

Situation in spruce bark beetle calamity in Czechia in 2021-2022



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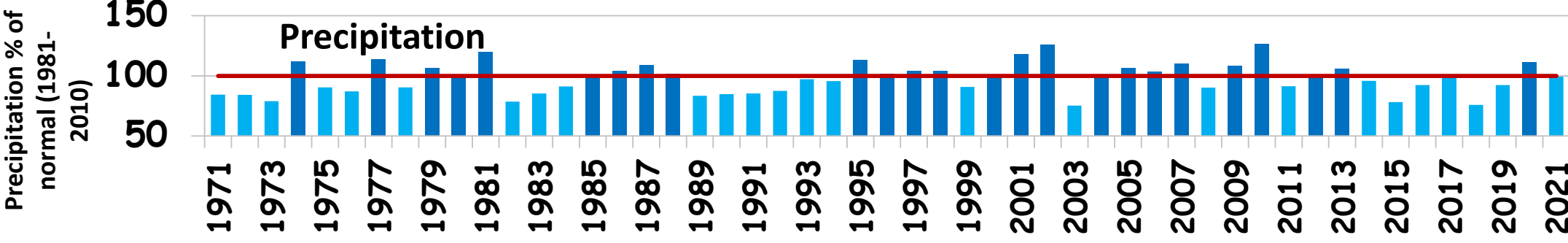
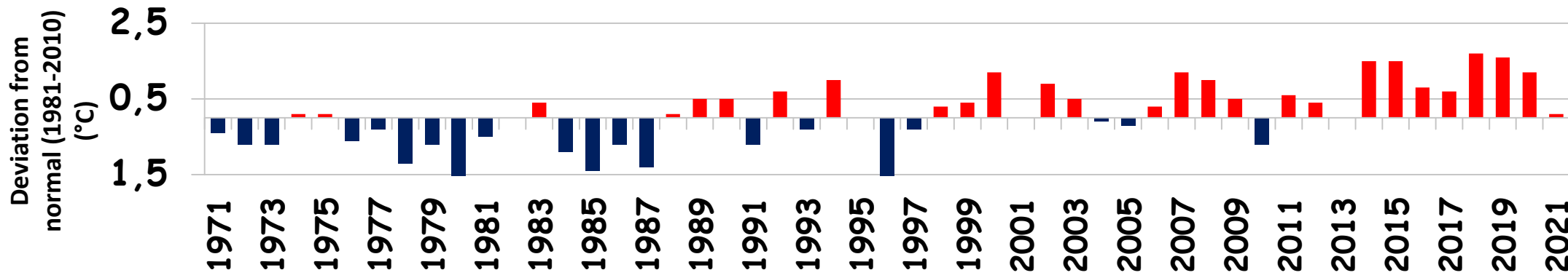
Forest Protection Service, FGMRI

June 20-24, 2022

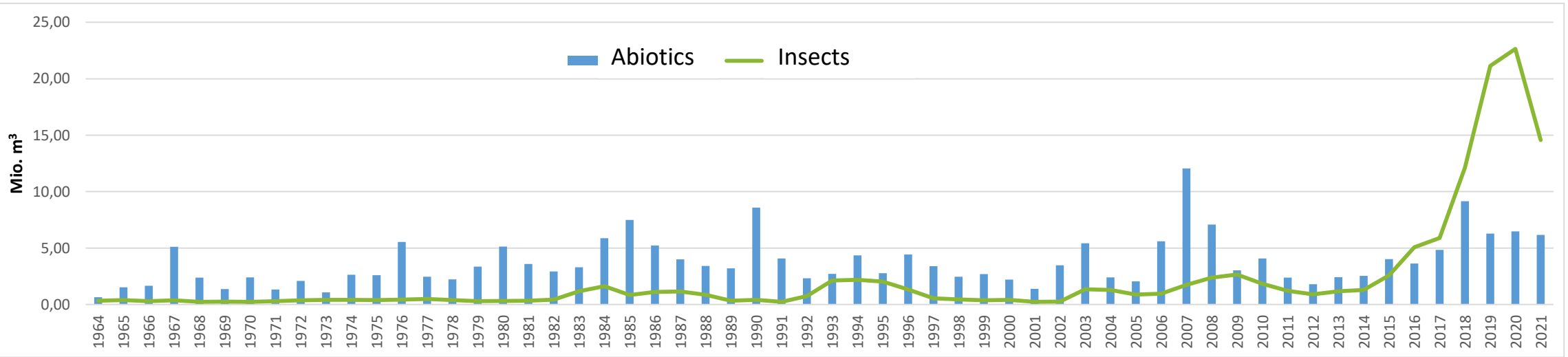
Forest area
in Czechia:
2.614 mio. ha

Spruce
forests area:
1.285 mio. ha

Temperature



Sanitary cutting



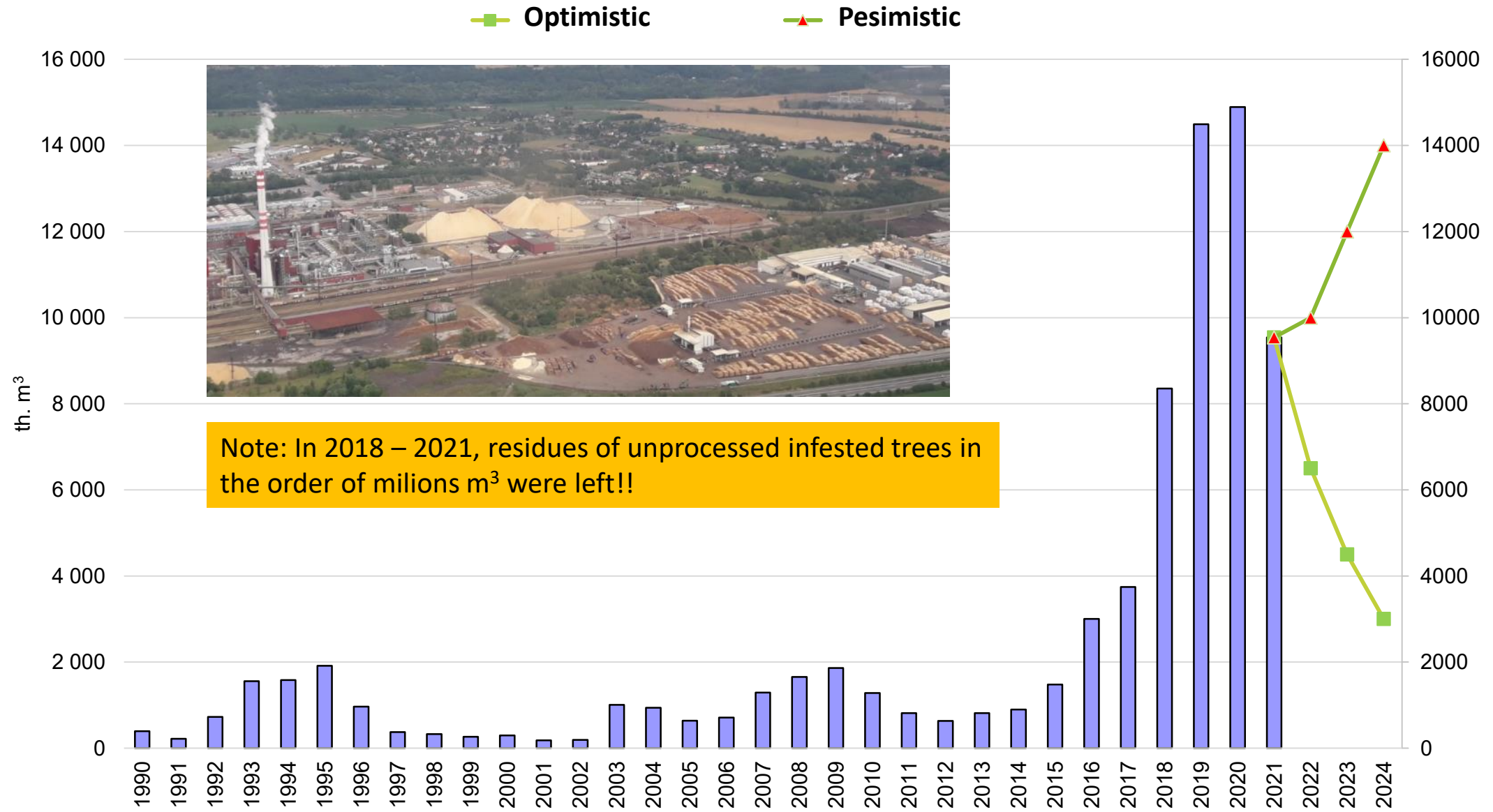
The most harmful bark and wood boring insect in Czechia

- Dominant role of bark beetles, approx. 95 % of biotic damage
- Main damaged host: Norway spruce
- Main insect species: *Ips typographus*, *Ips duplicatus*, *Pityogenes chalcographus* in their combination
- Increasing role of *Ips duplicatus*

- Serious damages also in pine stands



Recorded volume of spruce BB infested wood since 1990

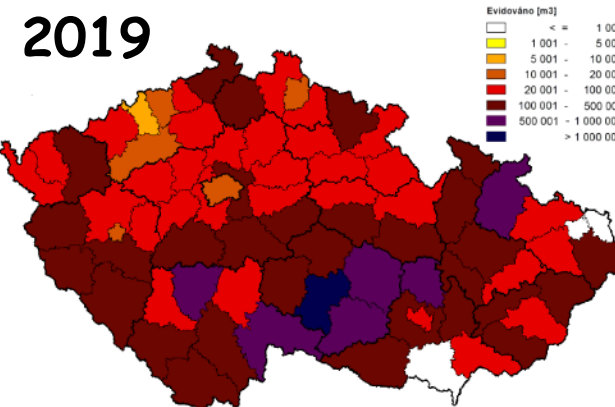
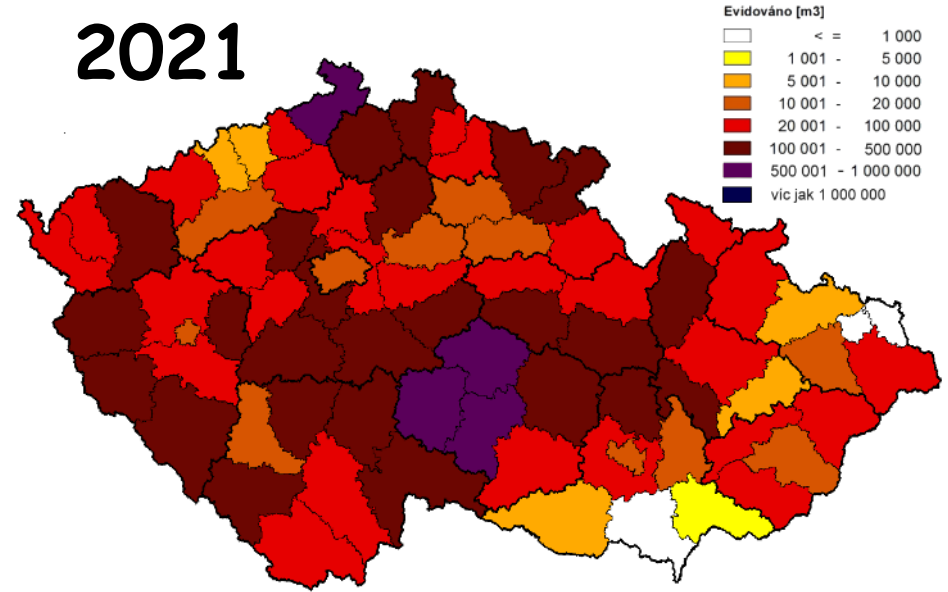
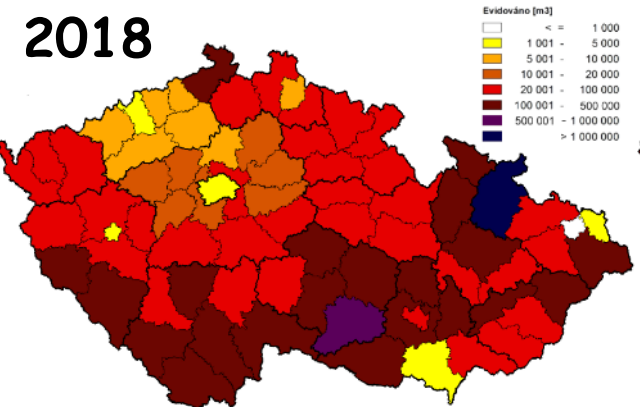
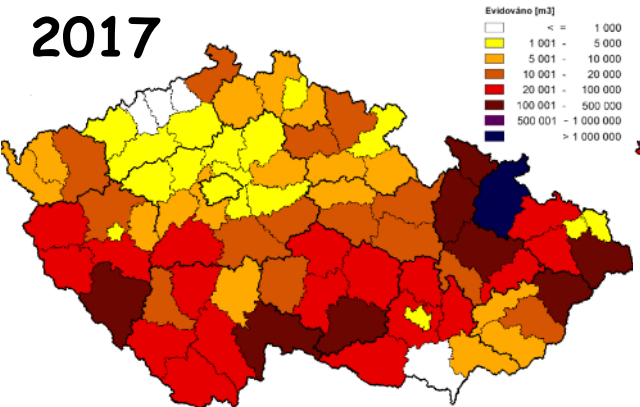
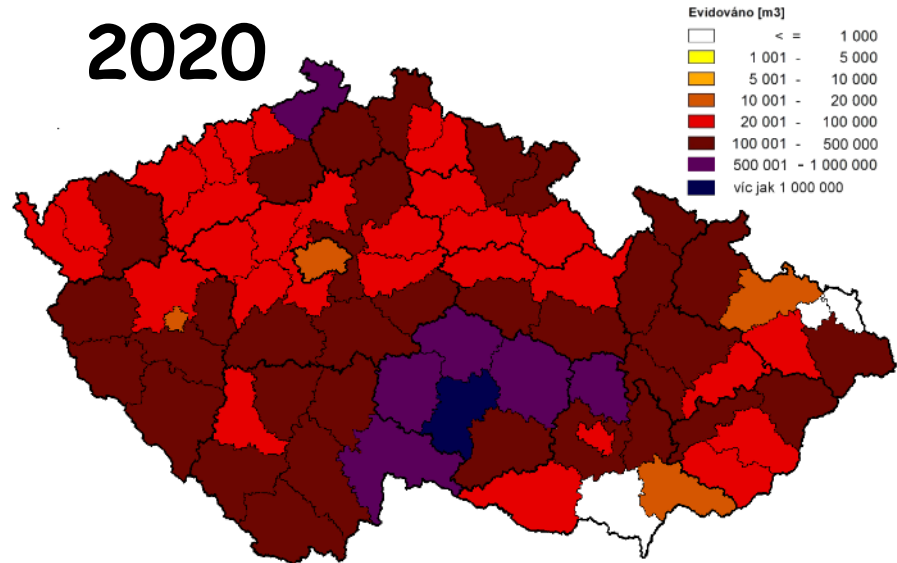
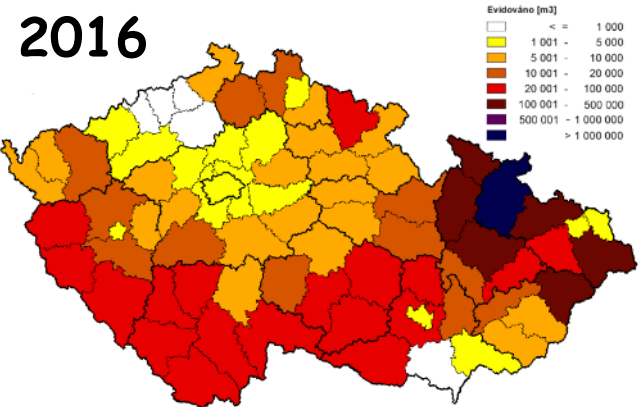
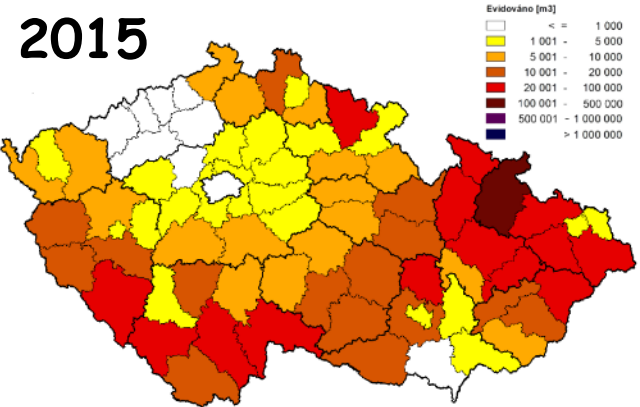
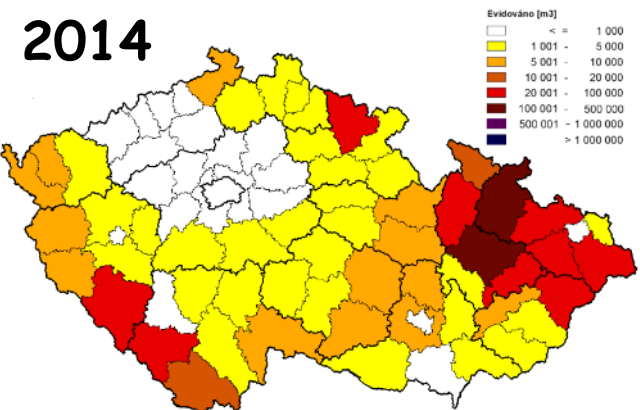


Recorded volume of BB spruce wood in Czechia

1951-1960	2 mio m ³
1961-1970	3 mio m ³
1971-1980	4 mio m ³
1981-1990	8 mio m ³
1991-2000	9 mio m ³
2001-2010	13 mio m ³
2011-2020	71 mio m ³
2021	9,5 mio m ³



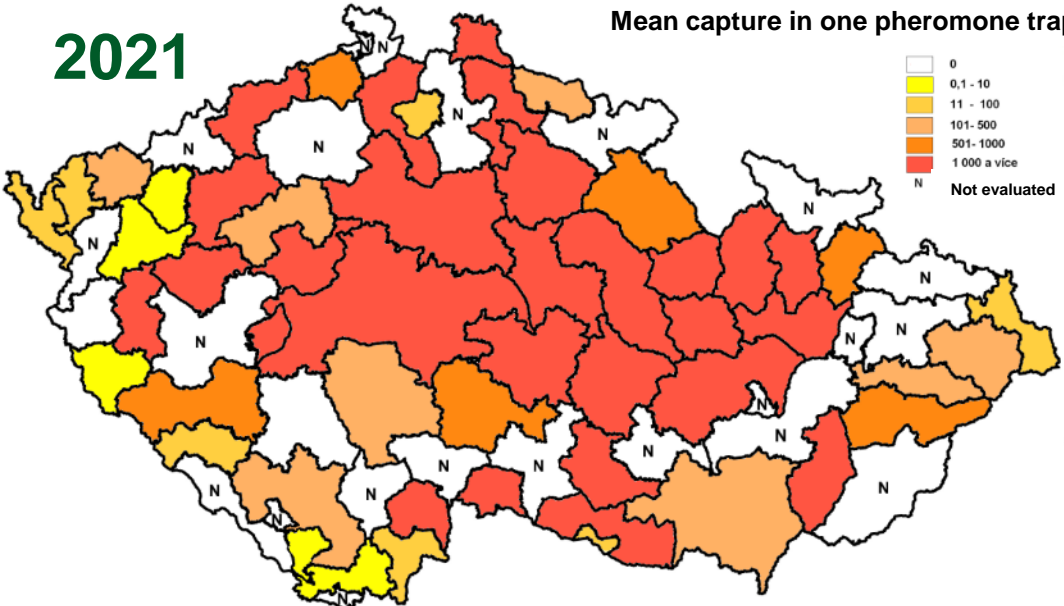
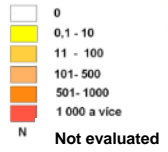
Recorded volume of spruce BB infested wood



Monitoring of *Ips duplicatus* in 2021 and cumulative map 1997 - 2021

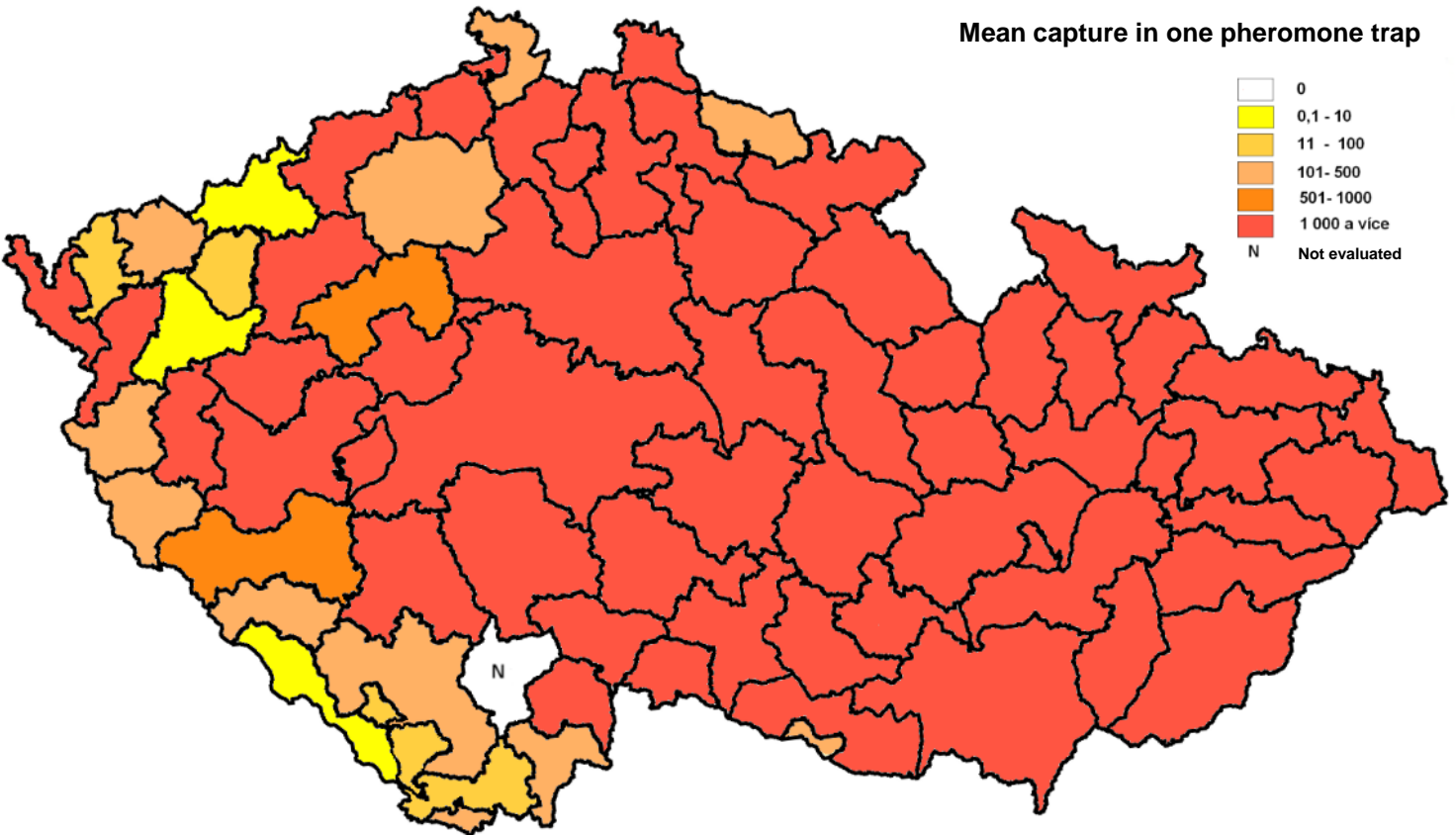
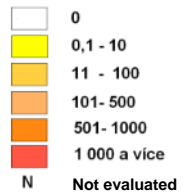
2021

Mean capture in one pheromone trap

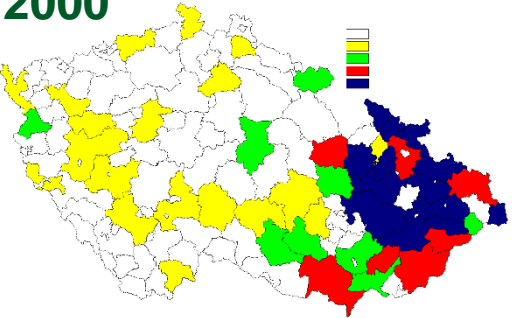


Cumulative 1997 - 2021

Mean capture in one pheromone trap



2000



Protection measurements

- **2021:**

- cca 290 th. m³ trap trees
- cca 42 th. pheromone traps
- barked ca 266 th. m³
- chemically treated ca 1 146 th. m³

- **2020:**

- cca 246 th. m³ trap trees
- cca 55 th. pheromone traps
- barked ca 319 th. m³
- chemically treated ca 2 046 th. m³

- **2019:**

- cca 250 th. m³ trap trees
- cca 69 th. pheromone traps
- barked ca 183 th. m³
- chemically treated ca 2 209 th. m³

- **2018:**

- cca 282 th. m³ trap trees (2017 - 461 th. m³)
- cca 71,5 th. pheromone traps (2017 - 53 th.)
- barked ca 106 th. m³ (2017 - 30 th. m³)
- chemically treated ca 1 265 th. m³ (2017 - 486 th. m³)



Kůrovcová mapa (BB map):

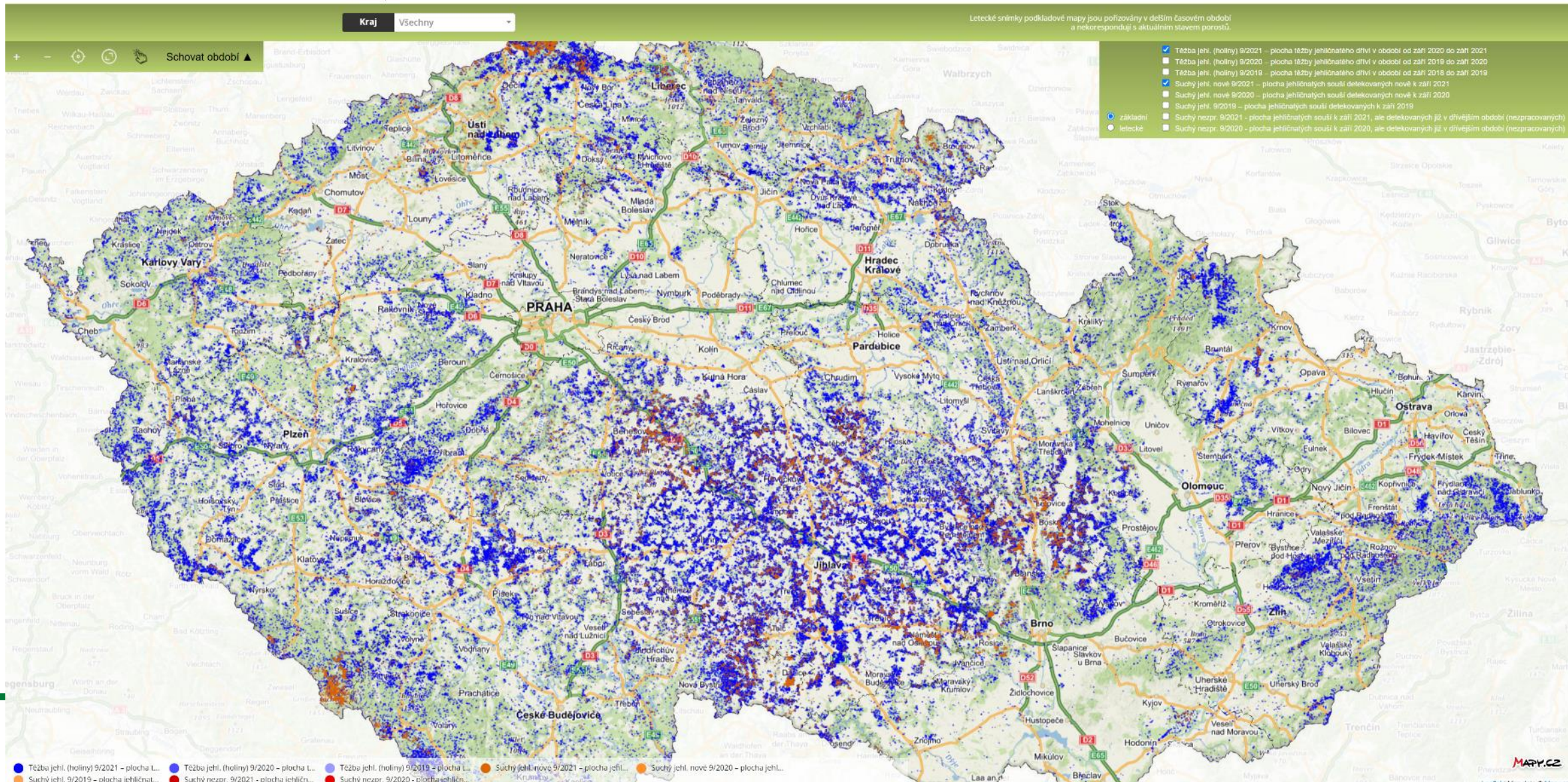
<http://geoportal.uhul.cz/mapy/MapyDpz.html>

or <https://www.kurovcovamapa.cz/>

Forest Management Institute



MAPA PLOCH S RIZIKEM ŠÍŘENÍ KŮROVCŮ
PROVOZNI TESTOVÁNÍ VYUŽITÍ ANALÝZY SATELITNÍCH SNÍMKŮ V LESNICKÉM PROVOZU

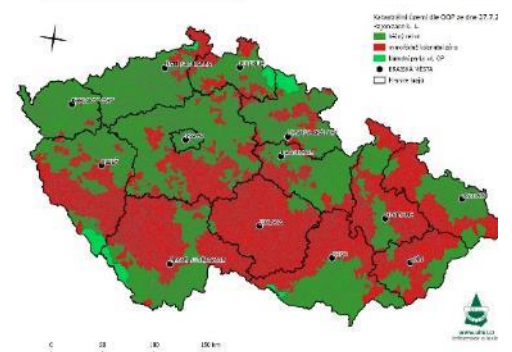
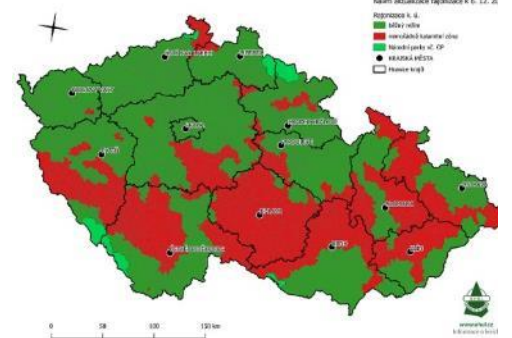
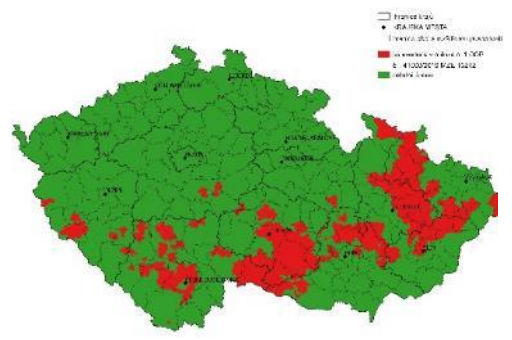
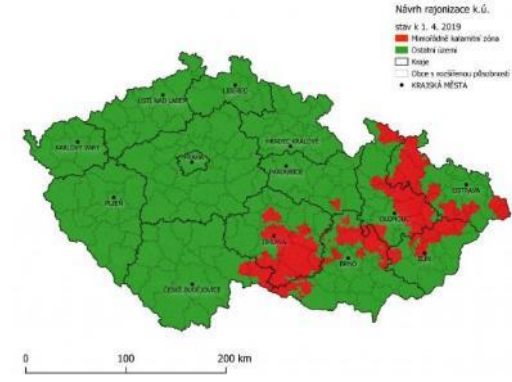


For the whole country:

1. Possibility to postpone logging until 31. 12. 2022.
2. Extension of afforestation on clearcuts to 5 years and to 10 years respectively.
3. Possibility to use reproductive material (except spruce) from different areas and elevation until 31. 12. 2022.

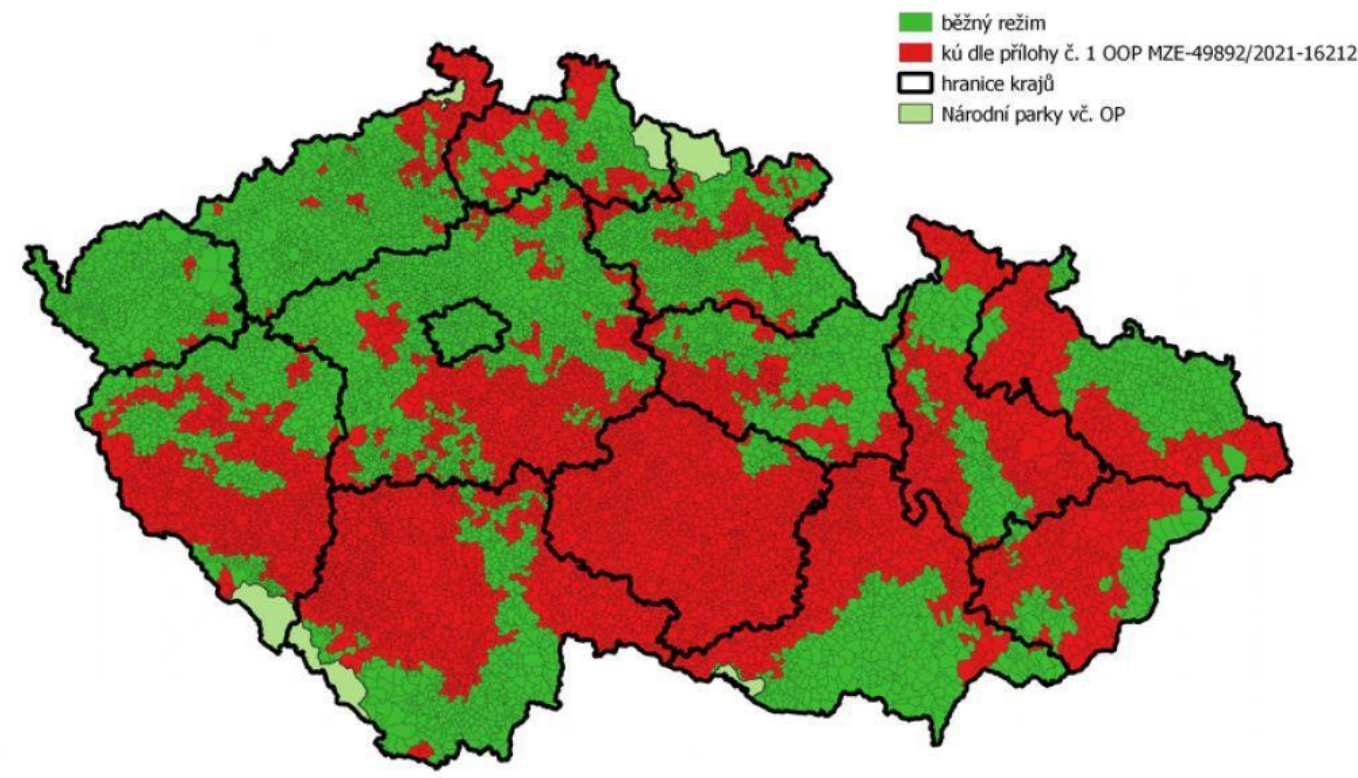
Calamity zone:

4. Use of traps and trap tress voluntary.
5. Leaving of 5 m wide non afforested lanes on clearcuts and their edges

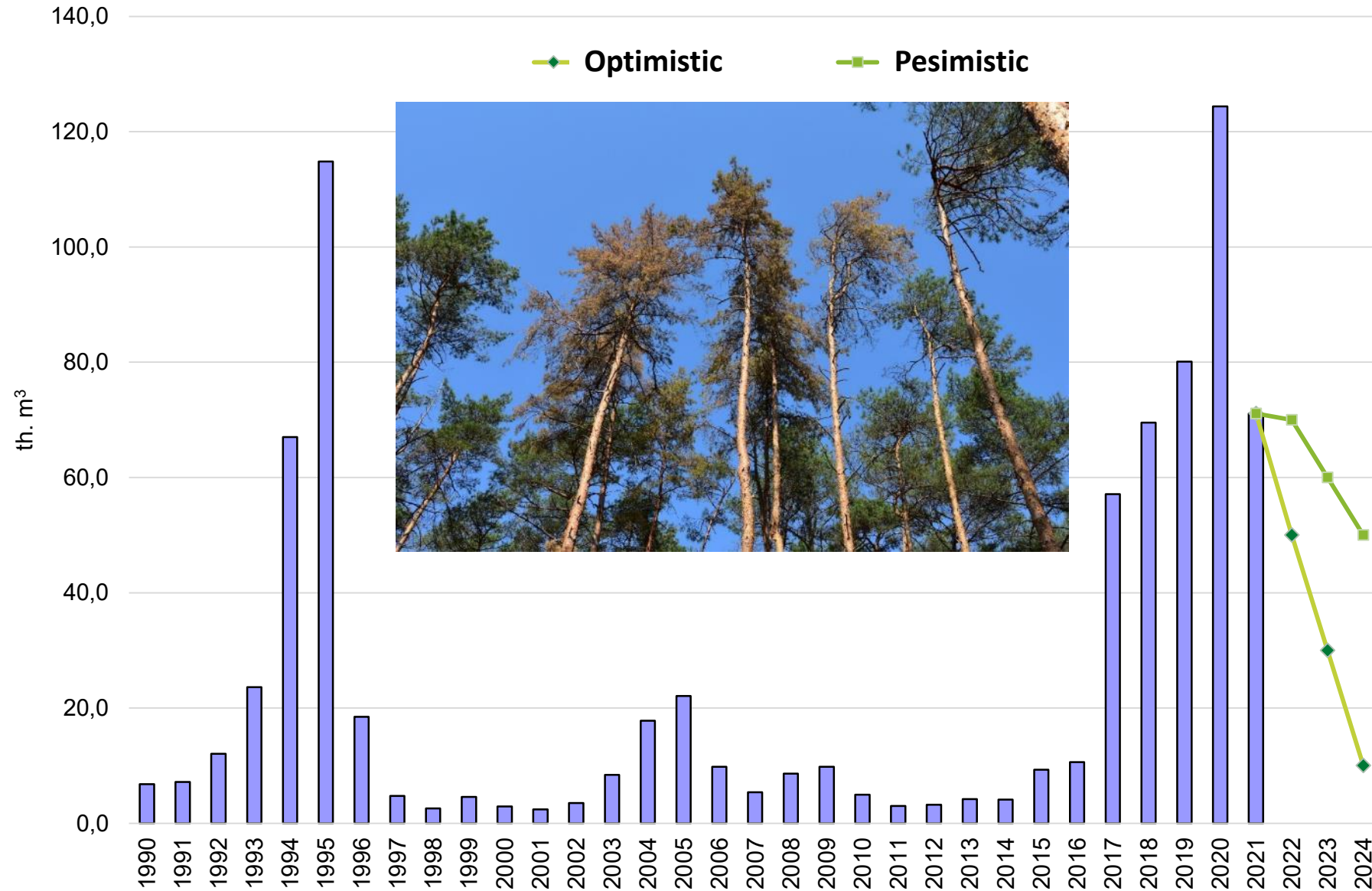


Regionalization of extraordinary calamity zones according to General regulation of measures— valid since 3.4. 2019 (actualization 30.8.2019, 6.12.2019, 2.4.2020 a 27.7.2020 and 14.9.2021)

Mapa katastrálních území zařazených dle přílohy č.1 OOP MZE-49892/2021-16212

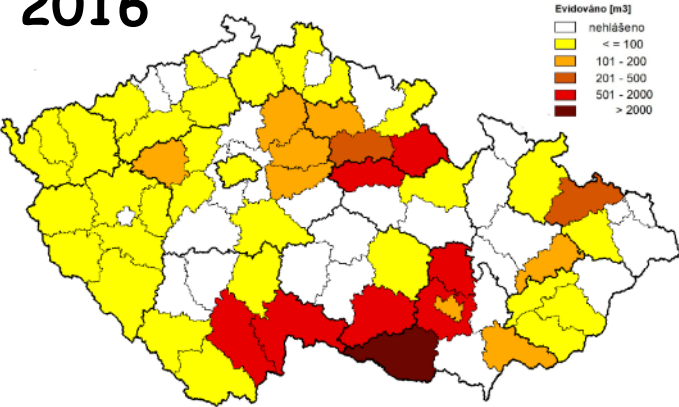


Recorded volume of pine BB infested wood since 1990

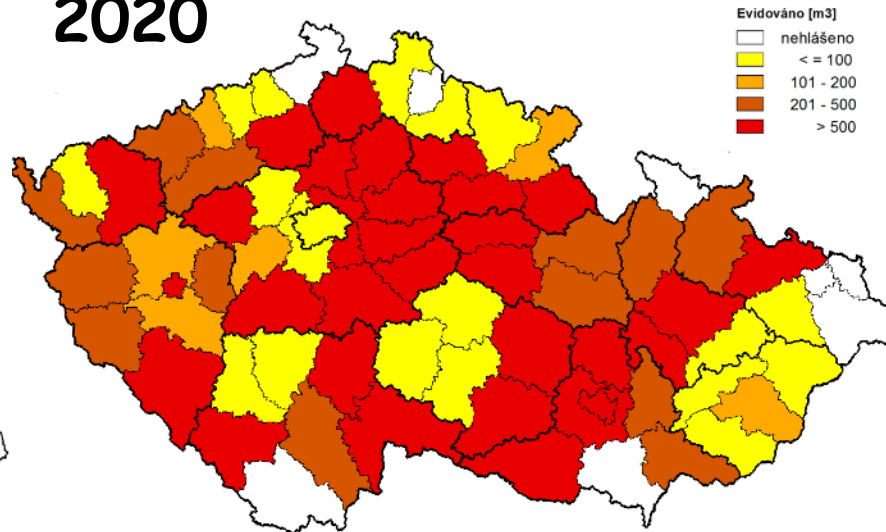


Recorded volume of pine BB infested wood

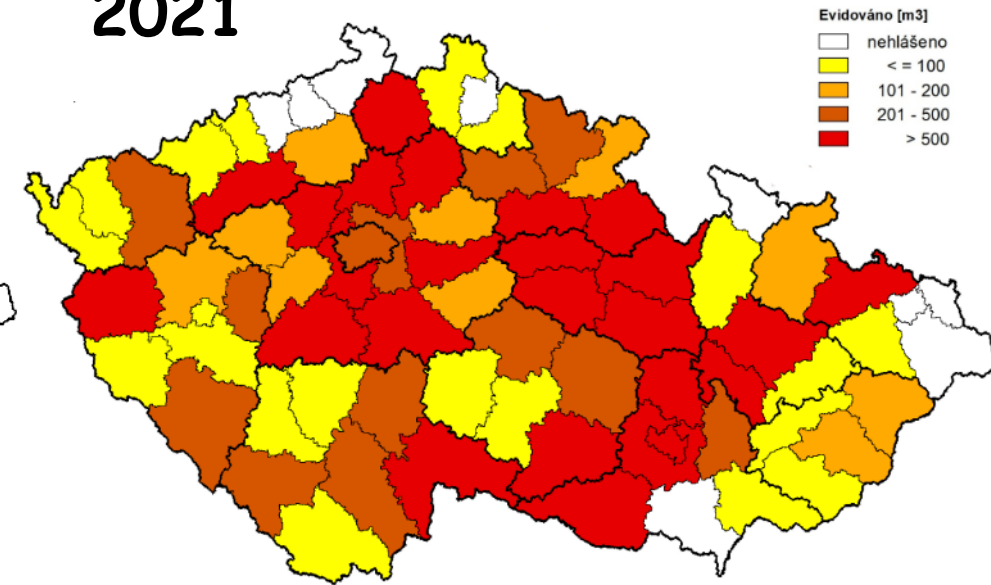
2016



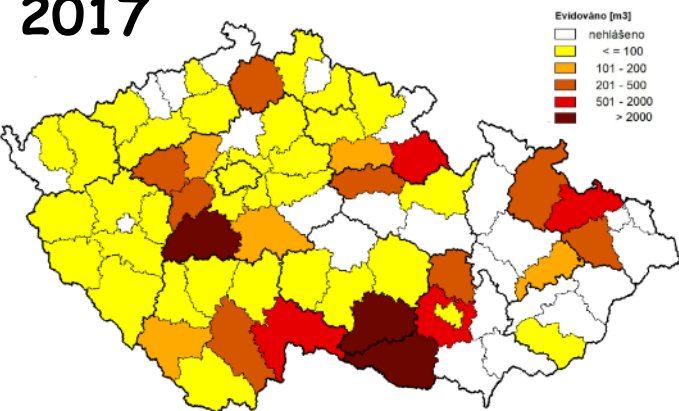
2020



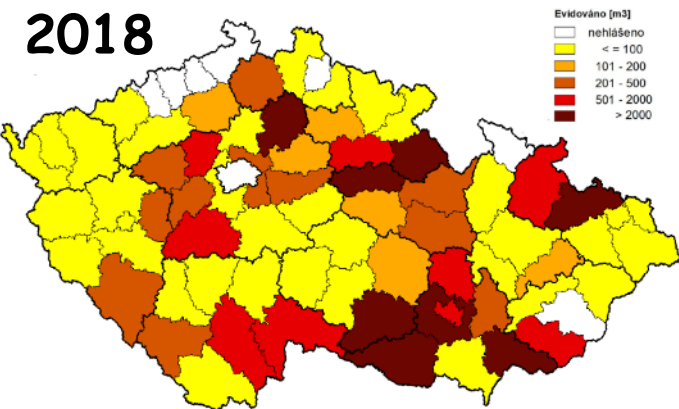
2021



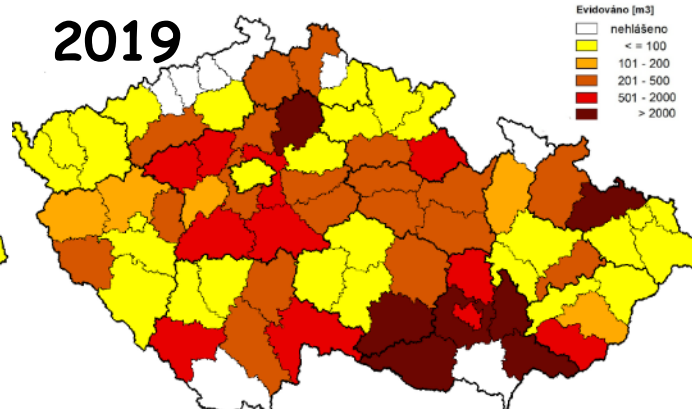
2017



2018



2019



Main species on pine: *Ips acuminatus*,
Ips sexdentatus, *Orthotomicus* spp.,
Phaenops cyanea, *Sirex noctilio*

General reasons:

Weather conditions mentioned above (since 2014)

Human reasons:

General causes

- Permanent loss of qualified workforce
- Inactivity of a number of owners
- Inflexible system of public procurement

Related impacts

- Late processing of bark beetles and other infested wood
- Insufficient processing of bark beetles infested wood



Conclusions and forecast

- **ca 62 mio m³ spruce BB infested wood cut in between 2003 and 2019 in Czechia!!**
- **ca 22 mio m³** in 2020, while the total infestation was approx. **25 – 30 mio m³** = ca 2x balanced annual amount
- Estimated stock of „living“ spruce wood still about ca 380 mil. m³
- In 2021 estimated ca **14,3 mio m³** spruce wood infested
 - Decrease of infestation in Moravia and Silesia
 - Deterioration in Bohemia and infestation on new locations
- **2020 – culmination!**
- In general - stagnation or hopefully improving of the stage in 2022 , but still high calamity situation => **Do not resign from the implementation of forest protection measures - draught in 2021/2022!!**
- Dramatically influenced static stability of spruce stands – high risk of windstorms...
- The issue of recovery of clearcuts under the pressure of overpopulated game...





lesní ochranná služba

Thank you for your attention!

Miloš Knížek, Jan Lubojacký, Jan Liška



**Forest Protection
Service**

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