Project of the mires inventory in the Karkonosze National Park as the basis for their monitoring and protection

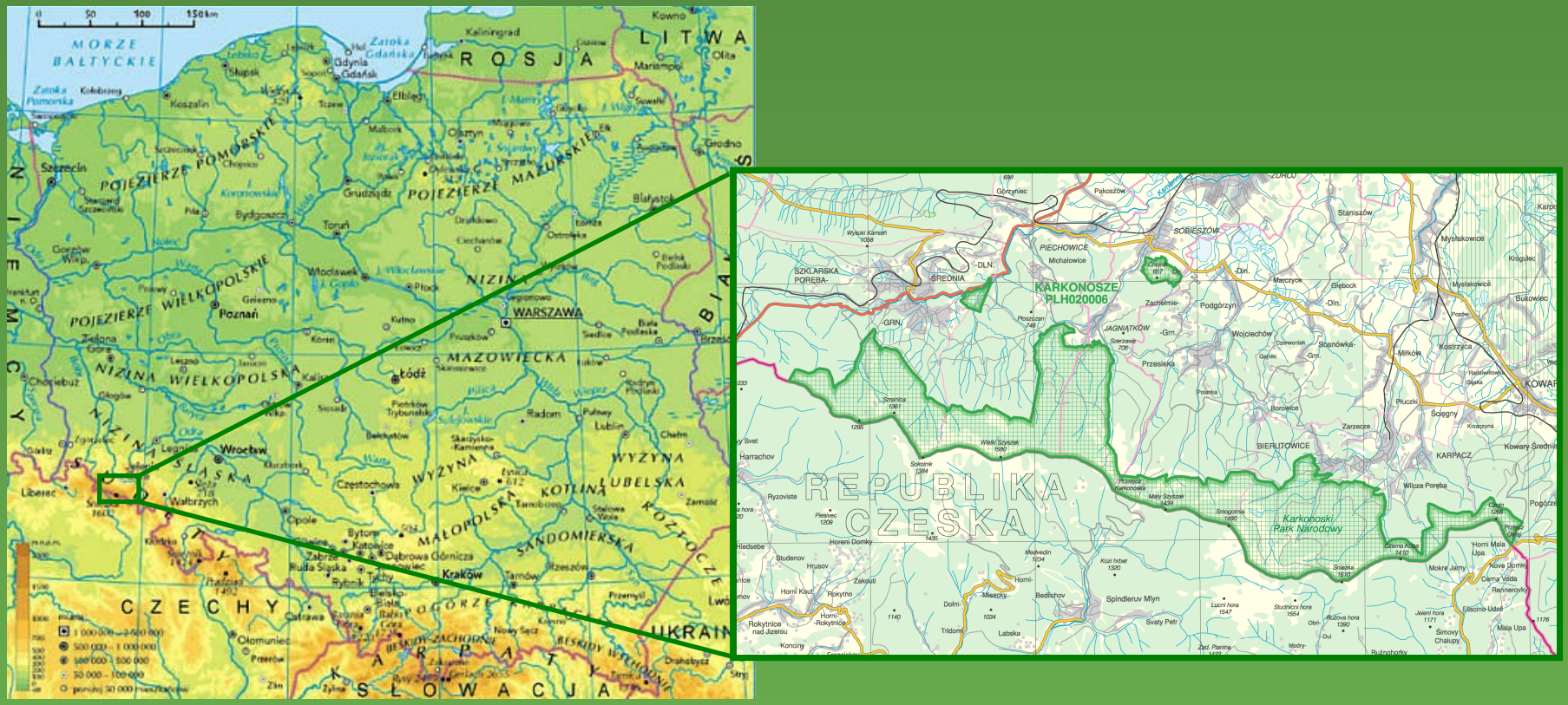
Třeboň, 4-10 June 2007

Mires in the mountains?

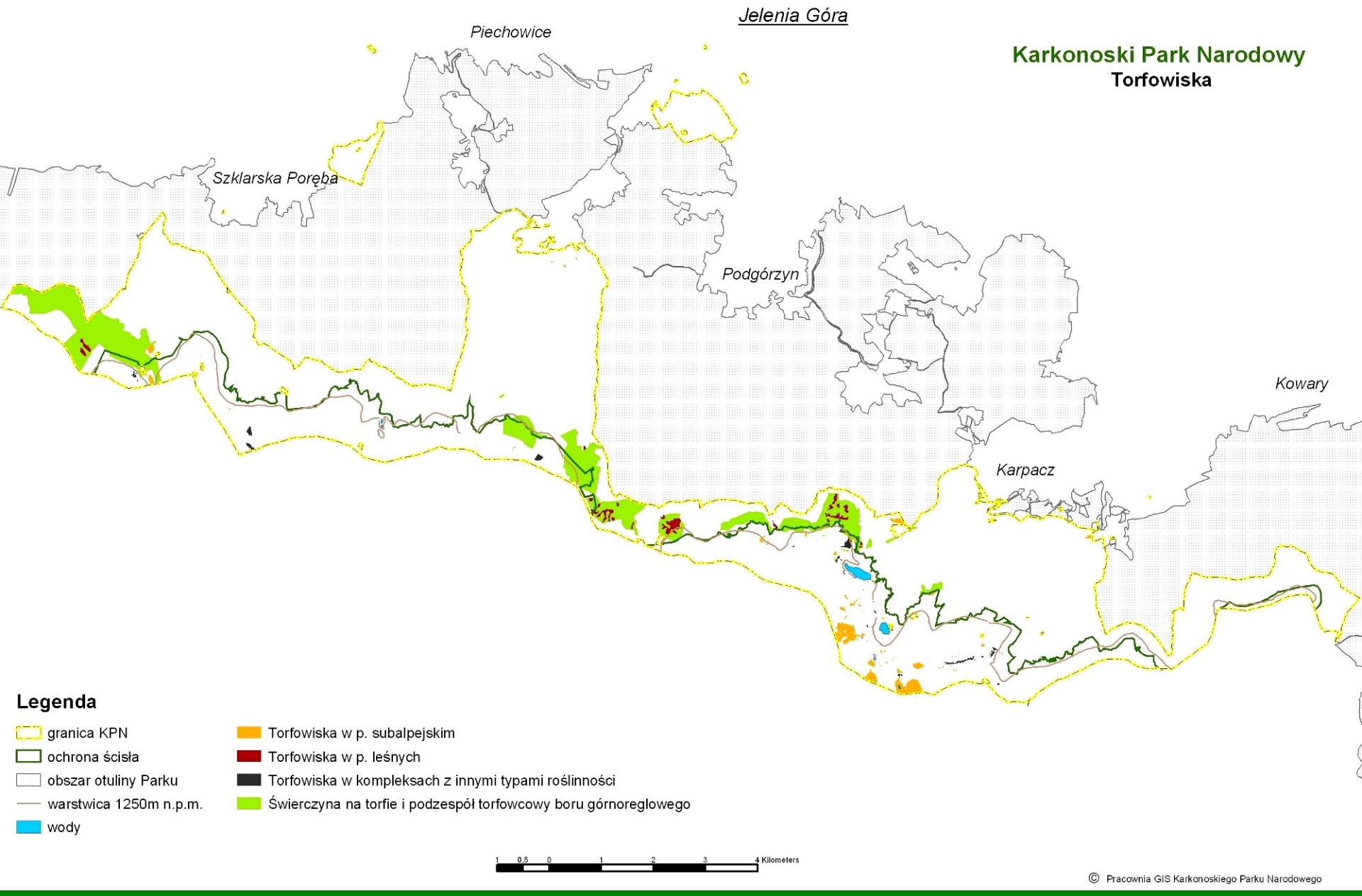
- **landscape features**
- **precipitation**

KARKONOSZE NATIONAL PARK

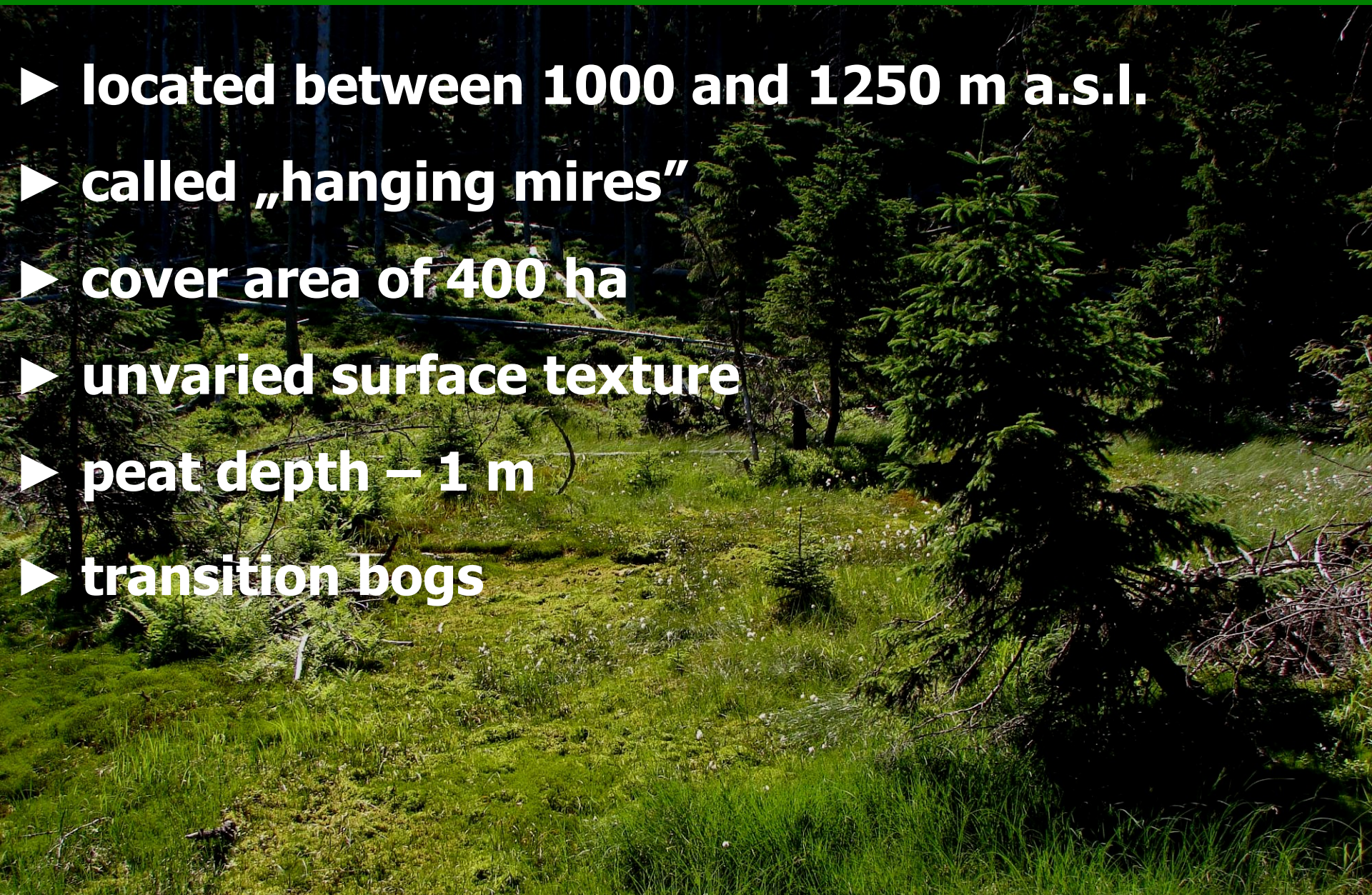
- established on 16th January 1959
- covers area of 5,585 ha



Mires in the Karkonosze National Park

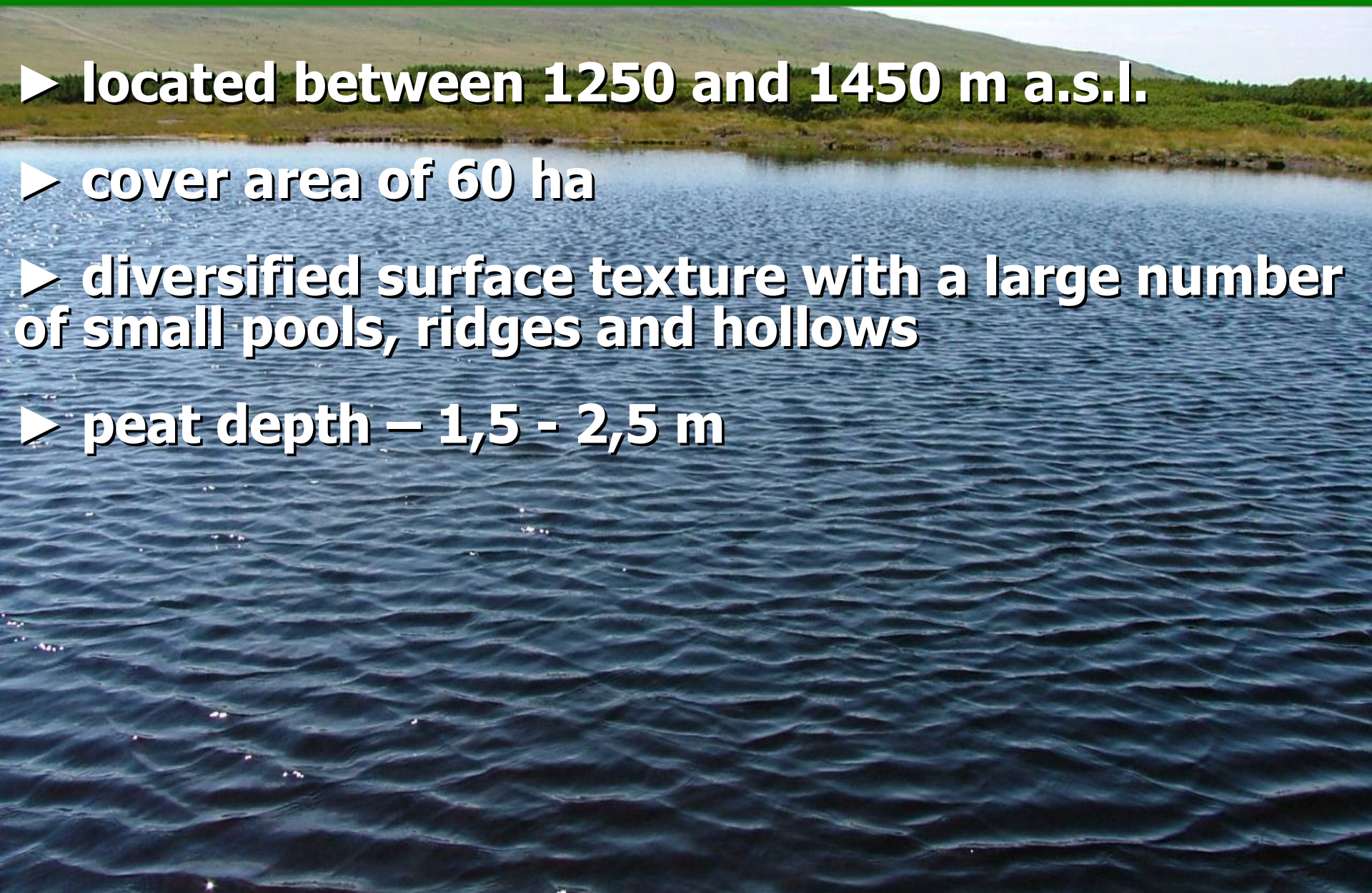


Mires of the upper forest zone

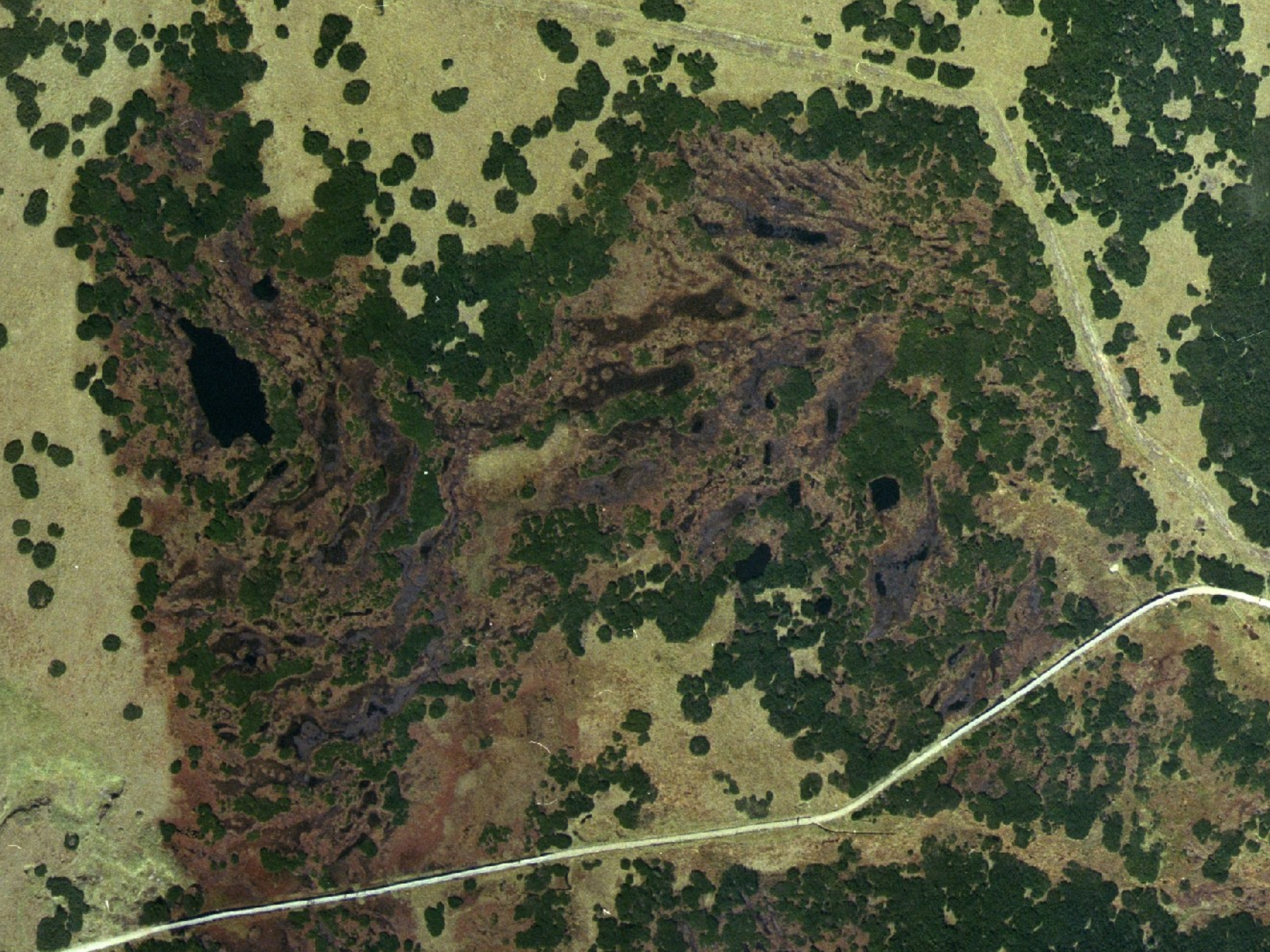


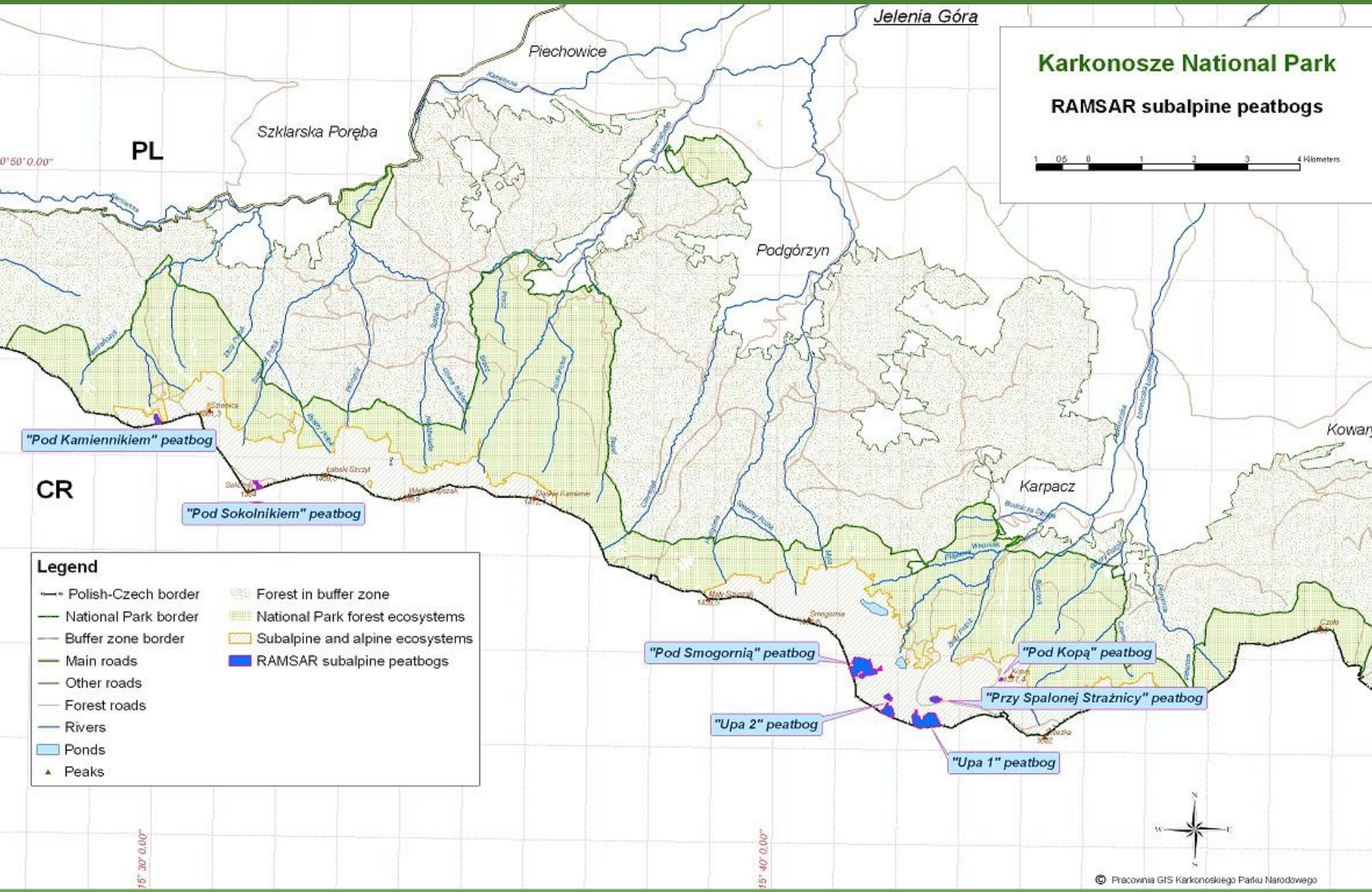
- **located between 1000 and 1250 m a.s.l.**
- **called „hanging mires”**
- **cover area of 400 ha**
- **unvaried surface texture**
- **peat depth – 1 m**
- **transition bogs**

Mires of the subalpine zone

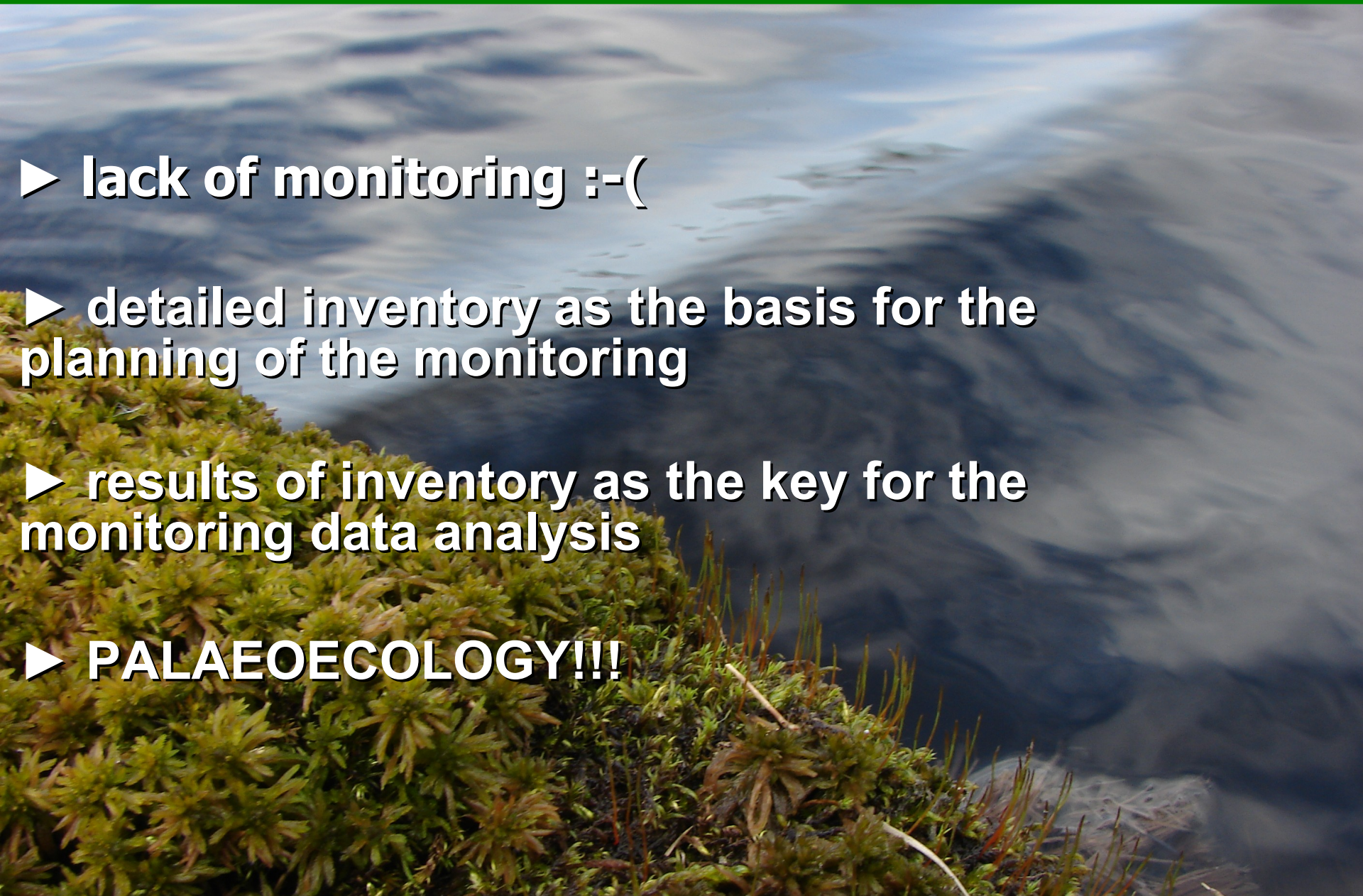


- **located between 1250 and 1450 m a.s.l.**
- **cover area of 60 ha**
- **diversified surface texture with a large number of small pools, ridges and hollows**
- **peat depth – 1,5 - 2,5 m**




Karkonosze National Park
RAMSAR subalpine peatbogs
1 0,5 0 1 2 3 4 Kilometers
Jelenia Góra
Piechowice
Szklarska Poręba
PL
CR
Podgórzyn
Karpacz
"Pod Kamiennikiem" peatbog
"Pod Sokolnikiem" peatbog
"Pod Smogornią" peatbog
"Pod Kopą" peatbog
"Przy Spalonej Strażnicy" peatbog
"Upa 2" peatbog
"Upa 1" peatbog
Legend
Polish-Czech border
National Park border
Buffer zone border
Main roads
Other roads
Forest roads
Rivers
Ponds
Peaks
Forest in buffer zone
National Park forest ecosystems
Subalpine and alpine ecosystems
RAMSAR subalpine peatbogs
© Pracownia GIS Karkonoskiego Parku Narodowego

Mires inventory

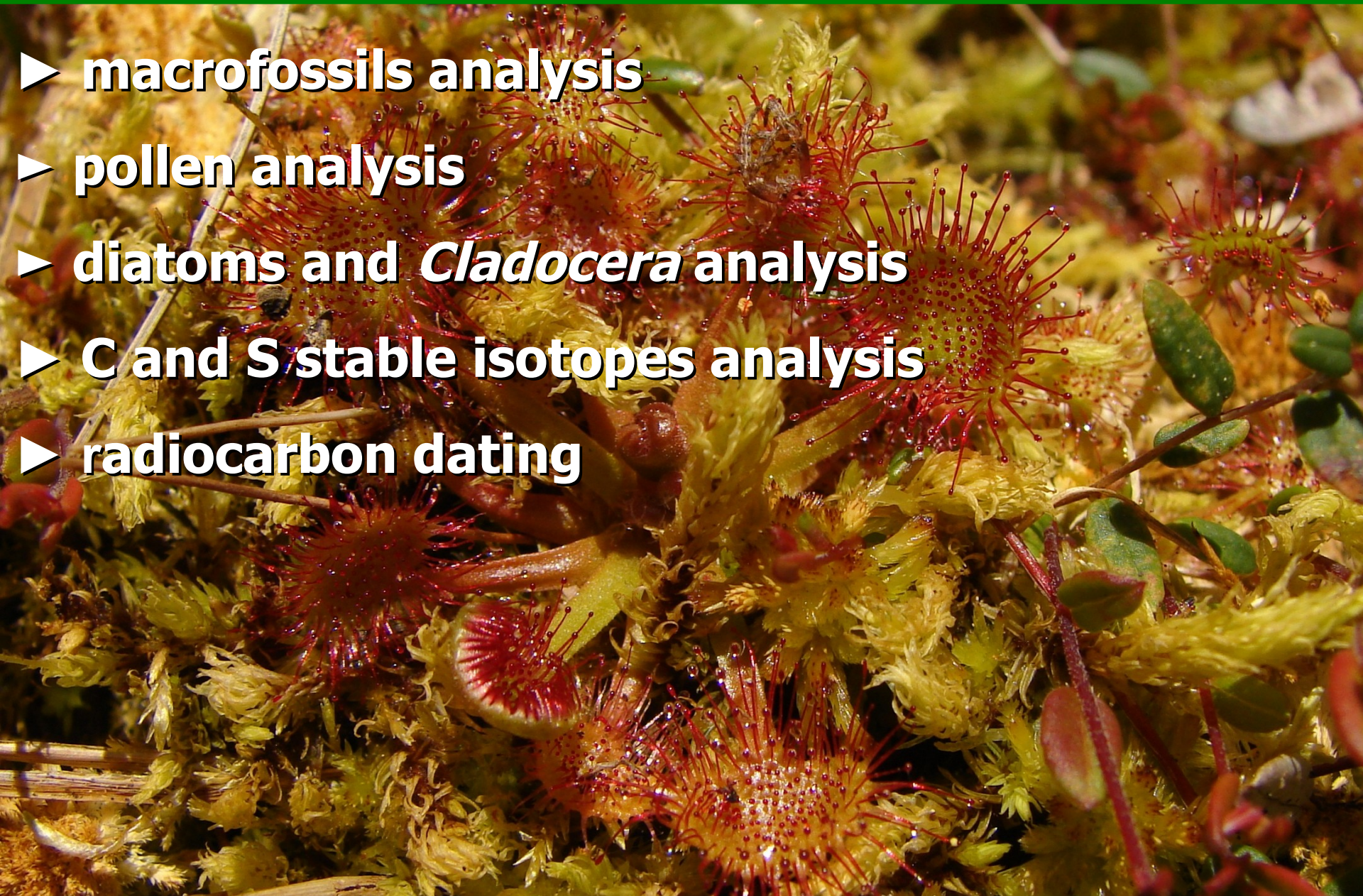


- lack of monitoring :-(
- detailed inventory as the basis for the planning of the monitoring
- results of inventory as the key for the monitoring data analysis
- PALAEOECOLOGY!!!

Mires inventory – first step

- location
- peat thickness measurement
- plant communities map
- lithological description of the profiles and construction of the mire cross-section

Mires inventory – second step

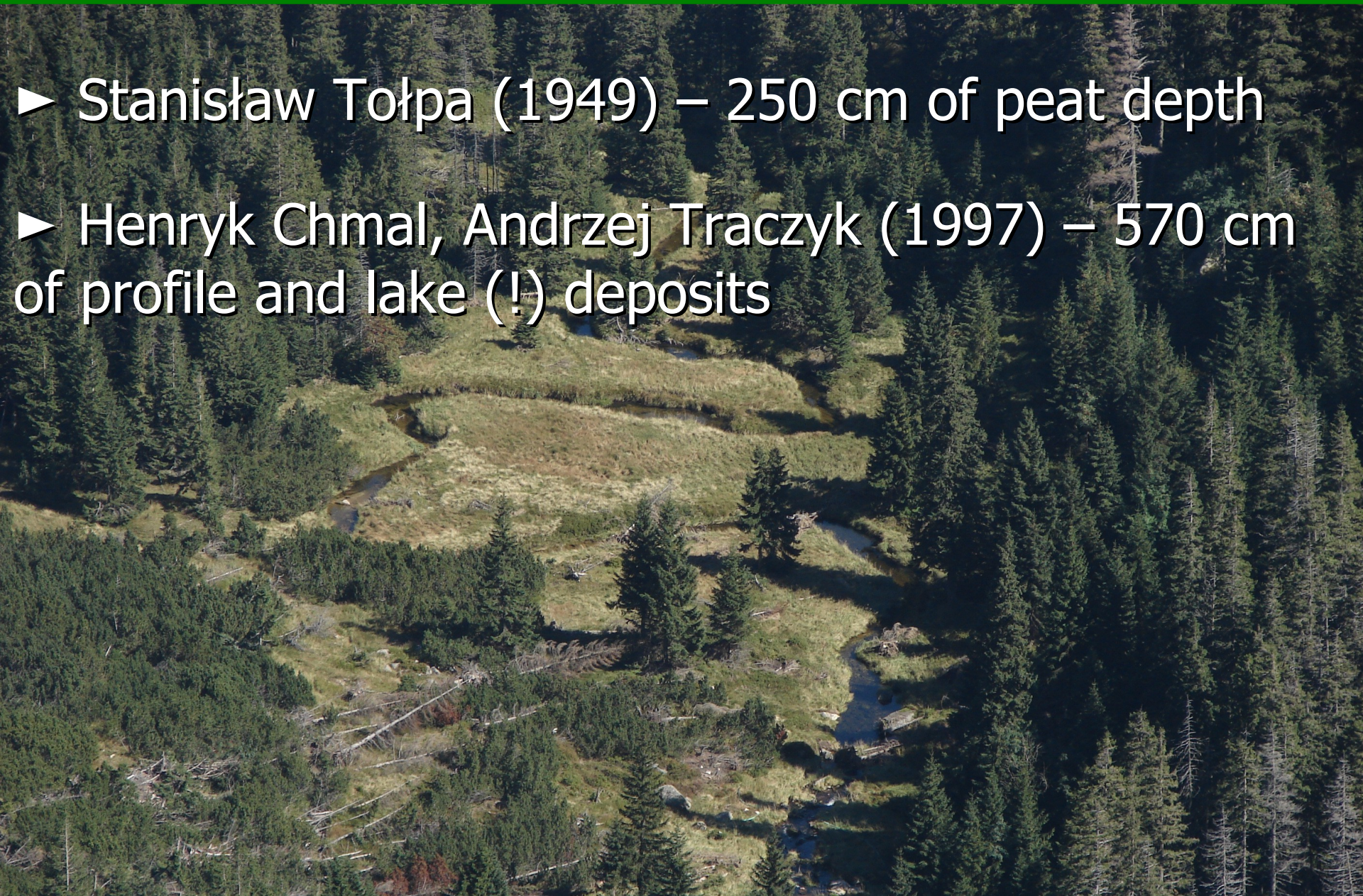


- **macrofossils analysis**
- **pollen analysis**
- **diatoms and *Cladocera* analysis**
- **C and S stable isotopes analysis**
- **radiocarbon dating**

The Łomnica Valley Peatland

first step of the inventory

The Łomnica Valley Peatland

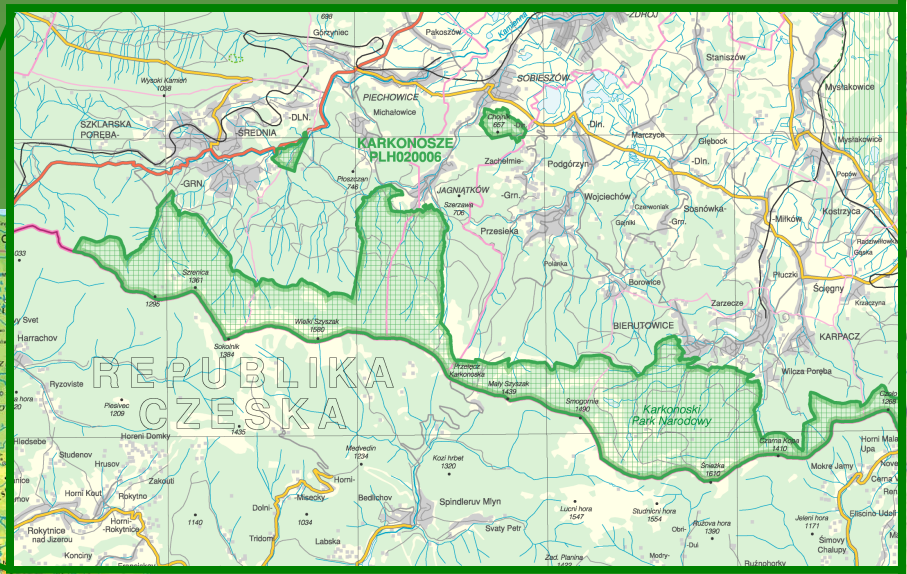


- Stanisław Tołpa (1949) – 250 cm of peat depth
- Henryk Chmal, Andrzej Traczyk (1997) – 570 cm of profile and lake (!) deposits

The Łomnica Valley Peatland

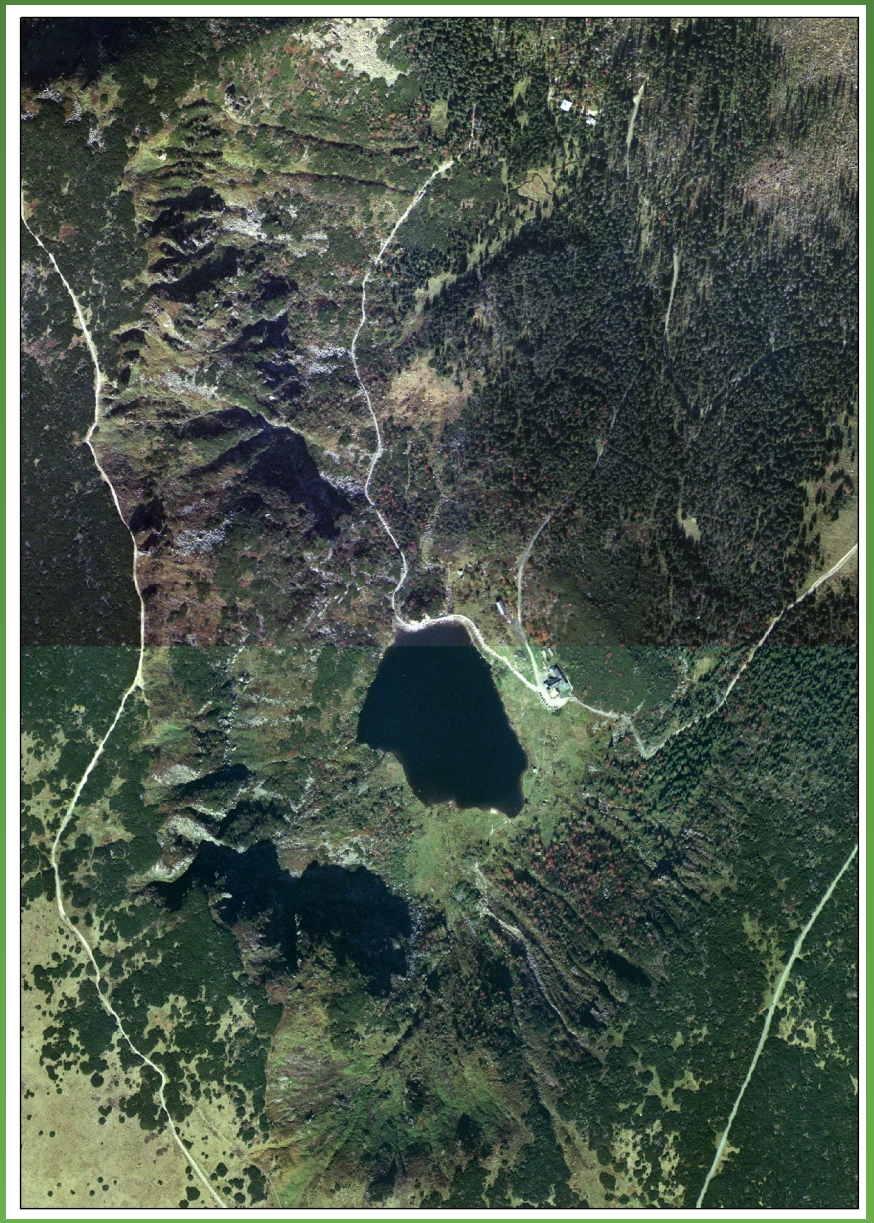
► located in the northern part of the Small Lake Cirque (Kocioł Małego Stawu) in the eastern Karkonosze

50°45'17"N, 15°42'09"E



The Łomnica Valley Peatland

► The Small Lake Cirque (Kocioł Małego Stawu)



The Łomnica Valley Peatland

- the depth of the deposits measurment

The Łomnica Valley Peatland

field work...

The Łomnica Valley Peatland

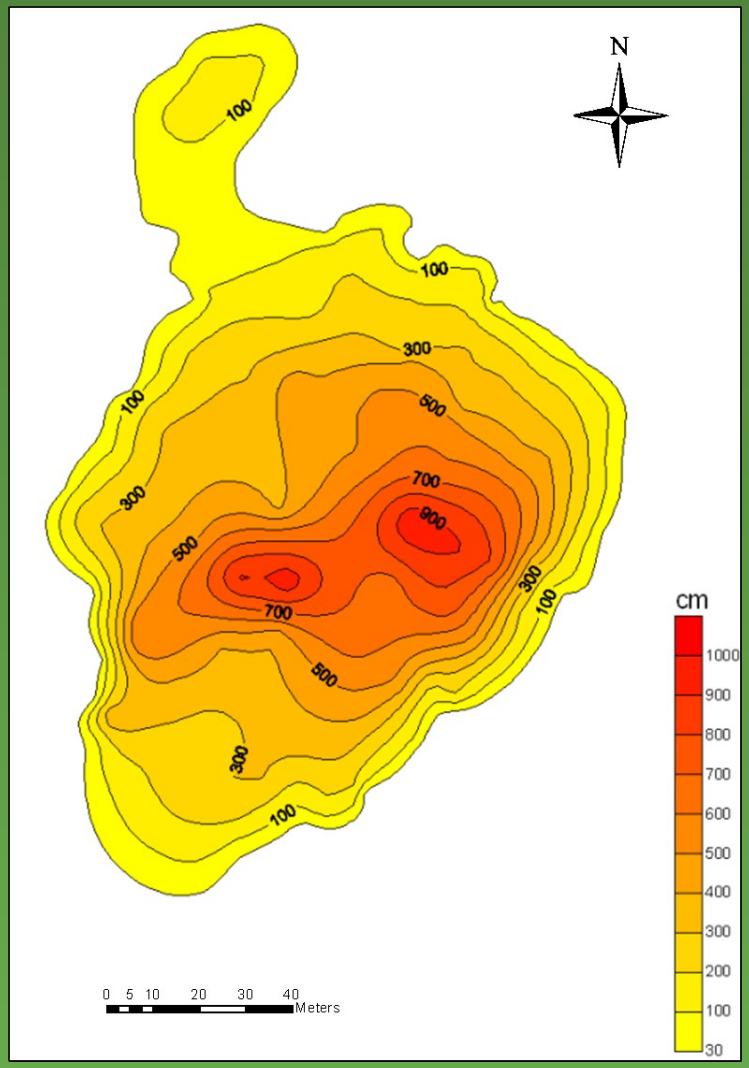
- peatland's border
  – 30 cm

- peatland's area
  – 1,29 ha

The Łomnica Valley Peatland

► map of the depth of the deposits

► maximum depth of the organic deposits in polish part of the Karkonosze Mts. – 987 cm!!!

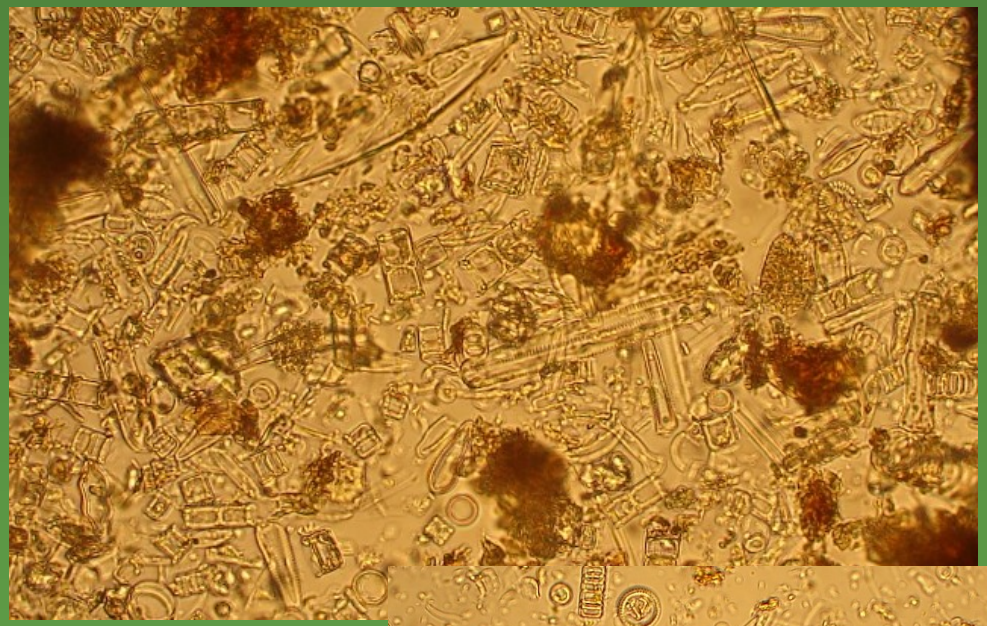


The Łomnica Valley Peatland

- taking a peat core...

The Łomnica Valley Peatland

► the profile - 7,75 m



► 0,00 – 1,75 m sedge peat

► 1,75 – 6,70 m gyttja

► 6,70 – 7,50 m gyttja with macrofossils

► 7,70 – 7,75 m clay

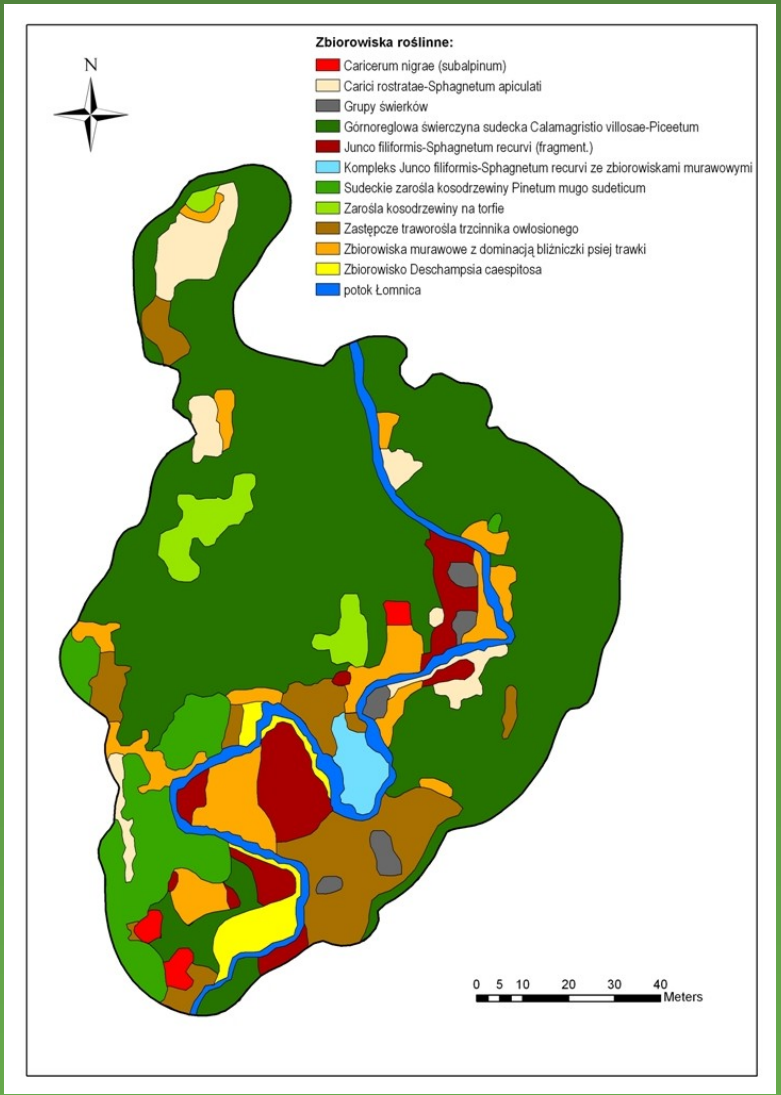
The Łomnica Valley Peatland

- plant communities

The Łomnica Valley Peatland

► map of plant communities

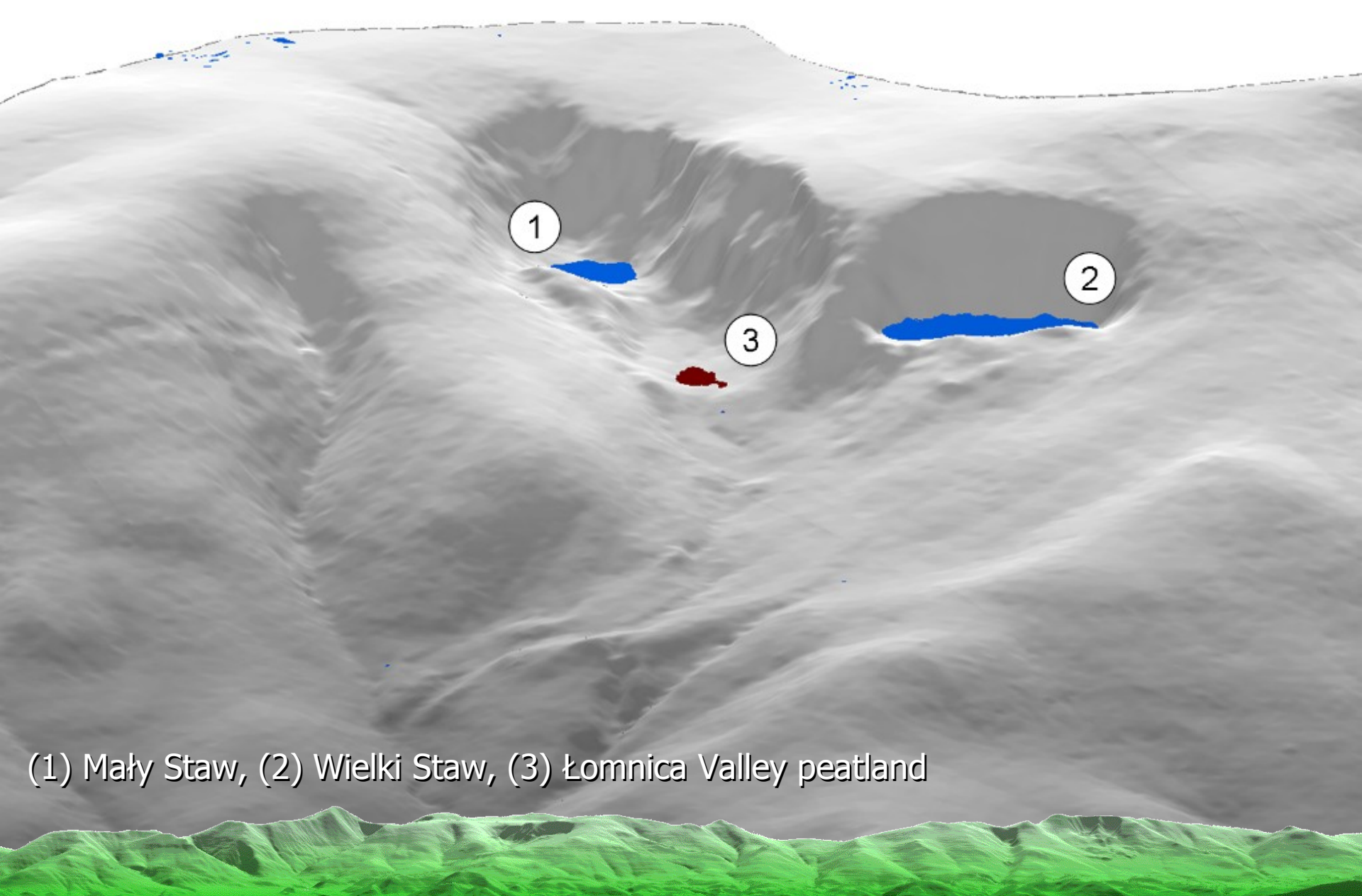
► only few patches of peat forming plant communities…



The Łomnica Valley Peatland

► what do we know about it now ???

The Łomnica Valley Peatland



(1) Mały Staw, (2) Wielki Staw, (3) Łomnica Valley peatland

Mires inventory

- Polish - Czech cooperation
- new methods of mires inventory development
- new geological data about Holocene in the Karkonosze Mts.


Thank you!!!