HPAI outbreak 2015)



Importance of Avian Influenza



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- AI is a (potential) zoonotic disease
- Can cause high mortality in poultry
- Very strict control measures are needed to minimize human risk and spread from holding to holding
- Socioeconomic losses (industrial chains and small farms as well)
 - Loss of production (killing hundreds of millions of birds)
 - Loss of trade possibilities
 - Loss of livelihoods
 - Illnesses and loss of lives



Food and Agriculture
Organization of the
United Nations

Global losses: Billions (10^9) of dollars

<http://www.fao.org/avianflu/documents/Economic-and-social-impacts-of-avian-influenza-Geneva.pdf>



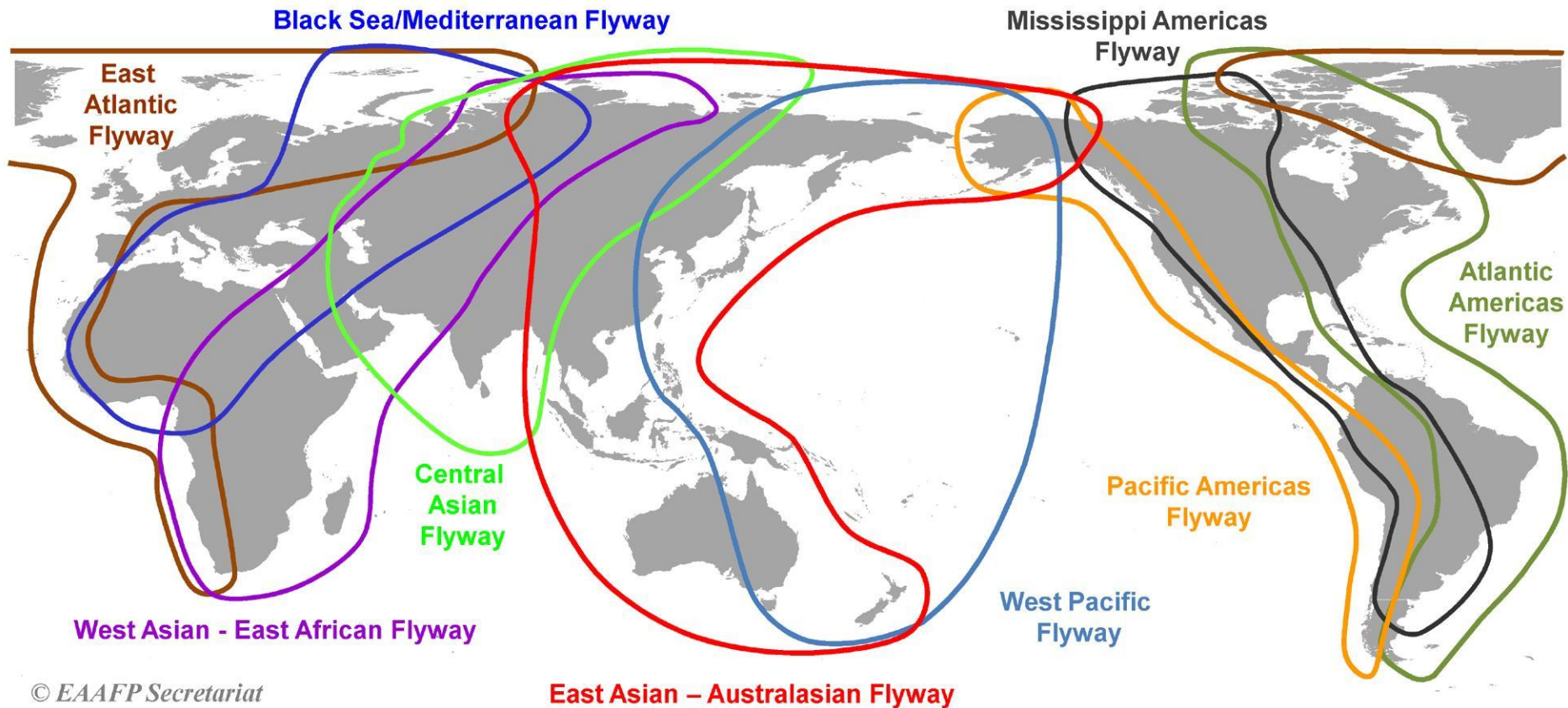
Human health



- There are strains of AI that can infect humans
- Symptoms vary from none to severe disease, that may cause death.
- Two forms of risk to human health
 - From infection by the **native form** of the AI virus
 - From the potential for the **emergence of new pandemic strains either directly** from avian viruses, **or from their recombination** with human or other animal viruses
 - 2014-2016: H5N8, H5N1, H5N2, H5N9, *H5N2*, *H5N3* : No human infection with these viruses have been reported in the EU/EEA countries.
 - See more at: http://ecdc.europa.eu/en/healthtopics/avian_influenza/Pages/index.aspx#sthash.osRQjCUZ.dpuf



Global flyways



Awareness and rapid response



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- Following and analysing the global and European epidemiological situation
- Surveillance programs and investigations of suspicions
- Rapid response
 - Contingency plans
 - Participants and their tasks
 - Emergency stock
 - Killing capacity
 - Destruction capacity



Legislation background



- Community law
 - **2005/94/EC** Council Directive
 - on Community measures for the **control of avian influenza** and repealing Directive 92/40/EEC
 - **2006/437/EC** Commission Decision
 - approving a **Diagnostic Manual** for avian influenza as provided for in Council Directive 2005/94/EC
 - **1099/2009/EC** Council Regulation
 - on the **protection of animals** at the time of **killing**



Legislation background



- National law – harmonized to or applied directly of EU community law
 - Decree No. **143/2007**. (XII. 4.) of Ministry of Agriculture and Rural Development on detailed rules of **protection against avian influenza**
 - Decree No. **41/1997**. (V. 28.) Ministry of Agriculture on issuing the **Animal Health Statutes**
 - Act No. XLVI. of 2008 on **food chain** and it's official supervision
 - + National **Contingency Plan** on Avian Influenza



Other essential documents - OIE



– Terrestrial Code – definitions, recommendations

- Chapter 10. 4. Infection with avian influenza viruses
- Chapter 4. 3. Zoning and compartmentalisation
- <http://www.oie.int/international-standard-setting/terrestrial-code/access-online/>

– Terrestrial Manual – laboratory technics

- Chapter 2.3.4. Avian Influenza
- <http://www.oie.int/international-standard-setting/terrestrial-manual/access-online/>



World
Organisation
for Animal
Health

AI surveillance in the EU



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- Compulsory according to the Directive on AI (2005/94/EC)
 - harmonised guidelines laid down in 2010/367/EU Commission Decision on the implementation by Member States of surveillance programmes for avian influenza in poultry and wild birds
 - In poultry since 2003
 - In wild birds since 2005
- Open access yearly report (2014)
 - 19,813 holdings and
 - 5,683 wild birds were sampled and tested
 - Seropositive samples from poultry are followed up by virological tests
 - http://ec.europa.eu/food/animal/diseases/controlmeasures/avian/docs/res_surv_ai_2014_ov_en.pdf



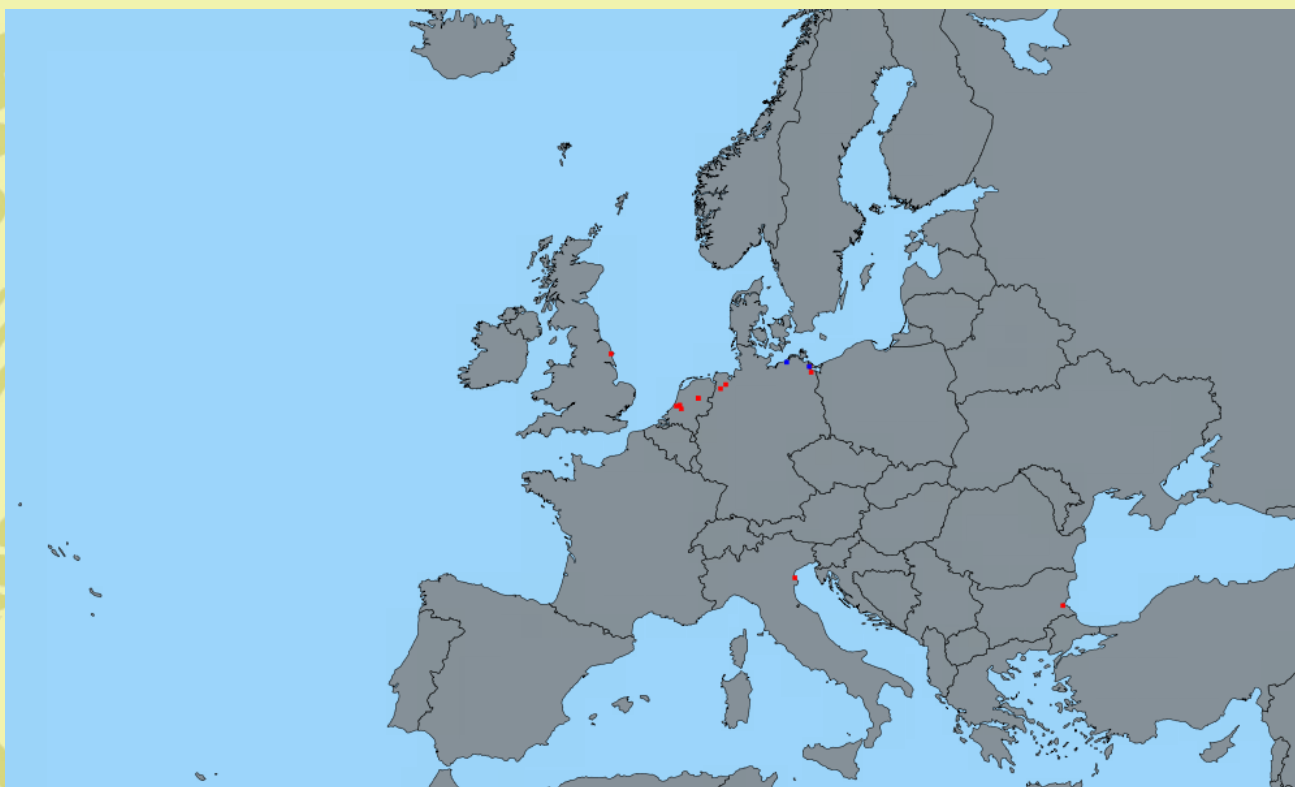
Situation in Europe

01/11/2014 – 12/02/2015



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- Avian Influnza, subtype H5N8 outbreaks (poultry and captive)
 - Bulgaria H5N1

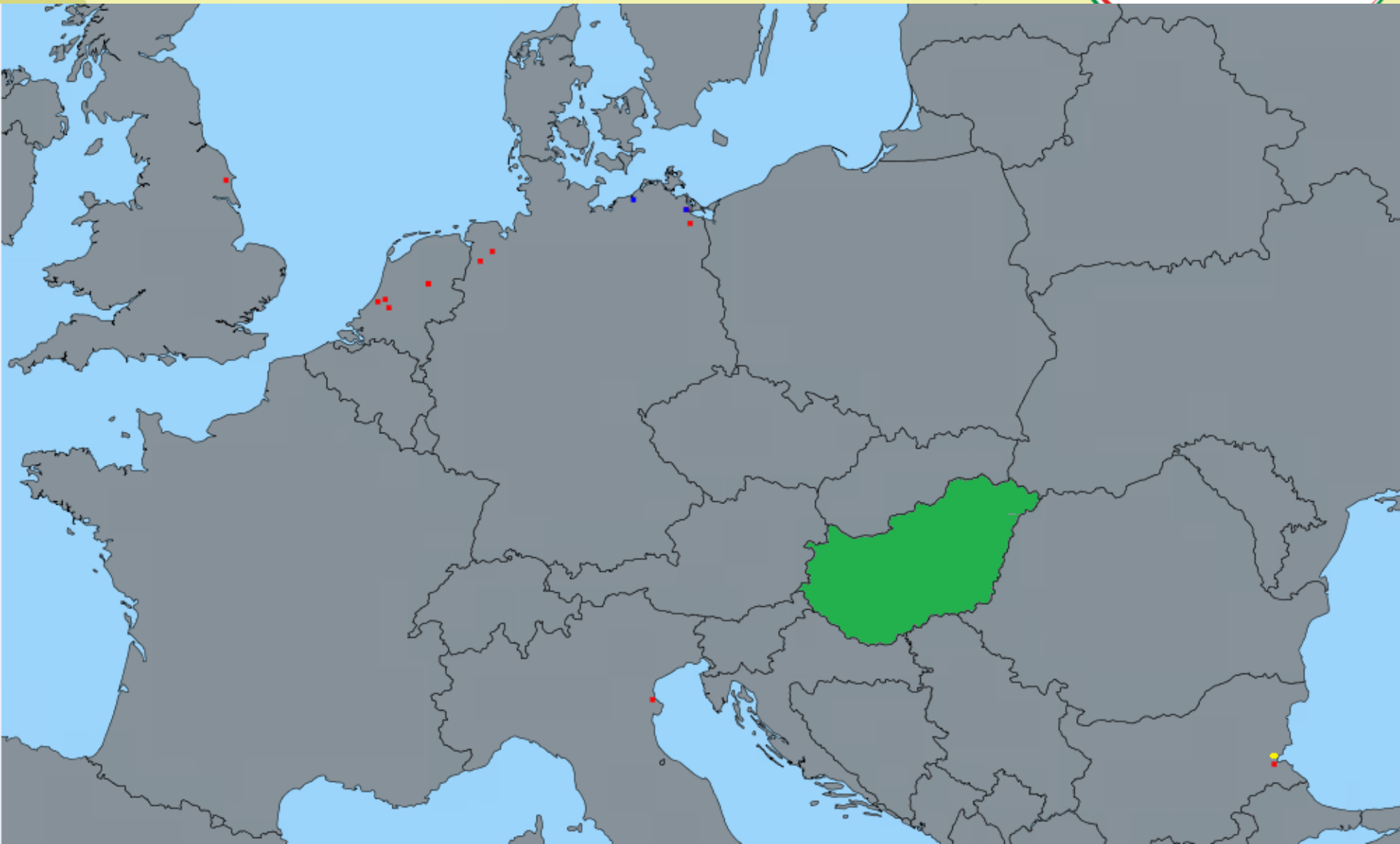


A closer look

Poultry
Captive
Wild



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Monitoring of wild birds

- Active (swabs from live birds, appearing healthy)
 - Ordered by Hungarian CVO in January 2015
 - Samples collected in cooperation with BirdLife Hungary
- Passive (birds found dead)
 - Program runs every year
- In the period of the outbreak:
 - 478 birds
 - 84 dead,
734 tracheal / cloacal swabs
 - 2 positives LPAI



By Solymári

Suspicion

- animal keeper & local veterinarian
- suspicion rises based on
 - **registers at farm**
 - mortality rate
 - water/feed consumption data
 - **clinical signs**
 - silence of animals
 - neurological symptoms (neck twisting)
 - respiratory symptoms (nasal discharge)
 - **laboratory results**
 - differential diagnosis
 - **serological monitoring**
- temporary measures by local veterinarian for prevention of spread
- notification to official veterinarian



Suspicion

- **When official veterinarian receives notification**
 1. places the holding under official surveillance incl. movement bans (animals, products, by-products...)
 2. carries out immediate investigation at suspect holding
 3. takes samples
 - **standard set of samples by production unit** according to the diagnostic manual 2006/437/EC
 - **for virological testing:**
 - at least five sick/dead birds, if present; and/or
 - at least 20 tracheal/oropharyngeal **and** 20 cloacal swabs.
 - **for serological testing:**
 - a minimum of 20 blood samples.

- **When official veterinarian receives notification**

- 4. reports to the county AH authority

- short description of the suspect holding
 - holding's and owner's ID data
 - location (GPS coordinates, how to reach)
 - data on animals: number, species, purpose of production, age
 - size, number of buildings, technology, biosecurity level
 - surrounding holdings of susceptible animals
 - business chains
- anamnesis
 - date and number of population
 - mortality rates
 - clinical signs
 - veterinary treatments
- epidemiological investigation



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- **When official veterinarian receives notification**

4. reports to the county AH authority

- short description of the suspect holding
- anamnesis
- epidemiological investigation
 - to find the possible origin of infection
 - to identify all contact holdings
 - backwards & forwards
 - » movement of people
 - owner, personnel, contractors, visitors
 - special attention to the movement of the veterinarian
 - » movements of animals
 - » movements of products
 - » movements of equipment, installations, articles possibly contaminated
 - » movements of feed
 - » movements of by-products
 - » movements of any kind of vehicles



Suspicion



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- **chief veterinarian of the affected county**
 - notifies the CVO of the suspicion
 - identifies the risk period
 - identifies the movements/transportations in the risk period
 - tracks down the consignments
 - based on gained information informs CVs of possibly affected counties
 - defines the possible restriction zones in advance



Confirmation



- **NÉBIH ÁDI** (National Food Chain Safety Office Veterinary Diagnostic Directorate)
 - National Reference Laboratory for Avian Influenza
 - results for H₅N₈ by RT-PCR within 24 hours (H5N8)
 - sequencing partial HA and NA sequence fragments on the next day (very closely related to the Asian and to the European H5N8 HPA AIV sequences)
 - whole genom sequencing



Confirmation

- **Chief Veterinary Officer**

- sets up National Disease Control Centre
- communicates the outbreak
 - to the European Union - SCoPAFF (Standing Committee on Plants, Animals, Food and Feed)
 - to the OIE
 - to trade partner countries' CVOs
 - to neighbouring countries' CVOs
 - at national level
 - animal health authorities of not affected counties
 - partner authorities
 - partner organisations
 - animal keepers
 - Public

- **Sample to the EURL**

- EURL for Avian Influenza
Weybridge, Surrey, UK



Identification of restriction zones



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- **Preliminary identification – 2015/338/EU**
 - **Protection zone:** 3 km radius circle around the outbreak holding + administrative territory of Füzesgyarmat
 - **Surveillance zone:** 10 km radius circle around the outbreak holding + administrative territory of all localities that reaches the 10 km line

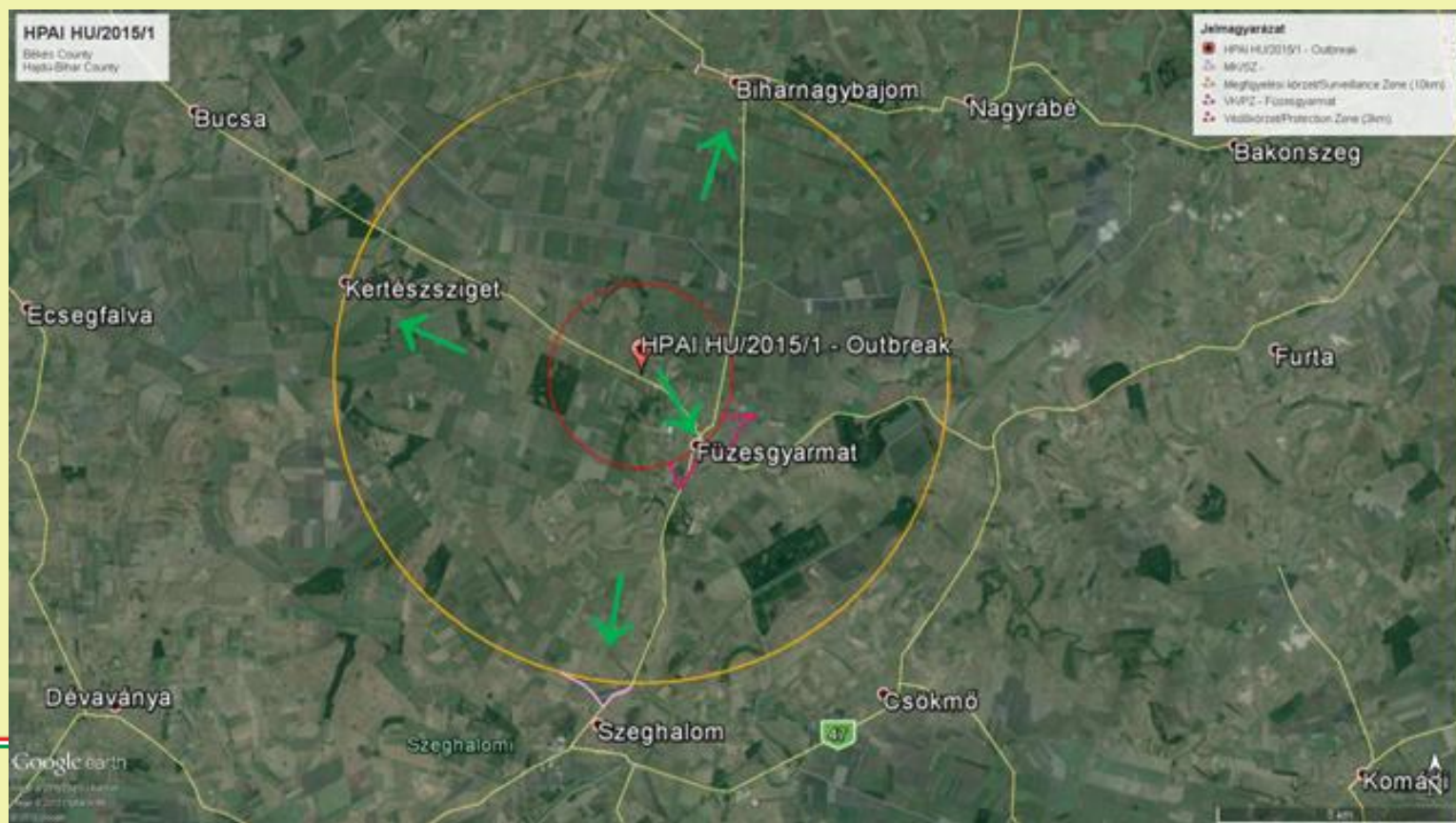


Final identification – 2015/522/EU



- analysis of type and number of holdings and connection between holdings in the firstly demarcated Restricted Zones
 - looking for epidemiological links and
 - large scale / commercial holdings
- modified Protection and Surveillance zones: pure 3 and 10 km radius circles +

+ for practical reasons: parts of localities that lay on the border of the zones



Details

- fine definition of zone border, in details, eg. Biharnagybajom



Measures in the infected holding

- official surveillance of the holding to be maintained
- detailed list of animals (poultry, other birds, domestic mammals, by categories)
- *birds to be brought inside a building on their holding and to be kept there (if not possible, all measures to minimize the contact with wild birds)*
- general movement ban
 - poultry or other captive birds
 - carcasses
 - meat of poultry, eggs
 - feed, materials
 - persons
 - mammals of domestic species
 - vehicles, equipment and utensils
 - waste, droppings, manure, slurry, used litter
 - etc.
- appropriate means of disinfection at the entrances and exits



Measures in the infected holding



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- Killing of all poultry
 - in this case
 - 118 911 fattening ducks of the affected company killed
 - hatchery in protection zone: 42 500 day old ducks killed
 - » no suspicion of disease in the day old ducks
 - started on 25th, completed on 28th February
 - total number of culled birds: 161 411
 - method of culling: CO₂, in containers
- Preliminary cleansing and disinfection (C&D)
 - end of preliminary C&D: 4th of March
- End of final C&D: 11th of March
- Epidemiological inquiry



Measures in the infected holding



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Results of epidemiological inquiry - backwards

- Origin of the animals: hatchery of the same owner
 - 1,5 km from outbreak holding
 - Parent flocks of hatching eggs were kept in free zone
 - four flocks
 - no clinical signs
 - samples taken
 - unhatched eggs
 - blood samples from all unit
- } all results negative



Measures in the infected holding



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Results of epidemiological inquiry - forwards

- No poultry have been moved neither from the affected nor from the contact holdings to EU Member States or Third Countries
- In the last 21 days prior to the outbreak the only transport was to a slaughterhouse in the same county
 - The duck carcasses which had been transported to a meat processing plant in an other county were **seized and destroyed**.
 - No products of flocks originating from the affected compwere moved from the meat processing plant
 - The carcasses and products of the ducks were destroyed.
 - The carcasses and products that were handled together with the above mentioned, were destroyed.



Measures in the restricted zones



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- movement ban
- official veterinary visits and census
 - all large scale holdings have been visited in restricted zones
 - all small scale holdings in 3 km Protection zone have been visited
 - census was made at all small scale holdings in 10 km Surveillance zone



Hunyadi

| | |
|------------------------------|----------------------------|
| Járányügyi összesítőlap | Teljesítés: Biharmagybajom |
| Összeírás dátuma: 2015.02.28 | Összeírás neve: AGÓCS NORA |

| száma | Állomány adatok | | | kereseti db száma | | | | | utolsó kiadatás | | adatok állása |
|-------|--------------------------|-------------------|------------------|-------------------|--------|------------|--------|-------|-----------------|----------------|--------------------------|
| | név | terület hely címe | terület hely kód | híztyúk | pulyka | liba/kacsa | galamb | egyéb | dátuma | elői település | |
| | | | | | | | | | | | |
| | KOVÁCS IMRE | 28 | | 28 | | | | | | | Kovács Imre |
| | MIRKO MARCELLA | BAJCSY-ZS 31 | | 5 | | | | | | | Mirko Marcella |
| | UDASZS BALAZS | BAJCSY-ZS 18/A | | 10 | | | | | | | Udasz Balázs |
| | IGÉCS ELIÓ | 51 | | 11 | | 6 | 3 | | | | Igéc Elő |
| | HAS RÓJOS | 40 | | 10 | | 5 | | | | | Has Rójos |
| | VASSHÁZI CSABA KRISZTINA | 41 | | 10 | 2 | 18 | | 8 | | | Vassházi Csaba Krisztina |
| | BOGÁTI IMRE | 3 | | 5 | | | | | | | Bogáti Imre |
| | BACSO FERENC | 30 | | 14 | | 3 | | | | | Bacso Ferenc |
| | PÁRÉCSI VILMOS | 34 | | 35 | | | | 12 | | | Párecsi Vilmos |
| | HARANGYI IMRE | | | 6 | | | | | | | Harangyi Imre |
| | VASS KRISZTINA | 22 | | 10 | | | | | | | Vass Krisztina |
| | HARANGYI BÉLA | 10 | | 30 | | | | 10 | | | Harangyi Béla |
| | BARCSENYI GÁBOR | 20/A | | 5 | | | | | | | Barcsényi Gábor |
| | BARCSENYI GÁBOR | 23 | | 5 | | | | | | | Barcsényi Gábor |
| | ARANYI JÁNOS | 13 | | 2 | | | | | | | Arany János |
| | UDASZ BALAZS | 15 | | 2 | | | | | | | Udasz Balázs |

| Járányügyi összesítőlap Biharmagybajom | | | | | |
|--|----------|--------|------------|--------|-------|
| 2015. február 28.-2015. március 1. | | | | | |
| Utcanév | Házityúk | Pulyka | Liba/kacsa | Galamb | Egyéb |
| Ady Endre utca | 39 | 3 | 1 | | 1 |
| Arany János út | 225 | 4 | 11 | | 55 |
| Árpád út | 83 | | 5 | | 3 |
| Bacso Béla utca | 339 | | 17 | | 3 |
| Bajcsy-Zsilinszky utca | 128 | 2 | 15 | | 12 |
| Baross Gábor utca | 135 | 2 | 24 | | 11 |
| Báthori utca | 190 | | 24 | 50 | 30 |
| Bem József utca | 210 | | 11 | 39 | 32 |
| Bercsényi körút | 594 | 1 | 118 | 100 | 88 |
| Bethlen Gábor utca | 238 | | 13 | | 1 |
| Béke telep | 123 | | 11 | | 10 |
| Damjanich utca | 40 | 4 | | 80 | 10 |
| Deák Ferenc utca | 81 | 2 | 14 | | 27 |

Lifting of restrictions

- 28th March – lifting restrictions of protection zone (21 days after C&D) -> surveillance zone
- 7th April – lifting restrictions of surveillance zone (30 days after C&D)
- 4th June – OIE freedom (3 months after C&D)

Repopulation

- 9th April – repopulation of the outbreak holding at Füzesgyarmat
- Tested and found to be negative



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Thank you for your attention!

