

Neandertal's Presence during the Eemian Interglacial in North-western Europe: a New Site at Waziers (Northern France)

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1 – UMR-CNRS 7194; 2 - INRAP; UMR-CNRS 8591; 3 - SRA Nord-Pas-de-Calais; 4 - UMR-CNRS 8591; 5 - UMR-CNRS 8198; 6 - CADDAP; 7 - INRAP; 8 - GEOTOP, Université du Québec à Montréal



At the end of the 1980's

⊘ Eemian ⊘
= No data

?

?

?

Debate on the ability of Early hominids to colonize northern latitudes of Europe during Middle and Late Pleistocene Interglacial periods

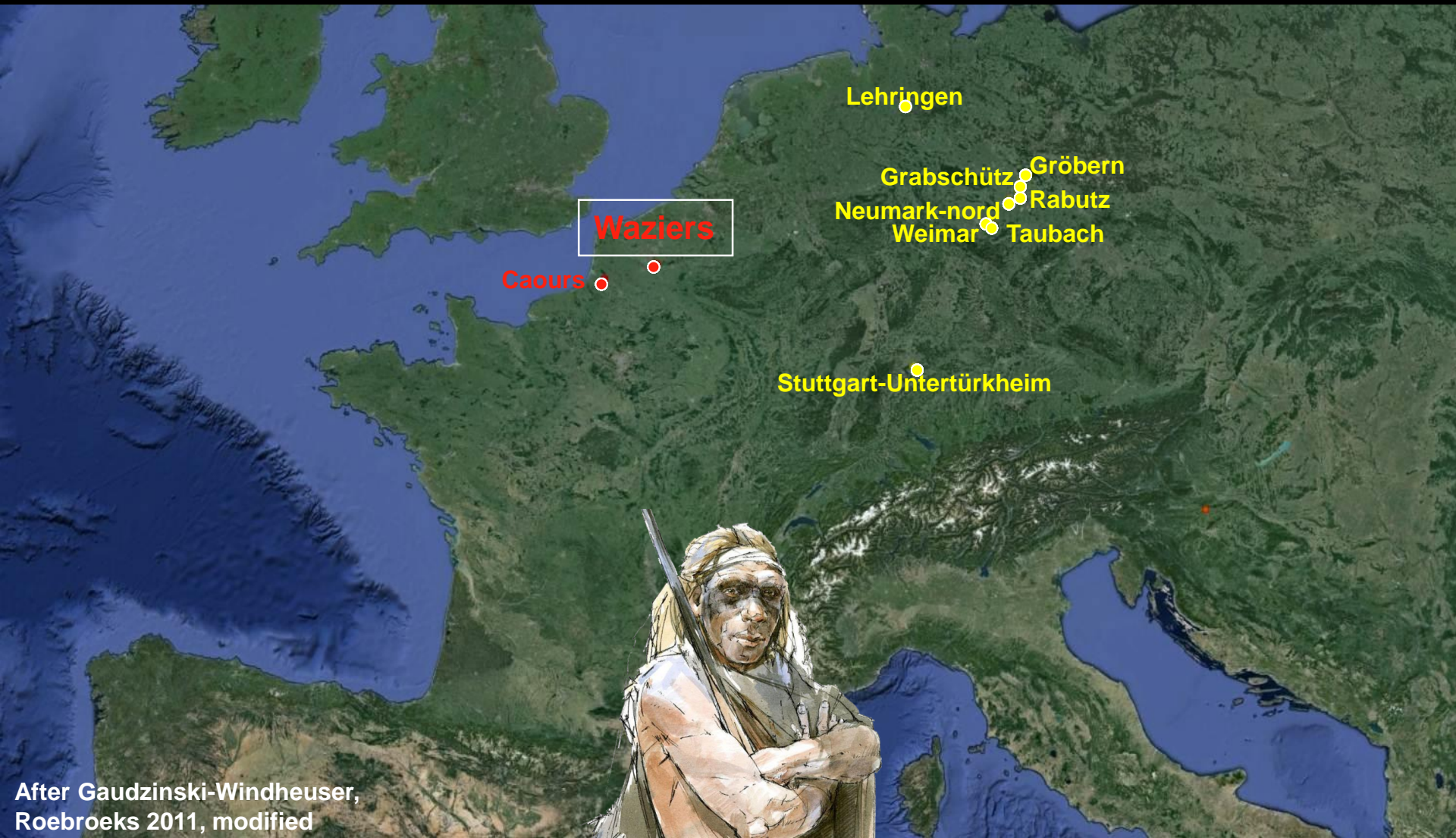
Since the 1990's



After Gaudzinski-Windheuser,
Roebroeks 2011, modified

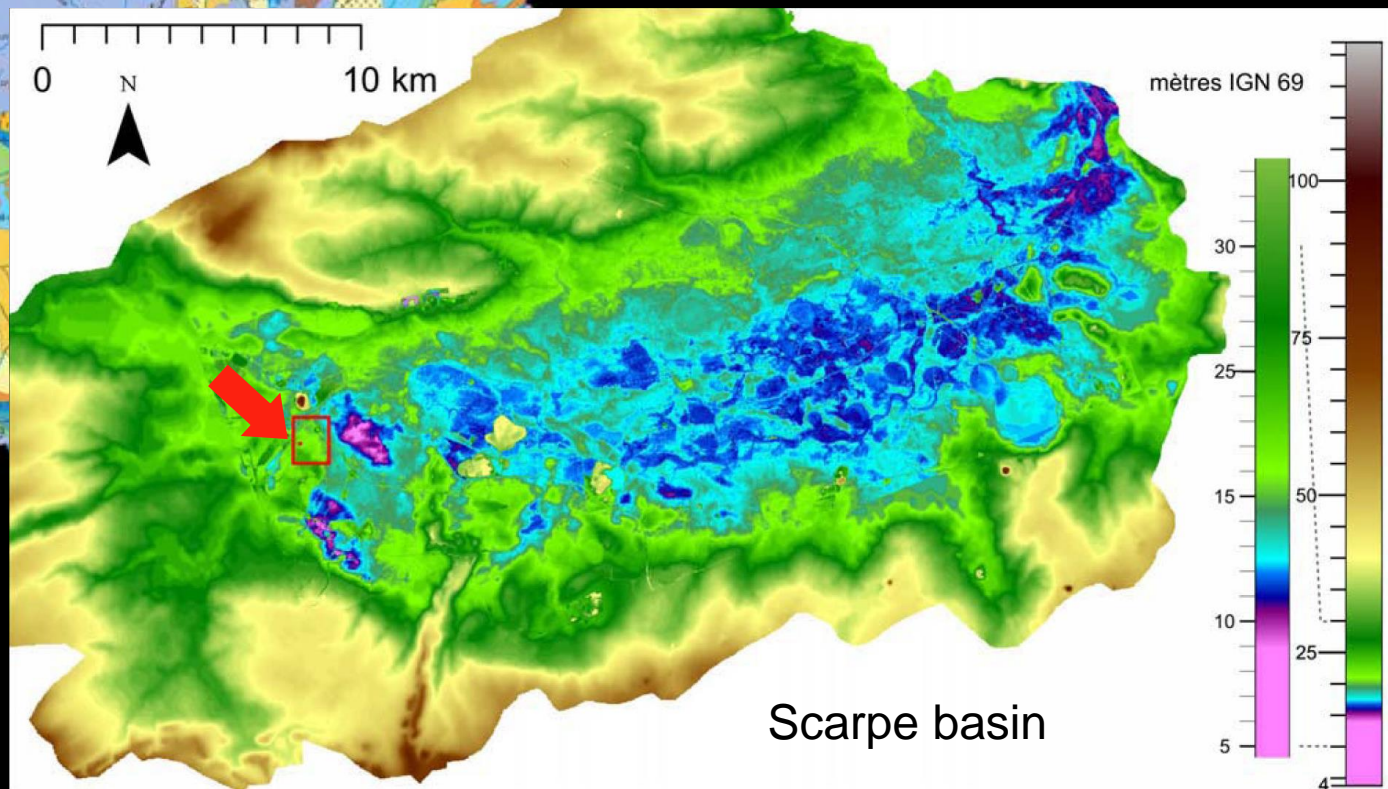
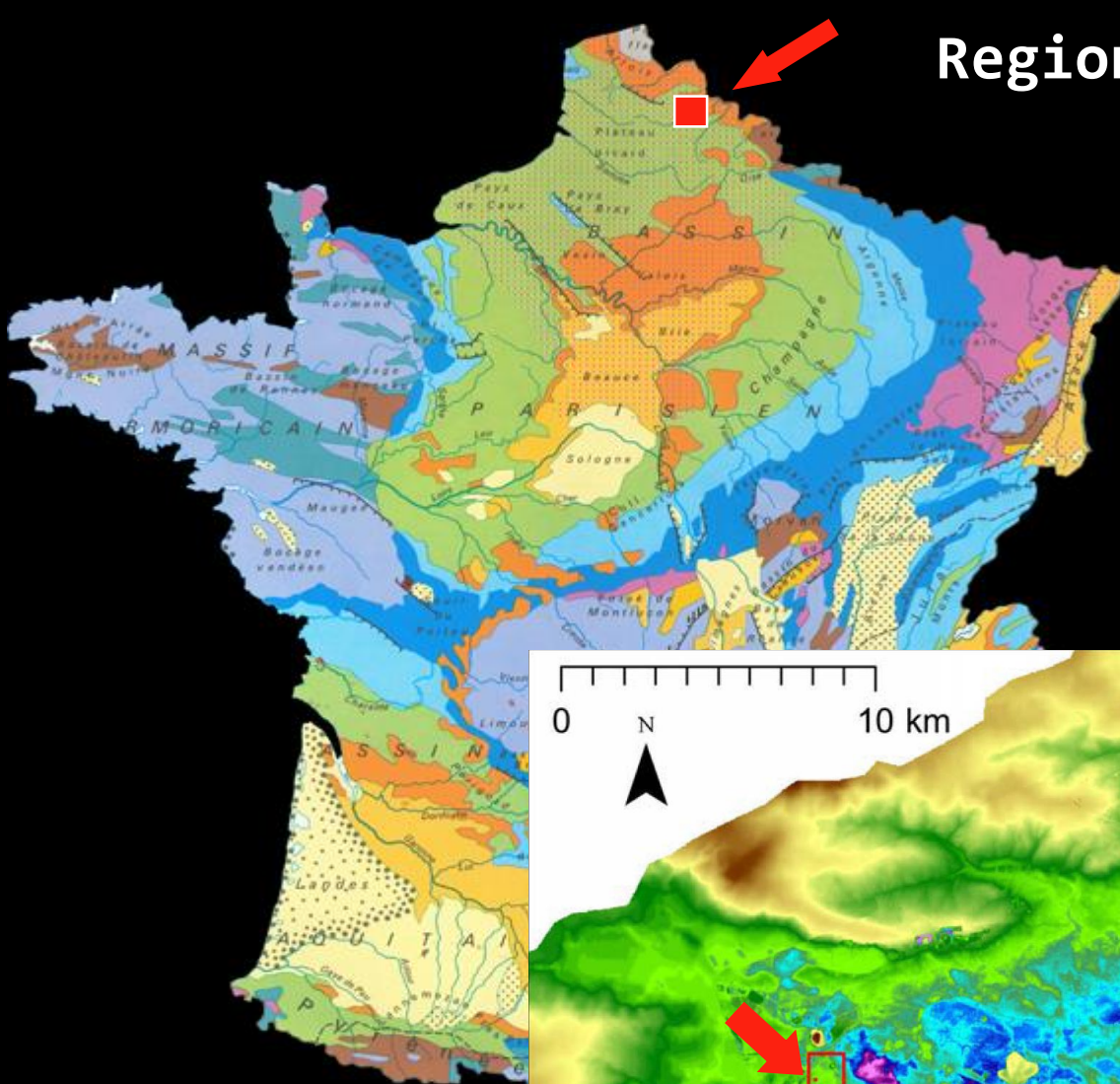
Neandertals able to colonize northern latitudes of Europe during Eemian

A new Eemian site in Northern France at Waziers



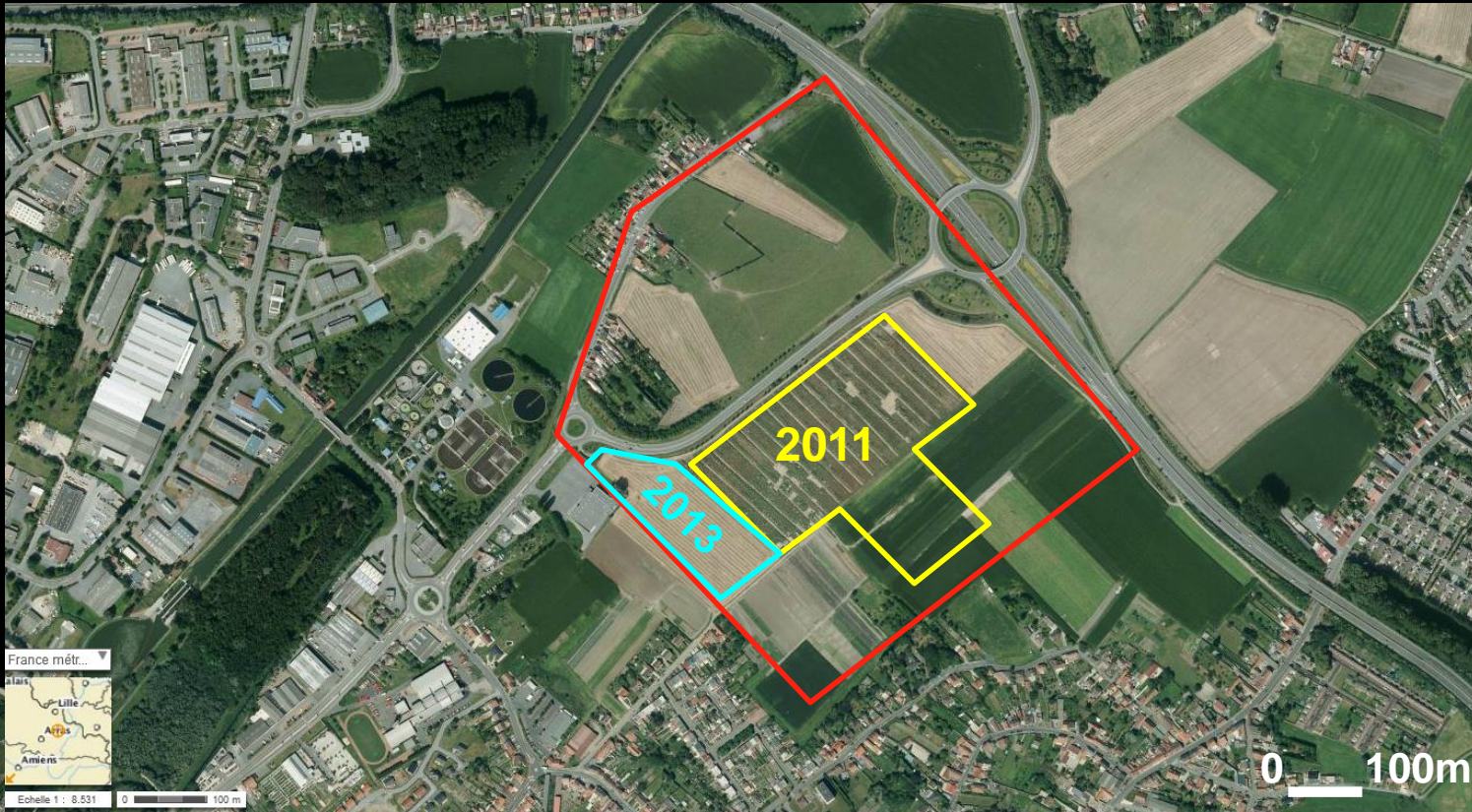
After Gaudzinski-Windheuser,
Roebroeks 2011, modified

Regional geological context



Scarpe basin

Context of the site discovery

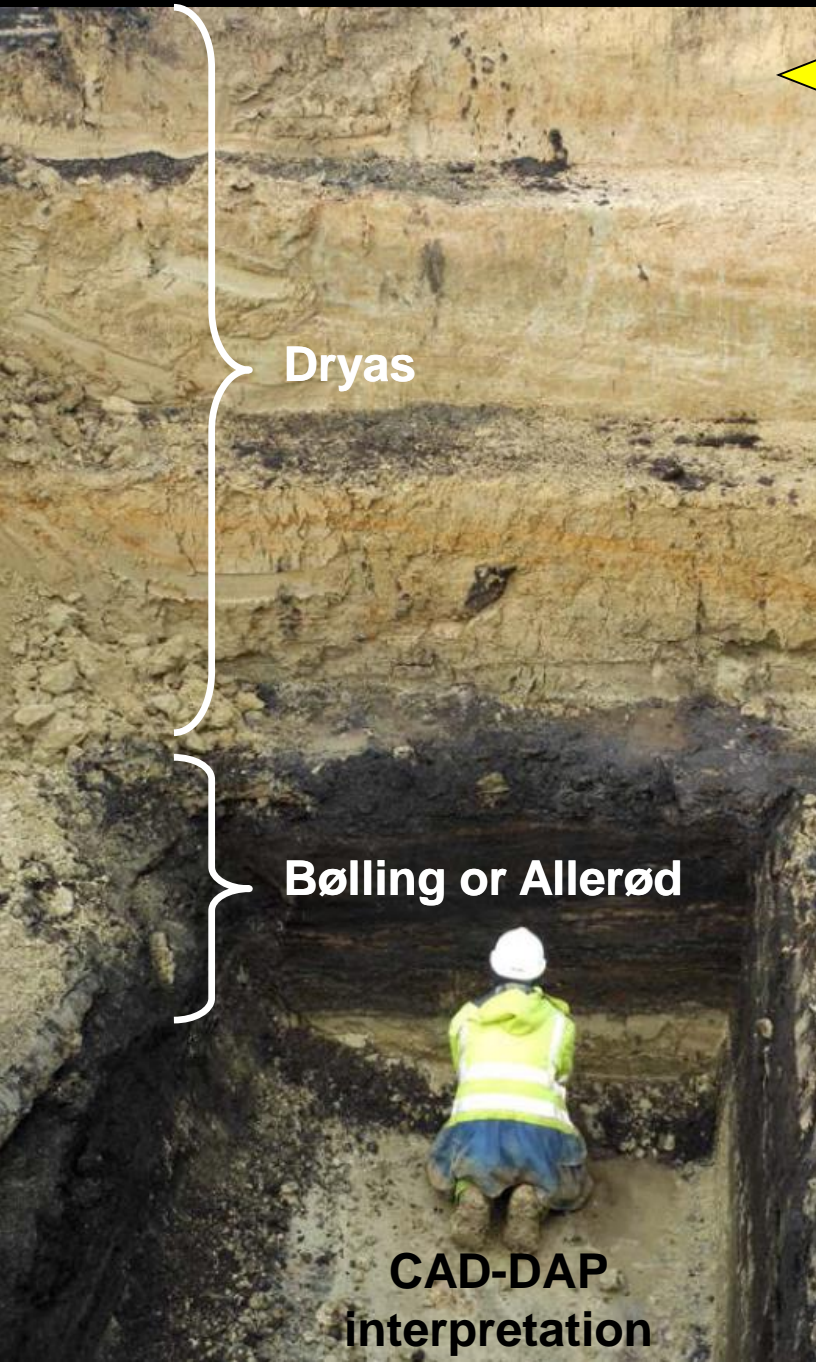


Diagnostic for historic periods by CAD-DAP

2011 : 80 000 m²

2013 : 30 000 m²

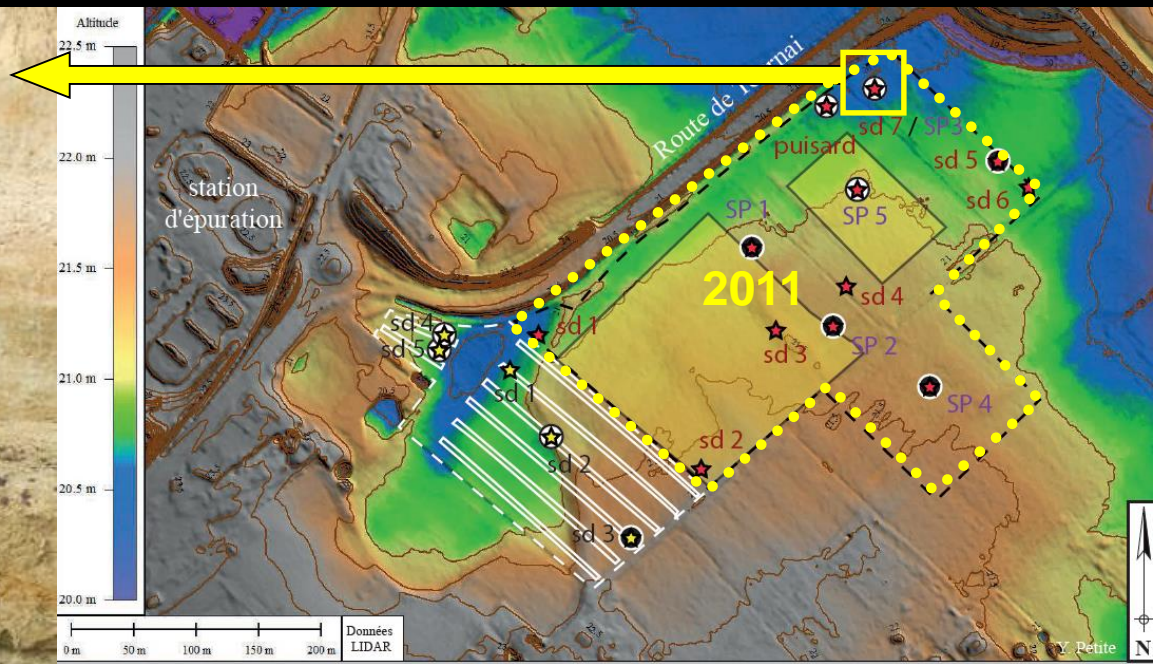
Context of the site discovery



Dryas

Bølling or Allerød

CAD-DAP
interpretation

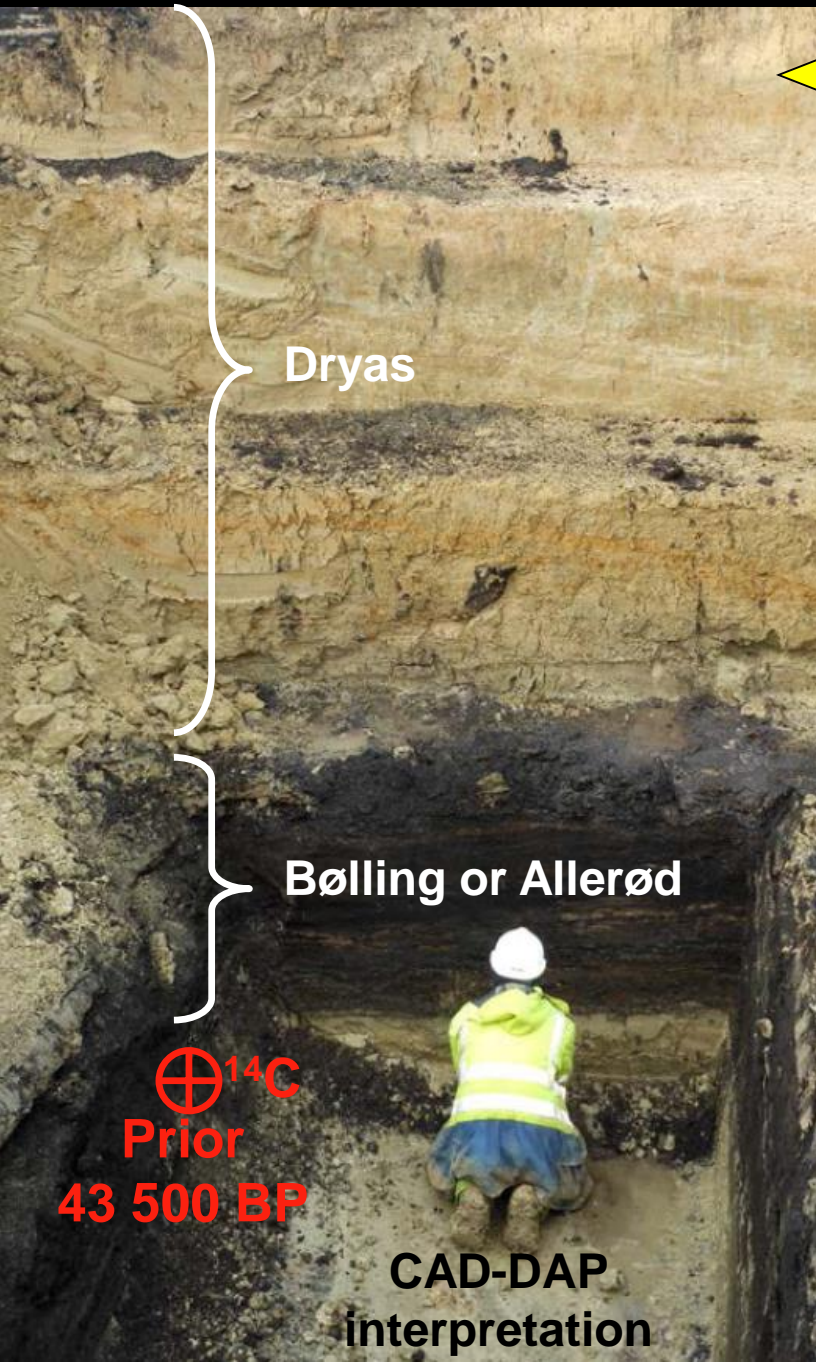


- | | | | |
|-----|--|-----|---|
| --- | Limite du diagnostic | --- | Limite du diagnostic de 2011 |
| --- | Limite de tranchées du diagnostic | ■ | Secteur prescrit en cours de fouille |
| ★ | Sondage du diagnostic ayant fait l'objet d'observation | ★ | Sondage hors parcelle diagnostiquée et ayant fait l'objet d'observation |
| ● | Observation du substrat tertiaire | ○ | Observation de niveau(x) holorganique(s) |
| SP | Sondage géotechnique | | |

2011
No archaeological remains found

After Sergent dir., 2013

Context of the site discovery

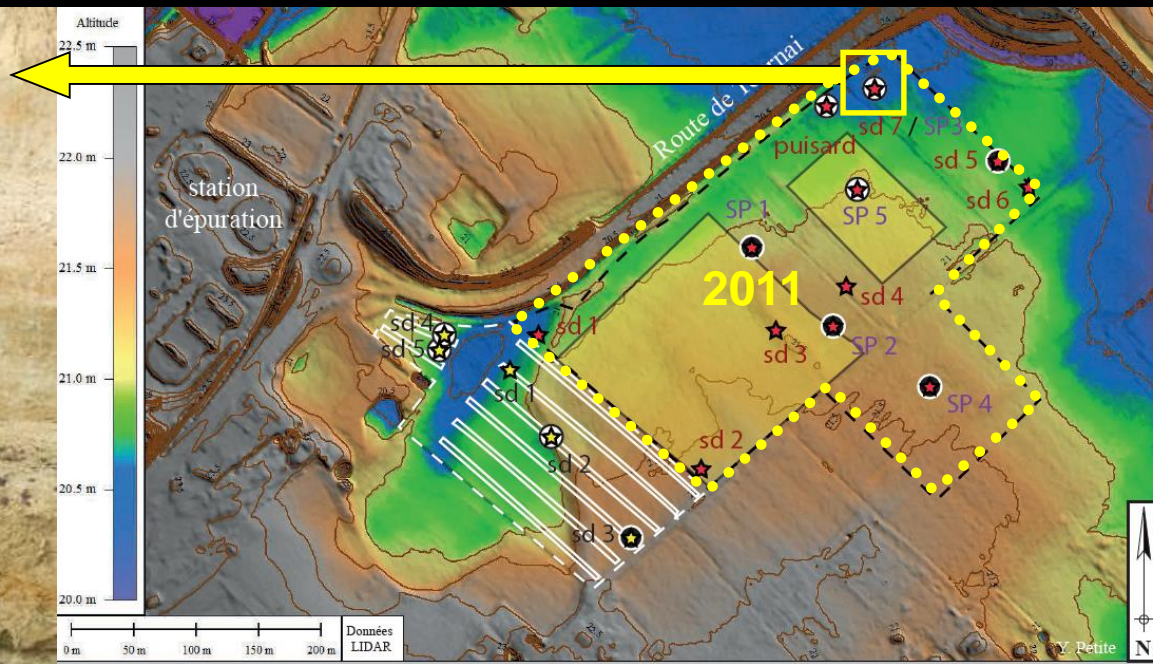


Dryas

Bølling or Allerød

$\oplus^{14}\text{C}$
Prior
43 500 BP

CAD-DAP
interpretation

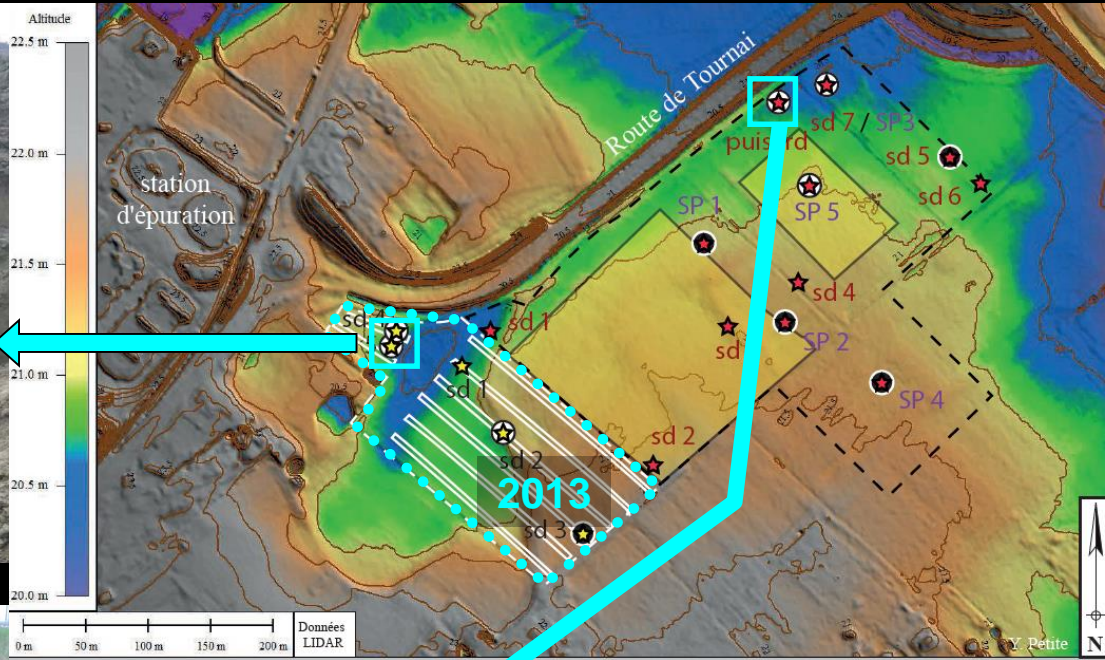


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2011
No archaeological remains found

After Sergent dir., 2013

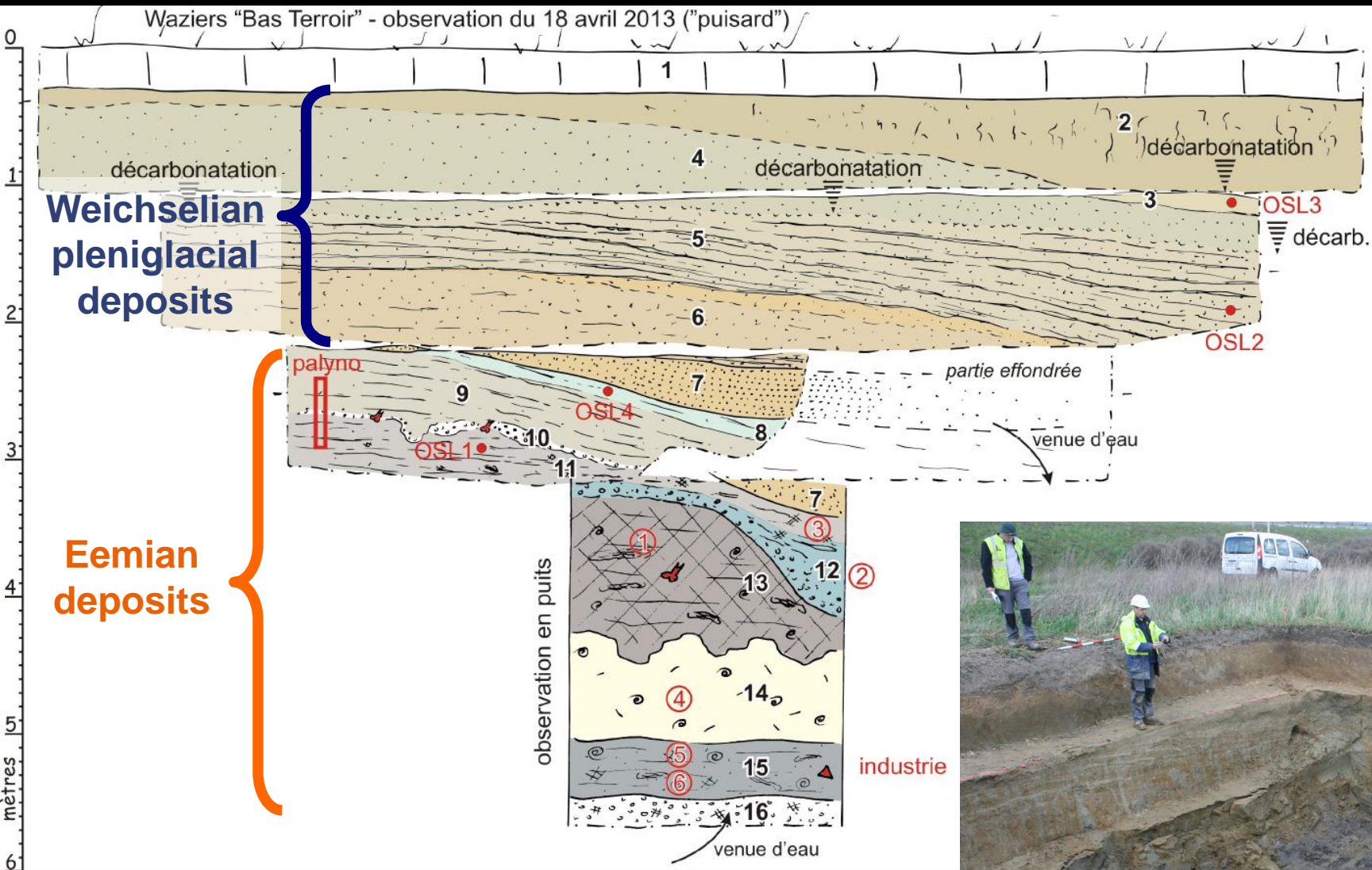
Context of the site discovery



- Limite du diagnostic
- Limite de tranchées du diagnostic
- ★ Sondage du diagnostic ayant fait l'objet d'observation
- Observation du substrat tertiaire
- SP Sondage géotechnique

- Limite du diagnostic de 2011
 - Secteur prescrit en cours de fouille
 - ★ Sondage hors parcelle diagnostiquée et ayant fait l'objet d'observation
 - Observation de niveau(x) holorganique(s)
- After Sergent dir., 2013**

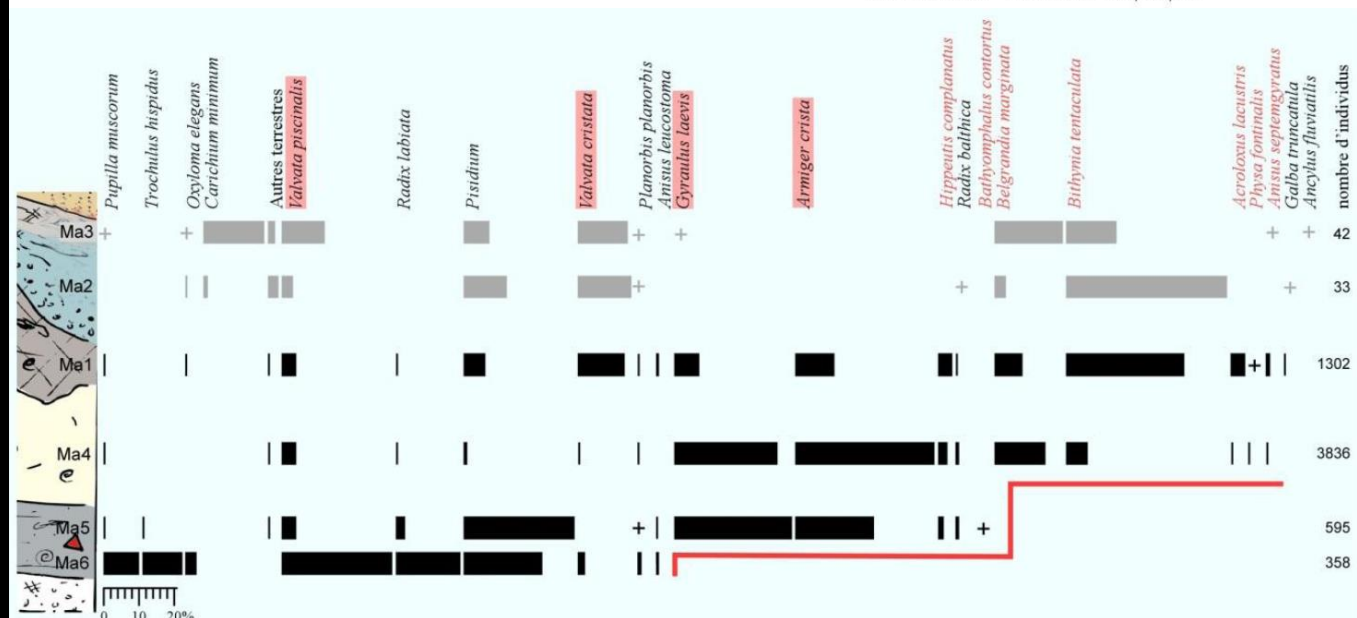
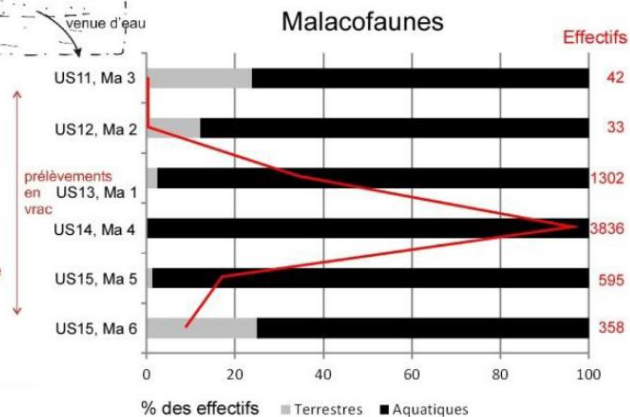
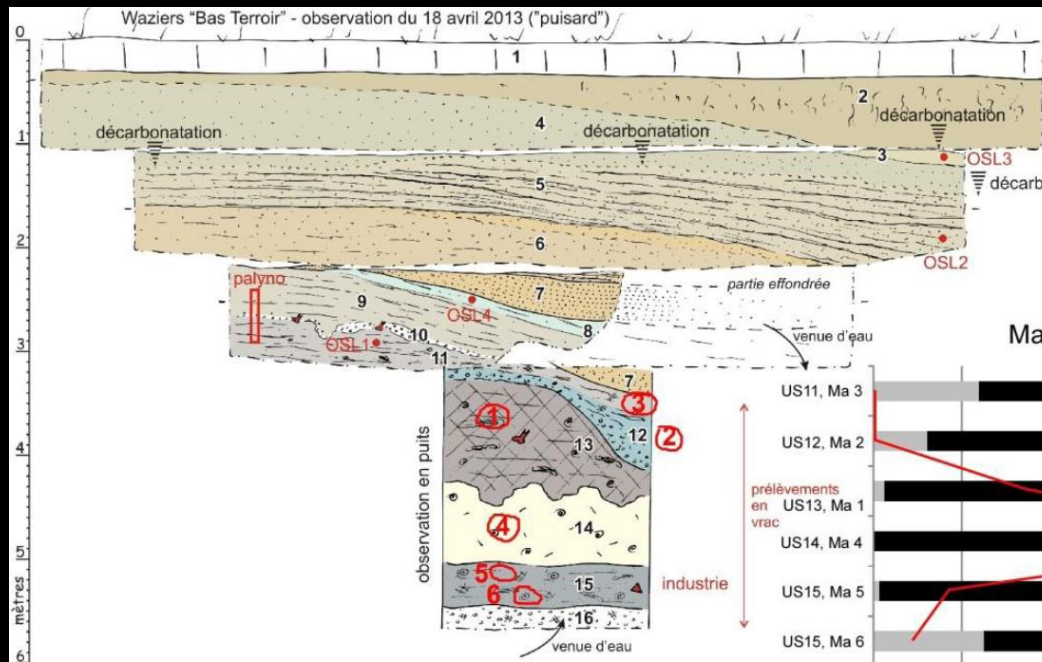
2013: a Pleistocene sequence with Eemian deposits



2013: an Eemian malacofauna



Unités	15	15	14	13	12	11
Echantillons	6	5	4	1	2	3
<i>Carychium minimum</i>				12	7	
<i>Succinella oblonga</i>					1	
<i>Oxyloma elegans</i>	12			3	2	1
<i>Vertigo</i> sp.				1	1	
<i>Pupilla muscorum</i>	37	5	4	5	1	
<i>Vallonia enniensis</i>				7		
<i>Vallonia pulchella</i>		1				
<i>Discus rotundatus</i>						1
Zonitidae				1		
Limaces				1		
<i>Trochulus hispidus</i>	40	2				
<i>Arianta arbustorum</i>			4			
<i>Arianta/Cepaea</i>				1		
Effectifs terrestres	89	8	8	31	4	10
Espèces terrestres	3	3	2	8	3	4
<i>Belgrandia marginata</i>			540	102	1	8
<i>Valvata cristata</i>	8		24	171	5	6
<i>Valvata piscinalis</i>	110	26	180	60	1	5
<i>Bithynia tentaculata</i>			236	441	15	6
<i>Galba truncatula</i>				5	1	
<i>Radix labiata</i>	66	16	8	2		
<i>Radix balthica</i>		8	40	9	1	
<i>Planorbis planorbis</i>	2	1	4	8	1	1
<i>Anisus septemgyratus</i>			8	14	1	
<i>Anisus leucostoma</i>	5	5		20		
<i>Bathymphalus contortus</i>		1				
<i>Gyraulus laevis</i>	199	1128	90	1		
<i>Armiger crista</i>	133	1488	153			
<i>Hipppeutis complanatus</i>	9	112	58			
<i>Acroloxus lacustris</i>		12	54			
<i>Physa fontinalis</i>		8	1			
<i>Ancylus fluviatilis</i>						1
<i>Pisidium</i> sp.	78	179		74	4	3
<i>Pisidium nitidum</i>			28			
<i>Pisidium milium</i>		10	12	9		
Effectifs aquatiques	269	587	3828	1271	29	32
Effectifs totaux	358	595	3836	1302	33	42



2013: a Pleistocene interglacial fauna

Red deer (*Cervus elaphus*)



B. Clarys



Roe deer (*Capreolus capreolus*)



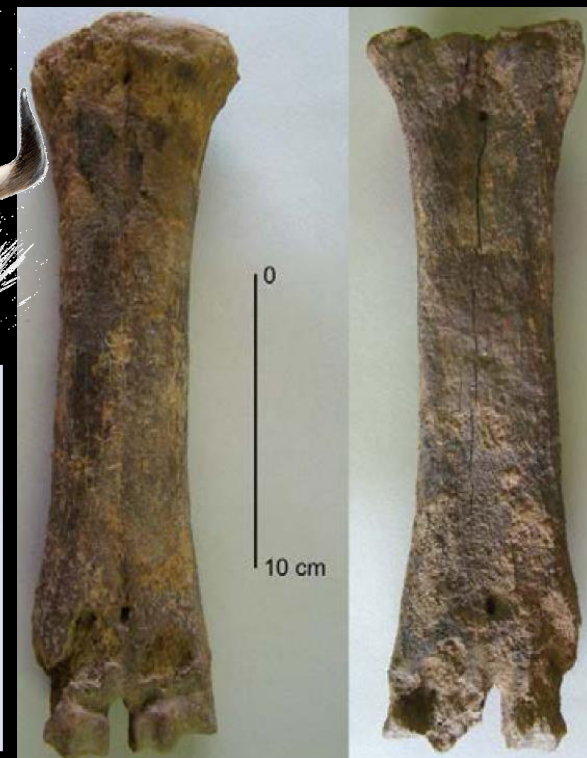
B. Clarys



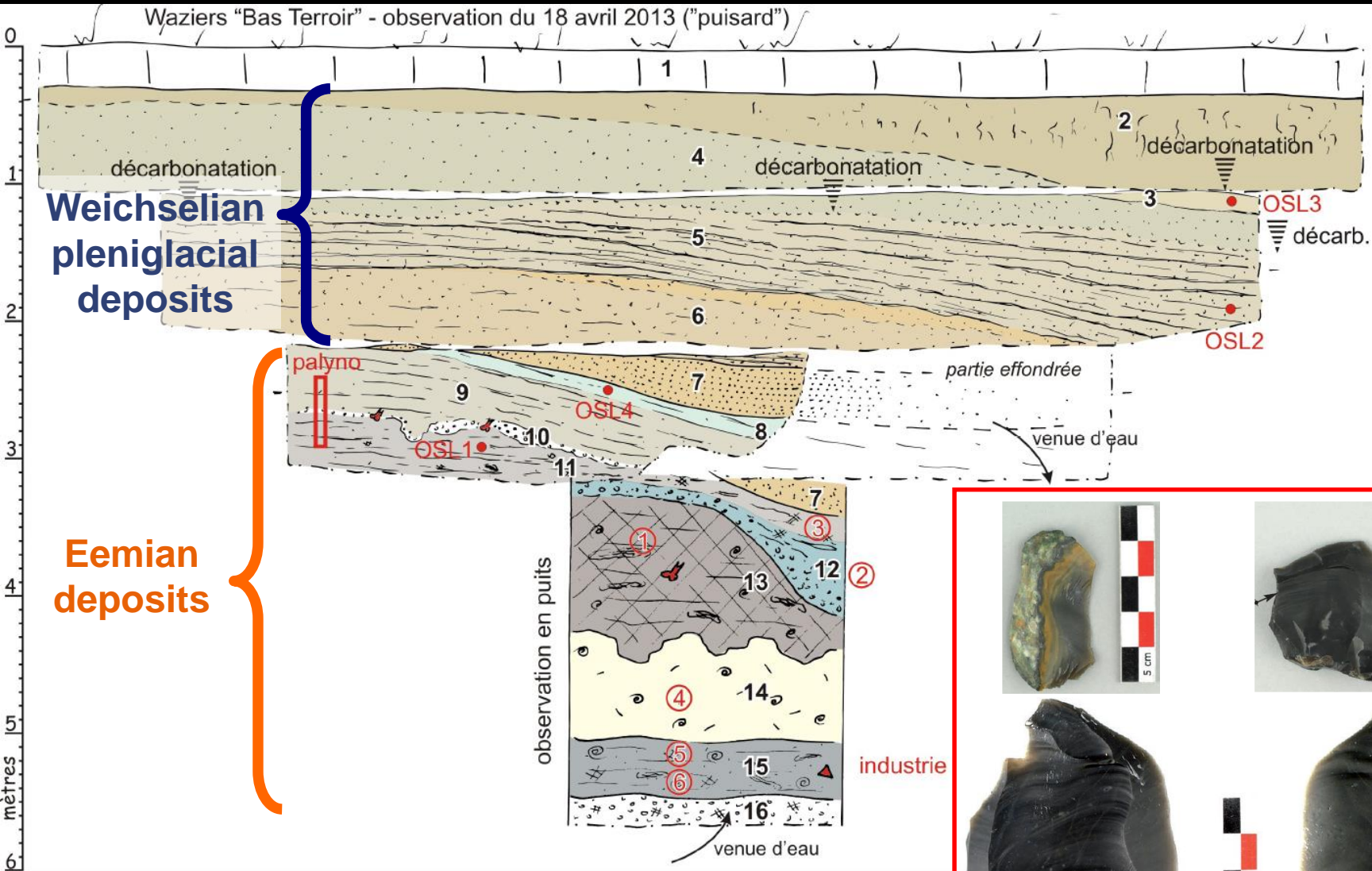
Aurochs (*Bos primigenius*)



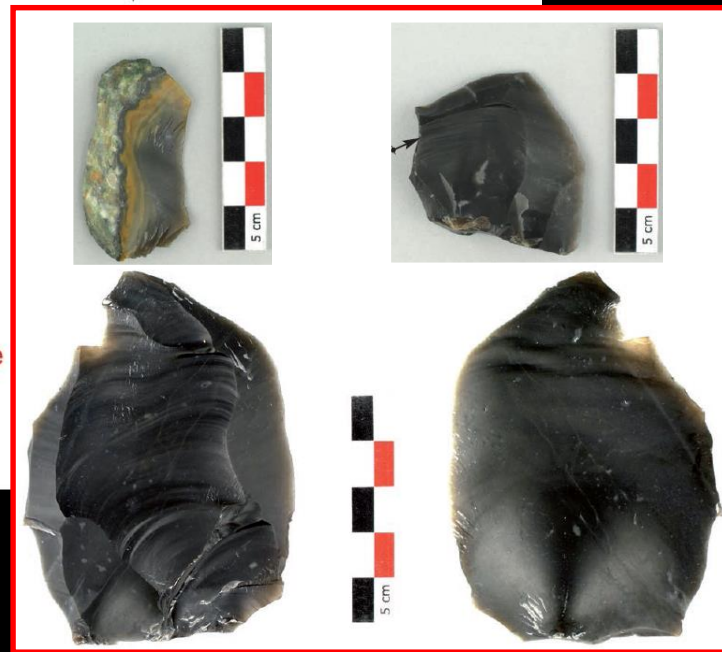
B. Clarys




2013: a Pleistocene sequence with Eemian deposits with archaeological remains



Eemian deposits





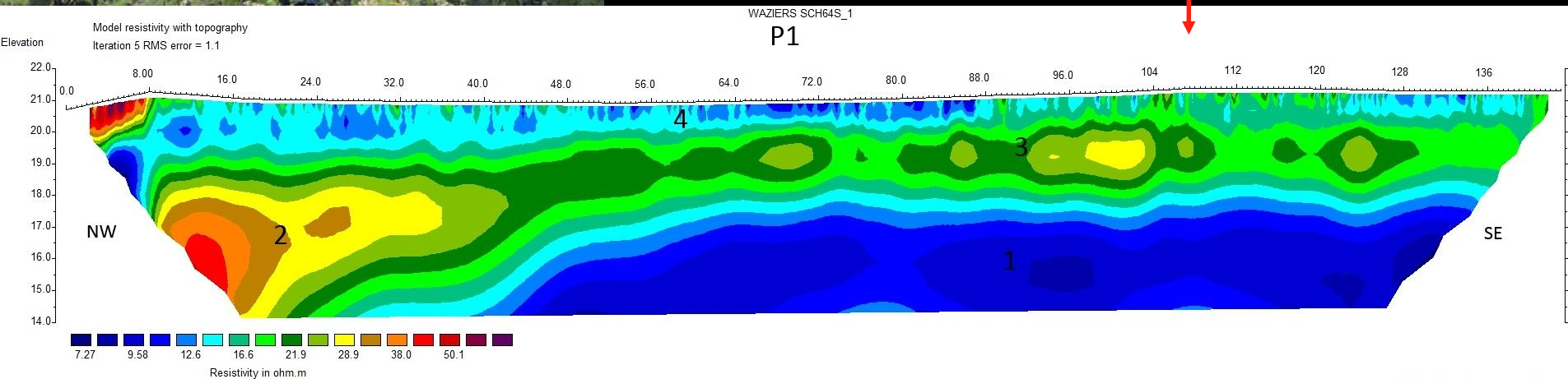
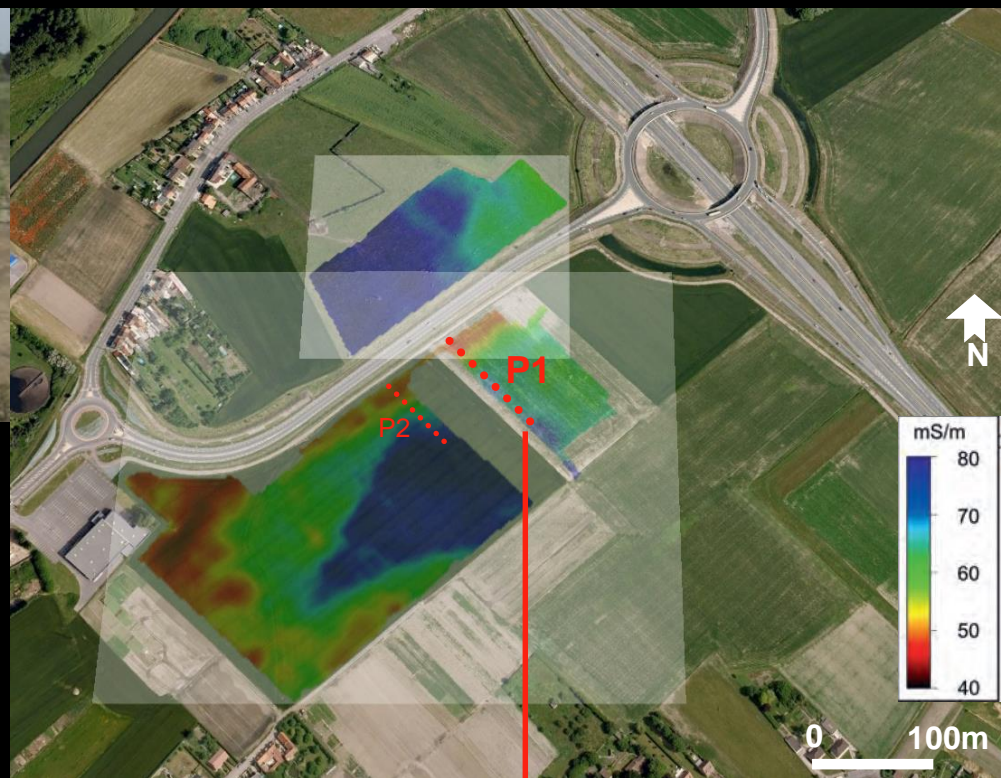
Beginning 2013:

- ✓ A new Eemian sequence with peat layers for Northern France
- ✓ A potential second Eemian site with human occupation for Northern France

After the discovery, two main objectives:

- Defining the extension of the Eemian valley and preserved human occupations
- Documenting precisely Eemian human occupations and their environment

Defining the extension of the Eemian valley and preserved human occupations

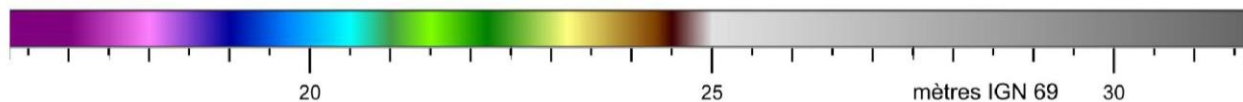
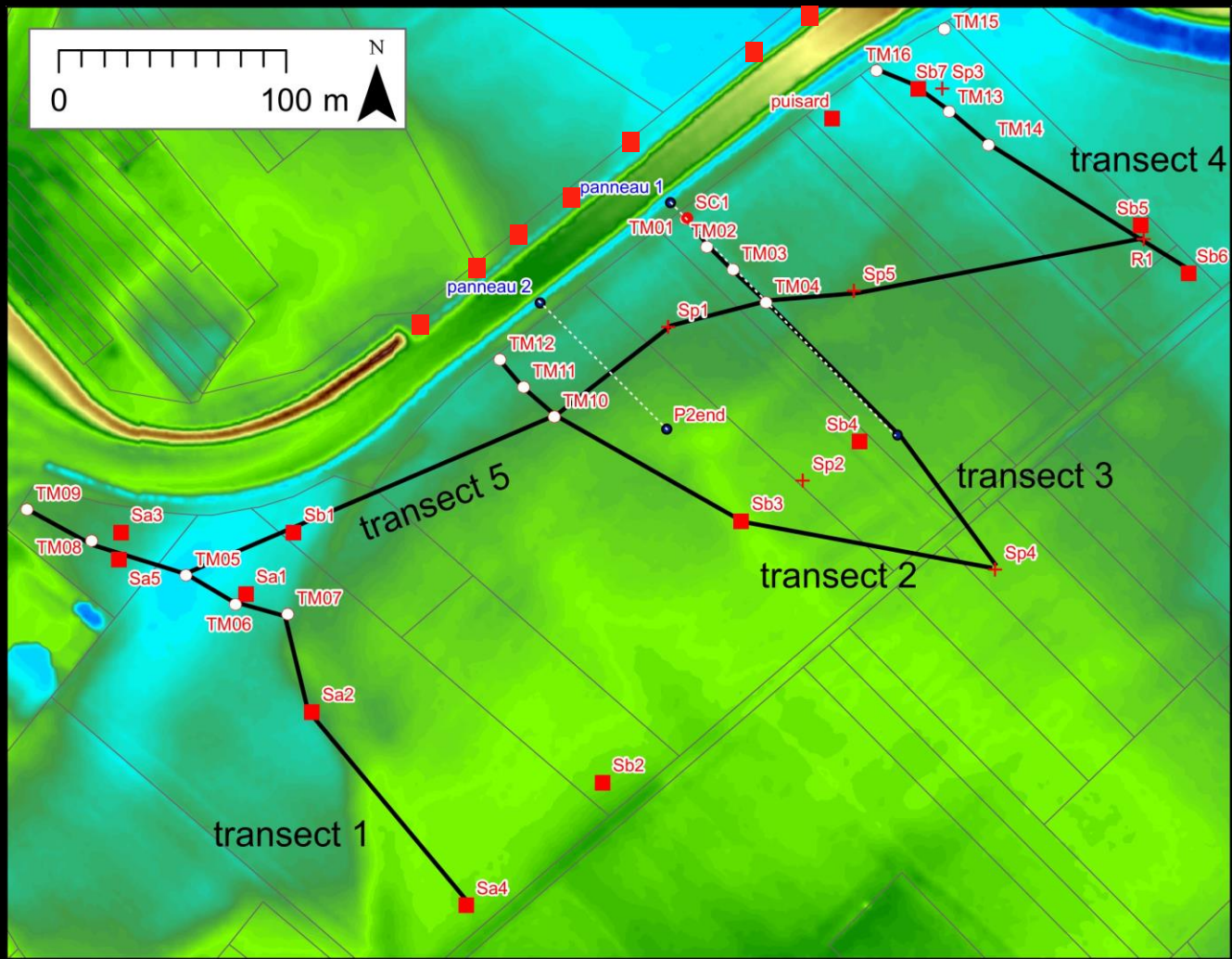


Defining the extension of the Eemian valley and preserved human occupations

Drilling core

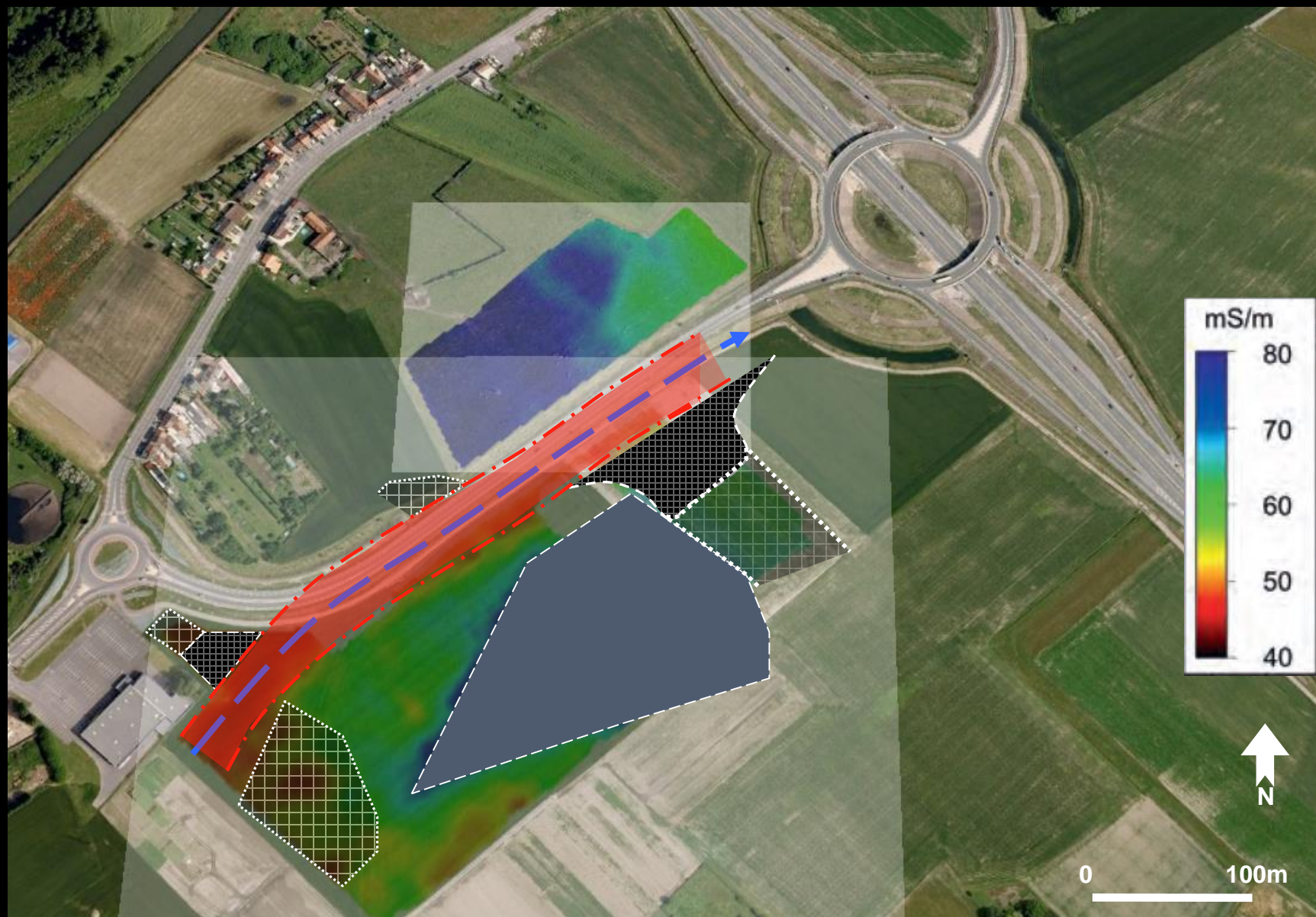



Test pit



○ Drilling core ■ Test pit + Geotechnic pit


Defining the extension of the Eemian valley and preserved human occupations



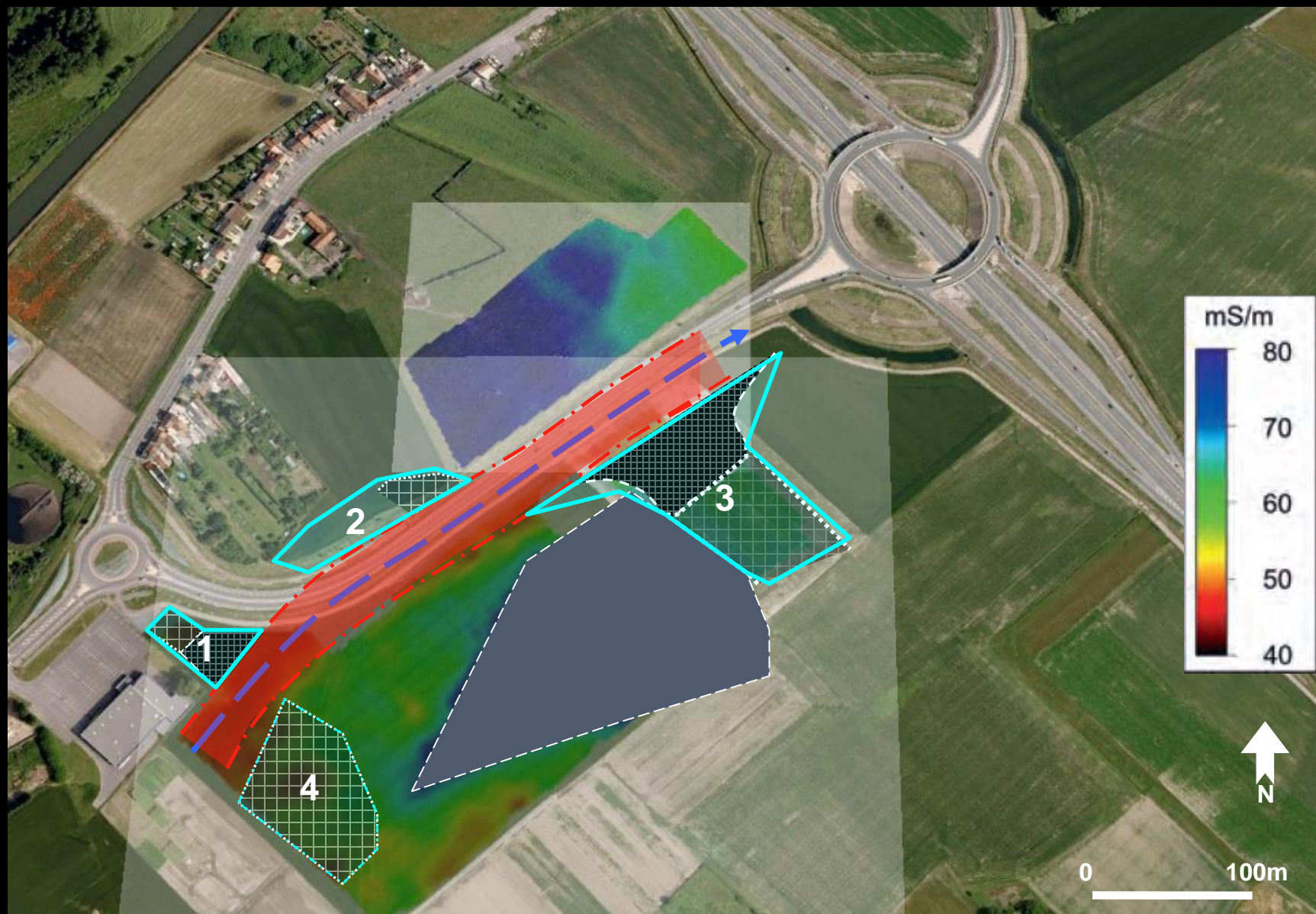
 Eemian peat and travertine at 15-17 mNGF


 Eemian peat and travertine at 14 mNGF

 Dome of clay

 Eemian hydrographic axis


Defining the extension of the Eemian valley and preserved human occupations



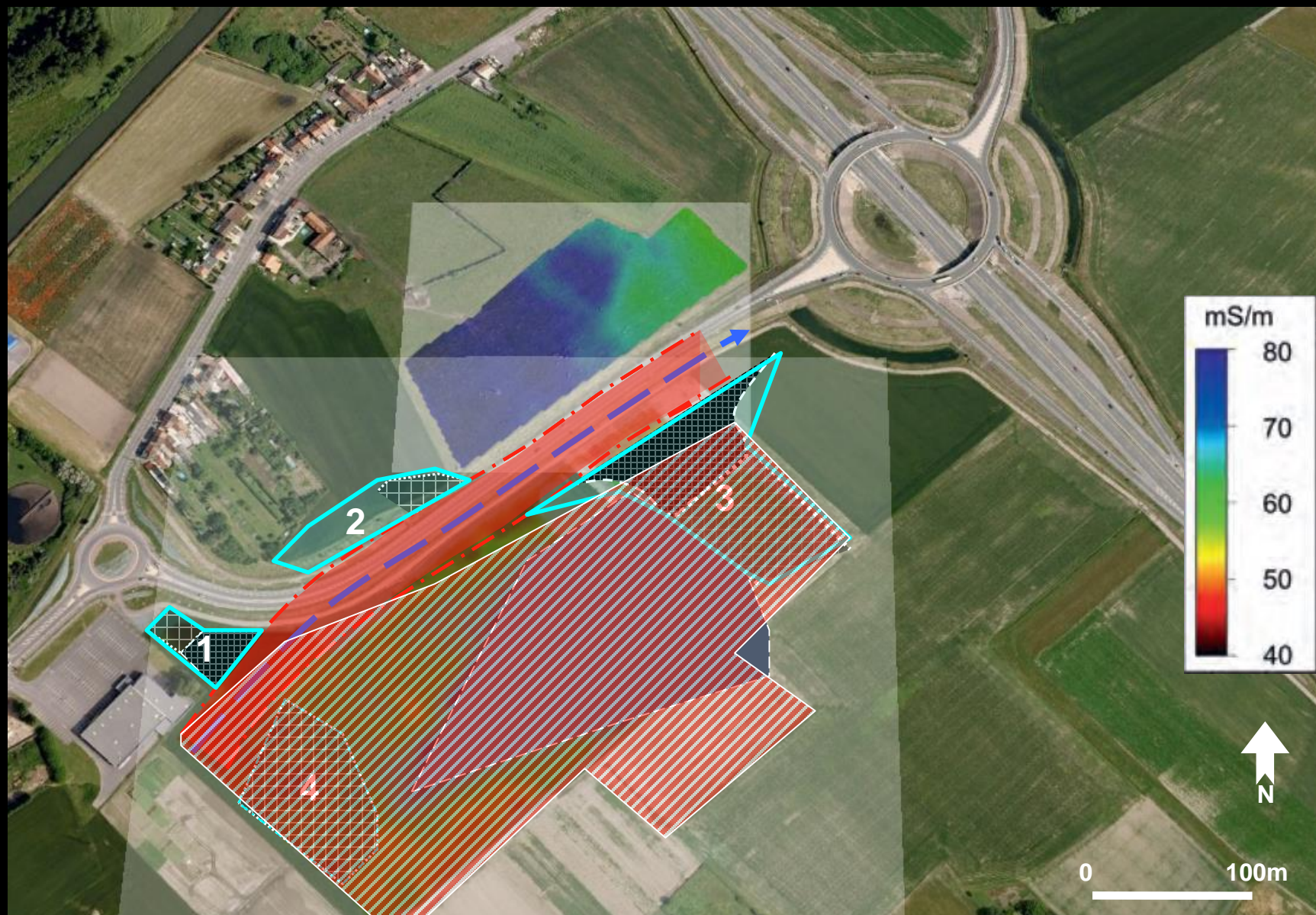
 Eemian peat and travertine at 15-17 mNGF


 Eemian peat and travertine at 14 mNGF

 Dome of clay

 Eemian hydrographic axis


Defining the extension of the Eemian valley and preserved human occupations



 Eemian peat and travertine at 15-17 mNGF

 Eemian peat and travertine at 14 mNGF

 Dome of clay

 Eemian hydrographic axis

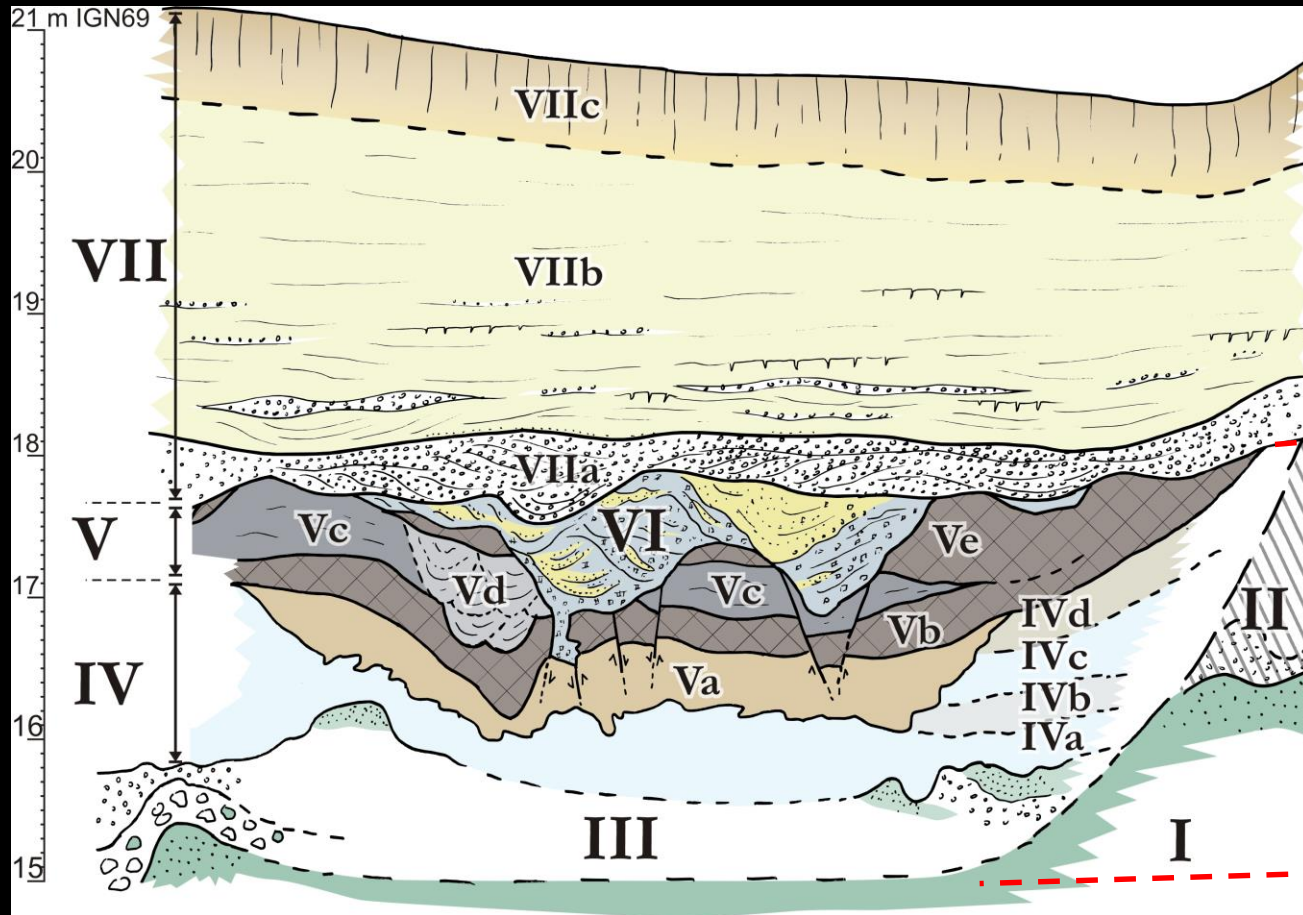
Documenting precisely Eemian human occupations and their environment



Excavation 2014

**400 m² opened
41 m² excated**

Stratigraphy



- unité VII – dépôts de recouvrement
- unité VI – remaniements fluviaux, graviers d'argiles et figures thermokarstiques
- unité V – dépôts fluviaux fins à dominante organique
- unité IV – dépôts fluviaux fins à dominante minérale
- unité III – dépôts fluviaux grossiers inférieurs
- unité II – dépôts antérieurs à l'unité III
- unité I – substrat antéquatenaire

Palaeoenvironmental remains

Palynology, Malacology, Entomology

Hazelnuts

Wood



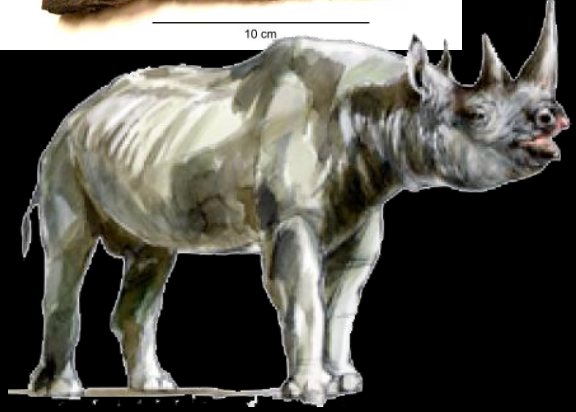
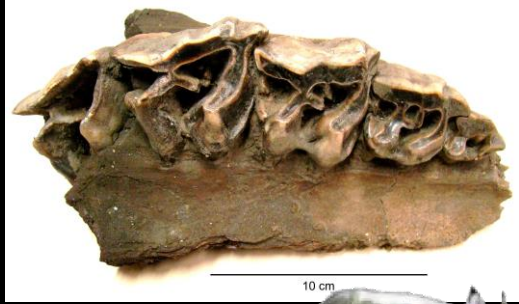
Oak acorns



Faunal remains

Meadow rhinoceros

(*Stephanorhinus cf. hemitoechus*)

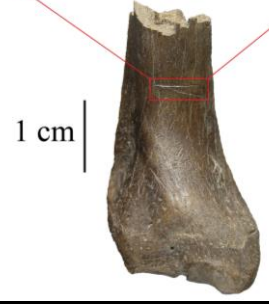


Brown bear

(*Ursus arctos*)



Beaver (*Castor fiber*)



Birds

(essentially ducks)



Horse (*Equus sp.*)



Roe deer



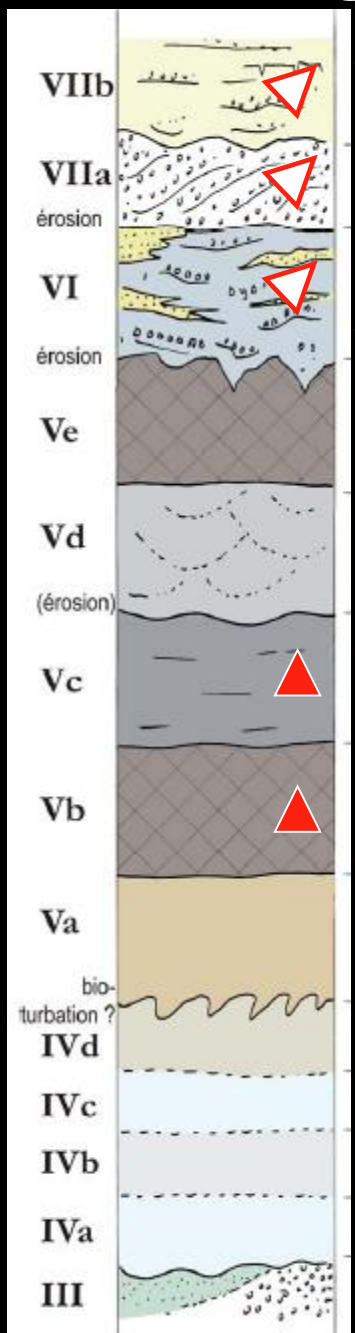
Red deer



Aurochs

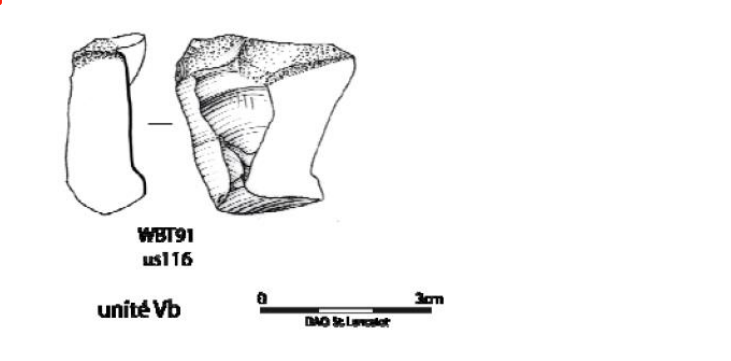
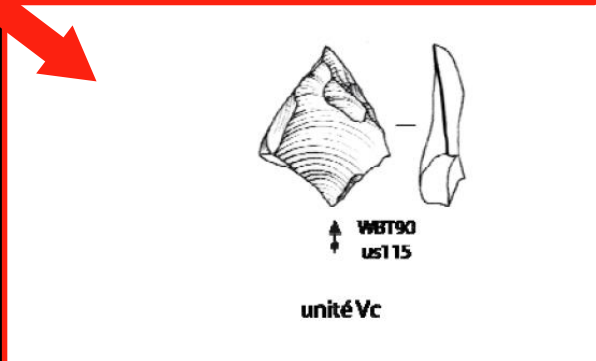
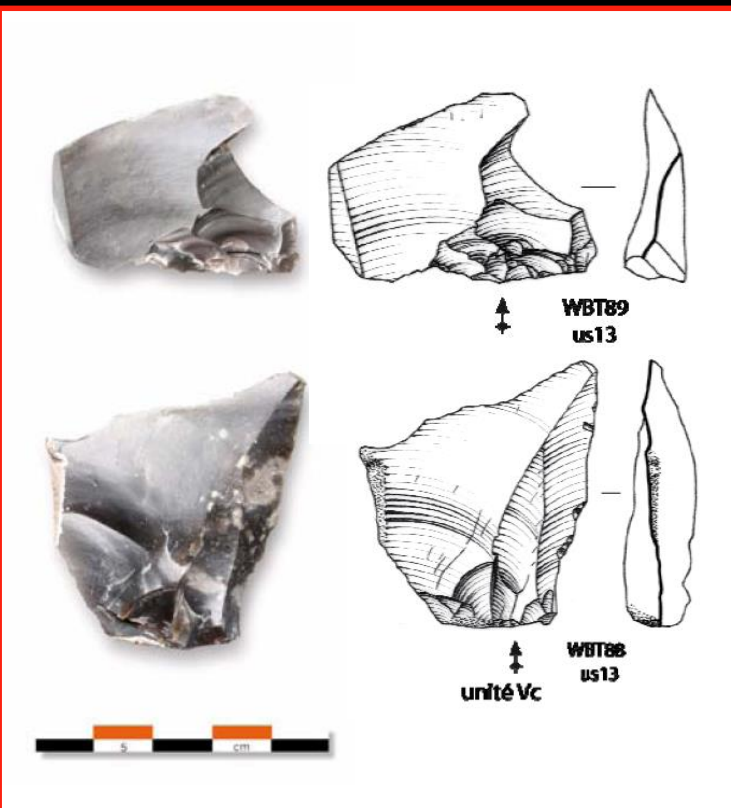


Archaeological remains

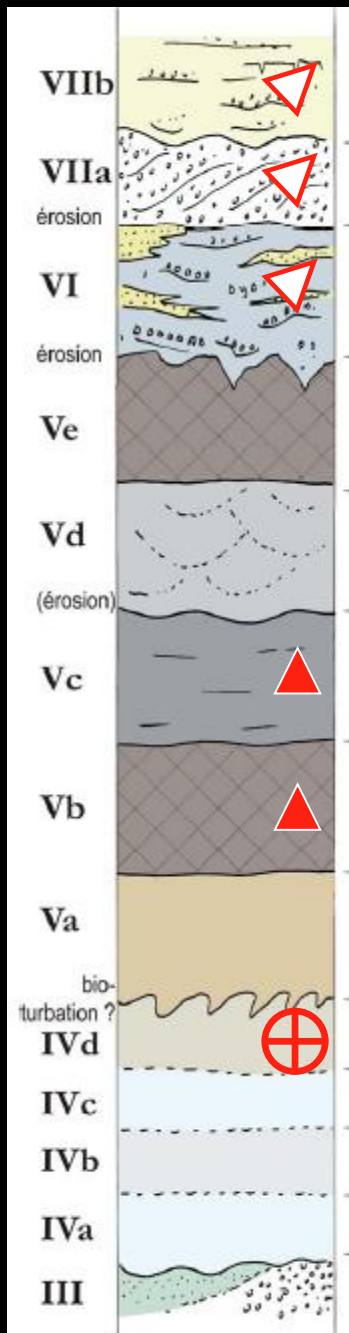


Reworked artefacts

In situ

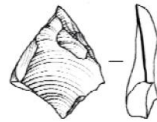
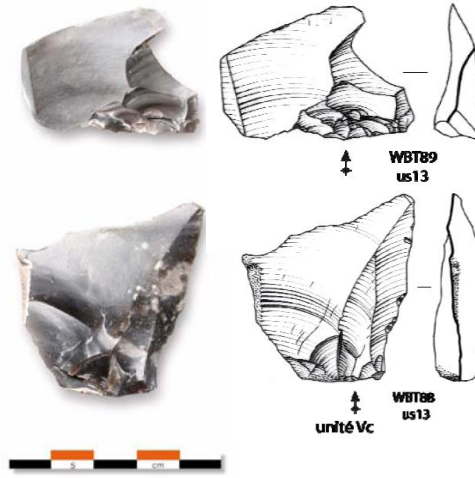


Archaeological remains

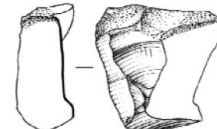


Reworked artefacts

In situ



WBT90
us115
unité Vc



WBT91
us116
unité Vb



U/Th dating of small CaCO₃ nodules (oogons of characeae)

103 +3.5/-3.4 ka (minimum age)

To conclude

Waziers is...

- ✓ A new Eemian sequence with peat layers
- ✓ A second Eemian site with human occupations for Northern France



↪ A unique opportunity for the next years to explore and document Eemian human occupations with a very high resolution study of their environment

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Thank you to all the team

Thank you for your attention