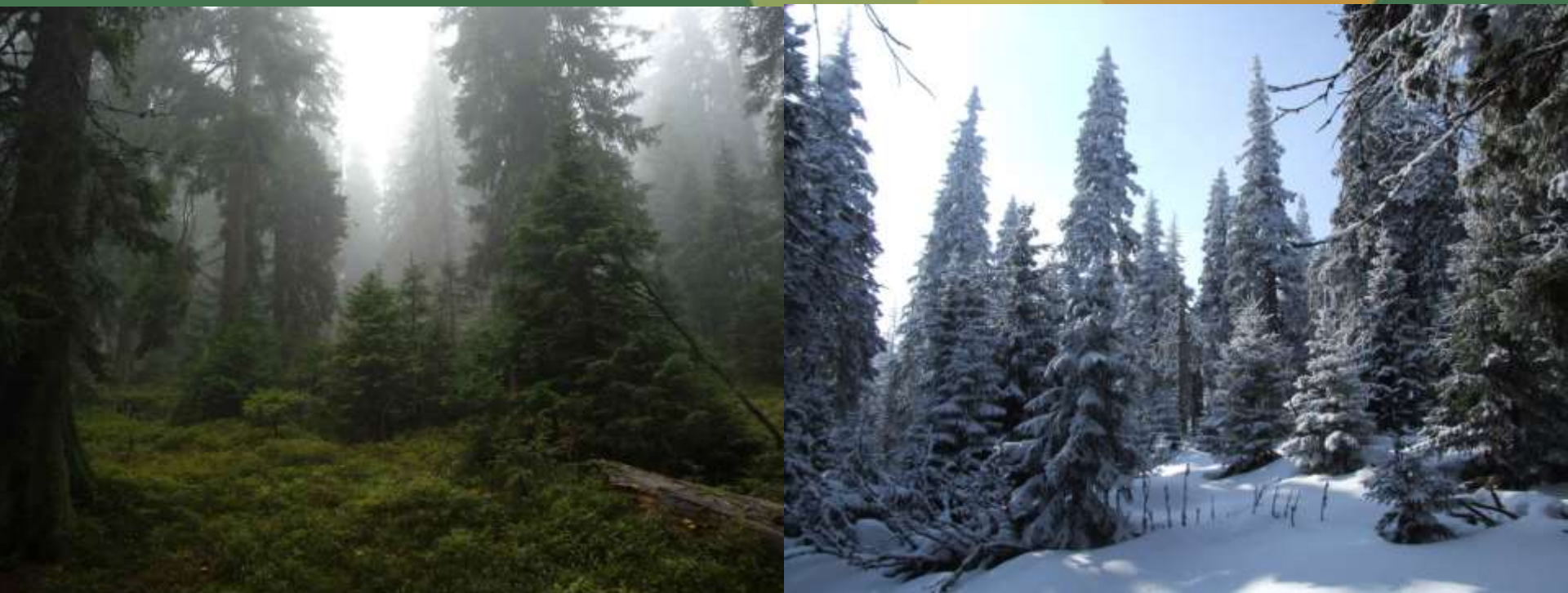


# Management of Mountain Spruce Forest in Small Scale Protected Areas – Under Pressure of Local Interests and Scientific Findings – an Example from the Jeseníky Mts.

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# Jeseníky Mts. – brief introduction

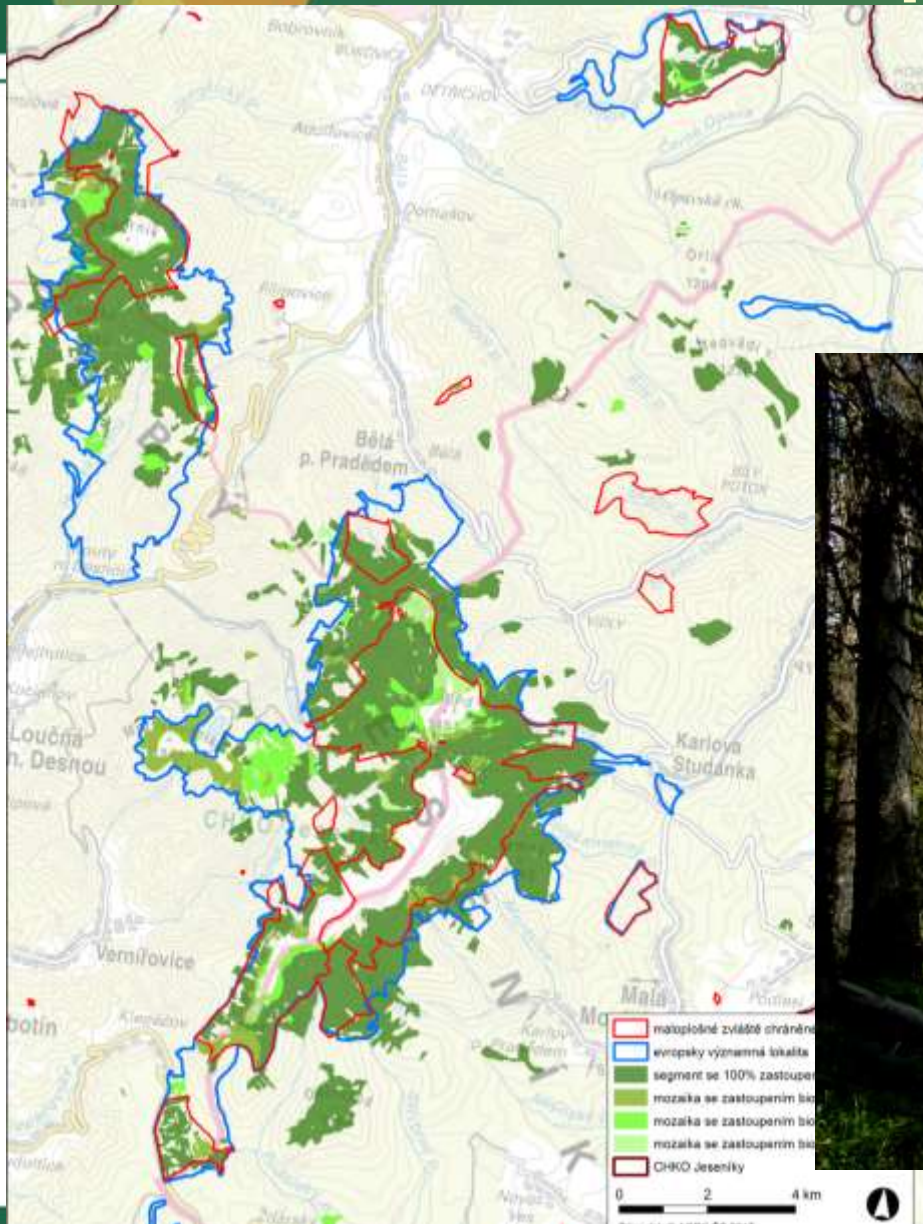




# Distribution of spruce forests



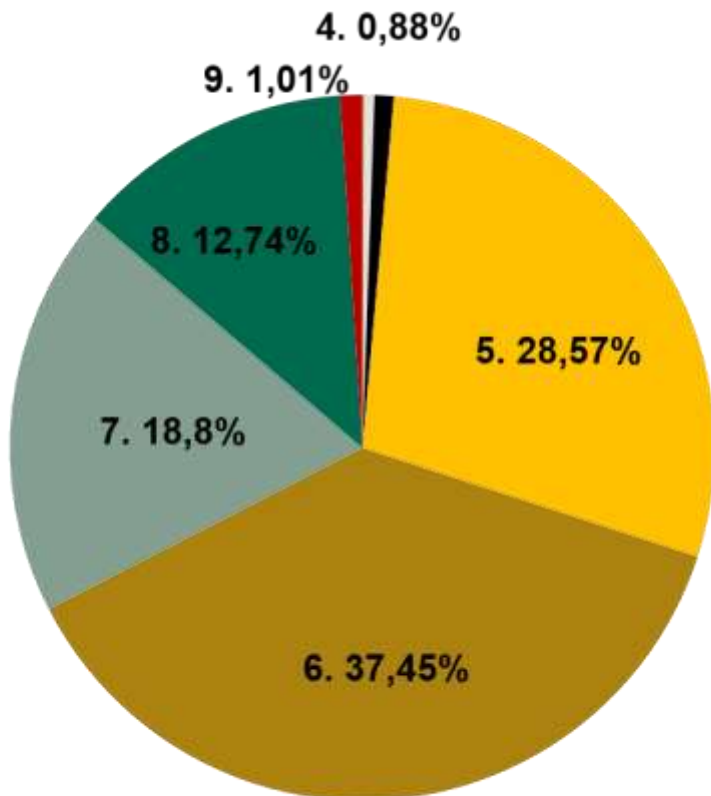
- 6754 ha
- **nature reserves**
- **SAC**



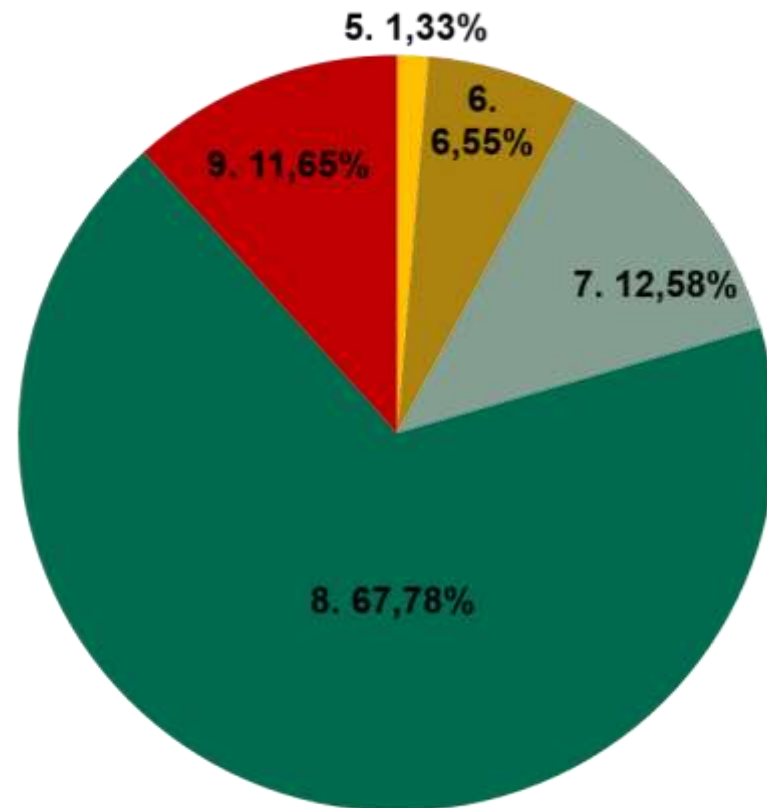
# Vegetation levels



## PLA Jeseniky Mts.



## the 1<sup>th</sup> zone













# History of spruce forests in Jeseniky Mts.



# History of spruce forests in Jeseníky Mts.



## Wind disturbances in last 2 decades

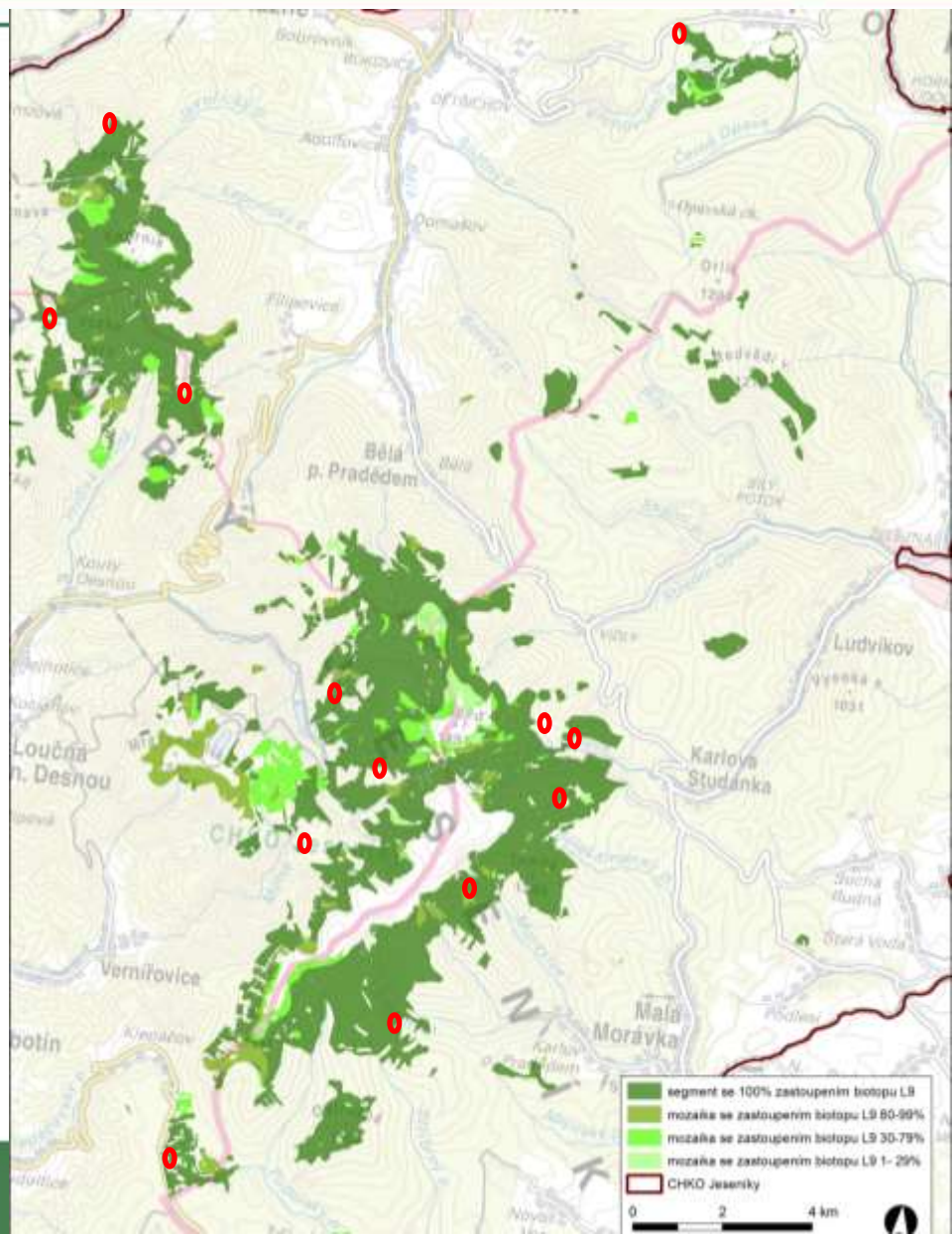
(over 1000 m<sup>3</sup>)

- all managed

- spruce forest are getting older

and more susceptible to wind

(and bark beetle)





# Bark beetle management



Majority of attacked trees is treated – debarked or... chemical means



# Chemical means can help but still...



**saving structures and keeping foresters calm ;-)**



12 ye









# Consequences



- all dead wood is left in the forest +
- vertical structure is very diverse and is getting more diverse +
- high portion of dead wood is left without bark --
- natural processes are strongly suppressed --
- structures of canopy disintegration are almost missing --
- sensitivity to large-scale disturbance grows up ---
- it costs huge amount of money and effort -

**Is this sustainable?**



„sustainable“ to the next windstorm











## 1. non-interventional approach

formally proclaimed long-term aim of management but:

- not acceptable by foresters and local authorities
- preparation takes long time (many decades) – reconstruction of adjacent forests
- not feasible throughout all reserves
- currently no support from the MoE and top-management of NCA  
**(no troubles first)**





# adjacent forest we protect...

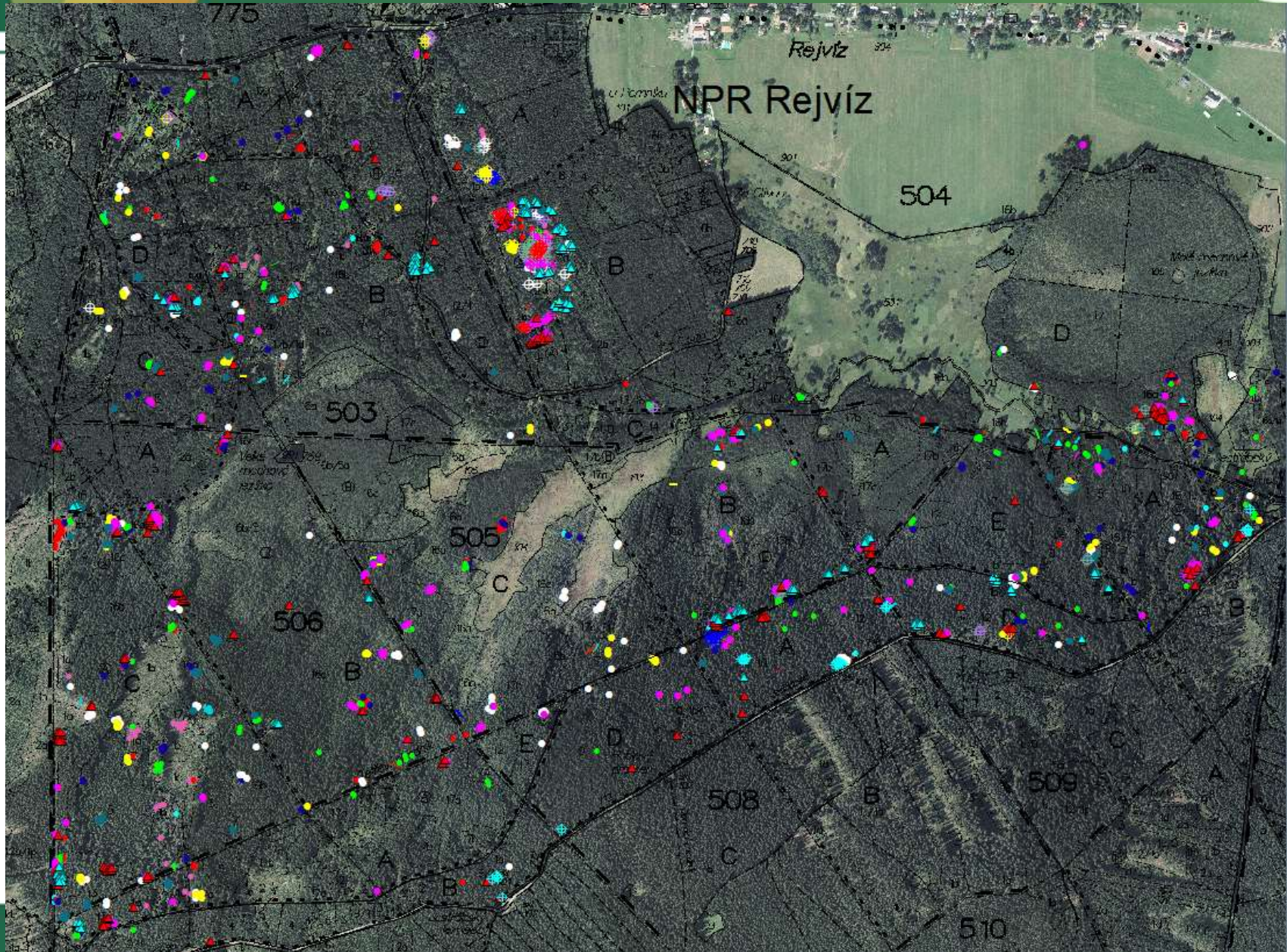








# Case study I – Rejvíz NNR







## Case study II – Praděd NNR

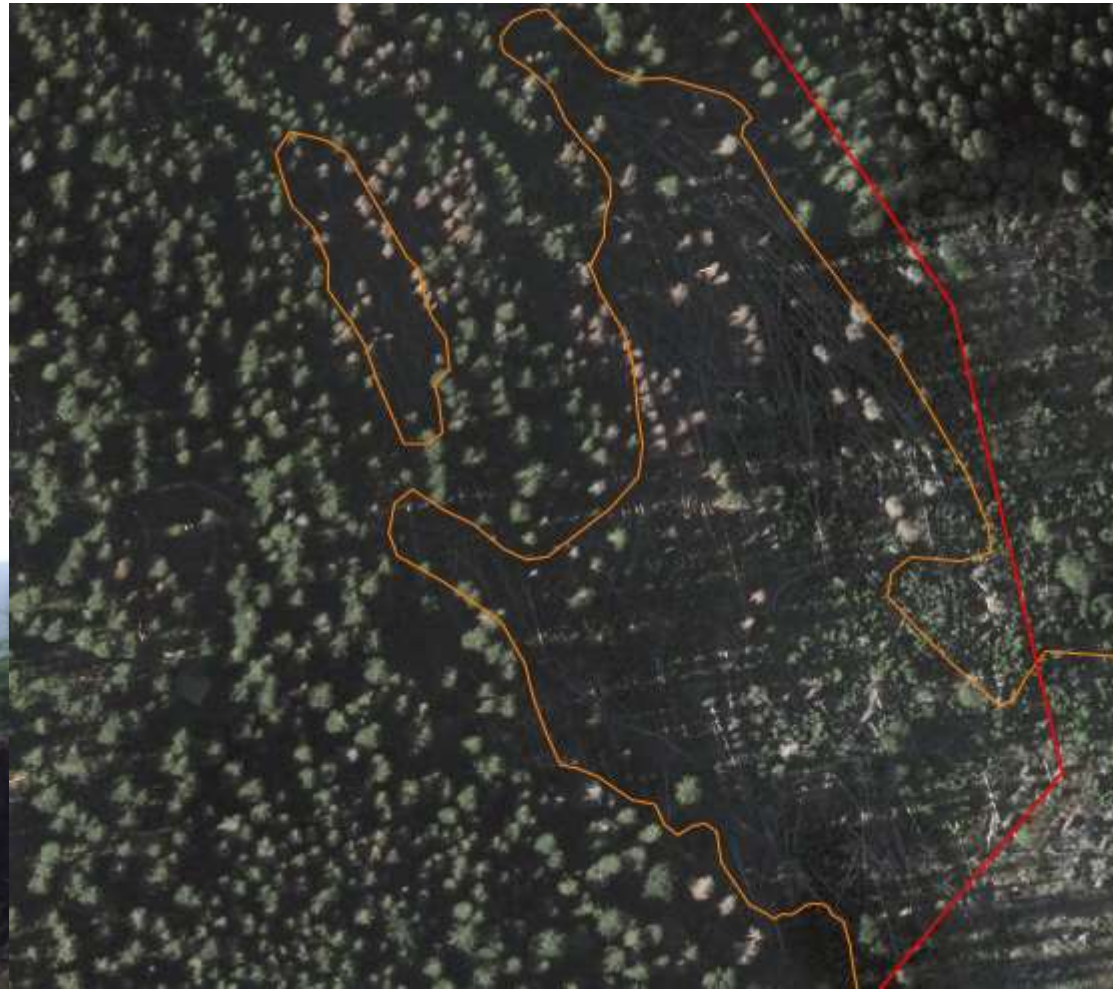


- management of biological legacy after the windthrow – an example from Praděd NNR

- overflow wind, 17<sup>th</sup> May 2010

- area: 1,70 ha

- 480 m<sup>3</sup>







# Case study – Praděd NNR



- maintaining of new stand structure after the disturbance

**vs.**

- protecting the commercial forests in the buffer zone against the bark beetle attack and spreading

- lying trees

- standing trees





# Case study – Praděd NNR

## ...a short summary

- + „imitation“ of stand structure after the disturbance
  - + all deadwood is left
  - + reducing the grasses competition
  - + „natural“ barriers against browsing damage (rowan, maple, birch)
- 
- natural processes are suppressed
  - all deadwood is debarked
  - high cost and effort







...after 7 years...





...after 7 years...





**...after 7 years in detail.**





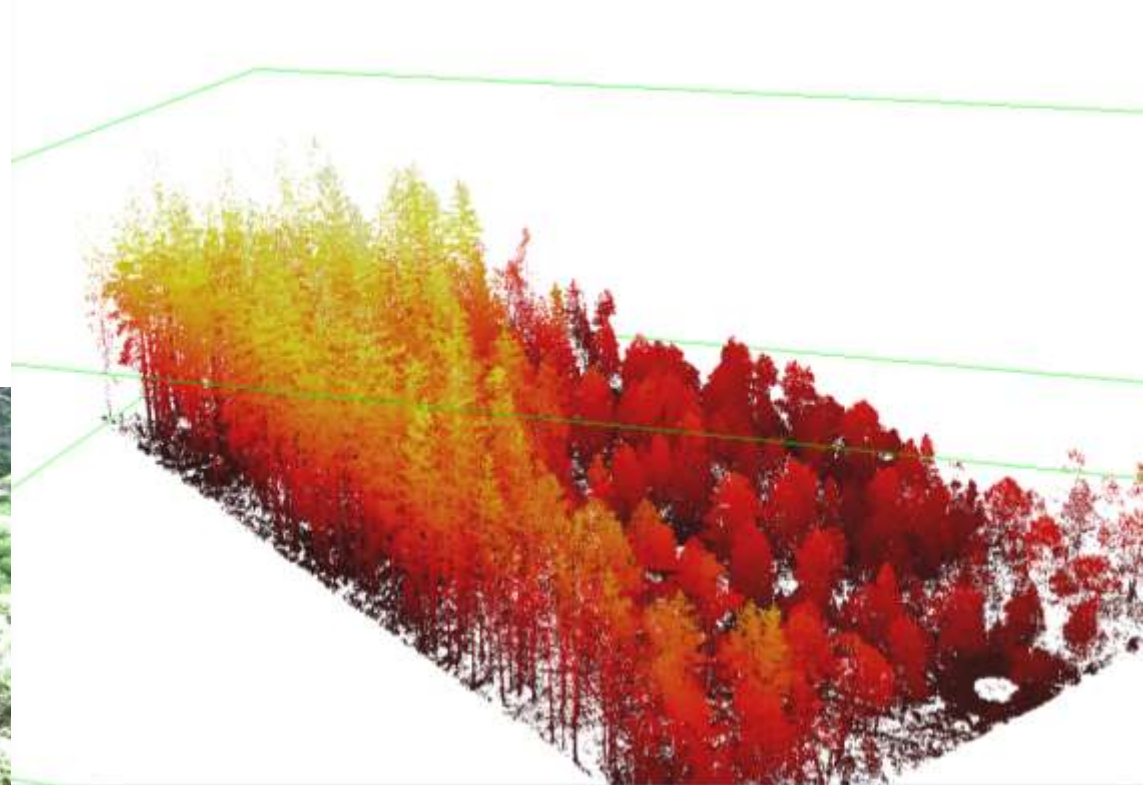
# Long-term monitoring



**integral part of the management**

**50 small plots (1000 m<sup>2</sup>)**

**2 large plots (4,5 ha, 5 ha)**







**thanks for your attention**  
**...and wish a nice winter ☺**

