

Soil as an archive and link to history and natural sciences



18th Experts Meeting
of the Ecology
Working Group

29th – 30th March 2011
St. Pölten, Austria

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Institut für Geographie
und Regionalforschung

Soil as an archive and link to history and natural sciences



Soil as archiv for
Natural events
Mankind events
Cultural events

The paleosols of Lower Austria
History and Status Quo

The Location of Stillfried B
a multi-methodological approach
to decode the paleoenvironmental
record

Soil as



Soil as an archive

Soil as „Hard Disc of Nature“

Conservation of short term events

volcanic eruptions (or fire)

tsunami flood

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archive



ral sciences



Soil as an archive and link to history and natural sciences

Soil a



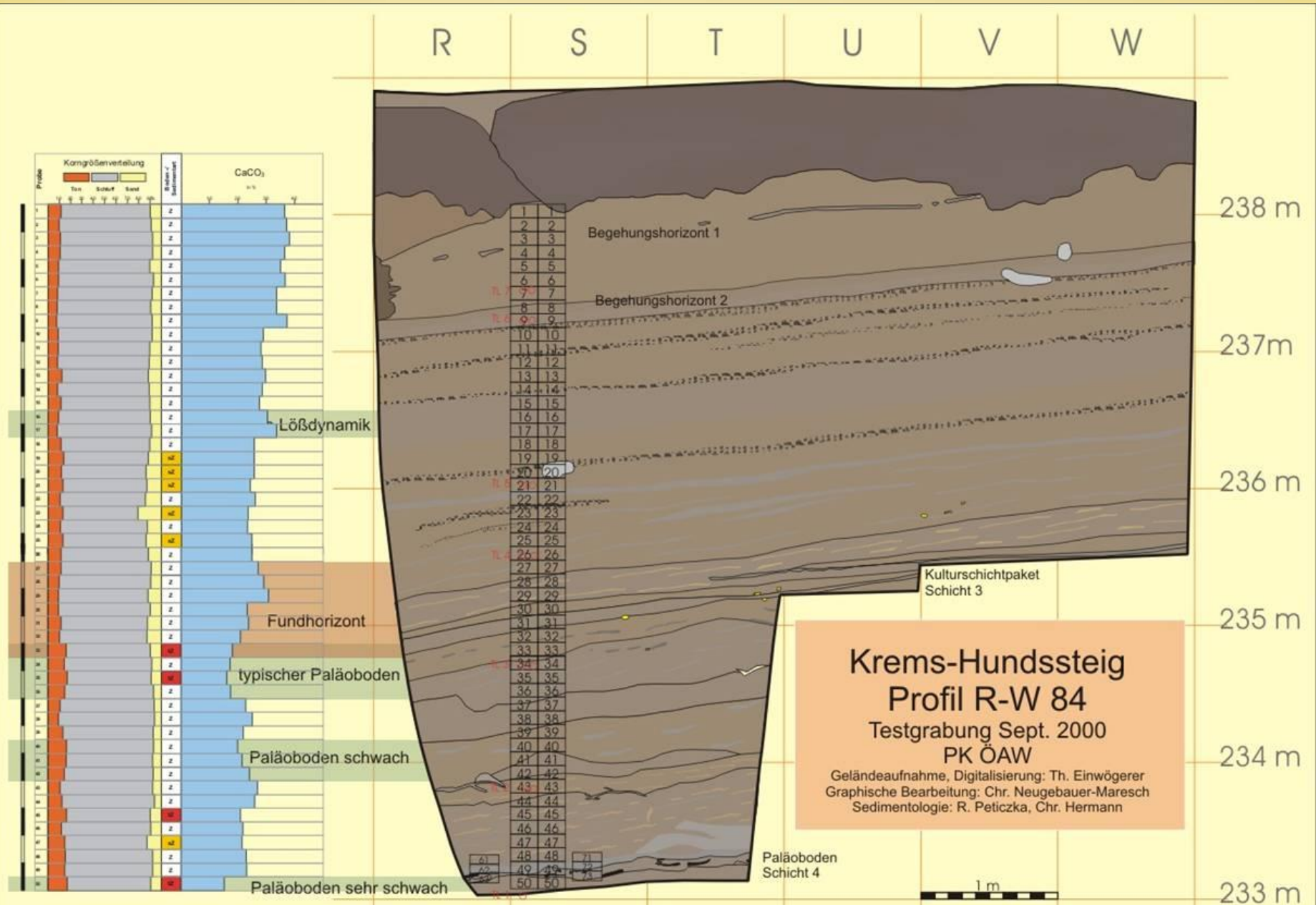
Soil as an archive and link to history



Jörg Backhaus



Soil as an archive



Soil as an archive

Palaeosols as a key between cultural and natural sciences

Reconstruction of the paleoenvironment of past time and space

Moisture

Temperatur?

Paleofauna and flora

Morphologie

Reconstruction of the paleolife of mankind

Settlement

Agricultural

(Sediments - not Soils!! – conserve most of the industrial and cultural outcomes done by man)

archive

“and make it look as if he’d been run over by a glacier.”

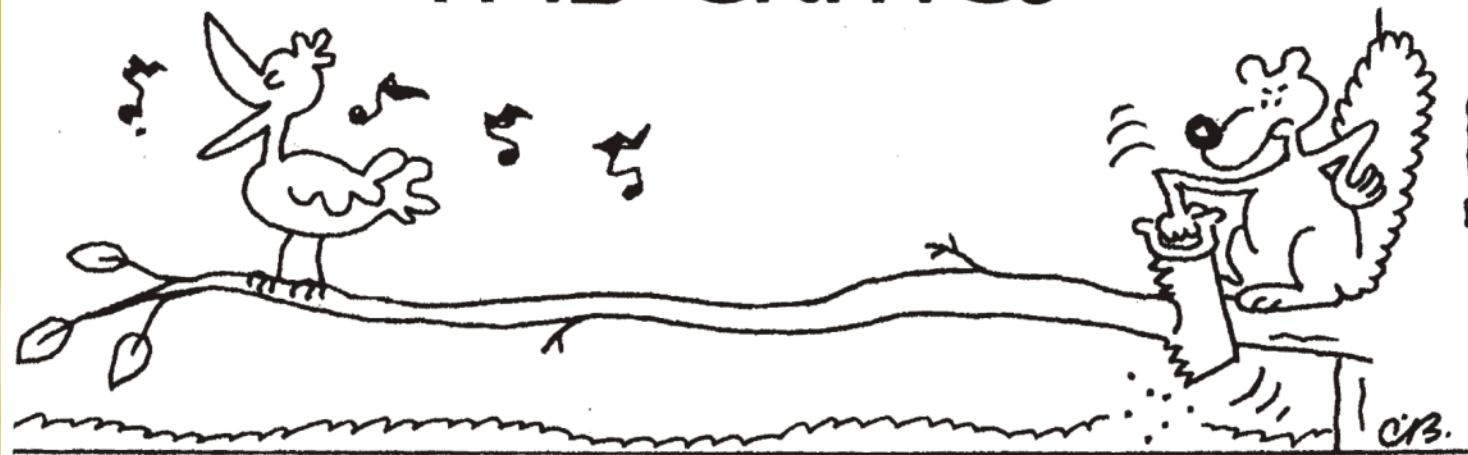


“And make it look as if he’d been run over by a glacier.”

Soil as an archive

Paleosols as a key that do not always open locked doors

THE CRITICS



Soil as an archive

Paleosols as a key that do not always open locked doors

The problems of paleopedological interpretations

The missing link (where have they been gone)

Erosion

Degradations

Loss of carbonates

Relocation (everything is flowing)

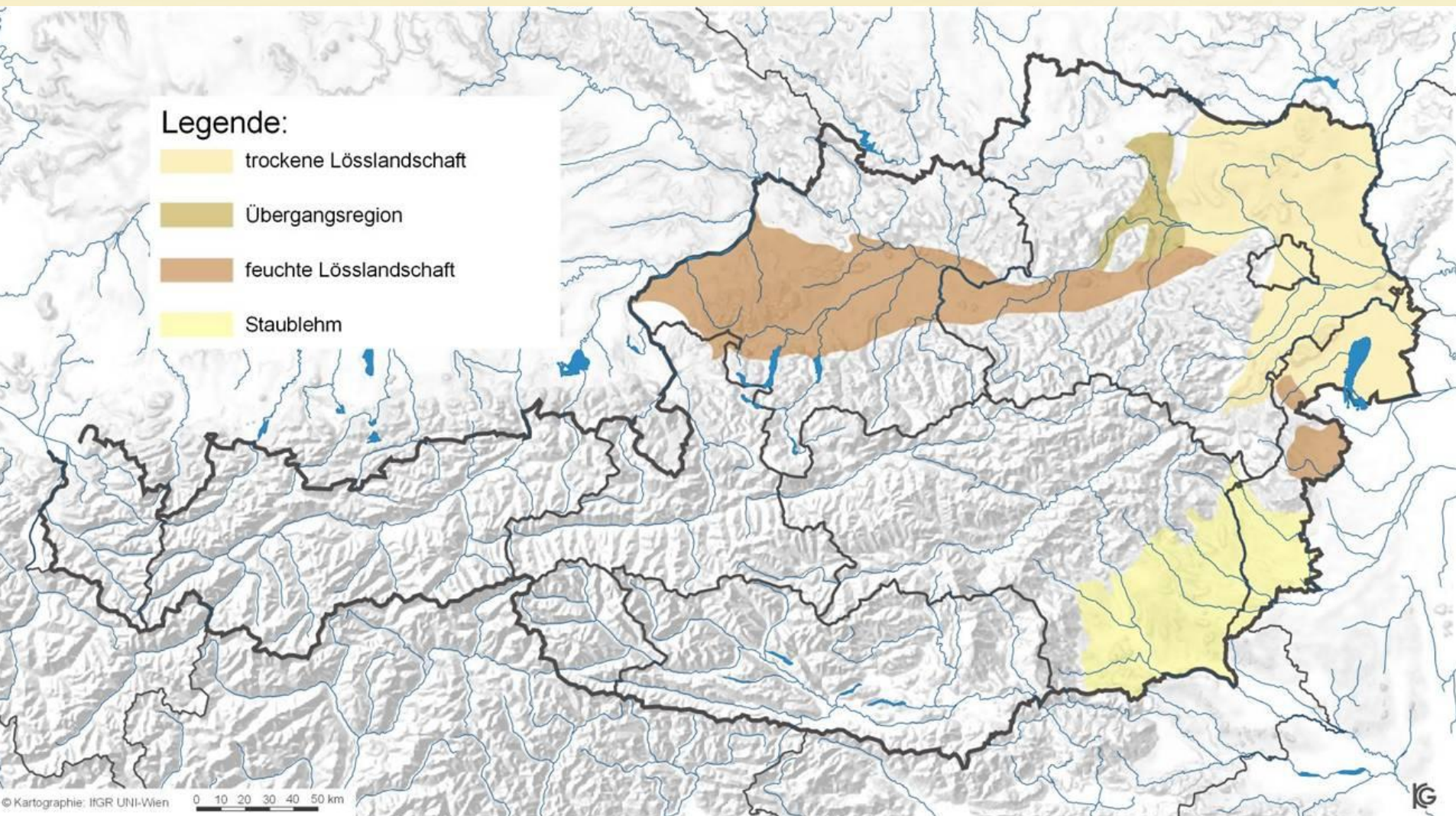
Discussion of the “in Situ” location

From aeolian → glacial → fluvioglacial → fluvial → aeolian →

Dating (dating is easy, but what do we get if we date?)

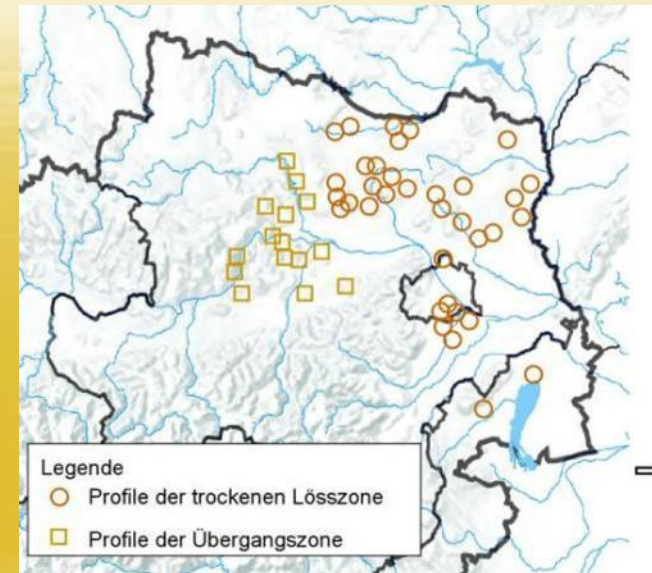
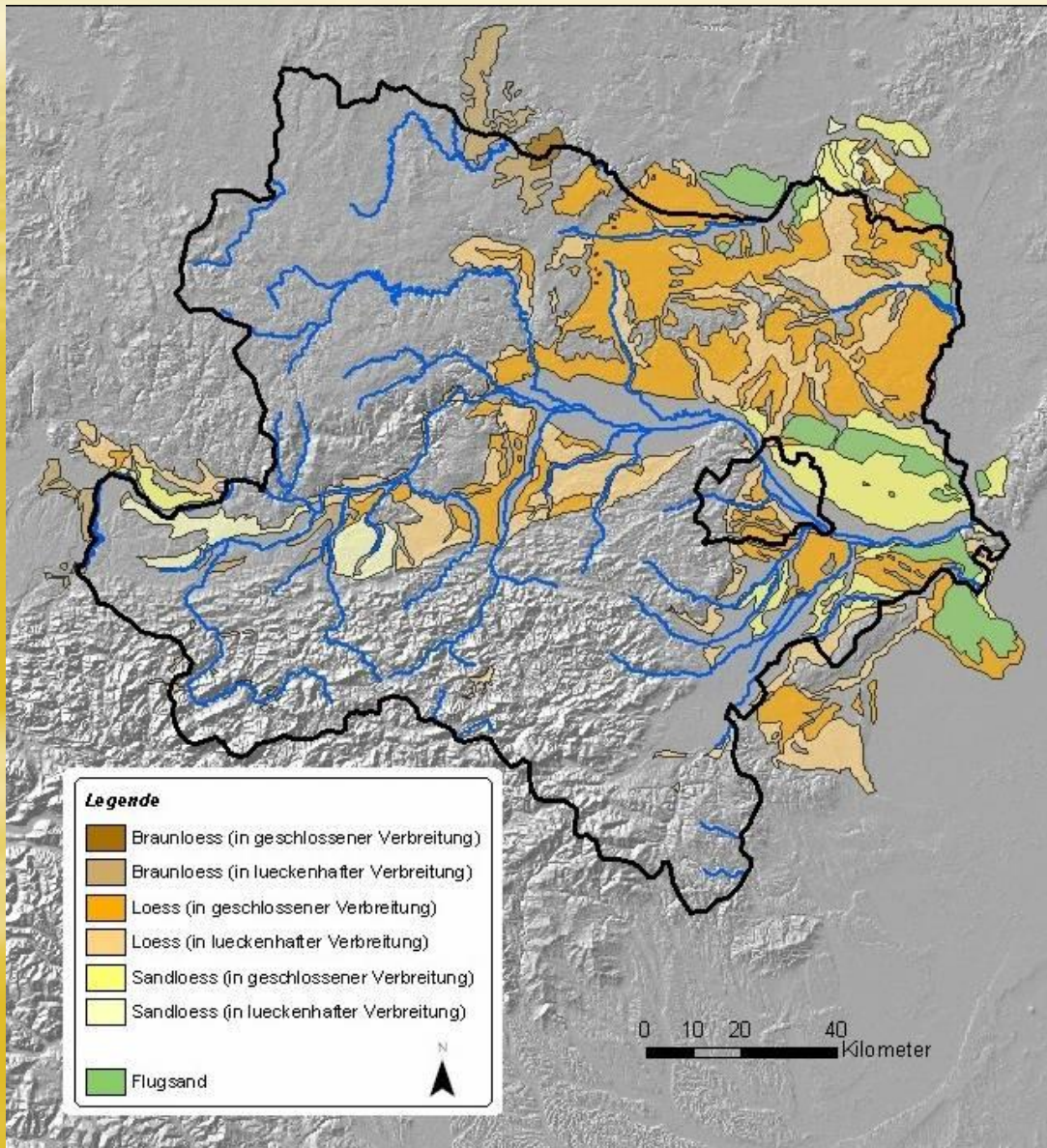
Sediments, Soils, Artefacts

The paleosols of Lower Austria

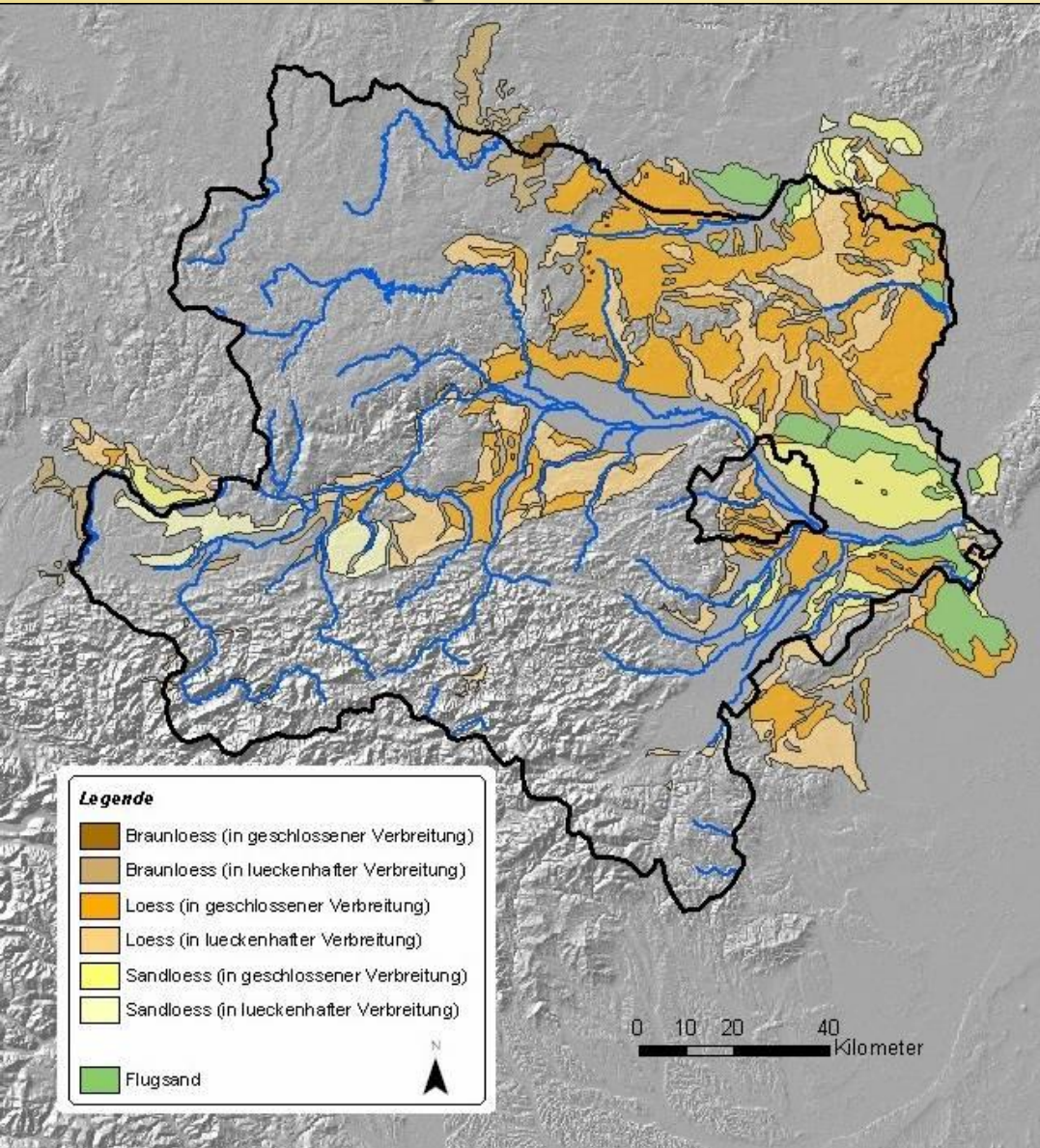


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The paleosols of Lower Austria



The paleosols of Lower Austria



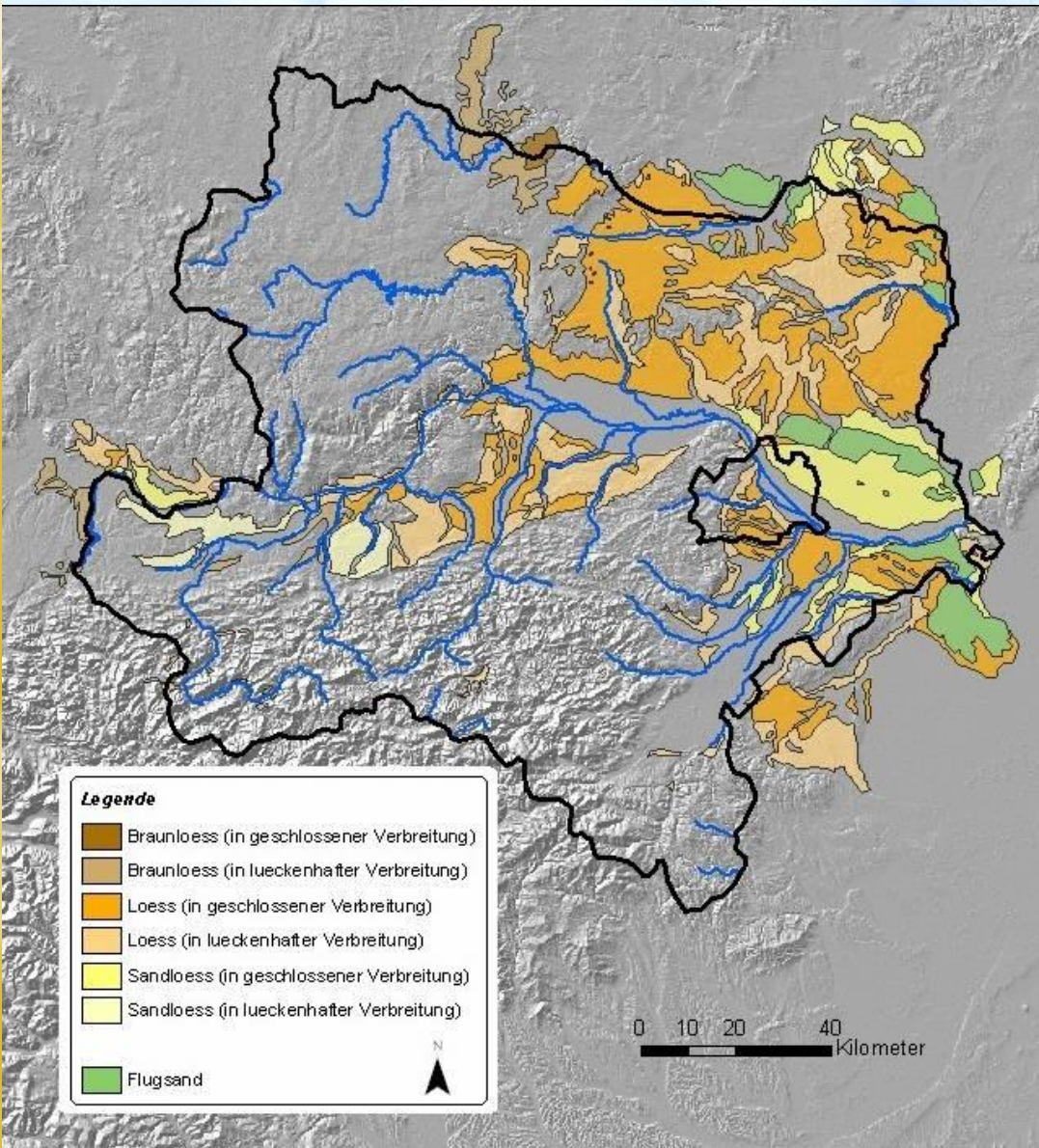
The paleosols of Lower Austria



The paleosols of Lower Austria



The paleosols of Lower Austria



The paleosols of Lower Austria



Soil as an archive and link to history and nature

The location of Stillfried



A multi-methodological approach to decode the paleoenvironmental record

Soil Scientist

Archeologists

Biologists

Physicians

Paleontologists

Statisticians

....

and natural sciences

Programm

- | | | |
|-------|---------------------------|--|
| 12:30 | <i>Martina Schlaipfer</i> | 3D Modellierung der räumlichen Verteilung der Standorte von Stillfried A und B |
| 12:45 | <i>Robert Peticzka</i> | Das Profil Stillfried B – Lage und (verschiedenste) Probenahme |
| 13:00 | <i>Christa Frank</i> | Die Mollusken von Stillfried B |
| 13:15 | <i>Franz Holawe</i> | Die Klassifikation eines Stillfrieder Profils als Zahlenspielerei |

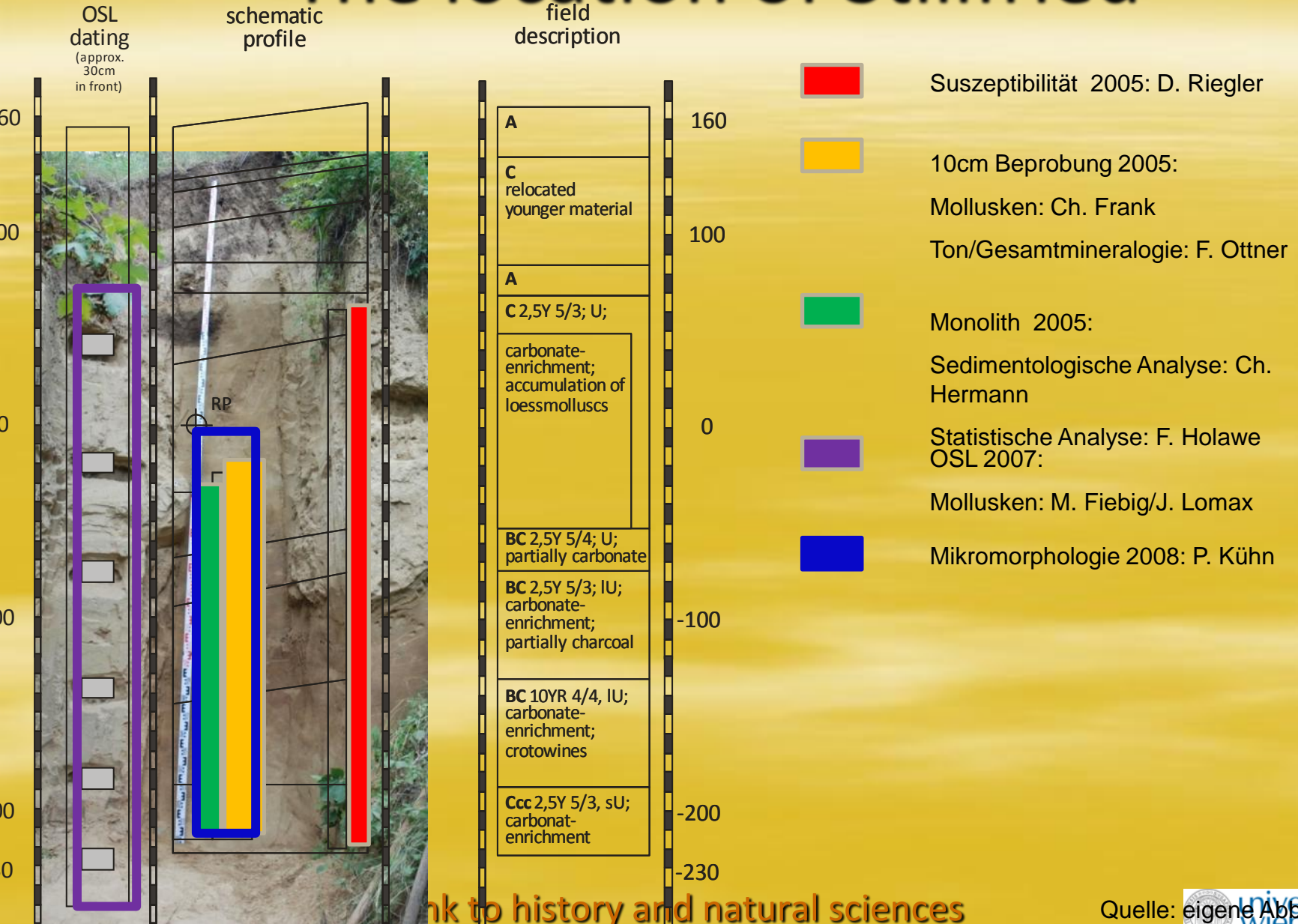
Pause

- | | | |
|-------|--|---|
| 14:00 | <i>Walpurger Antl</i> | Stillfried B ist überall |
| 14:15 | <i>Johanna Lomax</i> | OSL Datierung von Stillfried B |
| 14:30 | <i>Franz Ottner</i> | Die Tonmineralogie von Stillfried B |
| 14:45 | <i>Dieter Riegler</i> | Spätpleistozäne Paläoreliefrekonstruktion im Bereich Stillfried/Kranawettberg |
| 15:00 | <i>Gernot Rabeder</i>
<i>Peter Kühn</i> | Stillfried B und die Klimakurven
Dünnschliffe von Stillfried B (Poster) |

Diskussion

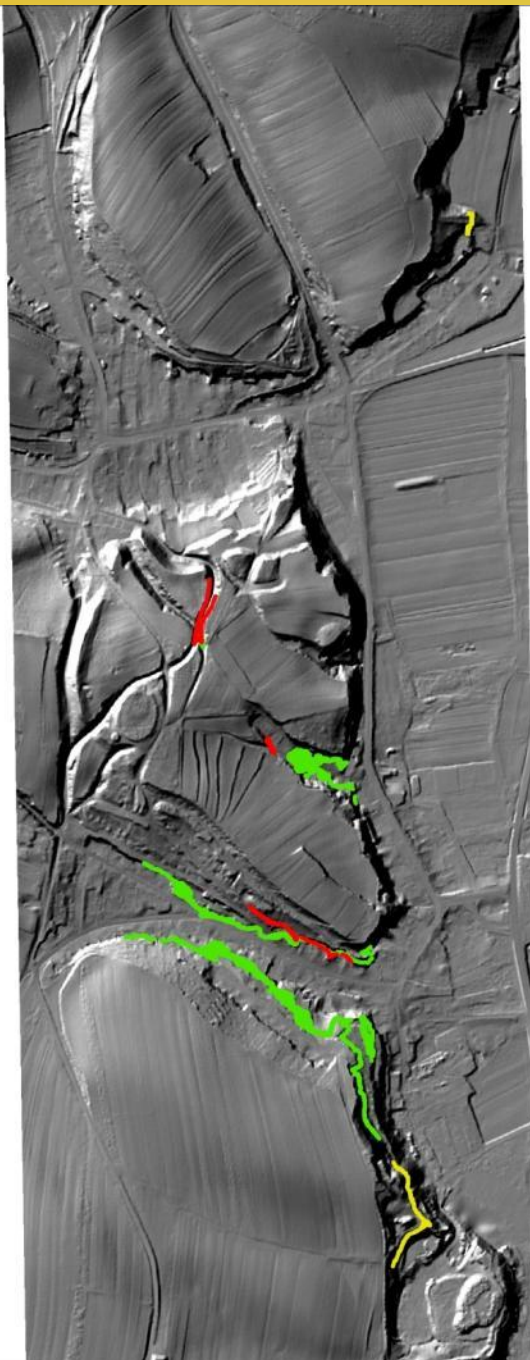


The location of Stillfried



ank to history and natural sciences

Quelle: eigene Abbildung

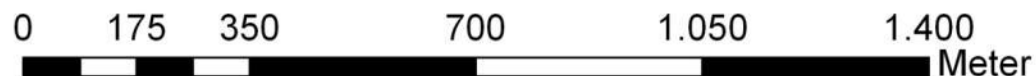


Schnittlinien der einzelnen Standort-Ebenen mit dem digitalen Geländemodell

- Schnittlinie Stillfried A
- Schnittlinie Stillfried B
- Schnittlinie Tertiär

Datenquellen: Land NÖ, BEV
bearbeitet von: Martina Schlaipfer, 2010

1:10.000



Soil as an archive

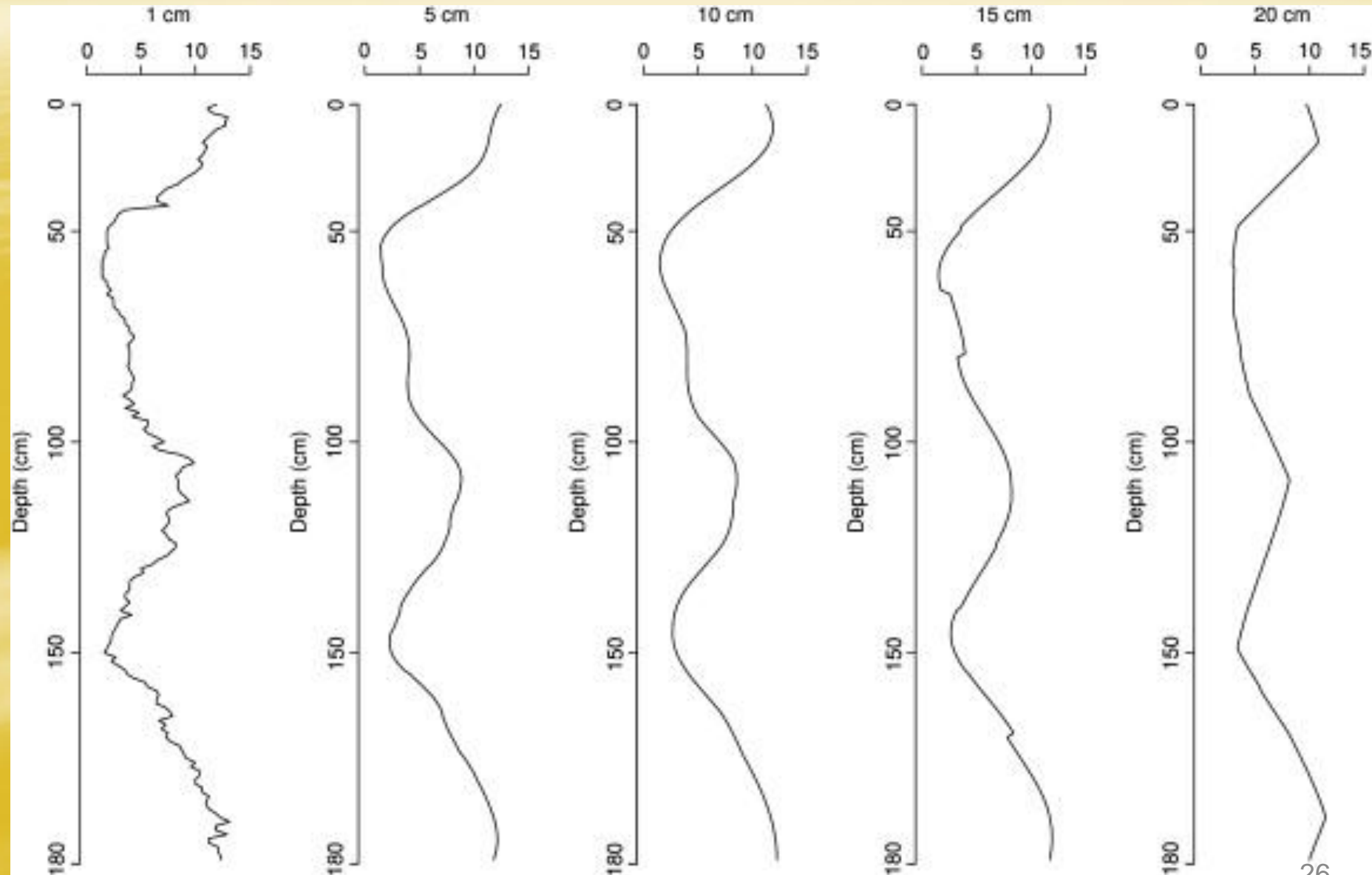


Quarz

Feldspat

	23 +/- 2 ka	Loess
30 +/- 3 ka	22 +/- 2 ka	Loess
31 +/- 3 ka	22 +/- 2 ka	Loess
<hr/>		
	27 +/- 2 ka	B
45 +/- 5 ka	40 +/- 4 ka	B
<hr/>		
Not datable	45 +/- 5 ka	Loess

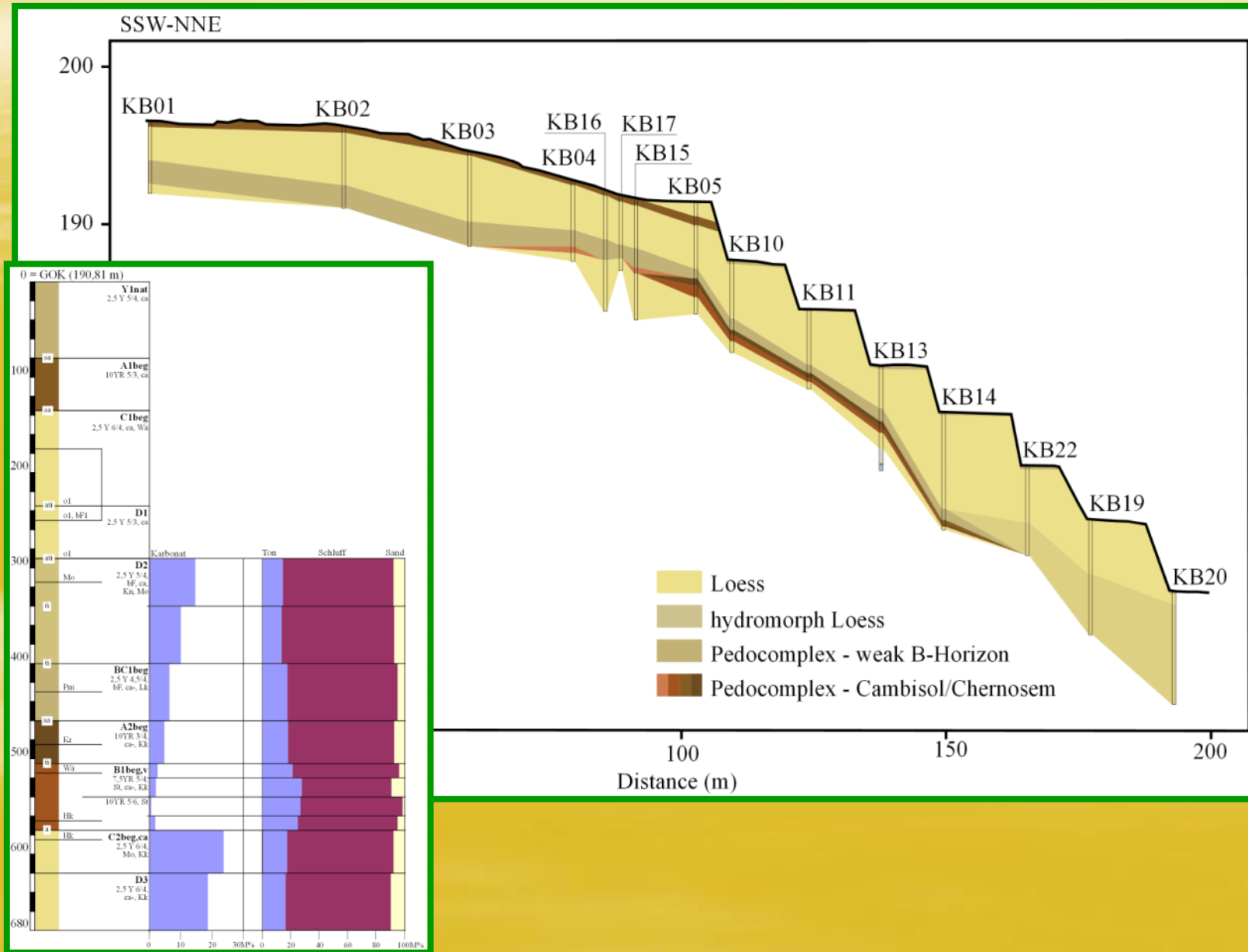
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Soil as an archive

Field-Expert Stratigraphy	FieldLab-Expert Stratigraphy	Statistic-Expert Stratigraphy 1	Statistic-Expert Stratigraphy 2- 6				
		1cm	5cm	10cm	15cm	20cm	10/15cm
C (C2beg)	LOE1	CLU1	CLU1	CLU1	CLU1	CLU1	CLU1
	SOL1	CLU2	CLU2	CLU2	CLU2	CLU2	CLU2
BC (BC1beg)							
BC (BC2beg)	LOE2	CLU3	CLU3	CLU3	CLU3	CLU3	CLU3
			CLU4	CLU4	CLU4	CLU4	CLU4
BC (BC3beg)	SOL2	CLU3	CLU3	CLU3	CLU3	CLU3	CLU3
Ccc (C3ca)	LOE3	CLU5	CLU5	CLU5	CLU5	CLU5	CLU5

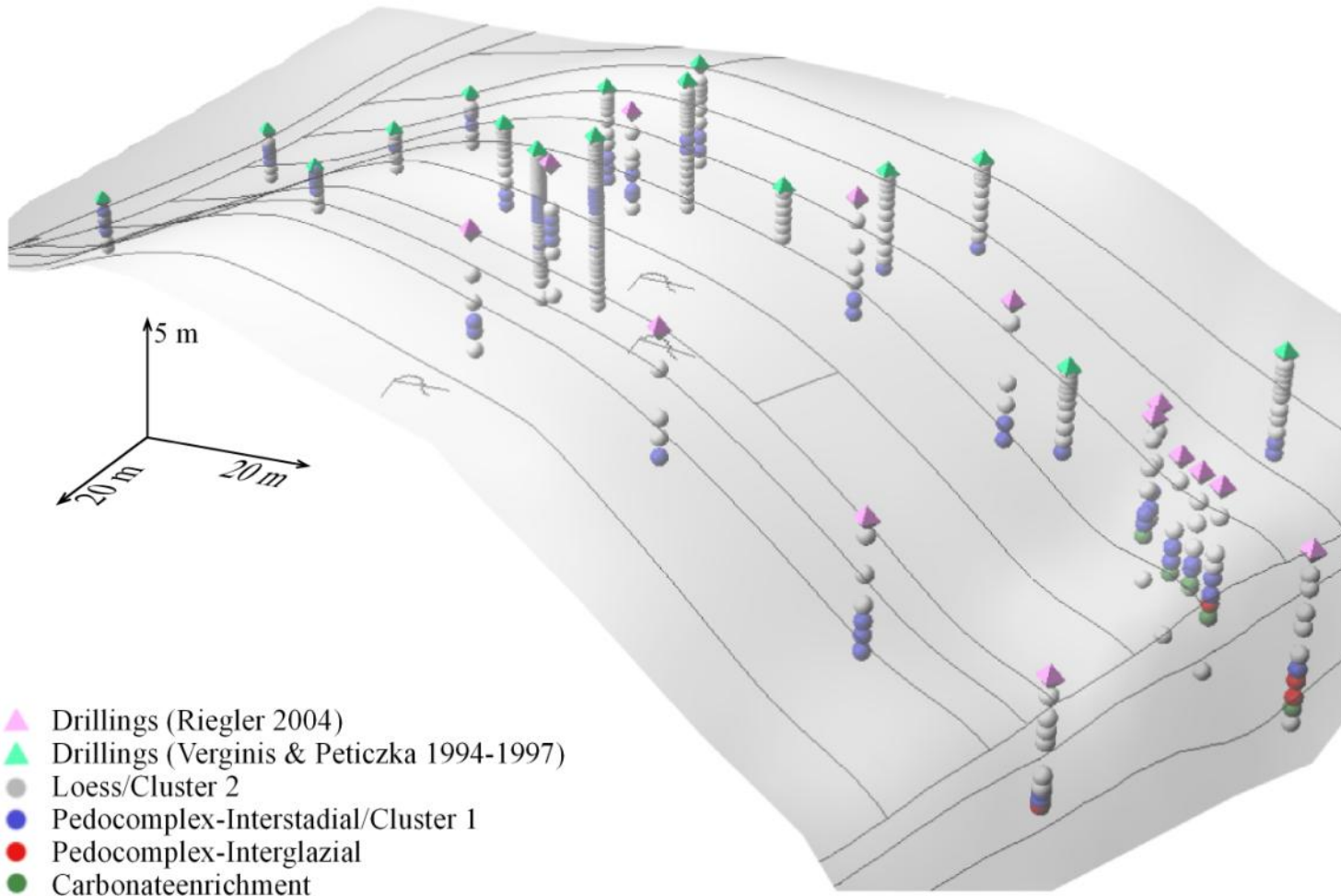
Soil as an archive



Soil as an archive

3D-Model, View SW, Eyelevel 235 m

Additional Sources: Digitale Katastralmappe, Archivmaterial Physiogeographisches Labor:



Paleopedologie (now and then)



the future??

Soil as an archive and link to history and natural sciences

Paleopedologie in Stillfried 2011??



Thank you

And thanks also to

Martina, Irene, Angela,
Dana, Birgit, Christa,
Johanna, Christine,
Walpurga, Thomas, Dieter,
Franz, Florian, Franz,
Markus,

and natural sciences