



WEST NILE VIRUS IN EUROPE

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French TBA, Veterinary advisor

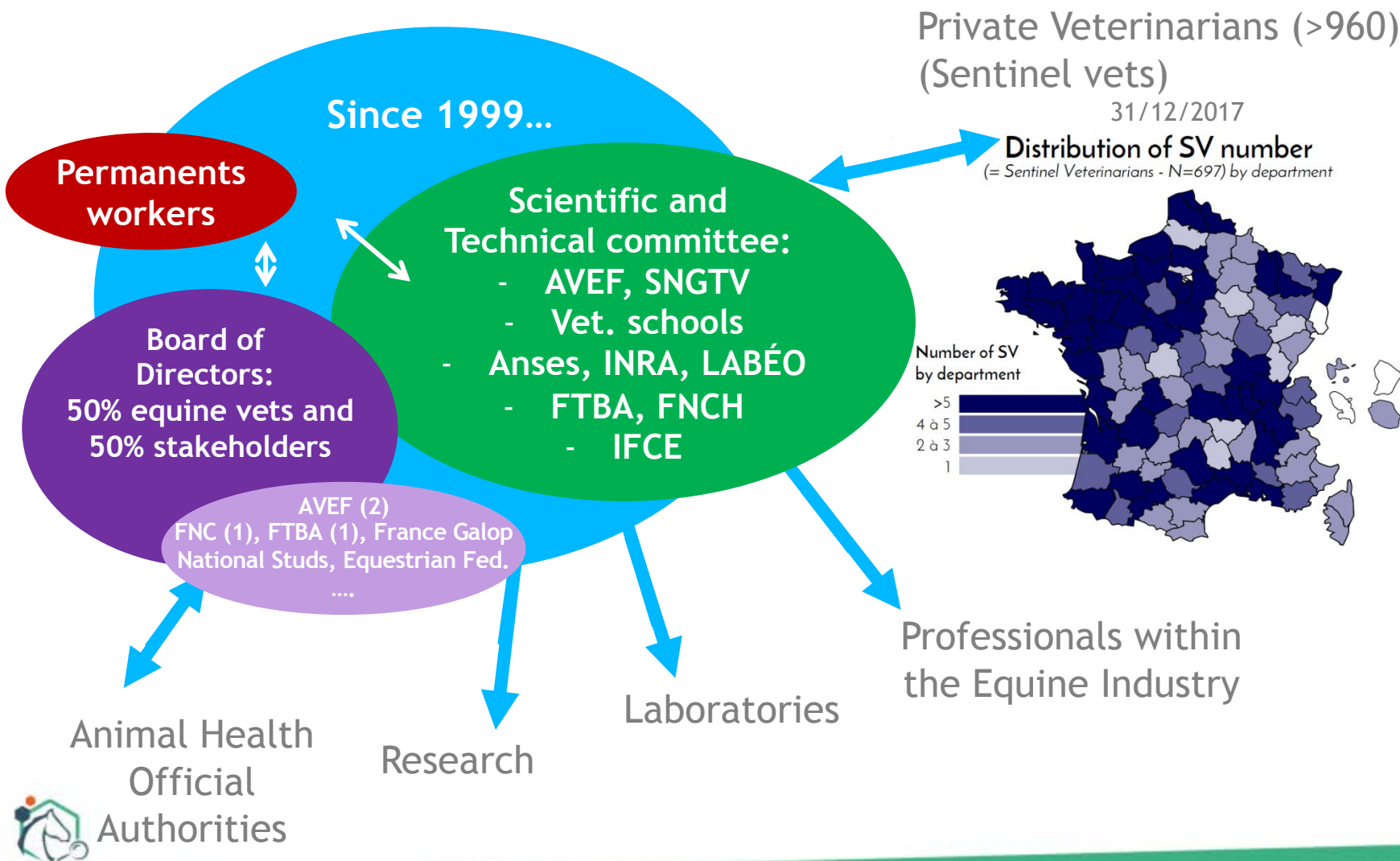
DVM, Dip.Pasteur Inst., PhD, HDR Normandy Univ.

anses
alimentation, environnement, travail



ORGANIZATION

RESPE = Network for Epidemio-Surveillance of Equine Diseases,
Created in 1999 in response to a need for more information on equine diseases





Acute Respiratory Syndromes



EI
EHV 1-4
Rhinovirus A-B
Adenovirus 1
Strangles



Neurological Syndrome

EHV1
West Nile



Piro-Like Syndrome



EIA
West Nile
Babesia caballi
Theileria equi
Anaplasma



Abortions

EHV1
EAV
Leptospirosis



Foal illnesses

Rotavirus
Coronavirus
Salmonella
Escherichia coli



« Paturage » diseases

Atypical Myopathy
Equine Grass
Sickness



Genetic Disorders



Reproduction



EHV-3
IEA
CEM
EVA



Sanitary prevention

Other diseases
Crisis Unit



West Nile Virus

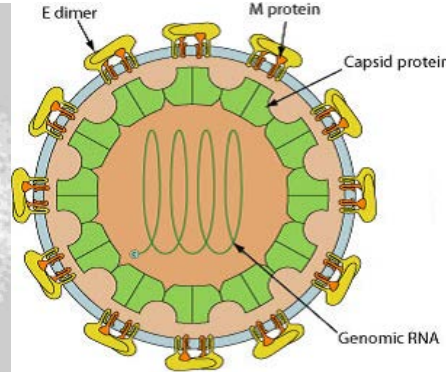
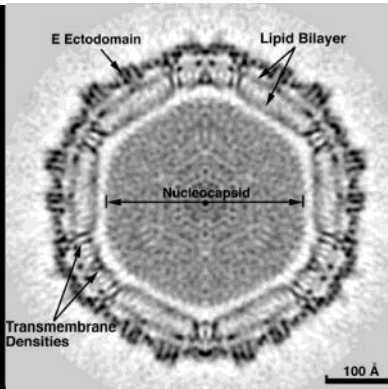
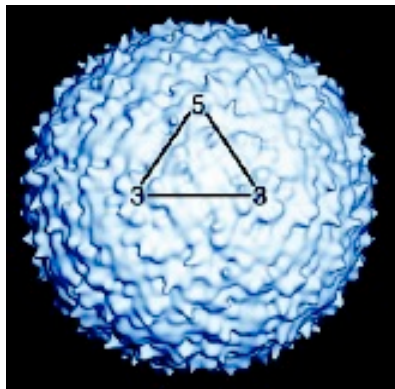
Family : *Flaviviridae*

Genus : flavivirus >70 virus

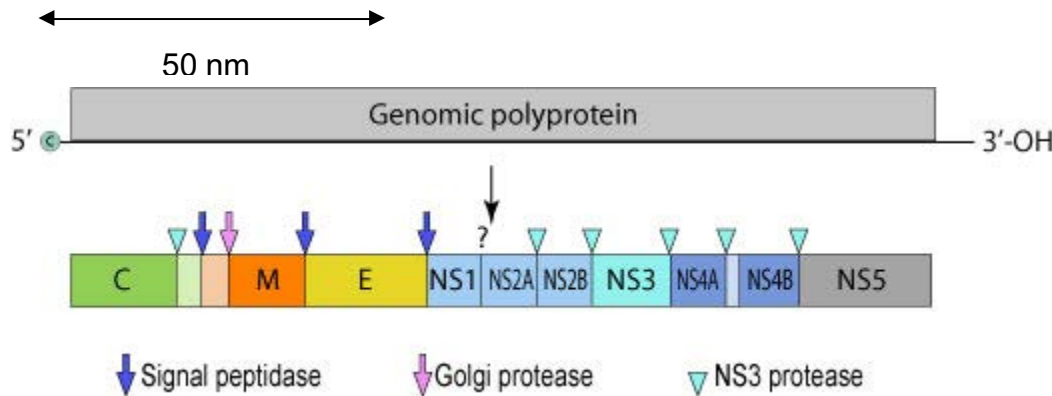
Structure



Yellow fever
Japanese encephalitis



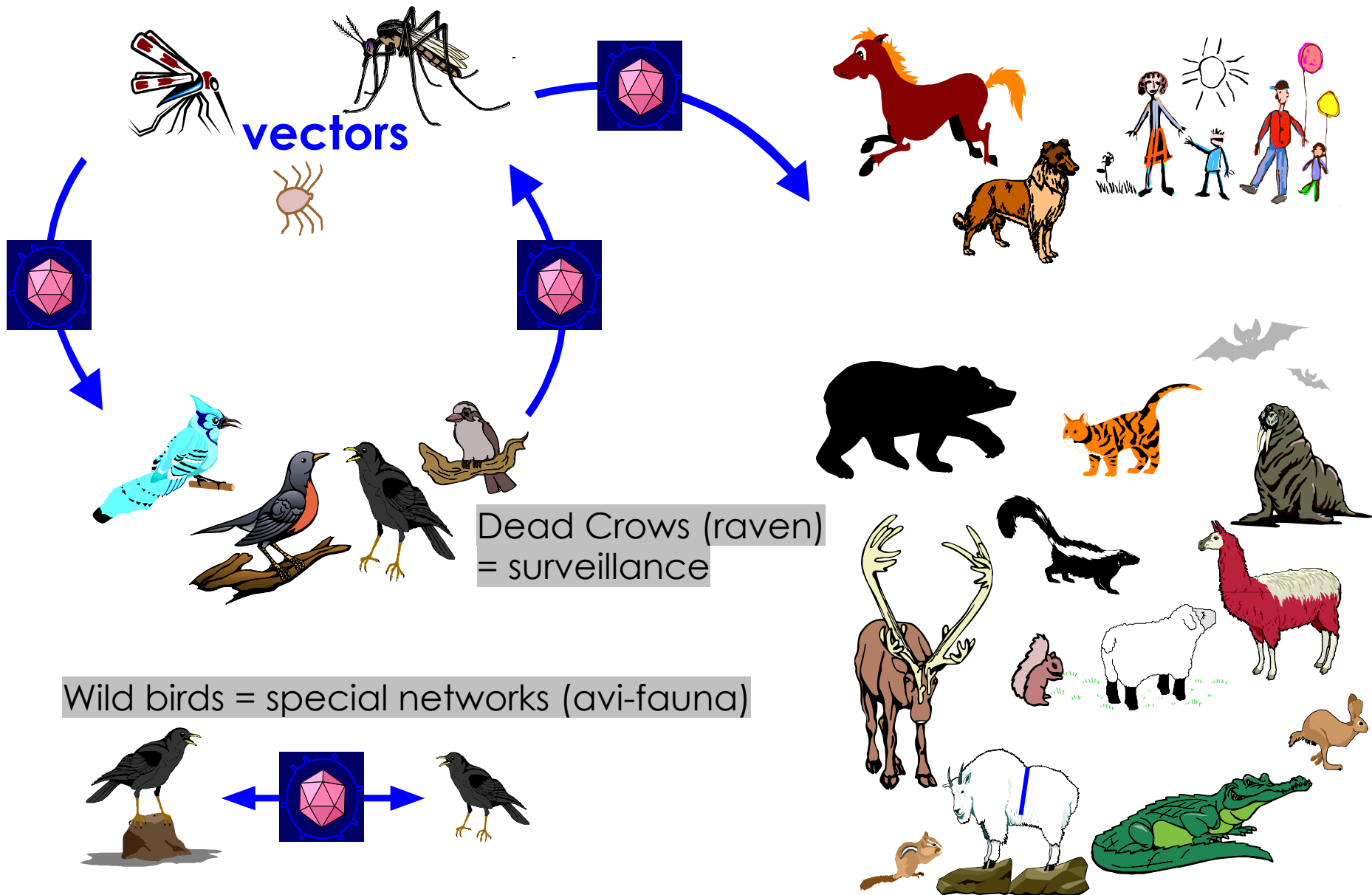
Structural protein : « E »
Highly immunogenic

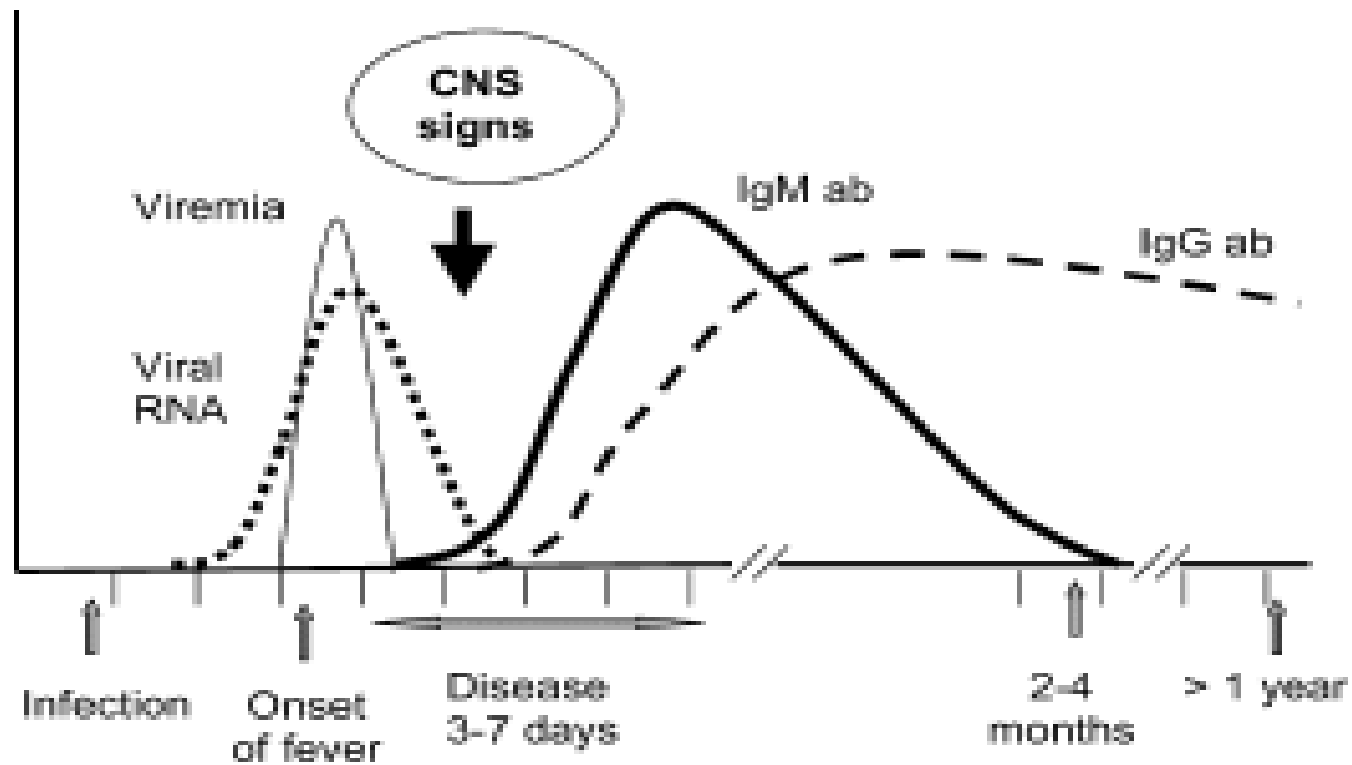


ssRNA+ 11kb

Kramer et al., 2007; <http://viralzone.expasy.org>

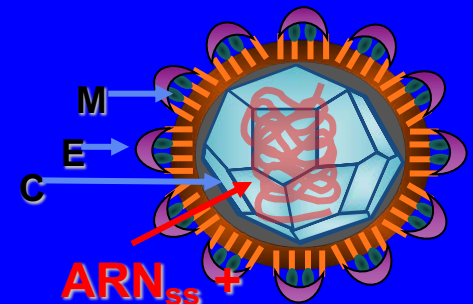
Transmission cycle





❑ **Serology** : Gold Standard - ELISA (IgM, IgG)

❑ **Virology** : Real Time PCR



Vaccines available in France for horses

zoetis

 **Boehringer
Ingelheim**

EQUIP WNV

Proteq WN ND





Dr. Christel MARCILLAUD-PITEL
Mr. Pierre-Thomas BELVER

2 ways of reporting for sentinel vets



Neurological Syndrome

EHV1
West Nile



Piro-Like Syndrome

EIA
West Nile
Babesia caballi
Theileria equi
Anaplasma



Since 2018

WN disease is under surveillance with a grade 4 (on 5) in France (level 5 is reserved for sanitary crisis situation; i.e EHV1 neurologic outbreak en 2018)

High Vigilance through the Neurological Sub-network of the RESPE

Hard Commitment of practitioners (sentinel vets)

Help of state institution (Ministry of Agriculture) and Anses Agency (European reference laboratory for equine diseases)

Total number of reports, all syndromes, in 2020: 875

Total number of Neurological reports: 67 (7.6%)

Total number of Pirolike syndrome [isolated fever] reports – 338 (38,6%)

i.E ; Acute respiratory syndrome sub Network – 195 (22,3 %)

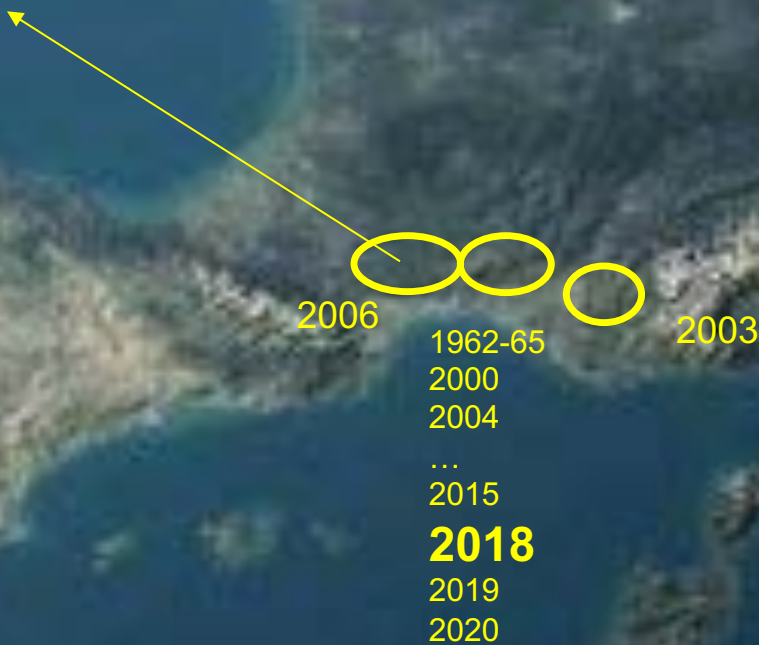
West Nile in France

Rhône river delta

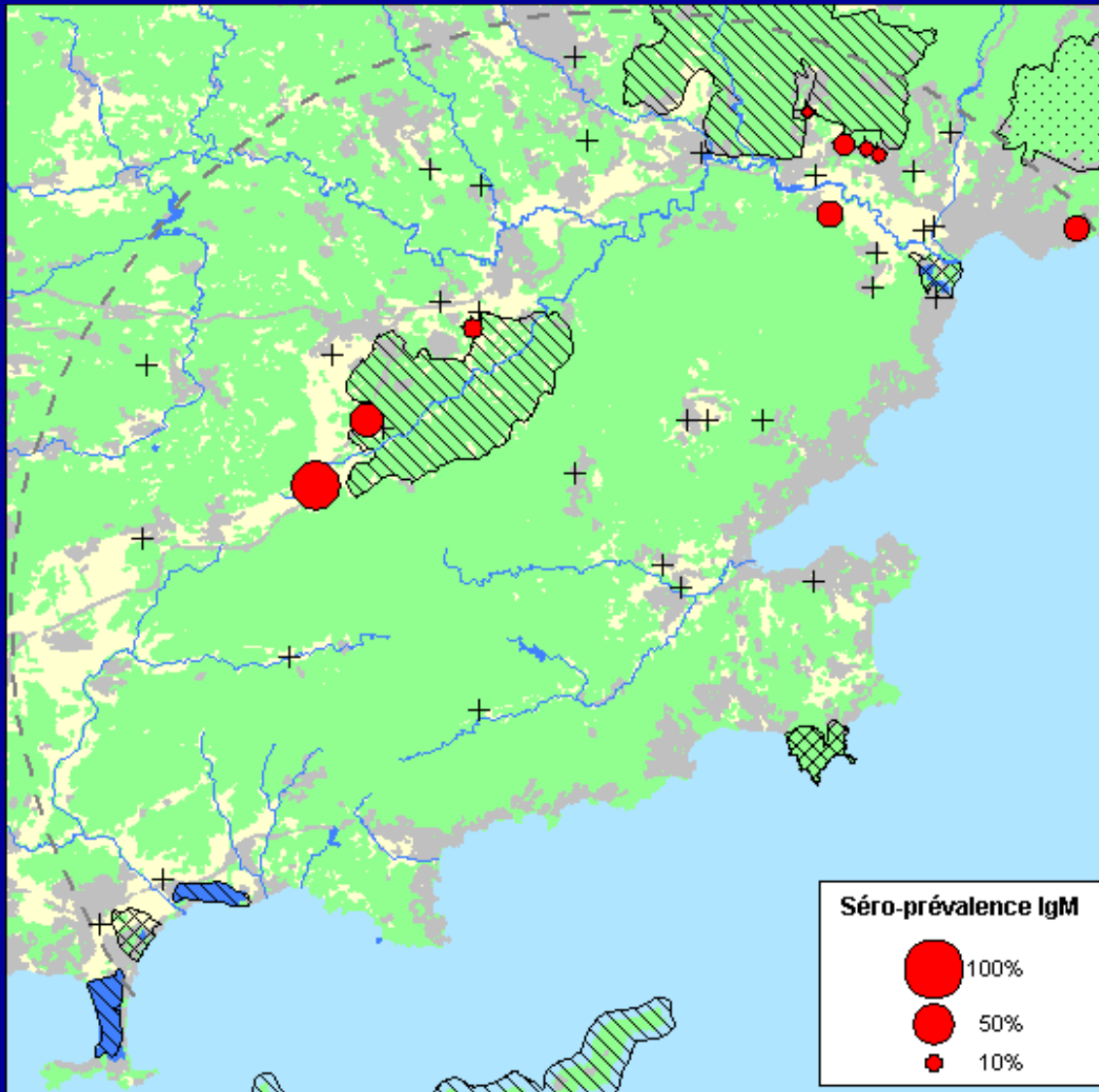
Common biotope of mosquitos, wild birds,
horses

Huge « marshes » areas

« historical areas » for WND cases in France

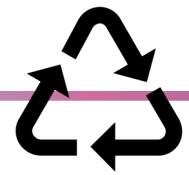


WN in France in 2003: Localisation vs seroprevalence IgM



● Dry Zones +++

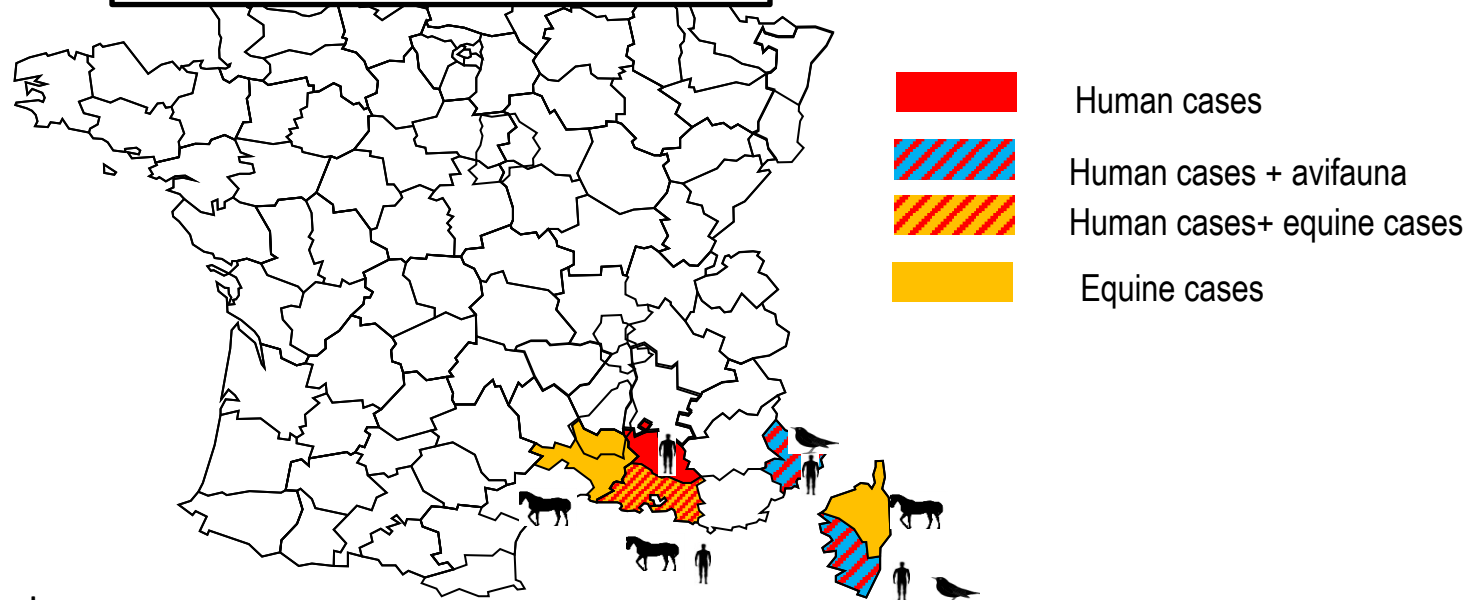
● Wet Zones 



WN Human cases in France in 2018

Bilan au 28/11/2018)

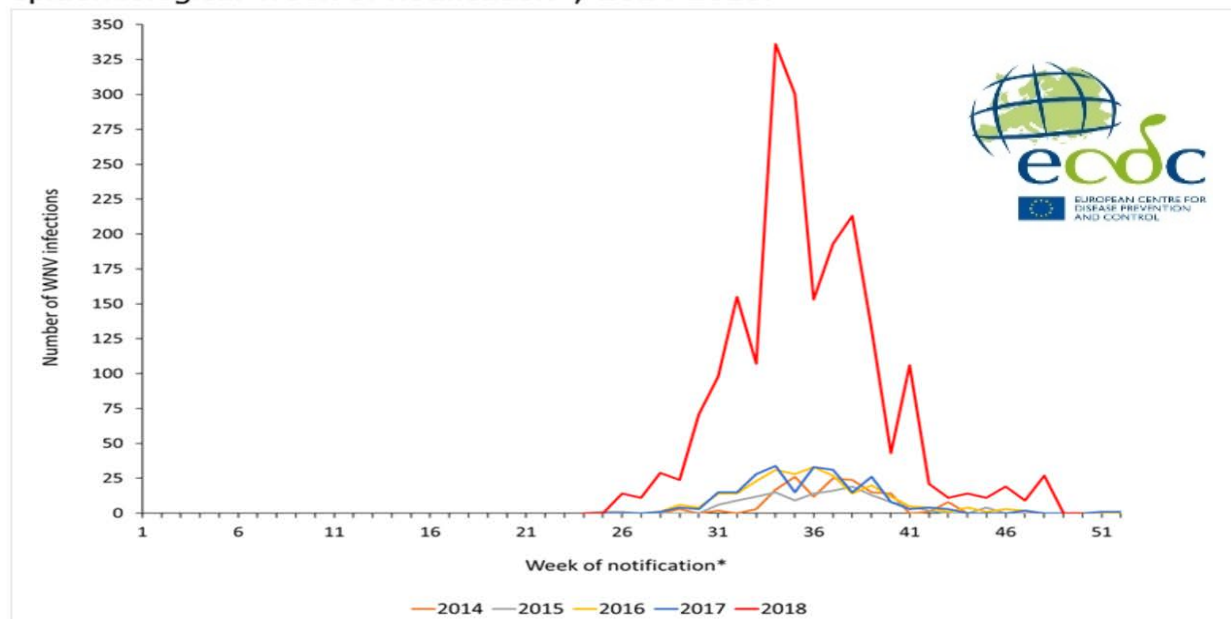
- ✓ 5 départements (07/07-12/11)
- ✓ 27 **autochthonous human cases** (24 cases in region PACA with 21 cases in Alpes-Maritimes) ; 7 **neuroinvasive forms**



Cécile Beck

Increase of WNV circulation in Europe : **human cases**

Number of WNV infections in EU/EEA and EU enlargement countries by epidemiological week of notification*, 2014-2018.



* Week of notification to national authorities or if missing, week of notification to ECDC.

In 2018 :

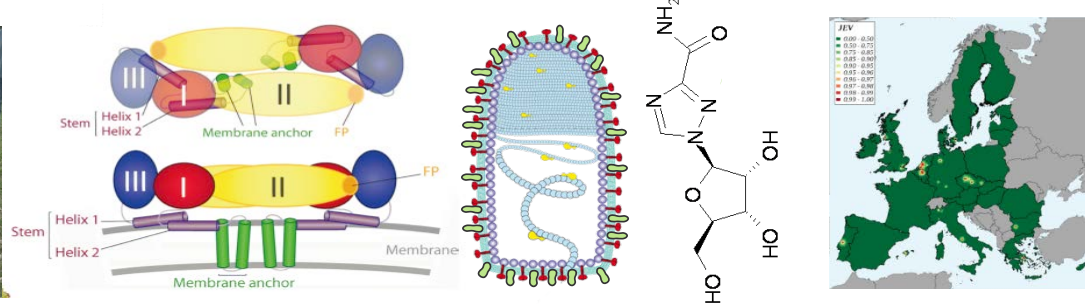
2,083 human cases

- 1 503 cases in EU: Italy (576), Grèce (311), Romania (277), Hungary (215)...
- 580 human cases in border countries →
- 7,8 times more cases in 2018 compared to 2017

181 deaths

285 equine cases

In EU, more cases in 2018 than in the 7 years before



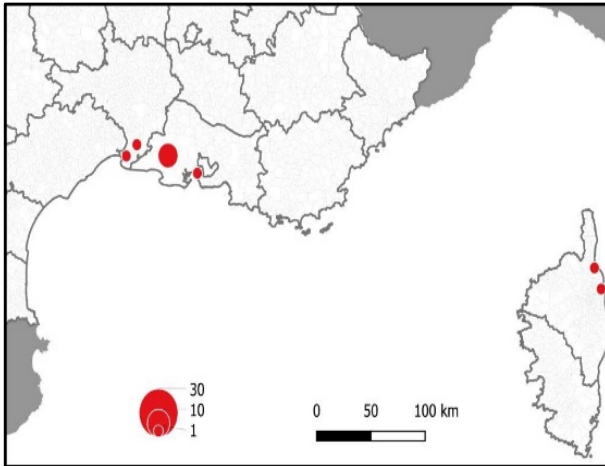
Assessment of equine, avian and human case reports for West Nile Disease in France for 2019-2020

LNR/LR-UE West Nile et encéphalites équine exotiques

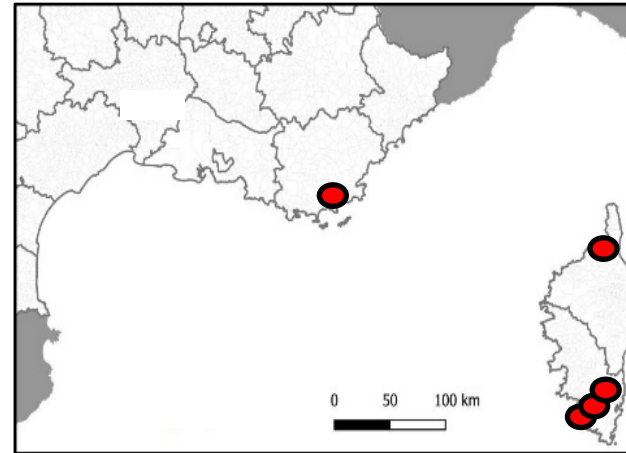
cecile.beck@anses.fr

WNV IN FRANCE EN 2019- 2020

2019



2020



Equine cases

Human cases

- 13 (11 en Camargue region and 2 in Haute-Corse)
- 2 human cases in Var region

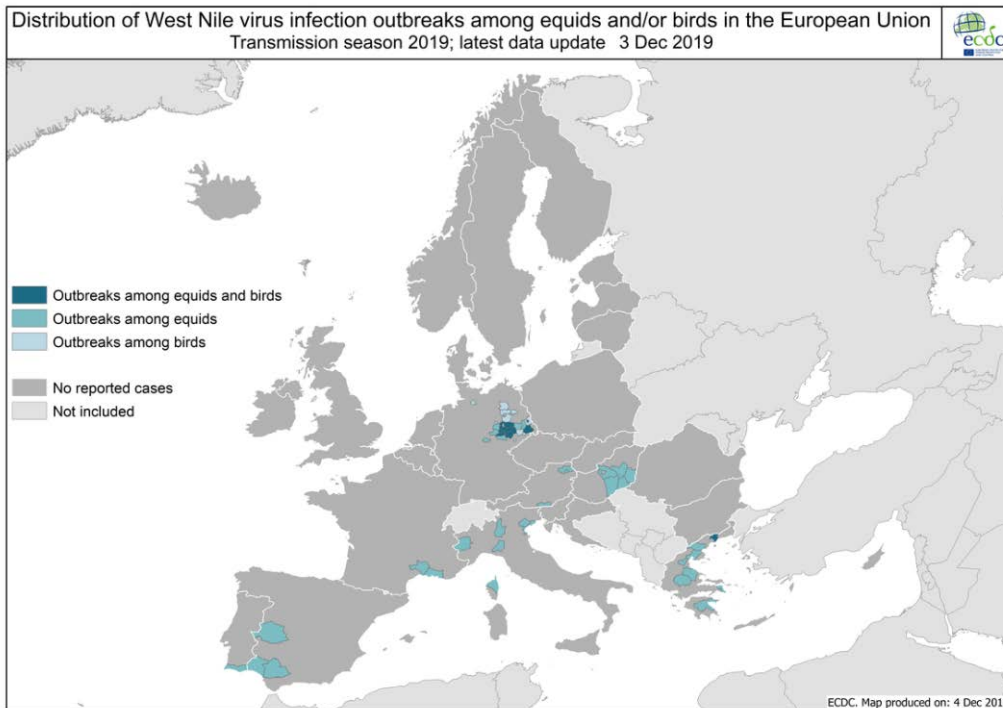
- 5 equine cases : 3 in South Corse region (august to october), 1 in North Corse (september), 1 in Var region (september)

- First detection of equine WNV première fois in Corse in 2018 and once again in 2019-2020
- New detection of WNV in Var in 2019 and 2020 (last cases in year 2003)

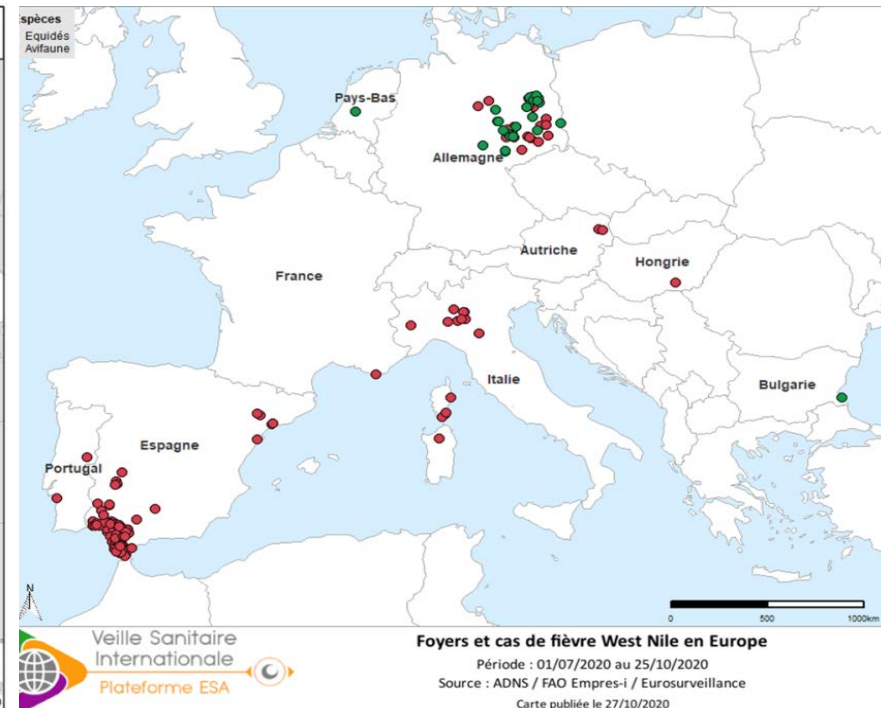


AVIAN AND EQUINE CASES DISTRIBUTION OF WNV IN EUROPE [2019-2020]

2019

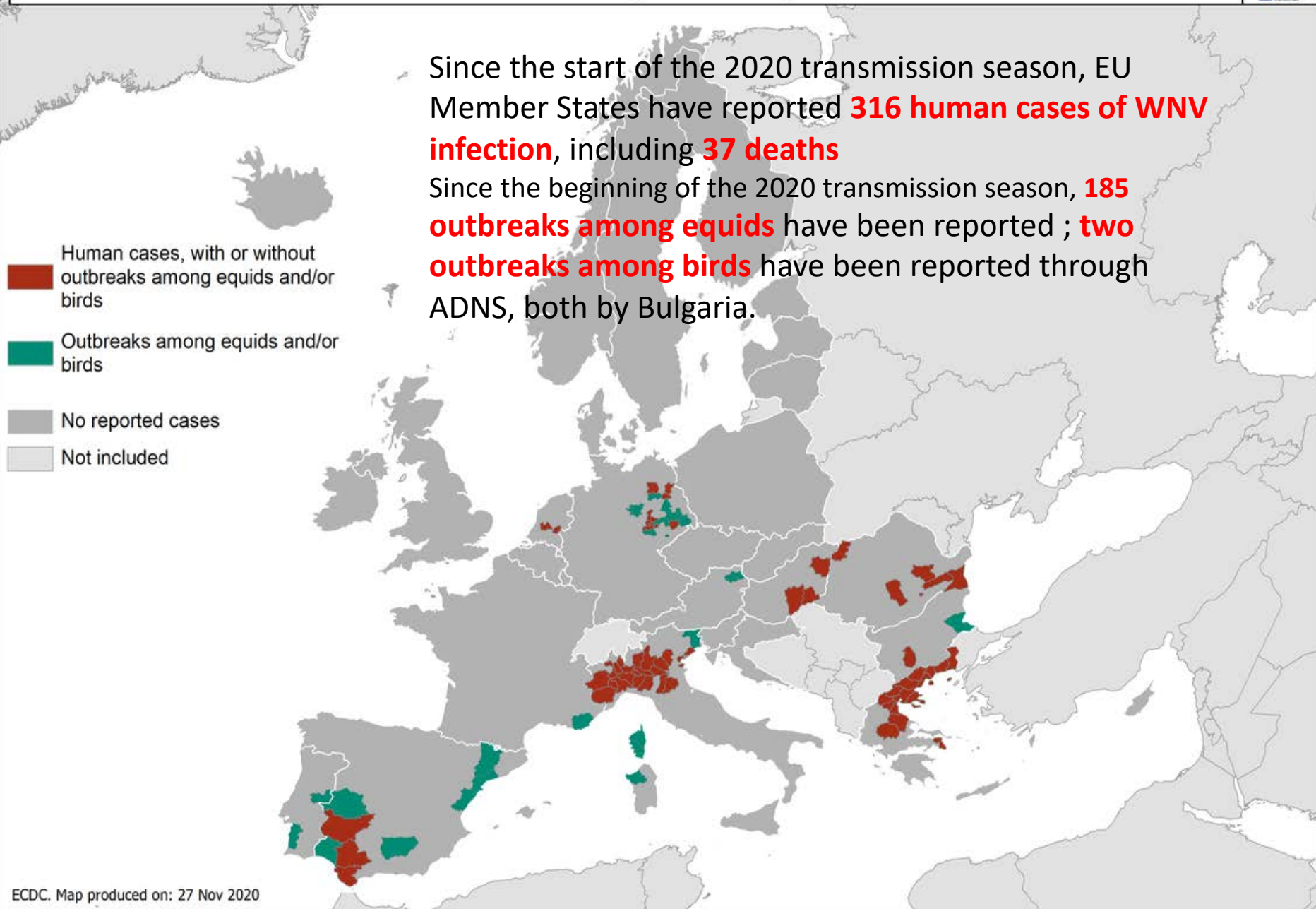


2020



- **93** outbreaks or cases including 31 equine cases **in Germany**
- 10 European countries have already declared human cases of FWN (**463**) : Greece (223), Romania (66), Italy (53), Hungary (16), Cyprus (16), Bulgaria (4), Austria (4), **Germany (4)**, France (2) et Slovaquia (1)

- Between July and October (2020), **218** outbreaks or cases including **183** equine ones mostly in **Spain**
- **1st case in the avifauna in the Netherlands associated to human cases**
- November 2020, height european countries have declared human cases of WND (**315**) : Greece (143), **Spain (77)**, Italy (66), Germany (13), Romania (6) **the Netherlands (6)**, Hungary (3) et Bulgaria (1)





Loïc MALIVET – Chairman

Antonia DEVIN – Head of the Sanitary Commission



Dr. Stéphan ZIENTARA

Dr. Cécile BECK

Anses

European reference laboratory
for Equine diseases (LRUE)

