

# ASF in wild boar in Sweden

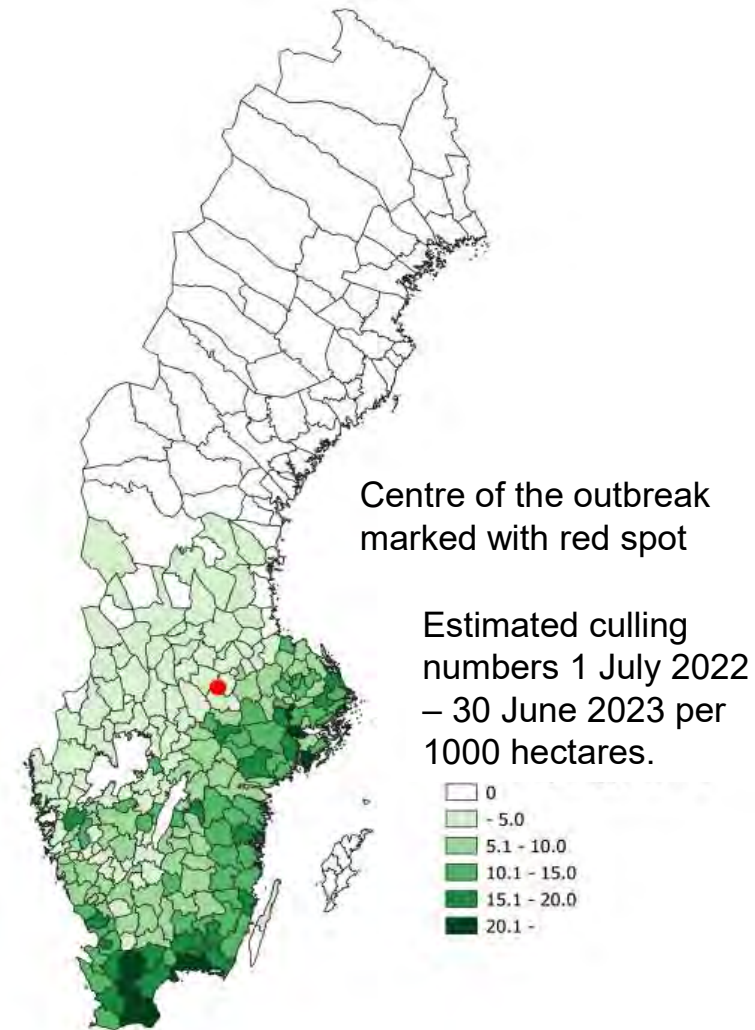


September 2024

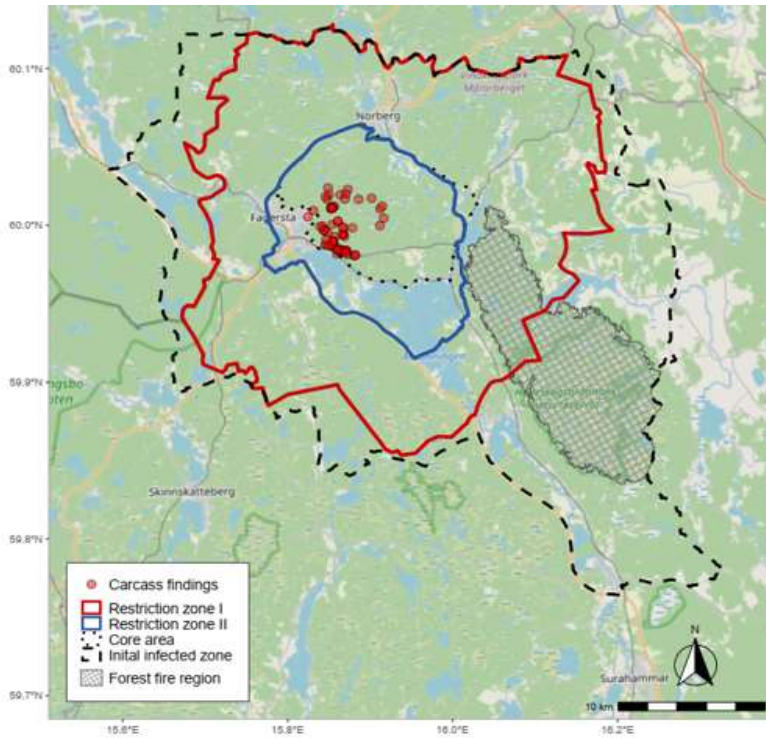
# Favourable location of first ASF outbreak in Sweden

The first case in Sweden of ASF was confirmed by PCR in a wild boar on 6 September 2023; genotype II.

- Relatively few wild boar in the area.
- Very few pig establishments.
- The core area was partly surrounded by waterways and by highways already equipped with game fences.



# Zoning and management



- Infected zone (1000 km<sup>2</sup>)  
     ➔ smaller restricted zone RZI + RZII (600 km<sup>2</sup>)
- Restrictions
- Pre-emptive culling of all kept pigs
- Carcass search and management
- Fencing of RZII
- All wild boar culled i RZII (blue line)

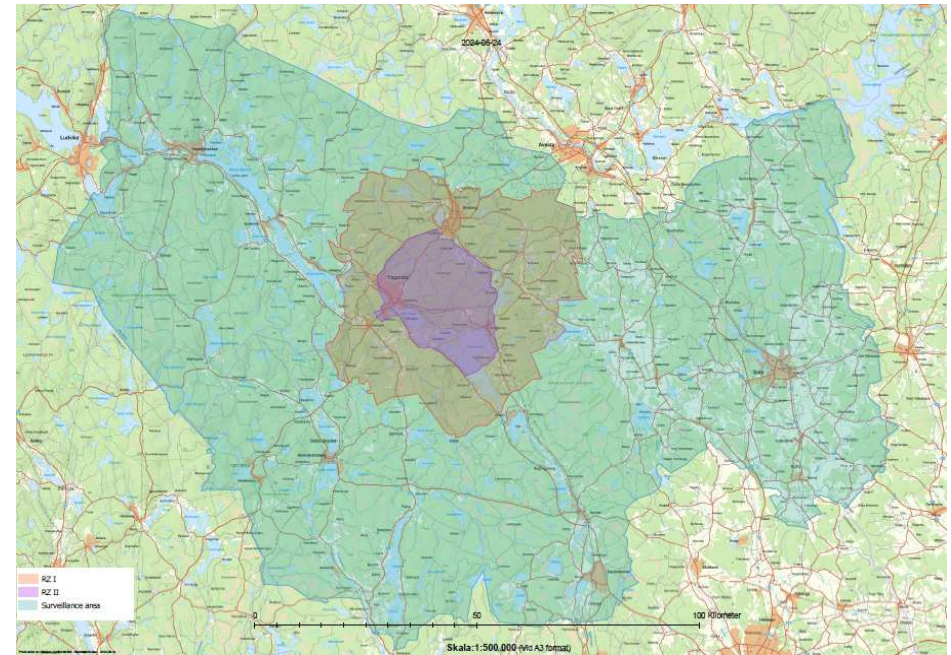
# Surveillance in restricted zones and additional area

Restricted zones = orange and pink:

- Wild boar carcasses
- Wild boar killed in traffic
- Hunted wild boar

Additional area = dark green:

- Wild boar as above, plus:
  - The first two dead pigs > 60 days old per week in establishments with >250 head
  - Suspicions in kept pigs (as in the rest of the country)



***NB: Ornithodoros ticks do not play any role in SE***

# Surveillance results

6 Sept 2023–20 Sept 2024		
Category	Positive	Negative
WB carcasses in the restricted zone	69	55
WB culled in restricted zone	1	104
WB killed by traffic in restricted zone	0	10
WB hunted for consumption in RZI	0	11
WB killed by traffic in surveillance area	0	5
WB hunted in surveillance area	0	91
WB carcasses in surveillance area	0	5
Passive surveillance in kept pigs (fallen stock) in surveillance area	0	28
WB carcasses in remaining parts of Sweden (national passive surveillance)	0	306
Suspicious in kept pigs in the rest of the country	0	16

# Temporal analysis

## 1) Semiquantitative taphonomy method

*Megyesi, J Forensic Sci 2005*

- Day degrees
- One carcass ASFV pos 13 sep
- Death early/mid May - late June 2023



## 2) Degree of decomposition

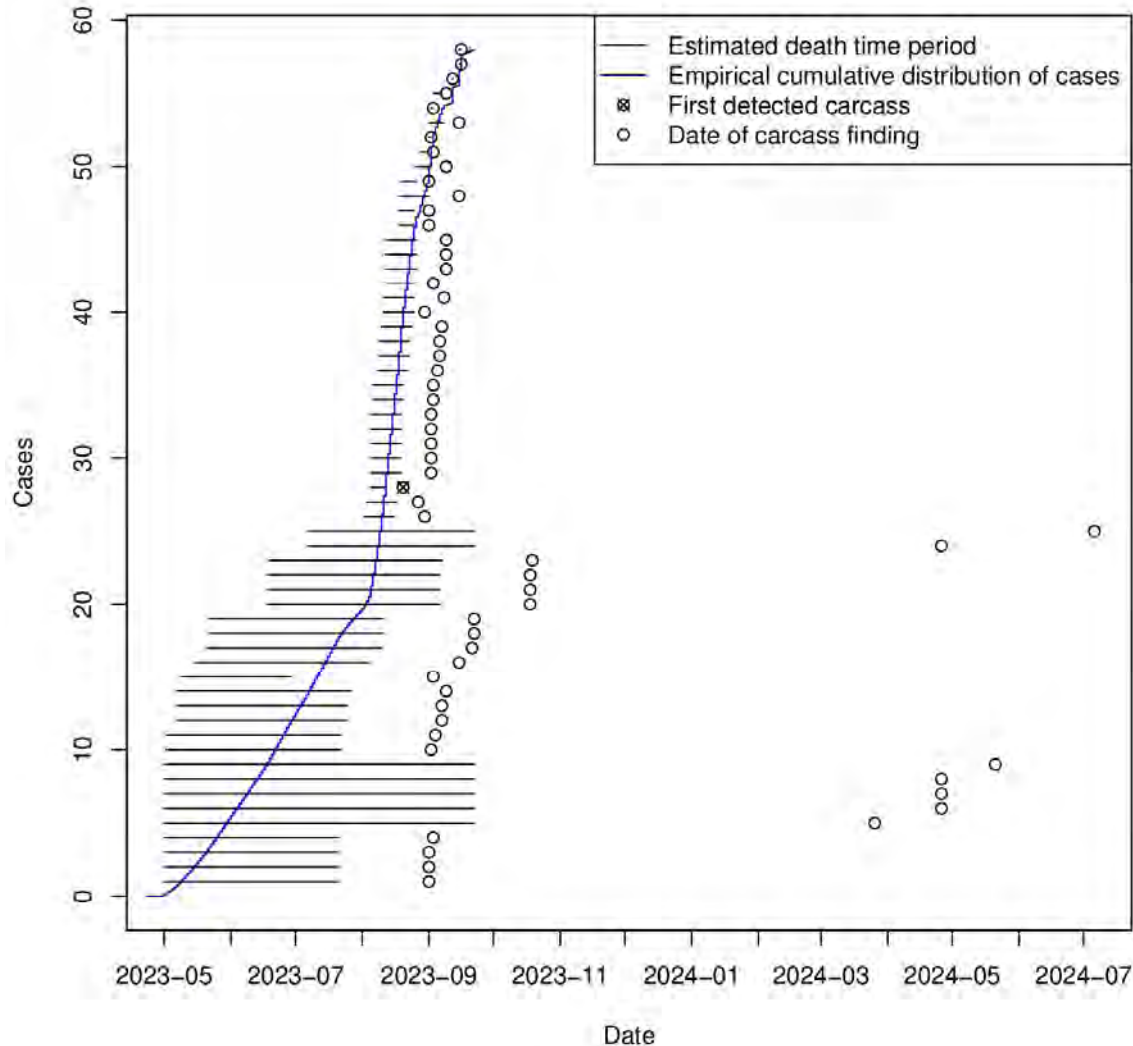
*Rietz et al , Transboundary and Emerging Diseases, 2023*  
September/July, southern Germany

- photographs and carcass status protocol examined by wildlife pathologists.
- time of death stated as an interval and as the average of that interval



Time	Stage	Description
0–1 days	Fresh	Cold carcass but no signs of decay or no severe smell
2–6 days	Early decay	Leakage of bodily fluids, discolouration of the skin
7–14 days	Bloated	Carcass bloated, loss of skin, and hair due to decay
2–4 weeks	Post-bloated	Abdominal cavity open, organs reduced to a fluid, bodily fluids distributed to the surrounding grounds, loss of musculature due to decay
1.5–4 months	Advanced decay	Carcass left by insects, visible bones, remaining skin is dry, and mummified or putrefied
>5 months	Dry remains	Only skeletal remains, with minor dry skin remains, possibly with moss or algae growth on bones

# Date of finding and period/date of death for wild boar carcasses



Based on forensic studies of 58 carcasses (remaining 12 not suitable for the studies – scattered bones).

The blue line shows the empirical cumulative distribution of cases.

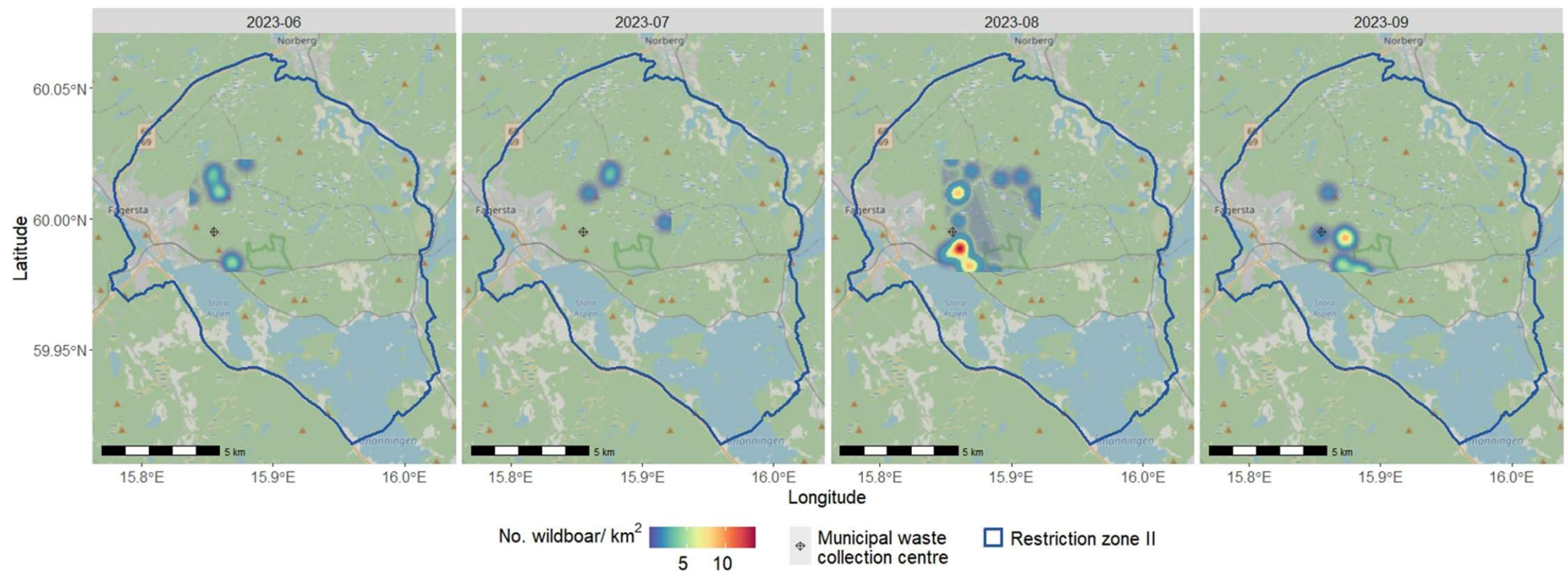
Peak of outbreak in Aug-Sept, where the line is steepest.

No blue line from end of Sept -23 = no new cases

Remains found in 2024: estimated that all of the decay process was finalised in Nov-Dec 2023, before snow season.



# Spatiotemporal analysis



Monthly spatiotemporal evolution.

The mean time of death of positive cases, the number of cases found.

The waste collection centre is represented by a diamond.

## The origin of the outbreak

Genotype II, group 19.

Exact route of introduction remains unknown. However, long distance human mediated translocation can be assumed

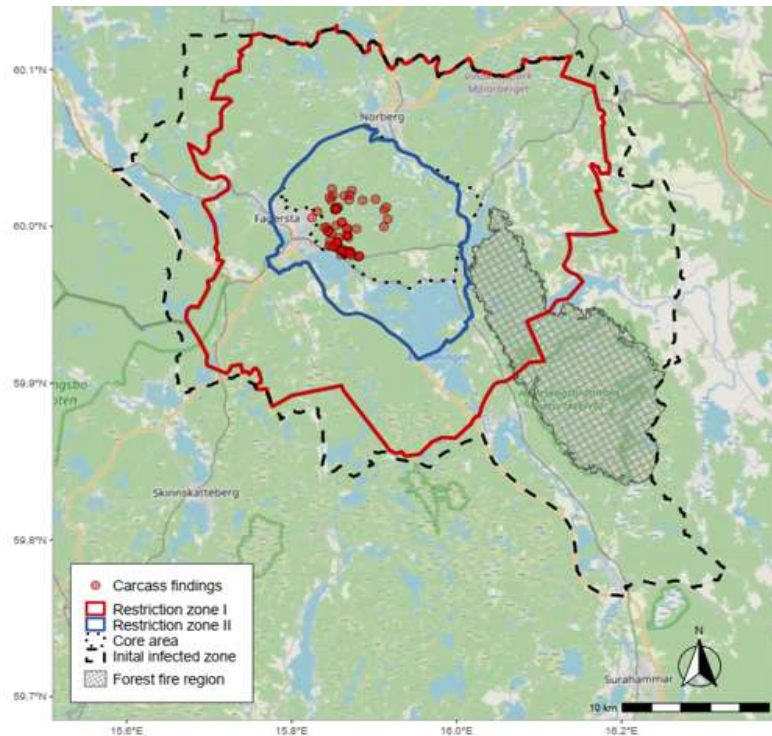
Origin of the virus unknown. Whole genome sequencing and typing of the virus not conclusive



# Conclusions

- Latest death of ASF by end of September 2023
  - Epidemic curve peaked mid August - mid September 2023
  - All positive cases within a very small area within RZII
  - No virus transmission since end of September 2023
  - No wild boar left in RZII since March 2024
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- The risk of residual viable virus in the environment of RZII, including in carcasses not found – **negligible**
  - The risk of new cases of ASF in wild boar occurring due to residual viable virus in the environment in both RZII and RZI – **negligible**

# Summary



A relatively limited outbreak, well concentrated in both time and space (5,1 km ø).

Exhaustive containment and eradication measures facilitated by limited amounts of wild boar and kept pigs in the area.

No virus circulation since end of Sep 2023.

The risk of new cases deemed negligible.

We are of the opinion that Sweden will have fulfilled the requirements for de-listing in Annex I of R 2023/594 by the end of Sept 2024.

# Thank you!

