



Update on the West Nile virus epidemiological situation and surveillance plans for 2024

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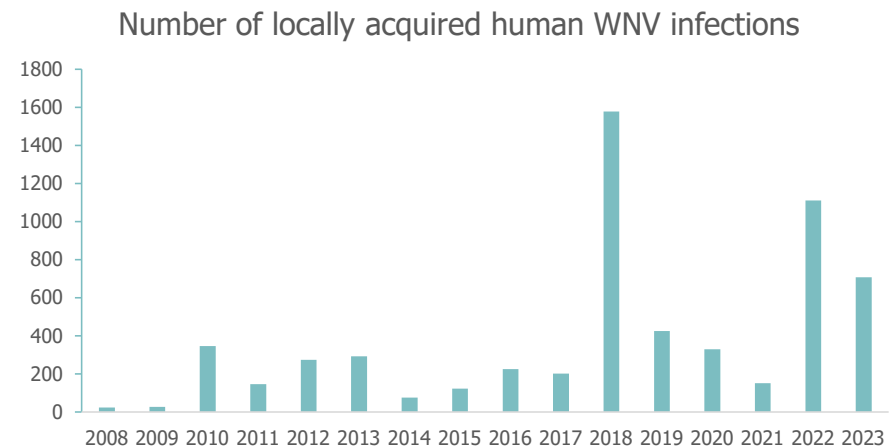
PAFF Committee meeting, Brussels - online, 16 May 2024



West Nile virus infections in humans



- High-impact mosquito-borne disease in humans in the EU/EEA
 - Broad geographic distribution
 - Most cases are locally acquired
 - Severe manifestations, case fatality ~10%
- Apparent changes in the epidemiological trends in the past years
 - The number of reported, locally acquired human WNV infections in the EU/EEA exceeded 700 cases annually in 2022-2023
 - Longer transmission seasons
- The first reported human case in 2024:
 - Seville, Andalusia, Spain
 - Date of (CNS) symptoms onset: 01 March



Enhanced seasonal WNV infection surveillance in humans in the EU/EEA

- Purpose: To inform blood safety authorities about risk areas of locally acquired West Nile virus infection in the EU/EEA and EU-neighbouring countries
- Legal basis:
 - Commission Directive 2004/33/EC of 22 March 2004 implementing Directive 2002/98/EC of the European Parliament and of the Council as regards **certain technical requirements for blood and blood components**
 - Commission Directive 2014/110/EU of 17 December 2014 amending Directive 2004/33/EC as regards **temporary deferral criteria for donors of allogeneic blood donations**

COMMISSION DIRECTIVE 2004/33/EC
of 22 March 2004

implementing Directive 2002/98/EC of the European Parliament and of the Council as regards certain technical requirements for blood and blood components

(Text with EEA relevance)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

(6) It is necessary to determine common definitions of technical terminology in order to ensure the correct application of the Directive.

2.2. Temporary deferral criteria for donors of allogeneic donations

2.2.1. Infections

Directive
Committee

Duration of deferral period

After an infectious illness, prospective donors shall be deferred for at least two weeks following the date of full clinical recovery.

However, the following deferral periods shall apply for the infections listed in the table:

Brucellosis (*)	2 years following the date of full recovery
Osteomyelitis	2 years after confirmed cured
Q fever (*)	2 years following the date of confirmed cured
Syphilis (*)	1 year following the date of confirmed cured
Toxoplasmosis (*)	6 months following the date of clinical recovery
Tuberculosis	2 years following the date of confirmed cured

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West Nile Virus (WNV) (*)

28 days after leaving an area with ongoing transmission to humans

(4) Blood and blood components imported from third countries.

Article 4

COMMISSION DIRECTIVE 2014/110/EU

of 17 December 2014

amending Directive 2004/33/EC as regards temporary deferral criteria for donors of allogeneic blood donations

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2002/98/EC of the European Parliament and of the Council of 27 January 2003 setting standards of quality and safety for the collection, testing, processing, storage and distribution of human blood and blood components and amending Directive 2001/83/EC⁽¹⁾, and in particular point (d) of the second paragraph of Article 29 thereof,

Whereas:

- (1) Point 2.2 of Annex III to Commission Directive 2004/33/EC⁽²⁾ lays down temporary deferral criteria for donors with an infectious illness or donors leaving an area where an infectious illness is present.
- (2) Point 2.2.1 of Annex III to Directive 2004/33/EC establishes a deferral period for prospective donors of 28 days after leaving an area with ongoing transmission of West Nile Virus (WNV) to humans.
- (3) Recent scientific evidence has demonstrated that a temporary deferral of such prospective donors is not required if a Nucleic Acid Test (NAT) was carried out and the test was negative.
- (4) Therefore, the Member States should be given the option to apply such a test, if they want to replace the temporary deferral criteria.
- (5) The measures provided for in this Directive are in accordance with the opinion of the Committee set up by Directive 2002/98/EC.

HAS ADOPTED THIS DIRECTIVE:

Article 1

The deferral criterion for West Nile Virus set out in the table (second column, last row) of point 2.2.1 of Annex III to Directive 2004/33/EC is replaced by the following:

'28 days after leaving a risk area of locally acquired West Nile Virus unless an individual Nucleic Acid Test (NAT) is negative'

Article 2

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 31 December 2015 at the latest. They shall forthwith communicate to the Commission the text of those provisions.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference in the case of their official publication. Member States shall determine how such reference is to be made.

Enhanced seasonal WNV infection surveillance in humans in the EU/EEA



- Surveillance is done by the Member States; data are reported to ECDC through TESSy; case-based data is expected, according to the EU case definition.
- Weekly reporting to ECDC – between the beginning of June and the end of November
- Place of infection (NUTS3 / GAUL 1) and date of infection are particularly important metadata
- ECDC publishes surveillance data
 - On a weekly basis: to provide necessary info for SoHO authorities
 - On a monthly basis: to provide enhanced analysis and assessment

Surveillance of West Nile virus infections: weekly



Weekly data collection on human cases, through TESSy



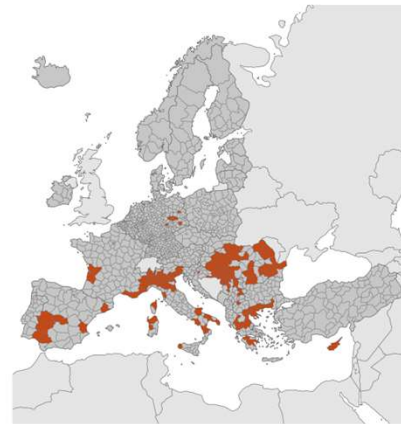
Weekly updates on ECDC website, with a focus on distribution of human cases



Distribution of human West Nile virus infections in WHO's 5 or GMS, 1 regions of the EU/EEA and neighbouring countries during the 2023 season, as of 14 of December 2023.

■ Human infections reported
■ No infections reported
■ Not included

Countries not visible in the main map content
■ Malta ■ Liechtenstein



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Timely inform SoHO authorities for implementation of the temporary deferral for donors of allogenic blood donations / blood testing for WNV

Interactive dashboard

The interactive dashboard is available following the "View in full screen" link further below.

West Nile virus infection

Season 2023



List of new places with human infections for selected week



Distribution of human West Nile virus infections in NUTS 3 or GAUL 1 regions of the EU/EEA and neighbouring countries during 2013–2022, as of 22 of November 2023

- Human infections reported, current season (2023)
 - Human infections reported, 2022
 - Human infections reported, 2013–2021
 - No data reported
 - No infections reported
 - Not included
- Countries not visible in the main map extent
- Malta
 - Liechtenstein

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Disease Prevention and Control

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Clipboard Font Alignment Number

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
139	France	FRI12	Gironde	#####	3	2						2023-W32		
140	France	FRI32	Charente	#####	1		1	1	Yes	Yes	Yes	2023-W33		
141	France	FRI12	Gironde	#####	6	6	1			Yes		2023-W33		
142	France	FRL05	Var	#####	1	1			Yes			2023-W34		
143	France	FRL04	Bouches-c	#####	1							2023-W34		
144	France	FRL03	Alpes-Mai	#####	1	1						2023-W34		
145	France	FRI32	Charente	#####	1	1	1	1				2023-W34		
146	France	FRI12	Gironde	#####	9	5	1					2023-W34		
147	France	FRI12	Gironde	#####	8	6	1					2023-W35		
148	France	FRI32	Charente	#####	1		1	1				2023-W35		
149	France	FRL05	Var	#####	1							2023-W35		
150	France	FRL04	Bouches-c	#####	2	2						2023-W35		
151	France	FRL03	Alpes-Mai	#####	3	3						2023-W35		
152	France	FRL05	Var	#####	1							2023-W36		
153	France	FRL04	Bouches-c	#####	2	2						2023-W36		
154	France	FRL03	Alpes-Mai	#####	3	3						2023-W36		
155	France	FRI12	Gironde	#####	10	6	1					2023-W36		
156	France	FRI32	Charente	#####	1		1	1				2023-W36		
157	France	FRL05	Var	#####	2	1						2023-W37		
158	France	FRL04	Bouches-c	#####	2	2						2023-W37		
159	France	FRL03	Alpes-Mai	#####	3	3						2023-W37		
160	France	FRI32	Charente	#####	2	1	1	1				2023-W37		
161	France	FRI12	Gironde	#####	12	7	1					2023-W37		
162	France	FRI32	Charente	#####	3	2	1	1				2023-W38		
163	France	FRI12	Gironde	#####	16	9	1					2023-W38		
164	France	FRL05	Var	#####	2	1						2023-W38		
165	France	FRL04	Bouches-c	#####	2	2						2023-W38		
166	France	FRL03	Alpes-Mai	#####	3	3						2023-W38		
167	France	FRL04	Bouches-c	#####	2	2						2023-W39		
168	France	FRI12	Gironde	#####	18	11	1					2023-W39		
169	France	FRI31	Charente	#####	2	2			Yes			2023-W39		

Surveillance of West Nile virus infections: monthly

**Weekly data collection
on human cases,
through TESSy**



**Collection of animal
cases (equids and birds),
through ADIS**



Monthly enhanced analysis on ECDC
website

Seasonal distribution

Human WNV infections WNV outbreaks in equids and birds Aggregated comparison

Figure 16. Seasonal distribution of human west nile fever infections during the 2023 west nile fever transmission season and during the last 10 years.

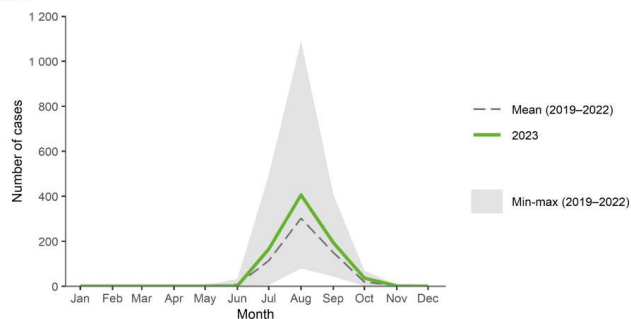


Figure 17. Distribution of human west nile fever infections in NUTS3 or GAUL 1 regions of the EU/EEA and the EU neighbouring countries during the 2023 west nile fever transmission season and during the last 10 years.



**Inform public health and
veterinary authorities and
provide a risk assessment of the
situation**

One Health approach: reporting and co-visualisation of data on WNF outbreaks in equine and avian hosts reported in ADIS



Distribution of animal West Nile virus infections in NUTS 3 or GAUL 1 regions of the EU/EEA and neighbouring countries during the 2023 season, as of 22 of November 2023

- Outbreaks among equids and birds
- Outbreaks among equids
- Outbreaks among birds
- No outbreaks reported
- Not included

Countries not visible in the main map extent

- Malta
- Liechtenstein



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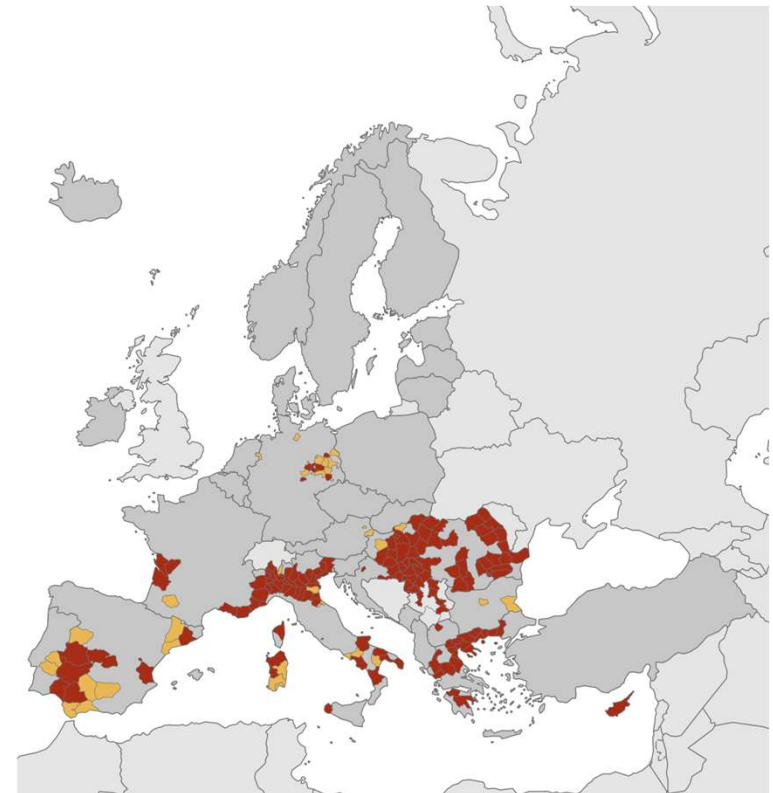


Distribution of human and animal West Nile virus infections in NUTS 3 or GAUL 1 regions of the EU/EEA and neighbouring countries during 2023 season, as of 22 of November 2023

- Human infections, with or without outbreaks among equids and/or birds
- Outbreaks among equids and/or birds
- No infections reported
- Not included

Countries not visible in the main map extent

- Malta
- Liechtenstein



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WNV – surveillance in animals



- ❑ **WNV surveillance in animals** involves **mostly passive surveillance**, including surveillance based on the diagnosis of neuro-invasive cases in equids, but some countries implement **active surveillance** of equids and/or captive birds and/or wild birds
- ❑ WNV data from annual surveillance and monitoring activities (number of tested and positive animals based on registered methods) reported to EFSA by EU MSs and non-MSs in accordance with **Directive 2003/99/EC (Annex I, part B)**
- ❑ **Number of outbreaks of equine and avian WNV** reported to **ADIS** according with **CIR (EU) 2020/2002**
 - Primary outbreaks to be notified to Commission and the other MSs within 24 hours
 - Secondary outbreaks to be notified to Commission on the first working day of each week covering the previous week



WNV - joint EFSA-ECDC EU One Health Zoonoses Report

WNV surveillance findings in humans and animals (birds and equids) in EU are summarized in a dedicated chapter of the **joint EFSA-ECDC One Health Zoonoses (EUOHZ) Report**

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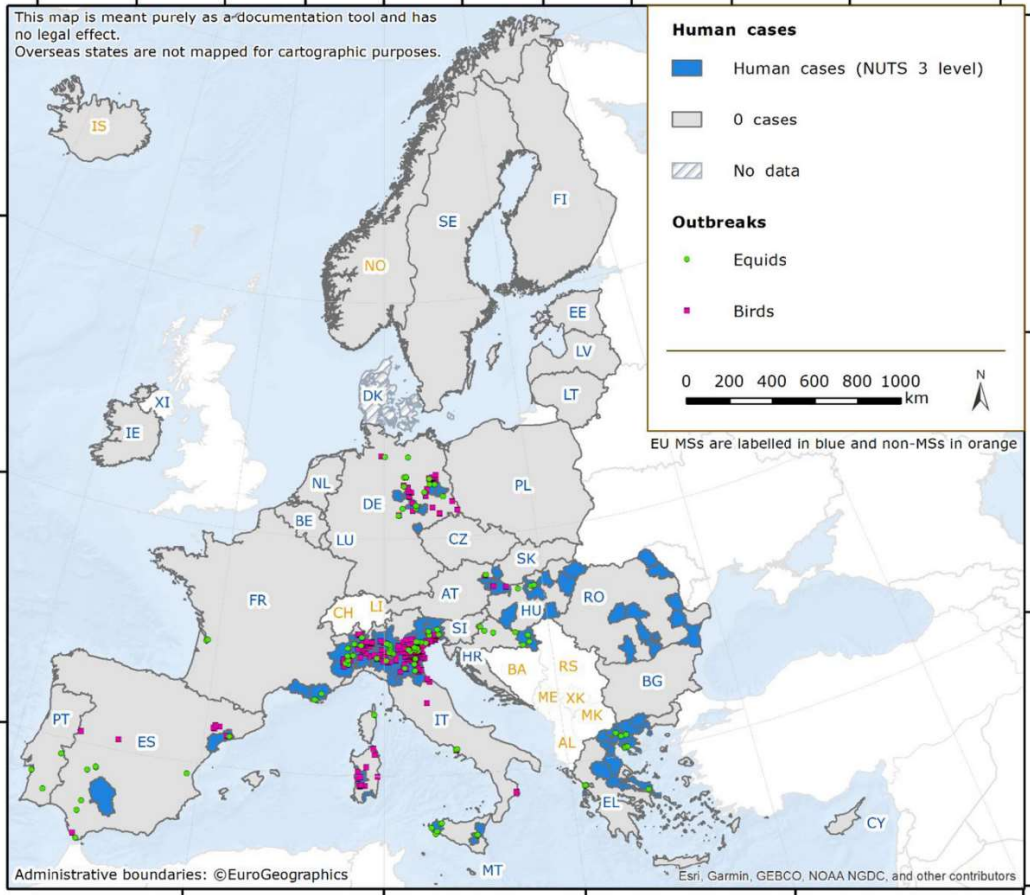
SCIENTIFIC REPORT

 JOURNAL

The European Union One Health 2022 Zoonoses Report

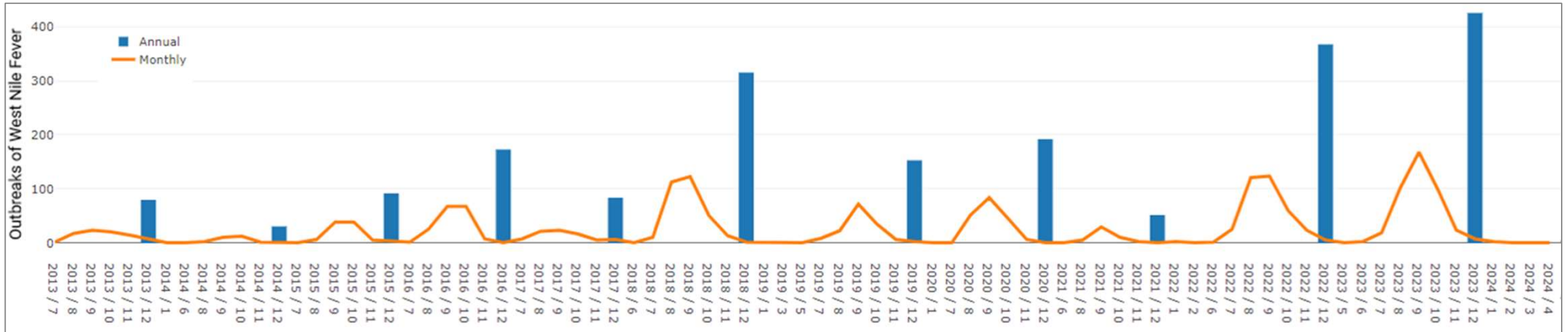
European Food Safety Authority (EFSA) | European Centre for Disease Prevention and Control (ECDC)

Geographical distribution of locally acquired West Nile virus infections among humans (NUTS 3 level) and outbreaks notified to ADIS among equids and birds (X,Y coordinates) across the EU, 2022 transmission season.

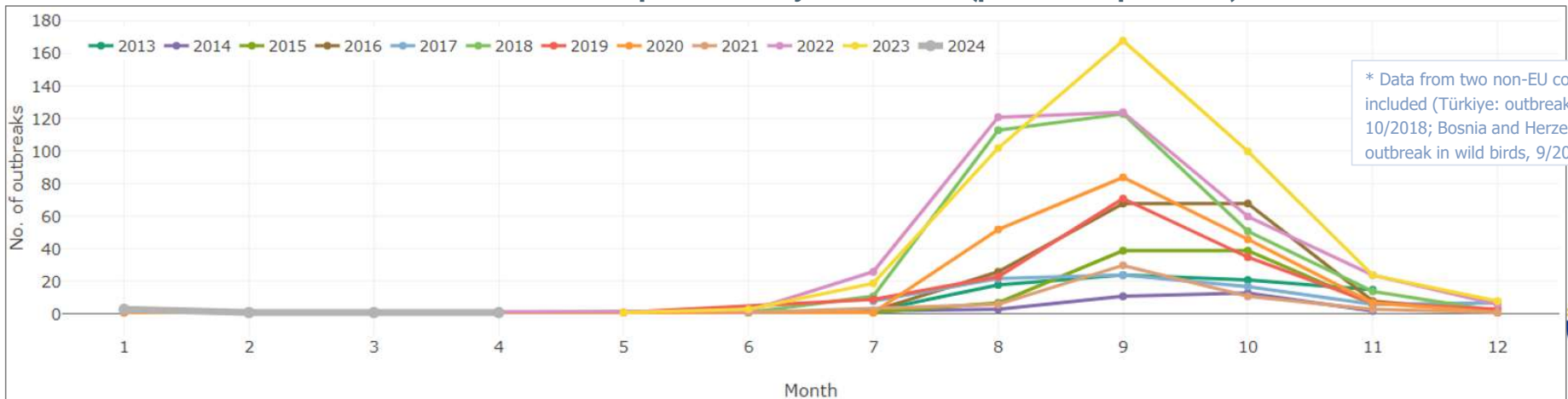


WNV - Outbreaks in birds and equidae 2013-2024 (source: ADIS)

Data reported by EU-MSs *



Observed seasonal pattern: July-November (peak in September)



* Data from two non-EU countries also included (Türkiye: outbreak in equines, 10/2018; Bosnia and Herzegovina: outbreak in wild birds, 9/2013)



WNV – surveillance in animals 2013-2024



EQUIDAE

Year	Months (only shown when data reported)											Grand Total
	January	March	April	May	June	July	August	September	October	November	December	
2013						2	18	23	21	15		79
2014	1				1		3	11	13	2		31
2015						1	7	39	39	6		92
2016						2	26	68	68	8	1	173
2017						8	22	24	17	6	7	84
2018					1	11	109	109	48	12	2	292
2019	2	1		1		7	10	37	31	7	3	99
2020	1					1	52	84	44	7	1	190
2021					1		6	22	11	3	1	44
2022	1					6	27	38	19	7	3	101
2023						1	20	72	50	13	3	159
2024	1		1									2
Grand Total	6	1	1	1	3	39	300	527	361	86	21	1346

BIRDS

Year	Months (only shown when data reported)											Grand Total
	January	February	March	May	June	July	August	September	October	November	December	
2013								1				1
2018							4	14	4	2		24
2019						2	13	35	4			54
2020									2			2
2021								8				8
2022	2	1			2	20	94	86	41	17	3	266
2023				1	3	18	82	96	50	11	5	266
2024	2	1	1									4
Grand Total	4	2	1	1	5	40	193	240	101	30	8	625

IT-WNF-2024-00001

- 12/01/2024 Confirmation
- Calabria
- Ag c-ELISA +, ELISA + horse
- No suspicion, clinical signs
- Vaccinated*

FR-WNF-2024-00001

- 11/04/2024 Confirmation
- Charente-Maritime
- ELISA IgM*+ horse
- No suspicion, healthy animal* (ADIS: clinical signs)

*info provided by IT-IZS and FR-ANSES

ES-WNF-2024-00001

- 23/01/2024 Confirmation
- Castilla y León
- Real-time PCR+ sparrow hawk
- No suspicion, no clinical signs

DE-WNF-2024-00001

- 23/01/2024 Confirmation
- Brandenburg
- Test not available Accipitridae
- No suspicion, no clinical signs

IT-WNF-2024-00002

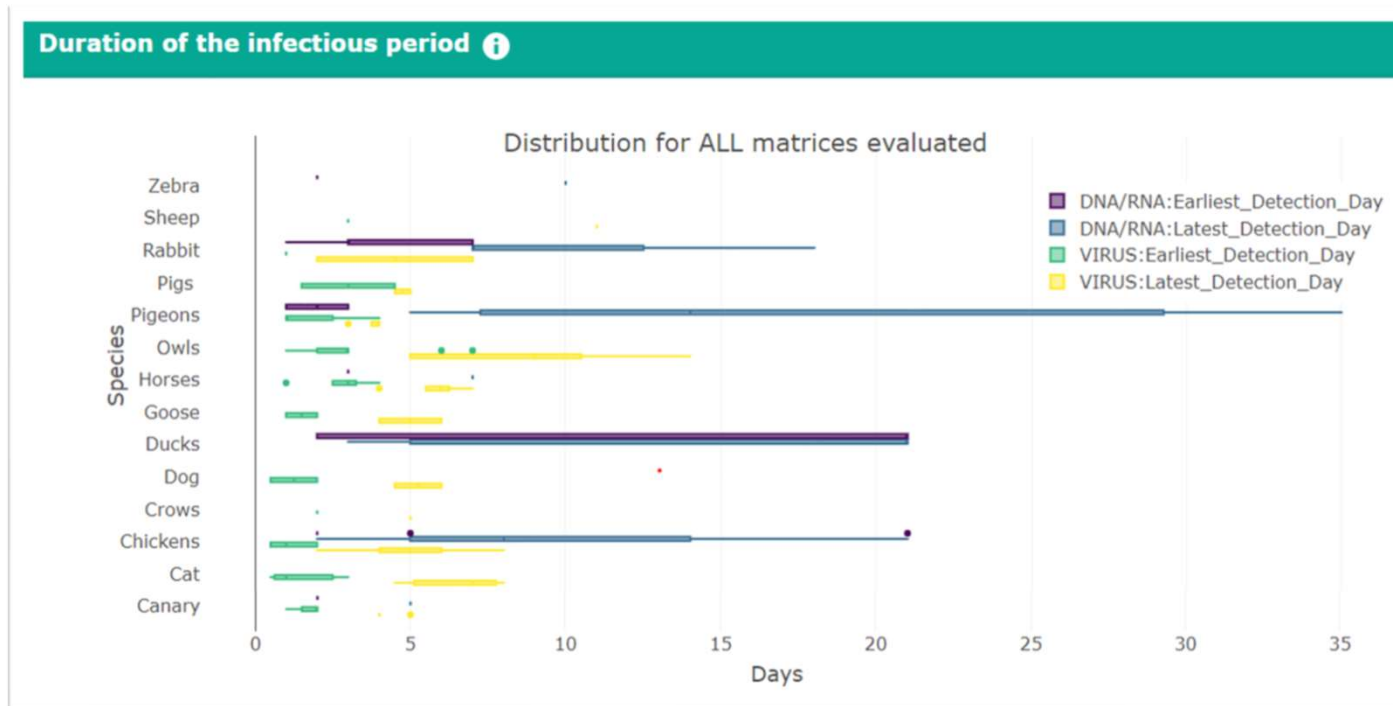
- 09/02/2024 Confirmation
- Calabria
- Real-time PCR+ Common magpie
- No suspicion, clinical signs

IT-WNF-2024-00003

- 28/03/2024 Confirmation
- Piemonte
- Real-time PCR+ Passer domesticus
- No suspicion, clinical signs



WNV – duration of the infection period



EFSA-Disease Profile West Nile fever

Living systematic literature review of **experimental WNV infections** in different animal species demonstrated **genome** detection for at least **7 weeks** in some bird species



Challenges of the WNV seasonal surveillance



The identification of the “risk area of locally acquired West Nile virus”

- The start of the transmission season is influenced by the
 - activity of *Culex pipiens s.l.*,
 - transmission cycle in the natural avian hosts,
 - WNV extrinsic period in the vectors.

→ Influenced by the weather – different in every year
- Early, sporadic cases
 - Laboratory diagnostic tests might not differentiate from an infection in the end of the previous season.
 - Possible off-season WNV-infected mosquito bites (e.g., by overwintering *Cx. pipiens molestus* or hybrids).

→ Timely, detailed information is necessary for the assessment whether an “early” case is a signal for the early start of the season.

→ “Early” cases necessitate increased diagnostic awareness.



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