

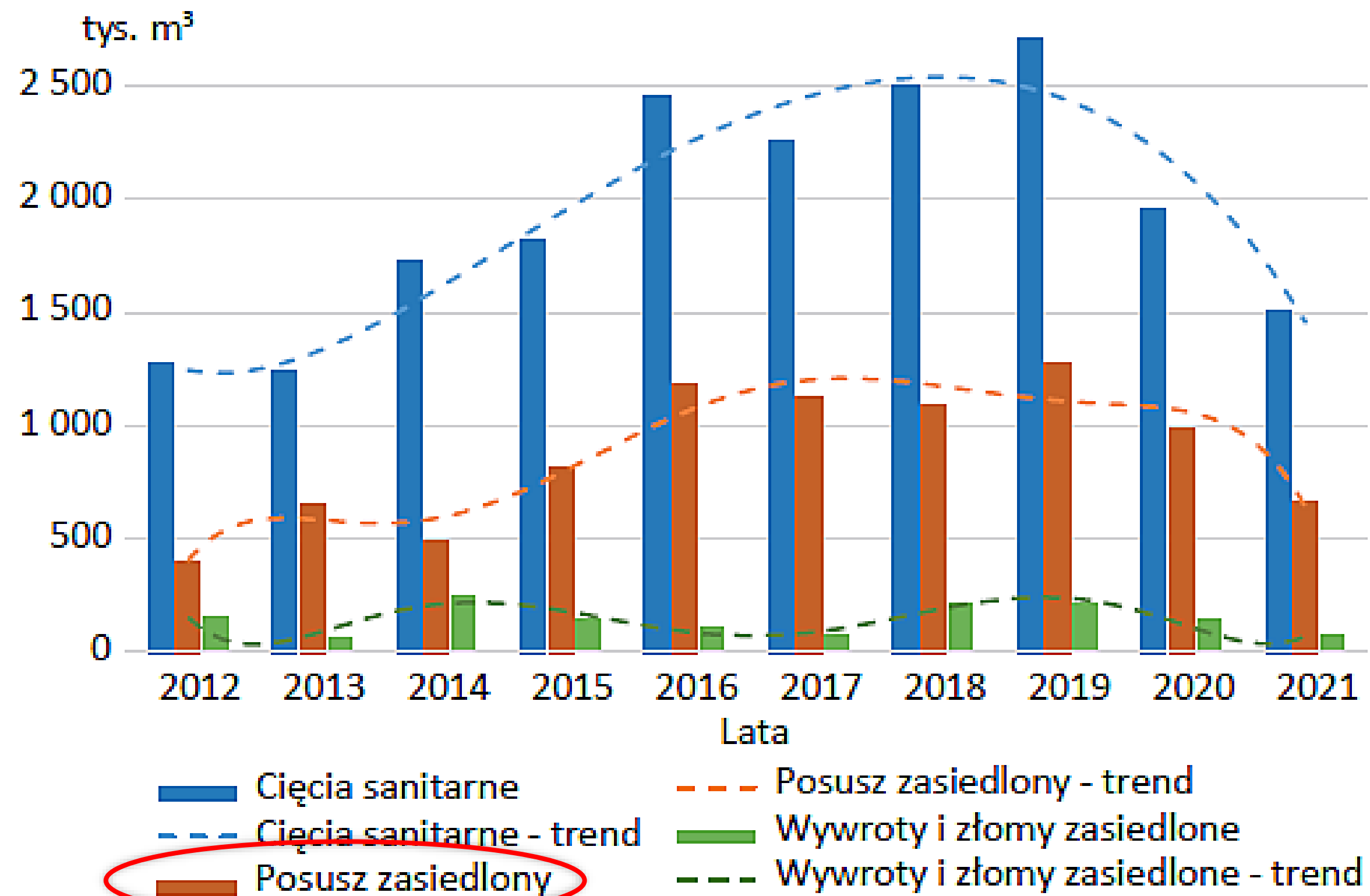


Current situation of the spruce bark beetle
Ips typographus (L.) outbreak in Poland
with special regard to montane stand
in the Carpathians and Sudety

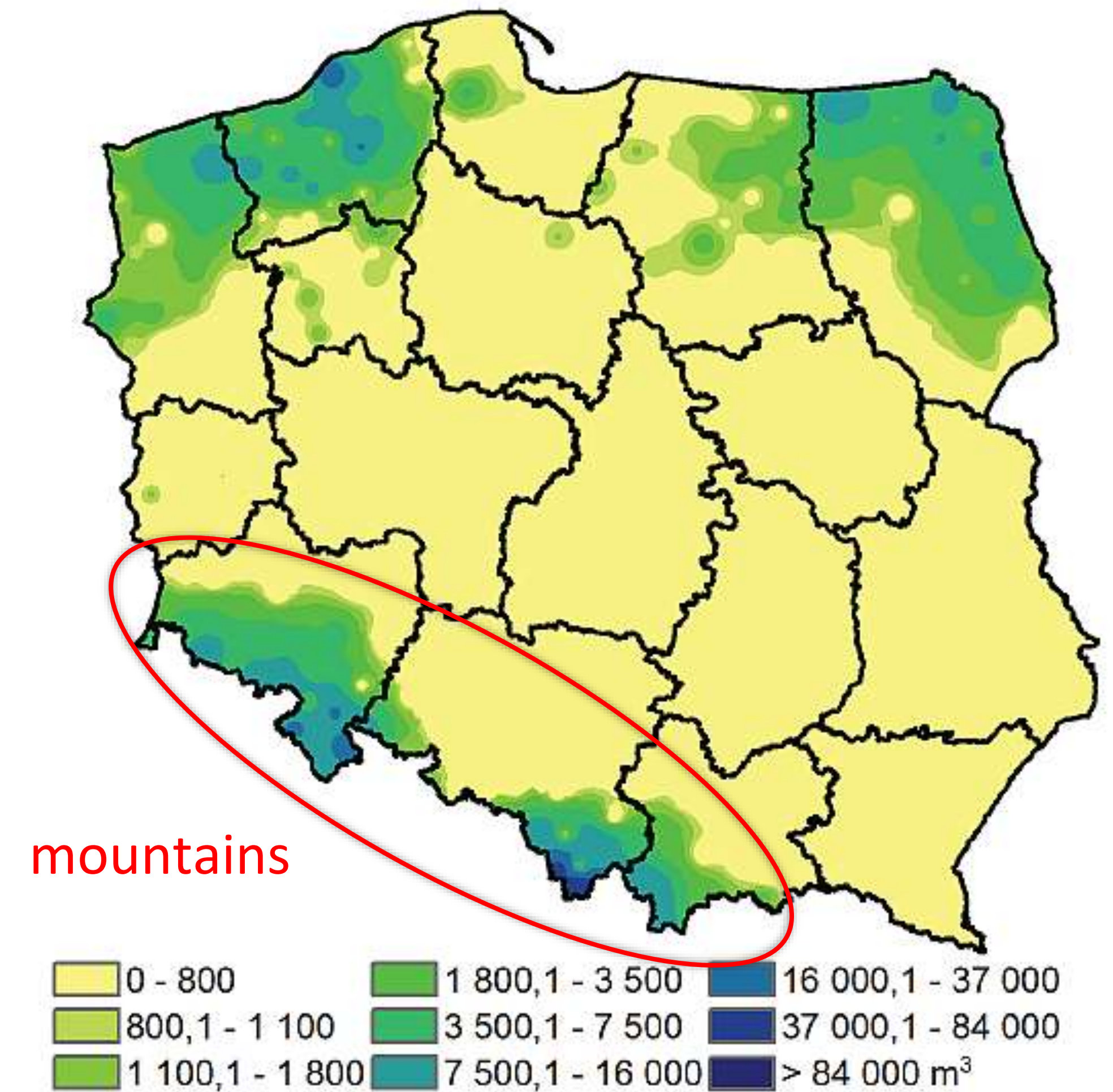
Wojciech Grodzki

Department of Mountain Forests

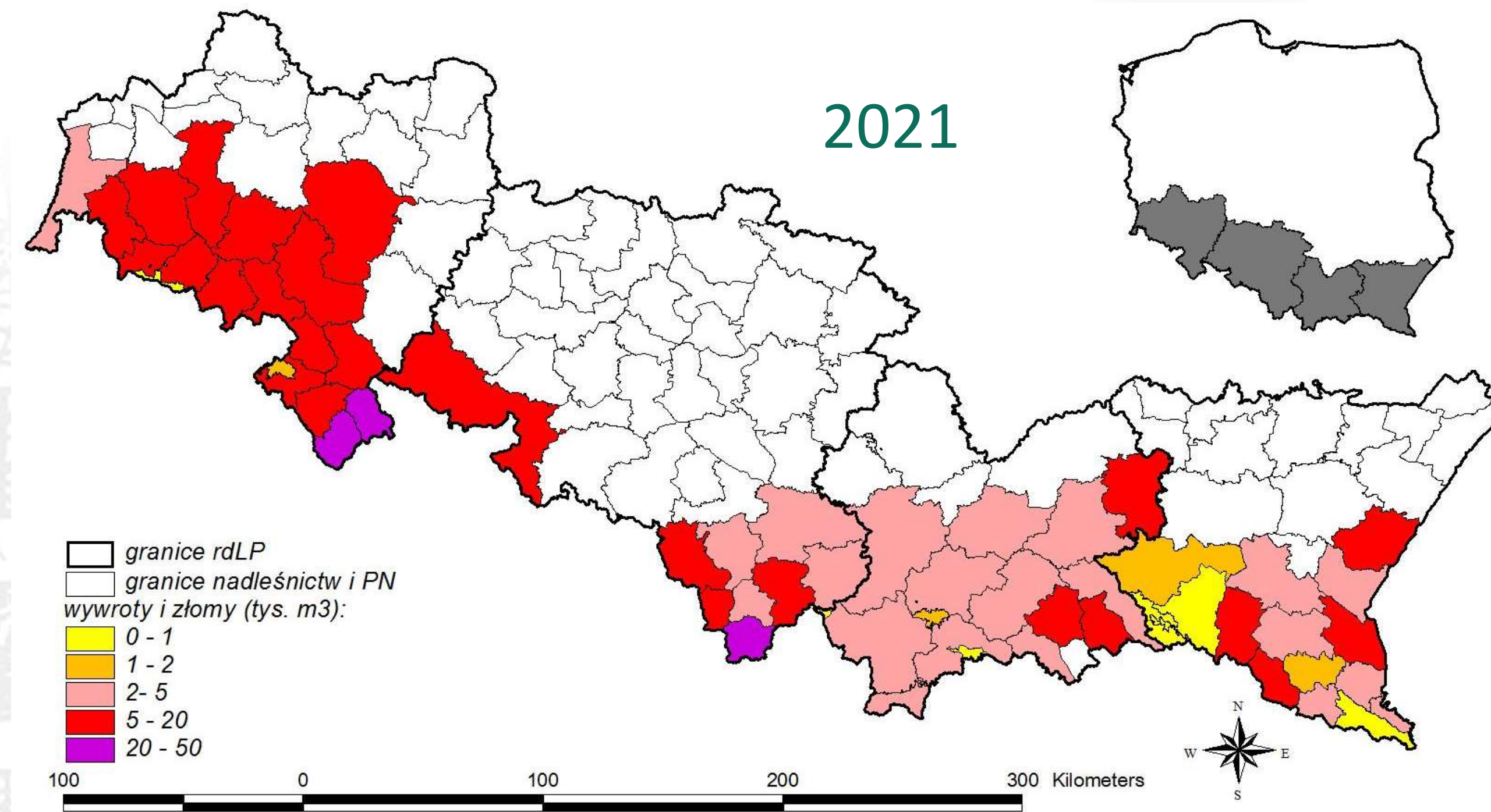
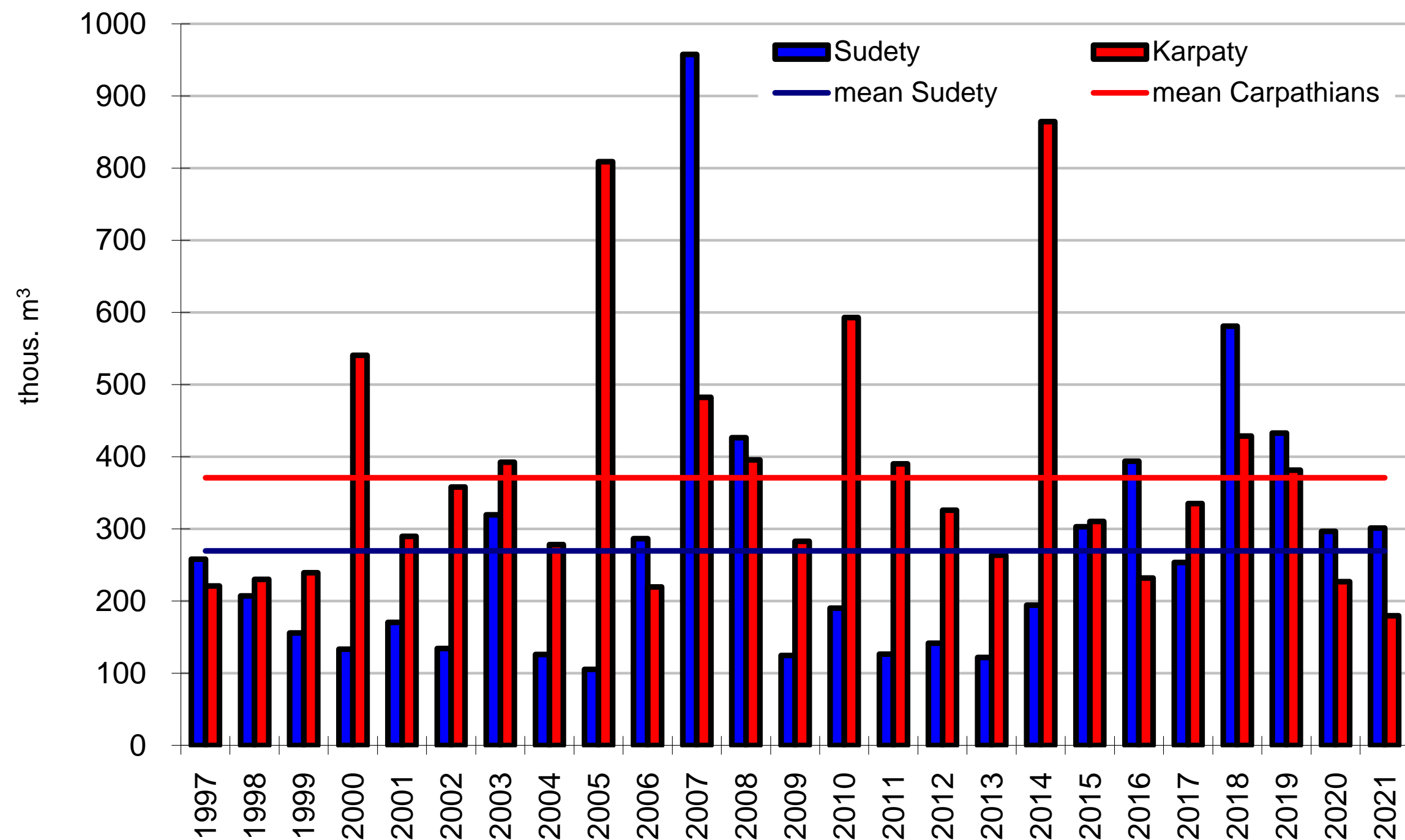
Forest Research Institute



Poland 2021



Abiotic damage (wind, snow)



No catastrophic damage during last years

Sudety – since 2006/2007

Carpathians – since 2013/2014

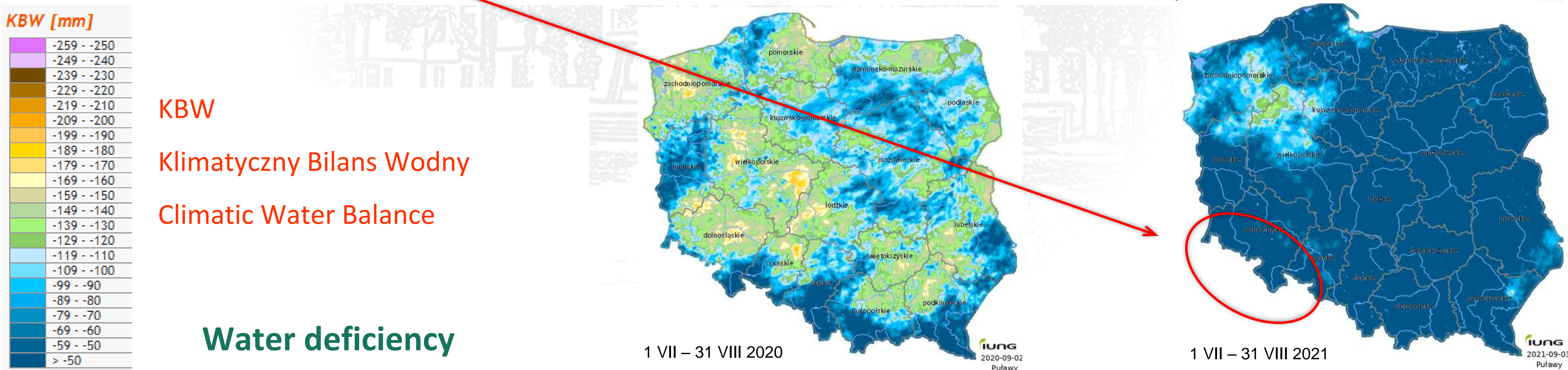
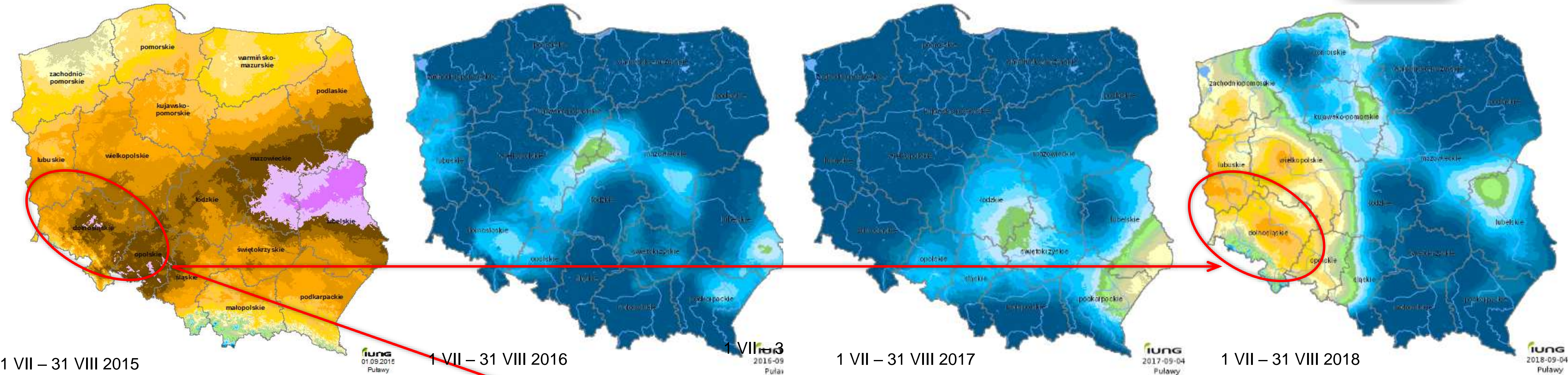
Fungal root diseases – *Armillaria* spp., *Heterobasidion* spp.

RDLP	water	wind	snow	<i>Armillaria</i>	<i>Heterob.</i>
2006:					
Wrocław	4884	3352	6121	20407	19103
Katowice	741	56	130	25862	705
Kraków	136	218	79	3040	663
Krosno	54	361	58	1908	980
2020					
Wrocław	15 913	7 964	5 050	15 450	37 933
Katowice	174	84	475	23 973	391
Kraków	45	351	106	371	363
Krosno	3	5	0	268	324



No catastrophic damage during last years

Factors affecting BB populations



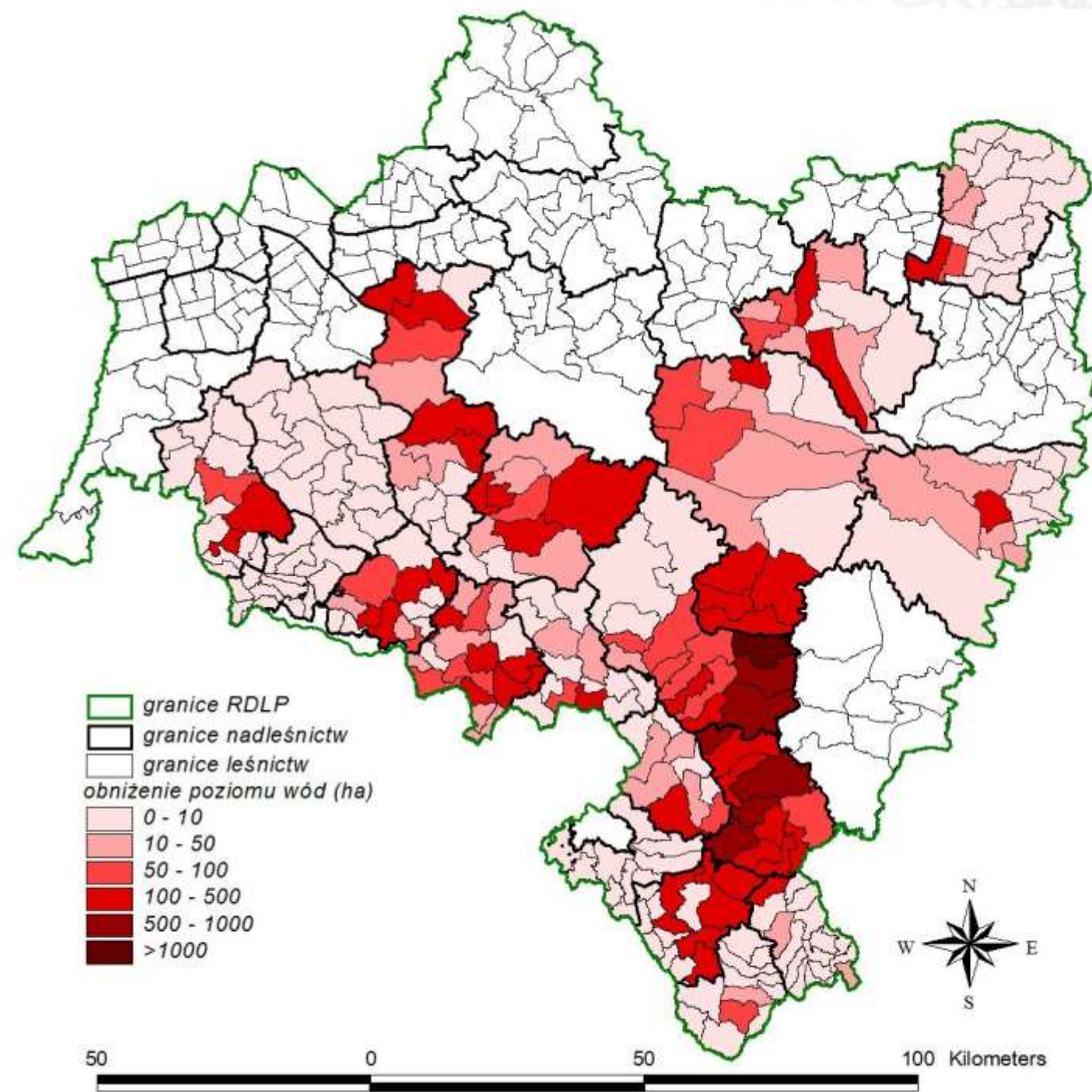
KBW [mm]

-259 - -250
-249 - -240
-239 - -230
-229 - -220
-219 - -210
-209 - -200
-199 - -190
-189 - -180
-179 - -170
-169 - -160
-159 - -150
-149 - -140
-139 - -130
-129 - -120
-119 - -110
-109 - -100
-99 - -90
-89 - -80
-79 - -70
-69 - -60
-59 - -50
> -50

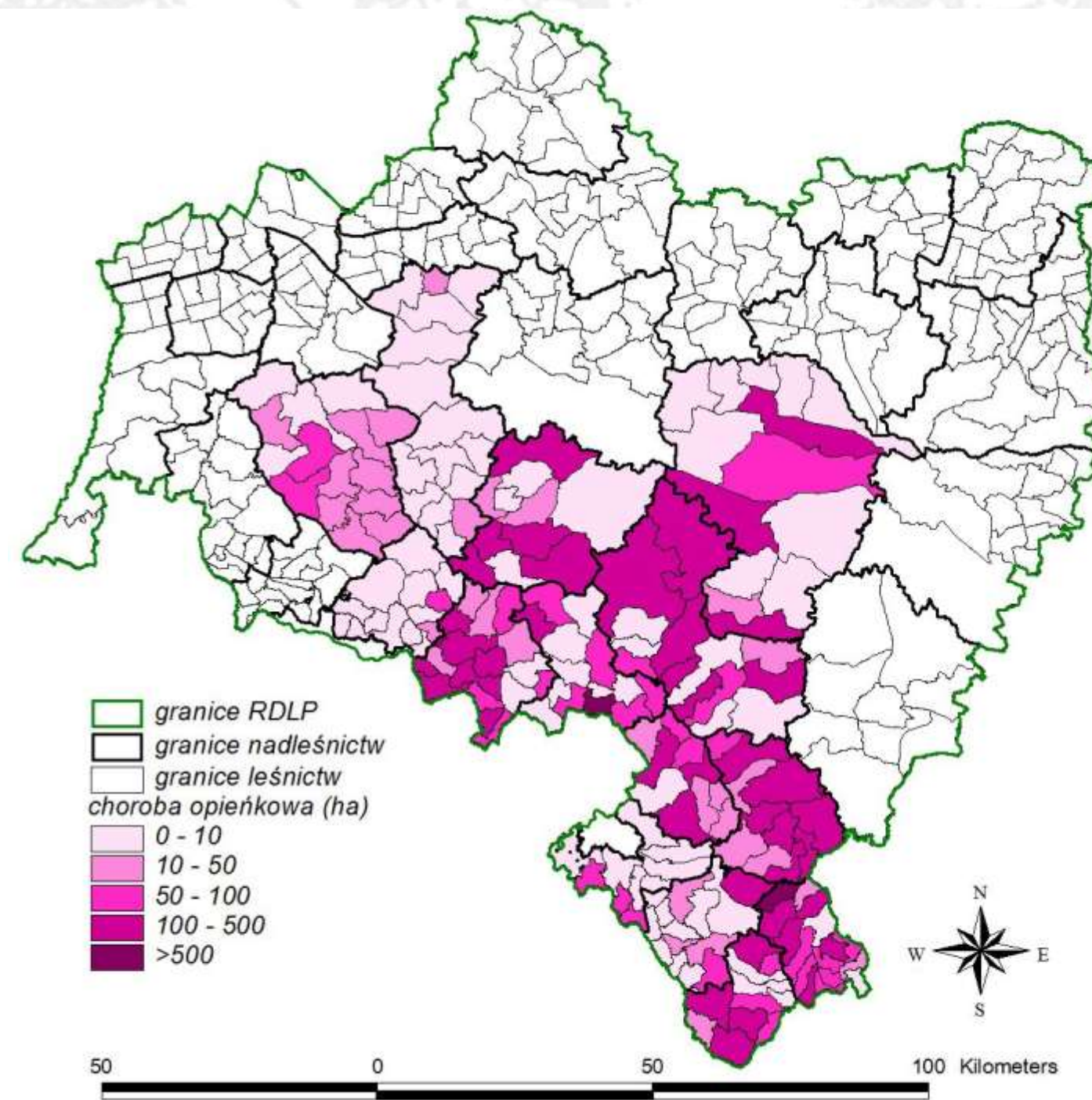
KBW
Klimatyczny Bilans Wodny
Climatic Water Balance

Water deficiency

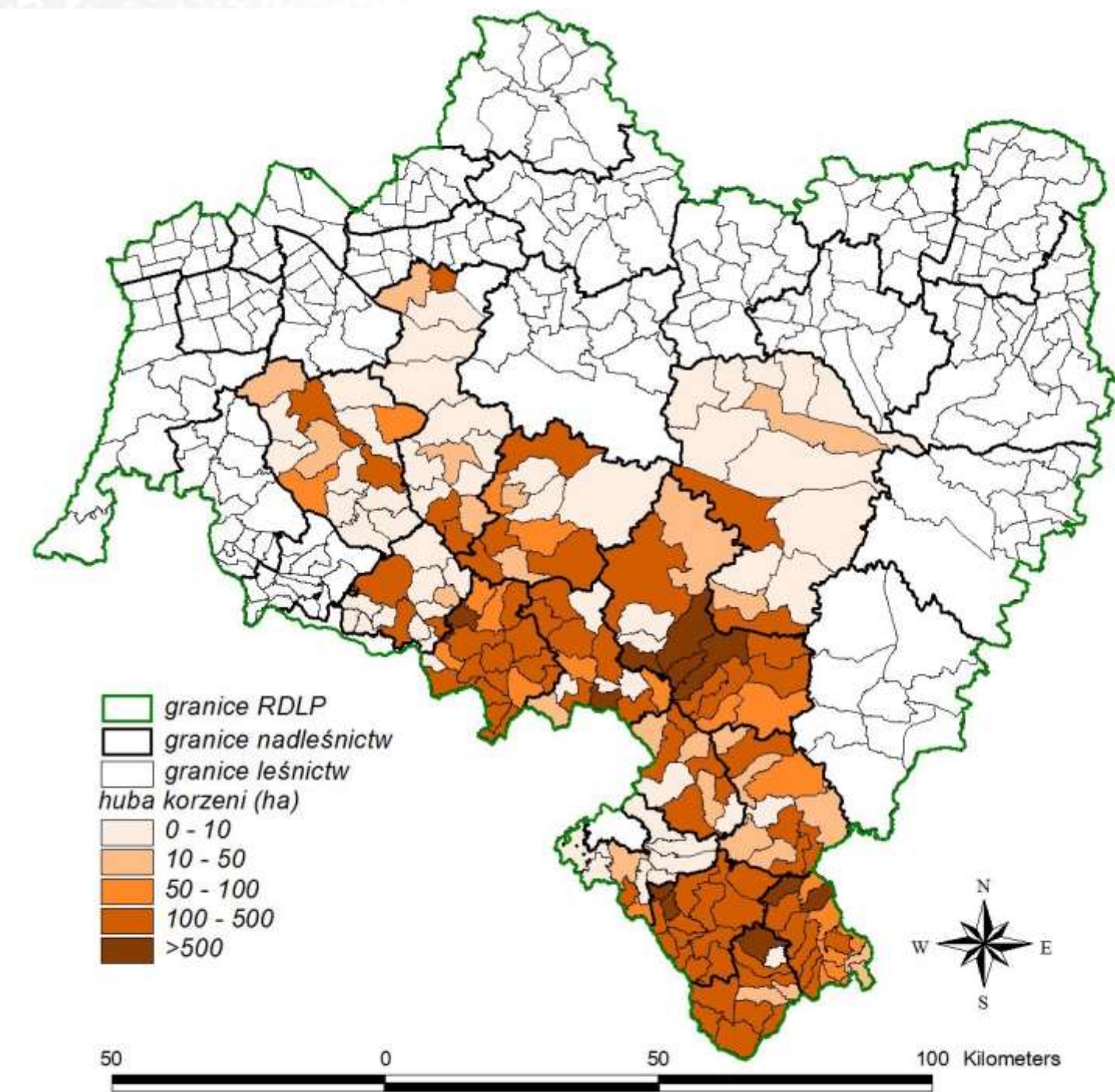
Synergy



Low ground water level 2018



Armillaria root rot 2018

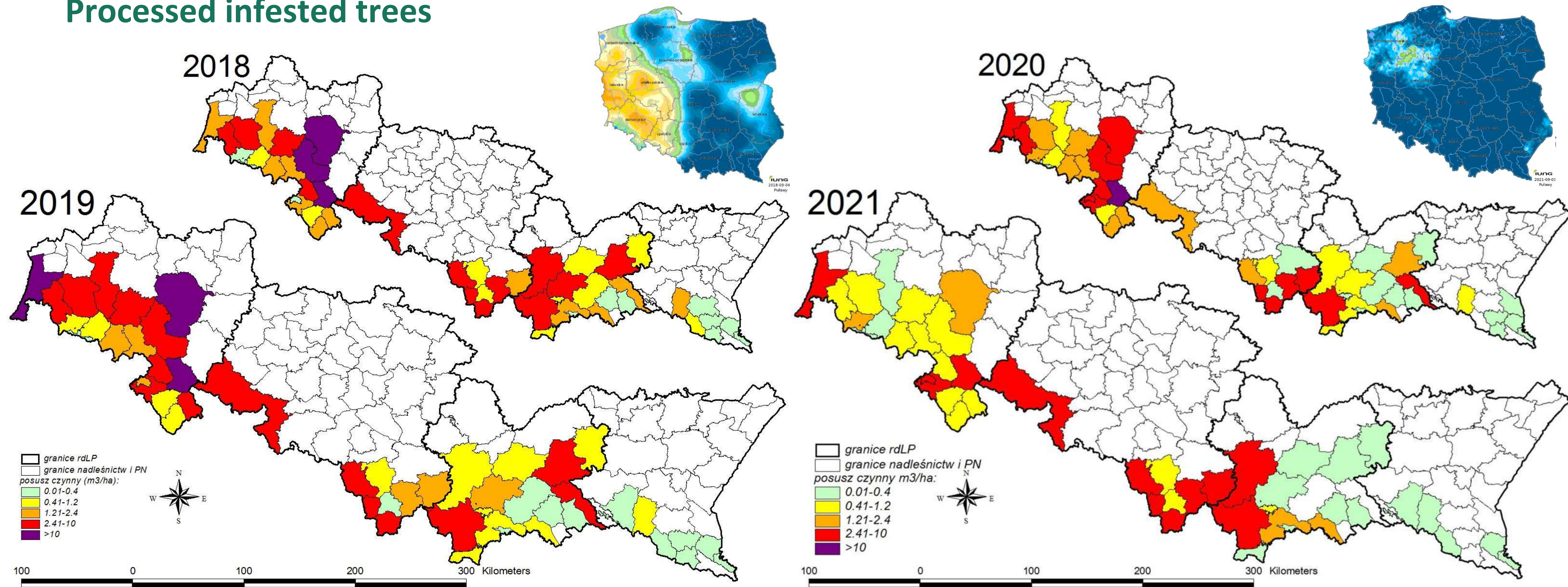


Heterobasidion spp. 2018

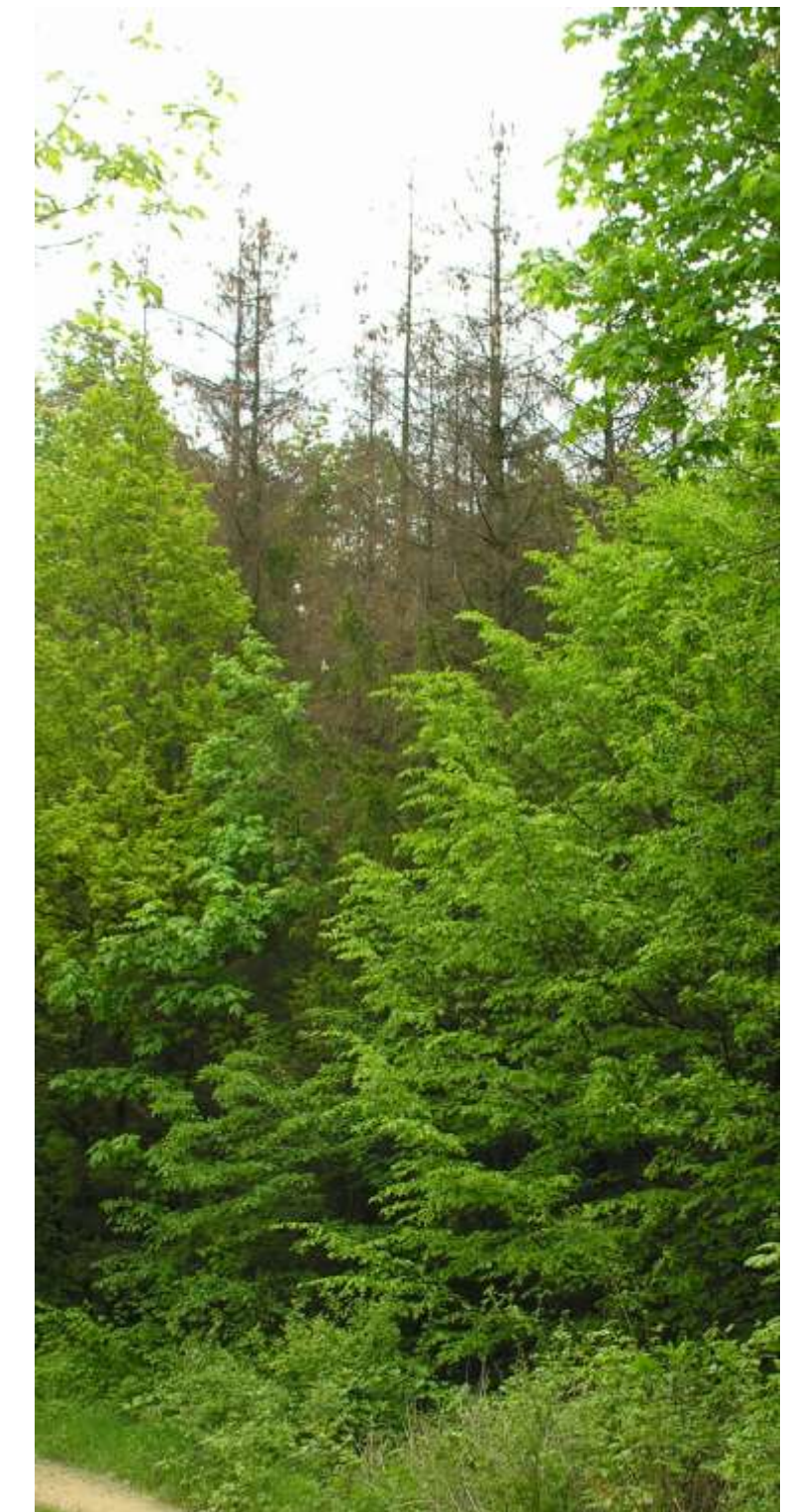
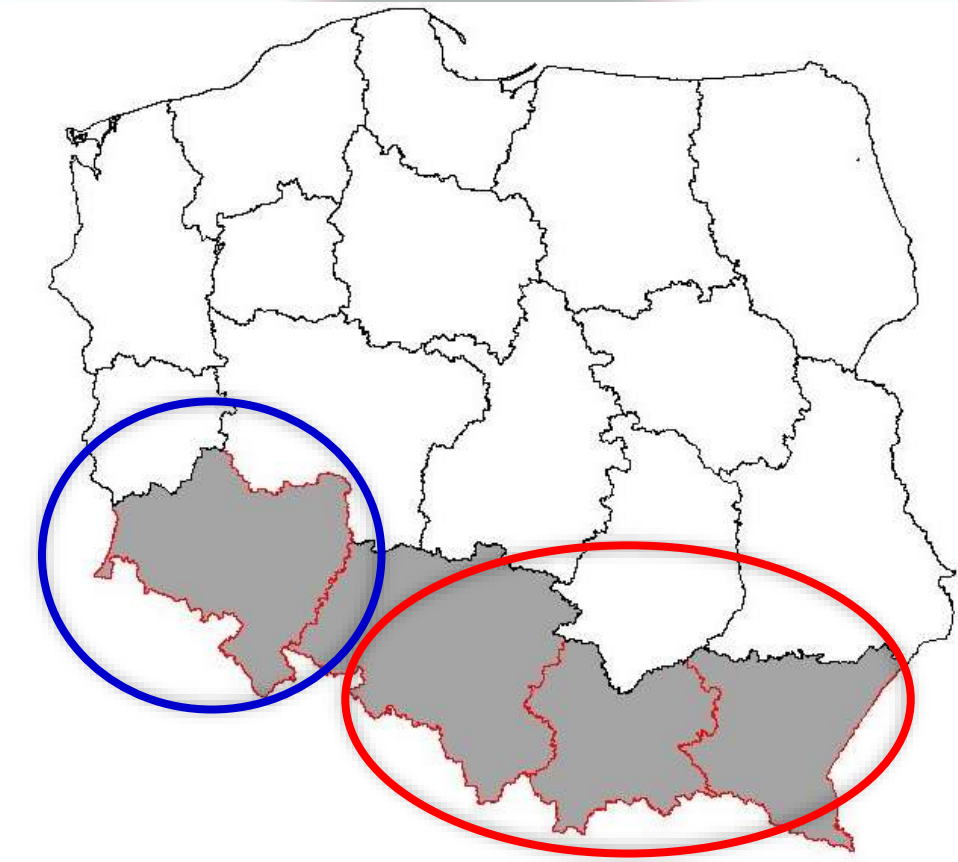
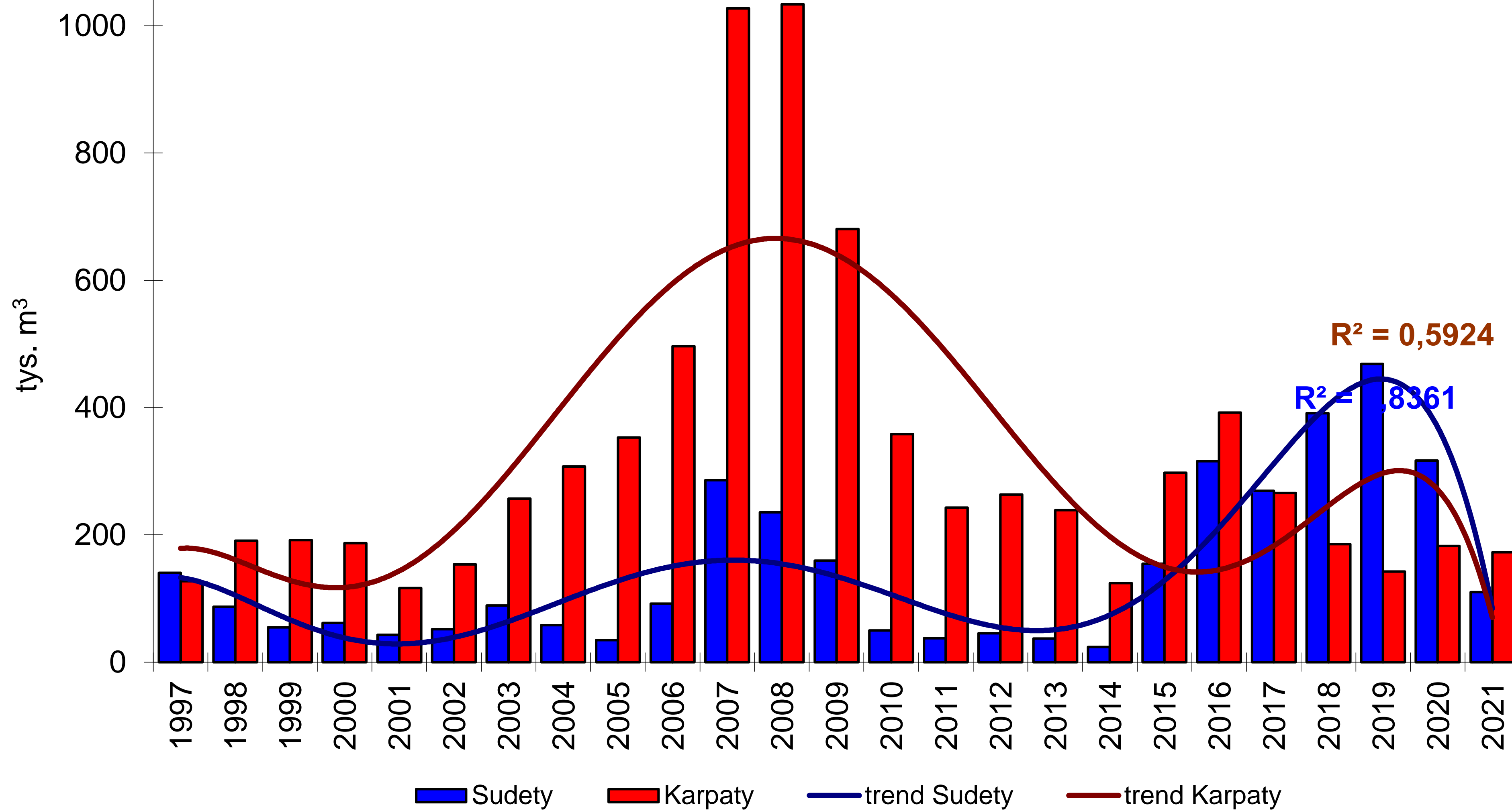
Source: Grodzki W., Góral J., Mazur A., Nowik K., Rogowski G., Skąlecka K. 2019. Dynamika zamierania drzewostanów na terenie Regionalnej Dyrekcji Lasów Państwowych we Wrocławiu. Konferencja „Aktualne problemy ochrony lasu”, Ameliówka, X 2019

Similar situation in the western Carpathians, lower water deficiency in the mountains

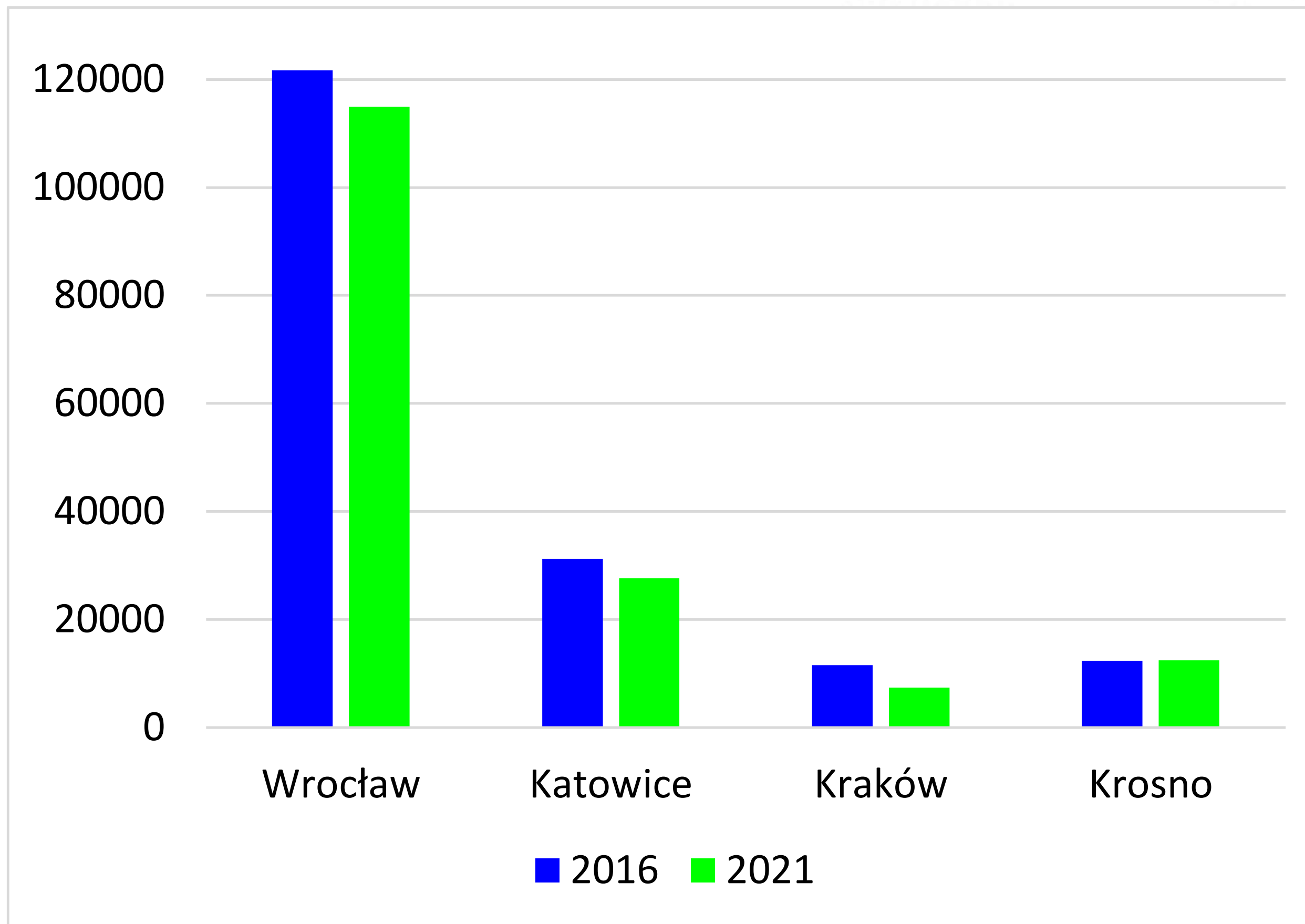
Processed infested trees



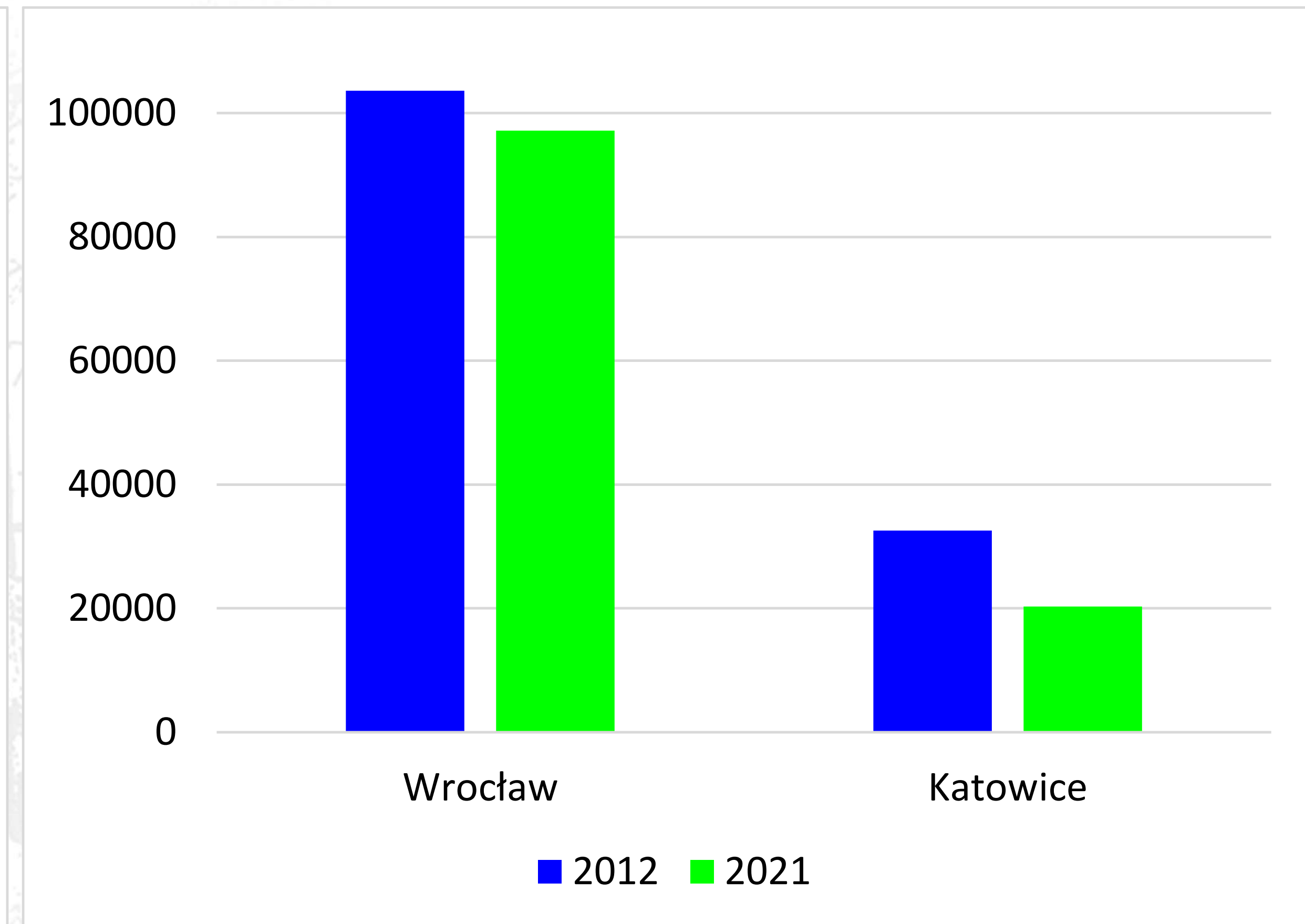
Processed infested trees



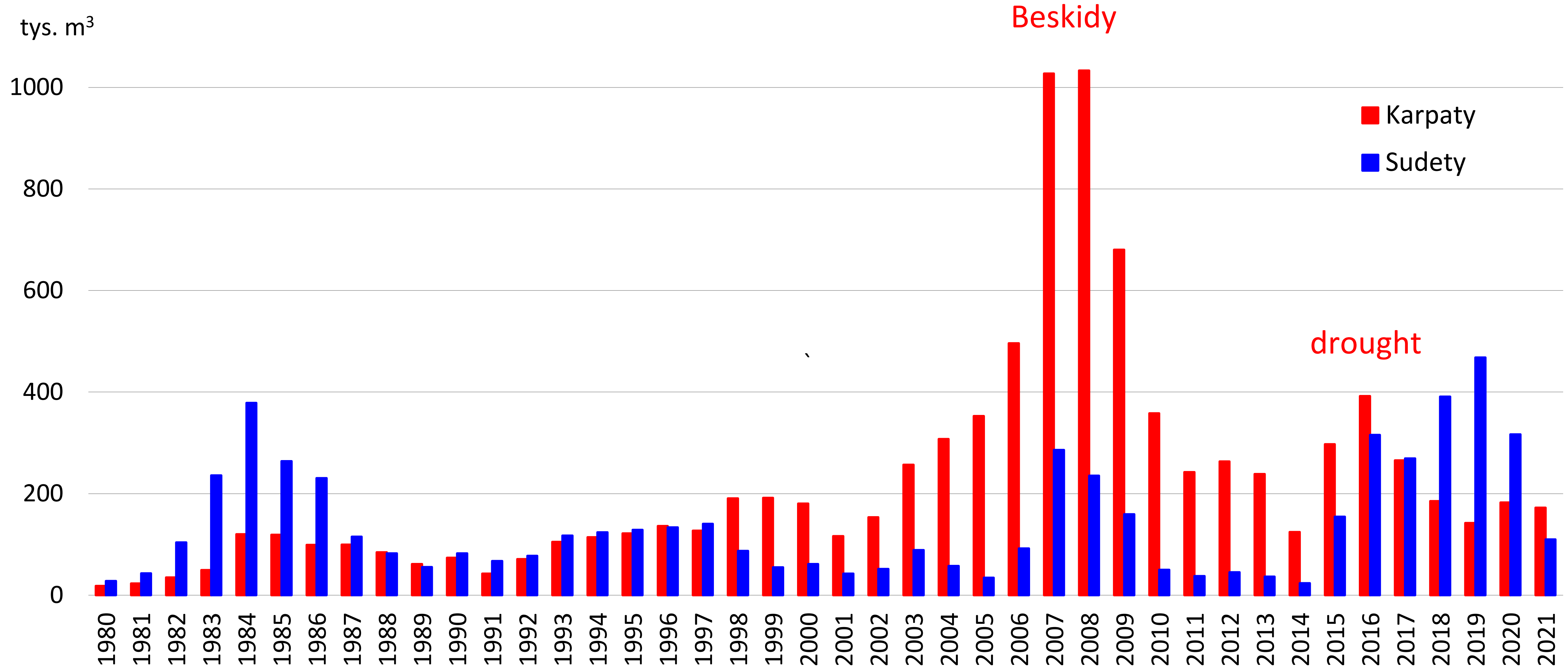
Area of spruce stands over 20 years



Area of spruce stands over 40 years



Outbreaks – overview



Z. griseana – *I. typographus*
„ecological disaster”

„Kirill”

drought



Is it already over?
Maybe this time...
Thank you!

Wojciech Grodzki
W.Grodzki@ibles.waw.pl