



Ministero della Salute

H5N8 HPAI in Italy in 2017

Epidemiological situation and eradication strategy

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HPAI H5 outbreaks in Italy 2016-2017

- Cases in wild birds:
 - 4 in Friuli Venezia Giulia
 - 3 in Lombardy
 - 1 in Piedmont
 - 1 in Veneto
- Cases in domestic poultry:
 - 3 in Emilia Romagna
 - 1 in Friuli Venezia Giulia
 - 15 in Lombardy
 - 1 in Piedmont
 - 17 in Veneto

Total of 37 cases in the domestic poultry

HPAI H5 outbreaks in Italy

2nd epidemic wave (Jul 17th – Sep 8th)

- Cases in wild birds:
 - 2 in Lombardy
- Cases in domestic poultry:
 - 12 in Lombardy
 - 8 in Veneto
 - 1 in Emilia Romagna

Total of 21 cases in
the domestic poultry

H5N8 HPAI in Italy

2nd epidemic wave

Cases in wild birds

Region	Province	Species	Number of birds	Confirmation date	Subtype
Lombardy	Pavia	Mallard duck (<i>Anas platyrhynchos</i>)	10	02/08/2017	H5N8
Lombardy	Bergamo	Mute swan (<i>Cygnus olor</i>)	1	25/08/2017	H5N8

H5N8 HPAI outbreaks in Italy

2nd epidemic wave

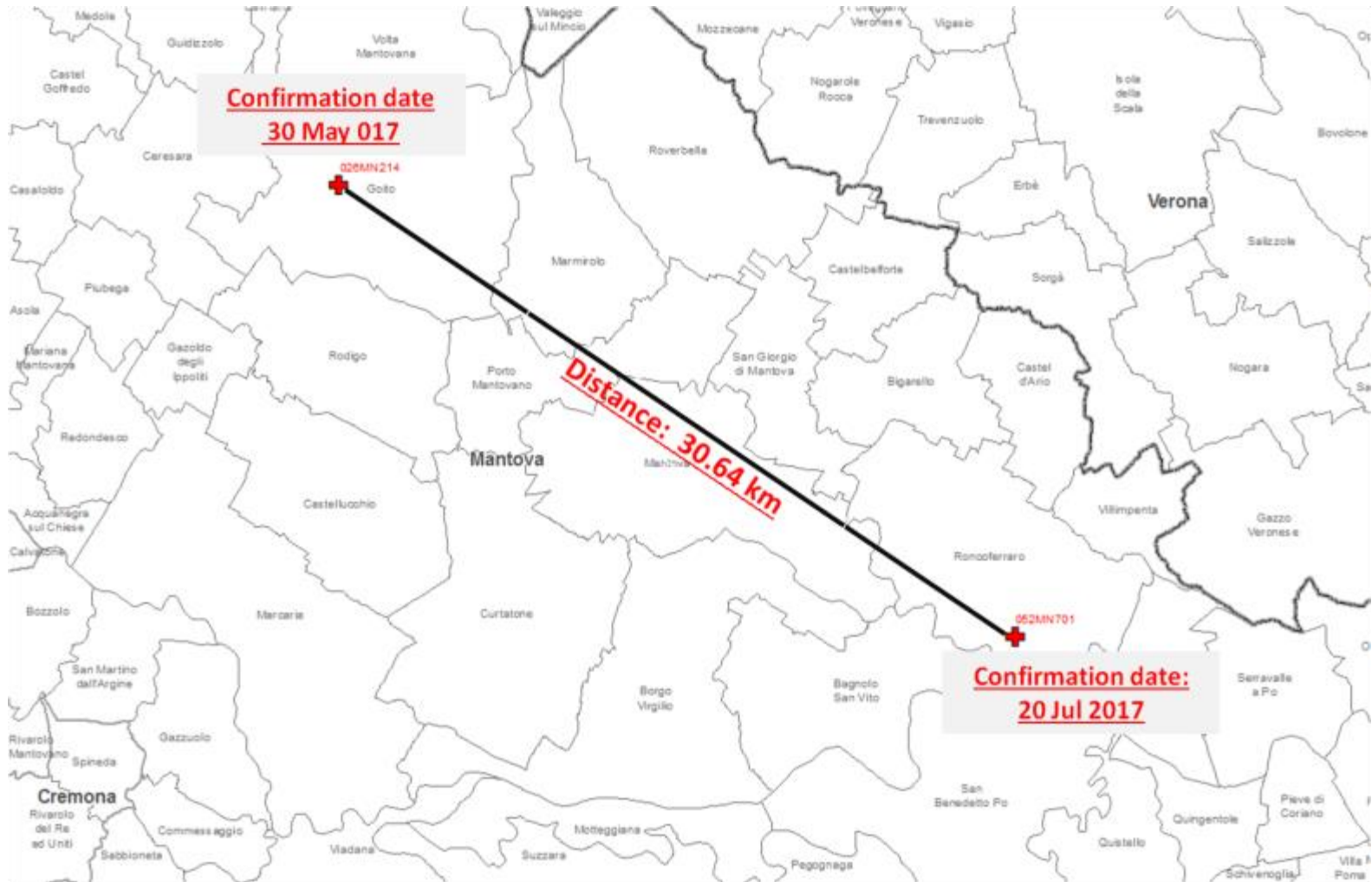
Distribution and type of affected farms

Region	Meat turkeys	Laying hens	Fattening geese	Game birds	Backyard	TOTAL
Emilia-Romagna	1	0	0	0	0	1
Lombardy	6	2	1	1	2	12
Veneto	7	0	1	0	0	8
TOTAL	14	2	2	1	2	21

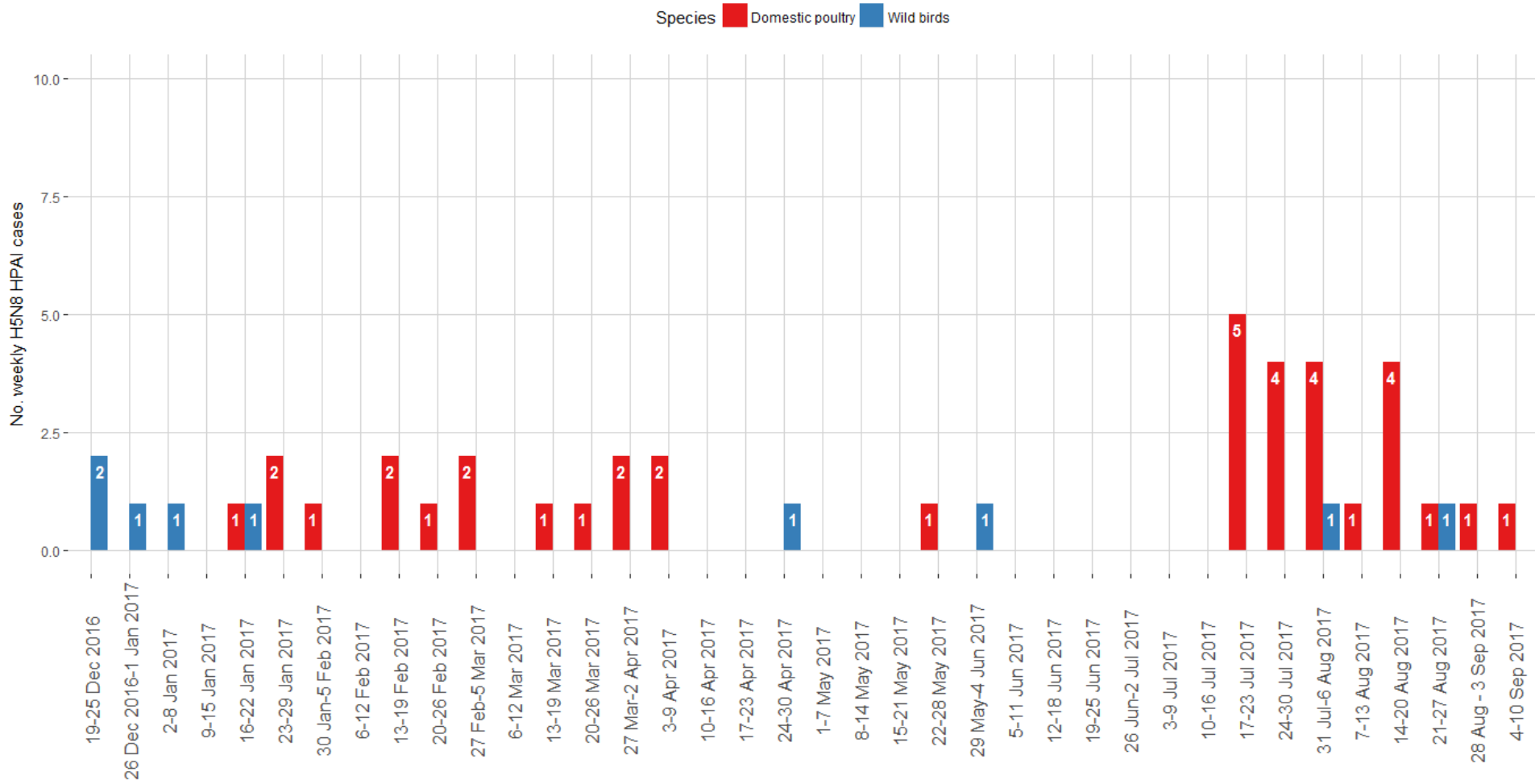
First HPAI H5N8 case of second wave

- Fattening turkey farm in Mantova Province with 20,500 birds
 - mortality rates increased since 17 July 2017
 - confirmed on 20 July 2017
- 30 km apart from the last case of the first wave
- 50 days after the last confirmation on domestic poultry, occurred in the same province on 30 May 2017

Conf. Date	Region	Depopulation date	Province	Species	No animals	Strain
20/07/2017	Lombardy	23/07/2017	Mantua	Meat turkeys	20.560	H5N8



Weekly H5N8 HPAI cases



Epidemiological Investigations

No evidence of risk contacts between infected farms

- Different production types were involved (mainly fattening turkeys and laying hens)
- Several poultry Companies involved (i.e. different personnel and services for feed, birds, and egg transportation)

Identification of other potential contact farms

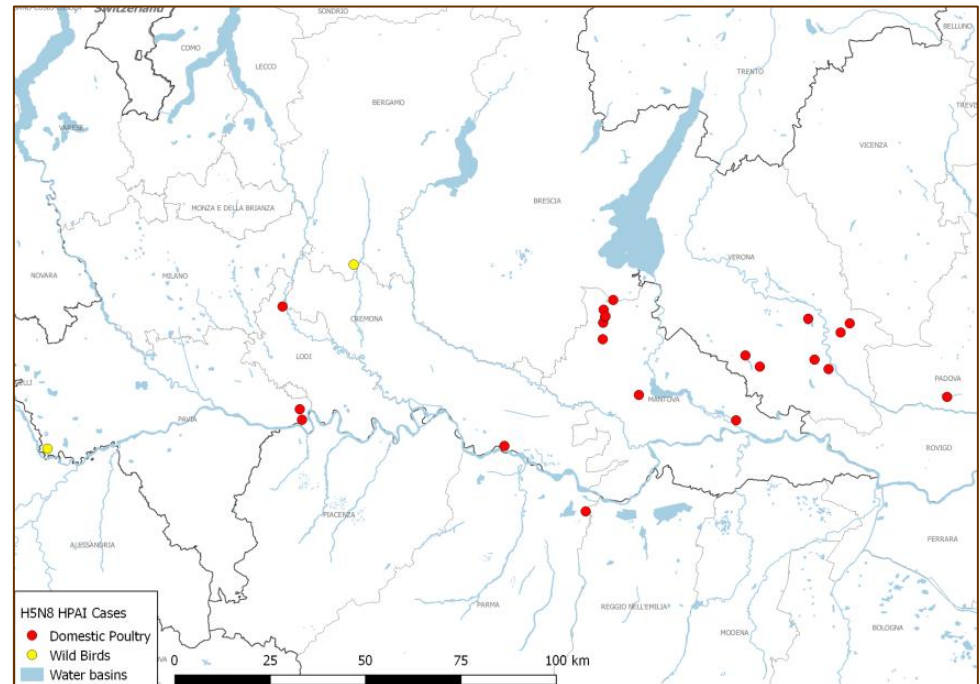
- Strict control measures
- Enhanced surveillance activities
- All potential contact farms tested negative for H5N8 HPAI

No evidence of lateral spread

Epidemiological Investigations

Most of the affected farms were located in large wetlands

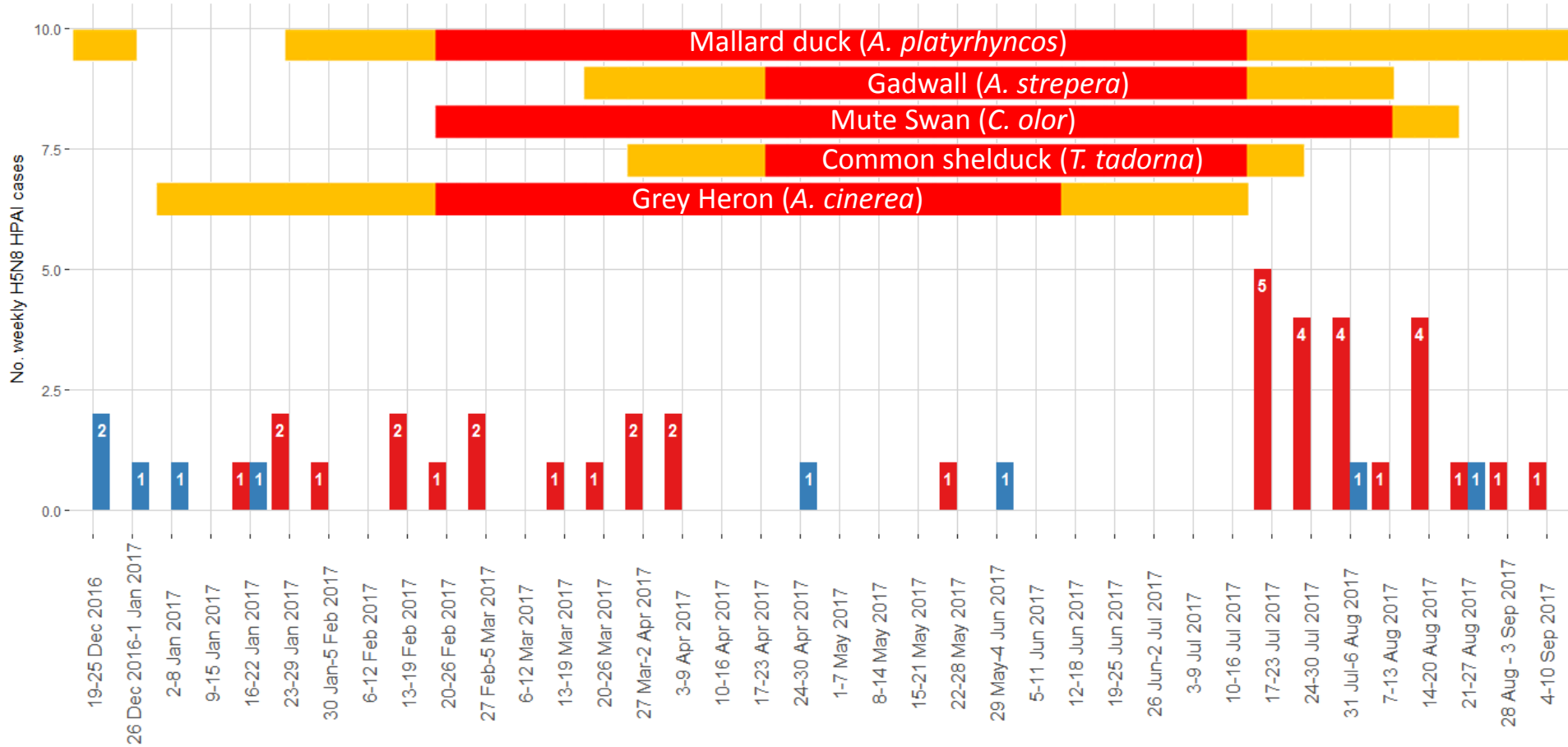
Substantial populations of wild water birds were reported



High risk of virus introduction from wild birds

Weekly H5N8 HPAI cases and wild birds nesting period

Species ■ Domestic poultry ■ Wild birds



Secondary outbreaks

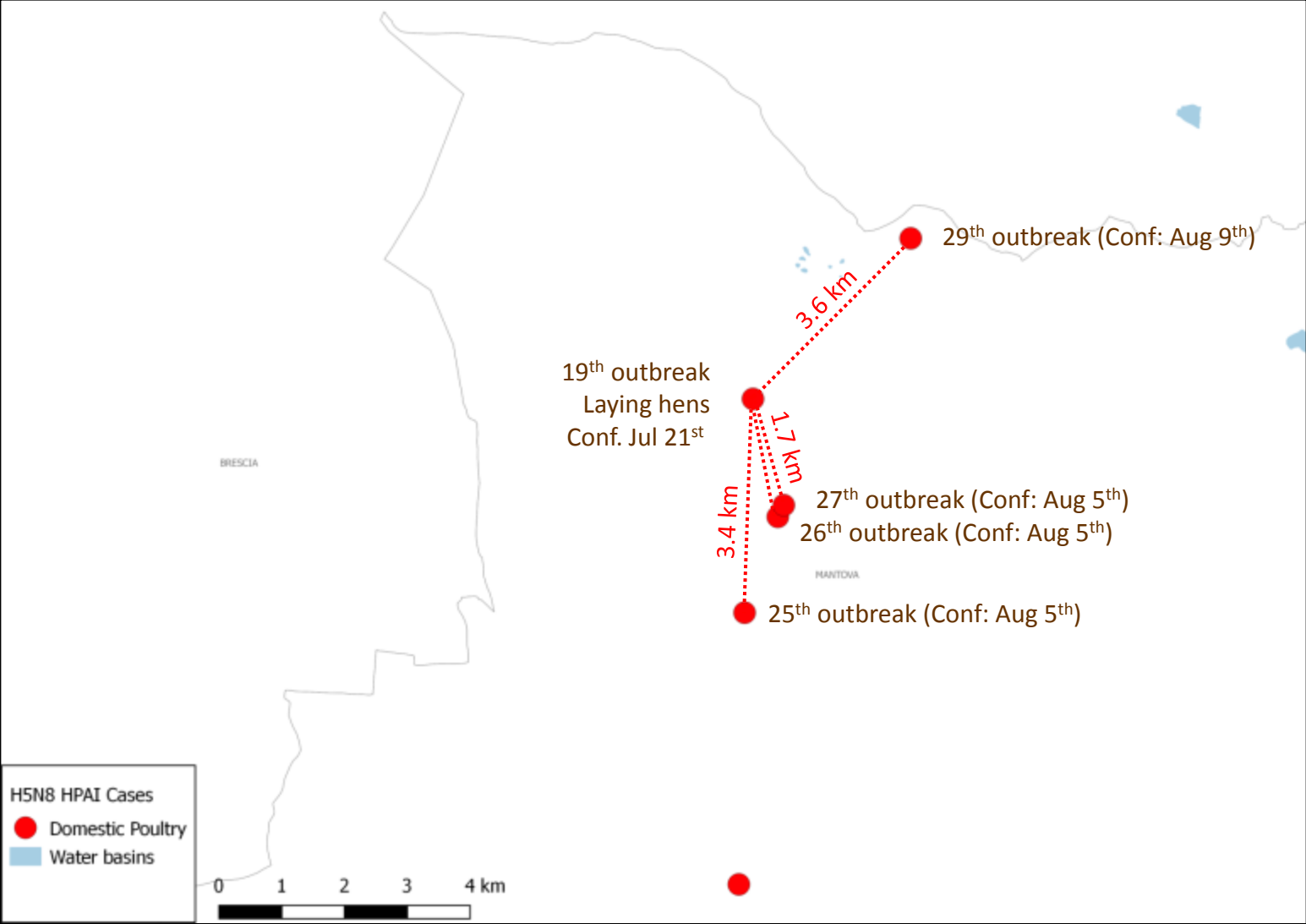
Culling activities for 19th outbreak underwent logistical issues that delayed the ending of the culling procedures

- Number of laying hens to be culled (approximately 480,000 laying hens);
- Housing type (Housed in modified cages)
- Extreme climatic situations (~40°C for prolonged periods)
 - Increased mortality related to the heath wave
 - Saturation of rendering capacities

Depopulation activities took about 15 days to be concluded.

It is likely that the delay caused the disease to spread to other four farms, the 25th, 26th, 27th, 29th cases

Secondary outbreaks

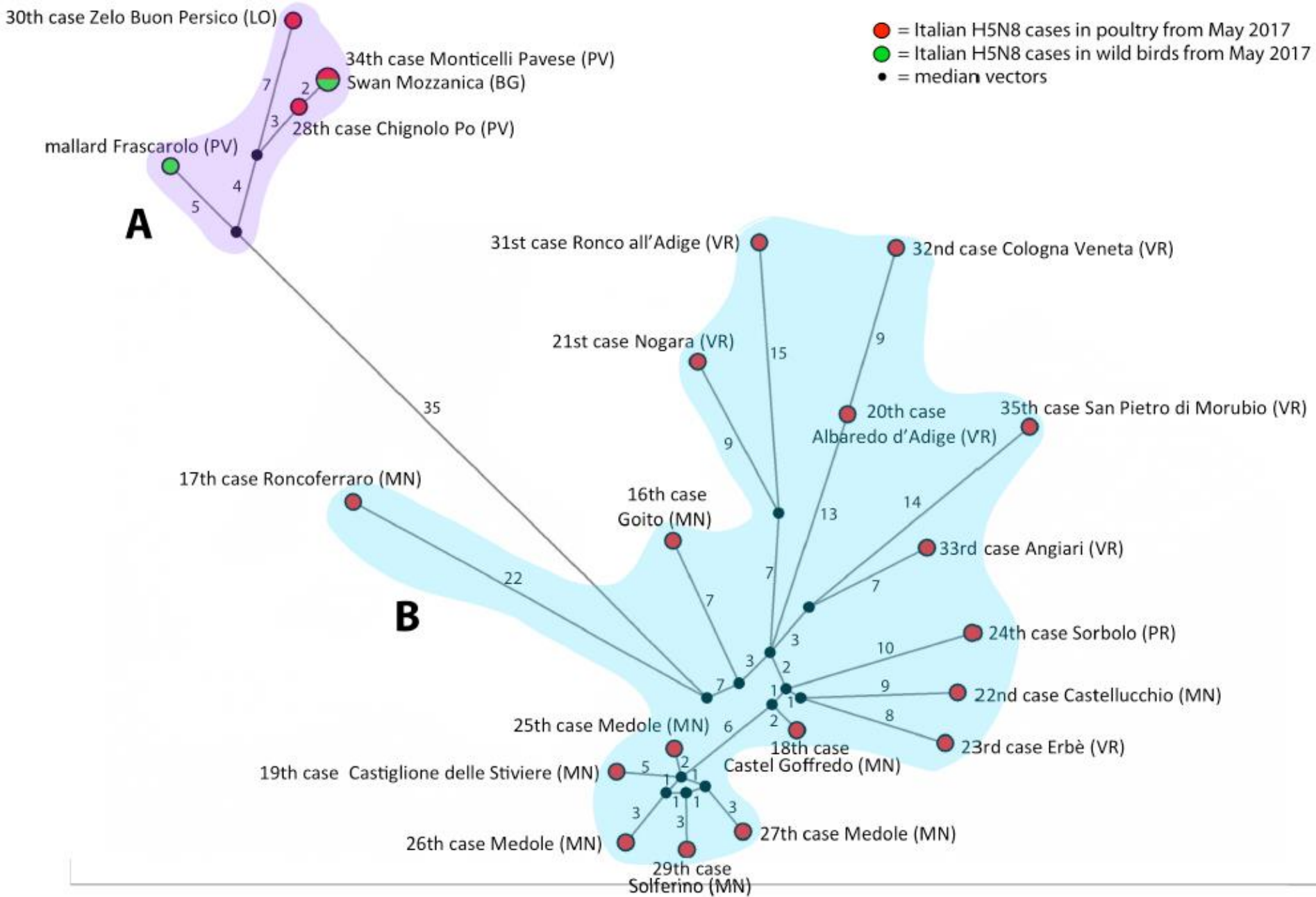


Phylogenetic analysis

Viruses isolated in the second semester 2017 cluster with the H5N8 virus detected in the fattening turkey farm and in the grey heron found in Mantua province at the end of May

The phylogenetic analysis of the 8 AI genes indicate that the viruses identified in the second semester of 2017, groups into two distinct clusters encompassing viruses circulating in different provinces (i.e. Group A: Lodi, Pavia, Bergamo; Group B: Verona, Mantova, Parma)

Viruses collected from the 19th (laying hen farms) and the 24th-26th and 29th outbreaks in fattening turkeys (Mantua) from July 20th to August 4th resulted almost identical to each other, and separated by other viruses by a larger number of nucleotide differences, suggesting potential transmission links among these four farms



Control Measures

Preventive culling



For each positive case, tracing exercises have been performed to identify potential at-risk farms

In total, 16 farms were subjected to preventive culling

Total number of culled birds	454.519
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Strategy to reduce the risk of HPAIV introduction

To reduce the risk of contacts between wild birds and domestic poultry:

- High-risk areas for the HPAIV introduction of have been defined
- Additional biosecurity measures are being enforced in these areas



Measures enforced to reduce the risk of HPAIV introduction

Application of biosecurity measures to reduce the risk of virus introduction:

- At a farm level (e.g. ban of free-range poultry rearing, regular check of biosecurity level before restocking in turkey farms)
- At an area level (e.g. ban on exhibitions, fairs, and live-bird markets)

Early detection system

To promptly detect HPAI outbreaks, significant productive or sanitary changes must be reported immediately to the Veterinary Services:

- Decrease in feed and/or water consumption
- Decreased egg production
- Clinical symptoms
- Increased mortality rate

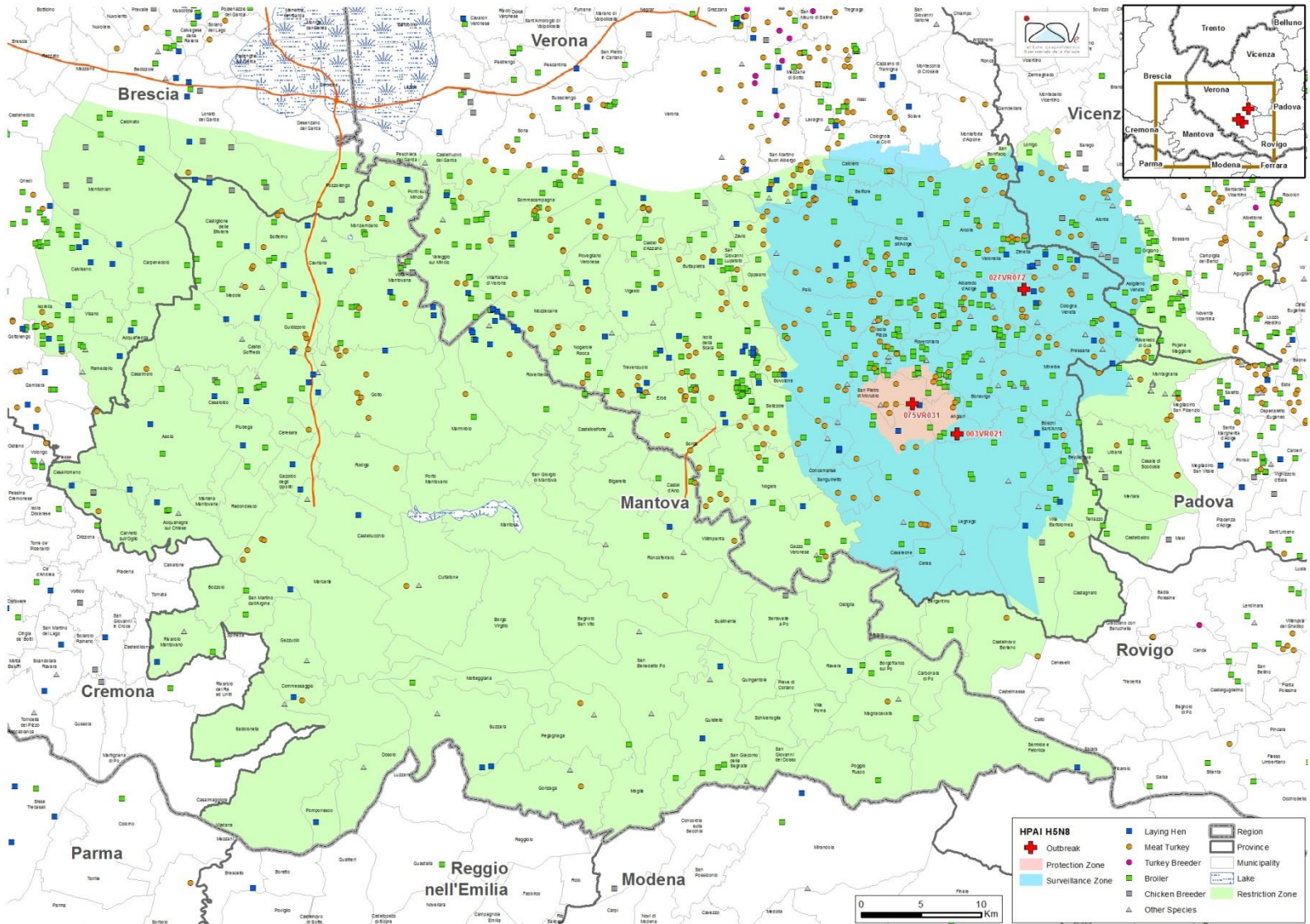
Establishment of a Further Restricted Zone

Given that the outbreaks occurred in densely populated poultry areas, the Ministry of Health issued a provision to establish a Further Restricted Zone

This zone has the general objective of preventing the introduction and diffusion of the disease

Ministerial provision n°18012 of 28 July
Establishment of a Further Restricted Zone

Further Restricted Zone



Measures applied in the Further Restricted Zone

- Ban on re-stocking of meat turkey farms to decrease poultry density
- Pre-movement inspection and testing in poultry farms
- Weekly inspection and testing of carcasses in laying hen farms
- Strict biosecurity measures applied on farms
- Ban on the gathering of domestic birds for fairs, exhibitions and live-bird markets
- Early detection systems

Final remarks

The results of the epidemiological investigations and the phylogenetic analysis point to the same conclusion

With the exception of a cluster of HPAI outbreaks in Mantua province, all the other H5N8 HPAI outbreaks in Italy have occurred due to separate virus introductions via wild birds and NOT to the spread of infection from farm to farm

Final remarks

The 2nd epidemic wave can be related to the amplification of the H5N8 HPAI virus in the resident wild bird population

The data points to the effectiveness of the measures applied by Italy in avoiding the further spread of the disease in an area with one the highest density of poultry (turkey) farms in the EU



Thank you!