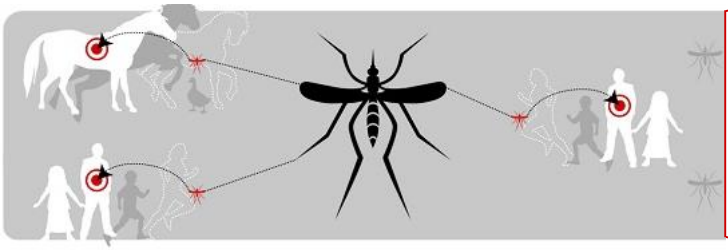

IZS TERAMO
NATIONAL REFERENCE CENTRE FOR EXOTIC DISEASES OF ANIMALS

ISTITUTO SUPERIORE DI SANITÀ

# Integrated surveillance of West Nile and Usutu virus

## Epidemiological report no. 7 20th July 2023
## National data

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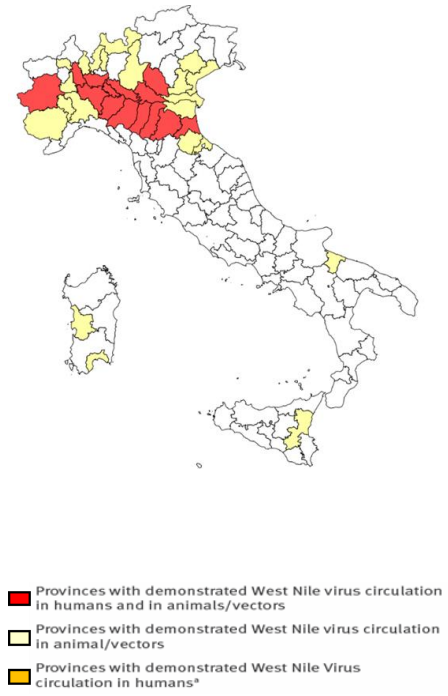
# 1 In Evidence

This report summarizes the results of West Nile virus and the Usutu virus surveillance activities in Italy, updated to **3-8-2023**

- Early start of the season of West Nile virus circulation. In two provinces, Catania (04/05/2023) and Varese (08/05/2023), positivity was confirmed in mosquito pools and in birds of the target species, respectively.

- The confirmed cases of West Nile Virus (WNV) infection in humans in Italy have risen to 25 since the beginning of May (6 in the previous bulletin); of these 15 occurred in the neuro-invasive form (4 Piedmont, 4 Lombardy, 7 Emilia-Romagna), 6 cases identified in blood donors (1 Piedmont, 4 in Lombardy, 1 Emilia-Romagna), 4 cases of fever (3 Lombardy, 1 Veneto). One death was reported among the confirmed cases in Lombardy. The first human case of WNV infection of the season was reported from Emilia-Romagna in July in the province of Parma. In the same period, 1 case of Usutu virus was reported in Piedmont (Novara).
- Veterinary surveillance conducted on horses, mosquitoes, resident and wild birds confirmed circulation of WNV Lineage 2 in Emilia-Romagna, Puglia, Veneto, Lombardy, Sardinia and Piedmont, while WNV Lineage 1 was confirmed in Sicily and Veneto regions.

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



# Integrated WN and Usutu virus surveillance

## 1 Human

Since May 2023, the start of surveillance, 25 confirmed cases of West Nile Virus (WNV) have been reported in Italy, 15 of which showed neuro-invasive symptoms (Table 1), all autochthonous cases, 6 identified in blood donors (3 Milan , 1 Mantua, 1 Turin, 1 Parma) 4 cases of fever (1 Lodi, 1 Verona, 1 Pavia, 1 Cremona). Only neuroinvasive forms are described below.

**Table 1.** Distribution of confirmed WNND cases by province of exposure and age group. Italy: 2023

| Regione/Provincia di esposizione | Fascia di età | | | | | Totale |
|---|---|---|---|---|---|---|
| | <=14 | 15-44 | 45-64 | 65-74 | >=75 | |
| **Piemonte (n=4)** | | | | | | |
| *Novara* | | | | | 1 | **1** |
| *Torino* | | | 1 | | 2 | **3** |
| **Lombardia (n=4)** | | | | | | |
| *Cremona* | | 1 | | 1 | | **2** |
| *Mantova* | | | 1 | | 1 | **2** |
| **Emilia-Romagna (n=2)** | | | | | | |
| *Bologna* | | | | | 1 | **1** |
| *Modena* | | | 1 | | 1 | **2** |
| *Piacenza* | | | | | 1 | **1** |
| *Ravenna* | | | 1 | | | **1** |
| *Reggio Emilia* | | | | 2 | | **2** |
| **Totale** | **0** | **1** | **4** | **3** | **7** | **15** |

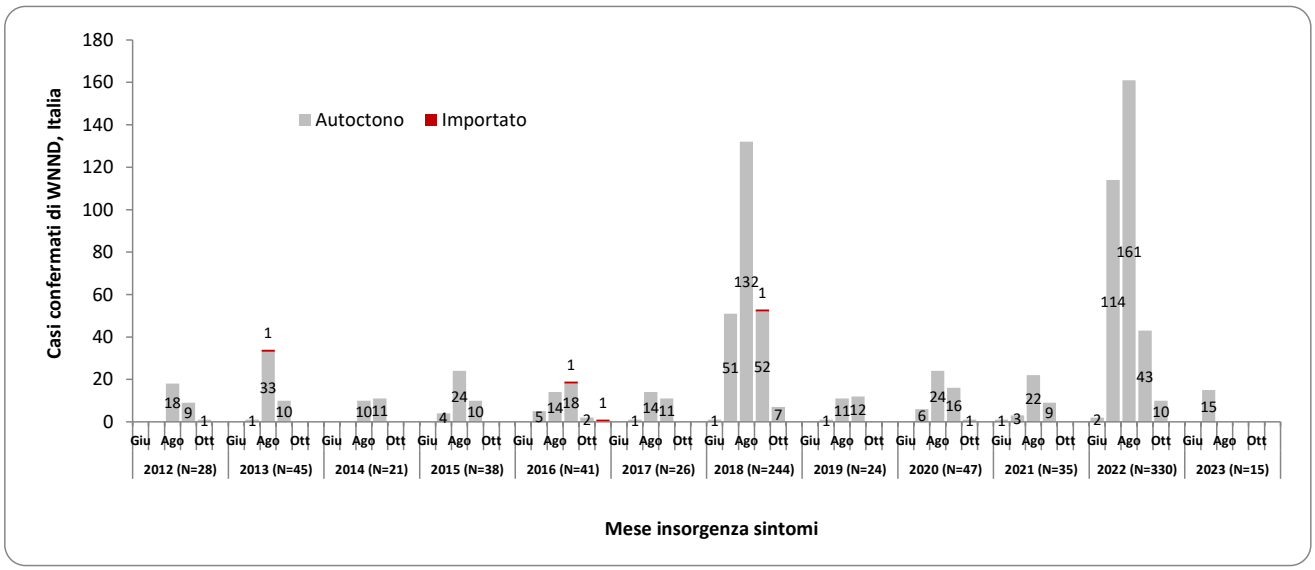



**Figure 1.** Trend of confirmed WNND cases by symptom onset month. Italy: 2012 – 2023.

## 3 Horses

No WND outbreaks have been confirmed in equids.



# 4 Resident birds of target species

CESME confirmed WNV in **22 resident birds** belong to target species from **Lombardia, Sardegna, Piemonte, Emilia Romagna**. The circulating strains belong to Lineage 2.

The target species for the surveillance are :

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

**Figure 1** Geographical distribution West Nile virus detection in birds belong to target species - **2023**

| Region | Provinces | Carrion Crow | Magpie | Jay |
|---|---|---|---|---|
| Lombardia | Varese | 1 | 0 | 0 |
| Emilia Romagna | Parma | 2 | 6 | 0 |
| | Ferrara | 0 | 1 | 0 |
| | Forlì Cesena | 0 | 3 | 0 |
| | Piacenza | 0 | 2 | 0 |
| | Ravenna | 0 | 1 | 0 |
| Sardegna | Sud Sardegna | 3 | 0 | 0 |
| | Oristano | 2 | 0 | 0 |
| Piemonte | Vercelli | 1 | 0 | 0 |
| Total | 22 | | | |

**Table 1** West Nile virus detection in birds belong to target species- **2023**

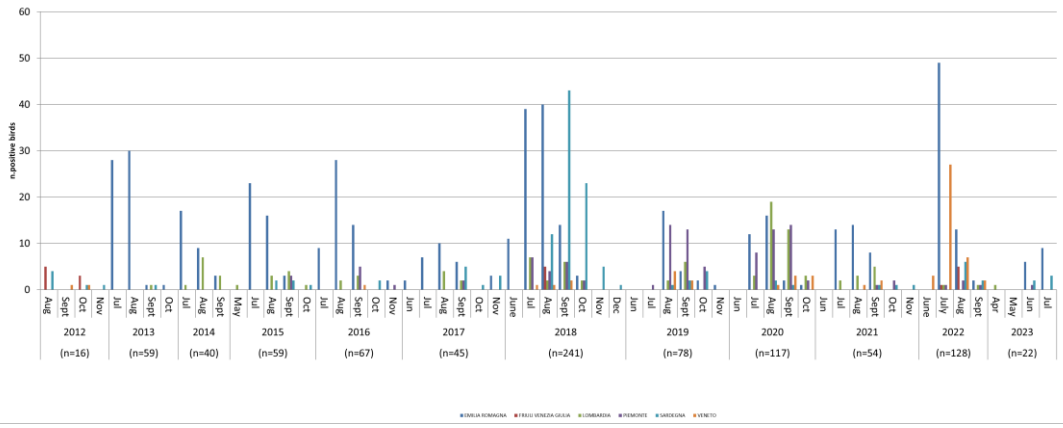



**Figure 2** Spatio–temporal distribution West Nile virus detection in birds belong to target species - **2023**

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# Wild birds

CESME confirmed WNV in **3 wild birds** from **Emilia Romagna, Piemonte and Lombardia** regions. The circulating strains belong **to Lineage 2.**

**Figure 3** Geographical distribution West Nile virus detection in wild birds- **2023**

| Region | Provinces | Species | n.birds+ |
|---|---|---|---|
| Emilia Romagna | Rimini | Blackbird | 1 |
| Lombardia | Mantova | Owl | 1 |
| Piemonte | Asti | Goshawk | 1 |
| Total | | | 3 |

**Table 2** West Nile virus detection in wild birds **2023**

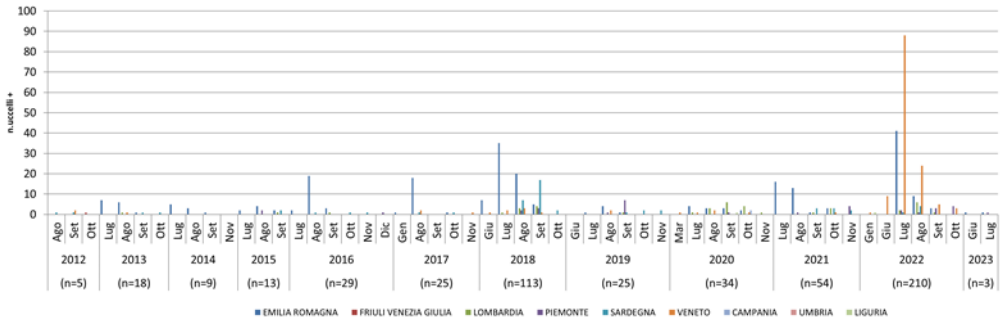


**Figure 4** Spatio–temporal distribution West Nile virus detection in wild birds - **2023**

# 6 Entomological surveillance

WNV genome has been reported in **32 mosquito pool** collected in **Emilia Romagna, Puglia, Lombardia and Sicilia** regions**.** The circulating strains belong to **Lineage 2**. In Sicilia was confirmed **WNV Lineage 1**

**Figure 5** Geographical distribution West Nile virus detection in mosquitoes - **2023**

| Region | Provinces | n.pool |
|---|---|---|
| Sicilia | Catania | 1 |
| Emilia Romagna | Piacenza | 3 |
| | Parma | 2 |
| | Modena | 3 |
| | Ravenna | 1 |
| | Bologna | 5 |
| | Reggio Emilia | 1 |
| | Ferrara | 1 |
| Lombardia | Pavia | 2 |
| | Milano | 1 |
| | Brescia | 1 |
| | Mantova | 2 |
| Piemonte | Torino | 1 |
| | Alessandria | 2 |
| Veneto | Rovigo | 1 |
| | Padova | 3 |
| | Verona | 1 |
| Puglia | BAT | 1 |
| Total | | 32 |

**Table 2** West Nile virus detection in mosquitoes- **2023**

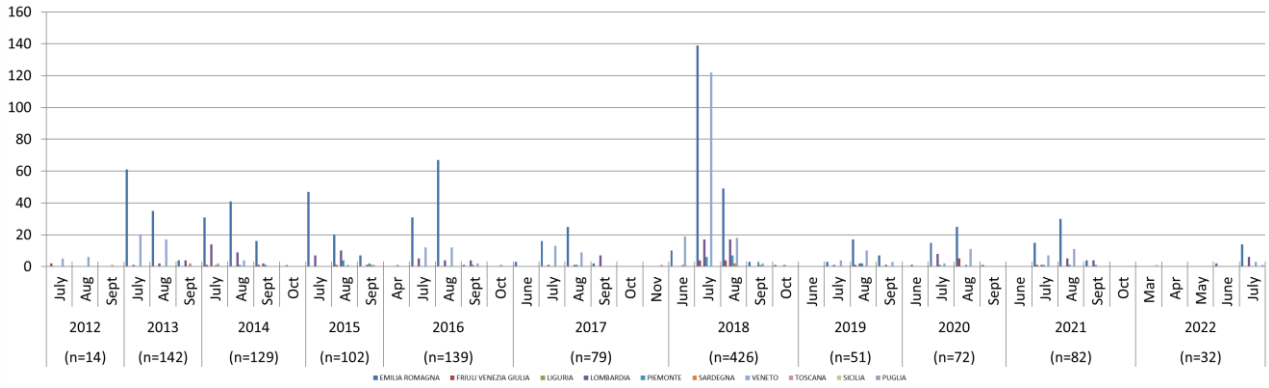


**Figure 6** Spatio–temporal distribution West Nile virus detection in mosquitoes - **2023**

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## Poultry surveillance

- No WND outbreaks have been confirmed in poultry flocks.



# 8 USUTU virus surveillance

Usutu virus was identified in 17 mosquito pools and 6 birds in **Emilia Romagna, Tuscany, Veneto, Lombardy, Marche and Piedmont.**

**Figure 7** Geographical distribution Usutu virus detection in birds and mosquitoes - **2023**

| Region | Province | n.pool+ |
|---|---|---|
| Piemonte | Cuneo | 1 |
| Toscana | Pistoia | 1 |
| Emilia Romagna | Parma | 1 |
| | Forlì Cesena | 2 |
| | Rimini | 1 |
| | Piacenza | 3 |
| | Bologna | 1 |
| Veneto | Padova | 1 |
| | Venezia | 2 |
| | Vicenza | 1 |
| Lombardia | Milano | 1 |
| | Mantova | 1 |
| Marche | Pesaro Urbino | 1 |
| Total | | 17 |

**Table 3** Usutu virus detection in mosquitoes - **2023**

| Region | Province | n.birds+ |
|---|---|---|
| Emilia Romagna | Rimini | 1 |
| | Parma | 1 |
| | Bologna | 2 |
| Veneto | Verona | 1 |
| Toscana | Siena | 1 |
| Total | | 6 |

**Table 4** Usutu virus detection in birds **-2023**

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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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