

Integrated surveillance of West Nile and Usutu virus

Epidemiological report no. 9 17 August 2022
National data

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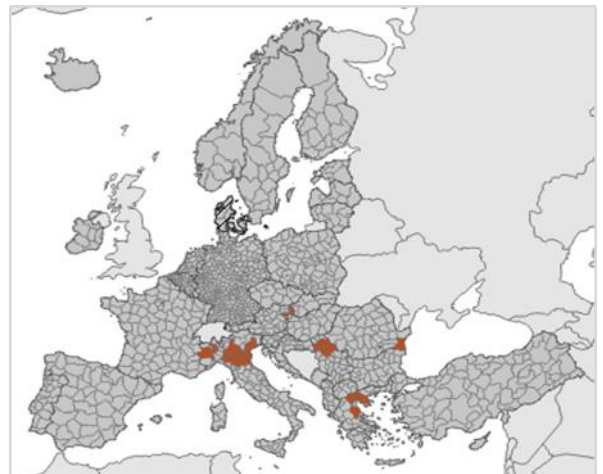
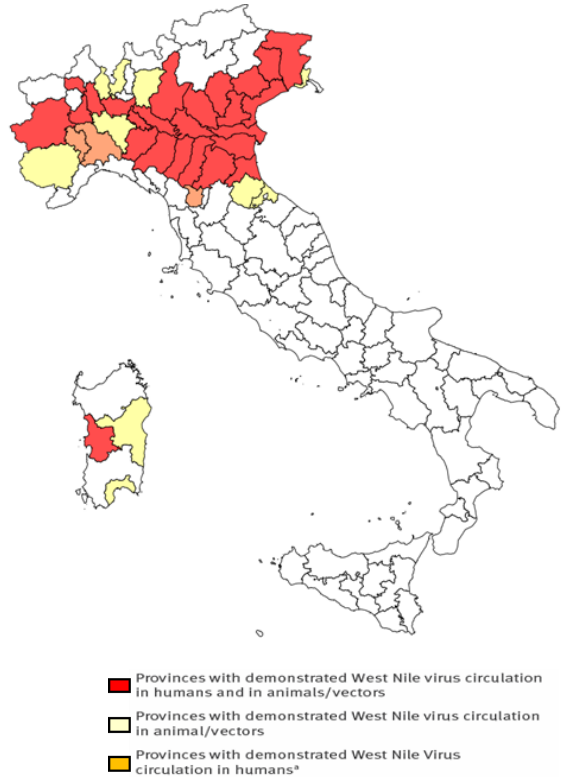
1

In Evidence

This report summarizes the results of West Nile virus and the Usutu virus surveillance activities in Italy, updated to **16-8-2022**

- Since June 2022, **230** confirmed cases of West Nile Virus (WNV) infection in humans have been reported in Italy; **127 WNND** (29 Emilia-Romagna, 71 Veneto, 14 Piemonte, 8 Lombardia, 3 Friuli Venezia Giulia, 1 Toscana, 1 Sardegna), **37 cases identified in blood donors** (5 Lombardia, 18 Veneto, 5 Piemonte, 9 Emilia Romagna) and **63 cases of WNF** (1 Piemonte, 4 Lombardia, 55Veneto 1 Friuli Venezia Giulia, 2 Emilia Romagna) 3 symptomatic case (3 Veneto). The first human case of the season was reported by Veneto in June in the province of Padova. 13 deaths were reported among the confirmed cases. In the same period, 3 cases of Usutu virus were reported from Friuli Venezia Giulia and Piemonte.
- Surveillance in mosquitoes, resident birds, wild birds, poultry and horses confirmed the circulation of WNV in **Piemonte Veneto, Emilia Romagna, Lombardia, Friuli Venezia Giulia and Sardegna** region. Molecular analysis confirmed **Lineage 2** and **Lineage 1** circulation.
- As of 10 August EU/EEA countries have reported 188 human cases of WNV infection in Italy (144), Greece (39), Austria (2), Romania (2) and Slovakia (1) and 10 deaths in Italy. EU-neighbouring countries have reported 34 human cases of WNV infection in Serbia (34) and three deaths in Serbia. (Source: ECDC 2022).

Figure 1. Provinces where WNV has been detected in vectors, animals and humans (blood donor, fever and neuroinvasive cases)



2

Human

Since June 2022, the start of surveillance, 230 of West Nile Virus (WNV) infection have been reported in Italy, 127 WNND (Table 1) all autochthonous cases, 37 identified in blood donors and 63 cases of fever. Details of WNND are provided below.

Region/Province	Age group					Total
	<=14	15-44	45-64	65-74	>=75	
Piemonte						
<i>Alessandria</i>	1					1
<i>Novara</i>			1		5	6
<i>Torino</i>			1		1	2
<i>Vercelli</i>				1	4	5
Lombardia						
<i>Brescia</i>				2	2	4
<i>Cremona</i>					1	1
<i>Lodi</i>				1		1
<i>Mantova</i>					2	2
Veneto						
<i>Padova</i>		2	8	14	26	50
<i>Rovigo</i>				4	6	10
<i>Treviso</i>					1	1
<i>Venezia</i>			1	1	4	6
<i>Verona</i>		1	1			2
<i>Vicenza</i>					2	2
Friuli-Venezia Giulia						
<i>Pordenone</i>				1	2	3
Emilia-Romagna						
<i>Bologna</i>			1			1
<i>Ferrara</i>			1	1	4	6
<i>Modena</i>			2	6	2	10
<i>Parma</i>				2		2
<i>Piacenza</i>				1	1	2
<i>Ravenna</i>			1	2	2	5
<i>Reggio Emilia</i>			1	1	1	3
Toscana						
<i>Pistoia</i>					1	1
Sardegna						
<i>Oristano</i>				1		1
Total	1	3	18	38	67	127

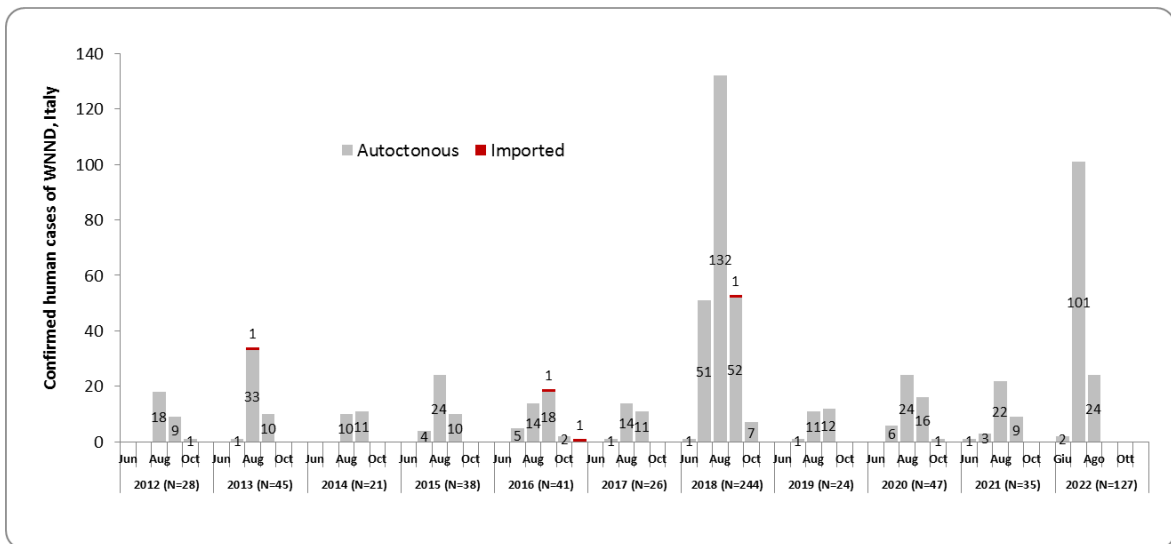


Figure 1. Trend of confirmed cases of WNND by month onset of symptoms. Italy: 2012 - 2022.

3

Horses

8 WNND outbreaks in horses have been confirmed by the National Reference Centre for exotic diseases (CESME) in **Veneto, Lombardia and Emilia Romagna** region.

Region	Province	N. Outbreaks	N. Clinical outbreaks	Outbreaks details				Prevalence (%)	Letality (%)
				Susceptible	N.cases	Clinical cases	Death/ slaughtered		
VENETO	Padova	3	3	45	3	3	0	0,07	0
	Venezia	1	1	103	1	1	0	0,01	0
	Vicenza	2	2	25	2	2	0	0,08	0
LOMBARDIA	Brescia	1	1	3	1	1	0	0,33	0
EMILIA ROMAGNA	Parma	1	1	46	1	1	1	0,02	100
Totale		8	8	222	8	8	1	0,04	0,125

Table 2 West Nile Disease in horses- 2022



Figure 2 Geographical distribution West Nile virus detection in horses - 2022

4

Resident birds of target species

CESME confirmed WNV in **50** resident birds belong to target species from **Emilia Romagna, Lombardia, Friuli Venezia Giulia, Piemonte and Veneto** region. The circulating strains belong to **Lineage 2** and **Lineage 1**.

The target species for the surveillance are :

- Magpie (*Pica pica*)
- Carrion crow (*Corvus corone cornix*)
- Eurasian jay (*Garrulus glandarius*)



Region	Province	Carrion Crow	Magpie	Jay	n.birds+
EMILIA ROMAGNA	Piacenza	0	3	0	3
	Bologna	0	2	0	2
	Ferrara	2	13	0	15
	Ravenna	0	5	1	6
	Parma	5	0	0	5
	Rimini	0	2	0	2
	Reggio Emilia	3	4	0	7
LOMBARDIA	Milano	1	0	0	1
VENETO	Verona	2	0	0	2
	Padova	2	0	0	2
	Rovigo	2	1	0	3
PIEMONTE	Cuneo	1	0	0	1
FRIULI VENEZIA GIULIA	Udine	1	0	0	1
Total		19	30	1	50

Table 3 West Nile virus detection in birds belong to target species- **2022**

Figure 3 Geographical distribution West Nile virus detection in birds belong to target species - **2022**

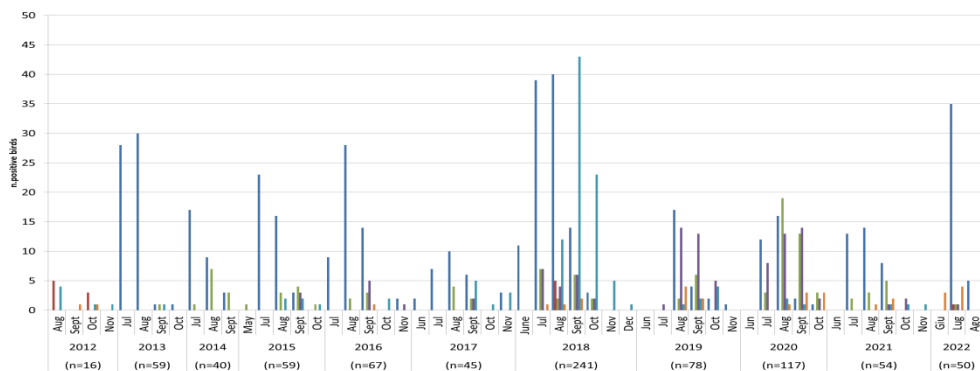


Figure 2 Spatio-temporal distribution West Nile virus detection in birds belong to target species - **2022**

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Wild birds

CESME confirmed WNV in **29 wild birds** from **Veneto, Emilia Romagna, Lombardia and Sardegna** region. The circulating strains belong to **Lineage 1 and Lineage 2**.



Region	Province	Species	n.birds+
SARDEGNA	Nuoro	Kestrel	1
		Crow	1
VENETO	Venezia	Blackbird	2
		Common swift	2
		Little Owl	2
		Cormorant	1
	Rovigo	Little Owl	1
		Sparrow	1
		Little Owl	1
		scops owl	1
		Long-eared owl	1
		Gull	1
	Padova	Little Owl	2
		Dove	2
		Kestrel	2
	LOMBARDIA	Pavia	Little Owl
Varese		Little Owl	1
EMILIA ROMAGNA	Bologna	Wood pigeon	1
	Ferrara	Great Tit	1
	Piacenza	Wood pigeon	1
		Egret	1
		Blackbird	1
		Kestrel	1
Total			29

Table 2 West Nile virus detection in wild birds -

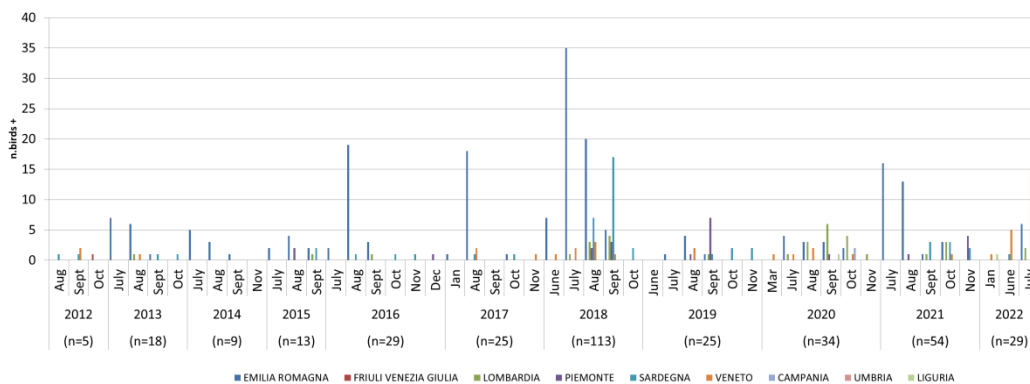


Figure 4 Spatio-temporal distribution West Nile virus detection in wild birds - 2022

6

Entomological surveillance

WNV genome has been reported in **173 mosquitoes pool** collected in **Veneto, Emilia Romagna, Piemonte, Friuli Venezia Giulia and Lombardia** region. The circulating strains belong to **Lineage 1 and Lineage 2**.



Figure 5 Geographical distribution West Nile virus detection in mosquitoes - **2022**

Region	Province	n.pool+
EMILIA ROMAGNA	Bologna	6
	Ferrara	13
	Modena	23
	Piacenza	10
	Ravenna	2
	Forlì Cesena	1
	Parma	11
	Reggio Emilia	12
FRIULI VENEZIA GIULIA	Udine	1
	Pordenone	2
	Gorizia	1
LOMBARDIA	Brescia	2
	Lodi	1
	Como	1
	Mantova	5
	Pavia	5
PIEMONTE	Cuneo	2
	Vercelli	3
	Torino	1
	Novara	1
VENETO	Padova	11
	Rovigo	24
	Venezia	21
	Vicenza	5
	Verona	5
	Treviso	4
Total		173

Table 3 West Nile virus detection in mosquitoes- **2022**

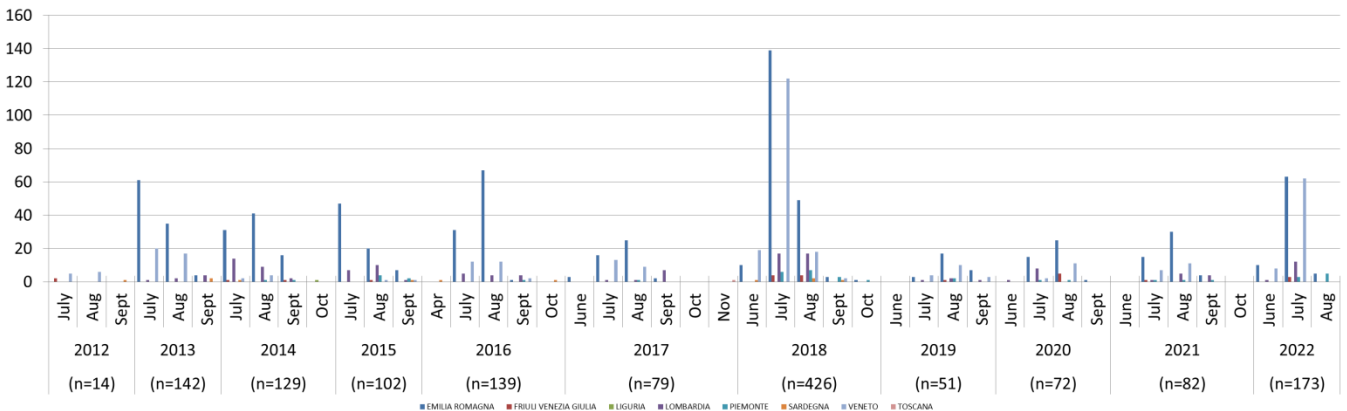


Figure 6 Spatio-temporal distribution West Nile virus detection in mosquitoes - **2022**

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Poultry surveillance

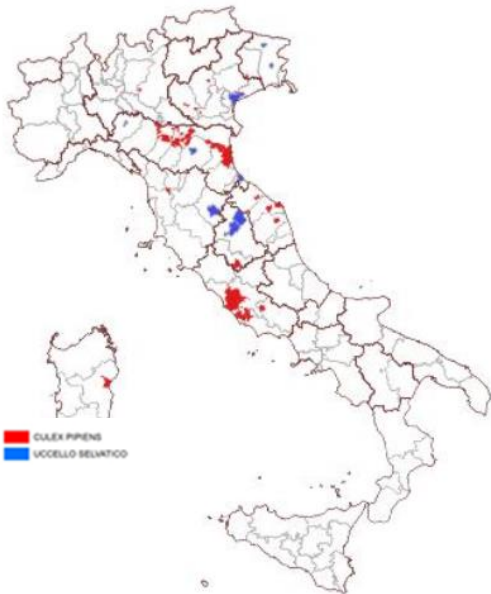
- No WND outbreaks have been confirmed in poultry flocks.



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USUTU virus surveillance

Usutu virus has been detected in **72 mosquitoes pool** and **20 birds** from **Emilia Romagna, Lombardia, Marche, Friuli Venezia Giulia, Umbria, Toscana, Lazio and Veneto** region.



Region	Province	n.pool+
MARCHE	Pesaro e Urbino	3
	Ancona	2
	Ascoli Piceno	1
	Macerata	1
EMILIA ROMAGNA	Modena	13
	Ferrara	2
	Ravenna	3
	Bologna	6
	Reggio Emilia	14
	Parma	2
	Ravenna	2
FRIULI VENEZIA GIULIA	Pordenone	1
LAZIO	Latina	3
	Roma	3
	Frosinone	1
LOMBARDIA	Milano	1
	Brescia	2
UMBRIA	Terni	1
	Perugia	2
VENETO	Verona	3
	Treviso	1
	Padova	2
	Vicenza	1
TOSCANA	Firenze	1
SARDEGNA	Nuoro	1
Total		72

Table 4 Usutu virus detection in mosquitoes -2022

Figure 7 Geographical distribution Usutu virus detection in birds and mosquitoes - 2022

Region	Province	n.birds+
FRIULI VENEZIA GIULIA	Udine	2
VENETO	Venezia	2
EMILIA ROMAGNA	Piacenza	1
	Bologna	5
	Rimini	2
	Forlì Cesena	4
TOSCANA	Arezzo	2
UMBRIA	Perugia	2
Total		20

Table 4 Usutu virus detection in birds -2022

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National Plan for Prevention, Surveillance and Response to Arbovirus 2020-2025

West Nile (WNV) and Usutu (USUV) viruses surveillance activities since 2020 are included in the National Plan for Prevention, Surveillance and Response to Arbovirus 2020-2025.

The Plan integrates in a unique document the surveillance measures to be implemented at the national level for autochthonous and imported arboviruses, promoting a multidisciplinary approach in the management of surveillance and control activities.

More details about the integrated surveillance plan are available on the complete document «National Plan for Prevention, Surveillance and Response to Arbovirus 2020-2025.»

National Human surveillance activities are coordinated by the National Institute of Health (Istituto Superiore di Sanità, ISS) and the Ministry of Health is responsible to provide surveillance data to the European Commission and to ECDC. Moreover regions can implement normative-programmatic documents for the epidemiological and laboratory surveillance on their territory according to National legislation and guidelines provided by the Ministry of Health .

Veterinary surveillance activities are coordinated by the National Reference Center for the exotic diseases of animals (CESME) which harmonize the diagnostic procedures within the network of IIZZSS national laboratories and confirms suspected specimens. CESME is also in charge for the veterinary surveillance data management, collection and communication to the Ministry of Health according to the data flow reported in the Plan.

Useful links

- Web page of [National Institute of Health](#)
- Web page of [Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale"](#) (CESME)
- Directions of the [National Italian Blood Center](#)
- Directions of the [National Italian Transplant Center](#)
- Web page of the [Italian Ministry of Health](#)
- Web page of [ECDC](#)

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