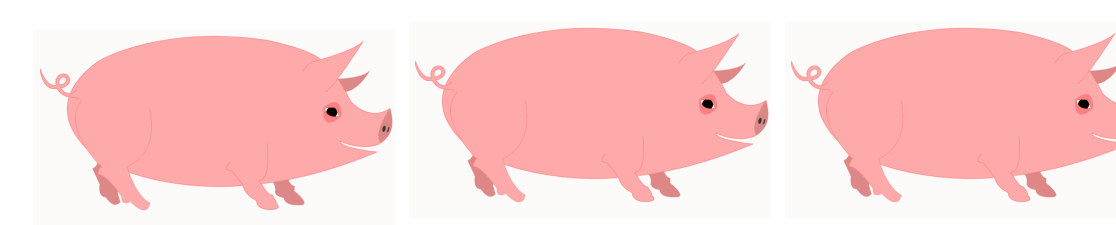


Are African swine fever and its control eliminating traditional pig farming in Lithuania?

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BACKGROUND

African swine fever (ASF) is a devastating disease of pigs affecting pig industry worldwide. It causes not only substantial economic losses but also impacts the structure of pig farming, mostly affecting traditional smallholders (1). In Lithuania, ASF has become endemic in wild boar since its first occurrence in 2014 and outbreaks in domestic pigs occurs annually (except 2021).

Due to the relatively small country size, comparable economic and demographic conditions as well as pig industry structure are prevailing through the country. This enables to assess the consequences of ASF and applied biosecurity, control and eradication measures on traditional non-commercial pig farming (1-10 pigs for own consumption) in Lithuania during 2014–2022.

DATA AND ANALYSIS

All data were obtained from the State Food and Veterinary Service of the Republic of Lithuania. Maps were generated using QGIS version 3.28.0.

Even before the introduction of ASF, a slow decrease of the pig sector has been recorded since 2008 in Lithuania. Since 2013 yearly biosecurity checks of pig farms by veterinary inspectors have been started. After the introduction of ASF, pig industry has suffered 70% reduction of total number of pig farms and 21% of total pig number in the last 10 years (Table. 1). As the ASF virus was slowly progressing westwards in Lithuania, an ASF buffer zone (BZ) with different requirements of preventive slaughter of pigs was established (Fig. 2). Due to widespread occurrence of ASF in domestic pigs and wild boars the BZ has been canceled in 03/2019.

Table 1. Number of pig farms and pigs according to a size of farms from 2013 to 2022 in Lithuania

Farm size	1 - 10 pigs		11 - 100 pigs		101 - 500 pigs		501 - 1000 pigs		1001 and more pigs		Total N pigs	
	N of farms	N of pigs	N of farms	N of pigs	N of farms	N of pigs	N of farms	N of pigs	N of farms	N of pigs	N of farms	N of pigs
2013	18 106	53 143	657	14 594	73	18 494	27	20 180	107	533 422	18 970	639 833
2014	35 444	82 987	582	12 951	78	19 466	27	18 388	95	516 539	36 226	650 331
2015	24 375	63 815	359	9 307	65	16 190	24	16 879	95	504 396	24 918	610 588
2016	19 897	51 936	311	7 953	61	15 606	28	19 073	95	504 897	20 392	599 465
2017	16 370	53 780	419	8 853	20	4 566	14	9 747	50	519 647	16 873	596 593
2018	13 190	40 608	379	7 978	17	4 169	5	3 326	34	503 675	13 625	559 756
2019	9 500	28 000	244	5 500	16	3 500	6	4 200	35	496 000	10 039	537 200
2020	8 929	22 879	229	6 522	42	3 652	23	6 827	88	512 633	9 311	522 513
2021	7 797	20 384	211	6 013	45	4 390	25	5 135	88	514 488	8 166	550 410
2022	5 401	16 117	172	3 615	13	3 102	5	3 896	30	475 170	5 621	501 900
Change (%)	-70.17	-69.67	-73.82	-75.23	-82.19	-83.23	-81.48	-90.69	-71.96	-10.92	-70.37	-21.56

In 2013 established buffer zone due to the risk of ASF reported in the neighboring country:

- strengthened biosecurity measures for all types of pig farms
- farmers not in compliance with biosecurity rules were forced to slaughter pigs preventively until a set deadline (preventive slaughter)
- If tested ASF negative – the meat was allowed to be used for personal consumption only.

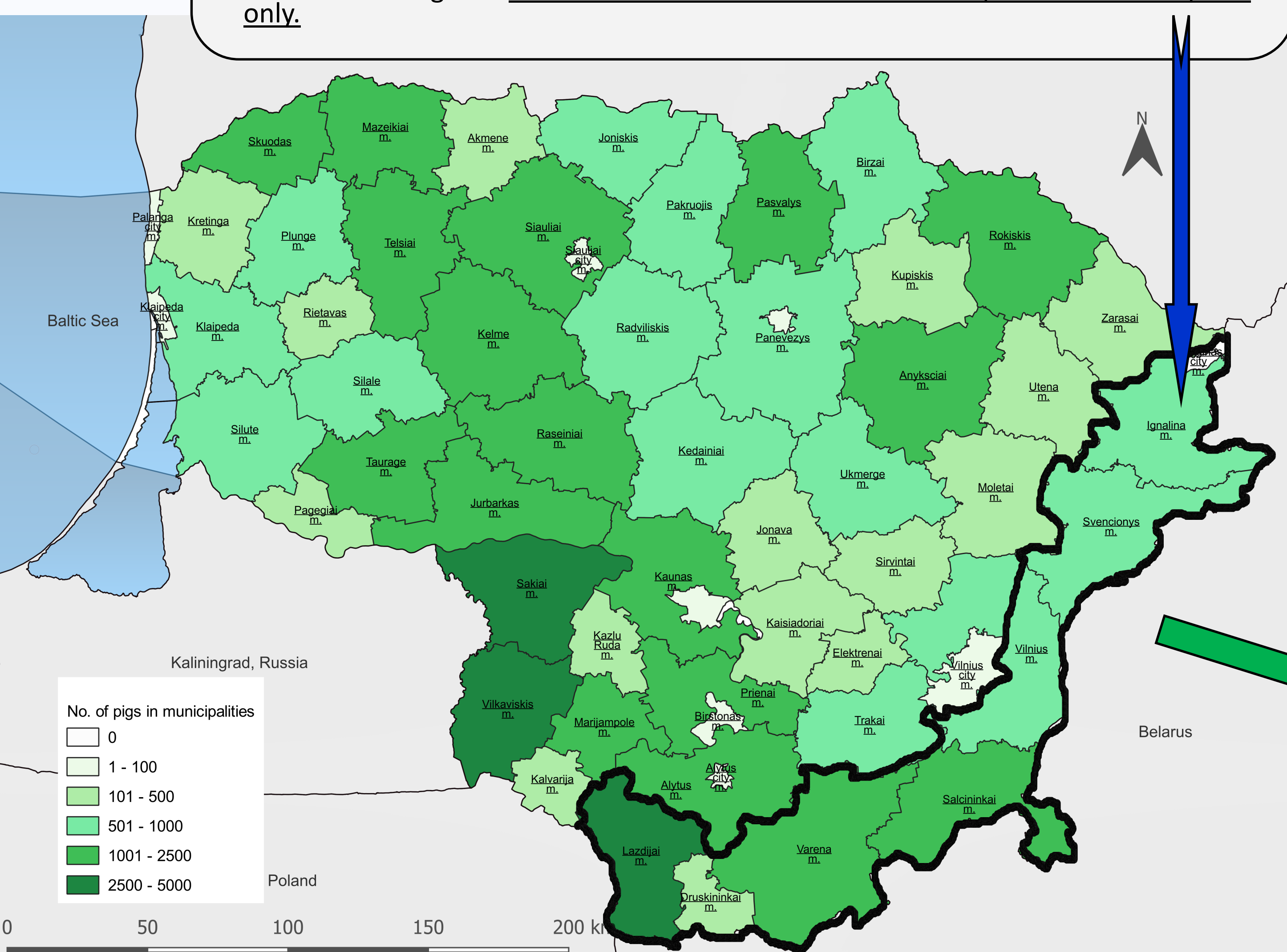


Fig. 1. The number of pigs kept in traditional non-commercial farms (1-10 pigs) in 2013 and the area of the first African swine fever buffer zone in Lithuania.

Enlargement of ASF BZ in 2018 with the same requirement of preventive slaughter as in 2017. 311 pigs slaughtered preventively.

Enlargement of ASF BZ in 2017 with the requirement of preventive slaughter of pigs only in traditional non-commercial farms and only if biosecurity measures are not met. 1920 pigs slaughtered preventively.

Enlargement of ASF buffer zone (BZ) in 2014–2016 with the requirement of preventive slaughter of pigs in all farms with 100 or less pigs. 24.656 pigs slaughtered preventively.

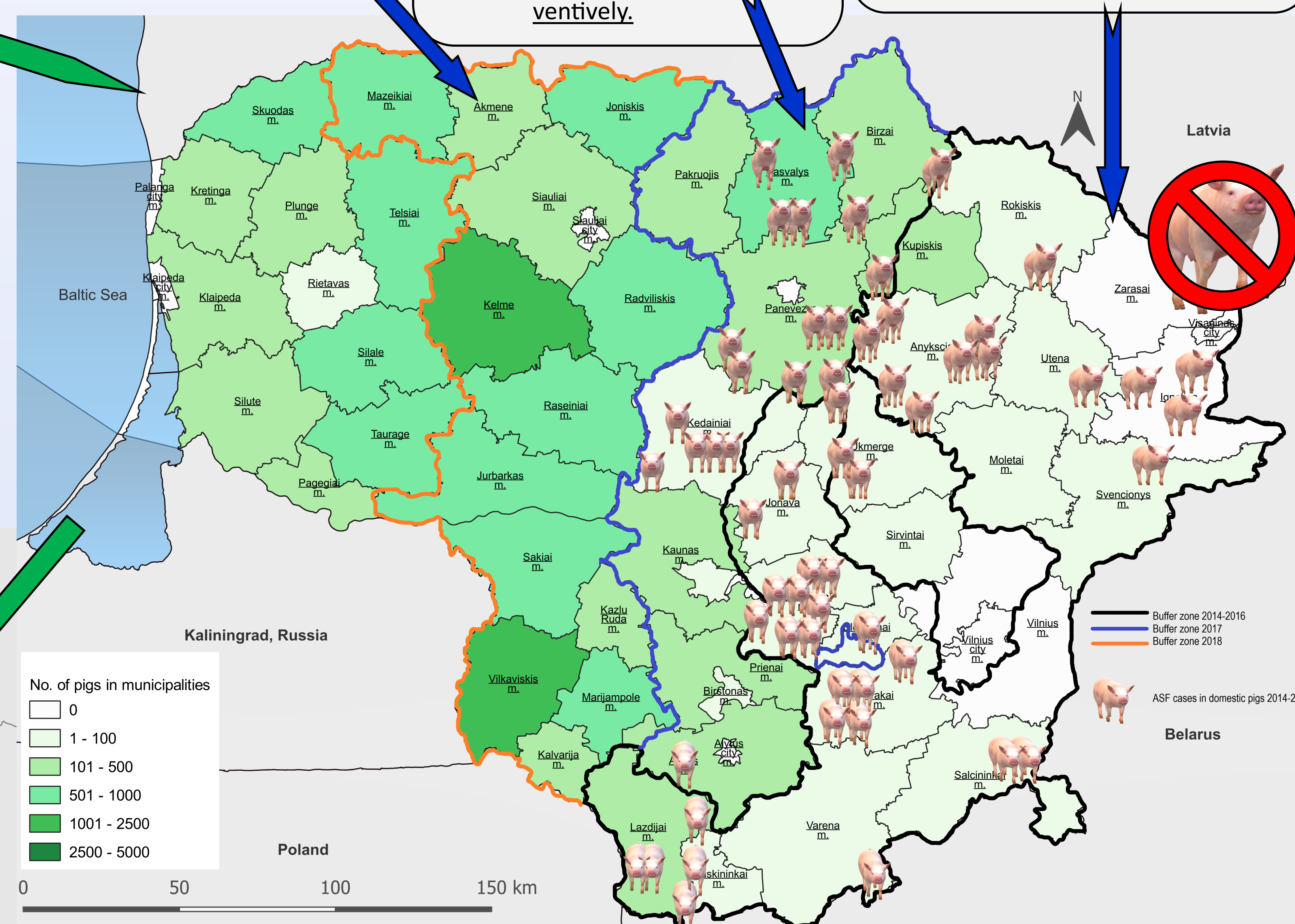


Fig. 2. The number of pigs kept in traditional non-commercial farms (1-10 pigs) in 2019 and areas of ASF buffer zones with the requirement to slaughter pigs in farms with 100 or less pigs (01 2014–02 2017), and in traditional farms and if biosecurity measures are not met (03 2017–03 2019). Pig icons show cases of ASF in domestic pigs from 2014 to 2017.

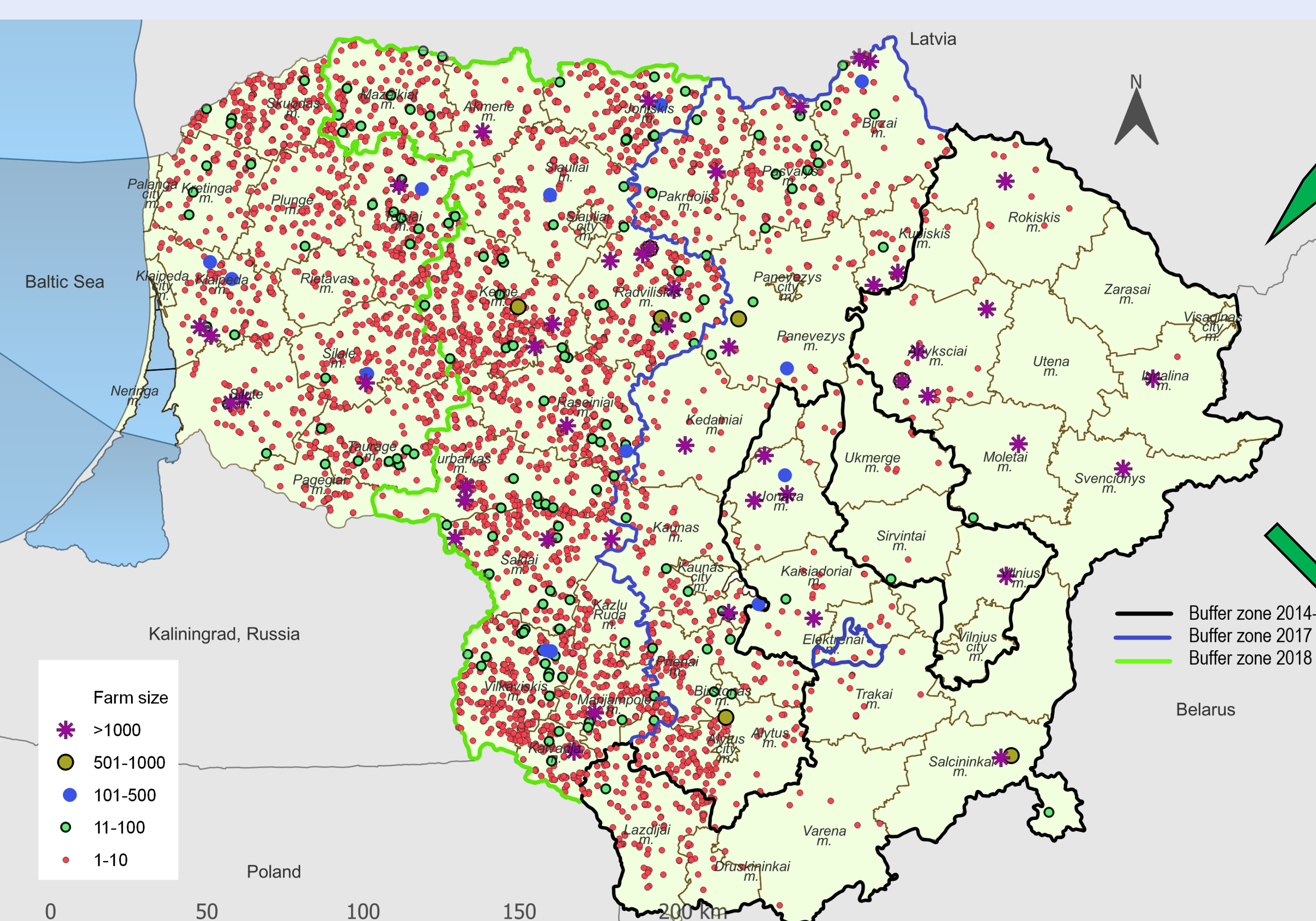


Fig. 3. Distribution of pig farms of different sizes in 2022 and previously established ASF buffer zones in Lithuania.

CONCLUSION

ASF had an overall negative impact on the number of pigs in Lithuania. However, in addition of preventive effect, the preventive slaughter of pigs in non-commercial traditional pig farms (1-10) has resulted in almost complete termination of this tradition to keep pigs for family consumption in the ASF buffer zone set in 2013-2016. In addition to preventive measures, this change was supported by availability of rather cheap pig meat from other countries, improved quality of life without pig farming, and increasing costs for pig farming, including expenses for biosecurity implementation. Improved biosecurity in traditional pig farms has enabled to retain traditional pig farming in ASF buffer zones enlarged since 2017.

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ACKNOWLEDGMENTS

G. Džiaugienė has been supported by the Society for Veterinary Epidemiology and Preventive Medicine to participate in the SVEPM2023 conference.

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