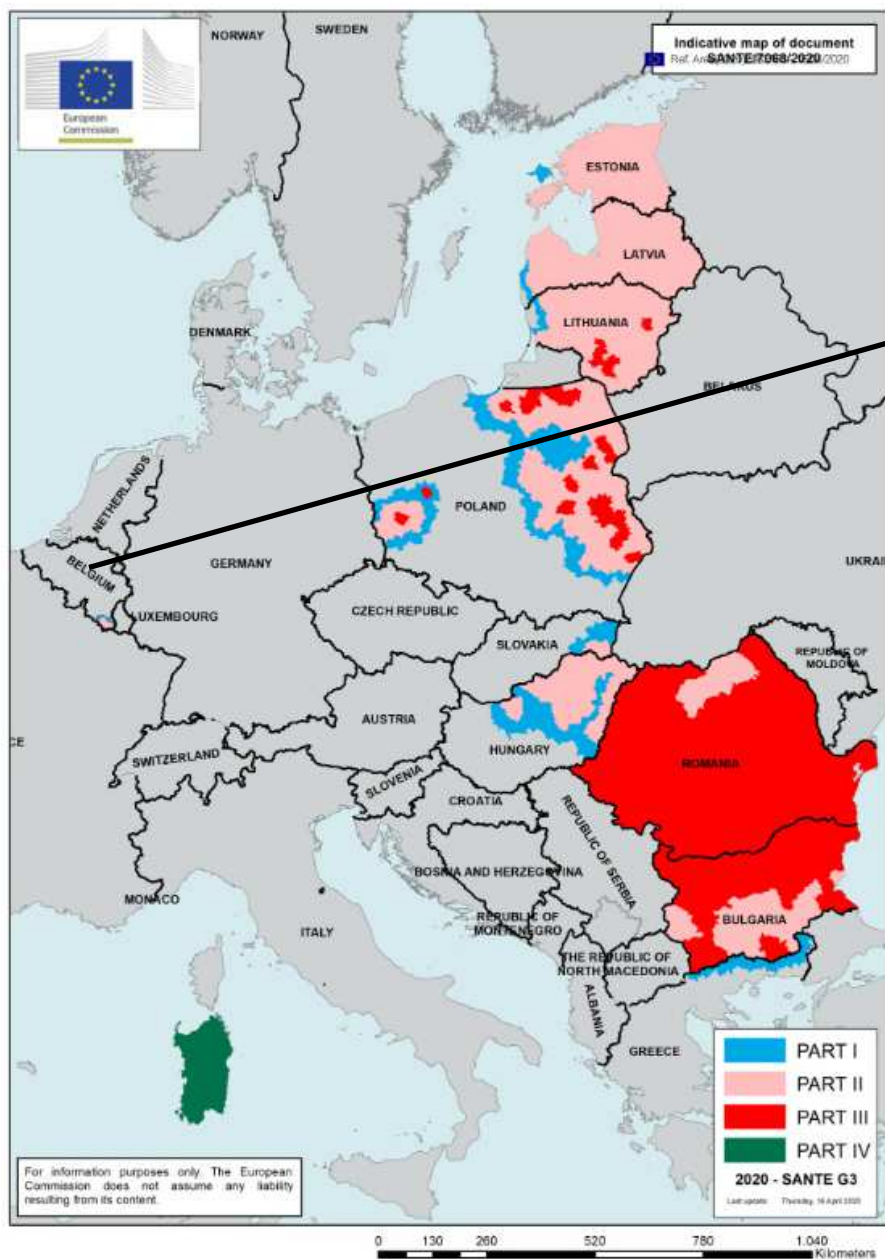


Belgian experience in containing ASF outbreaks in wild boar

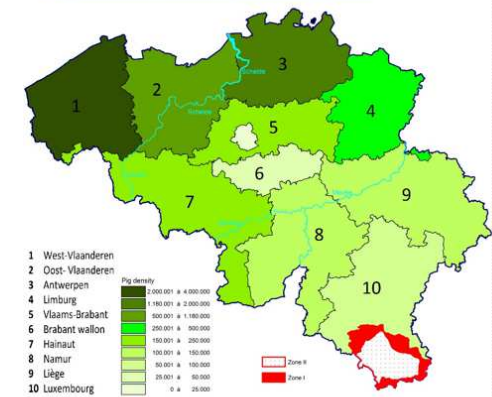
A. Linden, member of the belgian ASF strategic board

GF TADs - Virtual Meeting of the Standing Group of Experts
on African Swine Fever for Asia - 21 April 2020

Pr. A. Linden, Wildlife Diseases Unit, a.linden@uliege.be
Dpt of infectious and parasitic Diseases
Faculty of veterinary Medicine
University of Liege, Belgium



Pigs density throughout Belgium



Federal Agency for the Safety of the Food Chain .be

BELGIUM (data FASFC)


- 7200 pig farms
- 6,2 millions of pigs
- 11 millions of pigs slaughtered each year

ASF Outbreak in WB - Sept 2018

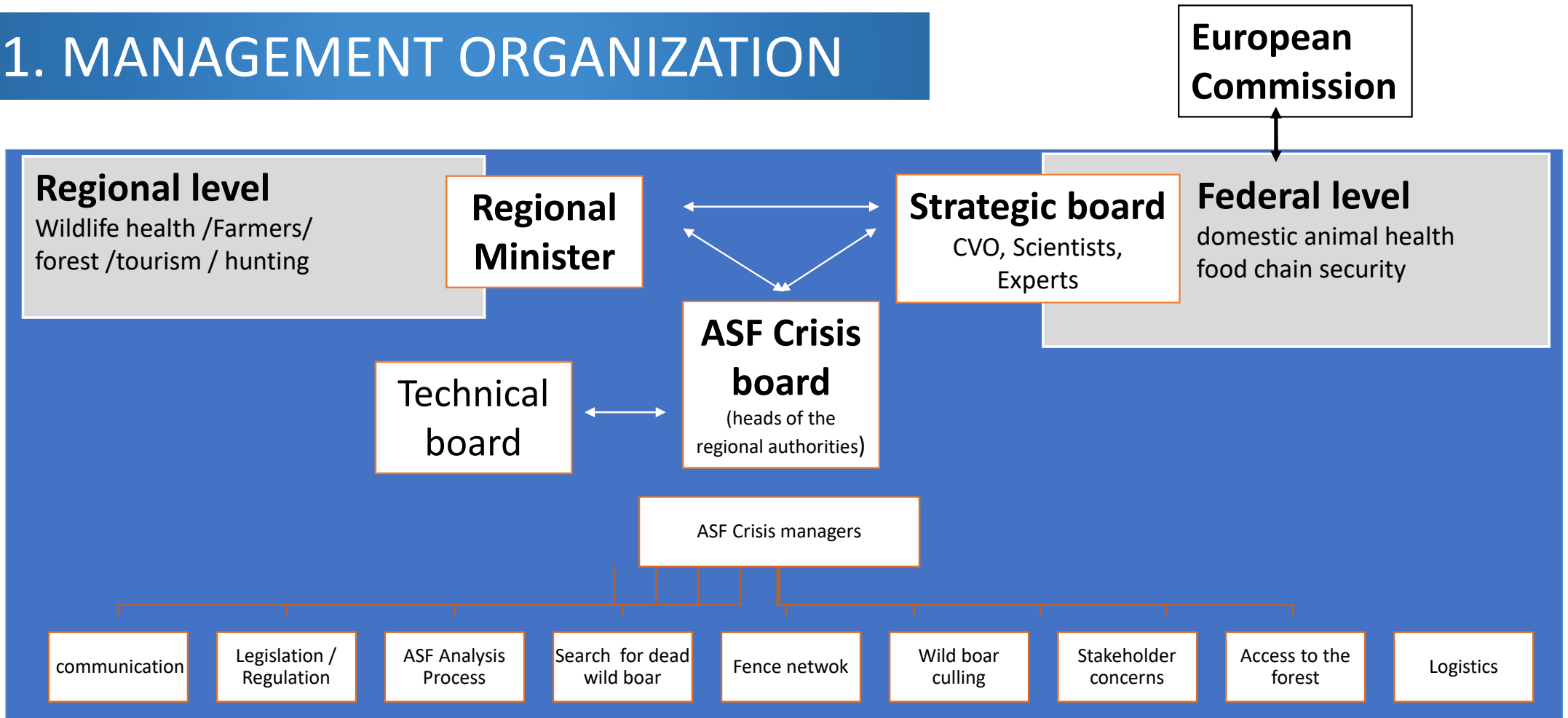


Ref Lab : 13/09/2018
2 ASF confirmed cases in WB
Prov. Lux - Belgium
south-east of Wallonia
France 12 Km and GD Lux 17 Km



- Focal introduction of ASFV in WB populations *far away from the nearest infected areas*
- Accidental introduction could be associated to :
 - live/infected wild boars illegally imported
 - contaminated meat or items (shoes, cars) illegally brought
- Origin of the outbreak ? 
- Belgium : ASF-free status for all *suidae* : lost > < status for domestic pigs : maintained

1. MANAGEMENT ORGANIZATION



MAIN GOAL - Eradication of the disease in the country

→ Prevent introduction of the disease into **pig farms**

→ Prevent spread of the disease among **wild boars population**

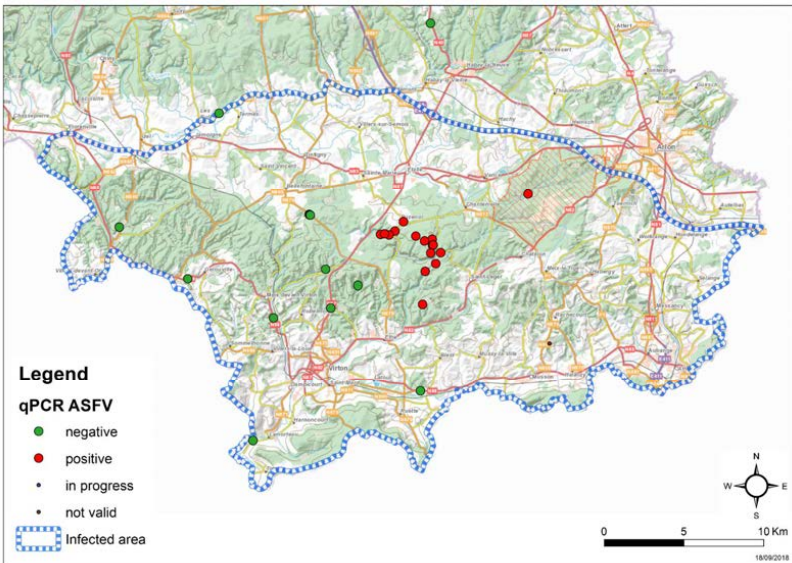
2. CONTROL MEASURES IN WILD BOAR

→ to prevent spread of the disease among WB population
outside the infected zone

1. Zoning and restrictions
2. Carcass search and removal
3. Fencing
4. Depopulation
5. Analysis process



1. Zoning and restrictions



Restrictions measures immediately implemented to respect **a complete standstill** in the provisional infected zone

Objective : decrease the risk of spreading ASF virus

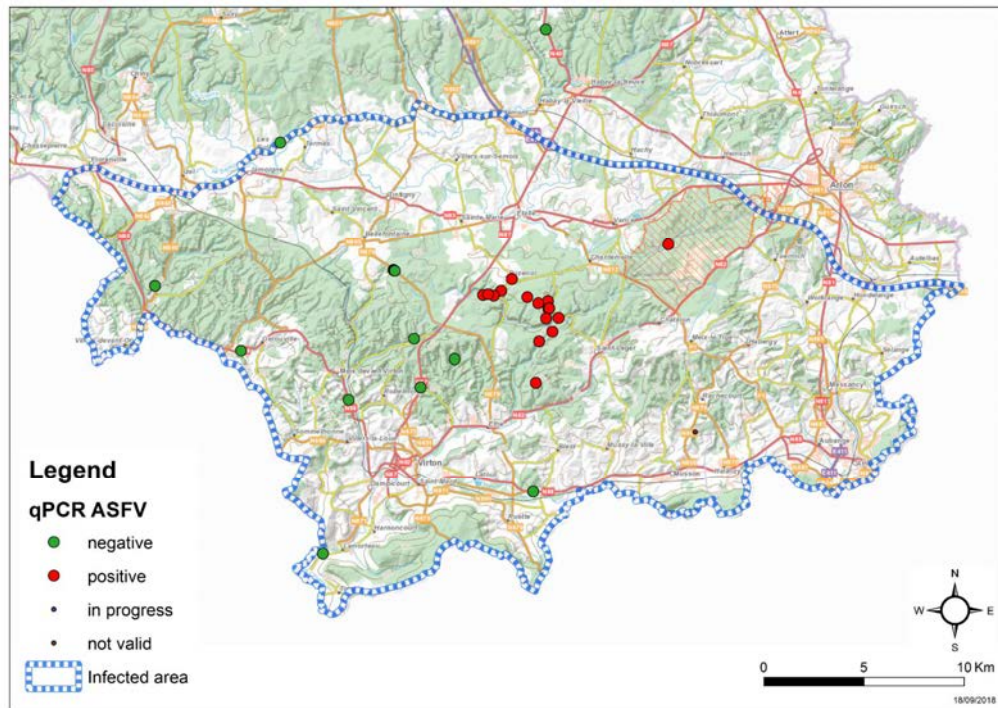
- avoid disturbing wild boar
- avoid any passive virus dissemination

14 Sept 2018 :
provisional infected zone (630 Km²)

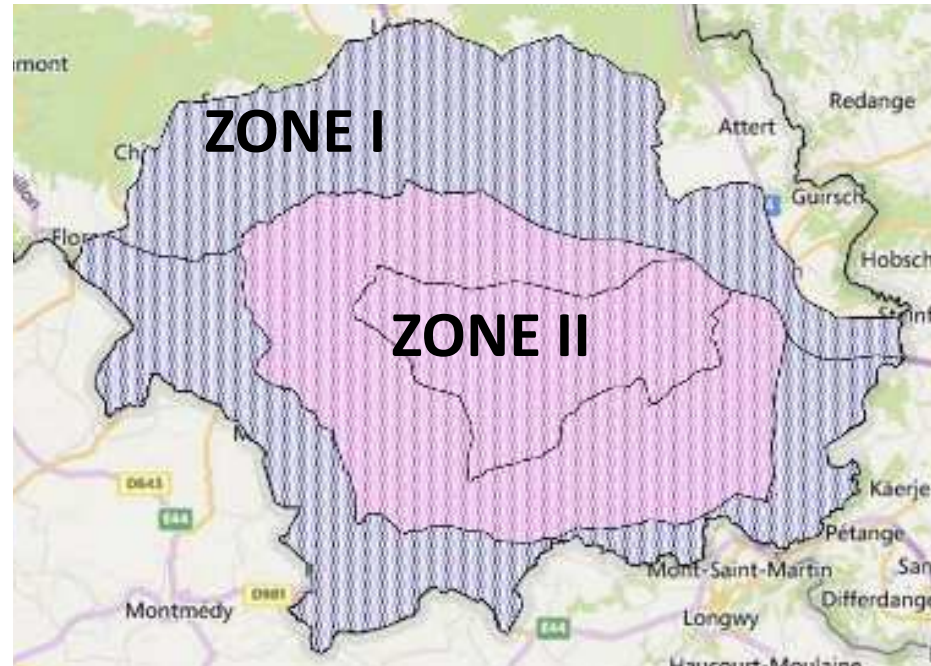


- Ban on feeding wild boar
- Ban on hunting wild boar
- Ban on circulation in the forest (for tourist and logging activities)
- Only active search, removal and analysis of carcasses with high biosecurity measures were allowed
- Regional legislation adapted

1. Zoning and restrictions

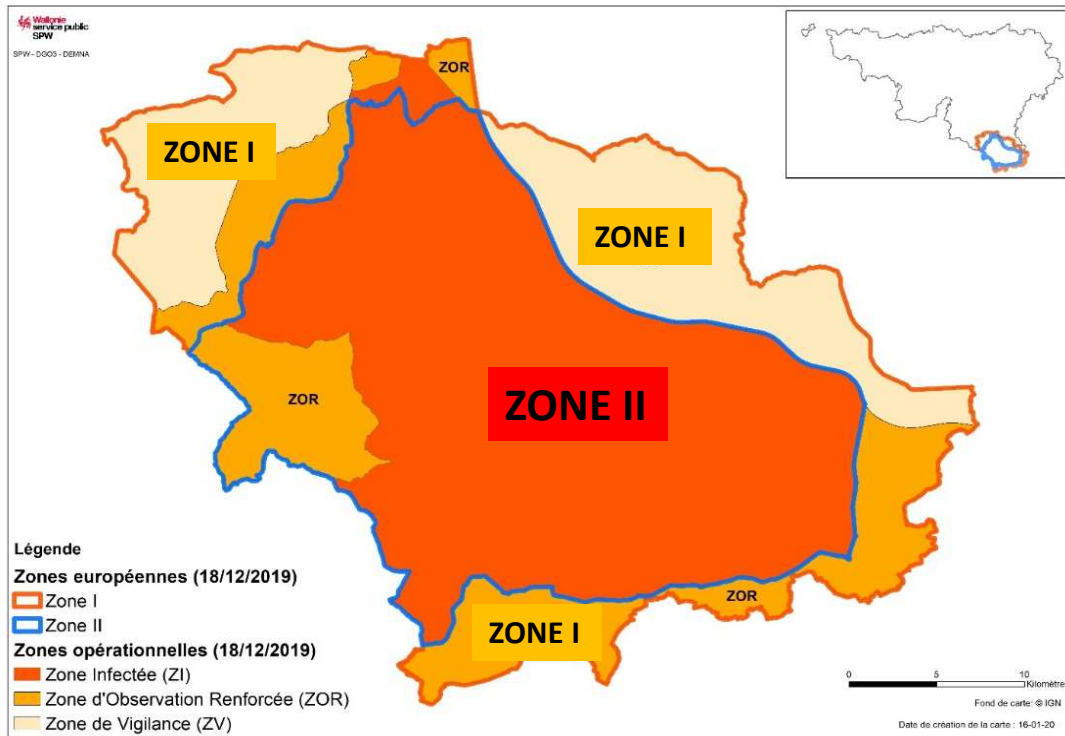


14 Sept 2018 :
provisional infected zone (630 Km²)
formalised by EU Decision 14/09/2018



23 Nov 2018 :
European zoning (Zones II and I)
Zones **adapted** ↔ new ASFV+ cases

EU zones (18/12/2019)



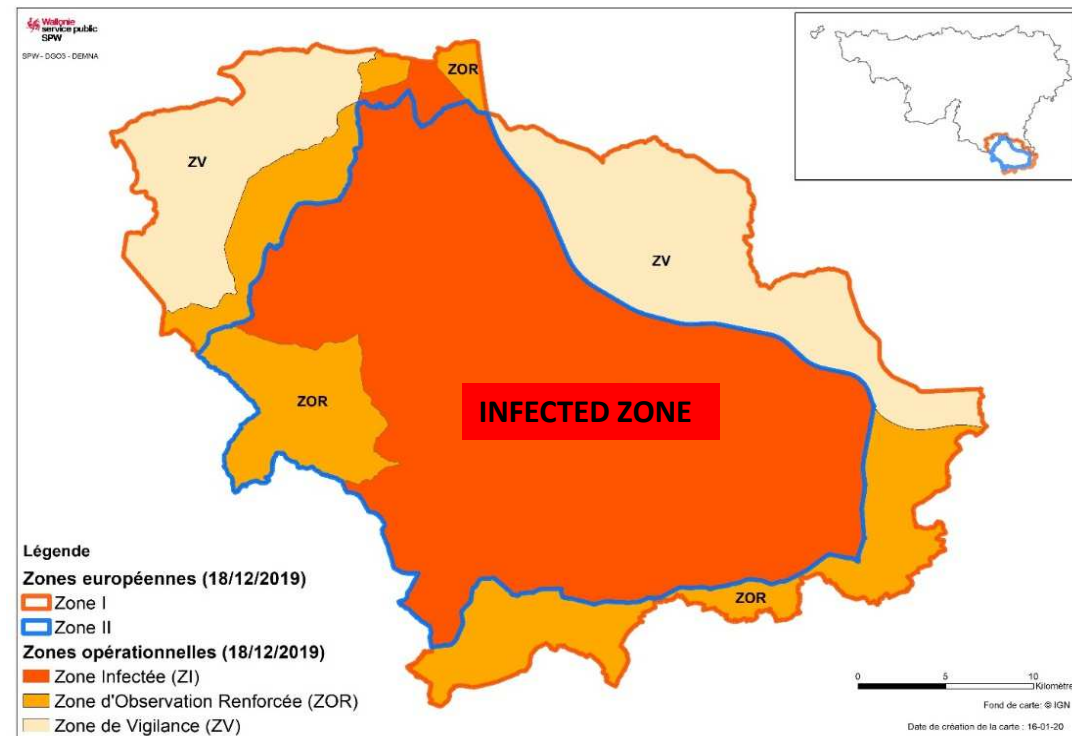
TOTAL ZONES II + I : 1106.64 km²

Zone II = 662.90 km²

Zone I nord = 335.68 km²

Zone I sud = 108.04 km²

Regional management zones (18/12/2019)



TOTAL ZI + ZOR + ZV : 1106.64 km²

ZI : infected zone

ZOR : reinforced observation zone

ZV : vigilance zone

2. Carcass search and removal



In infected zone, active search, removal and analysis of the carcasses are a priority :

- to decrease the viral load in the environment
- to delimit the real infected zone
- to follow the epidemic phase



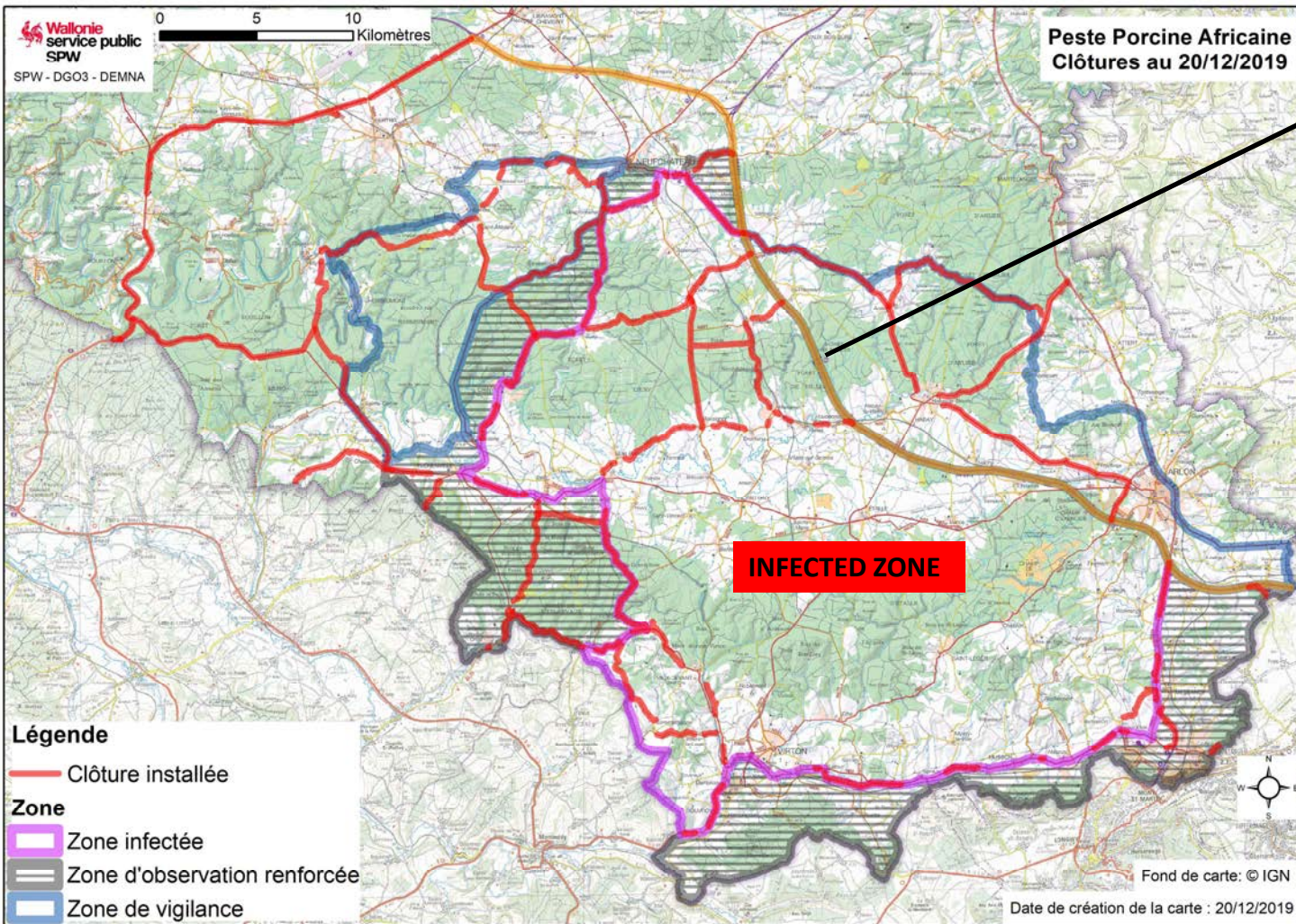
Direction générale de la sécurité civile
Unité opérationnelle de la protection civile



3. Fencing

~300 km (dec 2019)

Belgium ↔ France (120 Km)
↔ GDLux (40 Km)



Fences : a break, not 100% hermetic
daily check is strategic

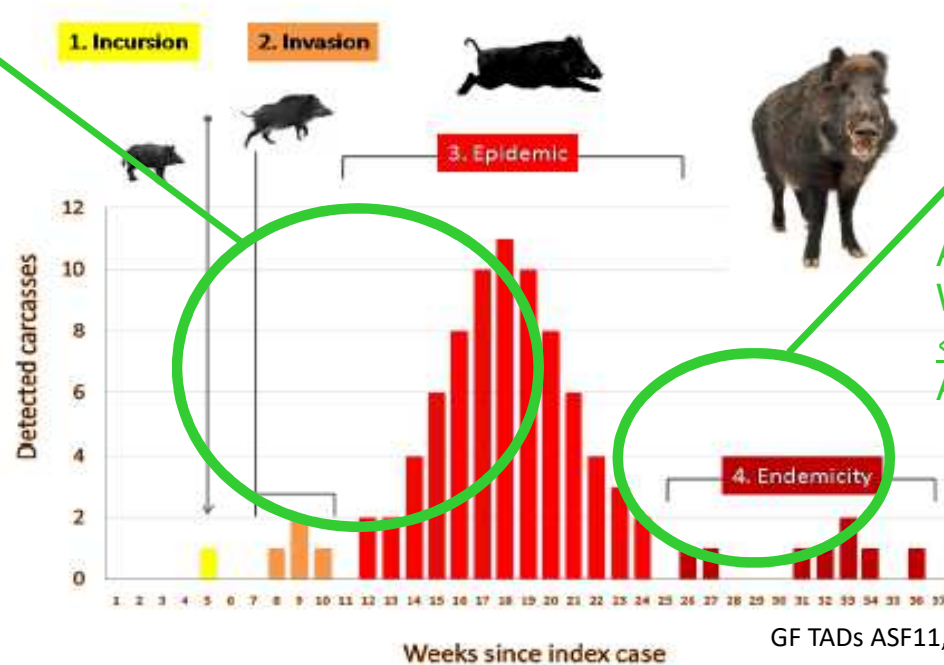
4. Depopulation

Aim = depopulation on 1106 km² including 517 forested km² (EU Zones II & I)
with specific restrictions according *to zones and timing*

EPIDEMIC PHASE

Sept 2018 → June 2019

Area surrounding infected zone : destruction
Within infected zone : ban on destruction
All zones : carcass removal



POST EPIDEMIC PHASE

July 2019 → April 2020

Area surrounding infected zone : destruction
Within infected zone : destruction of the « last » WB to avoid endemic evolution
All zones : carcass removal

GF TADs ASF11, Poland, 2018

4. Depopulation

Aim = depopulation on 1106 km² including 517 forested km² (EU Zones II & I)
with specific restrictions according *to zones and timing*

Combination of different tools : culling / trapping /
night shooting / single hunting on baiting points /
driven hunts with / without dogs

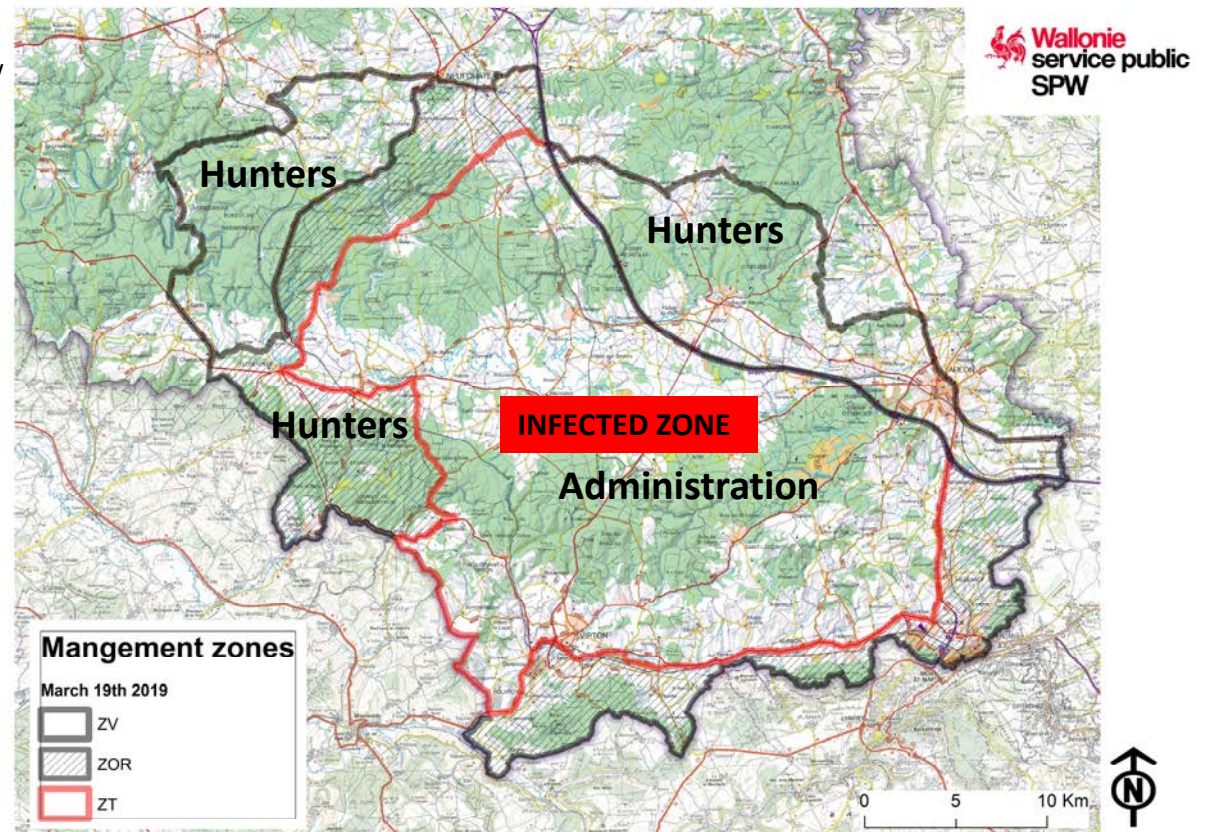
Responsibilities :

Infected zone : regional authorities

Areas surrounding infected zone : hunters

Legislation :

Walloon Government Decree 06/06/2019 :
Holders of hunting rights (hunters) have the
obligation to destroy wild boar on their
huntinggrounds



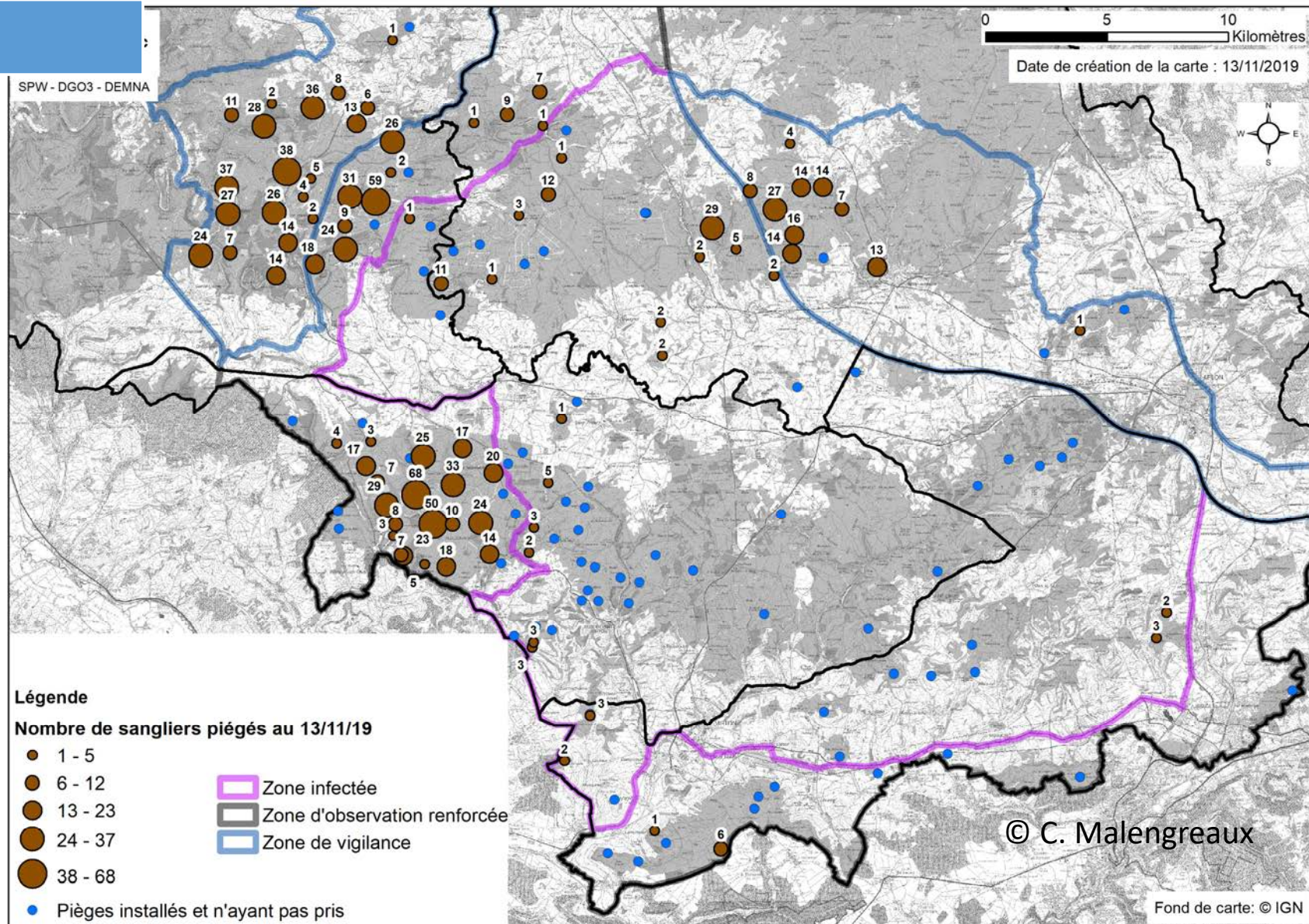
4. Depopulation



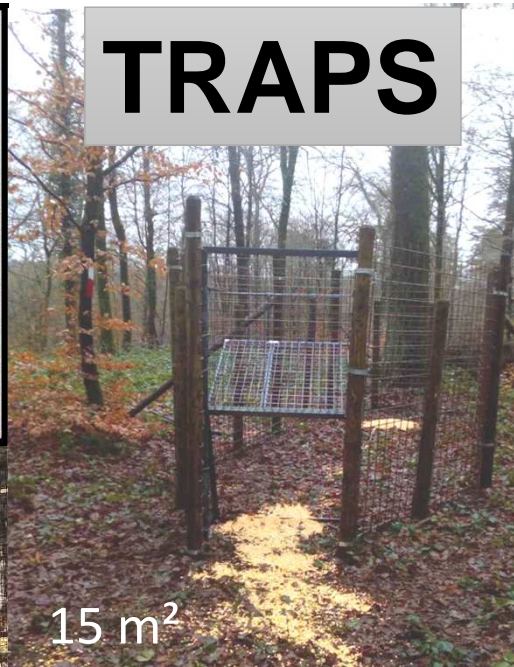
Night shots carried out by the regional authorities
Up to now : > 500 night shots in zones II et I
(14/04/2020)

4. Depopulation

Trap network (160)
1207 trapped WB
(14/04/2020)



TRAPS



© A. Licoppe

The setting of traps is organized by a professional team (SPW – DEMNA)

Depopulation results per Zone

	Before		Outbreak			After birth peak			© A. Licoppe
	2017-2018		2018-March 31, 2019			April 1, 2019 – Jan 13, 2020			
Zone	Dead WB	Dead/ km ² forest	Dead WB	Dead/ km ² forest	2017%	Dead WB	Dead/ km ² forest	2017%	
ZI	754	2,8	1505	5,6	200%	485	1,80	64%	
ZOR	535	4,6	850	7,3	159%	940	8,0	176%	
ZV	507	3,9	947	7,3	187%	1263	9,7	249%	

Comparison before/after the outbreak

200 % of increase in the infected zone ← found dead WB

159 % and 187 % in ZOR and ZV ← depopulation measures



5. Analysis process



3 collection centres
(1 in Zone II and 2 in Zone I)



Collection Centre of Virton (Zone II)
opening in 2018 - October 8th

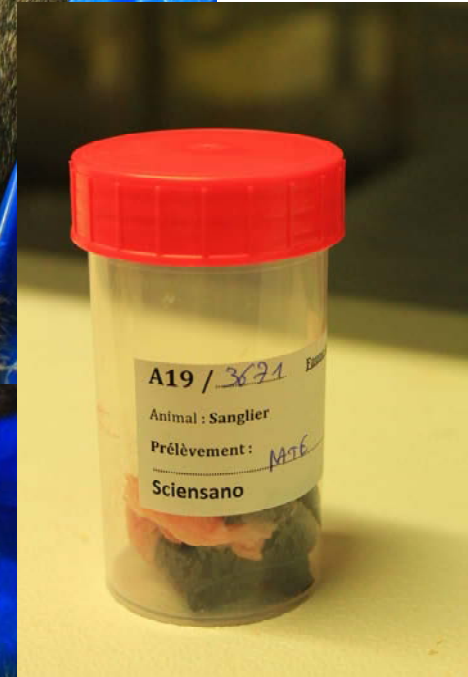


5. Analysis process



ONE WB PER PLASTIC BAG

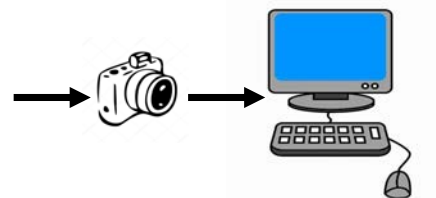
BIOSECURITY
GLOVES AND SCALPEL



5. Analysis process

BIOSECURITY

© A. Linden



Transport of carcasses and offals to the rendering plant (specific truck)

5. Analysis process

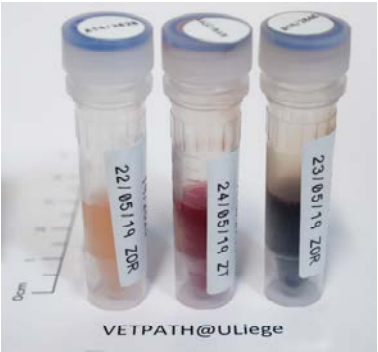


Sciensano Animal Health - NRL
M. Tignon, B. Cay, T. van den Berg
qPCR ASFV on different matrices
internal control beta-actin



Dpt of Pathology – Fac Vet Medicine
D. Desmecht
qPCR ASFV for C/D check, sequencing, serology

ac	100	180924 D86	Spleen	24,94	POSITIVE
A	101	180924 D86	Buccal Swab	36,81	POSITIVE
B	102	180924 D86	Spleen	23,55	POSITIVE
C	103	180924 D86	Buccal Swab	32,17	POSITIVE
E	104	180924 D86	Spleen	25,97	POSITIVE
F	105	180924 D86	Buccal Swab	40	POSITIVE
F	106	180924 D86	Bone Marrow	28,62	POSITIVE
F	107	180924 D86	Spleen	24,06	POSITIVE
G	108	180924 D86	Nasal Swab	27,64	POSITIVE
I	109	180924 D86	Buccal Swab	34,97	POSITIVE
IP	110	180924 D86	Spleen	>45	Negative
	111	180924 D86	Swab 1	>45	Negative



5. Analysis process

Wild Boar Database → Communication to EU Authorities

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
REF	Tracabil	Age	Sex	Discovery	Sampling	Zone	Place of	Village	ZID	Forest	X	Y	Context	Postmo	Sample	Contact	qPCR beta-	qPCR ASFV	REF	Date	REF
ULie	ity	category		date	date		discovery			district	Longitude	Latitude	of discove	rtm deca		(DNF)	actin Resu	Result	Sciensa	Confirma	Notifica
A19-3302	190242	BR	M	15/07/2019	15/07/2019	ZV	Piège 116 (Eplatis 2)	Florenville	6823	Florenville	5,306448	49,764199	Trapped	Fresh	Spleen	BAUDE	positive	Negative	U1907233	18-07-2019	
A19-3303	190243	BR	M	15/07/2019	15/07/2019	ZV	Piège 116 (Eplatis 2)	Florenville	6823	Florenville	5,306445	49,764198	Trapped	Fresh	Spleen	BAUDE	positive	Negative	U1907233	18-07-2019	
A19-3304	190244	BC	M	15/07/2019	15/07/2019	ZV	Piège 116 (Eplatis 2)	Florenville	6823	Florenville	5,306445	49,764198	Trapped	Fresh	Spleen	BAUDE	positive	Negative	U1907233	18-07-2019	
A19-3305	190245	BC	M	15/07/2019	15/07/2019	ZV	Piège 116 (Eplatis 2)	Florenville	6823	Florenville	5,306454	49,764204	Trapped	Fresh	Spleen	BAUDE	positive	Negative	U1907233	18-07-2019	
A19-3306	190246	MA	M	15/07/2019	15/07/2019	ZV	Piège 115 (Eplatis 1)	Florenville	6820	Florenville	5,311155	49,770948	Trapped	Fresh	Spleen	BAUDE	positive	Negative	U1907233	18-07-2019	
A19-3307	189279	AD	M	13/07/2019	15/07/2019	ZV	Piège 108 (Moleu)	Herbeumont	6887	Neufchâteau	5,262822	49,767943	Trapped	Fresh	Spleen	COOMANS	positive	Negative	U1907233	18-07-2019	
A19-3308	100541	BR	nd	16/07/2019	17/07/2019	ZT	Toernich (Hirzenber	Arlon	6700	Arlon	5,78606	49,66089	Found dead	Bones only	Long bone	FRASELLE	positive	POSITIVE	U1907233	18-07-2019	ASFIII
A19-3309	189951	AD	F	16/07/2019	17/07/2019	ZOR	Piège 99 (Fontaine	Chiny	6810	Florenville	5,333187	49,764049	Trapped	Fresh	Spleen	COLLIGNON	positive	Negative	U1907324	19-07-2019	
A19-3310	189950	AD	F	16/07/2019	17/07/2019	ZOR	Piège 99 (Fontaine	Chiny	6810	Florenville	5,333187	49,764153	Trapped	Fresh	Spleen	COLLIGNON	positive	Negative	U19	24	19-07-2019
A19-3311	189957	MA	F	16/07/2019	17/07/2019	ZOR	Piège 99 (Fontaine	Chiny	6810	Florenville	5,333112	49,764153	Trapped	Fresh	Spleen	COLLIGNON	positive	Negative	U19	24	19-07-2019
A19-3312	108031	MA	M	16/07/2019	17/07/2019	ZOR	Piège 67 (La Houdré	Chiny	6810	Florenville	5,373199	49,667279	Trapped	Fresh	Spleen	BAUDE	positive	Negative	U19	24	19-07-2019
A19-3313	108033	MA	M	16/07/2019	17/07/2019	ZOR	Piège 67 (La Houdré	Chiny	6810	Florenville	5,373124	49,667293	Trapped	Fresh	Spleen	BAUDE	positive	Negative	U19	24	19-07-2019
A19-3314	108037	MA	F	16/07/2019	17/07/2019	ZOR	Piège 67 (La Houdré	Chiny	6810	Florenville	5,373092	49,667307	Trapped	Fresh	Spleen	BAUDE	positive	Negative	U19	24	19-07-2019
A19-3315	108035	MA	F	16/07/2019	17/07/2019	ZOR	Piège 67 (La Houdré	Chiny	6810	Florenville	5,373092	49,66737	Trapped	Fresh	Spleen	BAUDE	positive	Negative	U19	24	19-07-2019

FASFC
Federal Agency for the Safety of the Food Chain

Animal Disease Notification System
(ADNS)



WAHIS
World Animal Health Information System
Système mondial d'information zoonitaire
Sistema Mundial de Información Zoonitaria

Zone	qPCR ASFV	Context of death								Total
		Culled	Found dead	Hunted	Night shot	Poaching	Road casualty	Sanitary shot	Trapped	
ZONE II	Dubious	1	3	0	0	0	0	1	0	5
	In progress	0	0	0	0	0	0	0	0	0
	Negative	563	89	53	192	1	51	7	510	1466
	not appl - not valid	2	187	0	0	0	3	0	0	192
	POSITIVE	7	799	0	2	0	3	16	4	831
	Total	573	1077	53	194	1	57	24	514	2493

96 %

Results 27/01/2020) 831 ASFV + cases

BIOSECURITY

Formation of the hunters (n > 500) and forest rangers trained for night shots



LIÈGE université **SPW**

Chasseurs - Règles de biosécurité pour la prise en charge d'un sanglier détruit en zone infectée - Plan de lutte PPA - Responsable A. Linden 00 32 478 280590

♦ **Objectif** : diminuer les risques de dissémination du virus PPA si un sanglier détruit est infecté

Prise en charge d'un sanglier détruit

Bracelet fait au collier
Un seul sanglier par bêche (adulte) ou par sac (marocassin ou bête rousses)

Ne pas pénétrer dans une porcherie ou entrer en contact avec des porcs dans les 72 h qui suivent un contact avec un sanglier

♦ **Matériel** (fourni par l'Administration et disponible au centre de collecte de Virton, sur RDV)

- bracelets - carnet - bip
- salopettes* et gants* jetables, une paire de bottes
- bâches* (3 X 4 ou 5 m) et sacs* (marocassins et bêtes rousses), colsons et ruban adhésif
- pulvérisateur* contenant un virucide agréé (VIRKON*)
- gel hydro-alcoolique* (éthanol 70%) pour les mains
- bidon d'eau savonneuse et brosse dure pour nettoyer les bottes
- sacs poubelle (30 L) avec lien de fermeture pour les déchets de classe B2 (salopettes et gants)

♦ **Procédure** : sanglier emballé obligatoirement entier, tête comprise

(1) Emballage du sanglier entier sur le lieu de tir et pose du bracelet

- noter dans carnet : date / coord. XY / lieu-dit / n°poste/piège / n°bracelet / âge / sexe
- s'équiper pour procéder à l'emballage : salopette jetable, bottes, 2 paires de gants
- disposer la bêche à côté du sanglier (le long de la ligne du dos)
- saisir les pattes et faire basculer l'animal sur la bêche
- lever la première paire de gants souillée (le jeter dans la bêche)
- continuer l'emballage sans toucher la carcasse puis fermer la bêche (2 colsons + ruban adhésif)
- fixer le bracelet de traçabilité au colson et transporter le colis à côté du véhicule
- désinfecter la bêche (pulvériser dos au vent)
- déposer le colis désinfecté dans le véhicule ou la remorque

(2) Désinfection sur site

- désinfecter l'emplacement de la carcasse (pulvériser dos au vent)
- élargir la zone de désinfection (30 cm autour de l'emplacement initial)
- insister sur les supports proches (branchages) souillés par du sang/tissus/os



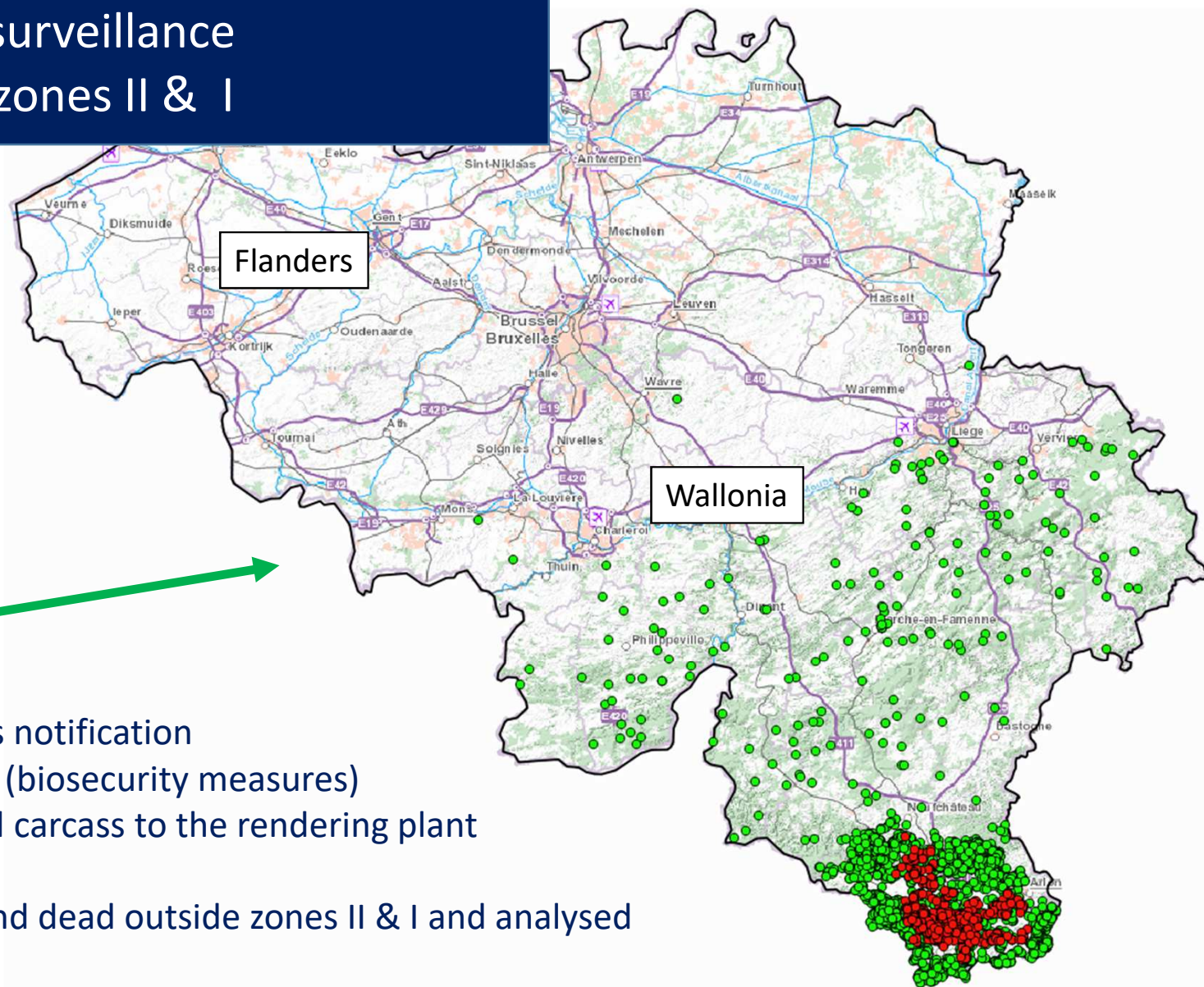
Voir verso

Incentives (50 or 100 € per WB) for approved hunters who have received specific training on biosecurity procedures

ASF - WB



Passive surveillance outside zones II & I



PASSIVE SURVEILLANCE

regional Hot line (1718) for carcass notification

team of 15 vets and forest rangers (biosecurity measures)

Samples to the Ref Lab and packed carcass to the rendering plant

Results→ wildboar database

Up to now (14/04/2020) : 266 found dead outside zones II & I and analysed
all ASFV negative

1. Management organization

2. Control measures in WB

1. Zoning and restrictions
2. Carcass search and removal
3. Fences
4. Depopulation
5. Analysis process

3. Results 

4. Key points

3. RESULTS

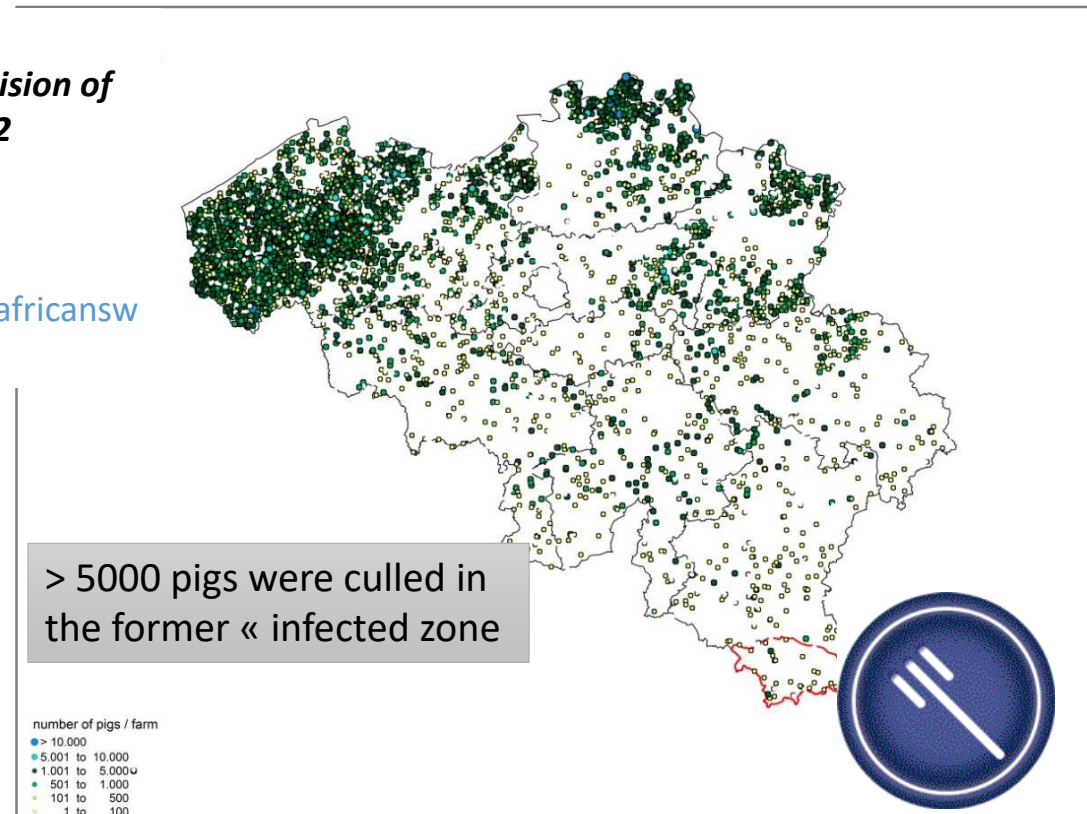
There is no cases among domestic pigs in Belgium

There are no outbreaks in domestic swine.

No domestic and captive swine remain in the initial infected zone (decision of the Federal minister of Agriculture to eradicate all domestic swine by 2 October 2018).

Strict measures have been taken for the whole country to prevent contamination of domestic swine.

<http://www.afsca.be/businesssectors/animalproduction/animalhealth/africanswinefever/#news>



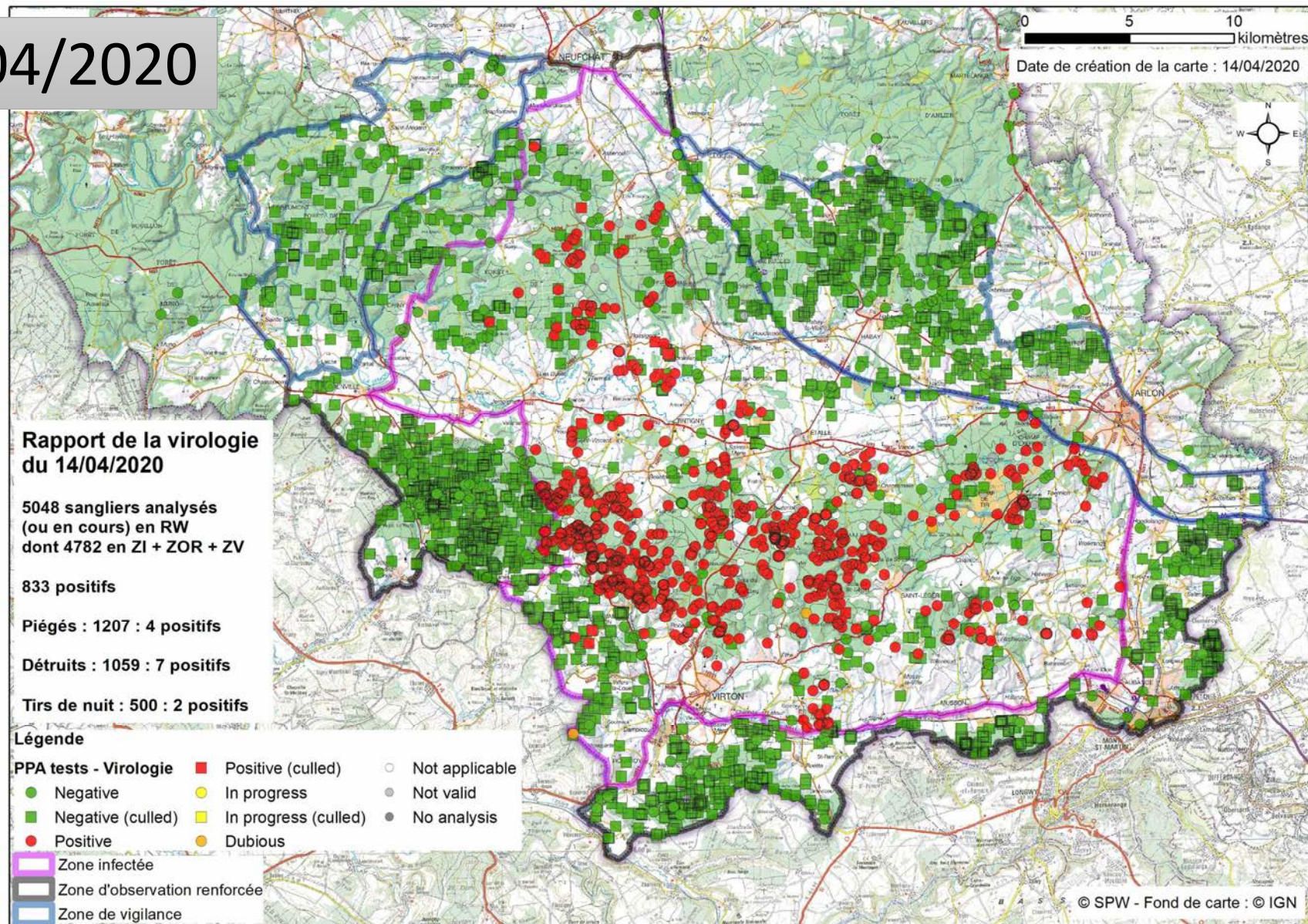
Snapshot 14/04/2020

ASF - WB



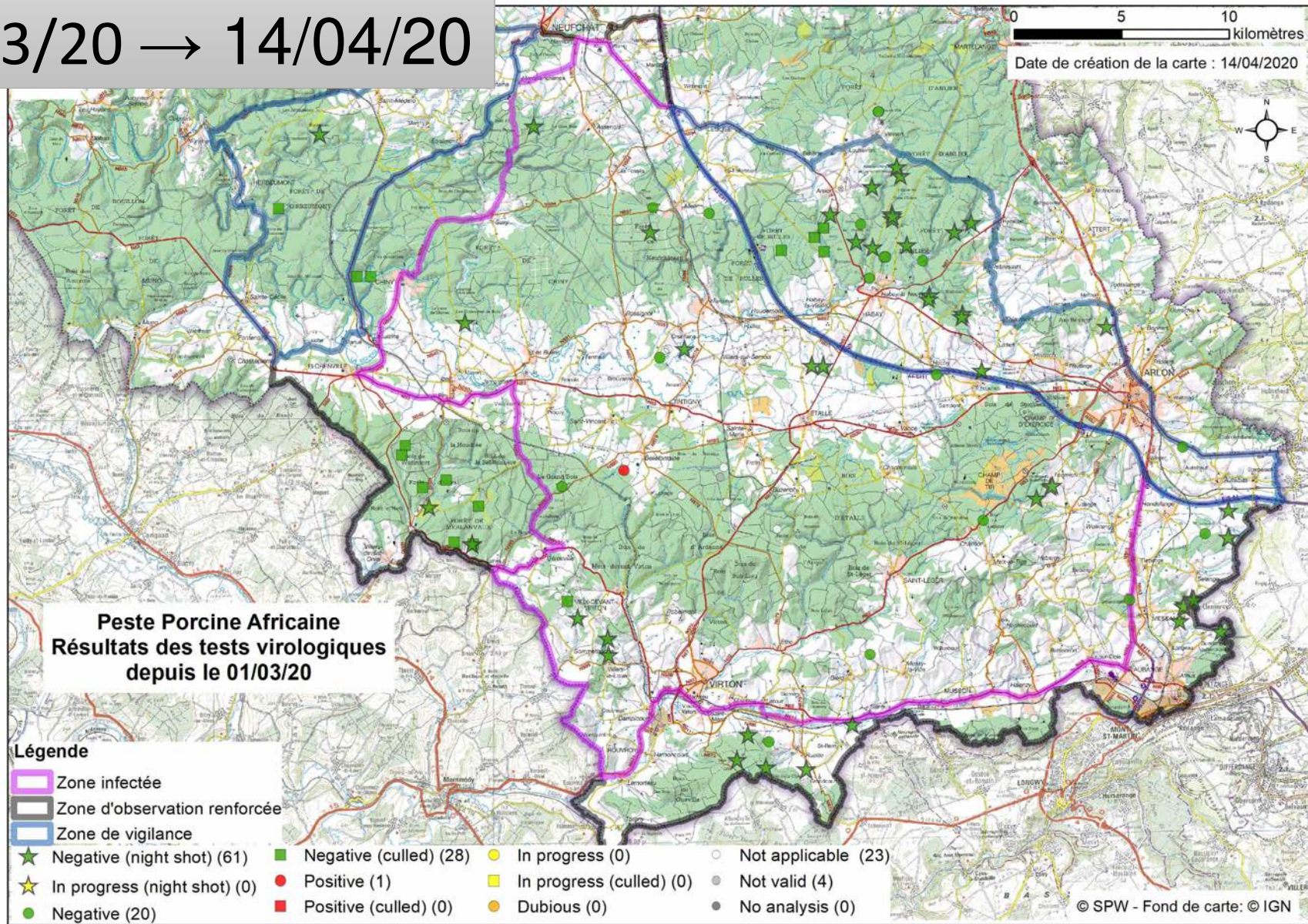
5048 qPCR analysis
including 4782 in ASF zone

833 ASFV + cases

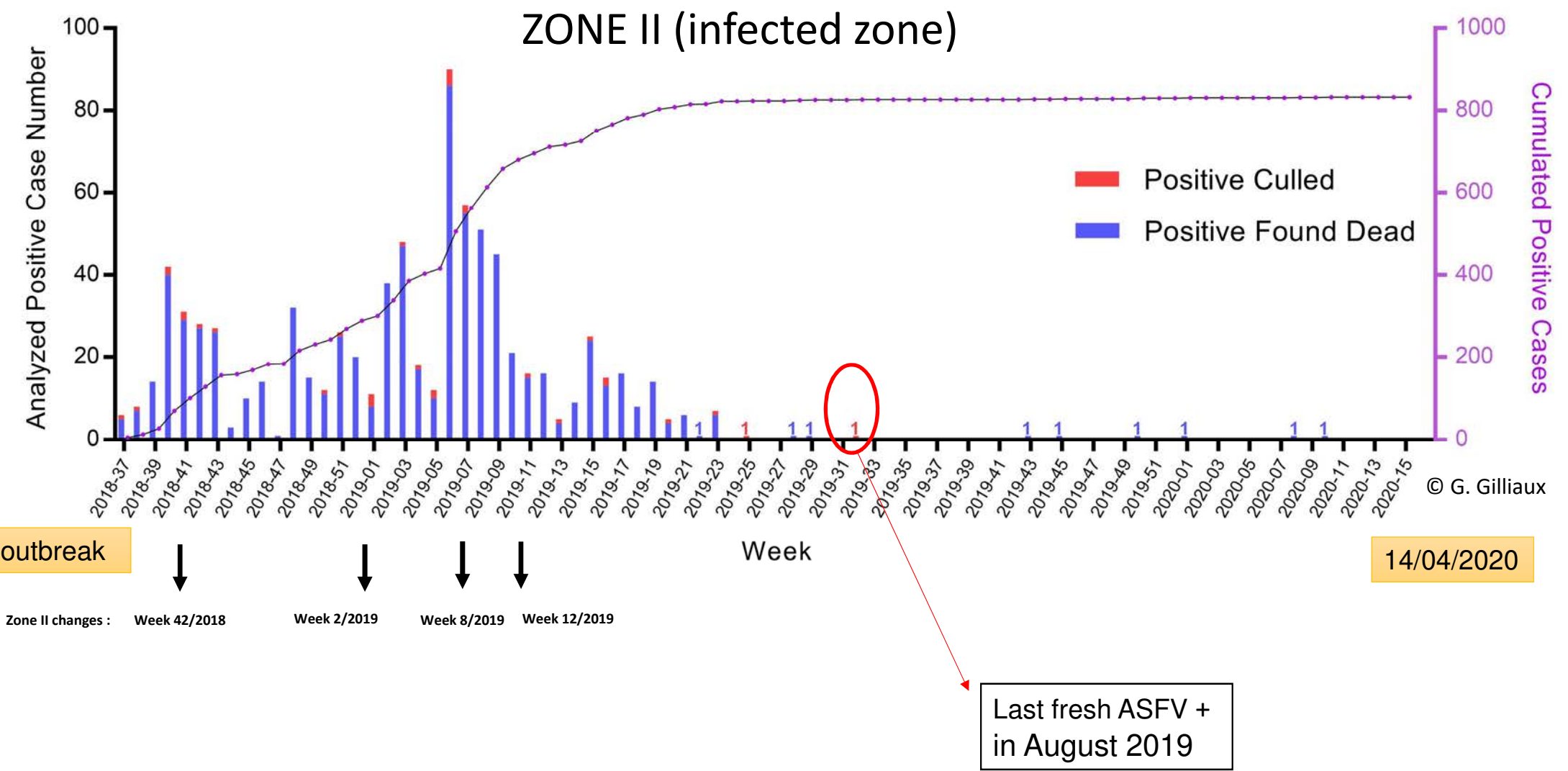


RESULTS 01/03/20 → 14/04/20

ASF - WB

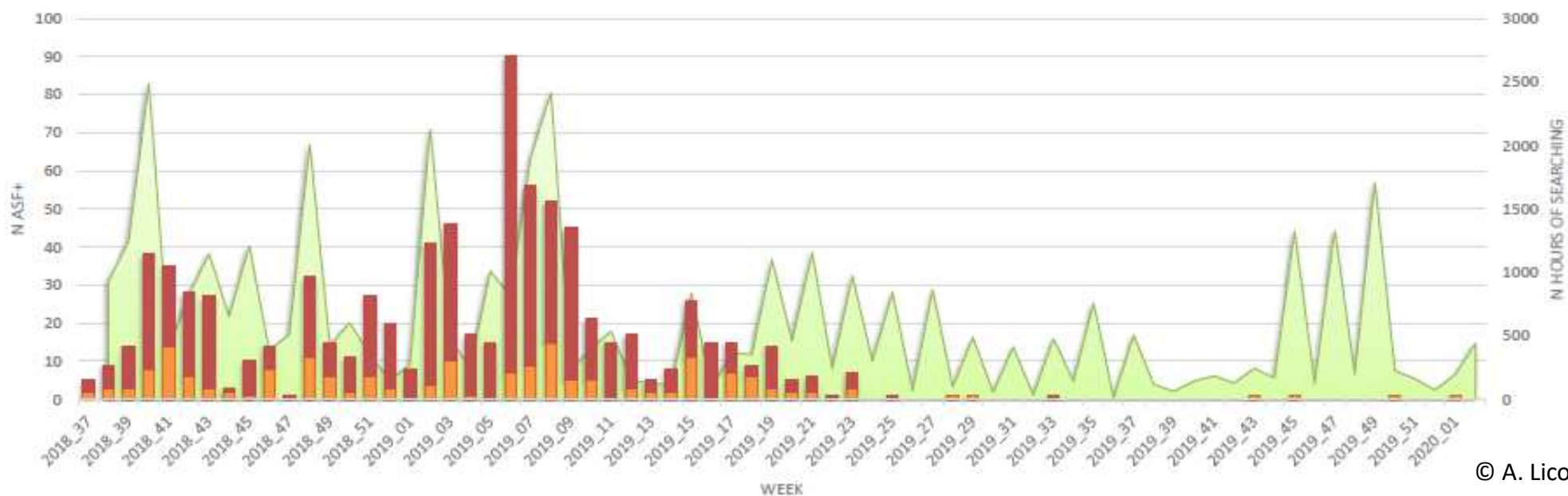


weekly evolution of ASFV + → 14/04/2020



29/01/2020
34

Weekly evolution of ASF+ and searching effort



© A. Licoppe



Active search of carcasses (~ 40.000 hours of searching)

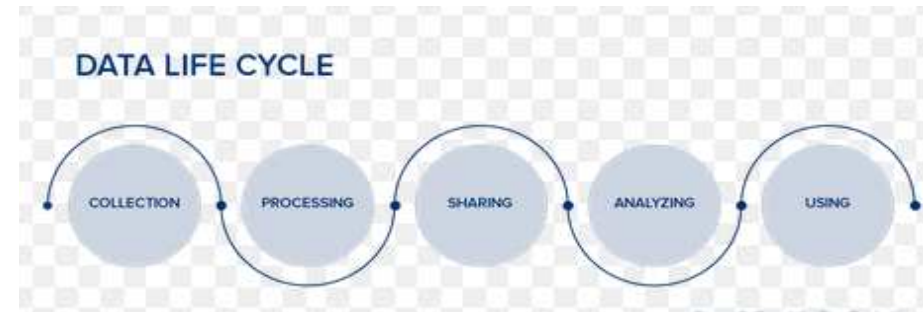
- Groups of 4 to 8 (10) people (compromise between efficiency and quiet) : in line on a very systematic way
- When dead WB discovered : GPS location, beaconing and call for removal (by Civil Protection)
- According to the landscape and vegetation : from 20 to 40 ha / day / pers
- Biosecurity procedures

ASF - WB in WALLONIA - CURRENT SITUATION (14/04/2020)

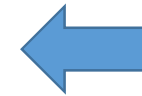
- Up to now : > 5000 WB ASFV qPCR analysed in Wallonia
- 833 ASFV positive cases : all from the infected zone (~ EU zone II : 660 km²)
- **Since March 2019 : no new cases outside the infected zone** (except old bones in Dec 2019)
- Control strategy (**combination of different measures**) has so far proved effective to maintain ASFV inside the infected zone
- Active search of carcasses and depopulation are going on in all zones
- Night shots are a strategic tool in post epidemic phase
- Regional and federal authorities are determined to keep pressure **on all actors** to eradicate ASFV in WB and to avoid endemic evolution



4. KEY POINTS



- Before outbreak : develop large wildlife database (hunting bags, carto. data, tracks animal movements, ..)
- Before outbreak : decrease WB densities
- Establish user-friendly & instant **networking capacity gathering field operators**
- Interconnection & and responsiveness between field/collect centers/lab
- Establish multidisciplinary teams for sample processing & analysis
- Maintain contacts between reg & federal authorities and neighbouring countries
- Make results available asap for decision-making and fast implementation
- **Systematize regular feed-back communication towards field actors (!)**
- **Devote time and energy to build & maintain trust between all the actors**



Thank you for your attention

Annick Linden, on behalf of the team

La présentation concernée émane des travaux conduits par les départements DNF et DEMNA du Service Public de Wallonie, le Réseau de Surveillance Sanitaire de la Faune Sauvage en Wallonie de ULiège, le Laboratoire d'Epidémiologie spatiale de l'ULB, l'AFSCA, le Laboratoire national de référence pour la PPA, le Ministre de l'Agriculture et son cabinet et la Protection Civile ; les acteurs principaux étant, par ordre alphabétique, S. Bairin, L. Baufay, N. Borboux, J-L. Boudart, B. Cay, F. Della Libera, S. Dellicour, D. Desmecht, V. Dewaele, M. Dispas, M. de Tillesse, V. Duran, M. Gilbert, G. Gilliaux, M-J. Goffaux, M. Herman, J-F. Heymans, J. Hooyberghs, P. Houdart, S. Kalpers, C. Lesenfans, P. Leyens, A. Licoppe, J. Lievens, A. Linden, M. Logeot, C. Malengraux, J. Paternostre, X. Patigny, B. Quévy, J-P Scohy, X. Simons, E. Thiry, M. Tignon, T. van den Berg, A. van Goethem et M. Villers ainsi que les Directeurs, chefs de cantonnements et agents du DNF, les équipes de la Protection Civile et les vétérinaires PPA.