1400 years of man-environment interactions and soil evolution in the Saint-Mont mountain (Remiremont, Vosges)


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The Saint-Mont site

A relatively inhospitable mountain:
- hard climate, steep slopes,
- on acid soils developed from a granitic rock,
- nowadays covered by forests.

Remains suggest human presence for at least 1400 years:
- At the top, the monastery Habendarum (from the 7th century to the French Revolution) and a late antique occupation (Chenal 2016).
- Monumental enclosure dry-stones walls of unknown age (Grzesznik, 2019).
- The « Point des Fées » An enigmatic structure

To investigate traces of ancient anthropic activities in soils and landscapes, on areas where archaeological structures have not yet been detected.

1. Soils not clearly disturbed
   - Far from any known archaeological remains, two main types of soils develop on granite:
     - Humic alisols (RH)
       - Dark brown soil (< 4 m thick)
     - Ranknoisols (RP)
       - Yellow-brown soil (> 4 m thick)

2. Highly anthropised soils on platform P
   - Anthropoped (RP) « Transformed on a man made terrace » Anthropoped with a prismatic horizon (WRB)
     - Highly structured subsoil
     - Neutral to basic pH
     - Phosphatic and lime rich
     - Sandy soil with clay nodules

3. Other evidence of ancient human influence on soils?
   - Detection of anomalies
     - Light when pH is between 4 and 5
     - More significant when pH is > 5
     - Easily related to the long-lasting human occupation on the summit.
     - More surprising on some western or southern platforms:

Conclusion and perspectives

Our results confirm:
- A very strong imprint of historical human activities on soils close to the summit part of the massif.
- An heritage on the western slope mainly from natural glacial and pedogenetic processes.
- Possible other human activities on some western or southern platforms.

We hypothesize that the weak anomalies are due to older and/or different human activities than those that took place at the top of Saint-Mont (like breeding).

Other analyses are being acquired and interpreted on soils, rocks, and LiDAR images.