

## Integrated surveillance of West Nile and Usutu virus

Epidemiological report no. 18 31 October 2024  
National data

- 1** In Evidence
- 2** Humans
- 3** Horses
- 4** Resident birds of target species
- 5** Wild birds
- 6** Entomological
- 7** Poultry
- 8** Usutu virus
- 9** National Plan for Prevention, Surveillance and Response to Arbovirus 2020-2025.

1

# In Evidence

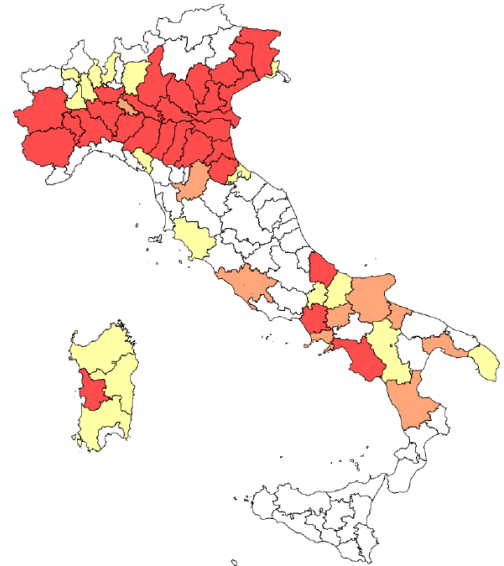
This report summarizes the results of West Nile virus and the Usutu virus surveillance activities in Italy, updated to **30-10-2024**

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

Since the beginning of May 2024, **460** confirmed cases of West Nile Virus (WNV) infection in humans have been reported in Italy (452 in the previous bulletin); of these **272** showed neurological symptoms (14 Piedmont, 20 Lombardy, 47 Veneto, 5 Friuli-Venezia Giulia, 147 Emilia-Romagna, 1 Tuscany, 1 Lazio, 4 Abruzzo, 16 Campania, 4 Puglia, 4 Calabria, 1 Sardinia, 8 imported cases (2 United States, 5 from Albania, 1 Romania), WNV was identified in 46 blood donors (2 Piedmont, 10 Lombardy, 14 Veneto, 2 Friuli-Venezia Giulia, 16 Emilia Romagna, 2 Campania), **141** cases of fever (3 Piedmont, 3 Lombardy, 90 Veneto, 6 Friuli-Venezia Giulia, 33 Emilia-Romagna, 2 Abruzzo, 1 Calabria, 2 imported cases (1 Oman, 1 Morocco), 1 asymptomatic case (1 Emilia-Romagna). **20** deaths have been reported (3 Piedmont, 2 Lombardy, 8 Veneto, 1 Friuli-Venezia Giulia, 3 Emilia-Romagna, 1 Lazio, 1 Campania, 1 Calabria).

In the same period, 6 cases of Usutu virus infection were reported (1 Lombardy, 1 Veneto, 3 Emilia-Romagna, 1 Lazio).

- Veterinary surveillance carried out on horses, mosquitoes, target and wild birds confirmed the WNV circulation in Abruzzo, Molise, Basilicata, Campania, Tuscany, Puglia, Veneto, Friuli-Venezia Giulia, Piedmont, Sardinia, Emilia-Romagna, Marche\* and Lombardy. Molecular analyses confirmed the circulation of WNV **Lineage 1 and 2.**



- Provinces with demonstrated West Nile virus circulation in humans and in animals/vectors
- Provinces with demonstrated West Nile virus circulation in animal/vectors
- Provinces with demonstrated West Nile Virus circulation in humans\*

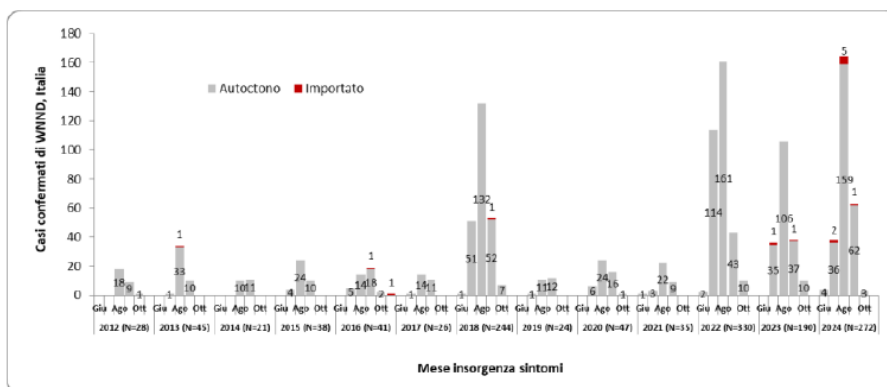
## 1

## Human

Since the beginning of surveillance, 460 human cases confirmed by West Nile Virus (WNV) have been reported in Italy, 272 of which have shown neuro-invasive symptoms (Table 1), 46 symptomatic cases identified in blood donors (2 Alessandria, 1 Benevento, 4 Bologna, 2 Brescia, 1 Caserta, 2 Cremona, 5 Mantua, 1 Milan, 10 Modena, 7 Padua, 2 Parma, 2 Rovigo, 3 Treviso, 2 Udine, 2 Verona), 141 cases of fever (2 Alessandria, 7 Bologna, 2 Chieti, 1 Cosenza, 1 Ferrara, 2 Forlì-Cesena, 3 Mantua, 16 Modena, 37 Padua, 2 Parma, 1 Piacenza, 3 Pordenone, 4 Reggio Emilia, 16 Rovigo, 1 Turin, 15 Treviso, 3 Udine, 12 Venice, 8 Verona, 2 Vicenza, 1 imported from Oman and 1 from Morocco), 1 asymptomatic case (1 Reggio Emilia).

**Table 1.** Distribution of confirmed WNND cases by province of exposure and age group. Italy: 2024

Regione/Provincia di esposizione	Fascia di età					Totale
	<=14	15-44	45-64	65-74	>=75	
<b>Piemonte (n=14)</b>						
Alessandria				1	3	4
Asti				1	3	4
Cuneo				2		2
Torino		1			3	4
<b>Lombardia (n=20)</b>						
Cremona				1		1
Lodi			2	1		3
Mantova			1	4	4	9
Milano		1		2	1	4
Pavia					3	3
<b>Veneto (n=47)</b>						
Padova	1		4	3	14	22
Rovigo			1	2	5	8
Treviso		1	2			3
Venezia		2	2	2	4	10
Verona					3	3
Vicenza					1	1
<b>Friuli-Venezia Giulia (n=5)</b>						
Pordenone					3	3
Udine					2	2
<b>Emilia-Romagna (n=147)</b>						
Bologna		2	9	8	17	36
Ferrara			3	2	2	7
Forlì-Cesena		2	1	1	5	9
Modena		1	7	10	29	47
Parma			2	1	3	6
Piacenza			2			2
Ravenna			3		2	5
Reggio Emilia		1	7	12	15	35
<b>Toscana (n=1)</b>						
Firenze			1			1
<b>Lazio (n=1)</b>						
Roma			1			1
<b>Abruzzo (n=4)</b>						
Chieti			1	1	2	4
<b>Campania (n=16)</b>						
Benevento			2		2	4
Napoli				1		1
Salerno			4	2	5	11
<b>Puglia (n=4)</b>						
Barletta-Andria-Trani			1			1
Foggia			1			1
Taranto					2	2
<b>Calabria (n=4)</b>						
Cosenza			1	1	2	4
<b>Sardegna (n=1)</b>						
Oristano					1	1
<b>Totale</b>	<b>1</b>	<b>11</b>	<b>58</b>	<b>58</b>	<b>136</b>	<b>264</b>



**Figure 1.** Trend of confirmed WNND cases by symptom onset month. Italy: 2012 – 2024.

**3**

**Horses**

26 WND outbreaks have been confirmed in equids in **Emilia Romagna, Campania, Veneto, Piemonte, Puglia, Molise, Toscana e Abruzzo** region.

Region	Province	N.Outbreaks	N.clinical outbreaks	Outbreaks details				Prevalence %	Letality%
				susceptible animals	Total cases	Clinical cases	Death		
Puglia	Lecce	2	2	11	2	2	1	18,2	50
Abruzzo	Chieti	5	0	19	5	0	0	26,3	0
	Padova	2	2	60	2	2	0	3,3	0
Veneto	Vicenza	1	1	27	1	1	1	3,7	0
	Venezia	1	1	15	1	1	0	6,7	0
	Verona	3	4	126	4	4	0	3,2	0
Piemonte	Asti	1	1	27	1	1	1	3,7	100
	Cuneo	1	1	4	1	1	0	25,0	0
	Torino	2	2	92	2	2	0	2	0
Emilia Romagna	Modena	2	2	60	2	2	2	3,3	100
	Reggio Emilia	1	1	19	1	1	0	5,3	0
	Bologna	1	1	25	1	1	0	4,0	0
Lombardia	Cremona	1	1	120	1	1	0	0,8	0
Campania	Salerno	1	1	1	1	1	0	100,0	0
Molise	Campobasso	1	1	2	1	1	0	50	0
Toscana	Grosseto	1	1	39	1	1	0	2,6	0



**4**

**Resident birds of target species**

CESME confirmed WNV in **170 resident birds** belong to target species from. **Lombardia, Toscana, Sardegna, Abruzzo, Piemonte, Friuli Venezia Giulia, Emilia Romagna e Veneto** The circulating strains belong to **Lineage 1 Lineage 2.**

The target species for the surveillance are :

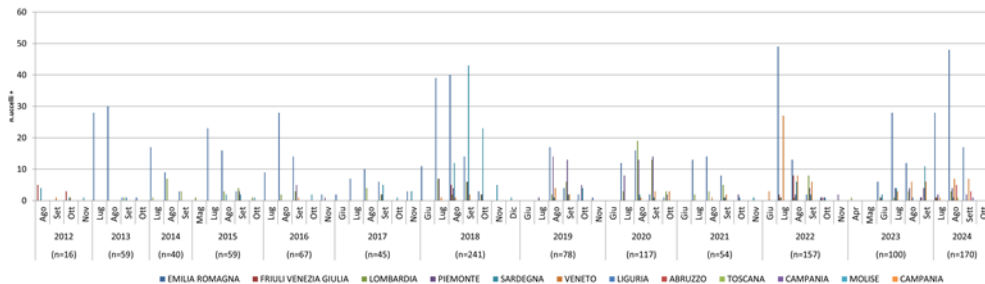
- **Magpie (*Pica pica*)**
- **Carrion crow (*Corvus corone cornix*)**
- **Eurasian jay (*Garrulus glandarius*)**



Regione	Provincia	Cornacchia	Gazza	Ghiandaia
Emilia Romagna	Forlì Cesena	0	4	1
	Ferrara	5	53	1
	Piacenza	1	1	0
	Bologna	3	11	3
	Modena	1	4	0
	Parma	7	7	0
	Ravenna	0	4	3
	Reggio Emilia	0	2	0
	Rimini	0	1	0
Friuli Venezia Giulia	Udine	0	1	0
	Cuneo	1	1	0
Piemonte	Asti	0	1	0
	Novara	1	0	0
	Torino	1	0	0
	Sud Sardegna	1	0	0
Sardegna	Oristano	2	0	0
	Padova	2	0	0
	Rovigo	1	1	1
	Treviso	2	5	0
Veneto	Verona	1	1	0
	Venezia	1	3	1
	Abruzzo	Chieti	1	10
Lombardia	Mantova	2	0	0
	Pavia	4	0	0
	Varese	0	1	0
Toscana	Grosseto	0	3	0
	Massa Carrara	0	1	0
Molise	Isernia	0	3	0
	Campobasso	0	2	0
Campania	Caserta	1	1	0
	<b>Totale</b>	<b>38</b>	<b>121</b>	<b>11</b>

**Table 1** West Nile virus detection in birds belong to target species- **2024**

**Figure 1** Geographical distribution West Nile virus detection in birds belong to target species - **2024**



**Figure 2** Spatio-temporal distribution West Nile virus detection in birds belong to target species - **2024**

**5**

**Wild birds**

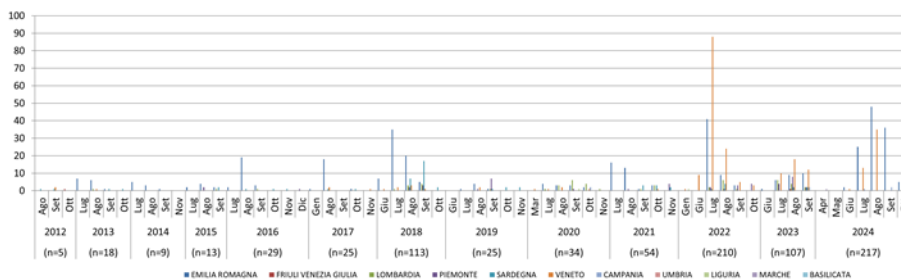
CESME confirmed WNV in **217 wild birds** from **Piemonte Basilicata, Campania, Marche\*, Emilia Romagna, Veneto, Friuli Venezia Giulia, Puglia e Sardegna** regions. The circulating strains belong to **Lineage 1** and **Lineage 2**.



**Figure 3** Geographical distribution West Nile virus detection in wild birds- 2024

Region		n.birds+	
Basilicata	Potenza	1	
	Benevento	2	
Campania	Salerno	1	
	Bologna	26	
Emilia-Romagna	Ferrara	69	
	Modena	2	
	Piacenza	3	
	Parma	1	
	Ravenna	4	
	Reggio Emilia	4	
	Rimini	7	
	Friuli-Venezia Giulia	Udine	1
	Lombardia	Brescia	1
Marche	Ancona	1	
	Asti	1	
Piemonte	Cuneo	1	
	Vercelli	1	
	Lecce	3	
Puglia	Nuoro	1	
	Oristano	1	
Veneto	Padova	19	
	Rovigo	15	
	Venezia	43	
	Verona	9	
	<b>Totale</b>	<b>217</b>	

**Table 2** West Nile virus detection in wild birds



**Figure 4** Spatio-temporal distribution West Nile virus detection in wild birds - 2024

**6**

**Entomological surveillance**

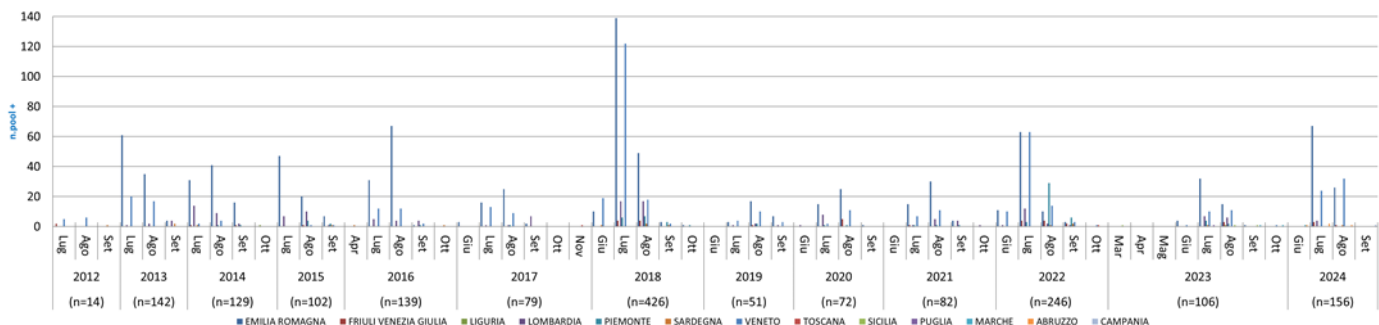
WNV genome has been reported in **156 mosquito pool** collected in **Emilia Romagna, Abruzzo, Veneto, Piemonte, Sardegna, Friuli Venezia Giulia Lombardia** regions. The circulating strains belong to **Lineage 2**. In Sicilia and Veneto was confirmed **WNV Lineage 1 and Lineage 2**.



Region	Province	n.pool +
Emilia Romagna	Parma	16
	Ferrara	21
	Forlì Cesena	1
	Reggio Emilia	26
	Piacenza	1
	Bologna	12
Lombardia	Modena	17
	Cremona	1
	Brescia	1
Veneto	Mantova	5
	Verona	11
	Venezia	12
	Treviso	2
	Padova	4
Sardegna	Rovigo	12
	Oristano	1
Friuli Venezia Giulia	Udine	1
	Gorizia	1
	Pordenone	2
Piemonte	Torino	1
	Alessandria	2
Abruzzo	Chieti	5
Campania	Benevento	1
<b>Totale</b>		<b>156</b>

**Figure 5** Geographical distribution West Nile virus detection in mosquitoes - **2024**

**Table 2** West Nile virus detection in mosquitoes- **2024**



**Figure 6** Spatio-temporal distribution West Nile virus detection in mosquitoes - **2024**

7

## Poultry surveillance

- No WND outbreaks have been confirmed in poultry flocks.





**8**

**USUTU virus surveillance**

**Usutu virus was identified in 61 mosquito pools and 139 birds in Emilia Romagna, Toscana, Lombardia, Marche, Sardegna e Piemonte.**



**Figure 7** Geographical distribution Usutu virus detection in birds and mosquitoes - **2024**

Region	Province	n.pool+
Emilia Romagna	Bologna	39
	Ferrara	14
	Forlì Cesena	1
	Piacenza	3
	Ravenna	1
Lombardia	Rimini	35
	Brescia	2
	Bergamo	2
Veneto	Pavia	1
	Padova	9
	Rovigo	4
	Verona	7
Marche	Venezia	12
	Fermo	1
Sardegna	Oristano	3
	Sassari	1
Sicilia	Palermo	1
Toscana	Pistoia	1
Molise	Campobasso	1
Totale		139

**Table 3** Usutu virus detection in birds -**2024**

Regione	Provincia	n.pool+
Piemonte	Alessandria	3
Emilia Romagna	Bologna	5
	Parma	1
	Ferrara	6
	Forlì Cesena	4
	Piacenza	2
	Ravenna	5
	Reggio Emilia	3
Lombardia	Lodi	1
	Brescia	1
	Bergamo	2
Veneto	Pavia	1
	Padova	4
	Venezia	2
	Rovigo	1
	Verona	1
Marche	Vicenza	1
	Macerata	4
	Fermo	1
	Pesaro Urbino	1
Sardegna	Ancona	4
	Oristano	2
Toscana	Sassari	1
Umbria	Grosseto	1
Abruzzo	Perugia	1
	Teramo	3
Totale		61

**Table 4** Usutu virus detection in mosquitoes - **2024**

9

## **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

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- 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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