Borsod Region Bronze Age Settlement (BORBAS)

Concepts and Progress 2012–2026

BORBAS: Concepts and Progress 2012–2026

The Borsod Region Bronze Age Settlement project (BORBAS) is a long-term, German-Hungarian cooperation project, initiated in 2012, that focuses on the Early to Middle Bronze Age (Hungarian terminology; *c*. 2200/2100 to 1500/1400 cal BC) tell or tell-like settlements in the Borsod region of north-eastern Hungary. The study area extends from the foothill zone of the Bükk mountains in the north-west to the Tisza river in the east.

It is characterised by two different geomorphological formations, namely the foothill zone, where Bronze Age multi-layer settlement mounds are situated on terraces *c*. 20–50 m high above the present-day valley bottom of the small rivers extending southwards from the Bükk mountains, and the adjacent lowlands of the Borsod plain itself. Here, the tells and tell-like settlements occupy the banks of the Tisza and its tributaries, or, just occasionally, peninsulae that were cut off from the meandering streams. The lowlands are partly characterised by slightly curved surfaces that would have remained flood-free. However, along meandering streams such as the Lator, Csincse, and Rigós, as well as along the Tisza itself, in premodern times, there would have also been wide expanses prone to occasional flooding.

The first systematic overview of Bronze Age occupation in this micro-region was provided by Nándor Kalicz in his 1968 monograph on the Early Bronze Age in north-eastern Hungary. His catalogue served as the starting point for the BORBAS project, which initially sought to verify Kalicz' information in the field and provide an up-to-date documentation of their state of preservation and potential for future research.

In the meantime, it was also possible to identify a couple of previously unknown sites (*e.g*. Borsodivánka-Nagyhalom, thus bringing the total number of tell or tell-like settlements systematically explored up to more than 20.

During the initial phase of the project, all accessible sites were systematically investigated through gridded surface survey and magnetometry, focusing, in particular, on the previously largely unknown outer settlement parts beyond the central multi-layer section, the tell itself. The use of both methods revealed that the spatial layout of the sites is considerably more complex and variable than previously assumed. It was also possible to broadly relate the inner and outer settlement parts in chronological terms, *i.e*. assign them to the local Early Bronze Age Hatvan period and/or the subsequent Middle Bronze Age Otomani-Füzesabony period respectively, and arrive at some initial conclusions concerning their functional and social relationship.

During the current project phase excavations were carried out at the tell settlement of Borsodivánka-Nagyhalom (2015–2024), while a systematic core drilling programme is currently still under way.

Targeting all accessible sites in the micro-region, the aim here is to obtain information on the layer thickness and the development of their central tell or tell-like section, the backfilling history of their ditches and the *in situ* preservation, if any, of off-tell houses in their outer settlement. Systematic radiocarbon dating is being conducted on organic sample material from the cores, in order to establish the chronological relationship and the lifespan of the tell and the outer settlement parts respectively, as well as to provide absolute dates for the abandonment history of our sites, *i.e*. the end of Bronze Age tell-living in the Borsod region.

In addition, soil chemistry is applied in order to both supplement the magnetometer data that we have in the identification of Bronze Age house structures and to provide additional information on the nature and the spatial organisation of household activities in the outer settlement of the Borsod sites.

To the same end, a first small-scale excavation has already been carried out in Bükkábrány-Kálvária (2022–2023; unpublished) partially uncovering the remains of a multi-phase house in the site’s outer settlement. However, a systematic comparison of on-tell and off-tell households in architectural, functional and social terms by means of targeted excavations on several sites is still pending and will be the aim of our oncoming next project phase.

Köln/Miskolc/Budapest, April 2026

Tobias L. Kienlin – Astrid Röpke – András Gömöri – Klára P. Fischl

BORBAS: Concepts and Progress 2012–2026

(University of Cologne – ELTE Research Centre for the Humanities – University of Miskolc)

	2012	13	14	15	16	17	18	19	20	21	22	23	24	25	26
'Phase' 1: Space and (relative) Time															
- geomagnetic survey and - systematic surface survey on all accessible sites - aerial photography and DEM - catalogue and GIS (Tobias L. Kienlin, Klára P. Fischl, Tamás Pusztai)															
'Phase' 2a: (Rel./abs.) Time and Function															
- excavation at Borsodivánka-Nagyhalom (Klára P. Fischl, Tamás Pusztai, Tobias L. Kienlin) - geoarchaeology, micromorphology, archaeobotany, animal bones (Astrid Röpke, Tanja Zerl, Beata Tuyga, András Gömöri) - cooperation with: *Interdisciplinary Daub* project (Jana Anvari, Eva Drunagel, Frederic Ebel, Tobias L. Kienlin)															
'Phase' 2b: (Absolute) Time															
- systematic core drilling - preservation, layer thickness and - C14 dating of all accessible sites (Tobias L. Kienlin, András Gömöri, Klára P. Fischl)															
'Phase' 3: Space and Function															
- trial excavation: outer settlement at Bükkábrány-Kálvária (Klára P. Fischl, Tobias L. Kienlin)															
- soil chemistry of households in the outer settlement at Emőd-Nagyhalom (Sabrina Save, Tobias L. Kienlin, András Gömöri)															
- geoarchaeology, predictive modelling, metal detector survey (András Gömöri)															
- cooperation with: *Grey ‚Ashy' Anthropic Layers on EBA/MBA Tells and LBA Ashmounds* (Elke Kaiser, Tobias L. Kienlin, Klára P. Fischl, Sabrina Save, Moritz Nykamp, Astrid Röpke, András Gömöri)															
'Phase' 4: Time after Tells															
- EBA/MBA to LBA Maklár micro-region (Ákos Mengyan, Klára P. Fischl, Tobias L. Kienlin)															
- Late Bronze Age 'megafort' Igrici (Klára P. Fischl, Tobias L. Kienlin, Ákos Mengyan)															

Acknowledgements

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University of Cologne

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And last but certainly not least …

We are glad to announce that the future work of BORBAS and the continuity of our project will be most generously supported by:

FOUNDATION FOR THE STUDY AND PRESERVATION OF TELLS IN THE PREHISTORIC OLD WORLD

Acknowledgements

Special thanks go to all our colleagues and students from Miskolc, Cologne and other universities who participated in BORBAS' research since its beginnings.

You know who you are, and we owe to you many enjoyable months of fieldwork and lively discussions accompanied by the occasional bottle of pálinka!

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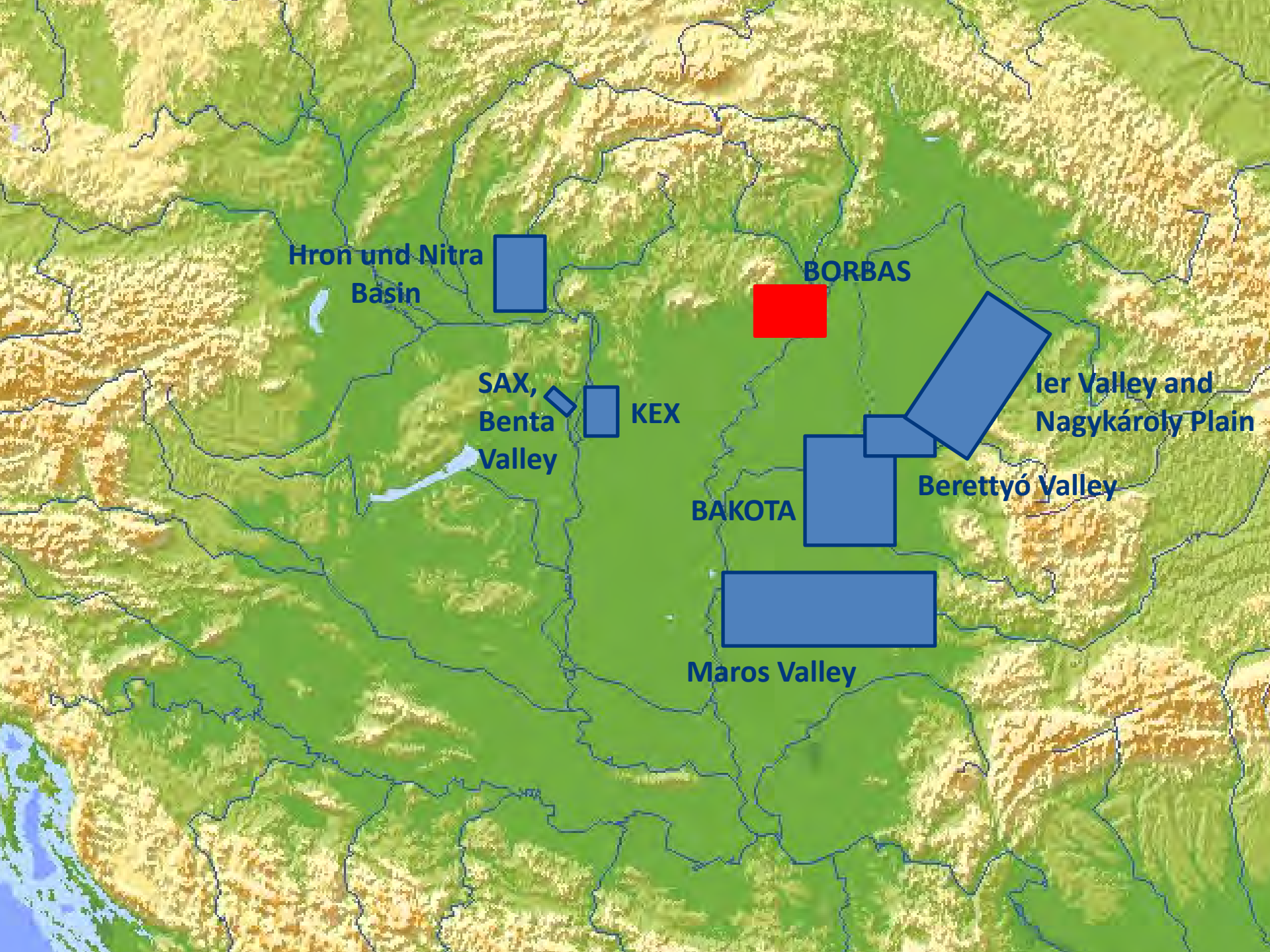
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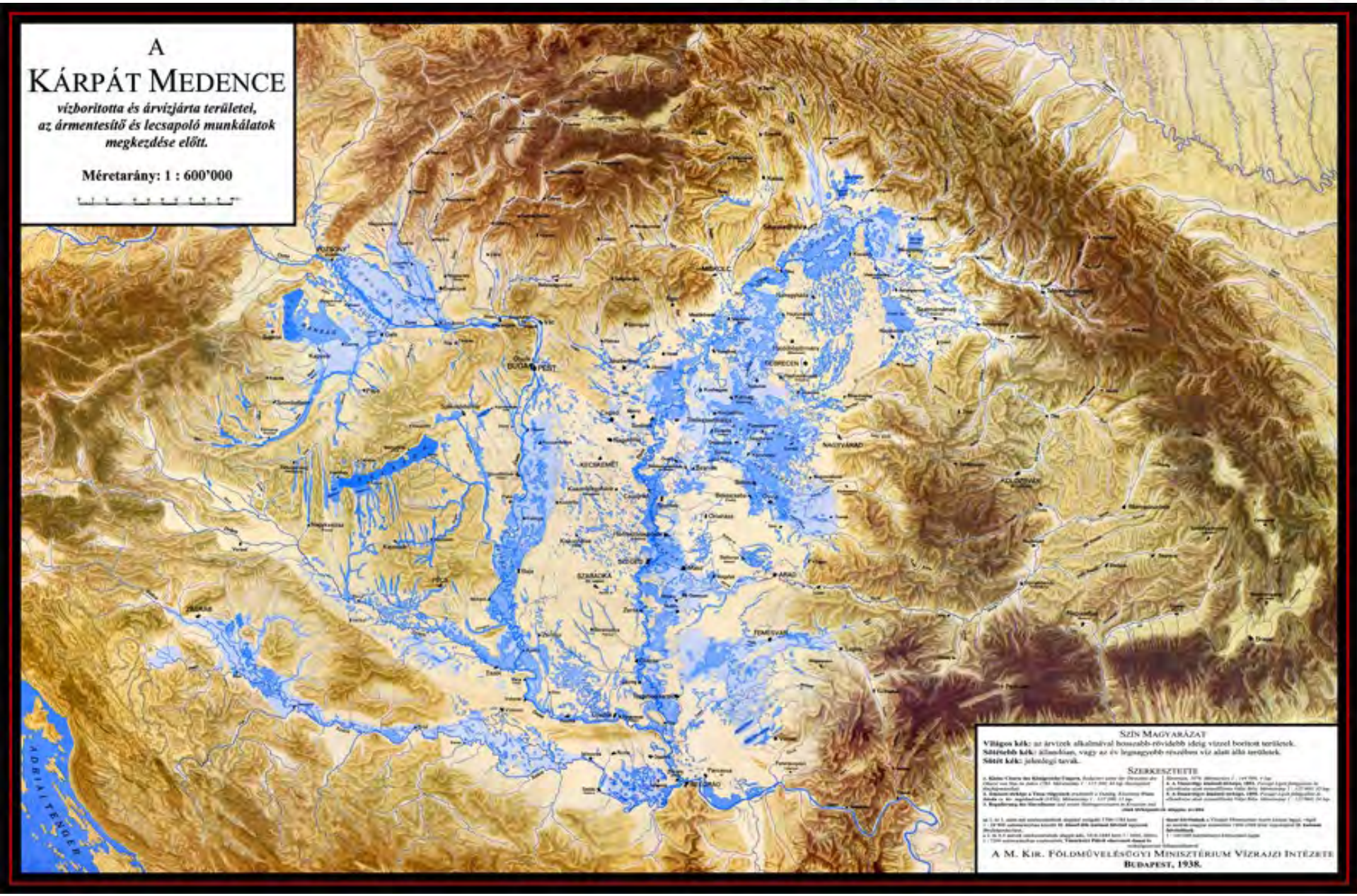
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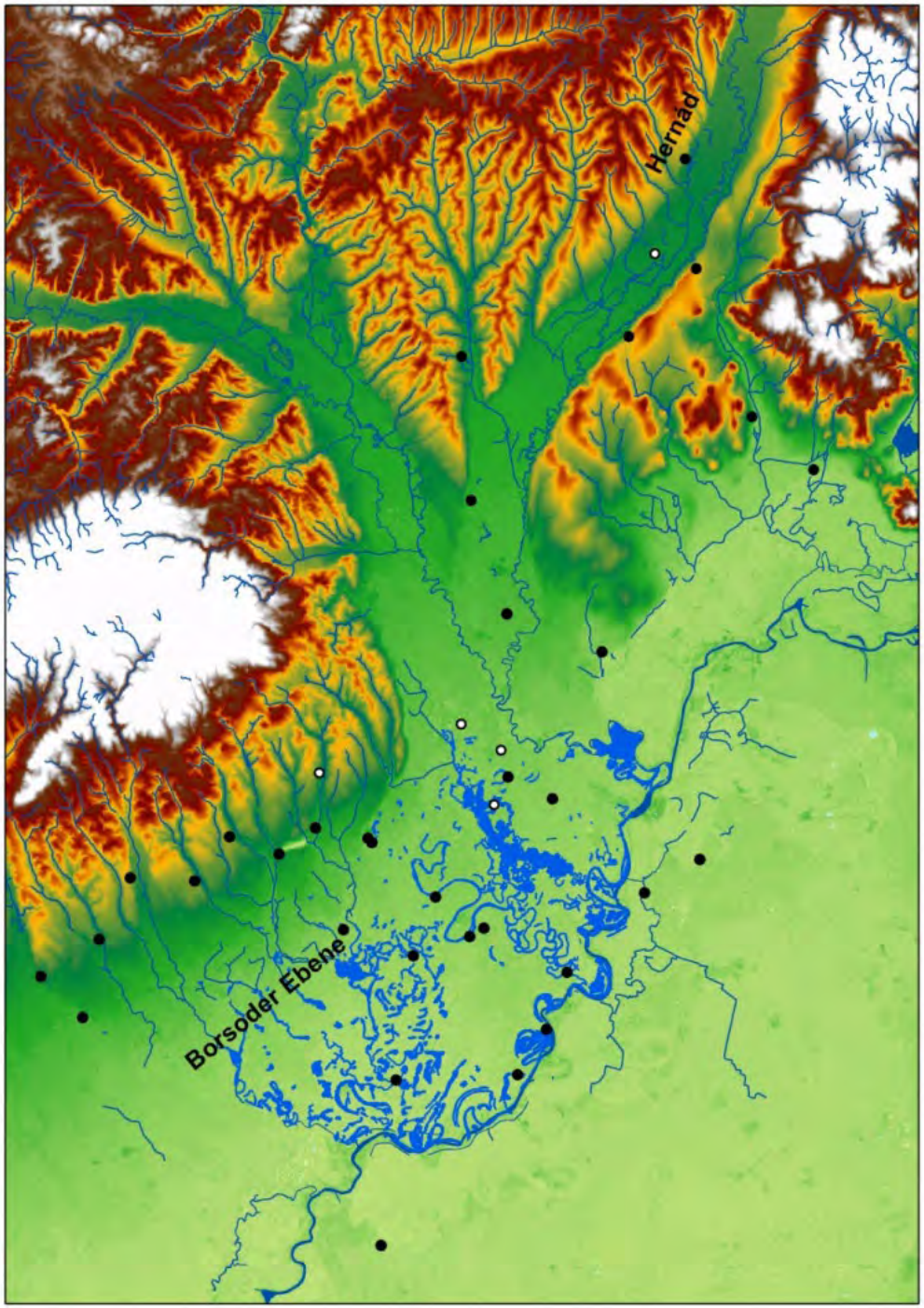
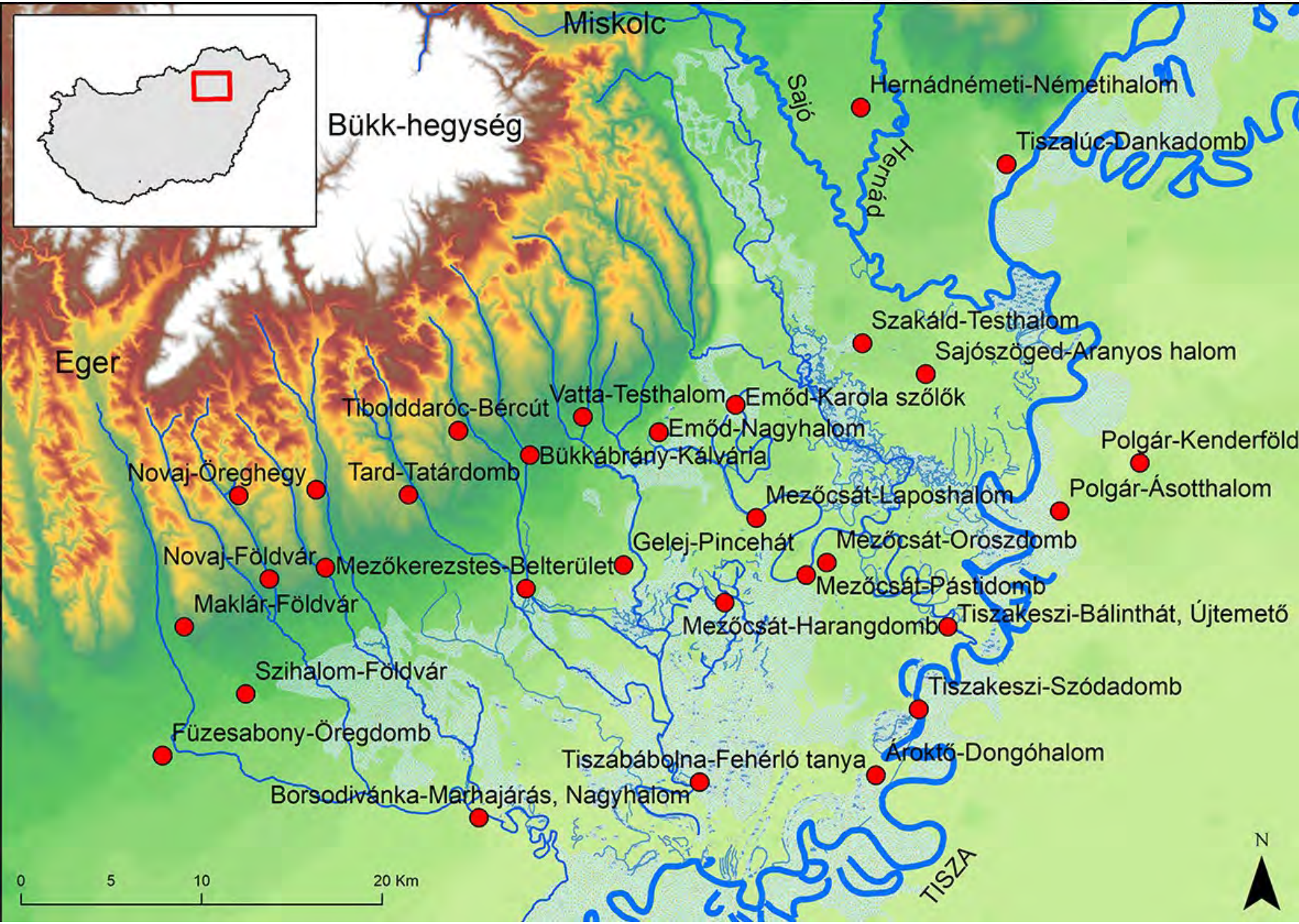


◄ Distribution map of the Hatvan and Füzesabony period settlements on the Borsod plain and in the foothill zone of the Bükk mountains.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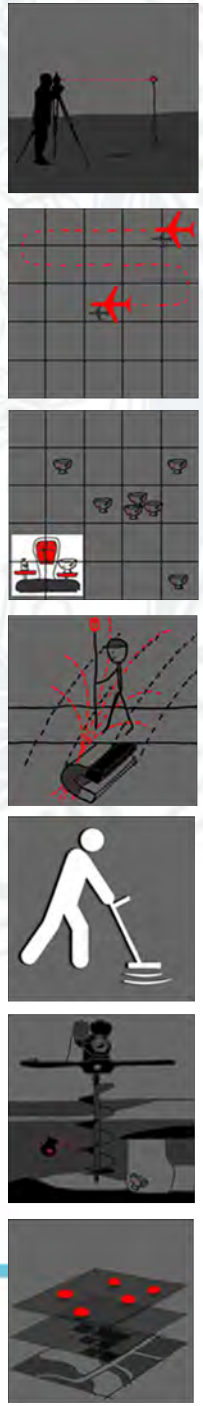
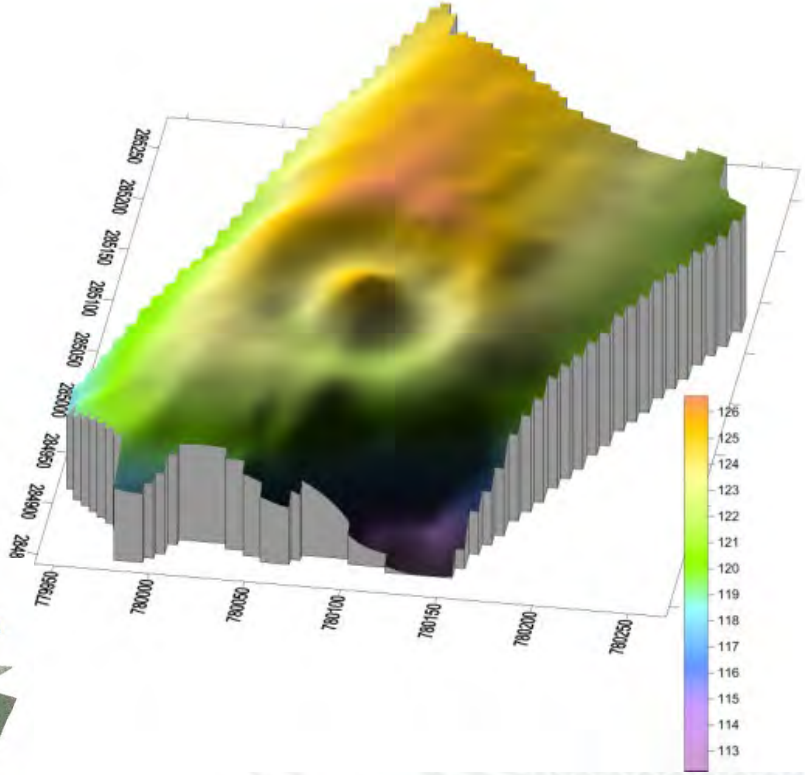


BORBAS: Methods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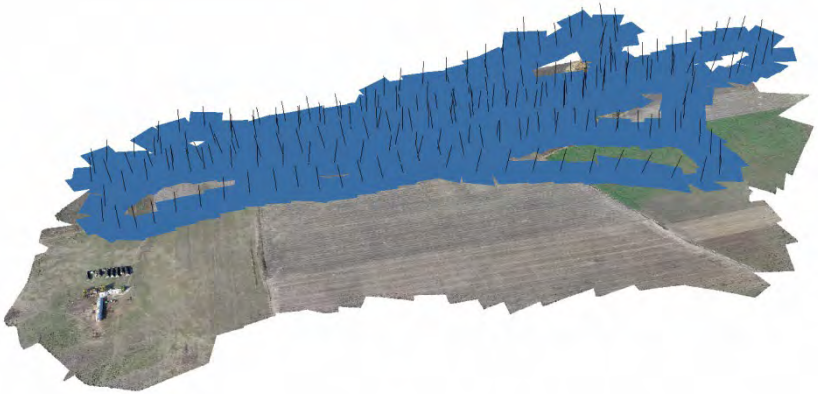
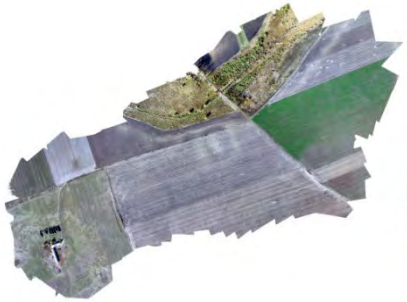
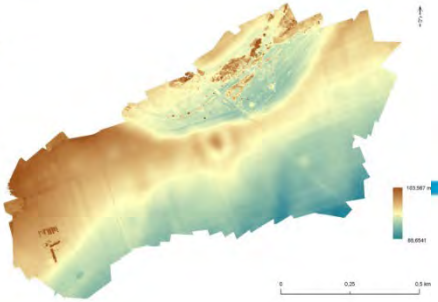
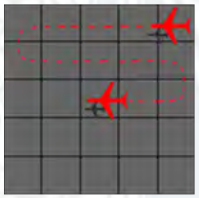
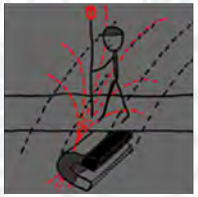
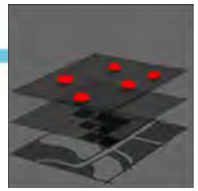


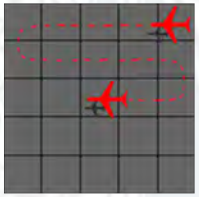


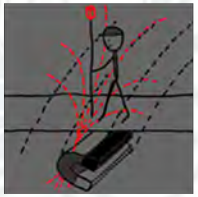


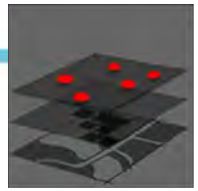












BORBAS: Methods

→ Verification of sites according to Kalicz (1968) 👍

→ GIS 👍

→ aerial photography 👍

→ DEM 👍

→ systematic surface survey (👍)

→ Magnetometer Survey 👍

→ environmental reconstruction (pollen, macro remains)

→ core drilling

→ excavation(s): Tell / outer settlement (started: Borsodivanka)

BORBAS: Methods

2012

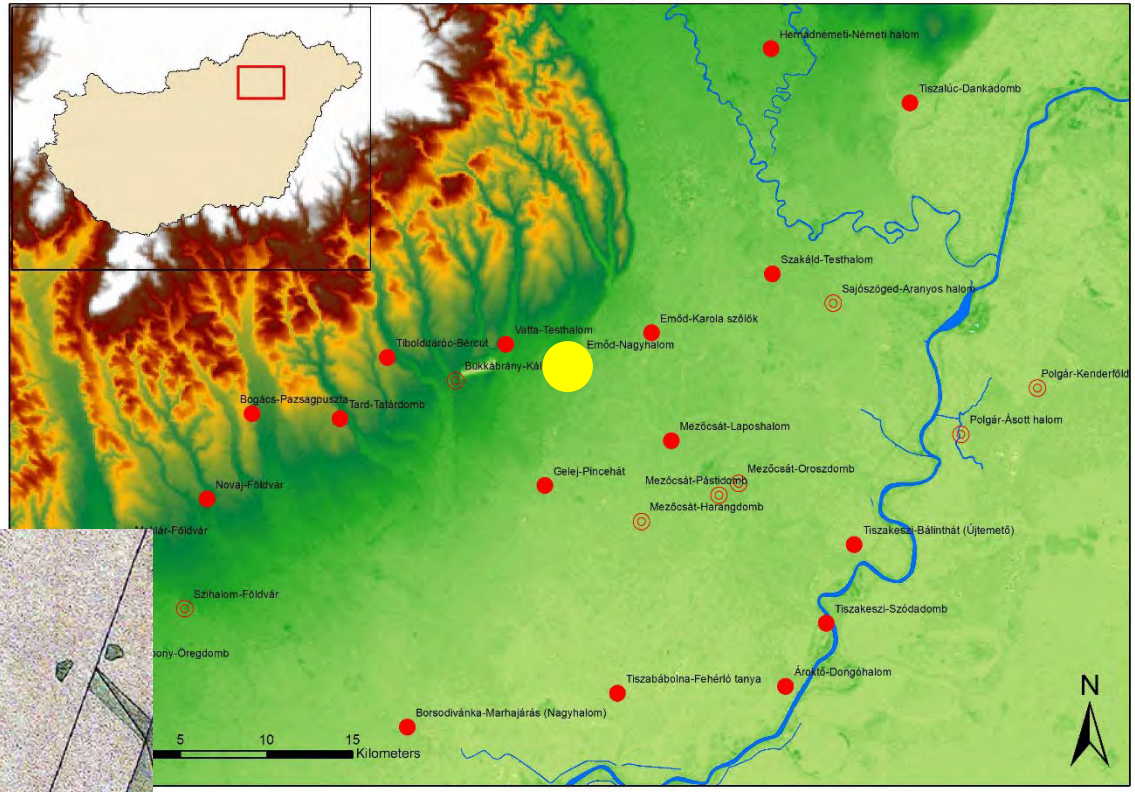
Magnetometer Survey

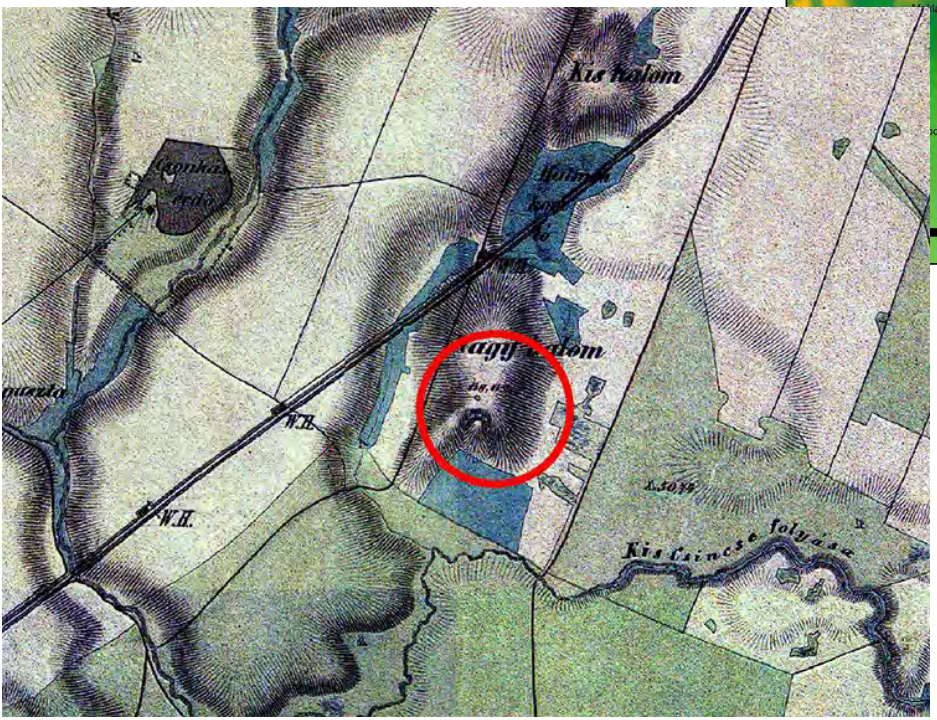
- ► Emőd-Nagyhalom
- ► Mezőcsát-Laposhalom
- ► Tard-Tatárdomb

Surface Survey

- ► Emőd-Nagyhalom
- ► Mezőcsát-Laposhalom
- ► Tard-Tatárdomb

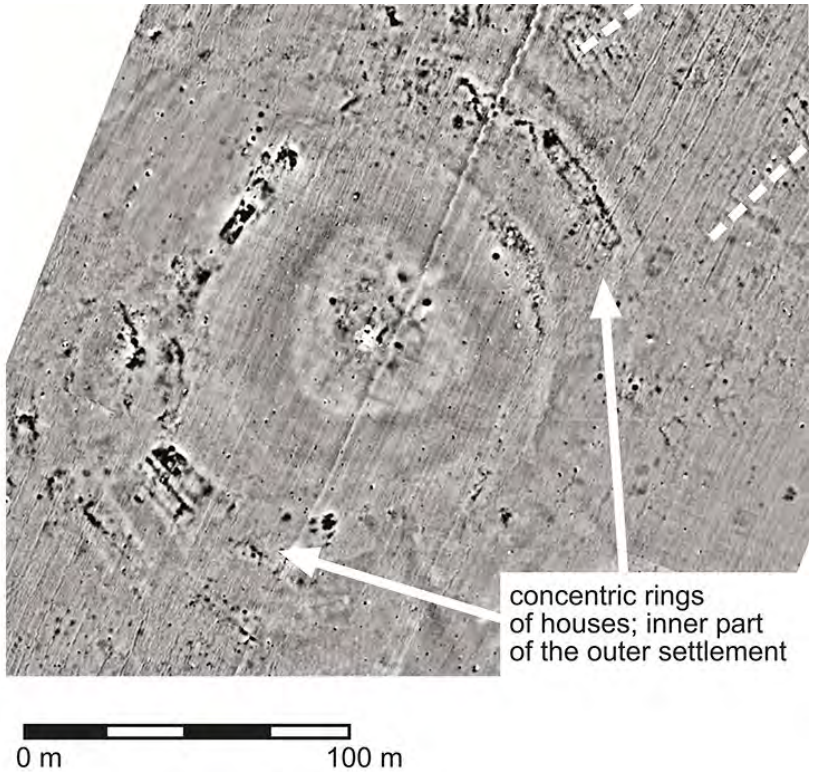
► Emőd-Nagyhalom





BORBAS 2012

BORBAS 2012

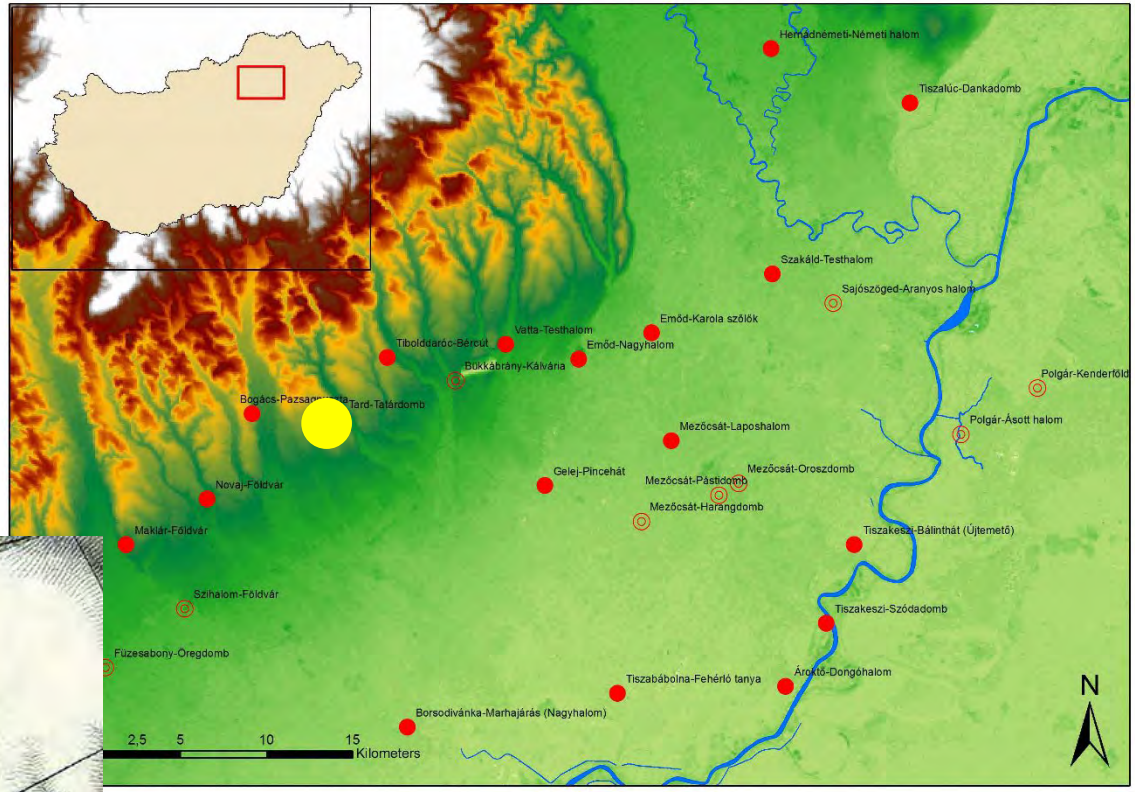


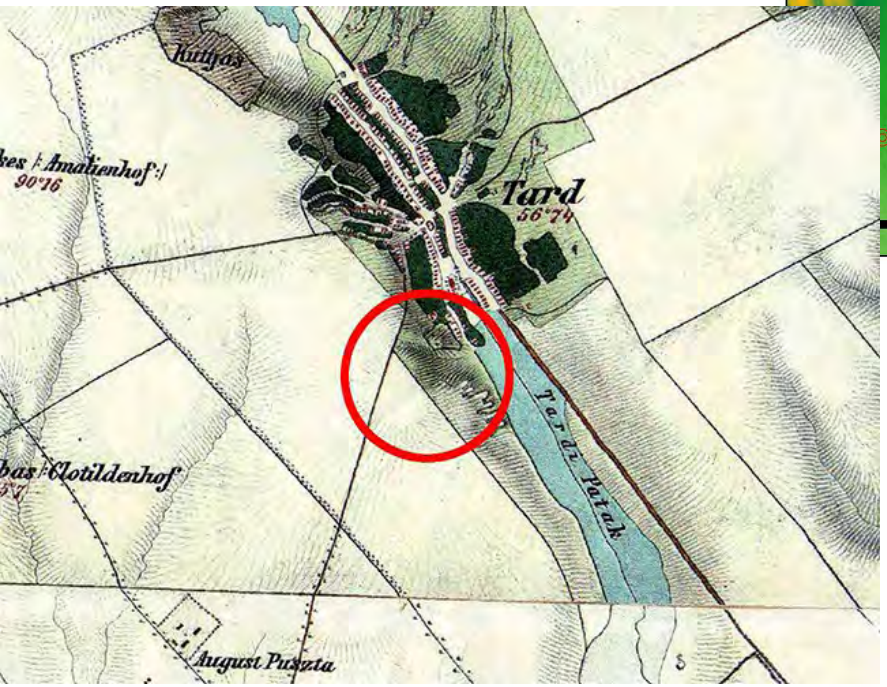
▲ Emőd-Nagyhalom. Magnetometer data of the tell-like central part of the site and part of the outer settlement.

BORBAS 2012

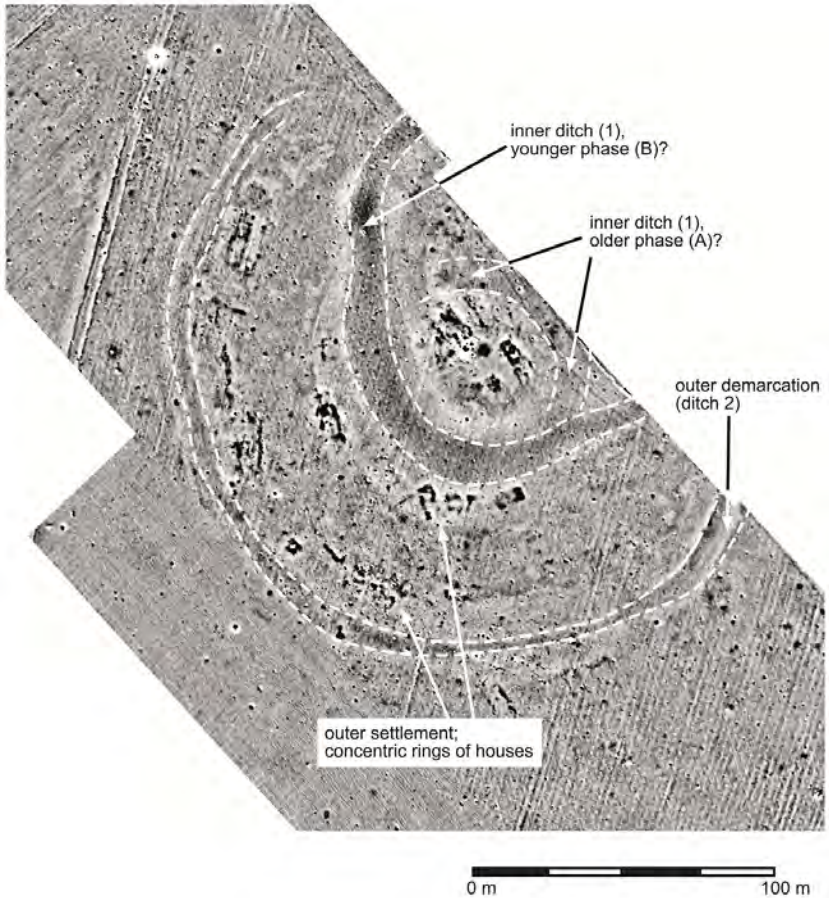
BORBAS 2012

► Tard-Tatárdomb





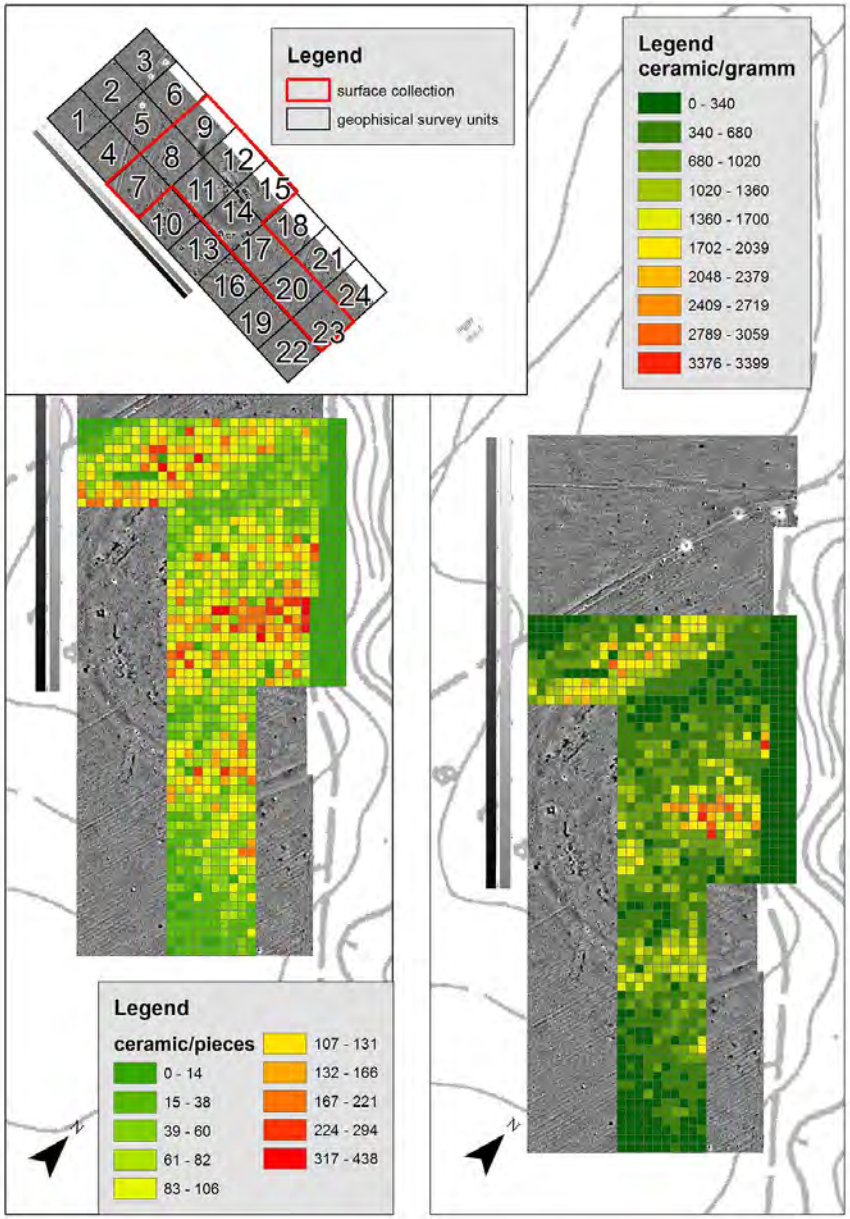
BORBAS 2012



▲ Tard-Tatárdomb. Interpretation of the magnetometer data showing the two-phase inner ditch enclosing the central tell-like part of the site.

BORBAS 2012

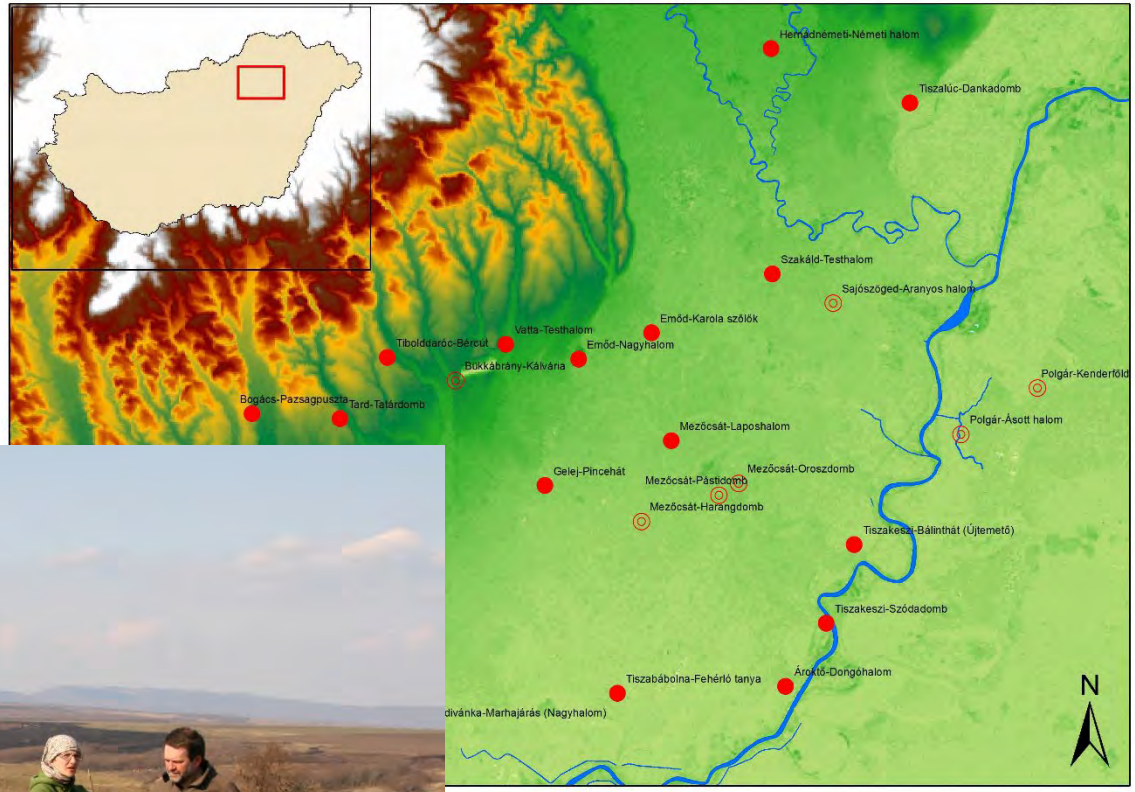
BORBAS 2012



◄ Tard-Tatárdomb. Results of the surface survey in 2012.

BORBAS 2012

► Social Life on BORBAS Tells



BORBAS 2012

BORBAS 2012

▲ The first visit to Emőd-Karola szőlők.

BORBAS 2012

▲ The first visit to Hernádnémeti-Németihalom.

▲ ► A visit to Ároktő-Dongóhalom.

BORBAS 2012

▲ The previous surface survey at Ároktő-Dongóhalom in 2008.

BORBAS 2012

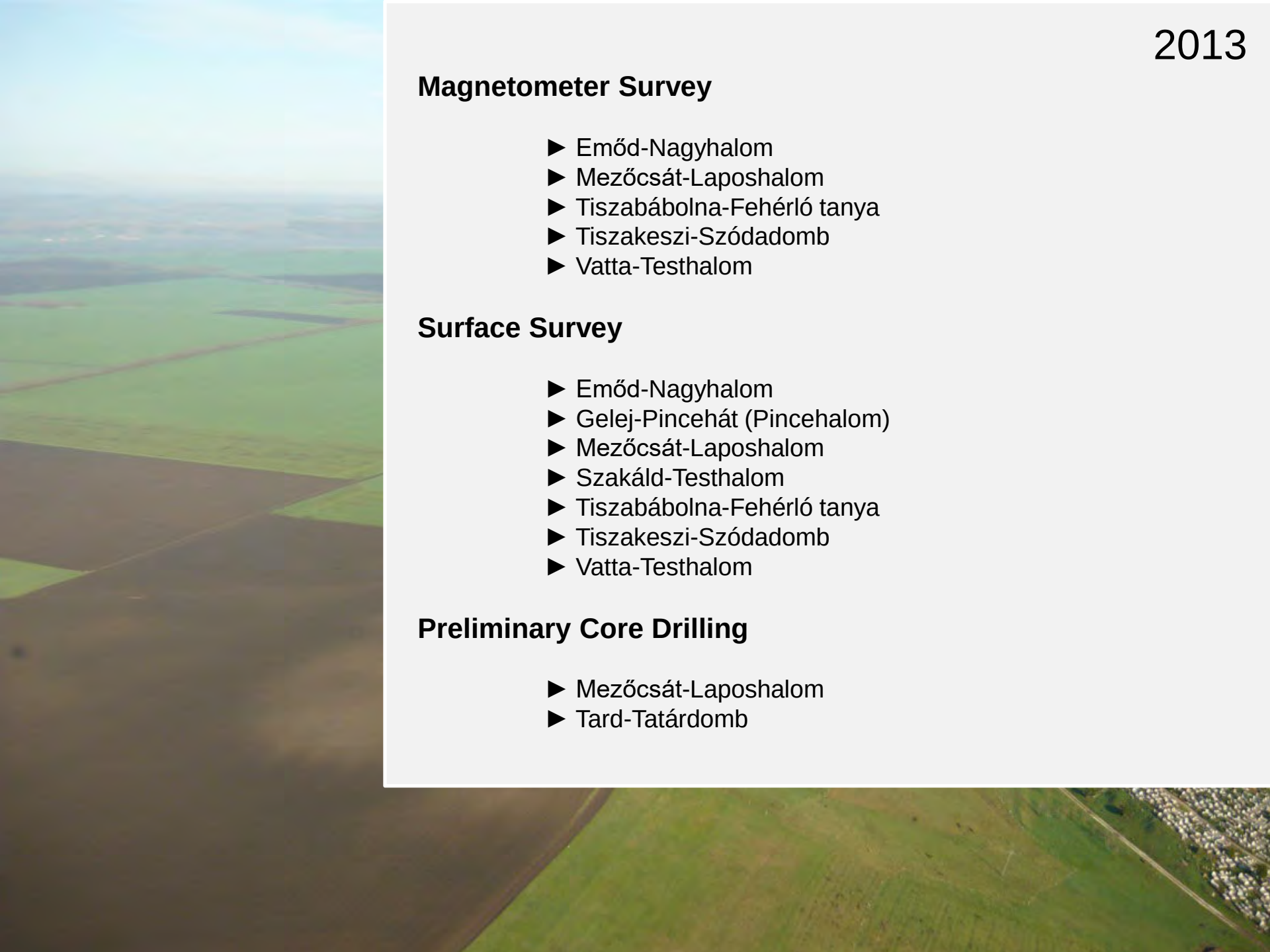
▲ Wine tasting in Tokaj.

BORBAS 2012

▲ At the Tisza near Tiszakeszi-Szódadomb.

▲ Accomodation at Miskolc University campus

BORBAS 2012



2013

Magnetometer Survey

- Emőd-Nagyhalom
- Mezőcsát-Laposhalom
- Tiszabábolna-Fehérló tanya
- Tiszakeszi-Szódadomb
- Vatta-Testhalom

Surface Survey

- Emőd-Nagyhalom
- Gelej-Pincehát (Pincehalom)
- Mezőcsát-Laposhalom
- Szakáld-Testhalom
- Tiszabábolna-Fehérló tanya
- Tiszakeszi-Szódadomb
- Vatta-Testhalom

Preliminary Core Drilling

- Mezőcsát-Laposhalom
- Tard-Tatárdomb

► Core drilling for a pollen profile close to Szakáld-Testhalom.

BORBAS 2013

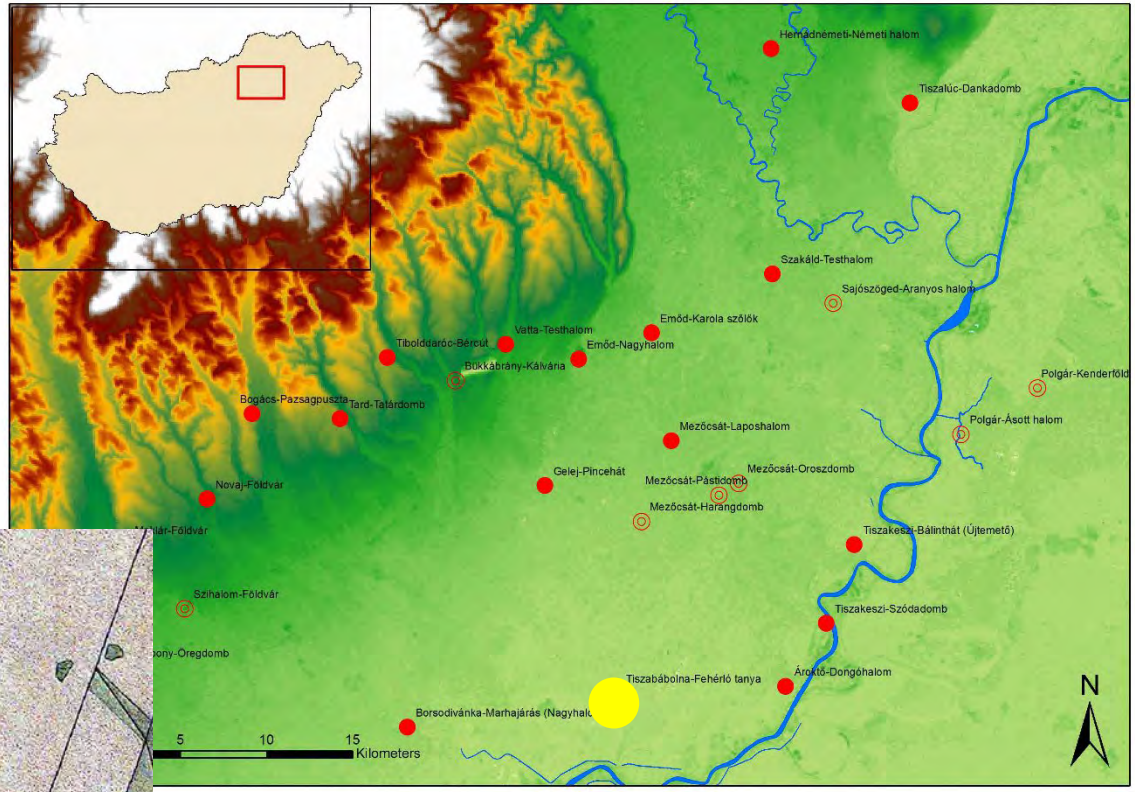
▲► Core drilling for a pollen profile close to Tiszabábolna-Fehérló tanya.

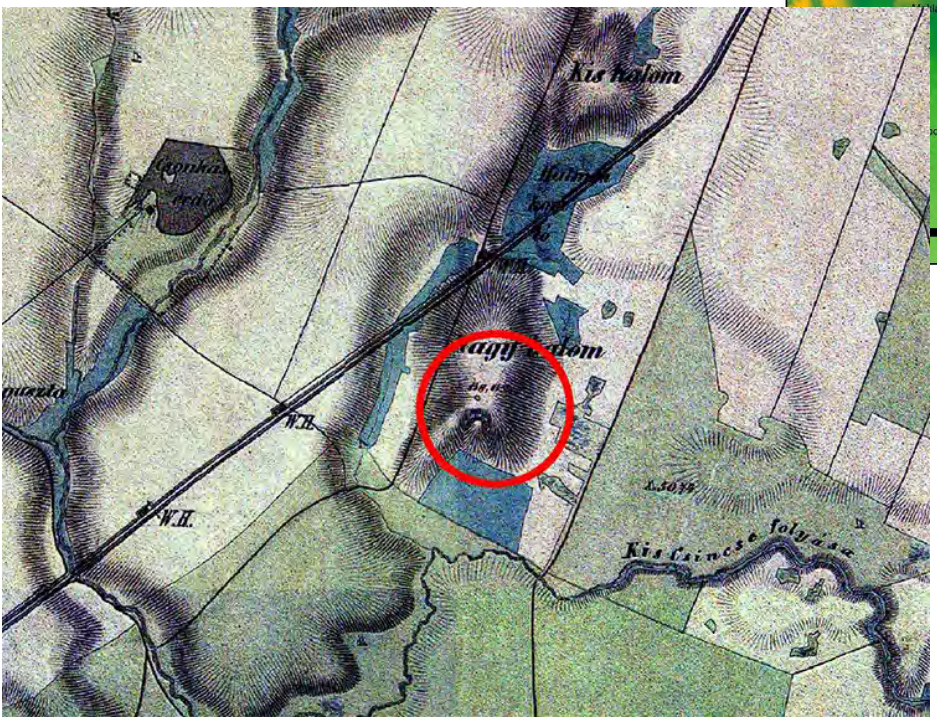
BORBAS 2013

BORBAS 2013

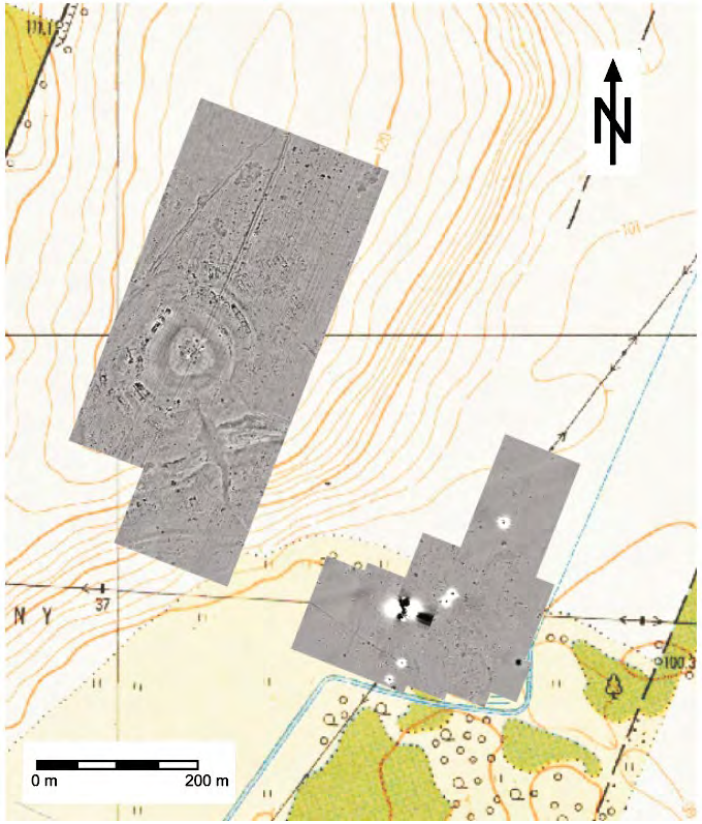
BORBAS 2013

► Emőd-Nagyhalom



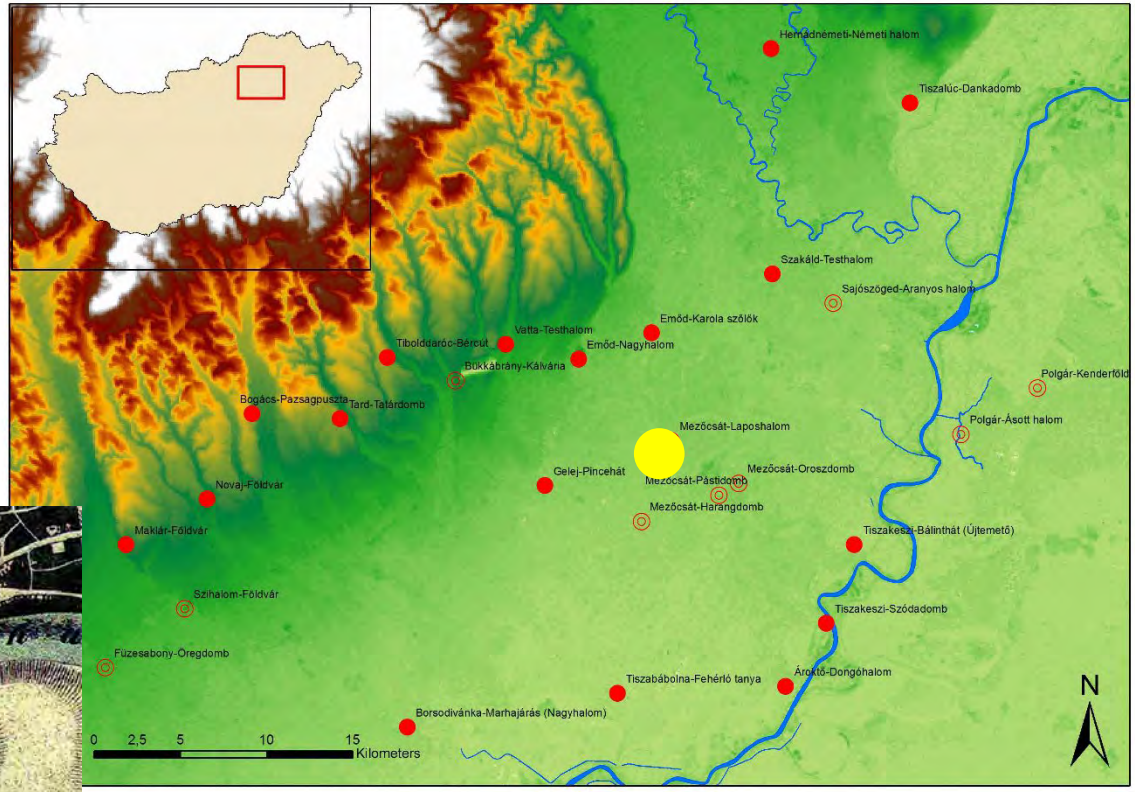


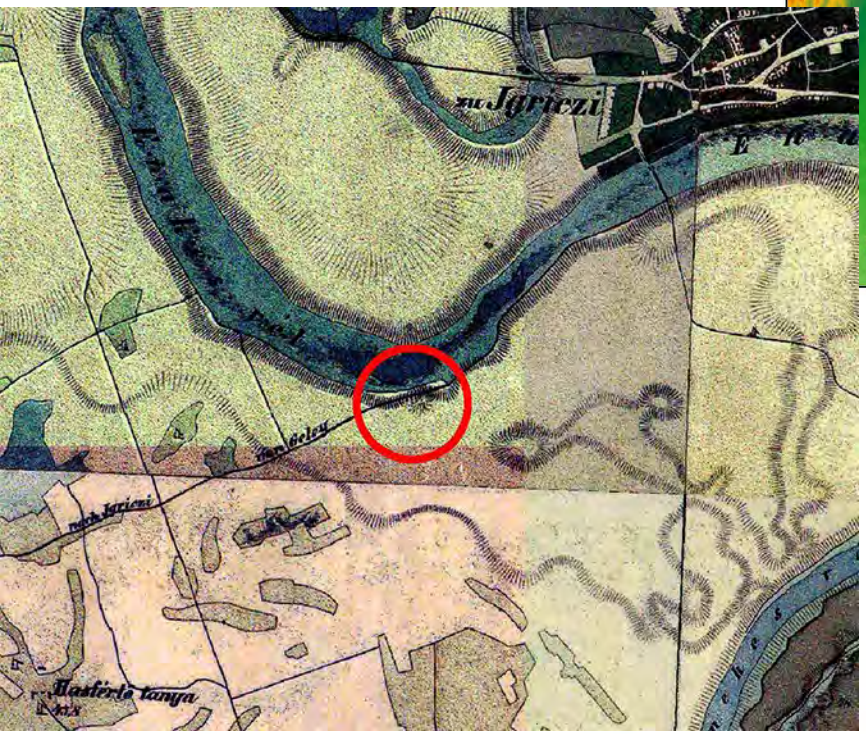
BORBAS 2013



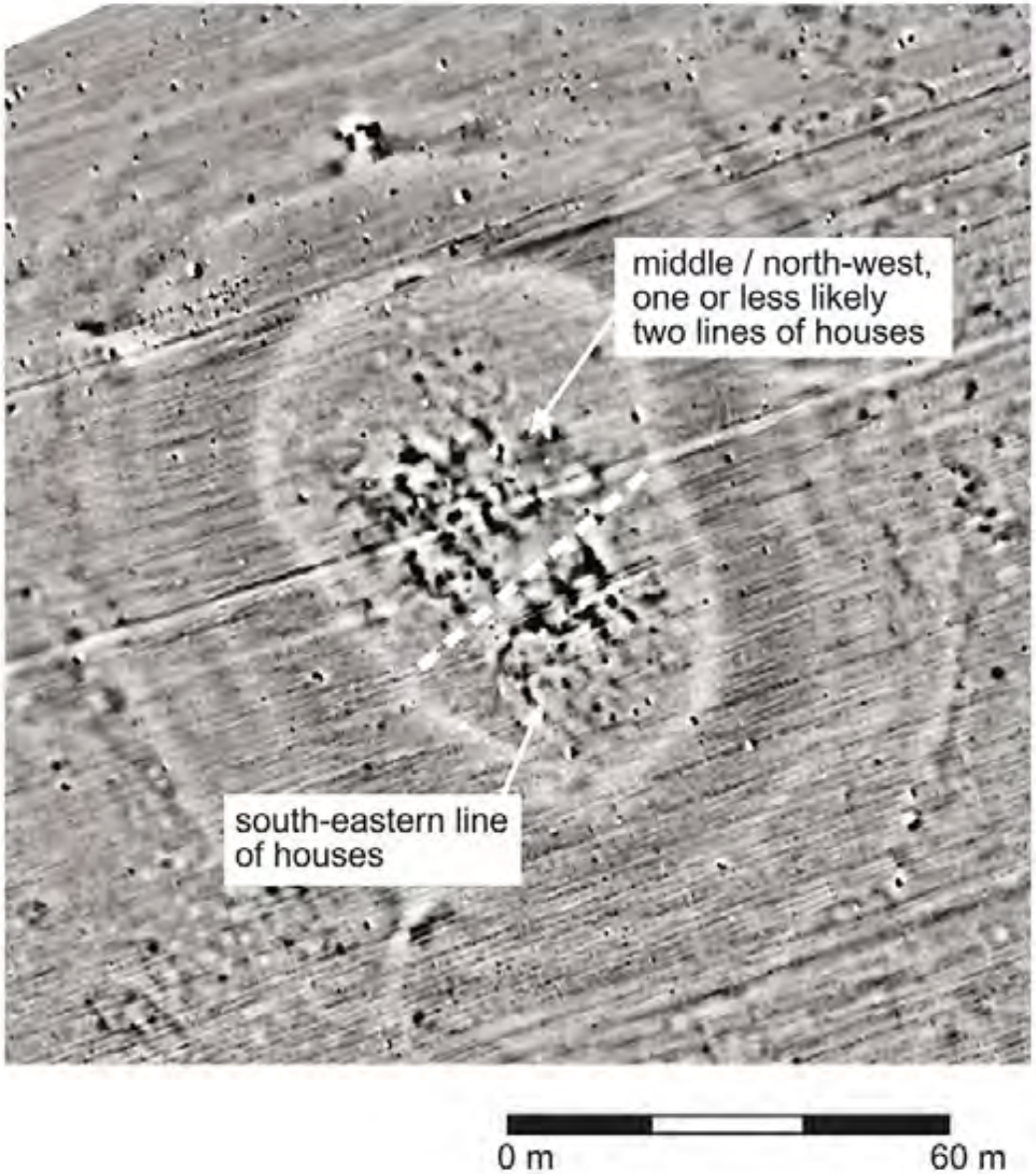
BORBAS 2013

► Mezőcsát-Laposhalom

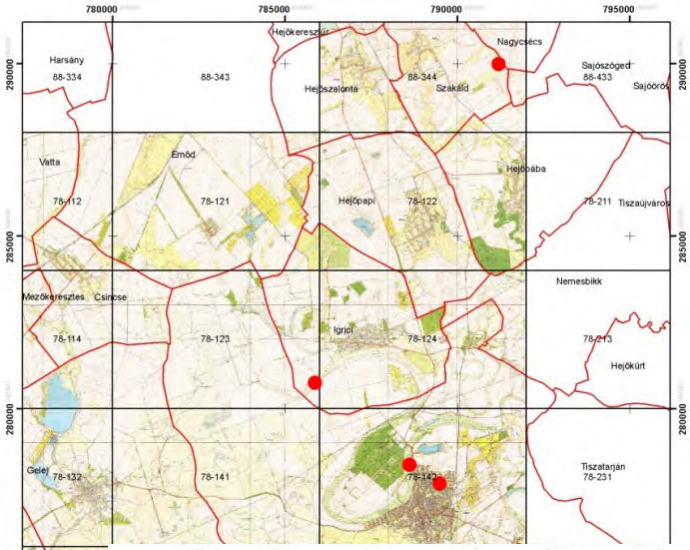




BORBAS 2013



► Mezőcsát-Laposhalom. Detail of the magnetometer data from the central part of the site illustrating the inferred layout of the settlement with various phases of two rows of houses.


Harsány
88-334
88-343
Hejőkeresztúr
Hejőszalonta
88-344
Szakáld
Nagycsécs
Sajószöged
88-433
Vatta
Emőd
78-112
78-121
Hejőpapi
78-122
Hejőcsaba
78-211
Tiszaújváros
Nemesbikk
Mezőkeresztes
Csincse
78-114
78-123
Igrici
78-124
78-213
Hejőkürt
Gelej
78-132
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78-142
Tiszatarján
78-231
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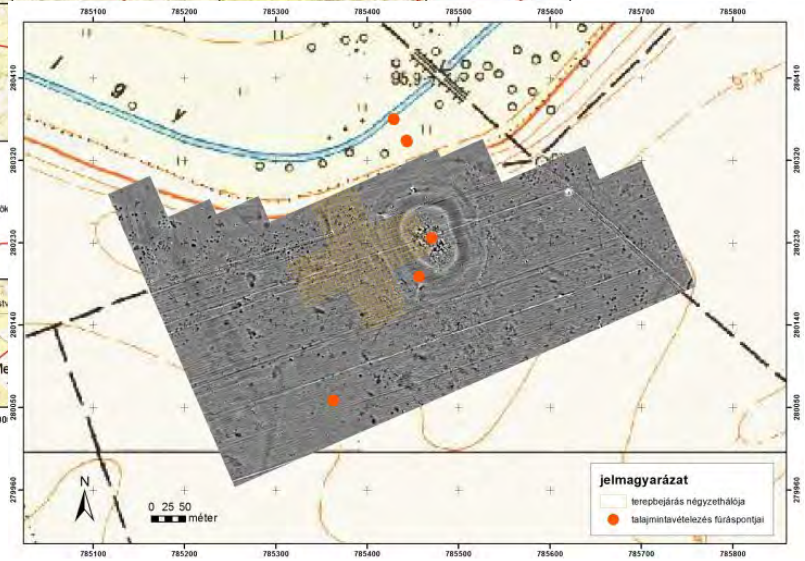
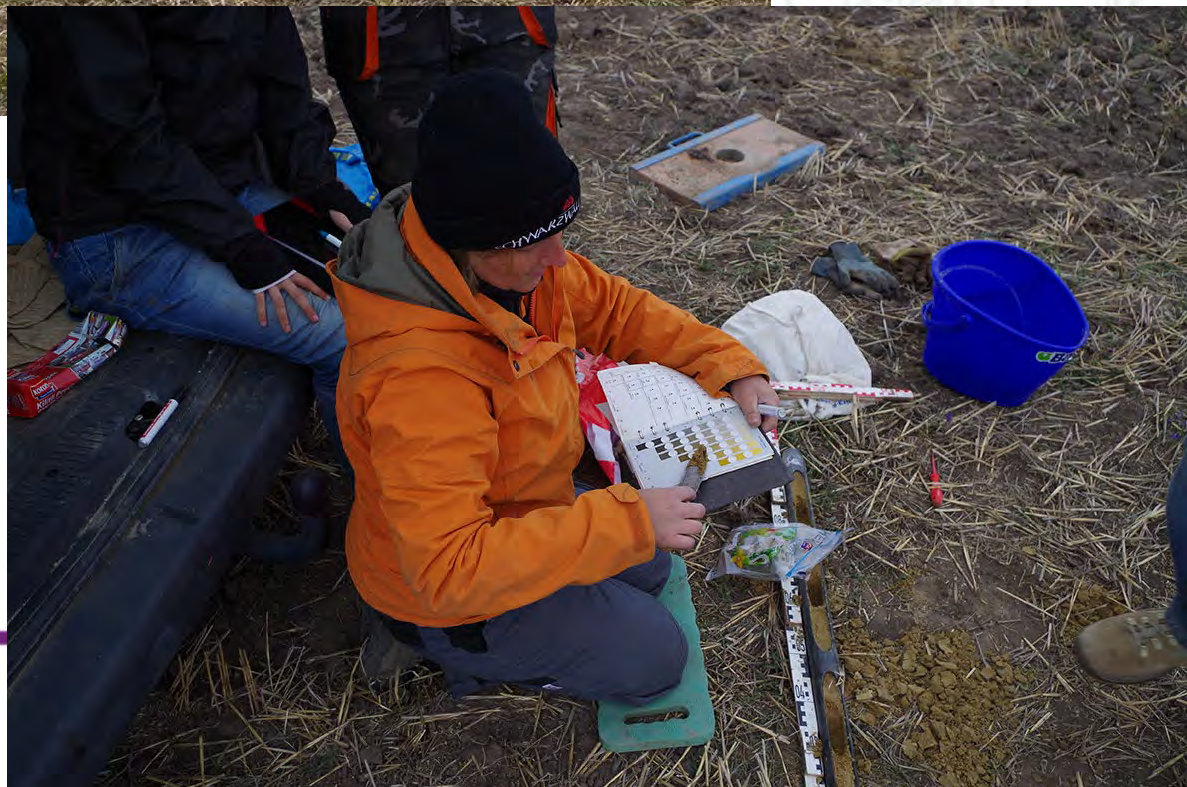
78-312Mezők
Szentistv
78-314
Négyes


N
0 25 50
méter
jelmagyarázat
terepbejárás négyzethálója
talajmintavételezés fúráspontjai

MET 1
01.10.2013
0-4 m

BORBAS 2013

BORBAS 2013

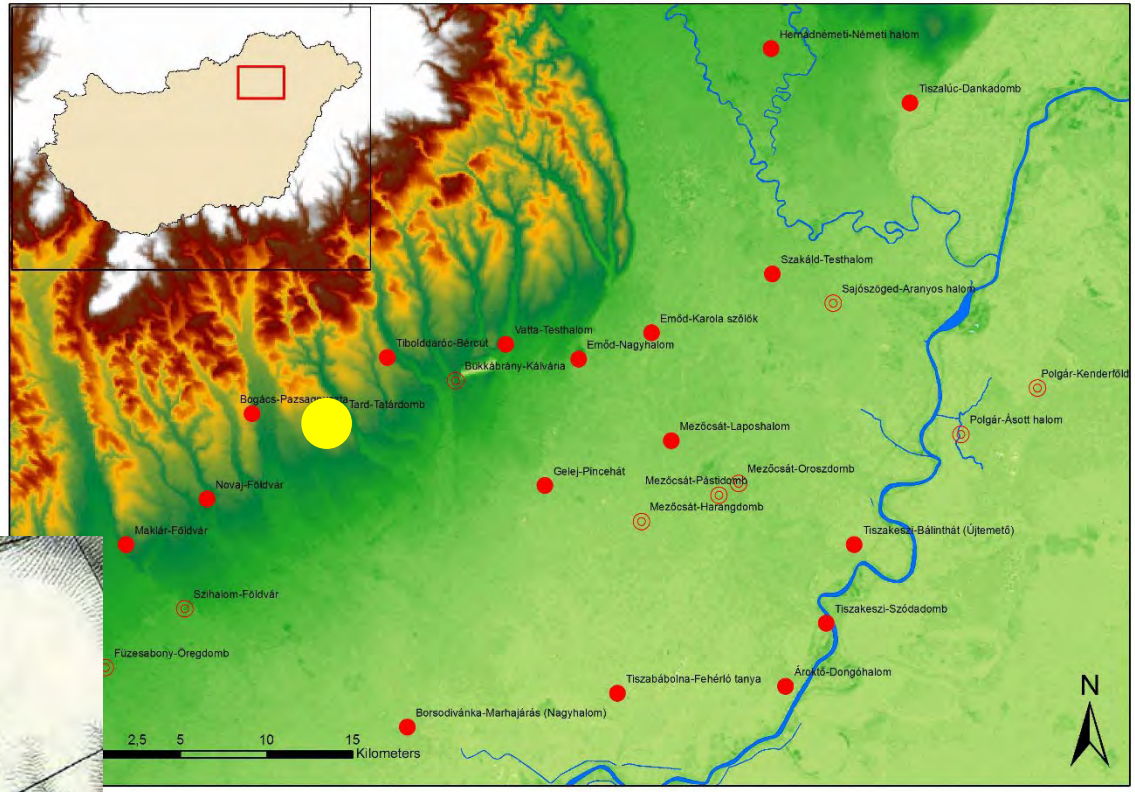


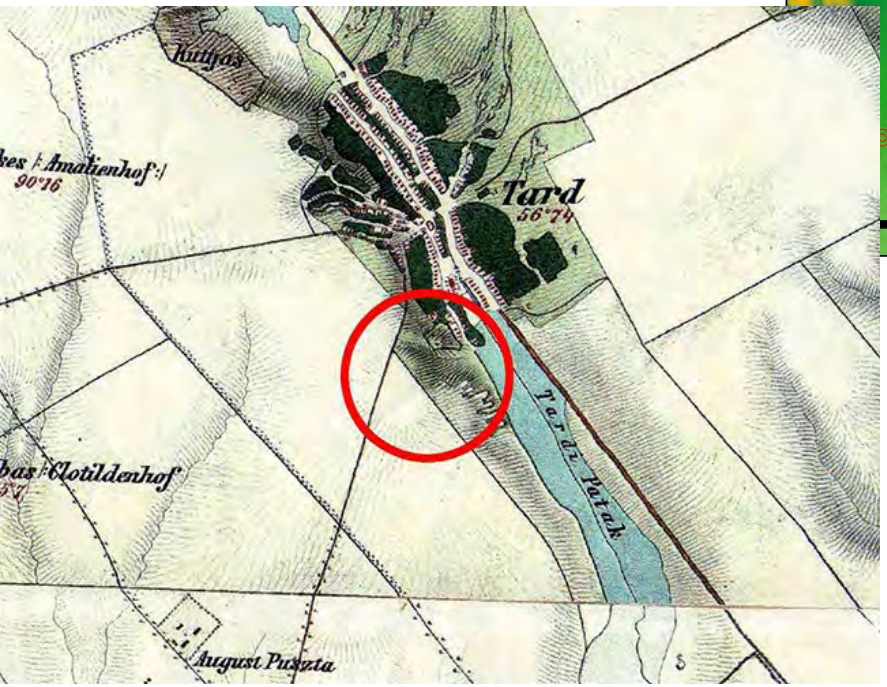
BORBAS 2013

BORBAS 2013

BORBAS 2013

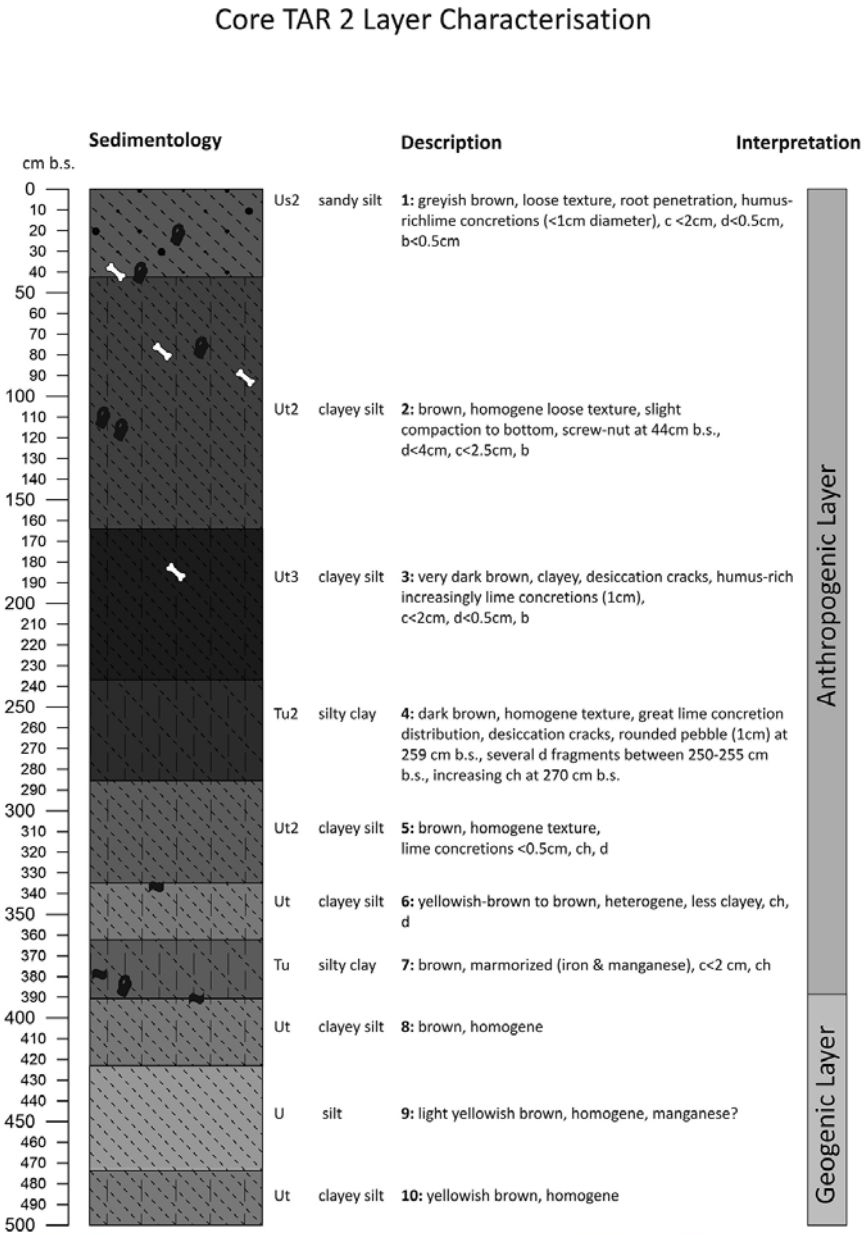
► Tard-Tatárdomb





BORBAS 2013

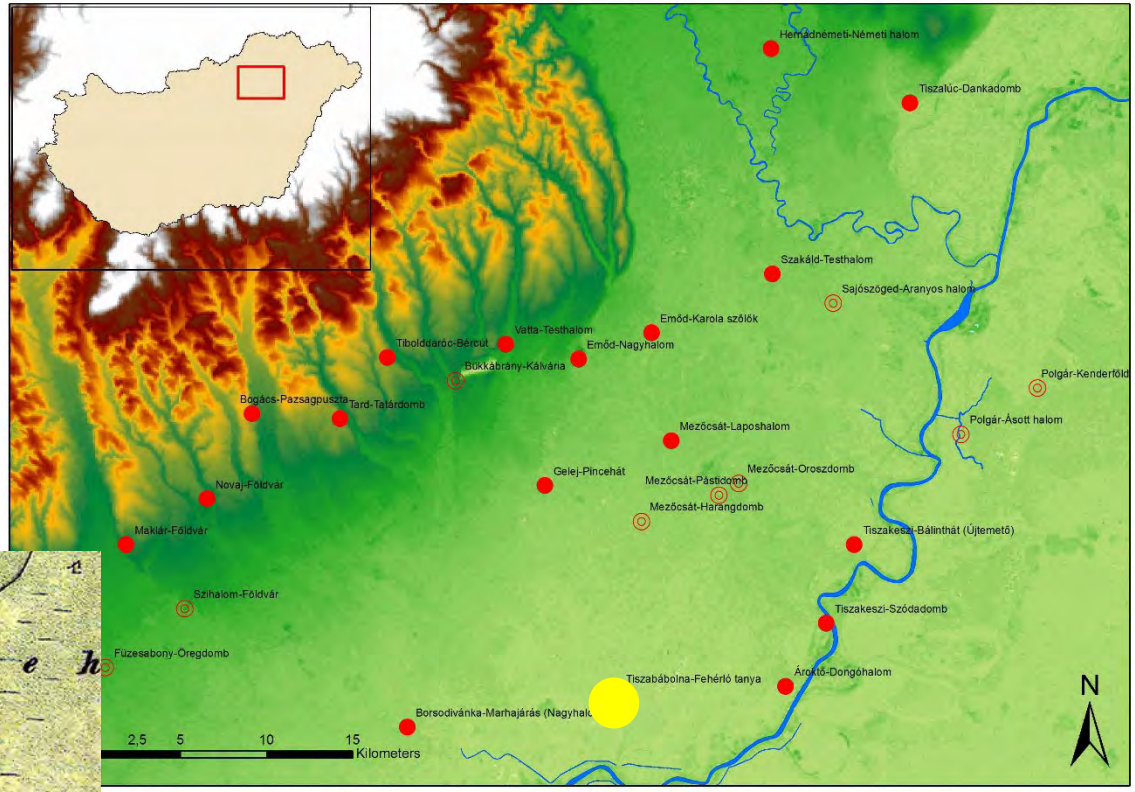
BORBAS 2013

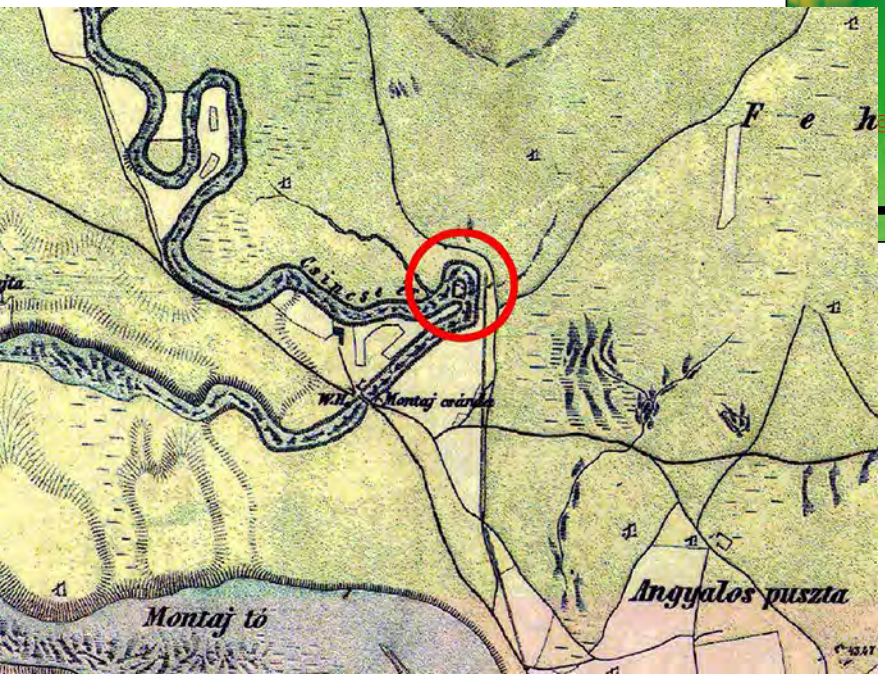


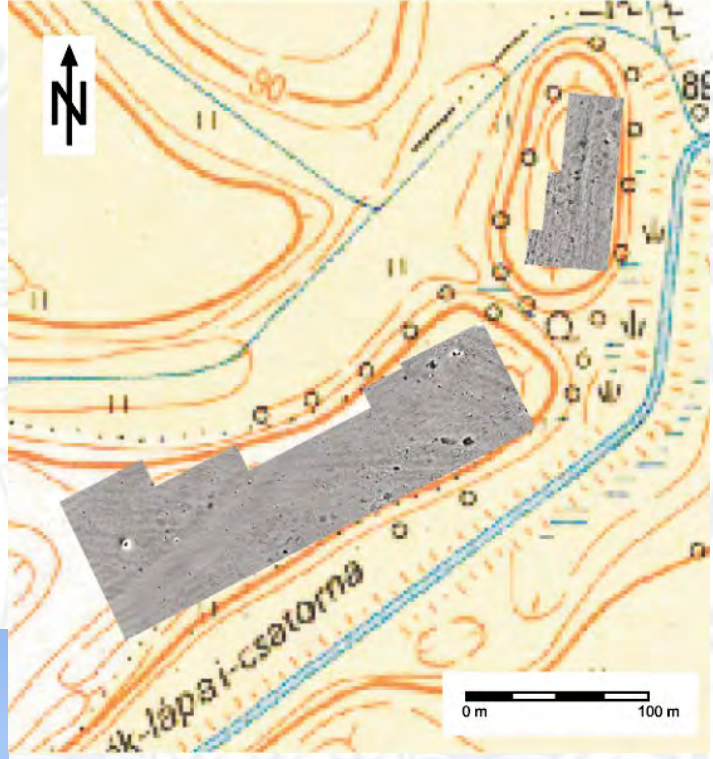
BORBAS 2013

▲ Sedimentology and interpretation of a core from the ditch at Tard-Tatárdomb.

► Tiszabábolna-Fehérló tanya

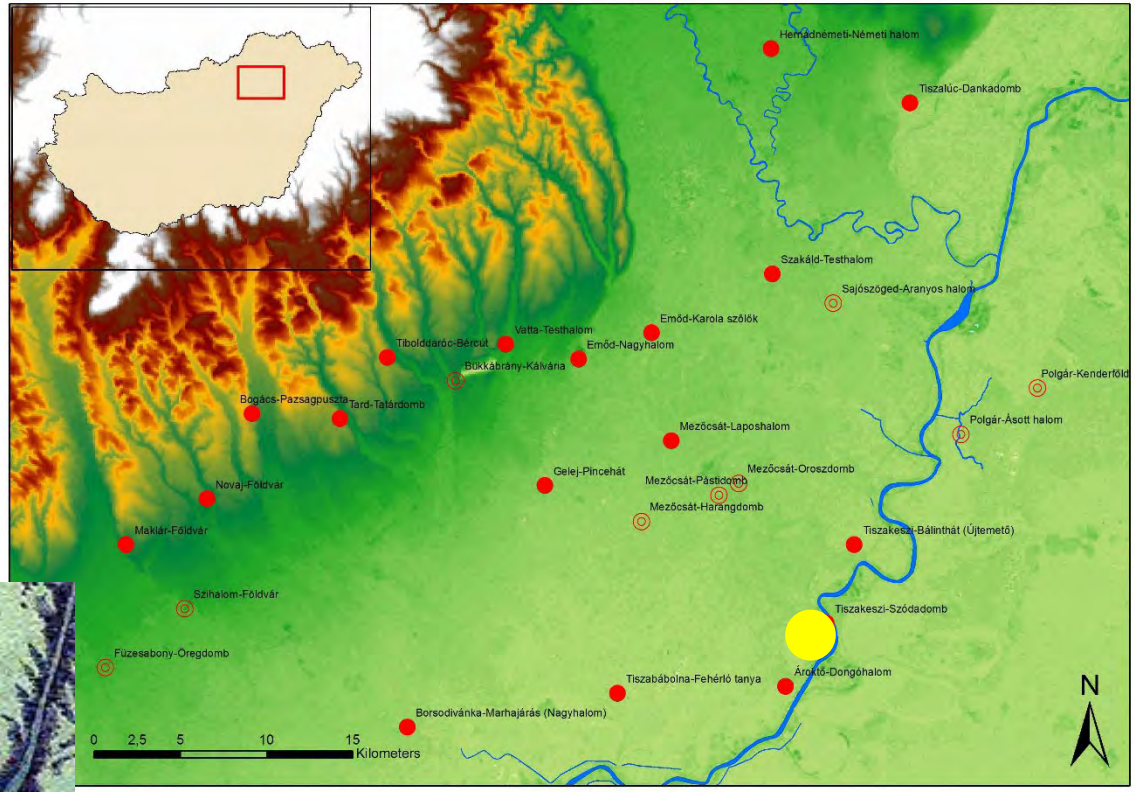





N
90
0 m
100 m

BORBAS 2013

► Tiszakeszi-Szódadomb

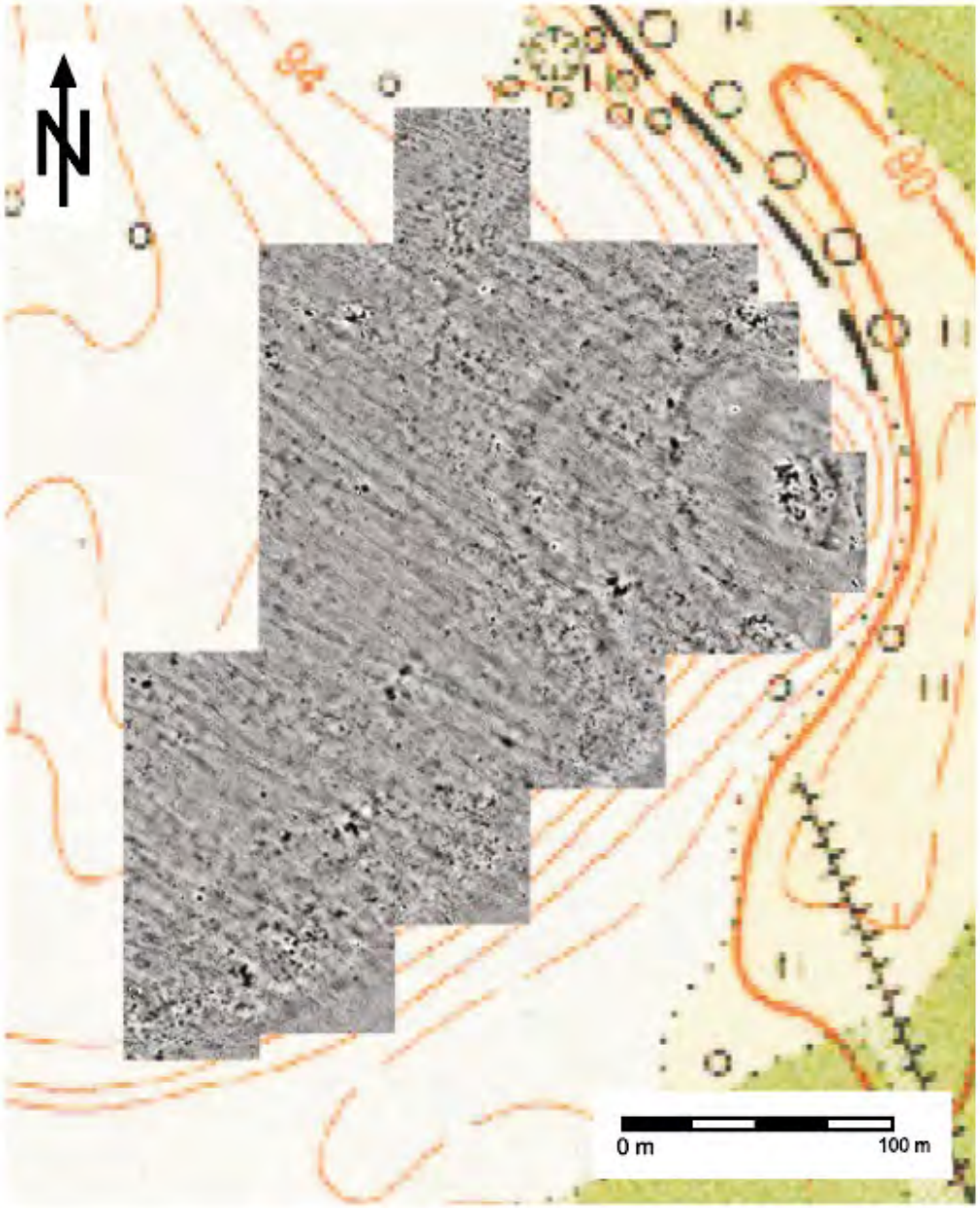


BORBAS 2013

BORBAS 2013

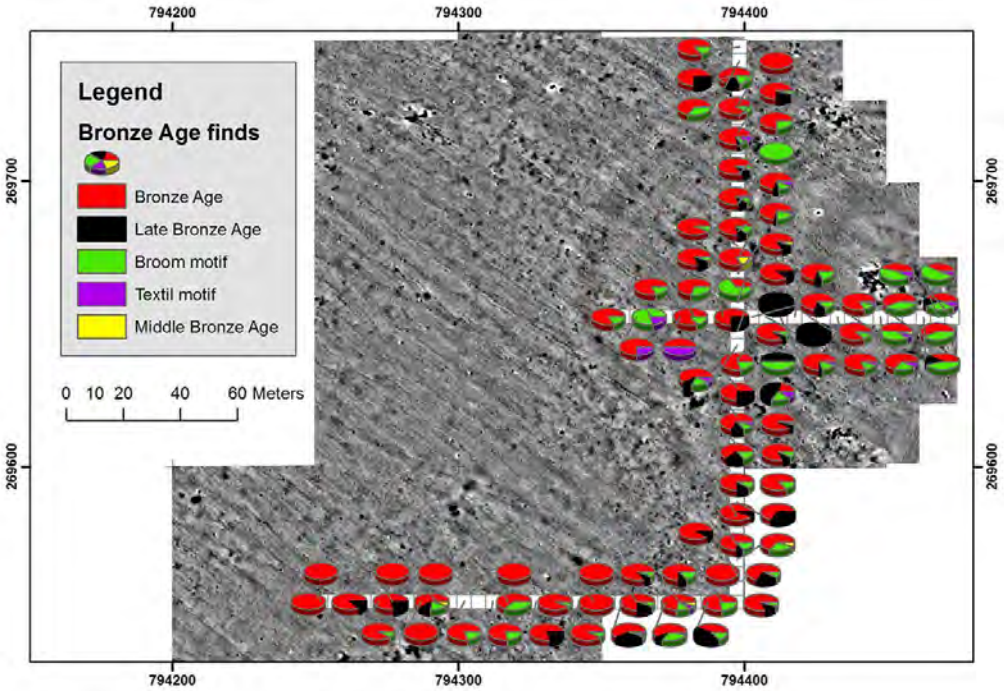
BORBAS 2013

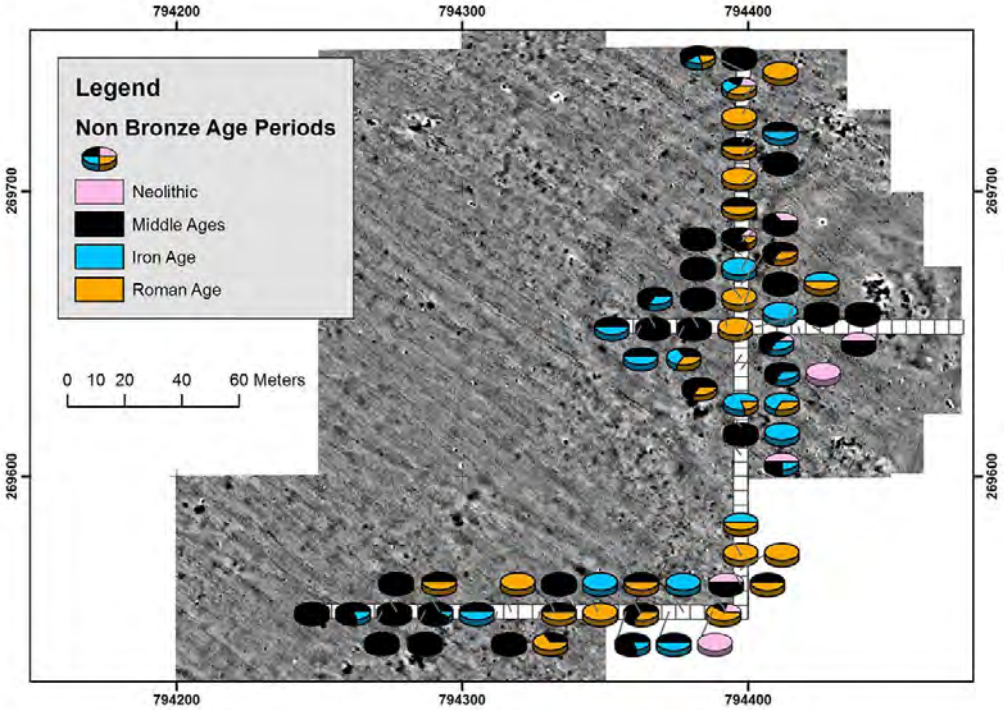
BORBAS 2013



► Tiszakeszi-Szódadomb. Results of magnetometry.

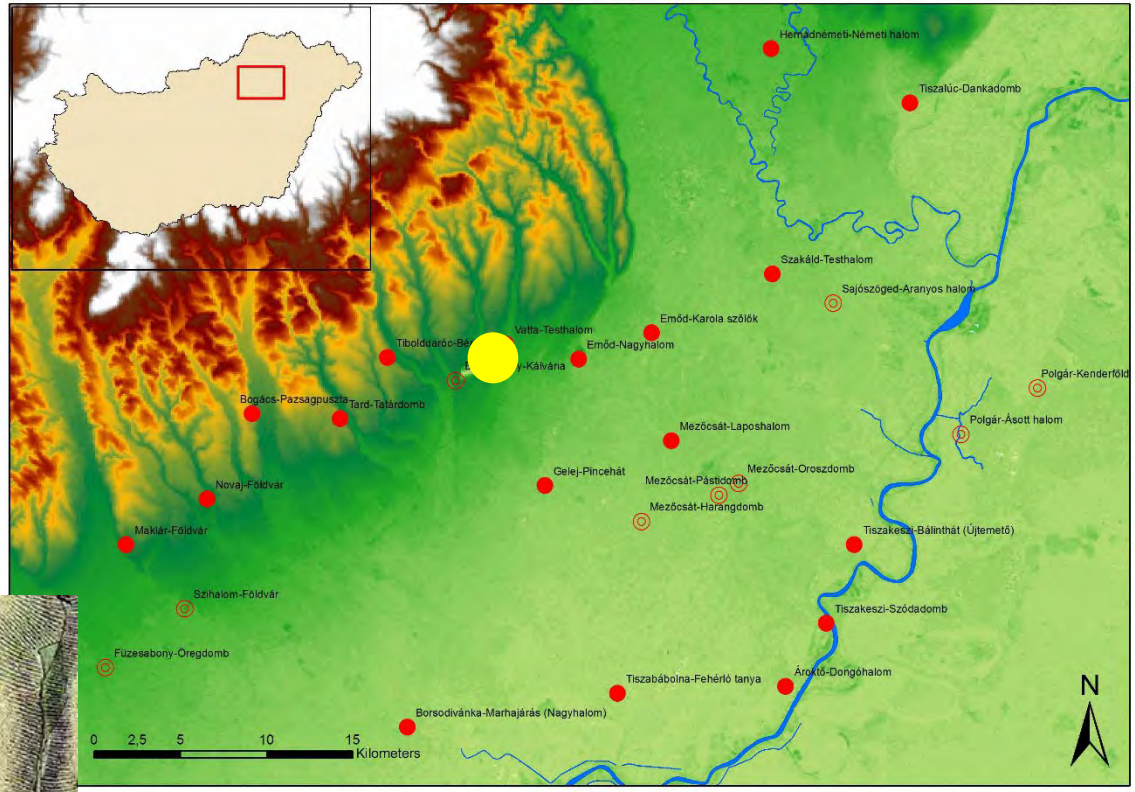
BORBAS 2013

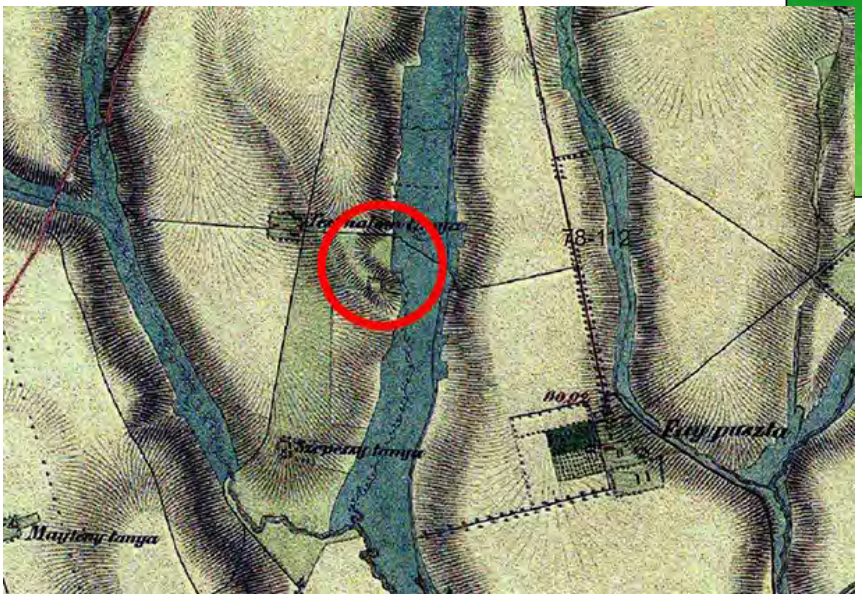




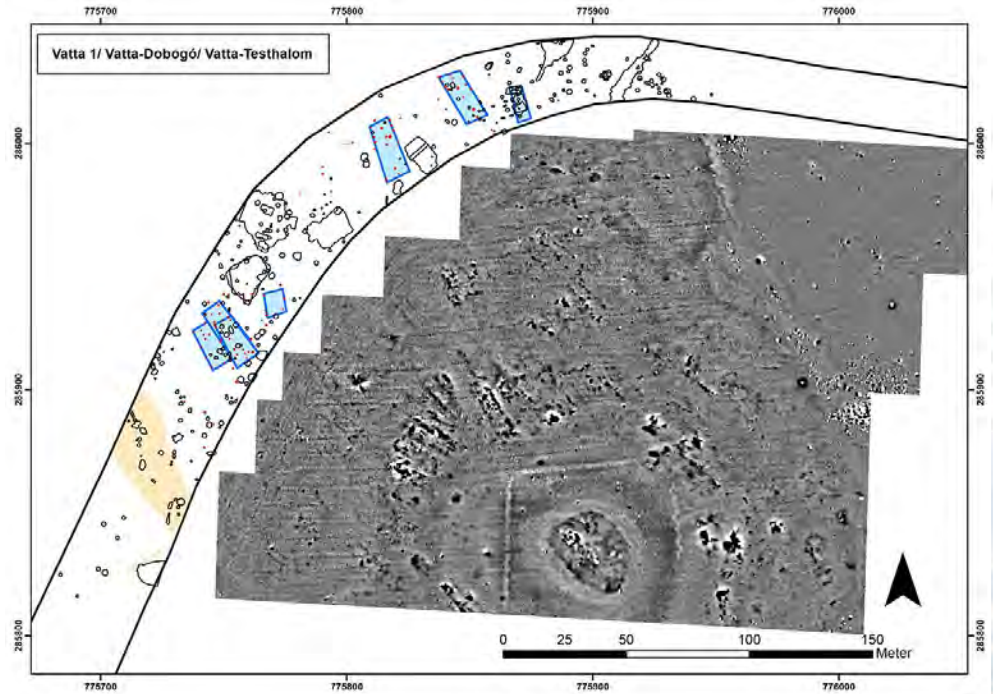
► Tiszakeszi-Szódadomb. Results of the surface survey in 2013.

► Vatta-Testhalom





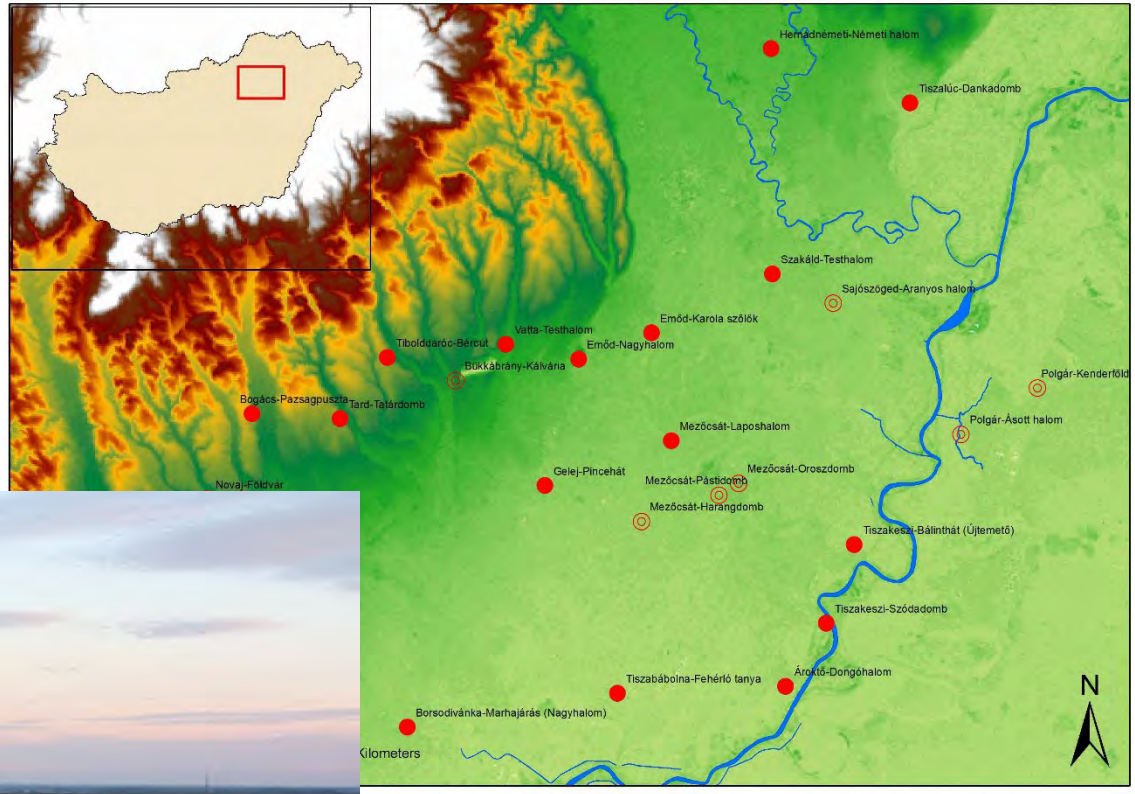
BORBAS 2013



◄ Vatta-Testhalom. Layout of the outer settlement; magnetometry and the results of a previous rescue excavation compared.

BORBAS 2013

► Social Life on BORBAS Tells



BORBAS 2013

◄ Accomodation in the sports home at Tard.

BORBAS 2013

BORBAS 2013

▲ Sunset at Tard-Tatárdomb.

BORBAS 2013

2014

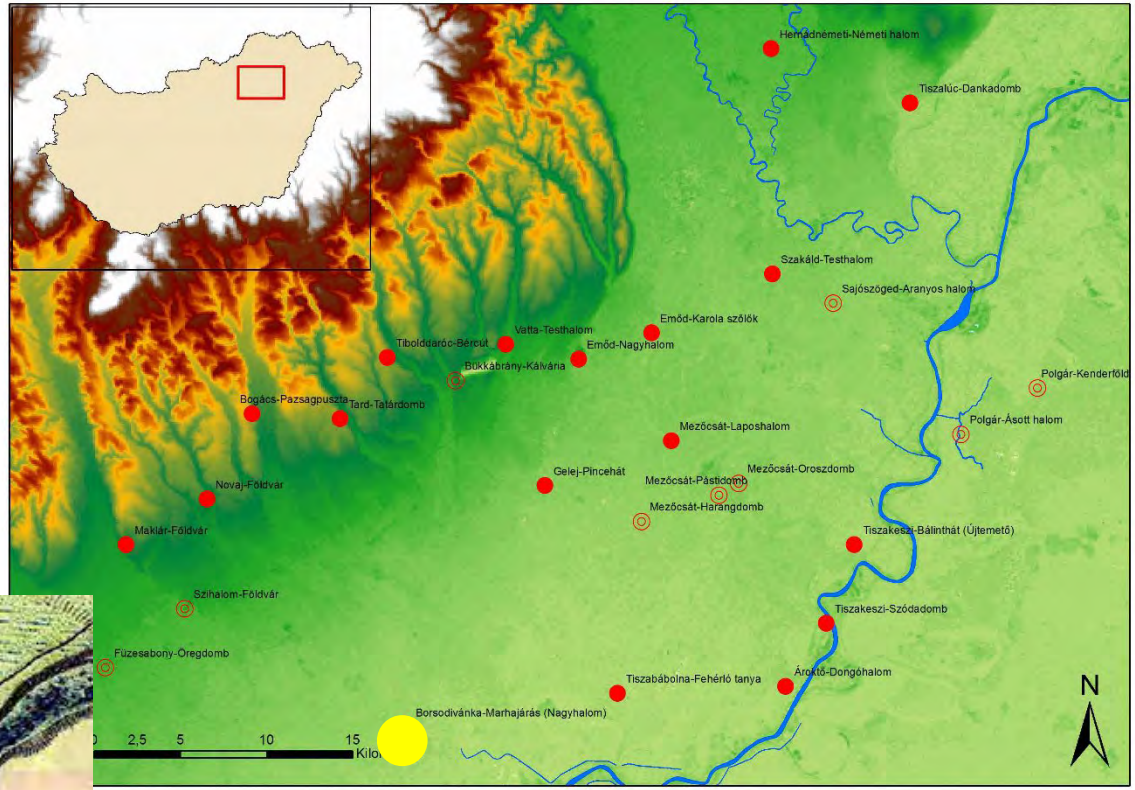
Magnetometer Survey

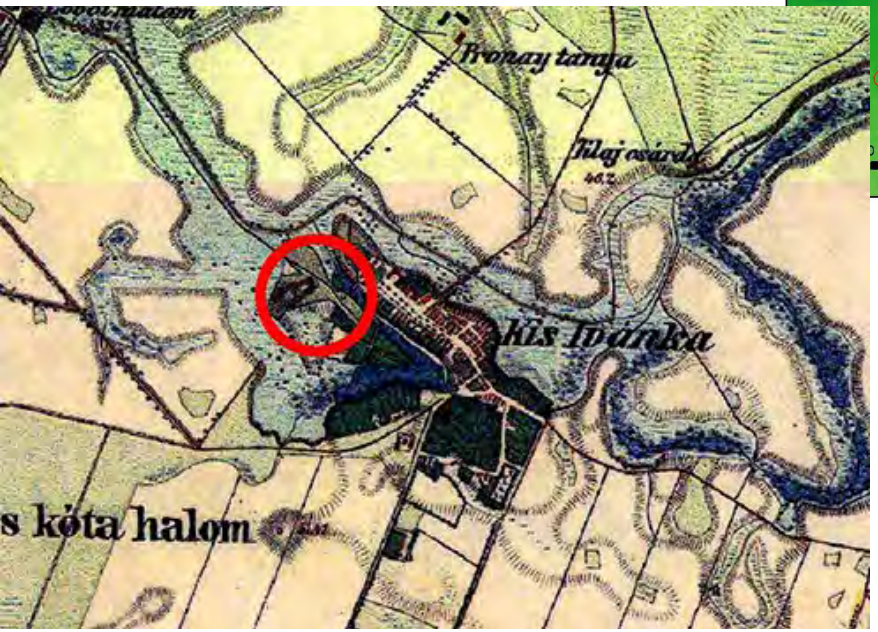
- ► Ároktő-Dongóhalom
- ► Borsodivánka-Marhajárás (Nagyhalom)
- ► Hernádnémeti-Németihalom
- ► Tiszabábolna-Fehérló tanya
- ► Tiszakeszi Bálinthát-Újtemető

Surface Survey

- ► Borsodivánka-Marhajárás (Nagyhalom)
- ► Hernádnémeti-Németihalom
- ► Tiszakeszi Bálinthát-Újtemető

► Borsodivánka-Marhajárás (Nagyhalom)



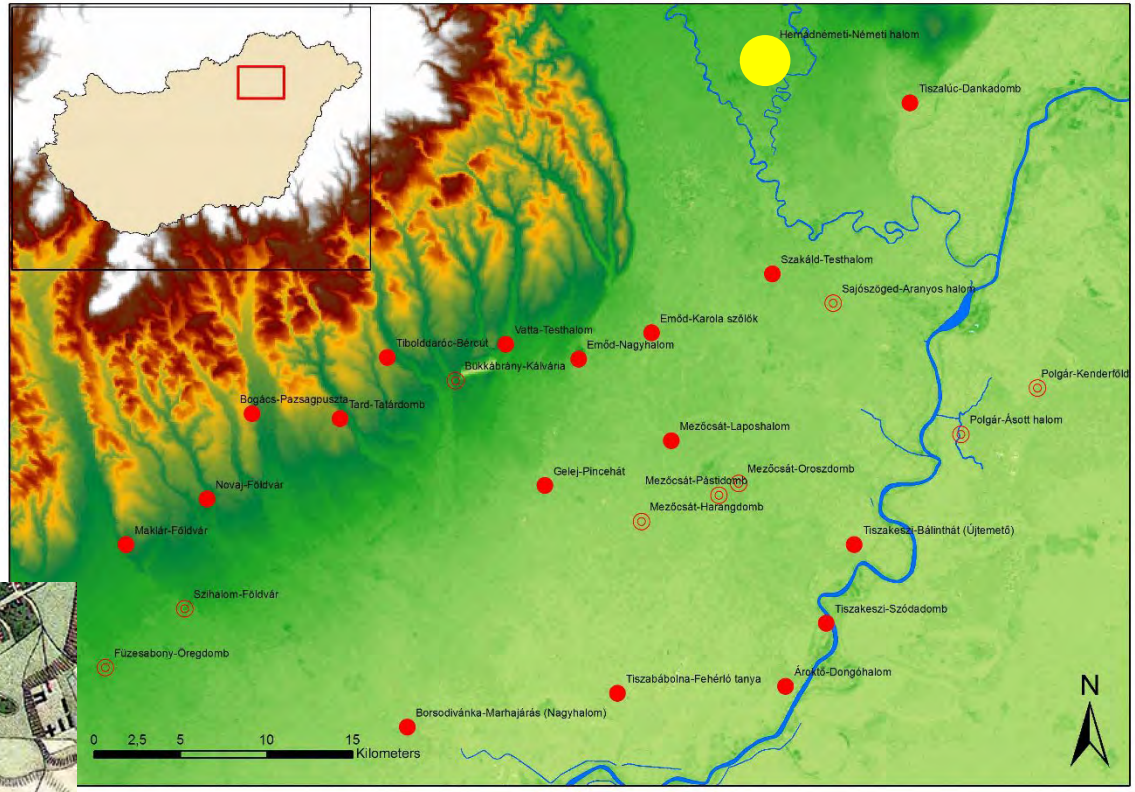


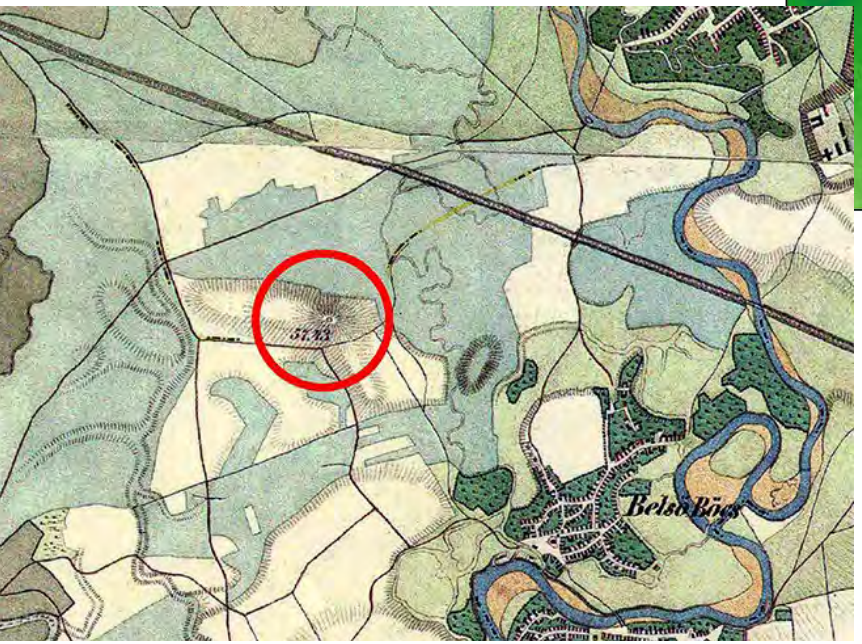
BORBAS 2014

BORBAS 2014

BORBAS 2014

► Hernádnémeti-Németihalom

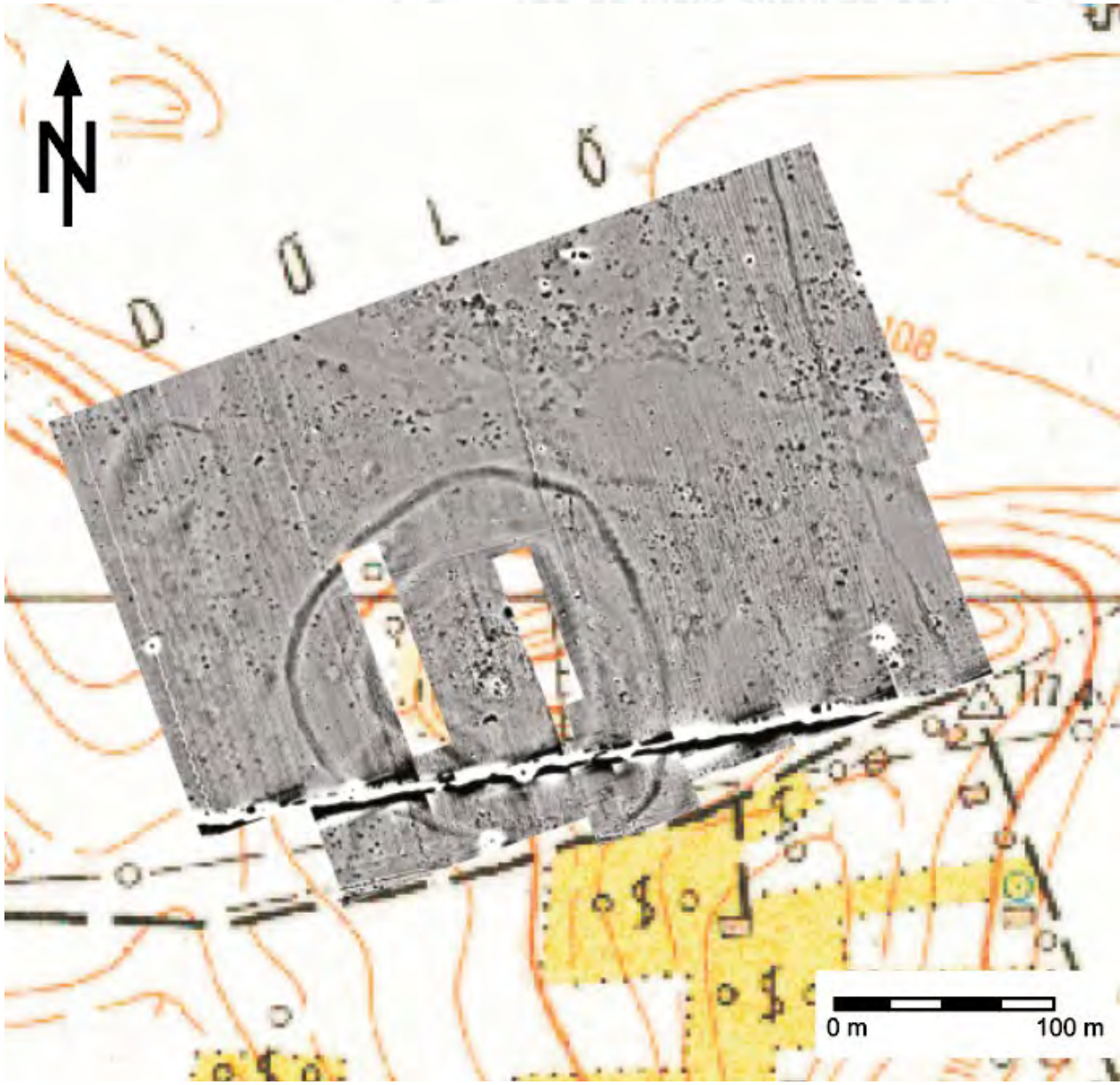




BORBAS 2014

BORBAS 2014

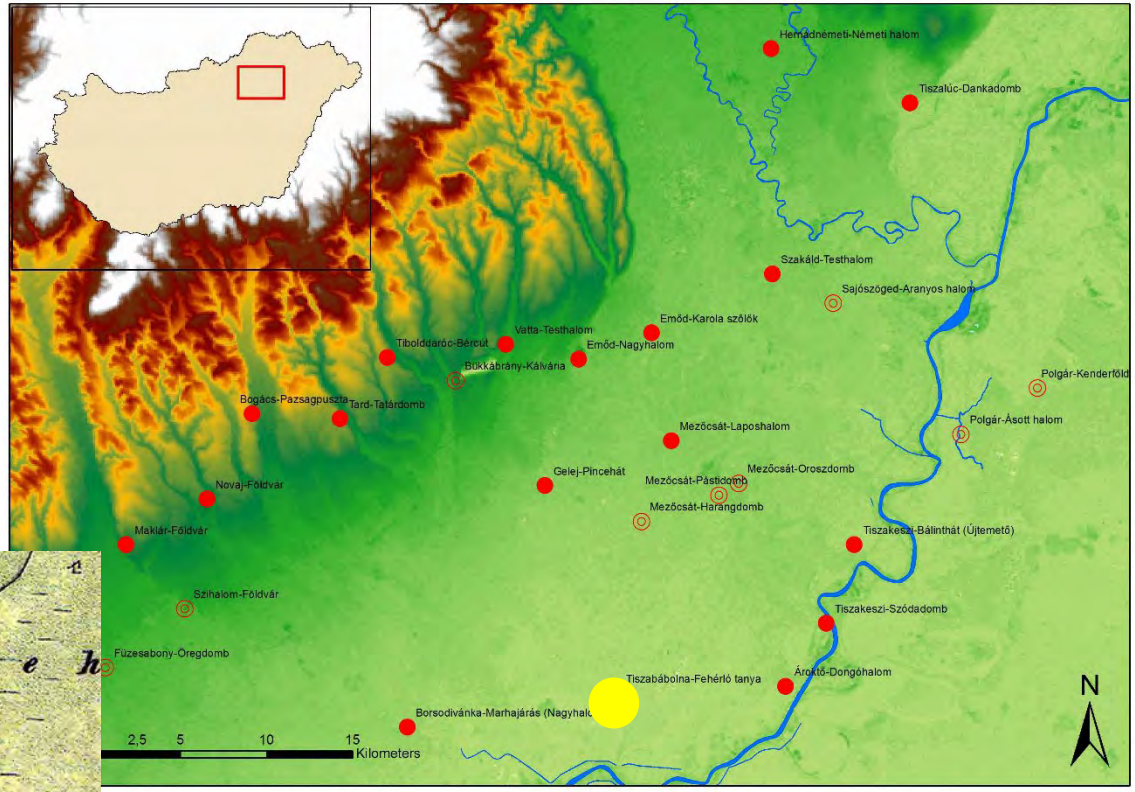
BORBAS 2014

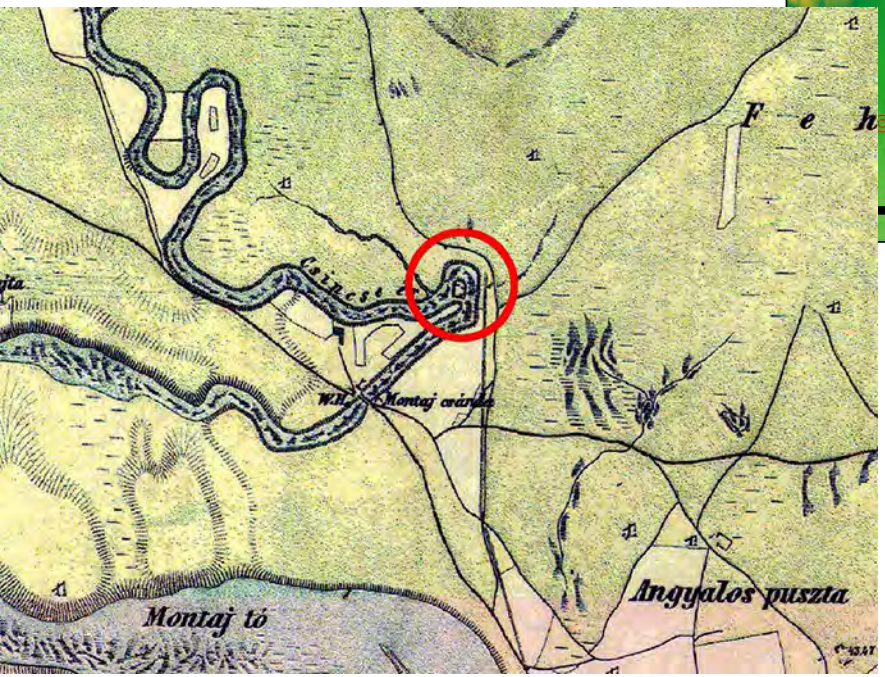


► Hernádnémeti-Németihalom. Results of magnetometry.

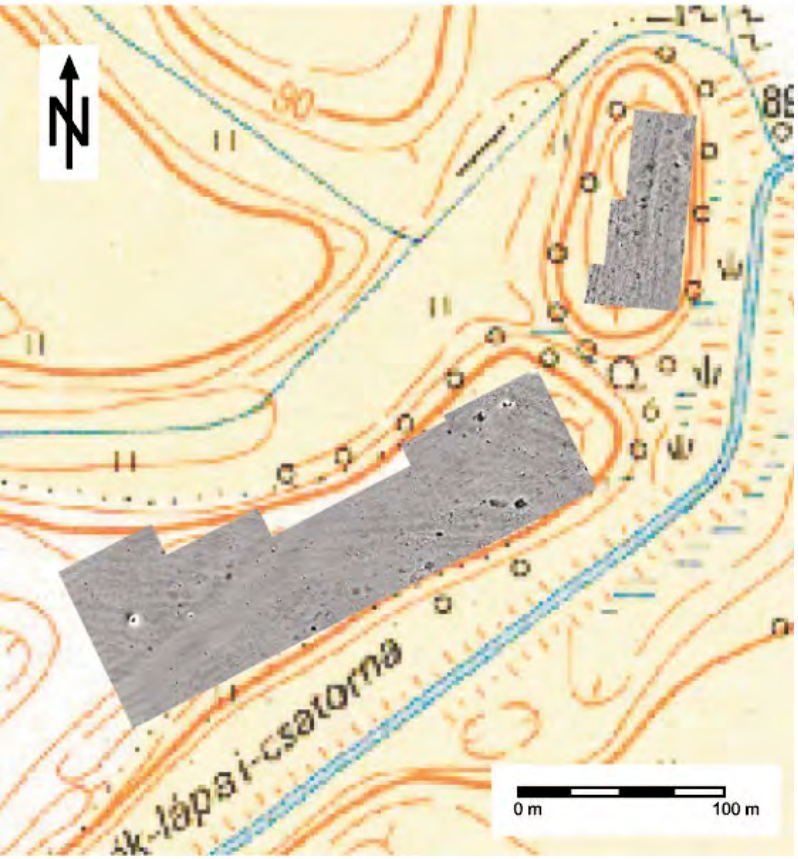
BORBAS 2014

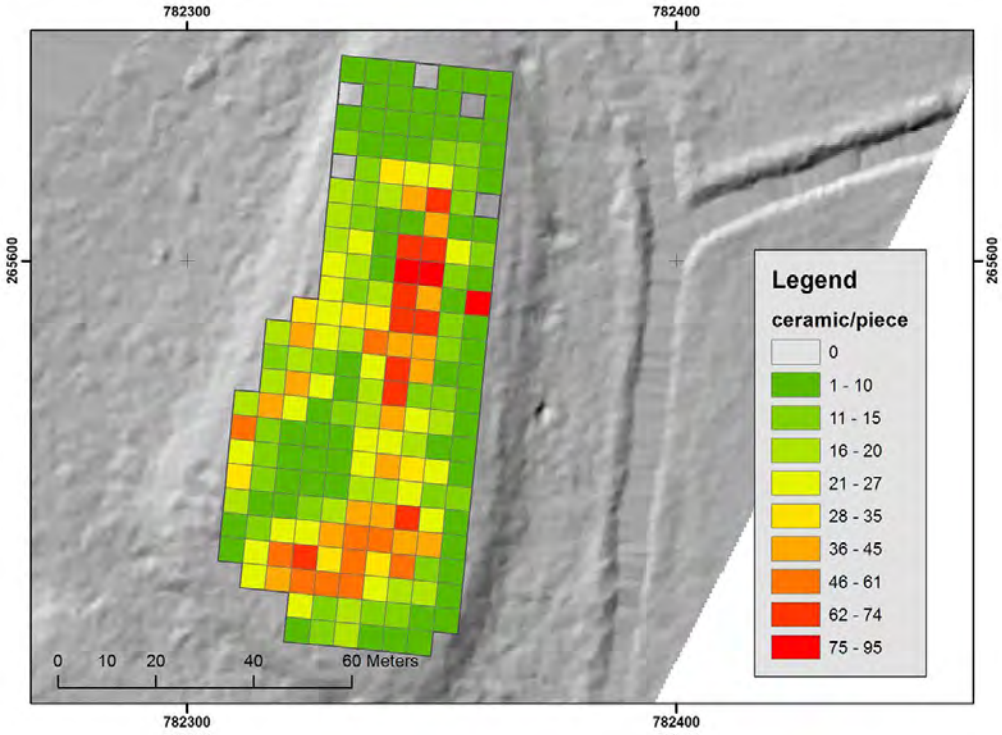
► Tiszabábolna-Fehérló tanya

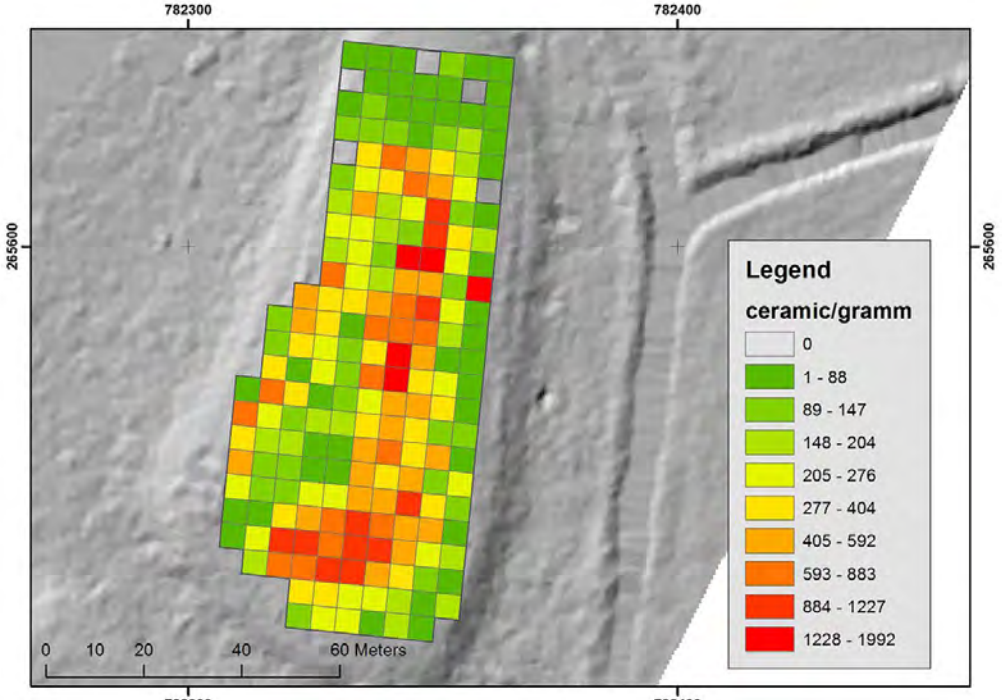




BORBAS 2014



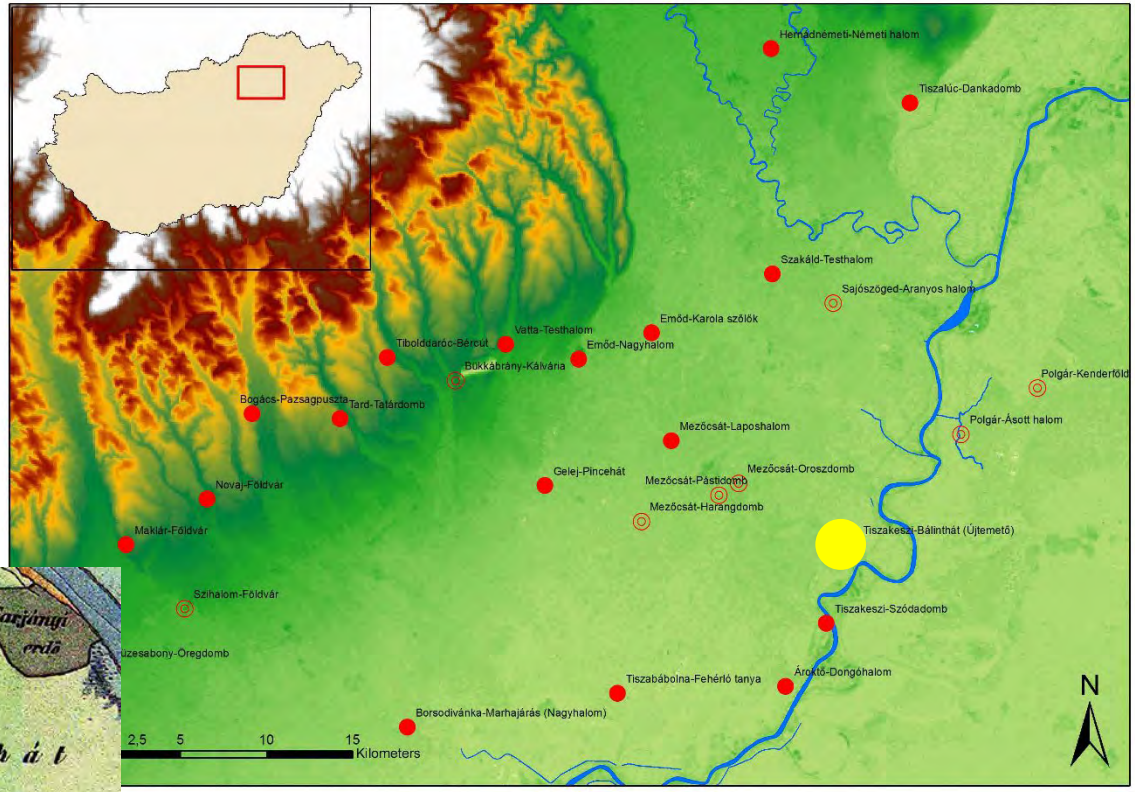


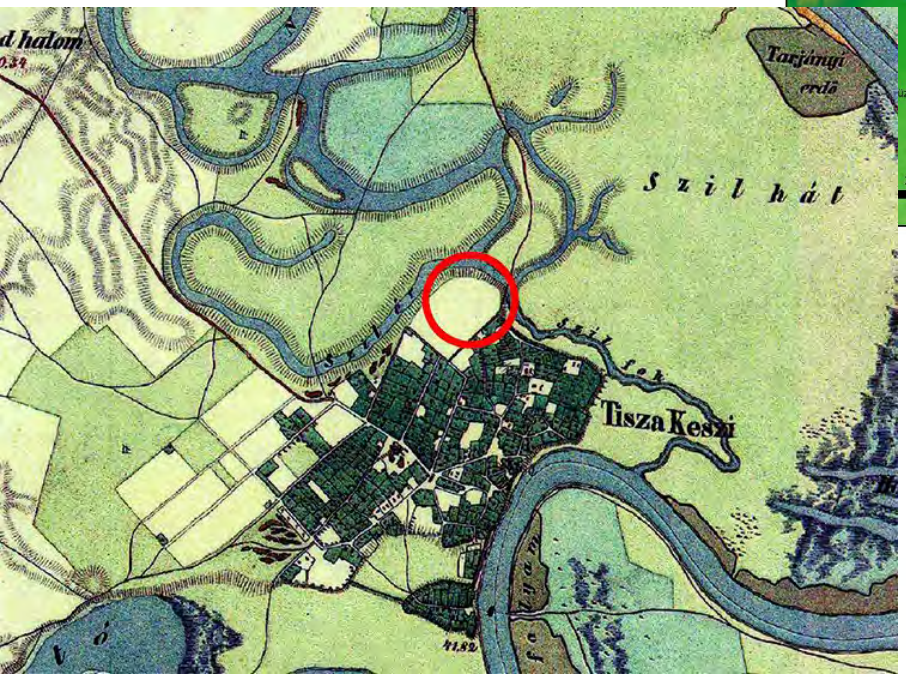


▲► Tiszabábolna-Fehérló tanya. Results of magnetometry and the surface survey in 2014.

BORBAS 2014

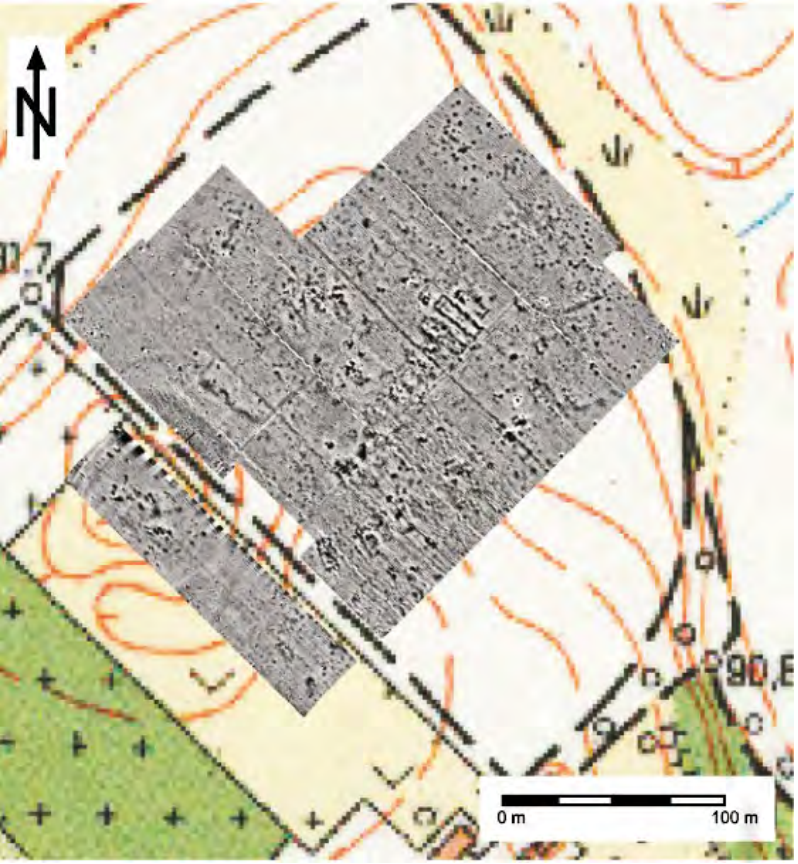
► Tiszakeszi Bálinthát-Újtemető

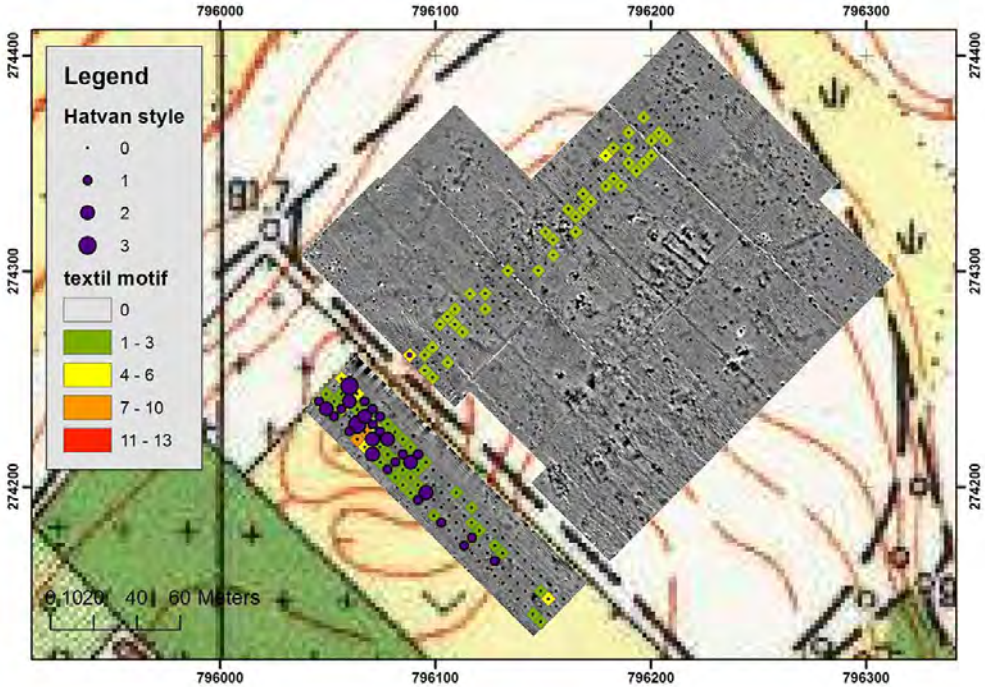


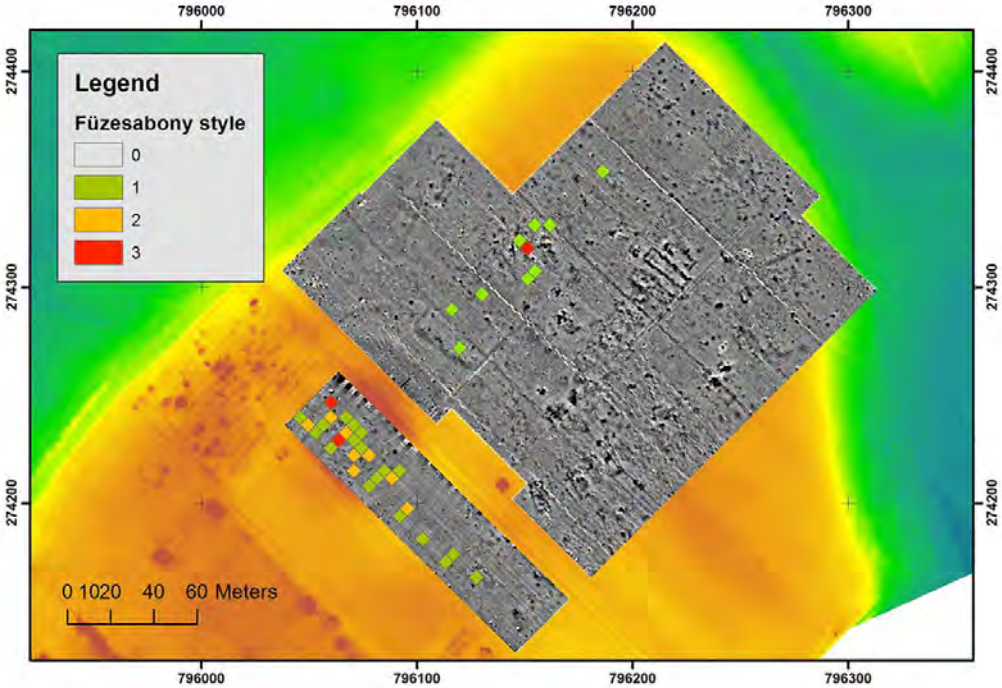


BORBAS 2014

BORBAS 2014







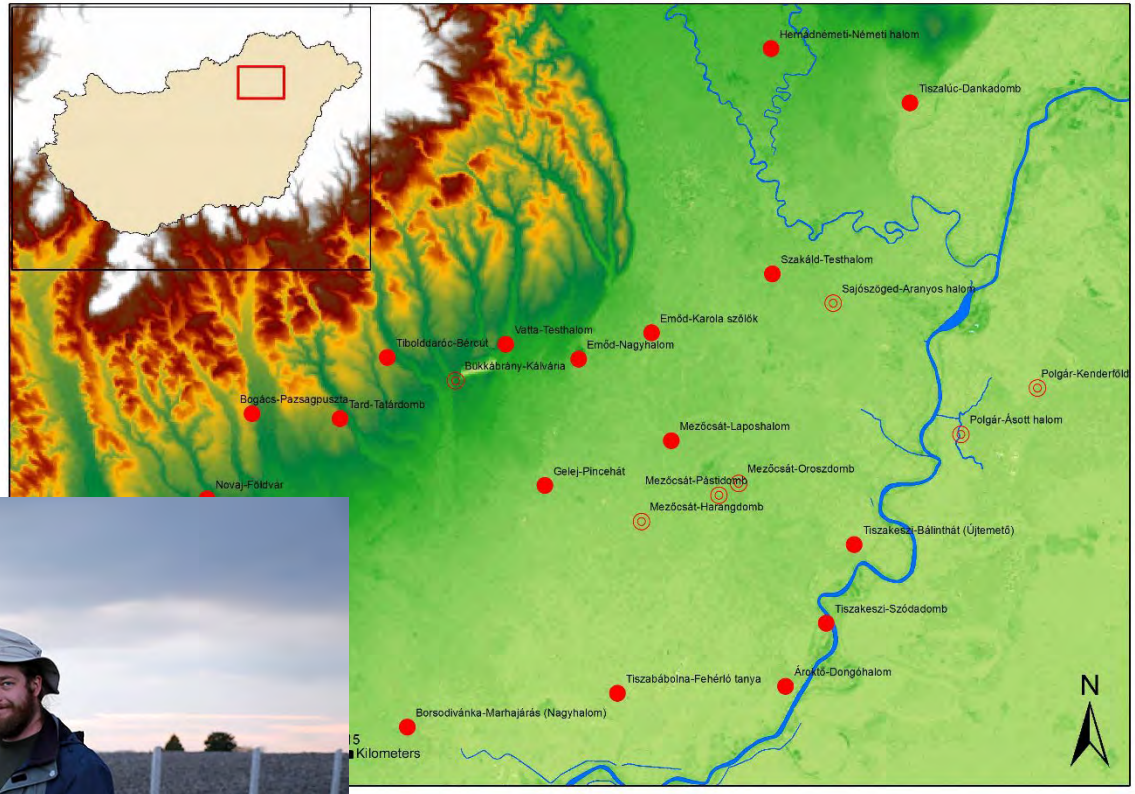
▲► Tiszakeszi Bálinthát-Újtemető. Results of magnetometry and the surface survey in 2014.

BORBAS 2014

BORBAS 2014

BORBAS 2014

► Social Life on BORBAS Tells



BORBAS 2014

BORBAS 2014

BORBAS 2014

► A visit to Bogács-Pazsagpuszta.

▲ Accomodation in Borsodivánka I.

► Accomodation in Borsodivánka II.

BORBAS 2014

BORBAS 2014

BORBAS 2014

BORBAS 2014

2015

Magnetometer Survey

- ► Bogács-Pazsagpuszta
- ► Emőd-Karola szőlők
- ► Szakáld-Testhalom
- ► Tibolddaróc-Bércút

Surface Survey

- ► Bogács-Pazsagpuszta
- ► Tibolddaróc-Bércút

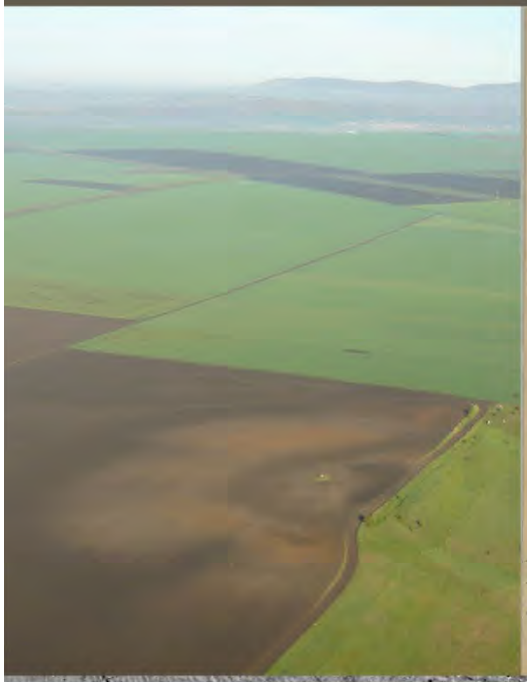
Excavation (Profile Cleaning)

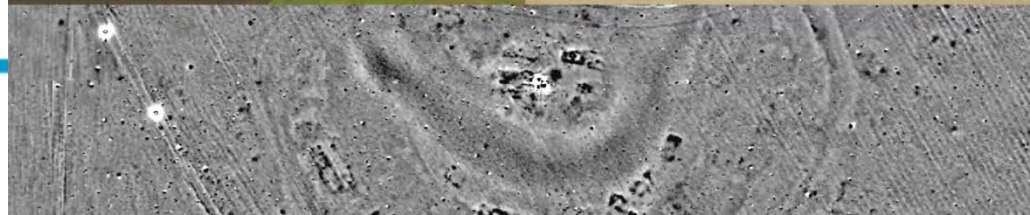
- ► Borsodivánka-Marhajárás (Nagyhalom)

Bronze Age Tell Communities in Context

An exploration into culture, society, and the study of European prehistory – Part 1

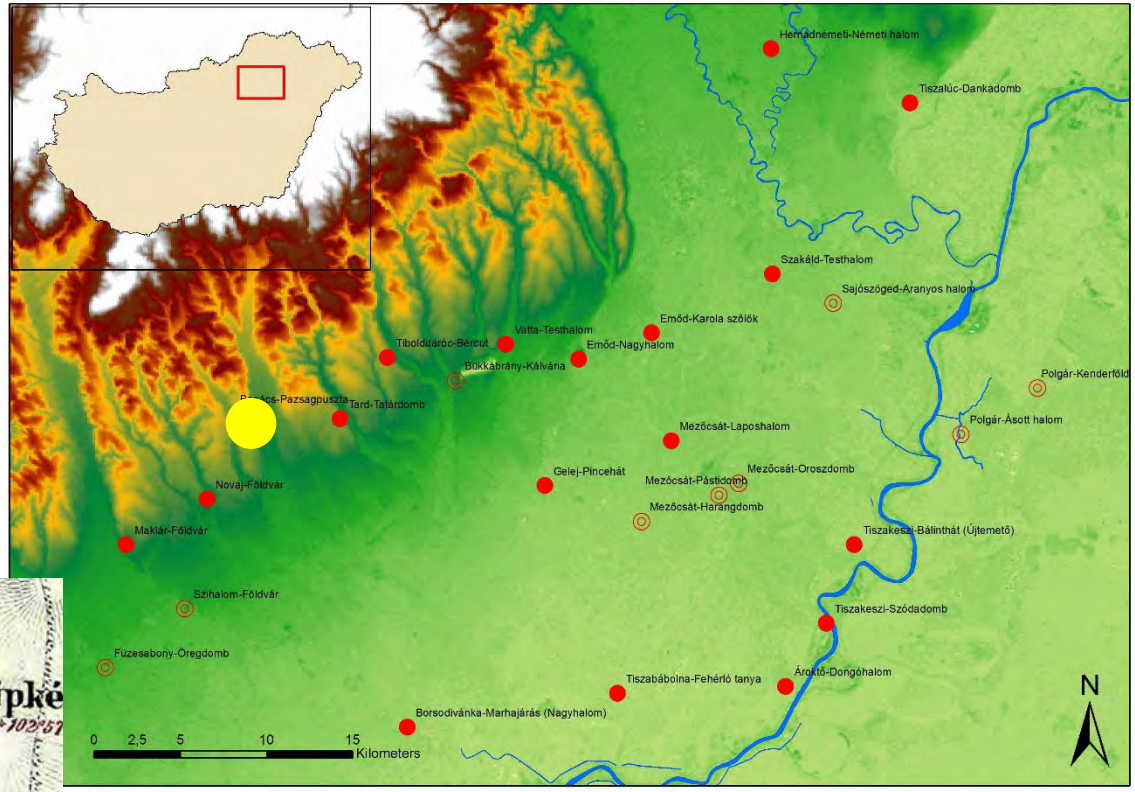
Tobias L. Kienlin

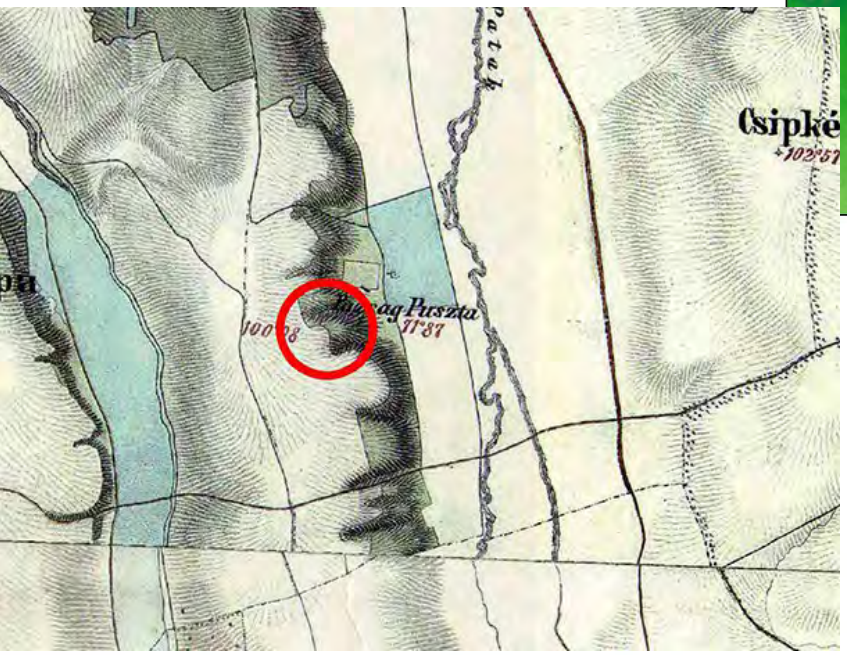




BORBAS 2015

► Bogács-Pazsagpuszta





BORBAS 2015

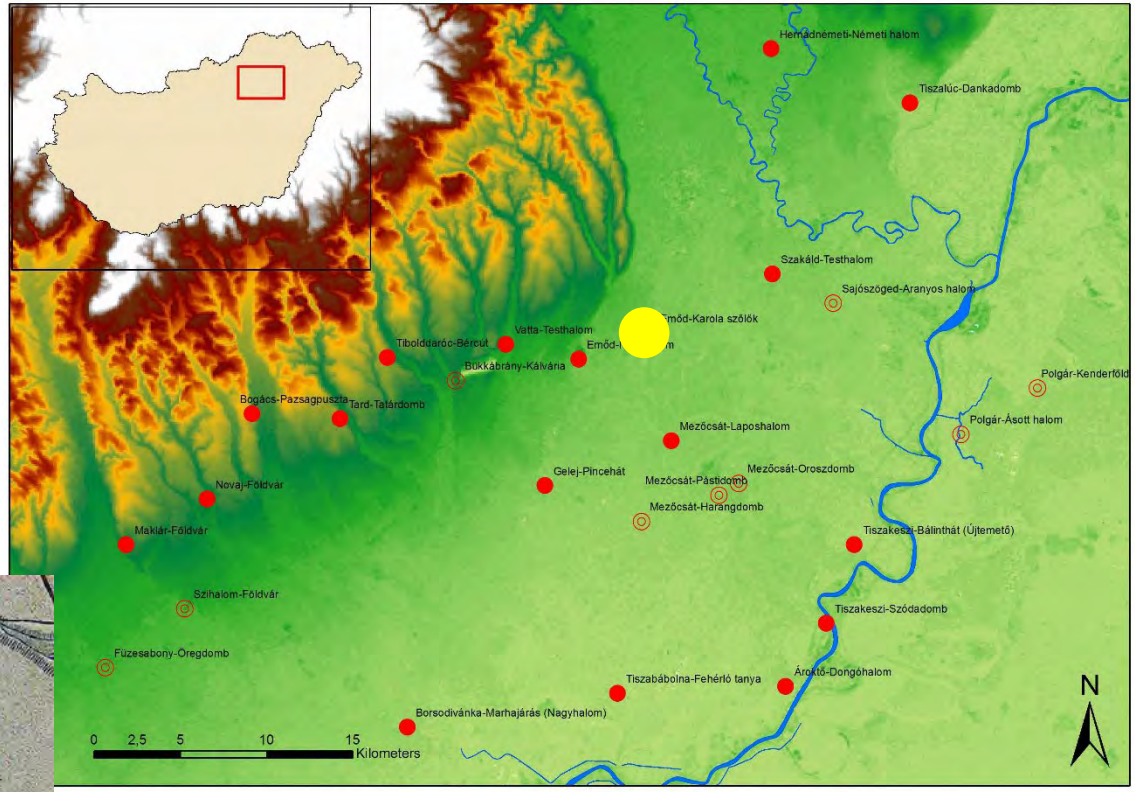
BORBAS 2015

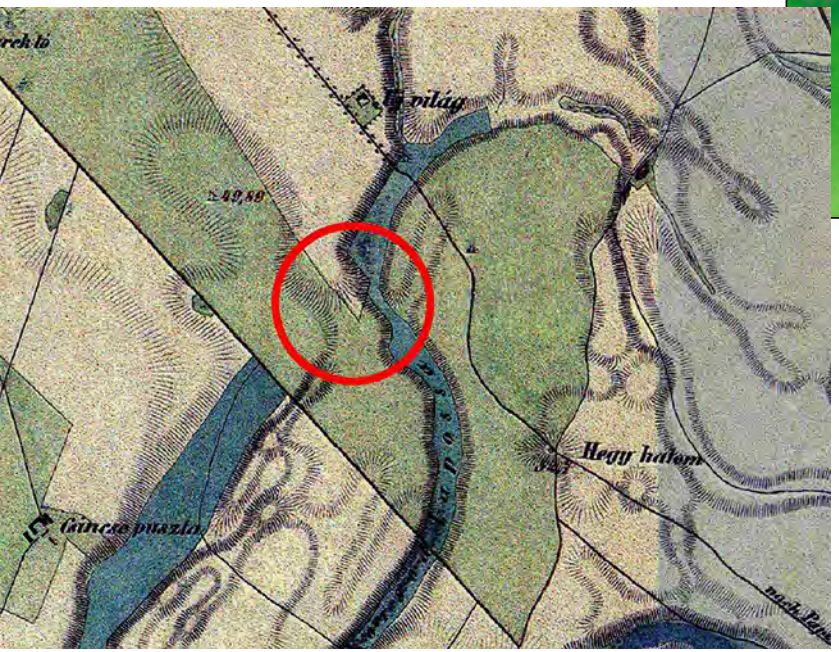
BORBAS 2015

BORBAS 2015

BORBAS 2015

► Emőd-Karola szőlők



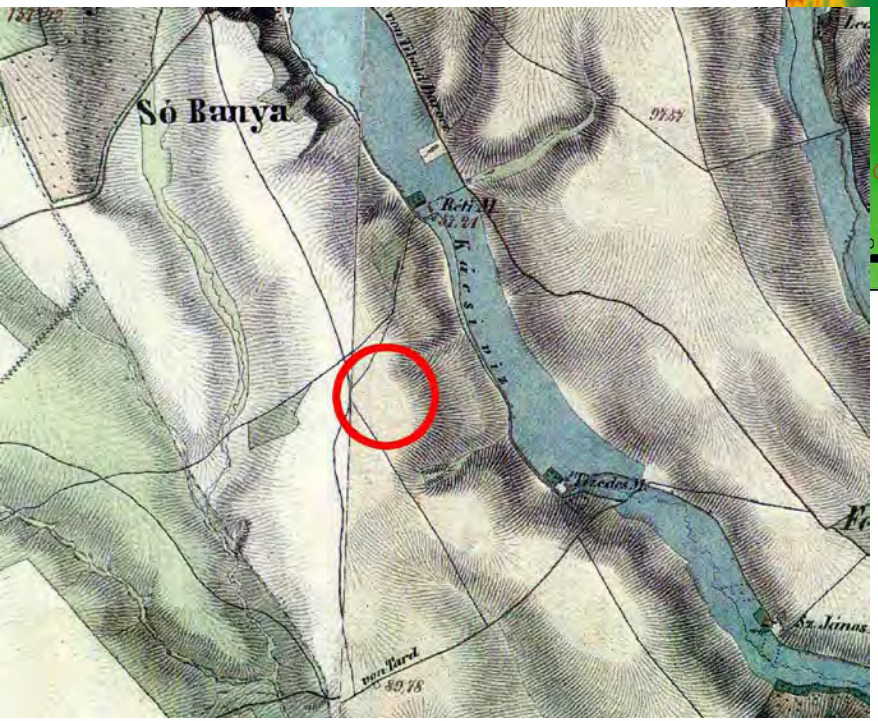


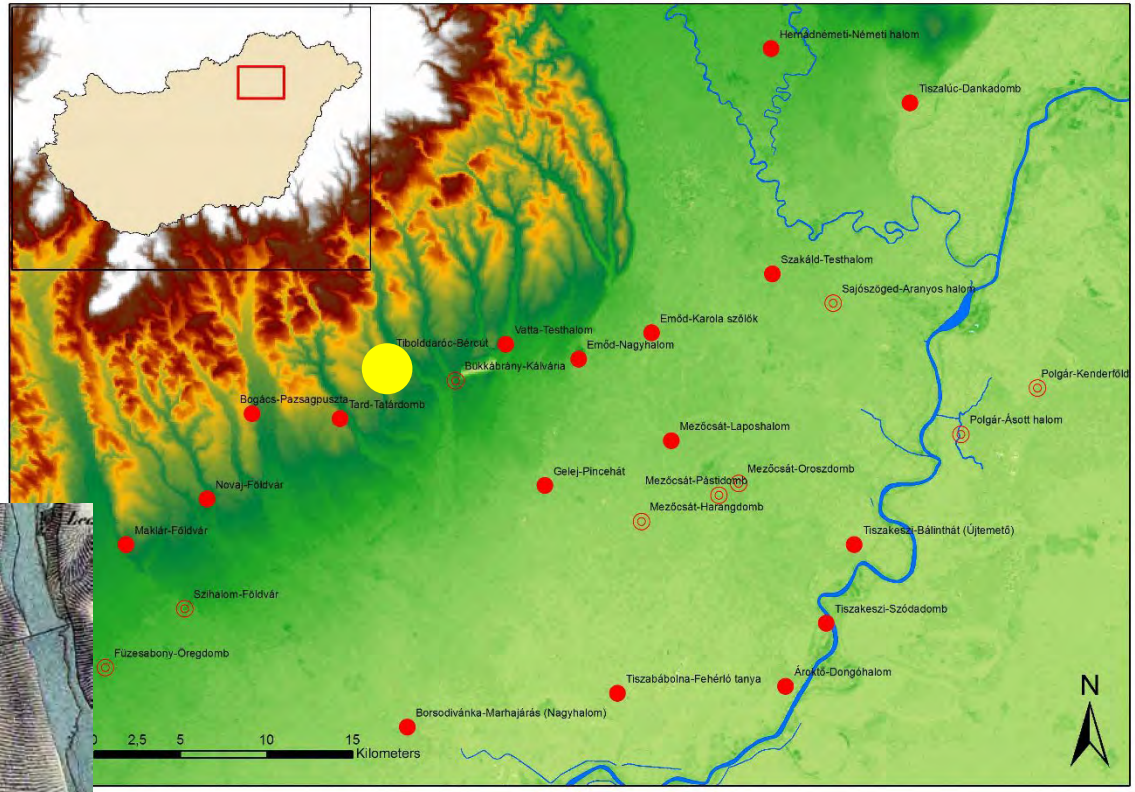
BORBAS 2015

BORBAS 2015

BORBAS 2015

► Tibolddaróc-Bércút





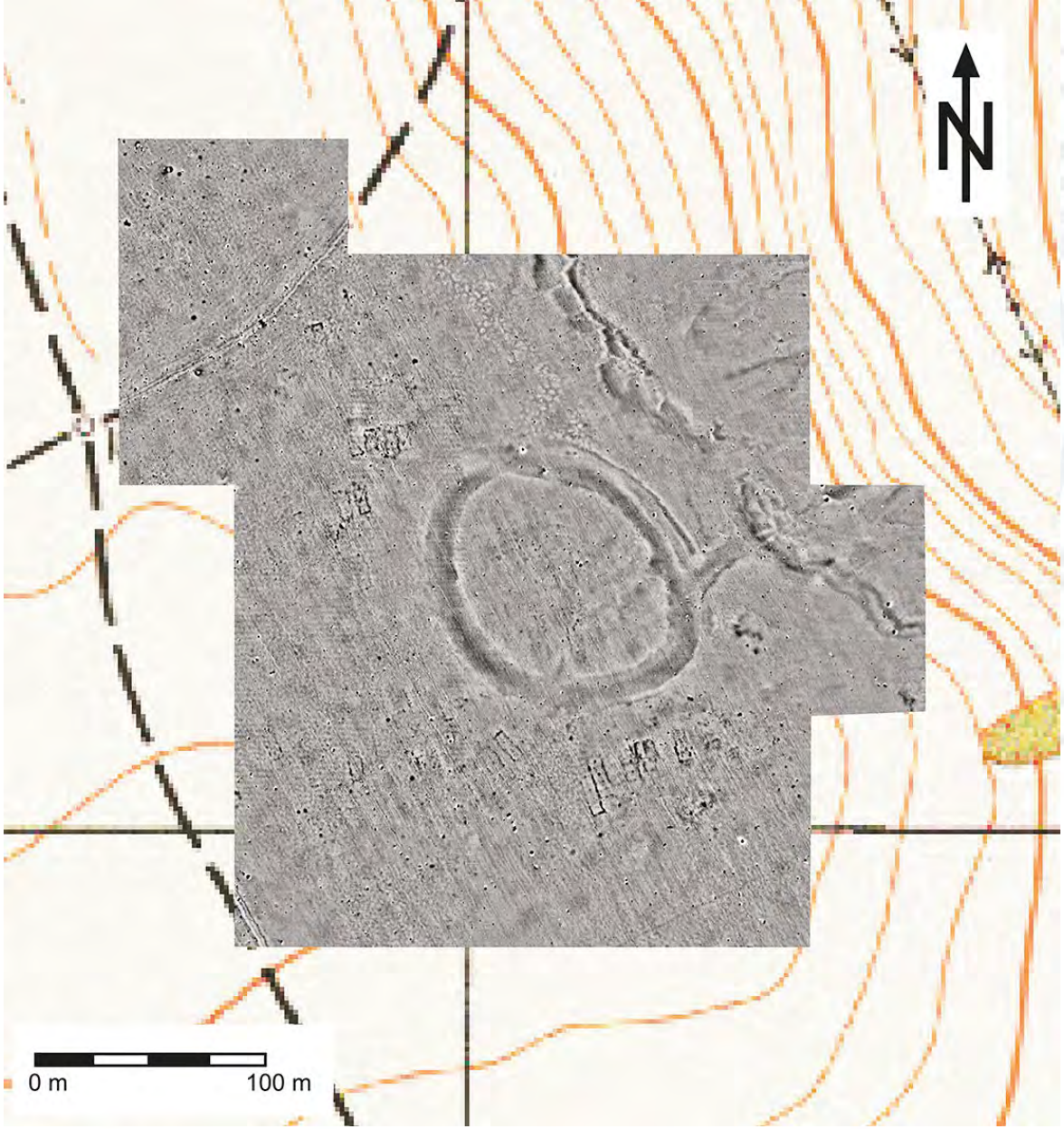
BORBAS 2015

BORBAS 2015

BORBAS 2015

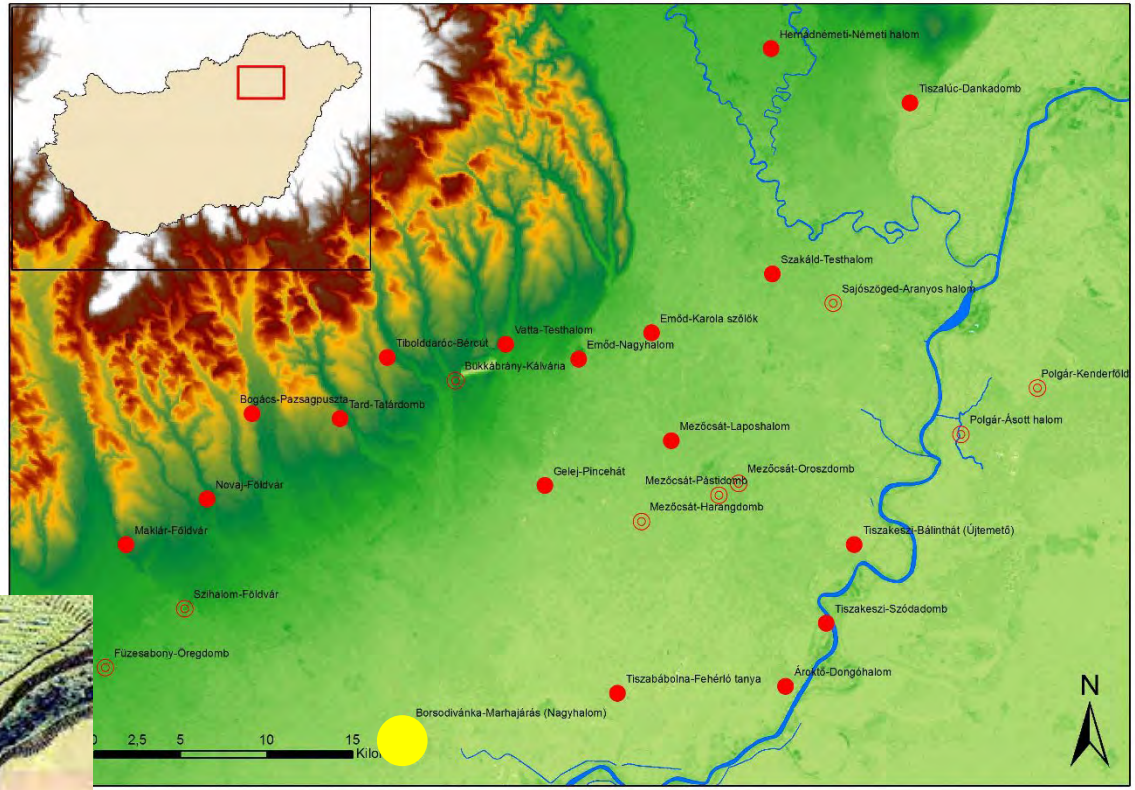
BORBAS 2015

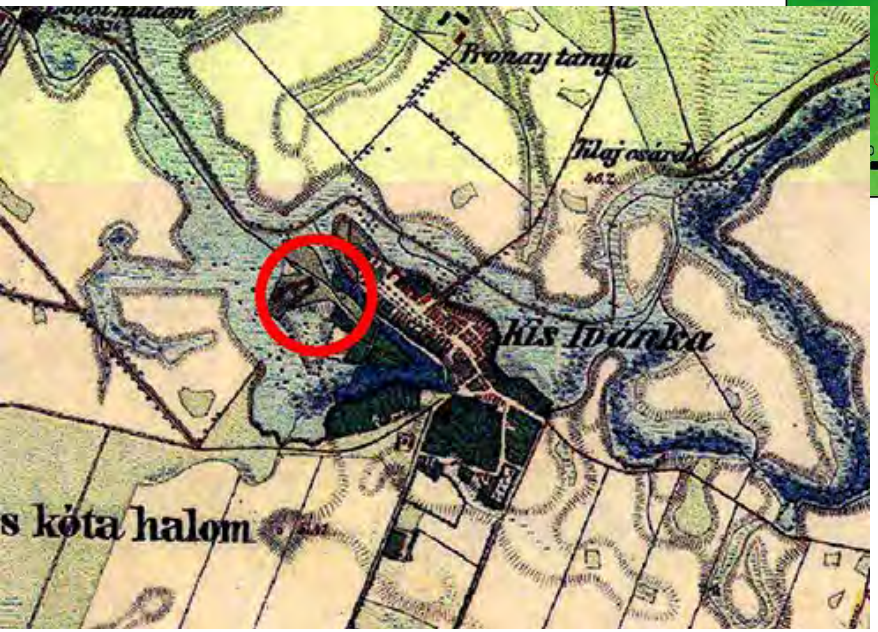
BORBAS 2015



► Tibolddaróc-Bércút. Results of magnetometry.

► Borsodivánka-Marhajárás (Nagyhalom)





BORBAS 2015

BORBAS 2015

BORBAS 2015

BORBAS 2015

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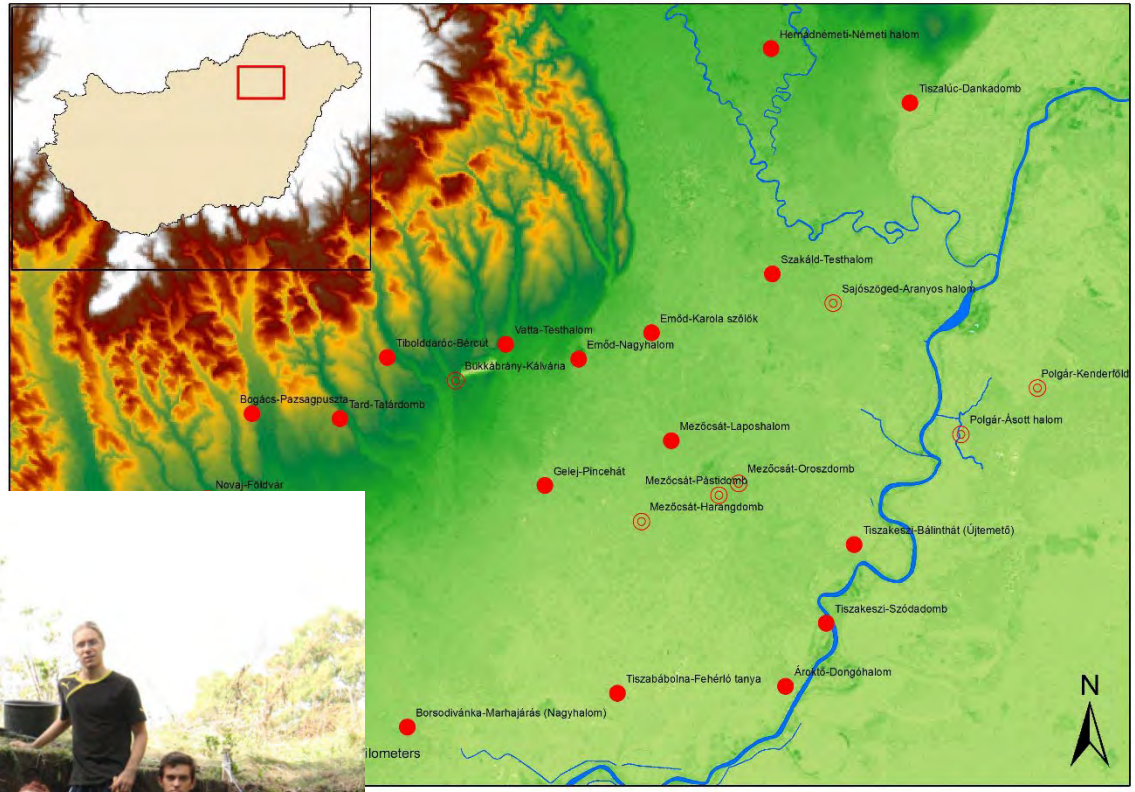
BORBAS 2015

BORBAS 2015

► Social Life on BORBAS Tells



BORBAS 2015

▲ Bronze Age friends and colleagues at Borsodivánka

BORBAS 2015

▲ Tübingen University excursion at Borsodivánka

BORBAS 2015

BORBAS 2015

BORBAS 2015

BORBAS 2015

BORBAS 2015

► The Salmonella campaign …

BORBAS 2015

▲ Accomodation in Borsodivánka I.

◀ Accomodation in Borsodivánka II.

BORBAS 2015

An excursion on Lake Constance

BORBAS 2015

▲ An excursion on Lake Tisza.

BORBAS 2015

BORBAS 2015

BORBAS 2015

BORBAS 2015

BORBAS 2015

2016

Magnetometer Survey

- Bogács-Pazsagpuszta
- Gelej-Pincehát (Pincehalom)
- Maklár-Baglyashalom
- Novaj-Földvár
- Tard-Tatárdomb

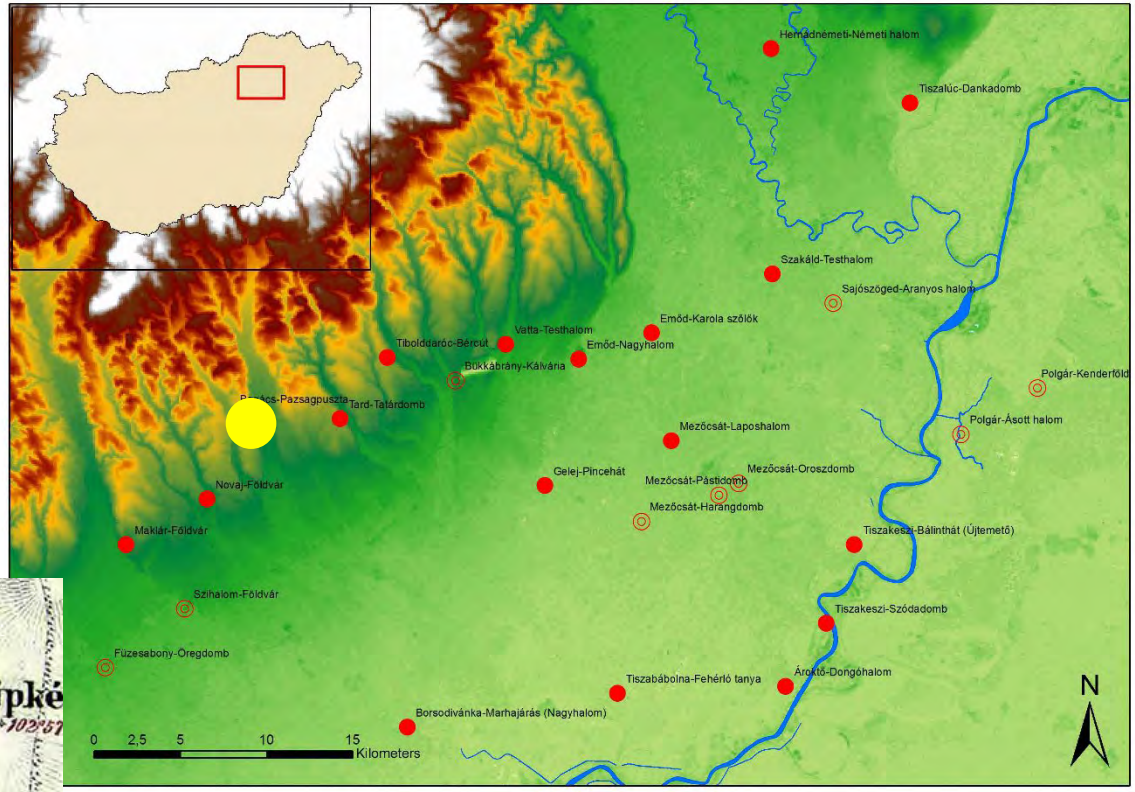
Surface Survey

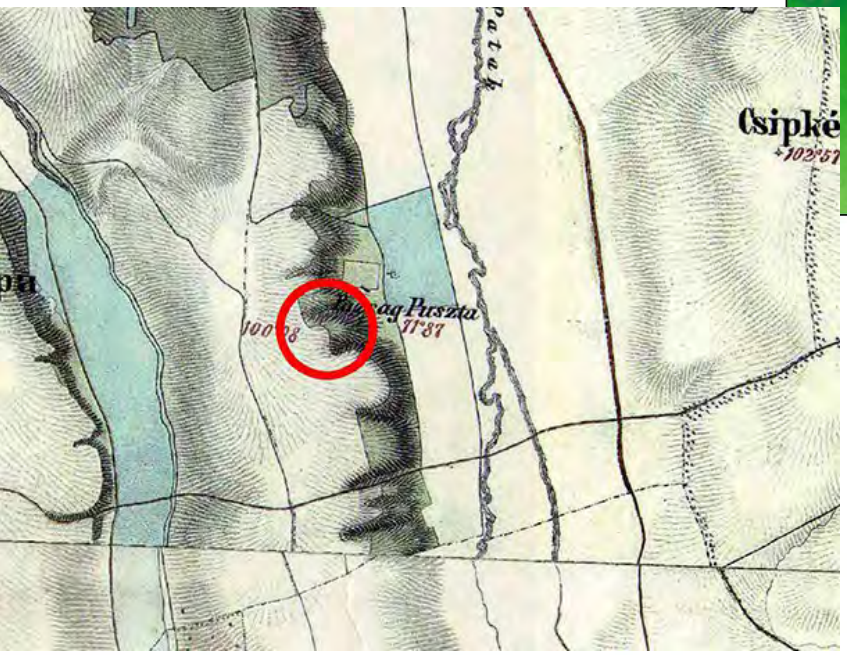
- Maklár-Baglyashalom
- Novaj-Földvár

Excavation (Profile Cleaning)

- Borsodivánka-Marhajárás (Nagyhalom)

► Bogács-Pazsagpuszta

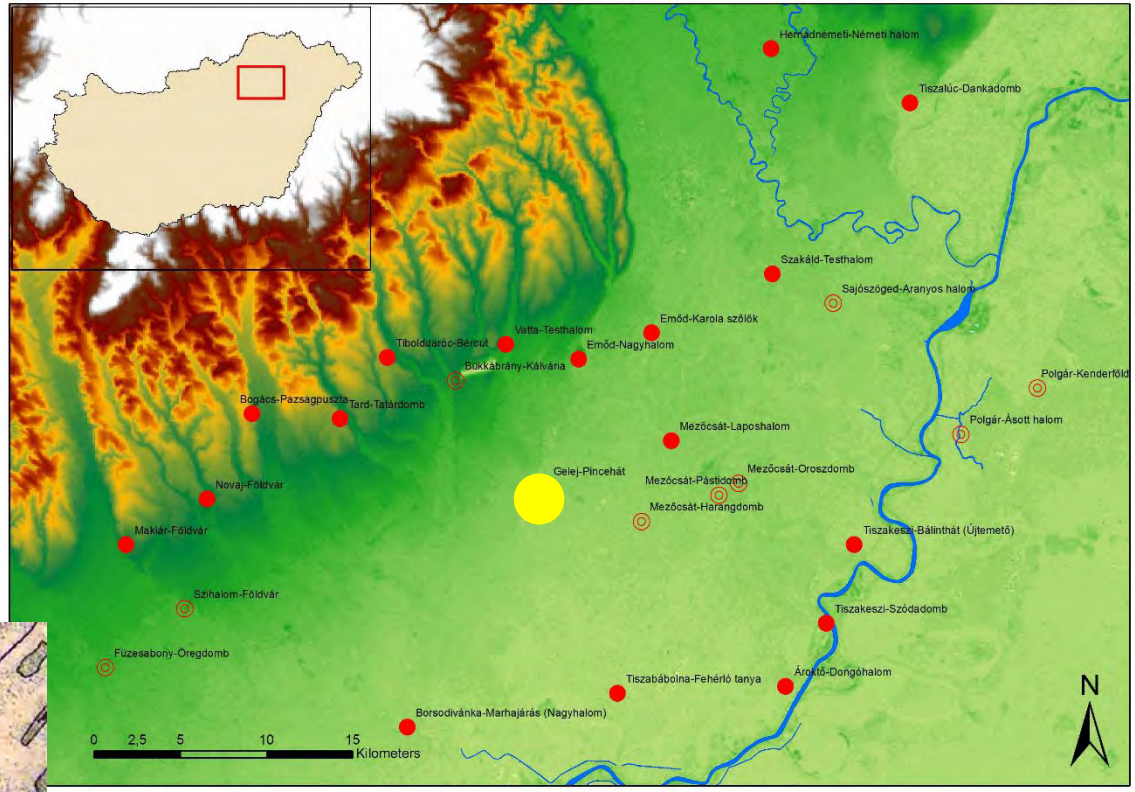


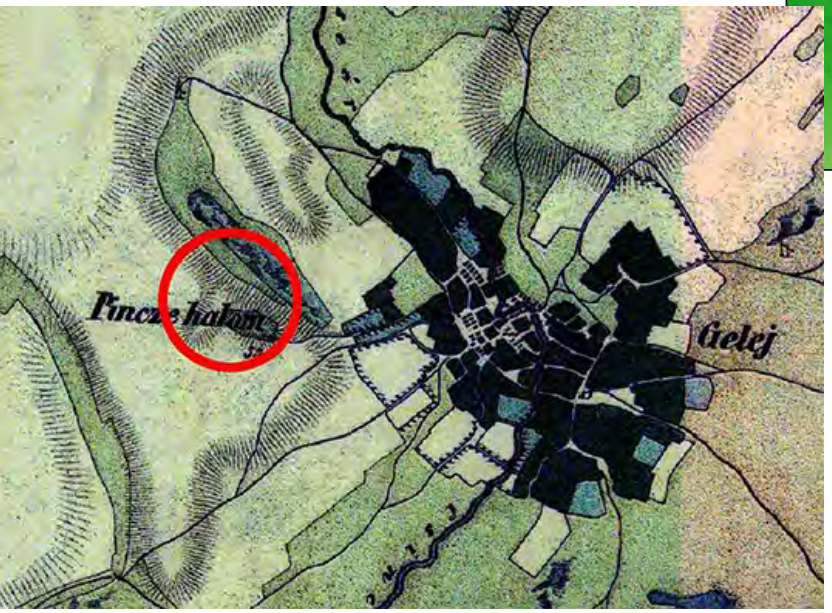


BORBAS 2016

BORBAS 2016

► Gelej-Pincehát (Pincehalom)



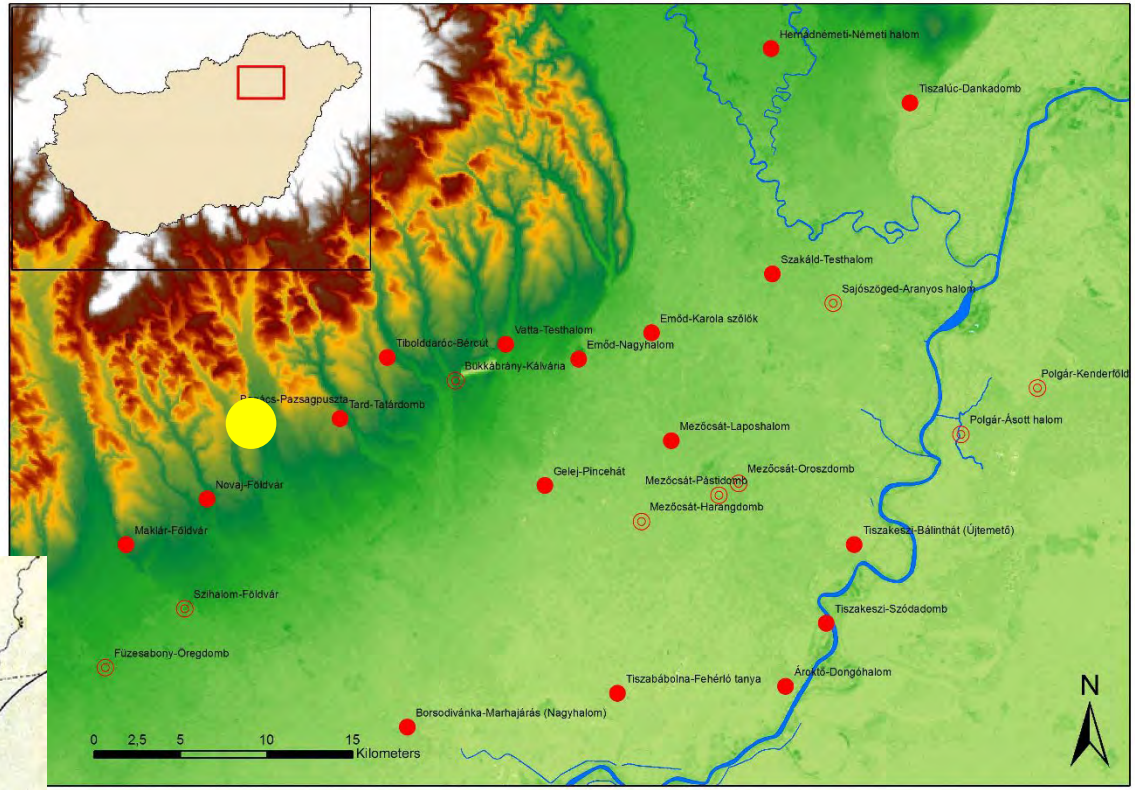


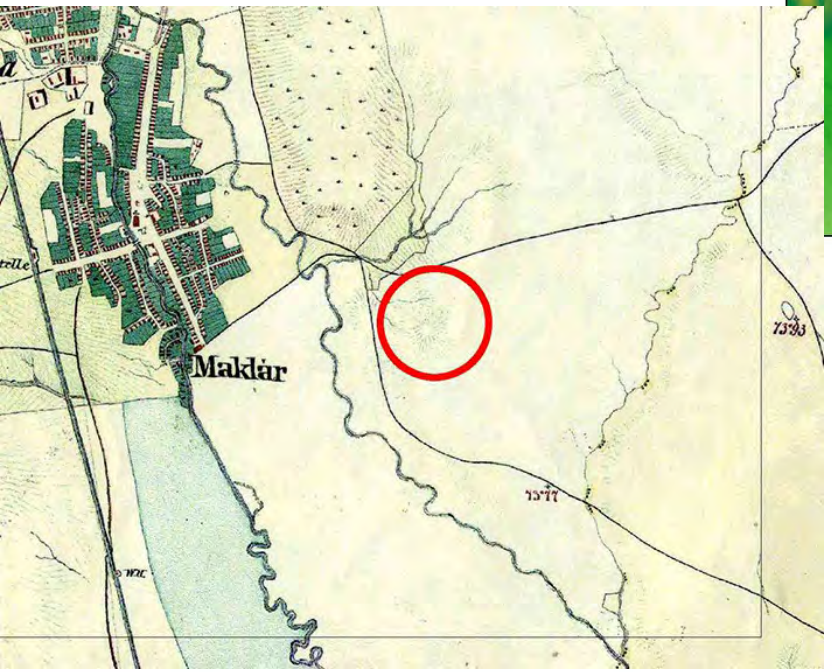
BORBAS 2016

BORBAS 2016

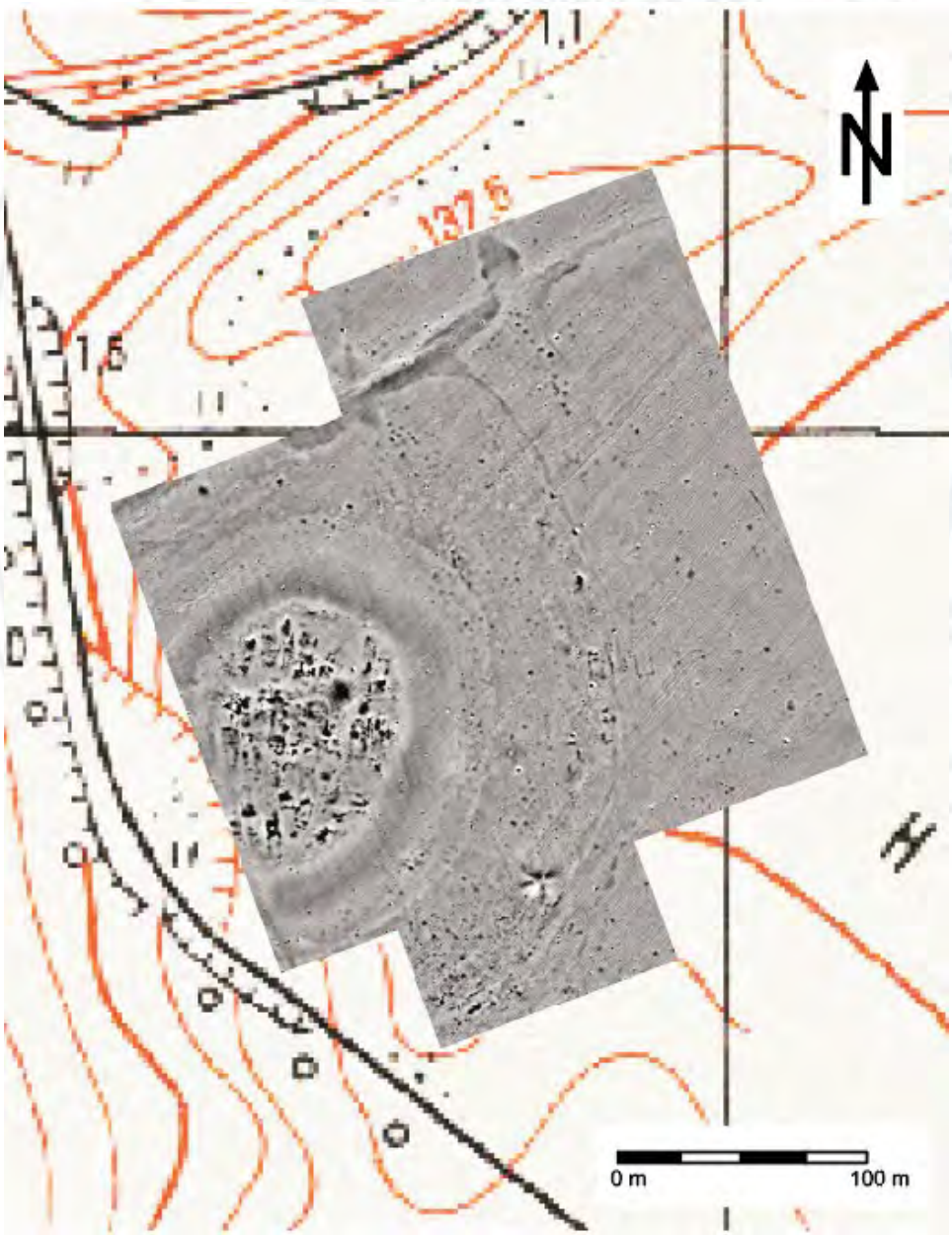
BORBAS 2016

► Maklár-Baglyashalom

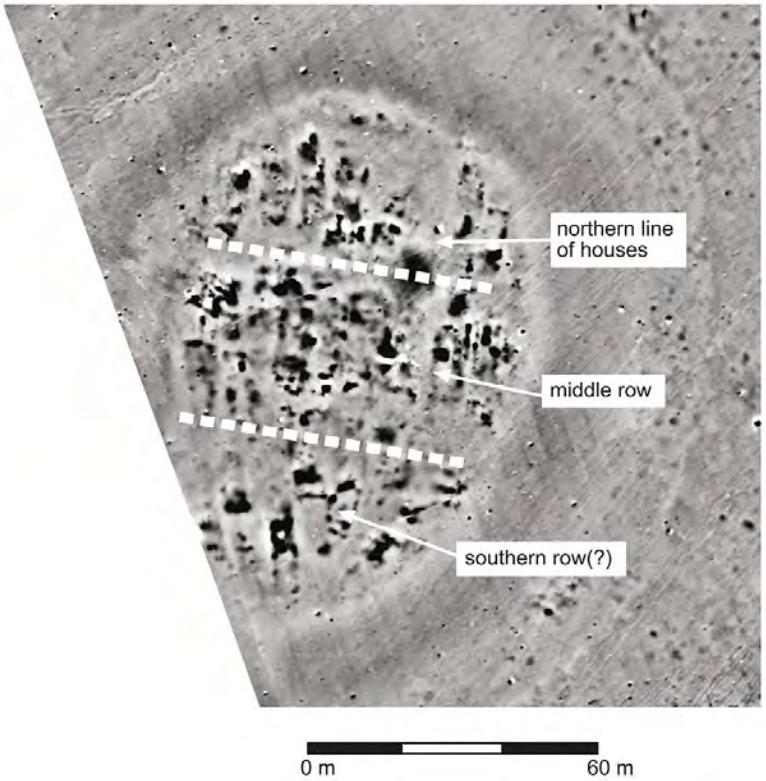




BORBAS 2016

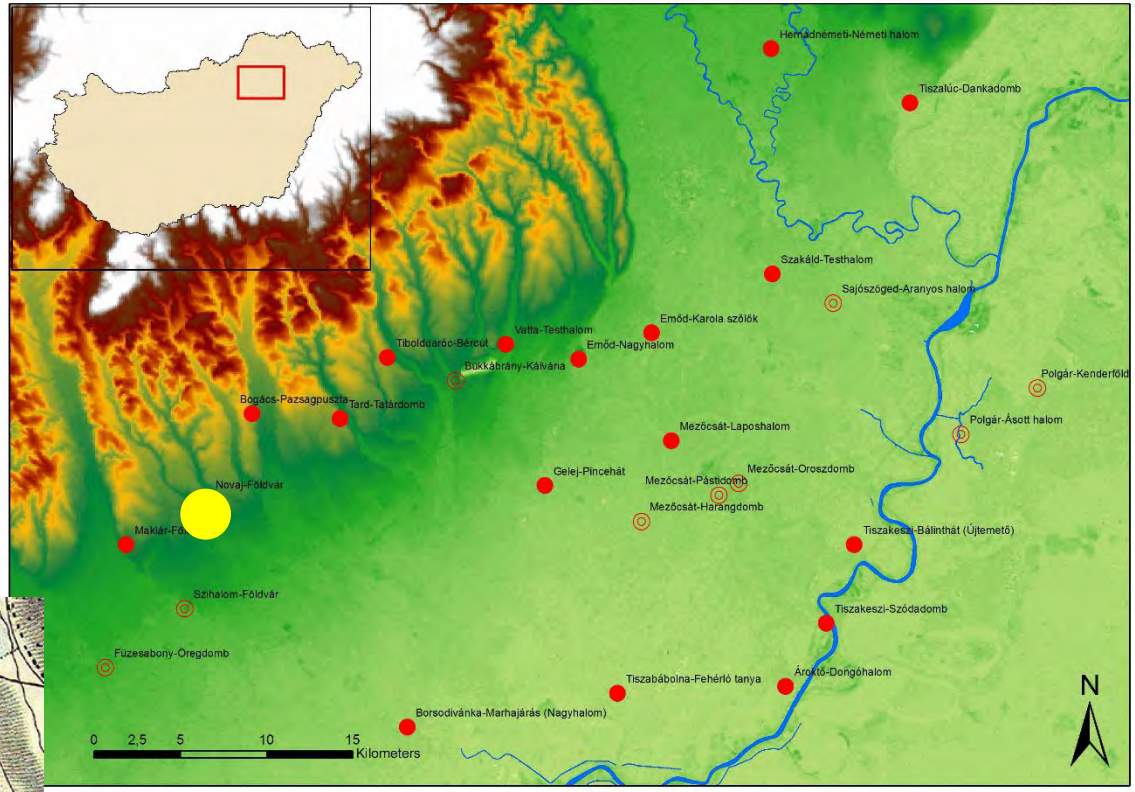


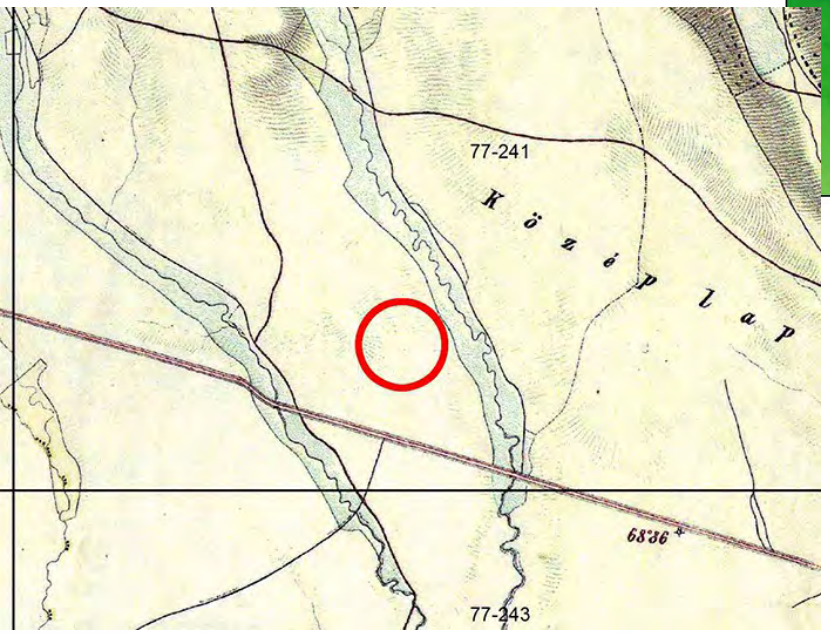
► Maklár-Baglyashalom. Results of magnetometry.

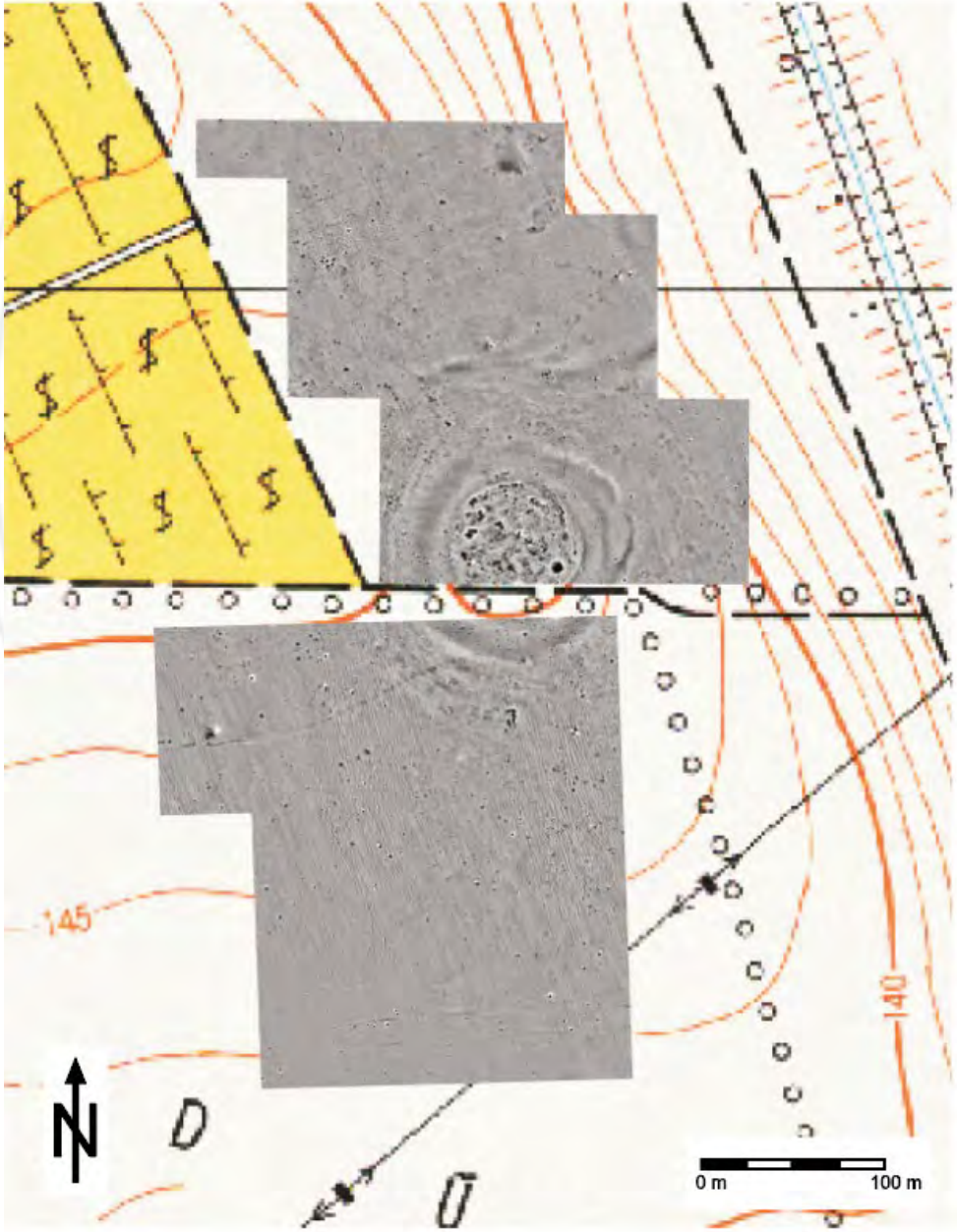


BORBAS 2016

► Novaj-Földvár



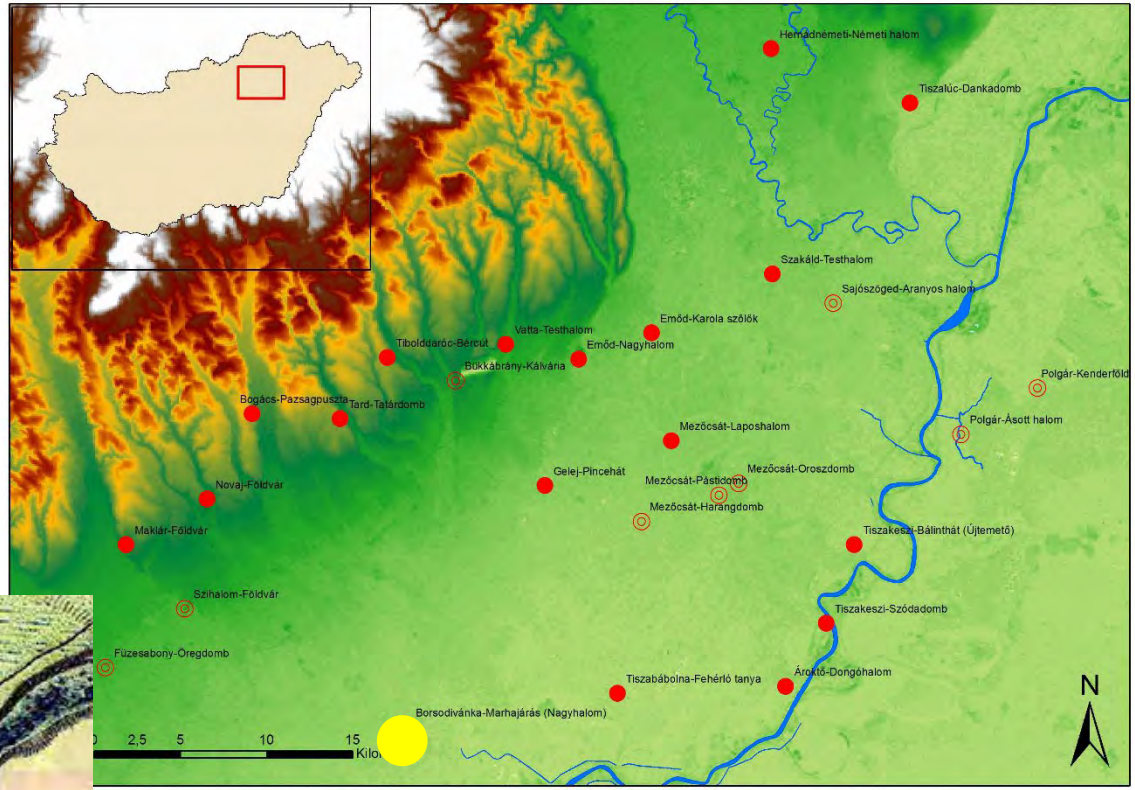


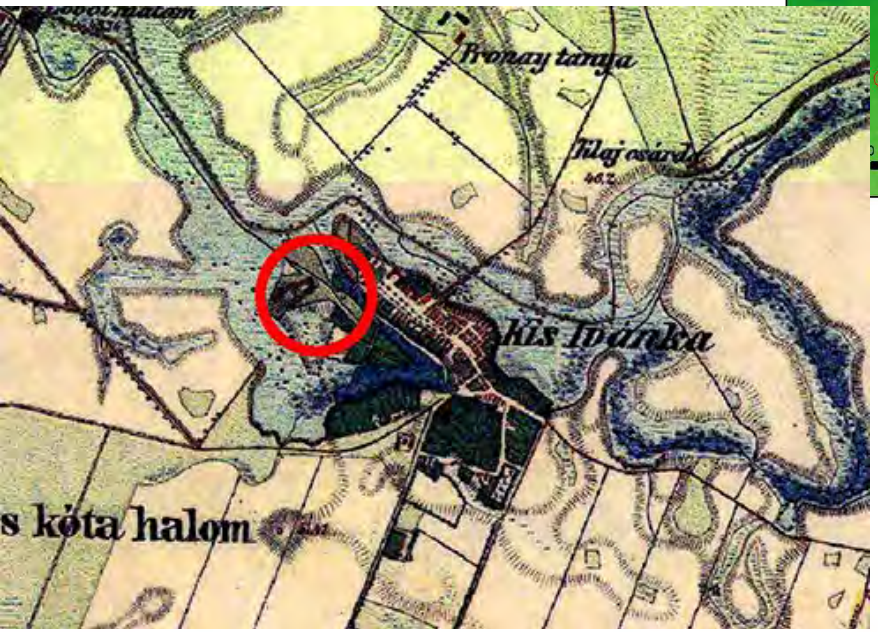


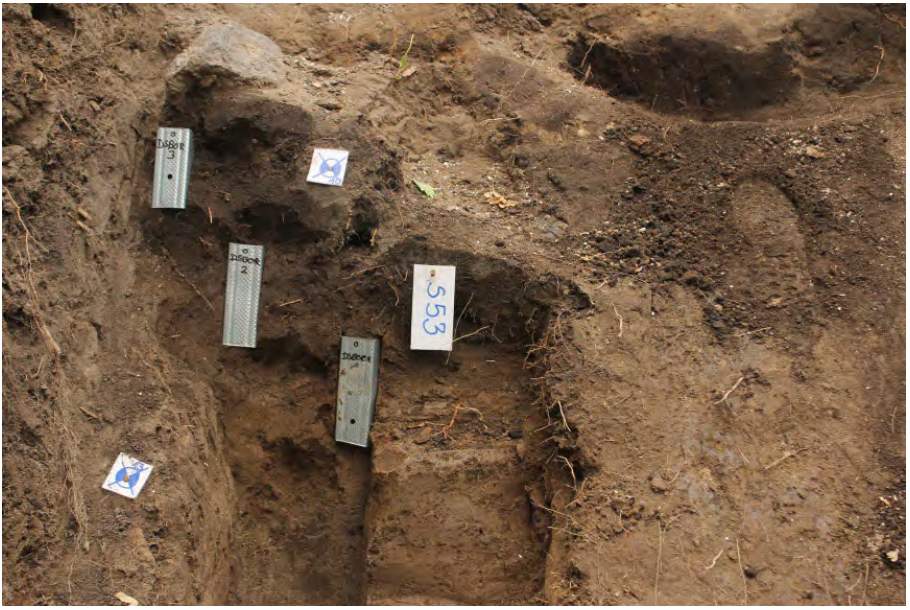
► Novaj-Földvár. Results of magnetometry.

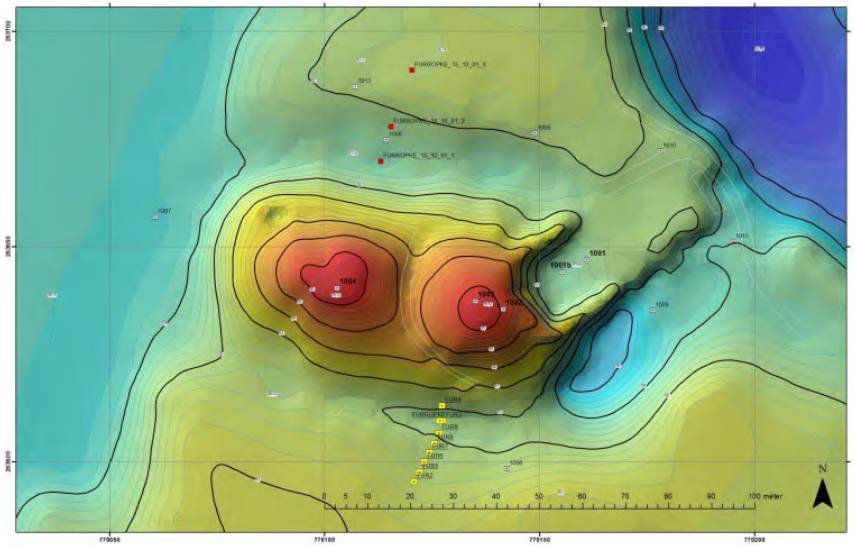
BORBAS 2016

► Borsodivánka-Marhajárás (Nagyhalom)







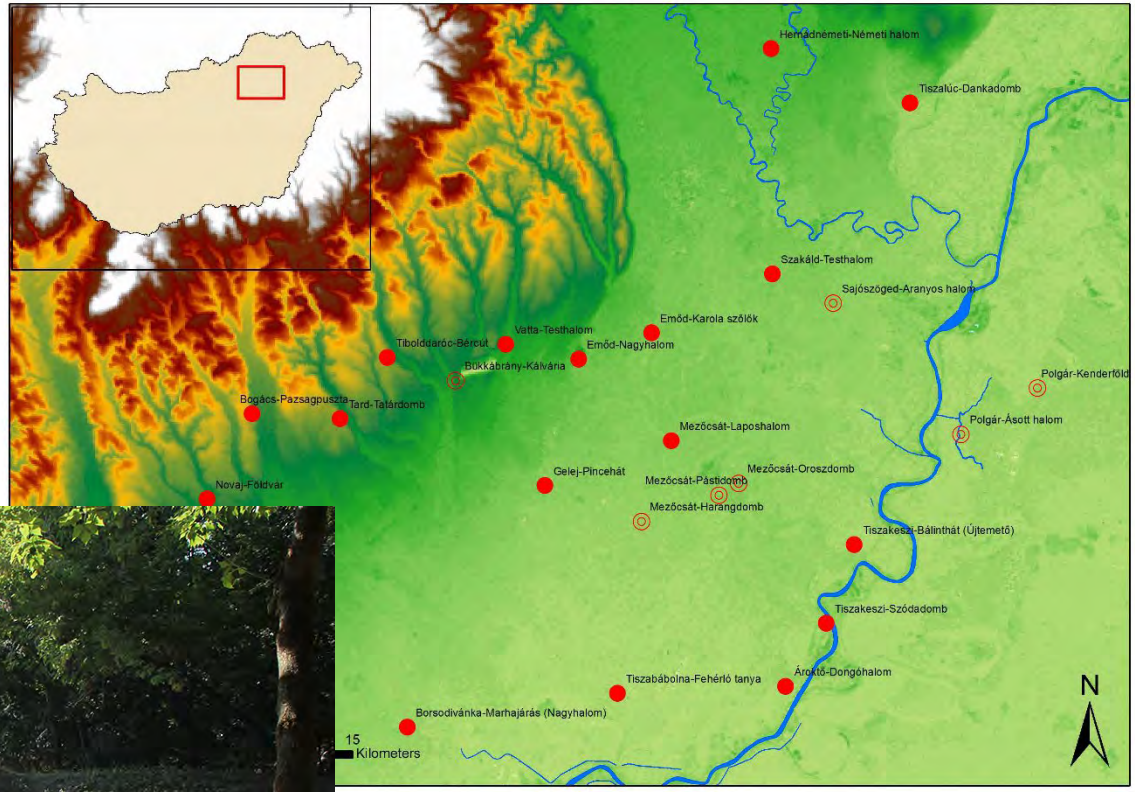


Borsodivánka Nagy-halom geodéziai felmérése
2015. október

BORBAS 2016

Auffüllung
Hausschuttschicht+Boden
Phytolith- und Müllschichten
Lehmauffüllung –
Planierungschicht
Unterste Hausschichten
Grube
Lehmplattform
Urhumus

► Social Life on BORBAS Tells



BORBAS 2016

► HARC meeting held at Borsodivánka

BORBAS 2016

BORBAS 2016

BORBAS 2016

BORBAS 2016

► HARC meeting and excursion to Novaj-Földvár.

BORBAS 2016

BORBAS 2016

BORBAS 2016

BORBAS 2016

▲ Accomodation in Tiszabábolna-Fehérló tanya.

BORBAS 2016

BORBAS 2016

BORBAS 2016

BORBAS 2016

BORBAS 2016

▼ An excursion to Hortobágy.

BORBAS 2016

BORBAS 2016

BORBAS 2016

▲ An excursion to Eger.

◄ Egri Vár, Siege-play.

BORBAS 2016

BORBAS 2016

BORBAS 2016

BORBAS 2016

BORBAS 2016

BORBAS 2016

2017

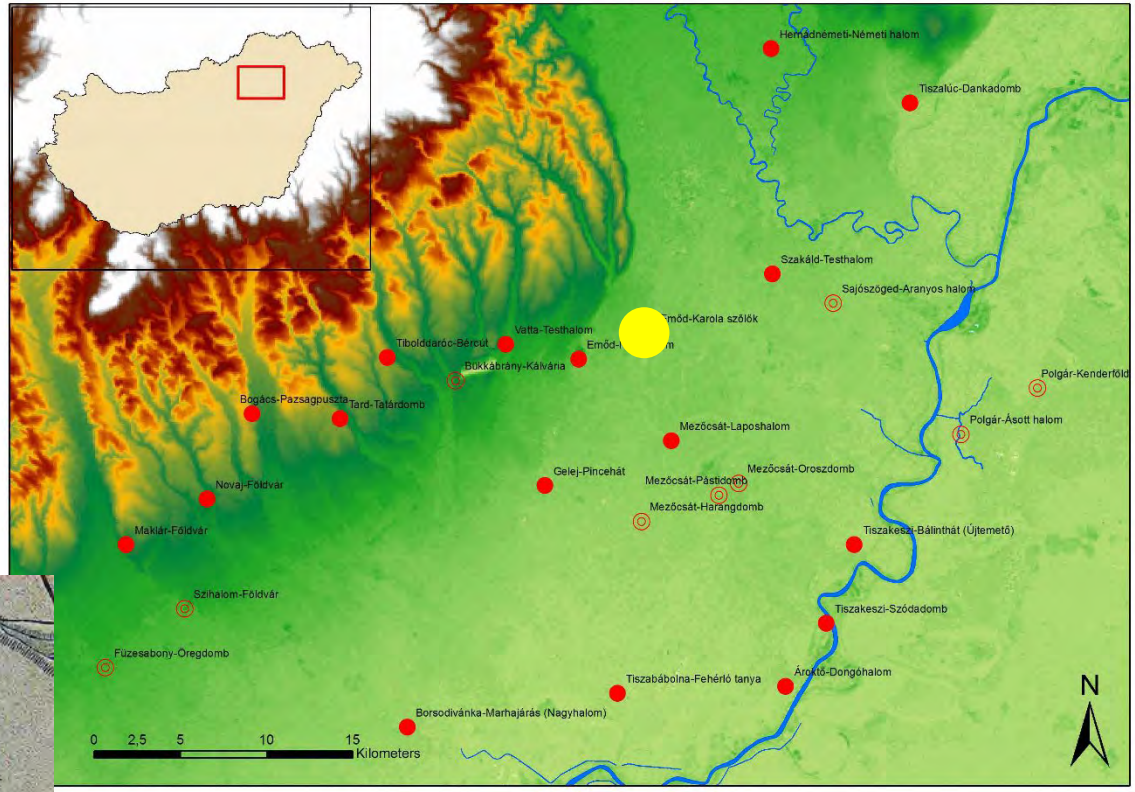
Systematic Core Drilling

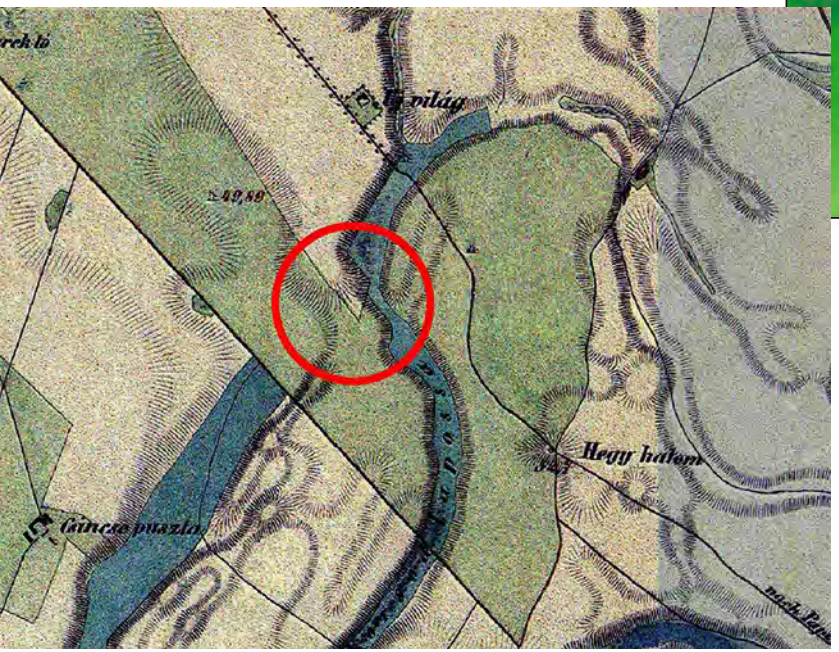
- ► Emőd-Karola szőlők
- ► Mezőcsát-Laposhalom
- ► Tard-Tatárdomb
- ► Tibolddaróc-Bércút
- ► Tiszakeszi-Szódadomb

Excavation

- ► Borsodivánka-Marhajárás (Nagyhalom)

► Emőd-Karola szőlők



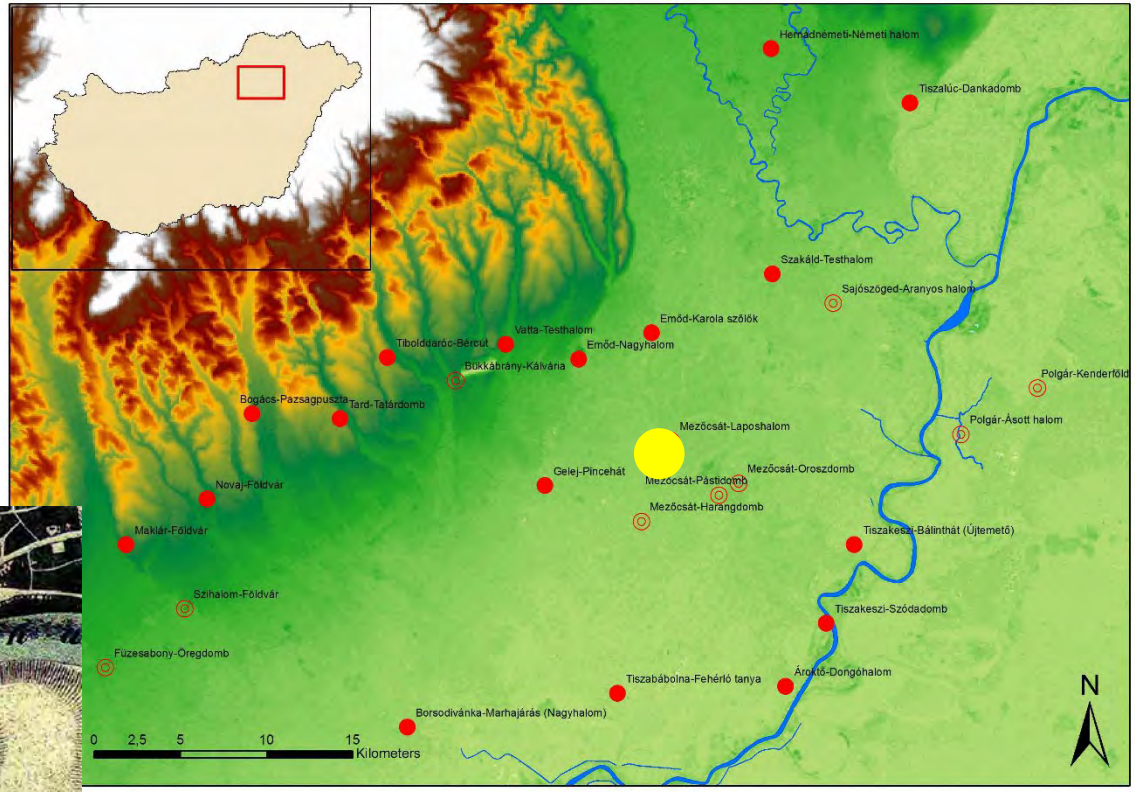


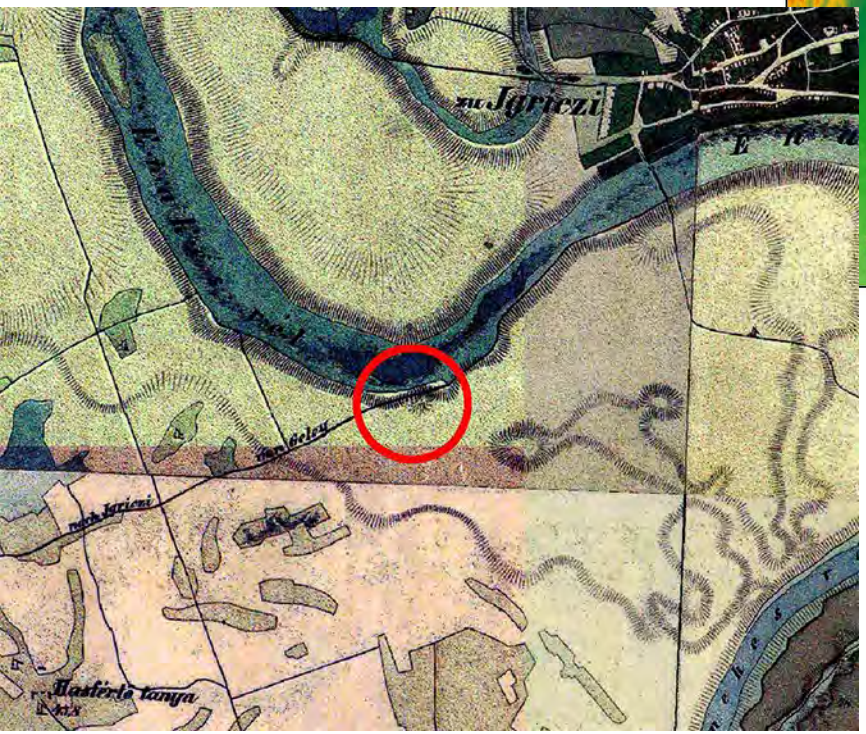
BORBAS 2017

▲ First attempts at core drilling with the new equipment.

BORBAS 2017

► Mezőcsát-Laposhalom

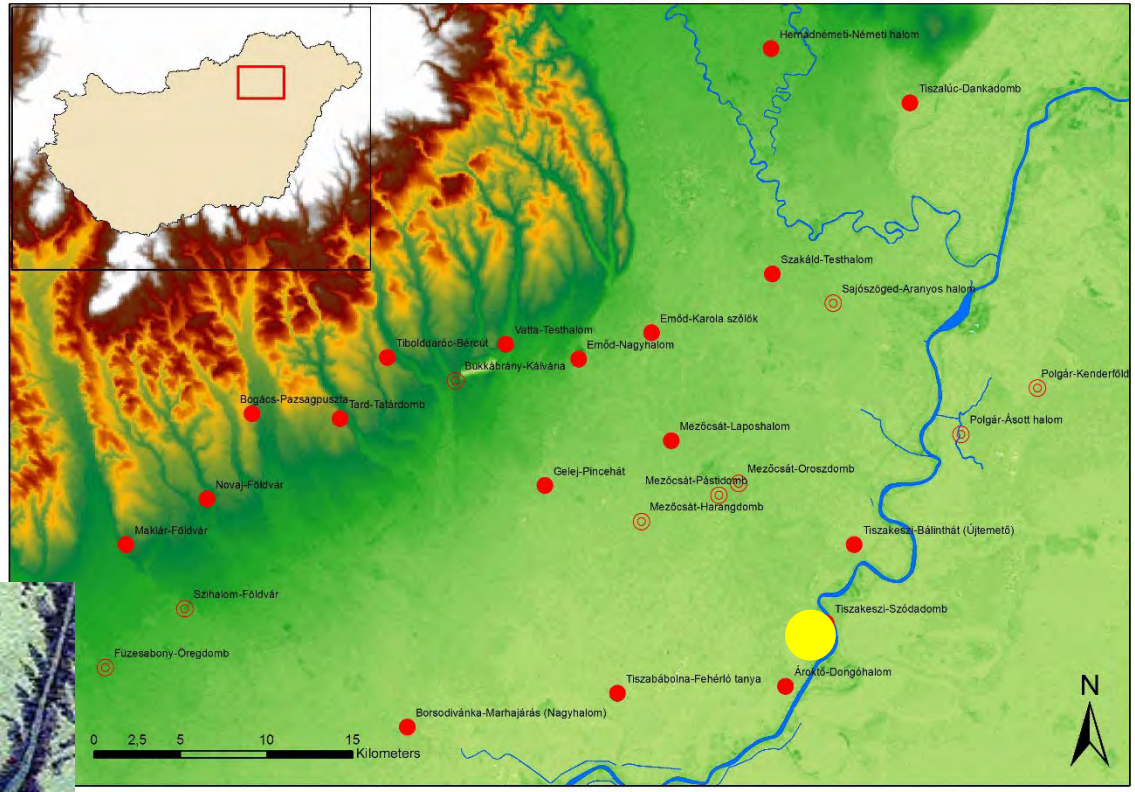




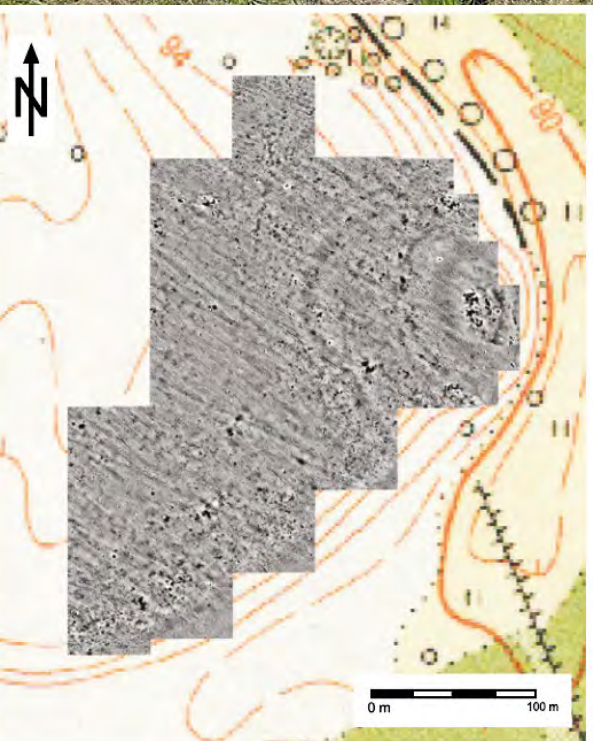
BORBAS 2017

middle / north-west, one or less likely two lines of houses
south-eastern line of houses
0 m
60 m

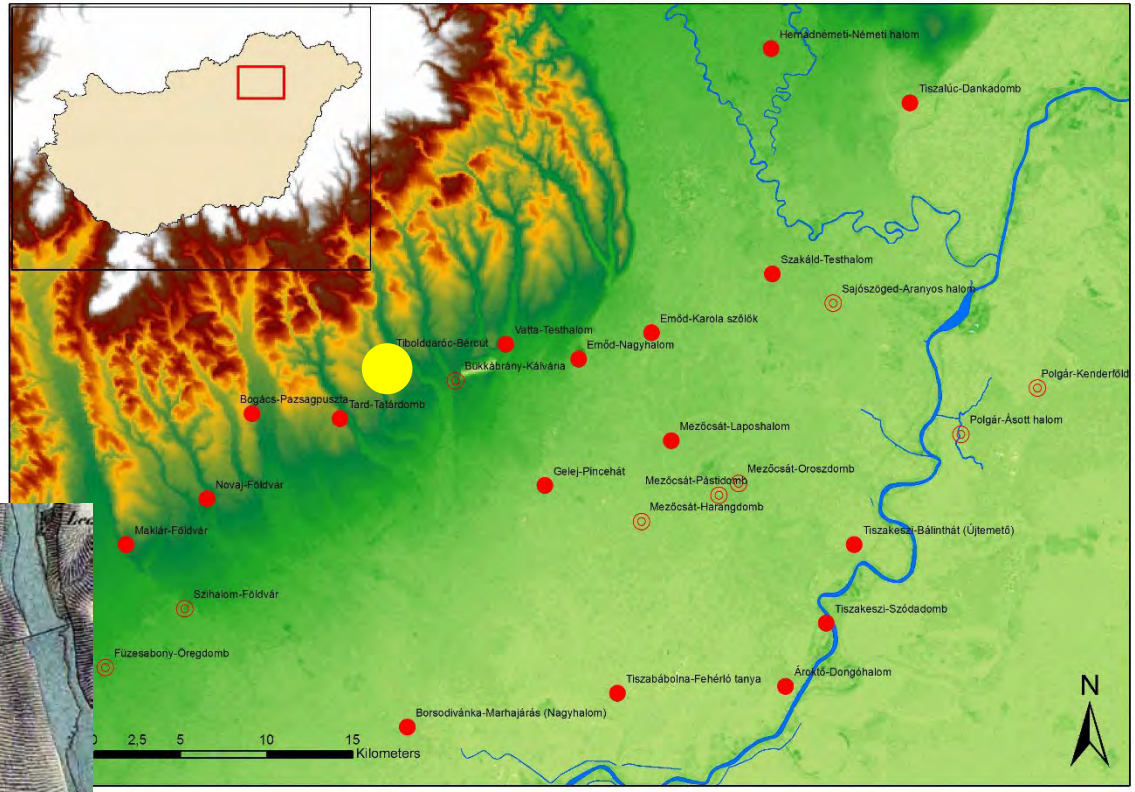
► Tiszakeszi-Szódadomb

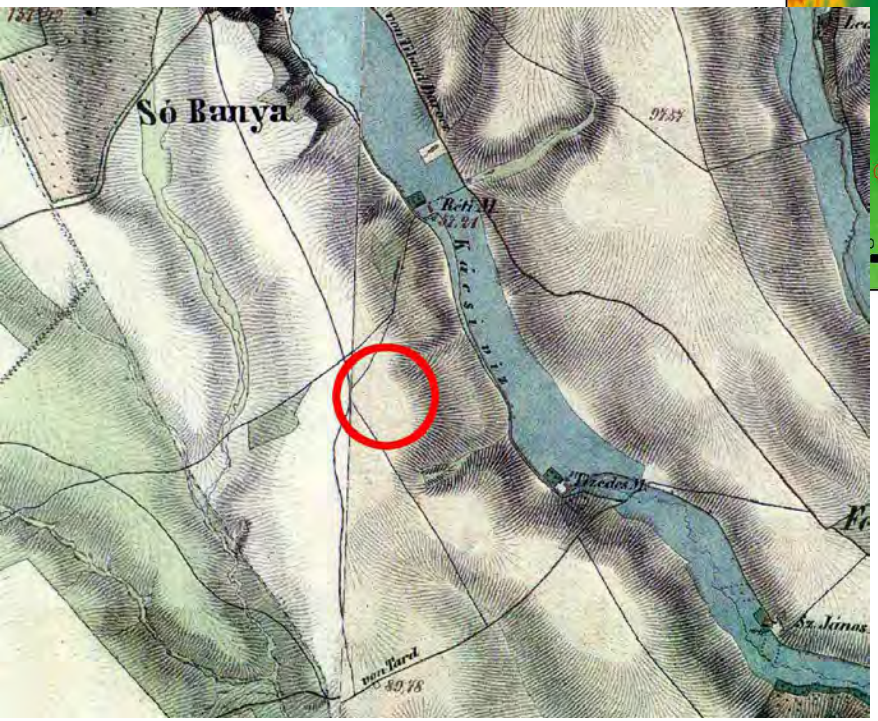


BORBAS 2017


N
0 m
100 m

► Tibolddaróc-Bércút



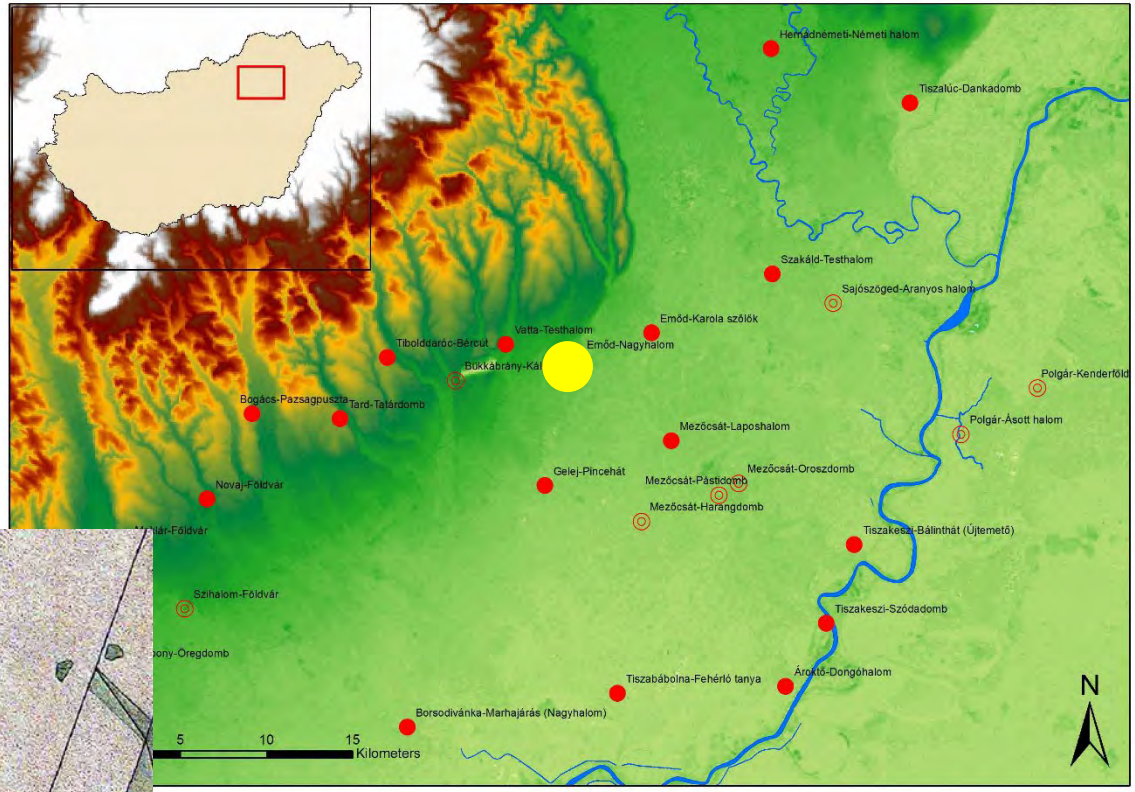


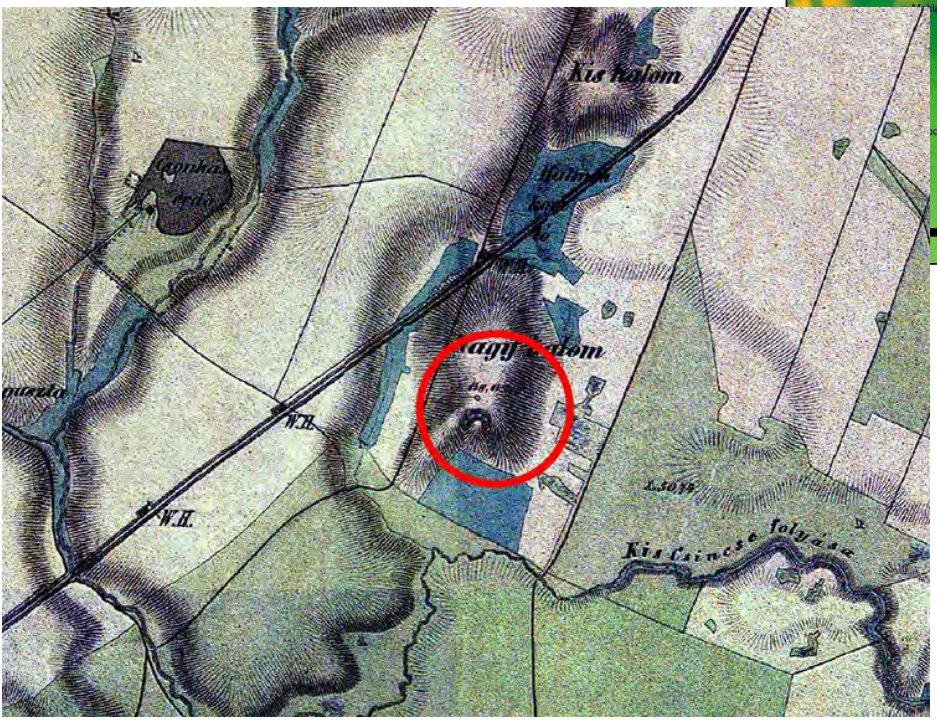
BORBAS 2017

BORBAS 2017

BORBAS 2017

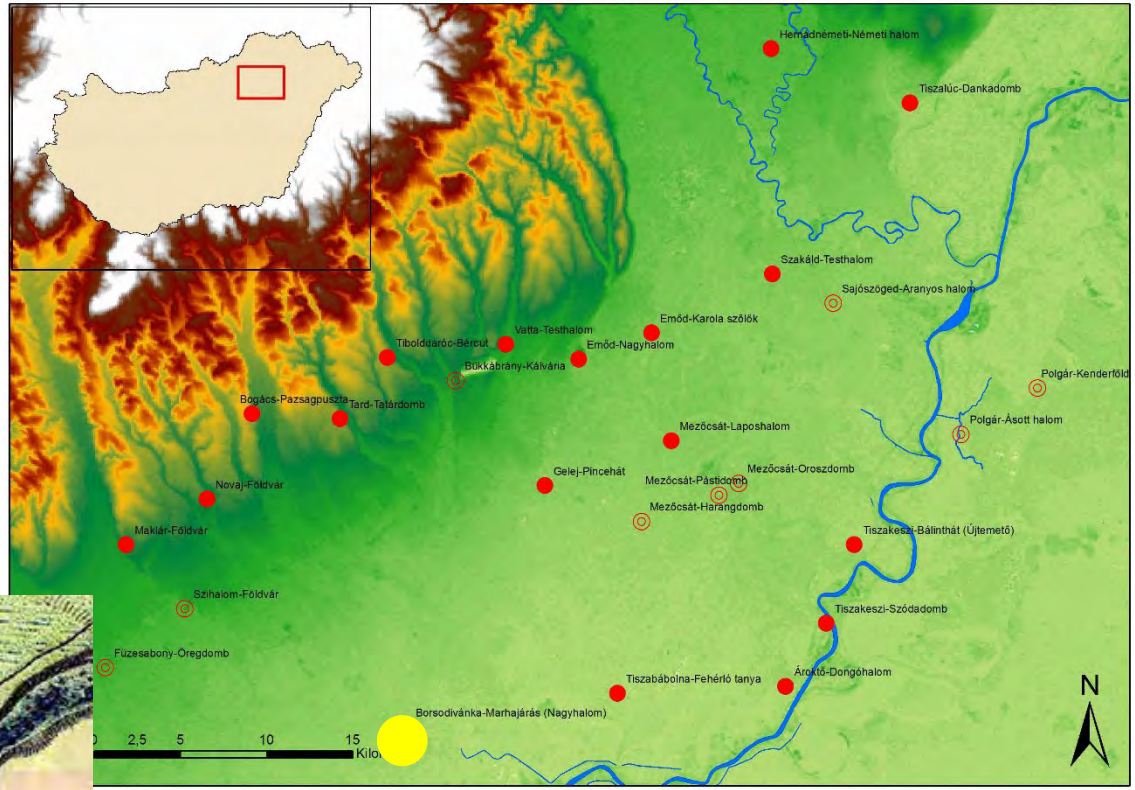
► Emőd-Nagyhalom

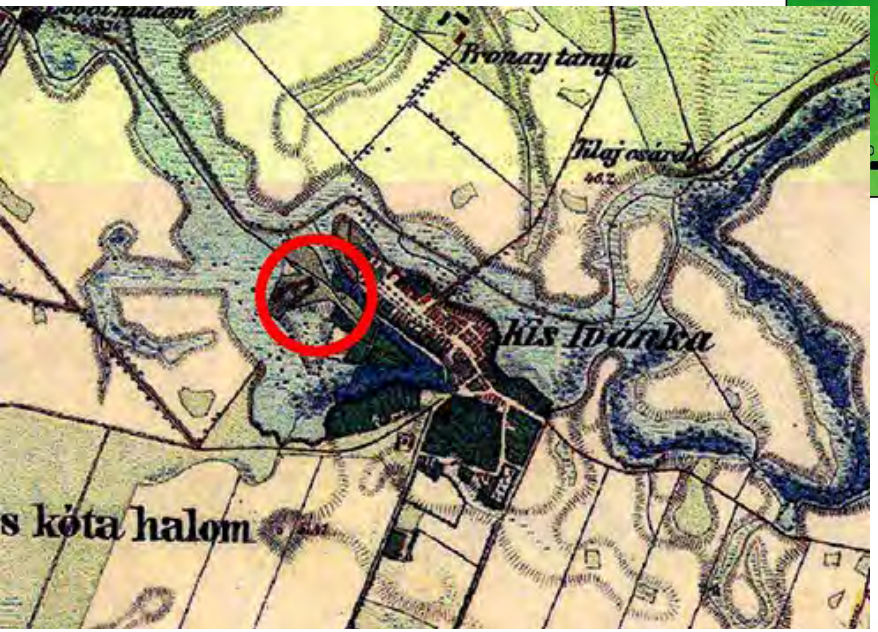




BORBAS 2017

► Borsodivánka-Marhajárás (Nagyhalom)





BORBAS 2017

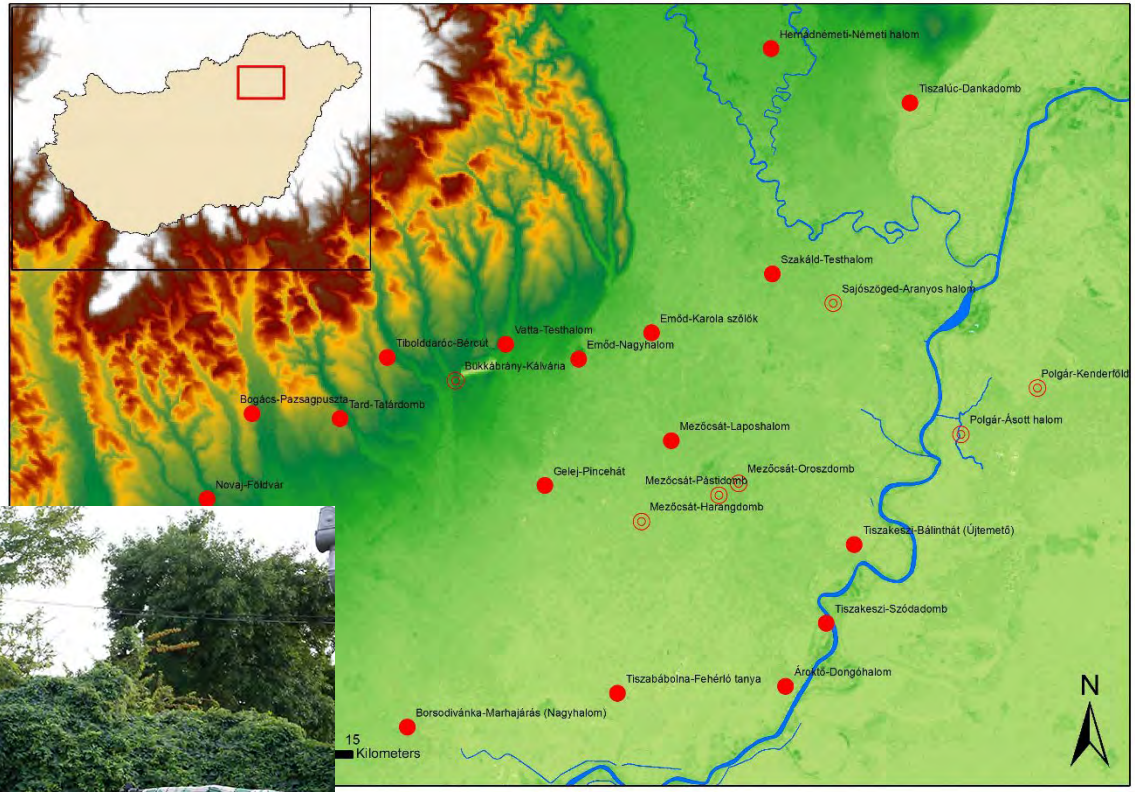
BORBAS 2017

BORBAS 2017

BORBAS 2017

BORBAS 2017

► Social Life on BORBAS Tells



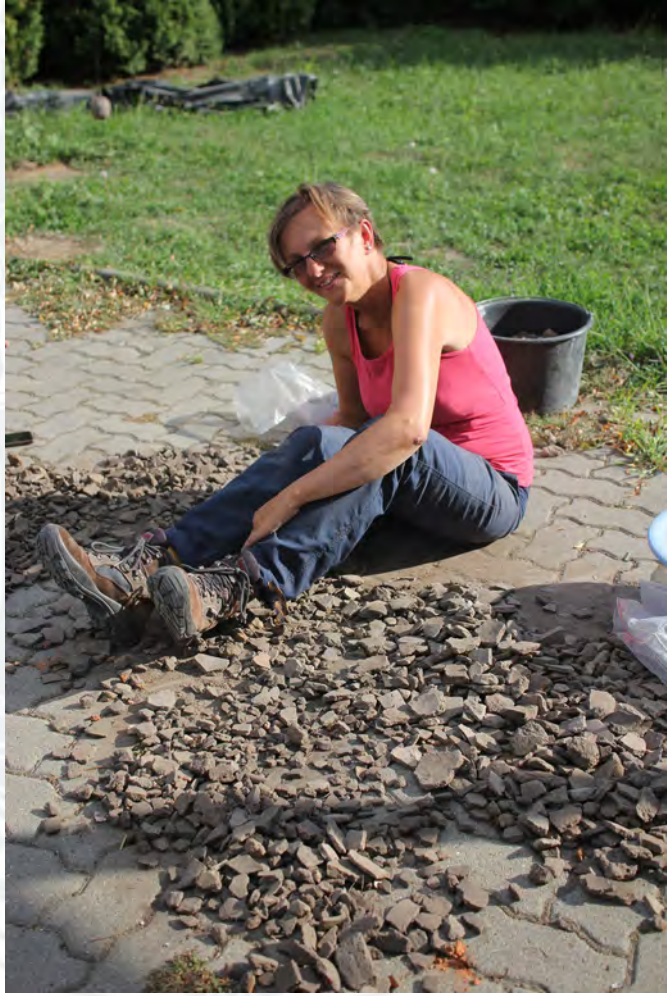
BORBAS 2017

BORBAS 2017

▲ Borsodivánka Mayor visiting the excavation

BORBAS 2017

BORBAS 2017



BORBAS 2017

BORBAS 2017

▲ The workshop of hearts to fix our drill cores.

BORBAS 2017

BORBAS 2017

2018

Systematic Core Drilling

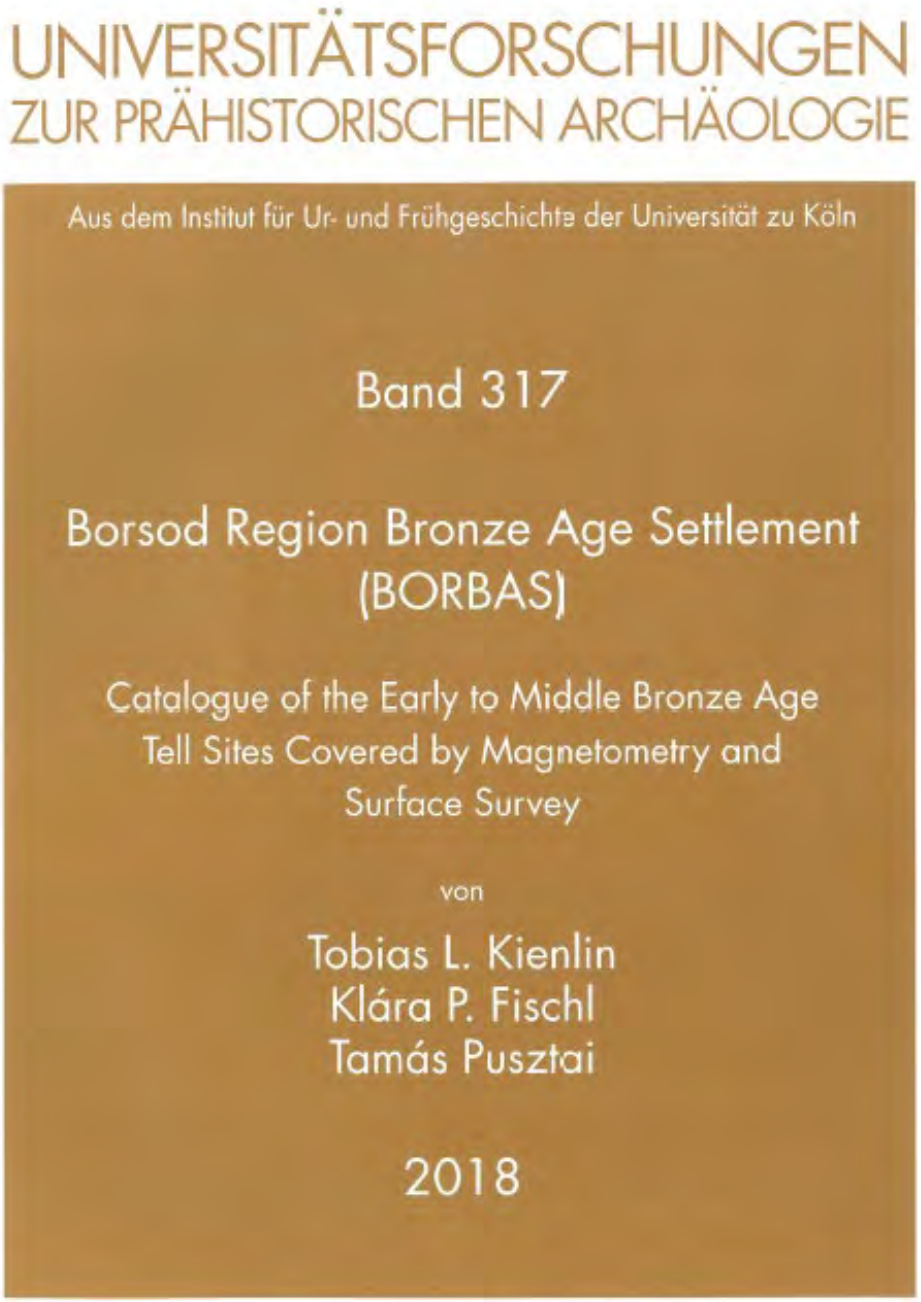
- ► Borsodivánka-Marhajárás (Nagyhalom)
- ► Emőd-Nagyhalom
- ► Tibolddaróc-Bércút

Surface Survey

- ► Tard-Tatárdomb

Excavation

- ► Borsodivánka-Marhajárás (Nagyhalom)


UNIVERSITÄTSFORSCHUNGEN
ZUR PRÄHISTORISCHEN ARCHÄOLOGIE
Aus dem Institut für Ur- und Frühgeschichte der Universität zu Köln
Band 317
Borsod Region Bronze Age Settlement
(BORBAS)
Catalogue of the Early to Middle Bronze Age
Tell Sites Covered by Magnetometry and
Surface Survey
von
Tobias L. Kienlin
Klára P. Fischl
Tamás Pusztai
2018
VERLAG DR. RUDOLF HABELT GMBH, BONN

BORBAS 2018

Ausgrabung auf der bronzezeitlichen Tell-Siedlung von Borsodivanka (Nordost-Ungarn)

Geländepraktikum
Sa., 15. September bis
So., 7. Oktober 2018

Aus organisatorischen Gründen kann in diesem Jahr als Geländepraktikum nur eine dreiwöchige Kampagne zu dem oben genannten Termin angeboten werden. Im Rahmen der Kampagne wird die Ausgrabung in den oberen Schichten der Tellsiedlung von Borsodivanka fortgesetzt. Neben der archäologischen Dokumentation der Siedlungsschichten und Befunde sollen Proben für die naturwissenschaftliche Datierung und paläobotanische Untersuchungen entnommen werden.

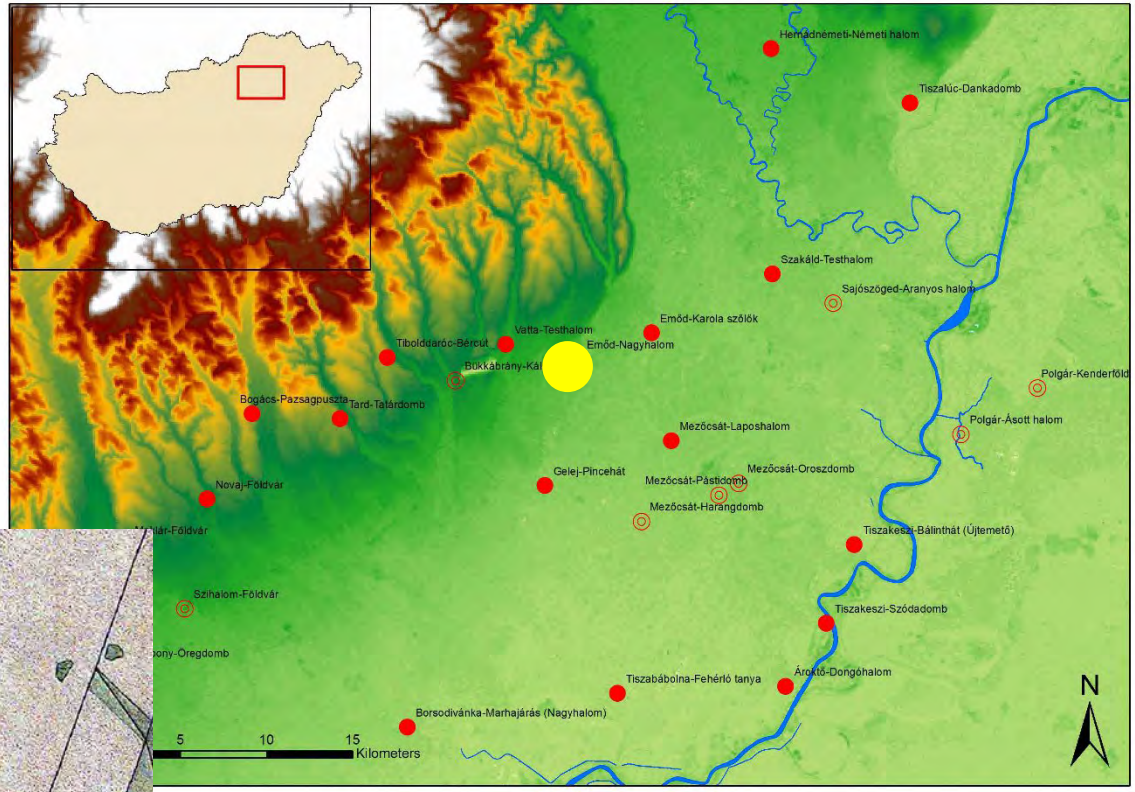
Nachdem im vergangenen Jahr die geomagnetische Prospektion auf den bronzezeitlichen Siedlungen der Borsodebene zwischen Bükk-Gebirge und Theiss weitgehend abgeschlossen wurde, stehen in diesem Projektteil nur noch einzelne Nacharbeiten an. Statt dessen wird das 2017 begonnene systematische Bohrprogramm auf den zuvor prospektierten Siedlungshügeln fortgesetzt.

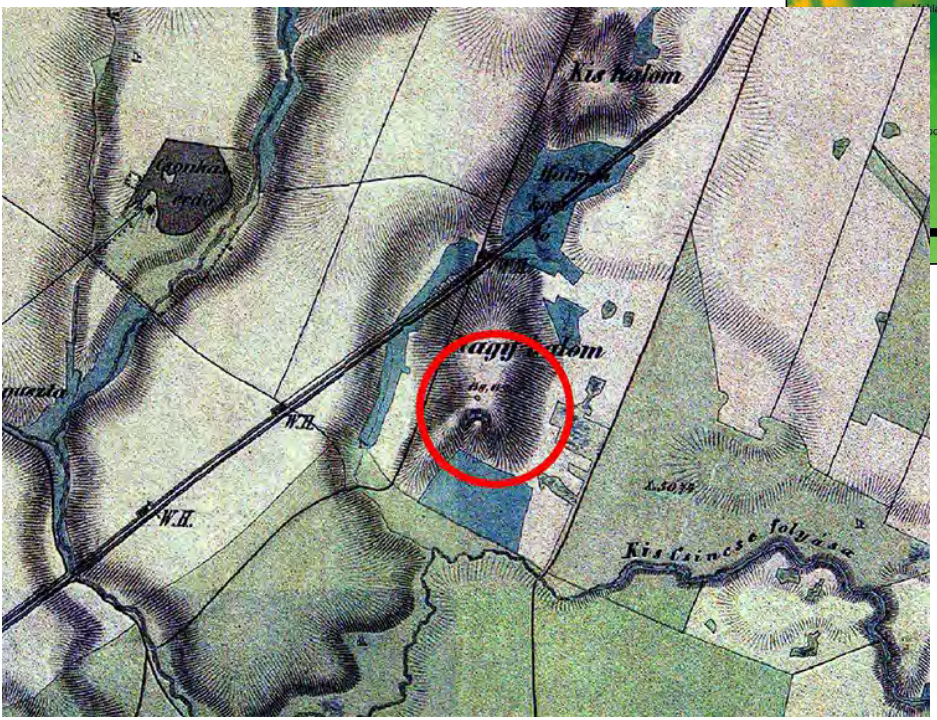
Das Geländepraktikum findet im Rahmen eines Projekts des Instituts für Ur- und Frühgeschichte der Universität zu Köln, der Universität und des Herman Otto Museums in Miskolc statt. Sie haben Gelegenheit, die Grundzüge der Schichtgrabung, der geomagnetischen Prospektion und der Handhabung einer Rammkernsonde zur Entnahme von Bohrkernen zu erlernen. Sie erhalten eine Einführung in die Archäologie der Bronzezeit des Karpatenbeckens.

Weitere Informationen zu unserem Projekt entnehmen Sie bitte unseren Publikationen auf academia.edu.

BORBAS 2018

► Emőd-Nagyhalom



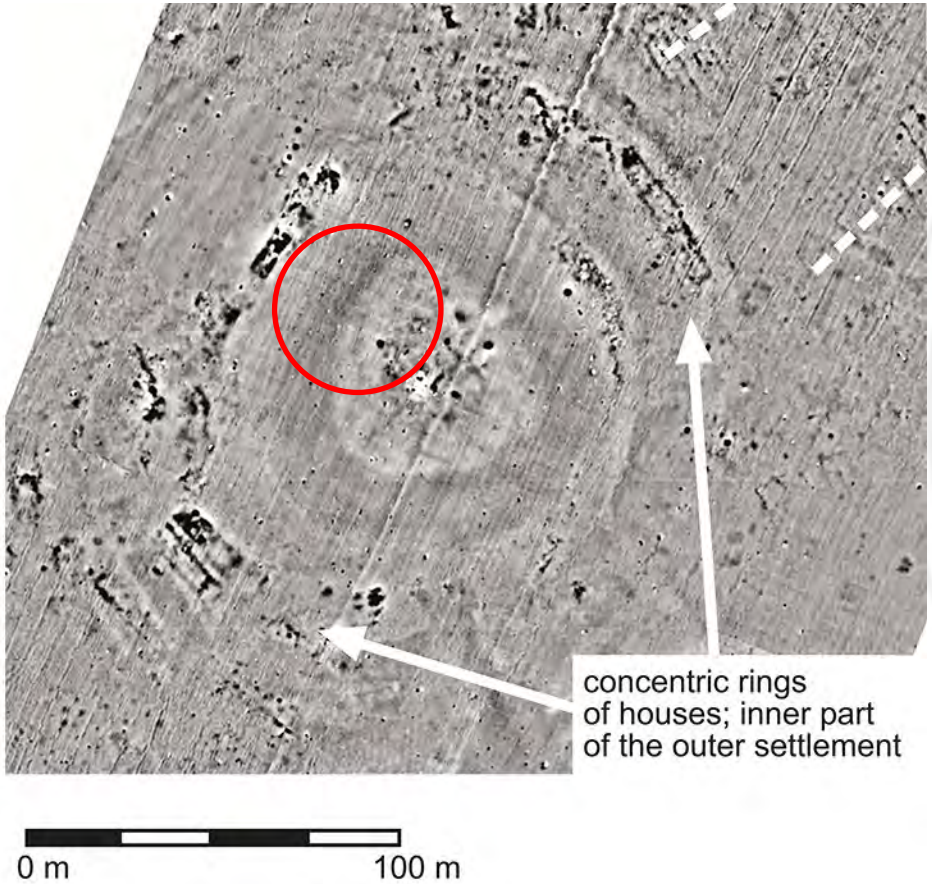


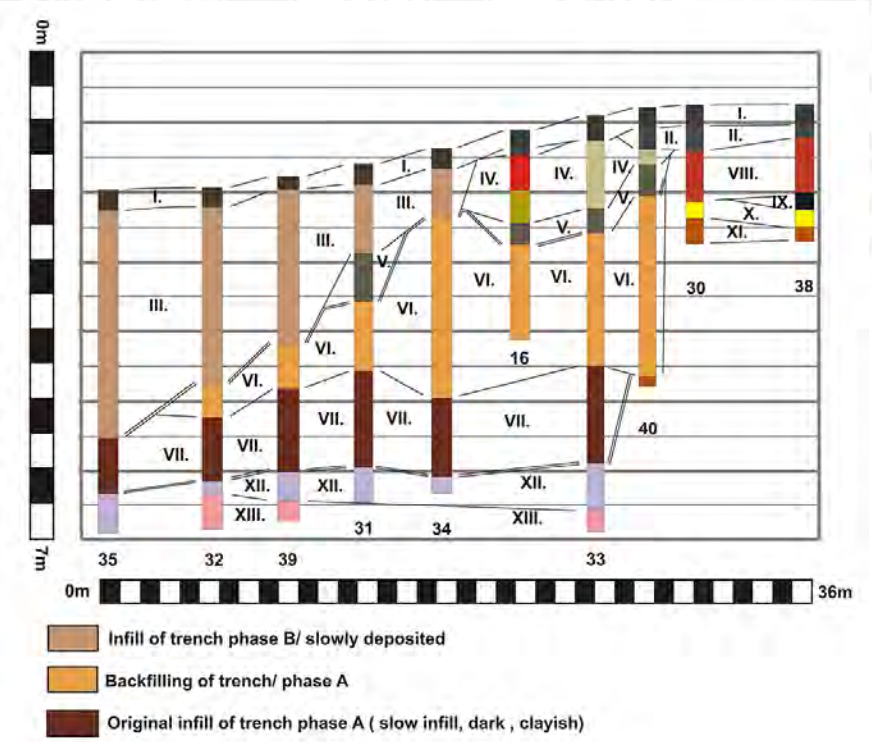
BORBAS 2018

BORBAS 2018

BORBAS 2018

BORBAS 2018

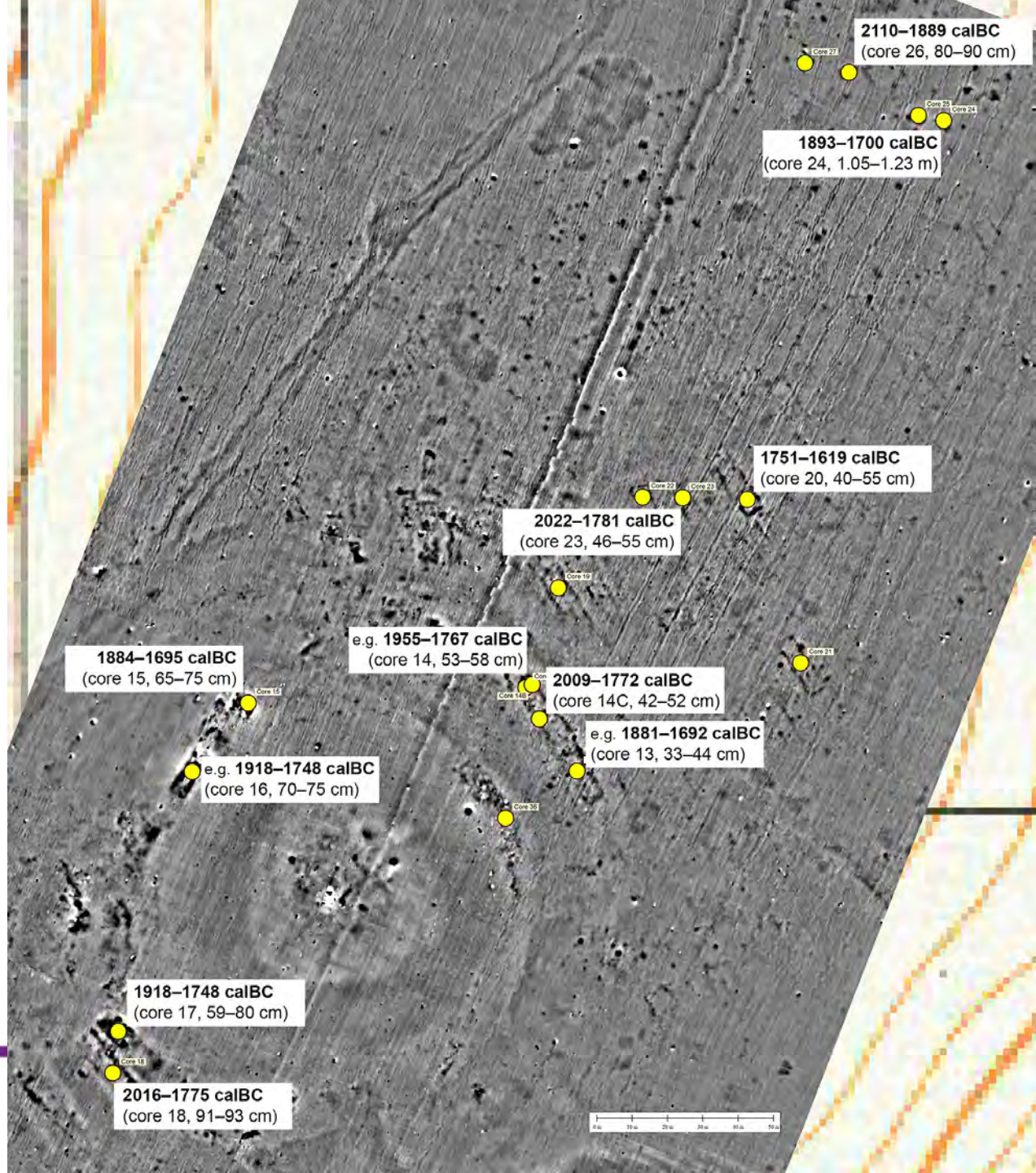




► Emőd-Nagyhalom. Profile through the north-western section of the ditch and interpretation of the stratigraphy.

BORBAS 2018

► C14 dates from various houses in the outer settlement of Emőd-Nagyhalom.

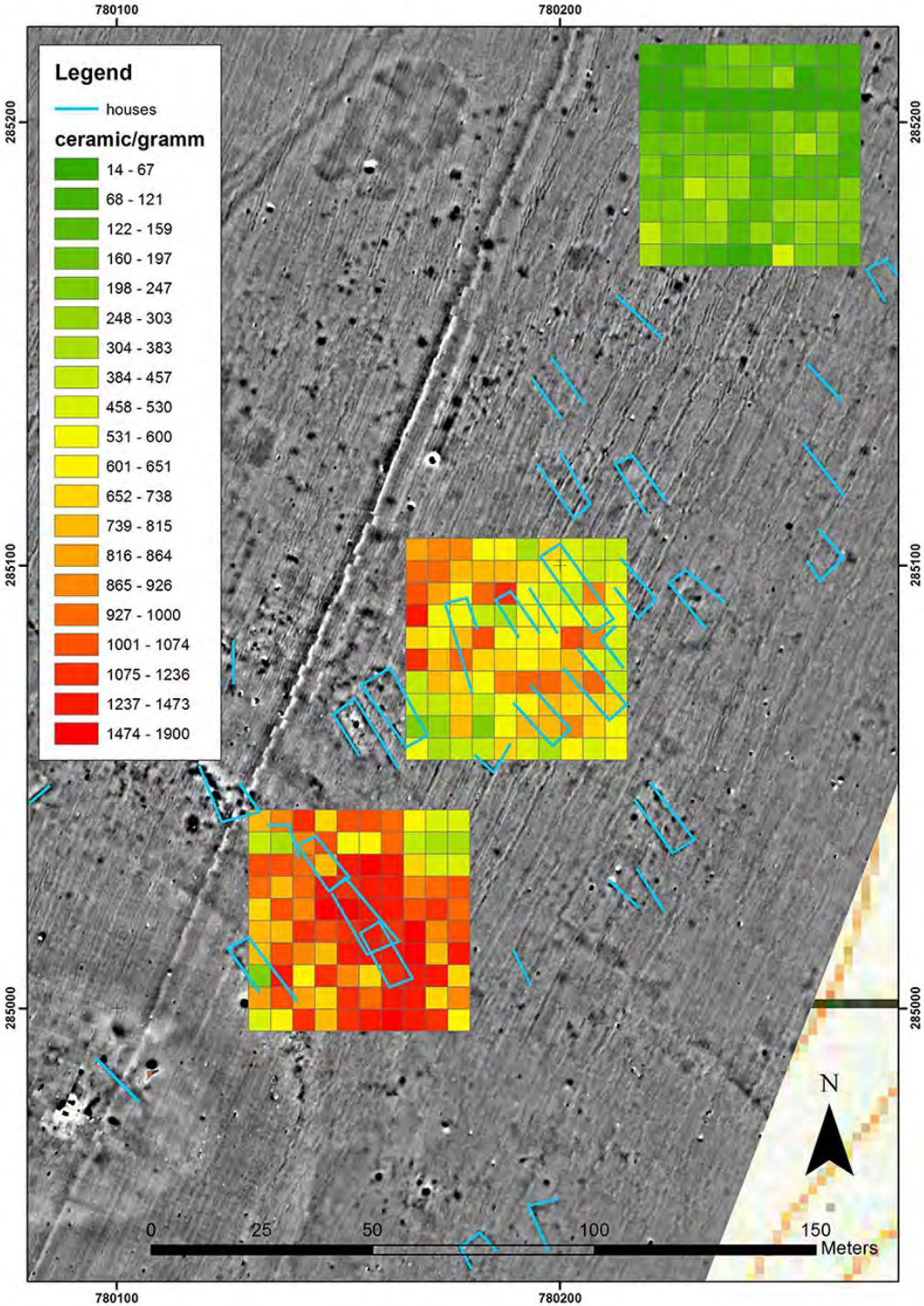


BORBAS 2018

BORBAS 2018

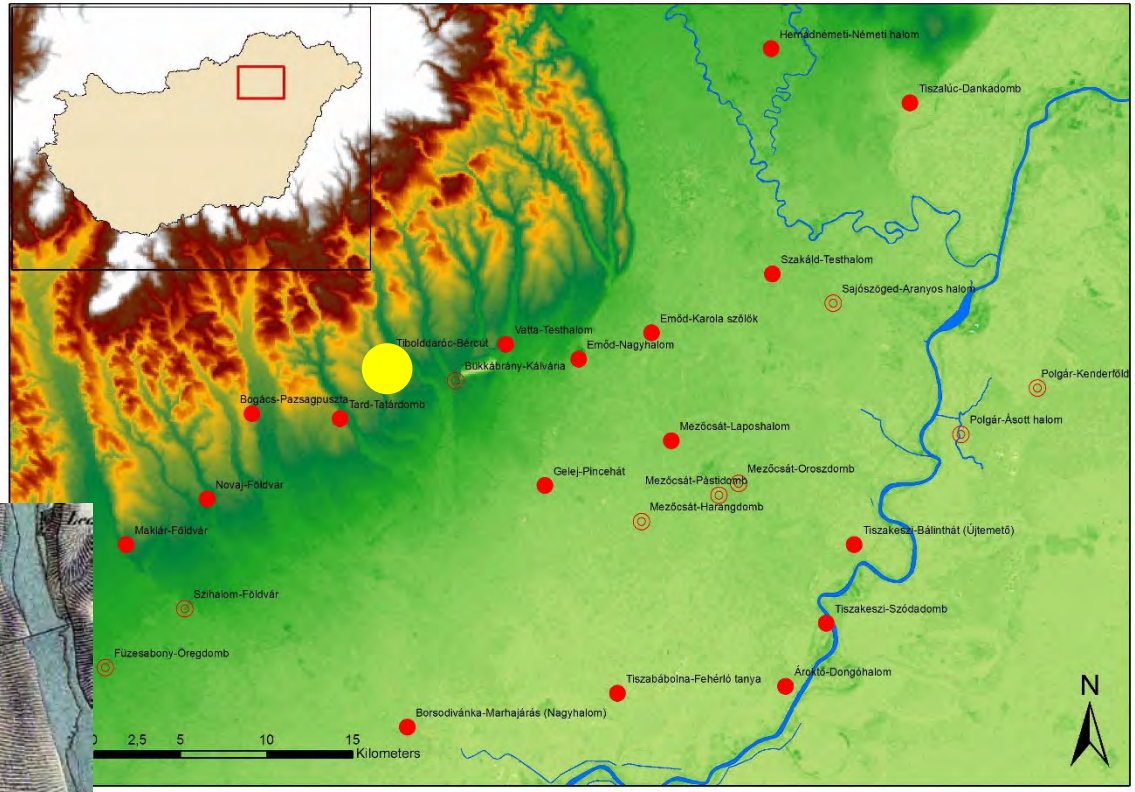
BORBAS 2018

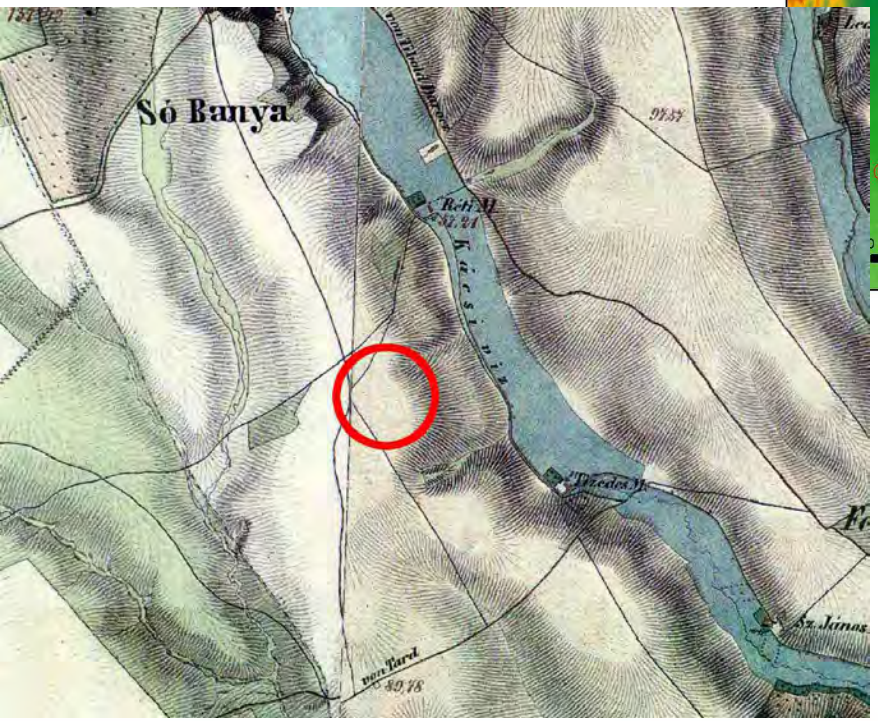
► Emőd-Nagyhalom. Results of the surface survey 2018.



BORBAS 2018

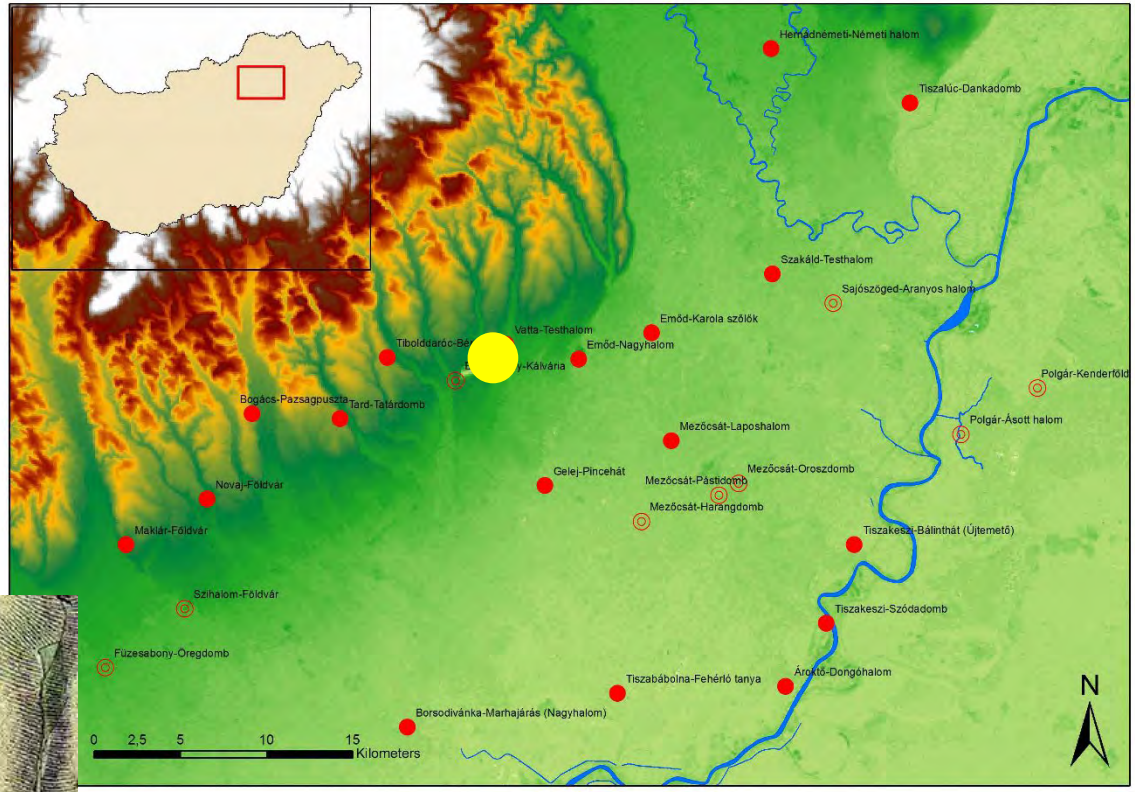
► Tibolddaróc-Bércút

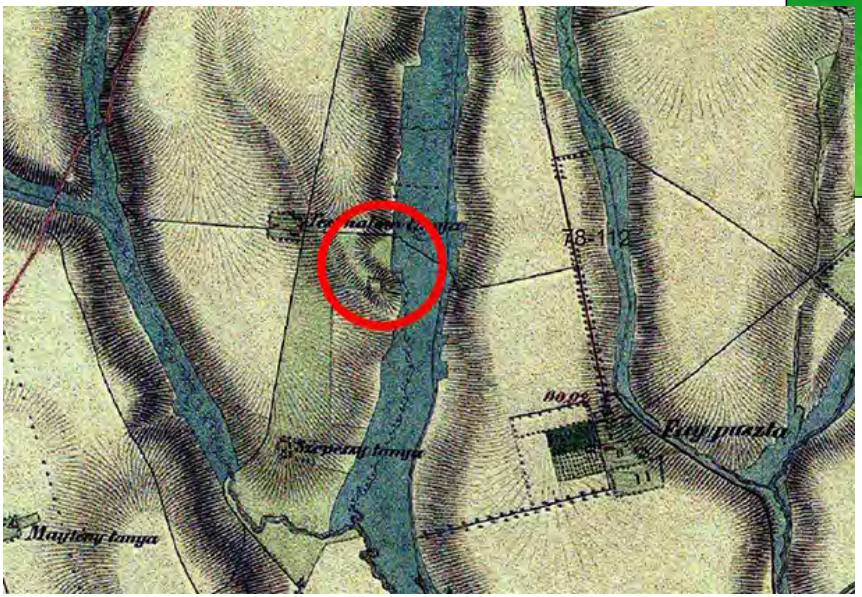




BORBAS 2018

► Vatta-Testhalom

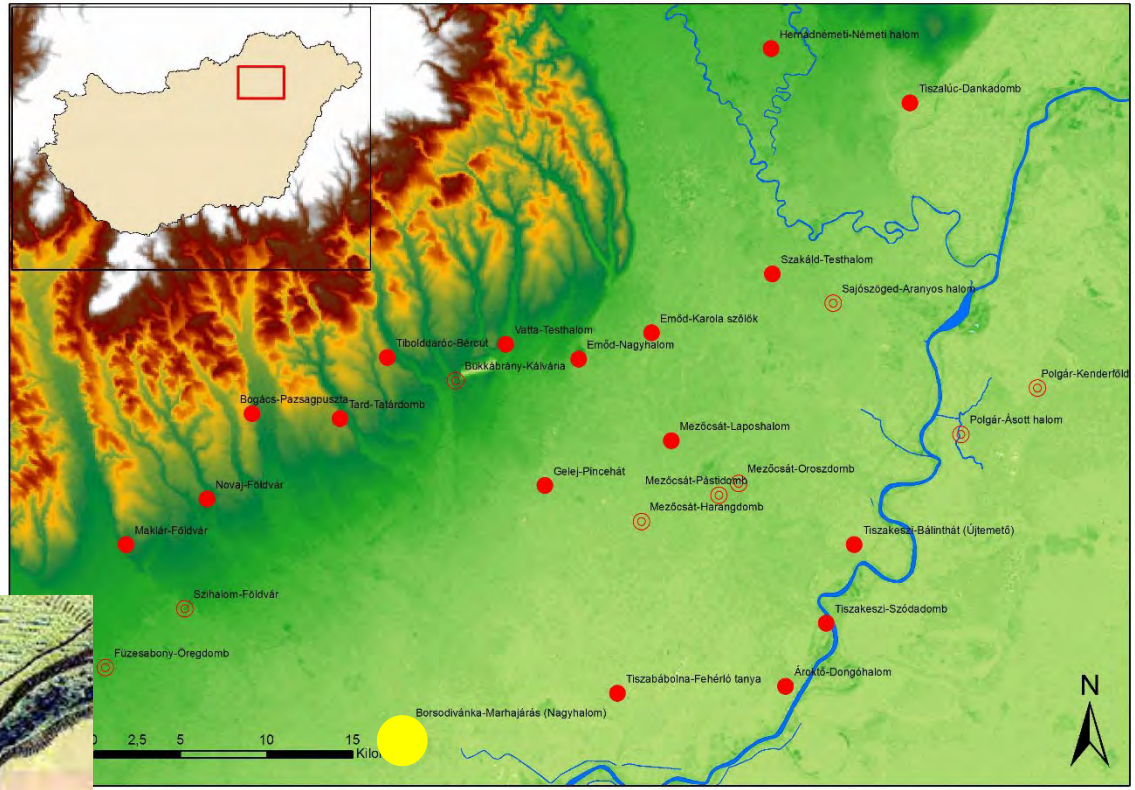


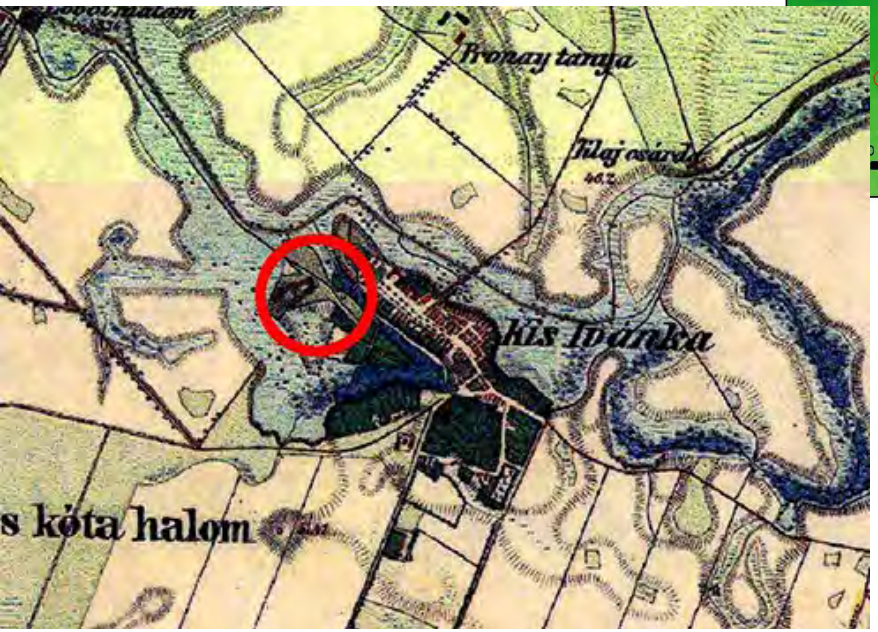


▲ ► Vatta-Testhalom.
Rescue excavation prior to the construction of drainage facilities of the nearby open cast mine.

BORBAS 2018

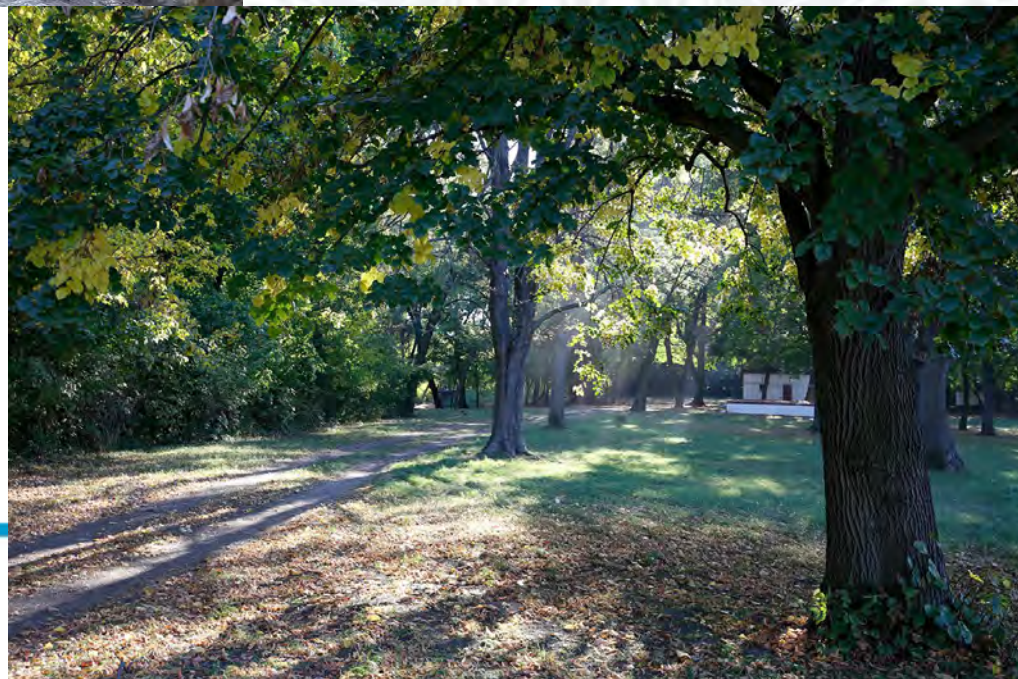
► Borsodivánka-Marhajárás (Nagyhalom)





BORBAS 2018

BORBAS 2018



BORBAS 2018

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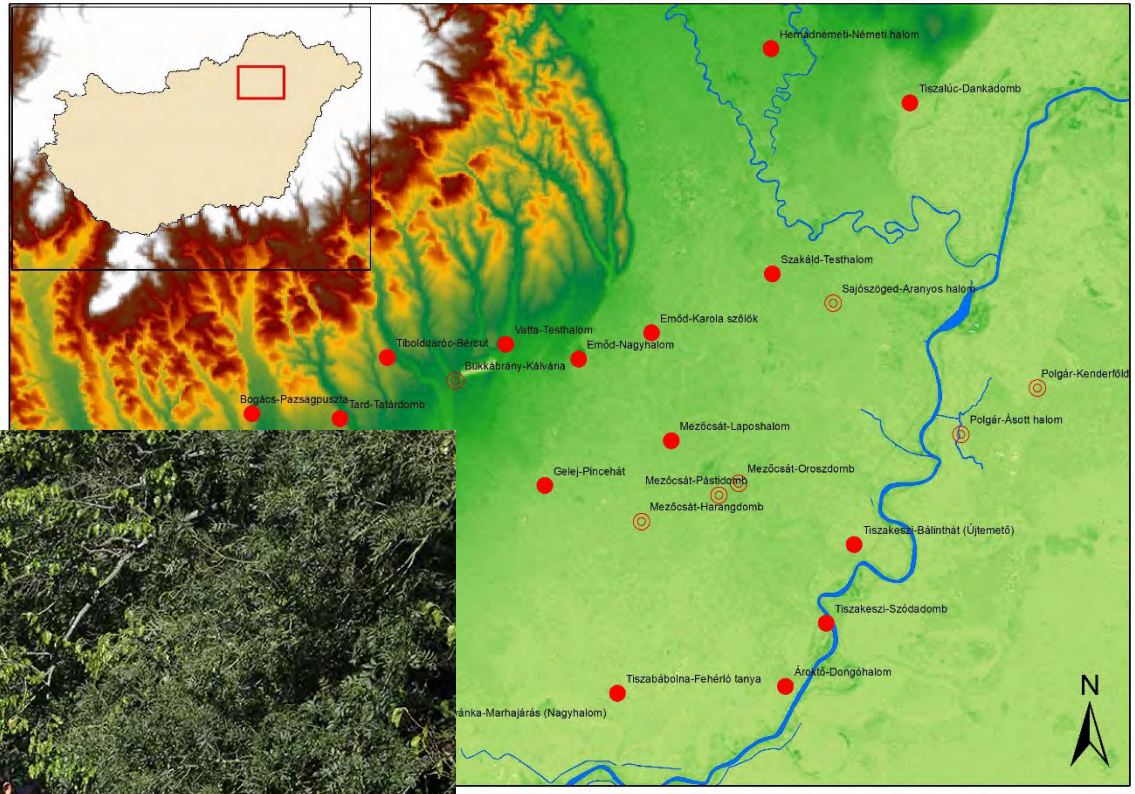
BORBAS 2018

► Social Life on BORBAS Tells



BORBAS 2018

▲ Conference ‘Settlement layouts, system and structure of the Otomani-Füzesabony Cultural Complex’ in Miskolc (7th–9th June 2018)

BORBAS 2018

BORBAS 2018

▲ An excursion to the rescue excavation of the Middle Bronze Age cemetery at Encs.

BORBAS 2018

BORBAS 2018

BORBAS 2018

▲ Accomodation in Tiszabábolna.

2019

Systematic Core Drilling

- ► Emőd-Karola szőlők
- ► Hernádnémeti-Németihalom
- ► Mezőcsát-Laposhalom
- ► Mezőkeresztes-Laposhalom (Late Neolithic)
- ► Sajószöged-Aranyoshalom
- ► Szakáld-Testhalom
- ► Tard-Tatárdomb
- ► Tibolddaróc-Bércút

Magnetometer Survey

- ► Sajószöged-Aranyoshalom

Post-Excavation (Find Processing 2015–2018)

- ► Borsodivánka-Marhajárás (Nagyhalom)

UNIVERSITÄTSFORSCHUNGEN
ZUR PRÄHISTORISCHEN ARCHÄOLOGIE
Aus dem Institut für Ur- und Frühgeschichte der Universität zu Köln
Band 345
Beyond Divides –
The Otomani-Füzesabony Phenomenon
Current Approaches to Settlement and Burial in the
North-eastern Carpathian Basin and Adjacent Areas
edited by
Klára P. Fischl
Tobias L. Kienlin
2019
VERLAG DR. RUDOLF HABELT GMBH, BONN

BORBAS 2019

Geländepraktikum auf bronzezeitlichen Tellsiedlungen in Nordost-Ungarn (BORBAS)

Sa., 10. August bis
So., 8. September 2019

BORBAS (Borsod Region Bronze Age Settlement) ist ein Kooperationsprojekt des Instituts für Ur- und Frühgeschichte der Universität zu Köln und der Universität Miskolc in Nordost-Ungarn, in dessen Rahmen seit 2012 die bronzezeitlichen Tellsiedlungen der Borsod-Ebene zwischen Bükk-Gebirge und Theiss untersucht werden.

Nach dem weitgehenden Abschluss der geomagnetischen Prospektion führen wir neben der Ausgrabung auf dem Siedlungshügel von Borsodivanka seit 2017 ein systematisches Bohrprogramm auf den zuvor prospektierten Siedlungshügeln durch, um das chronologische und funktionale Verhältnis der verschiedenen Siedlungsteile – Tell und Außensiedlung – zu klären.

Im Rahmen unserer diesjährigen Sommerkampagne bieten wir während des oben genannten Zeitraums die Möglichkeit zur Teilnahme an der Fundbearbeitung des Materials aus Borsodivanka und den Bohrungen auf verschiedenen Fundstellen der Borsod-Ebene.

Weitere Informationen zu unserem Projekt entnehmen Sie bitte unseren Publikationen auf academia.edu.

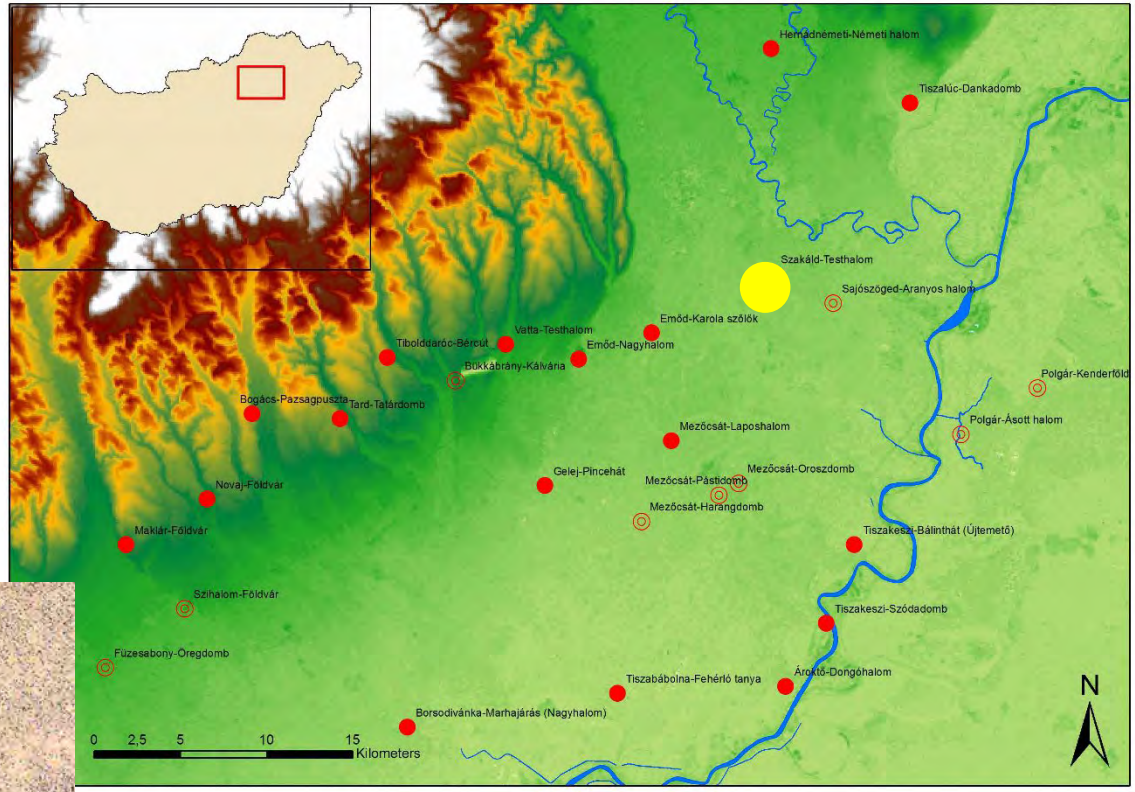
Die Anzahl der Teilnehmer ist beschränkt. Interessenten bitten wir, sich per e-mail unter Angabe ihrer Semesterzahl und Geländeerfahrung mit uns in Verbindung zu setzen. Die Anreise, Unterkunft und Verpflegung an Ort und Stelle sind umsonst. Mit der Teilnahme an der Kampagne ist der Erwerb eines Praktikumsnachweises (B.A./M.A.) verbunden.

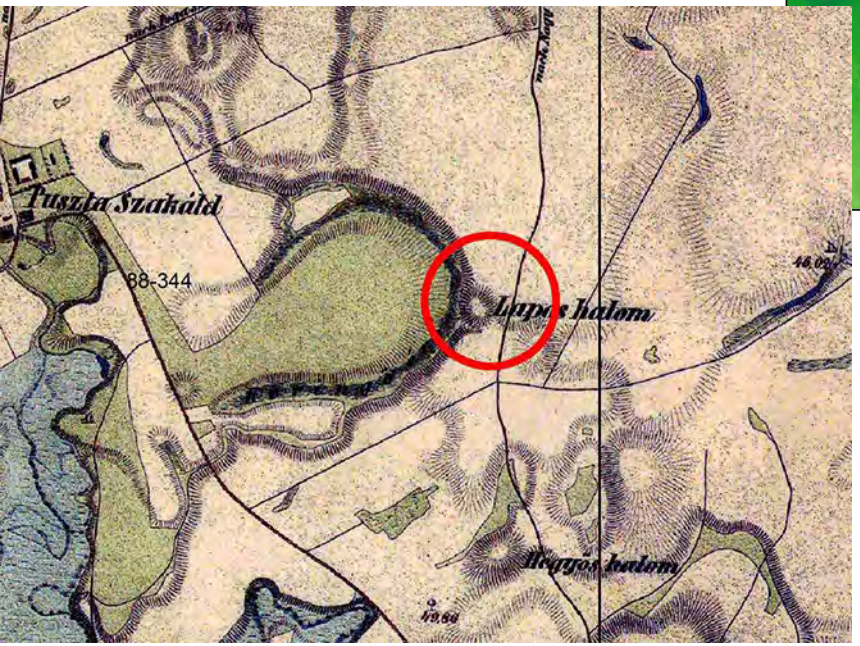
BORBAS 2019

Prof. Dr. Tobias L. Kienlin – Dr. Klára P. Fischl

tkienlin@uni-koeln.de – https://uni-koeln.academia.edu/TobiasKienlin

► Szakáld-Testhalom

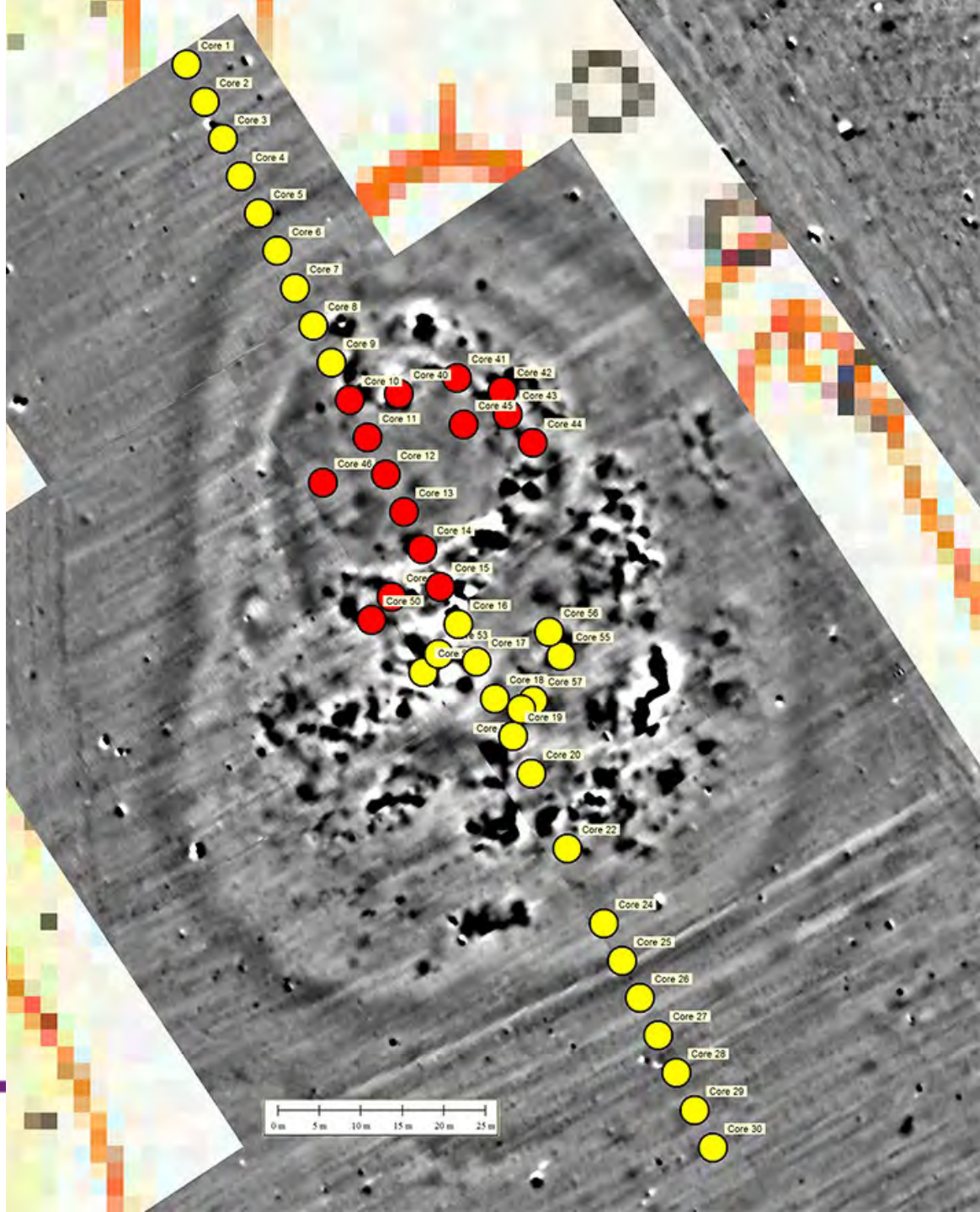




BORBAS 2019

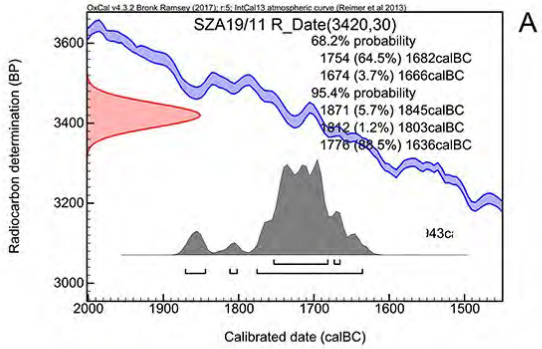
BORBAS 2019

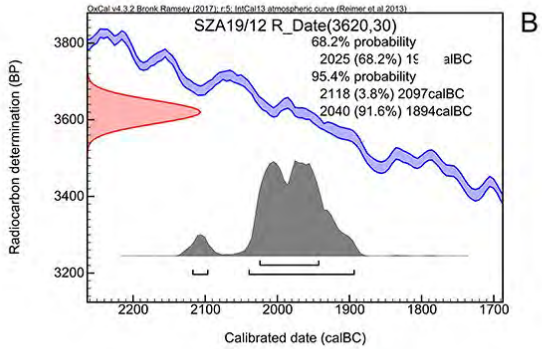
BORBAS 2019

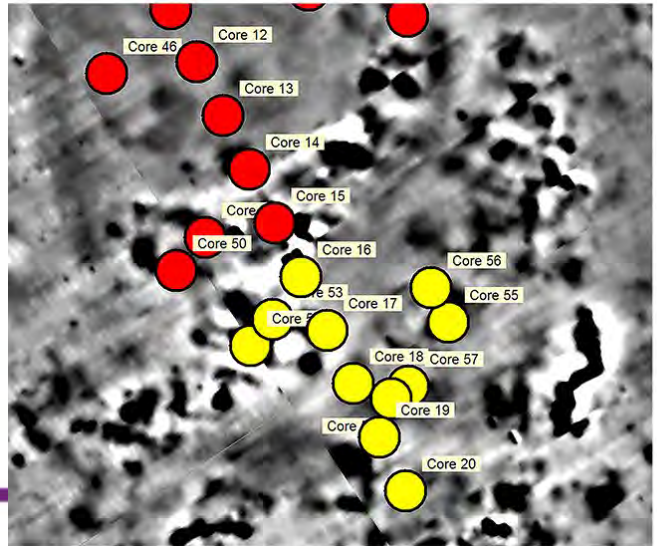


► Szakáld-Testhalom.
The location of the cores in the inner tell part of the site.

BORBAS 2019

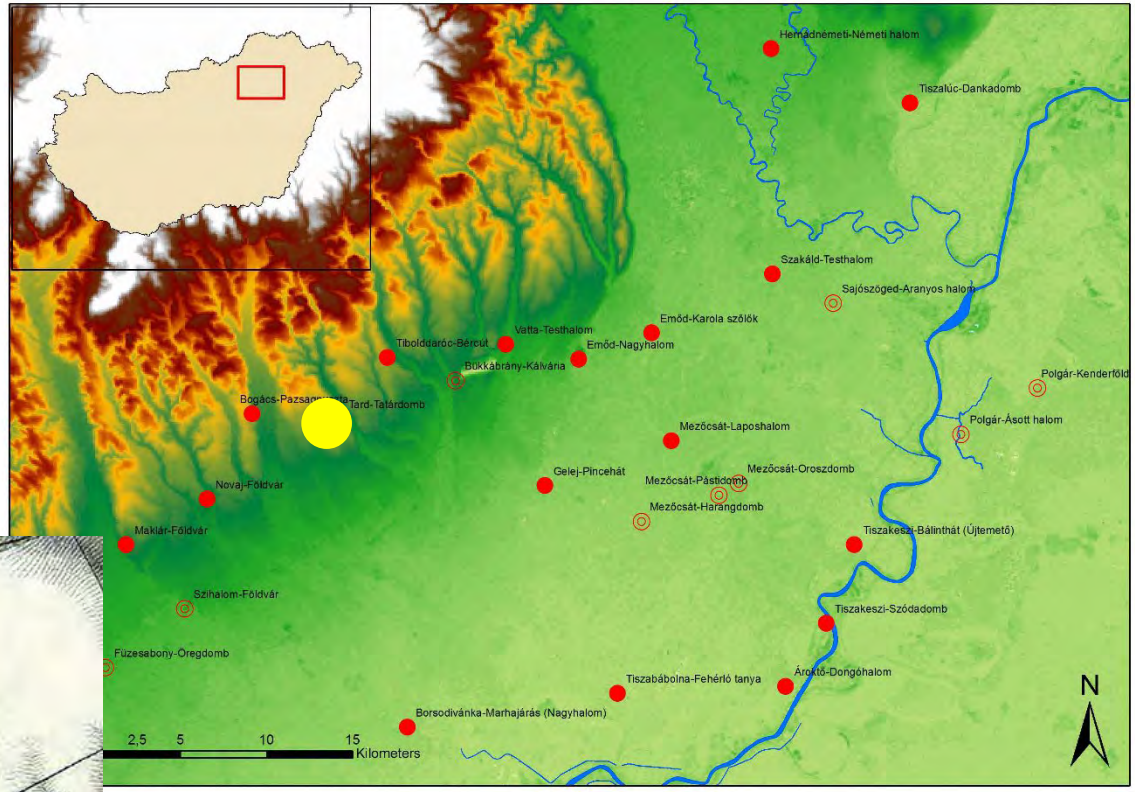


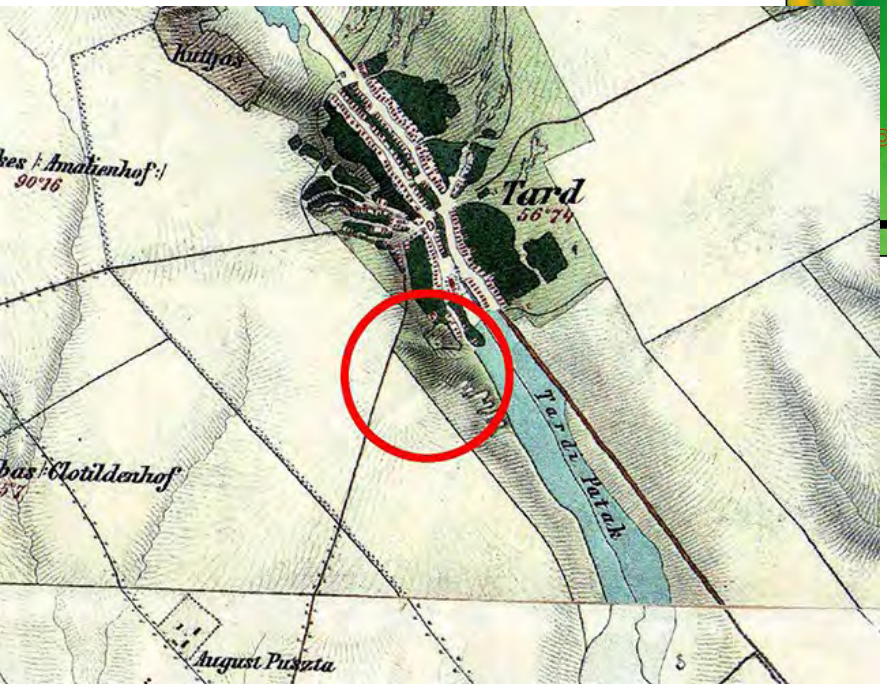




► Szakáld-Testhalom.
Two radiocarbon dates from various depths of core 15.

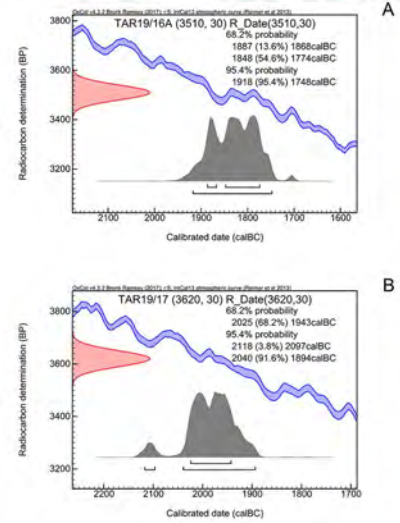
► Tard-Tatárdomb

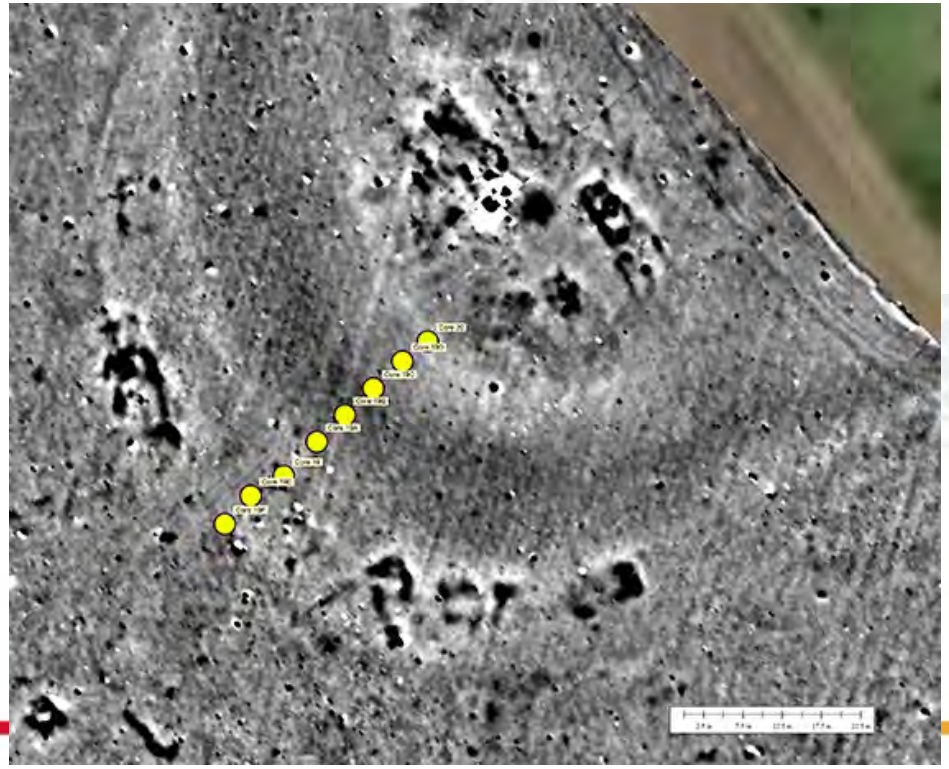




BORBAS 2019

► Tard-Tatárdomb. The stratigraphic sequence in core 19 in the south-western section of the main enclosure and two radiocarbon dates obtained from it.

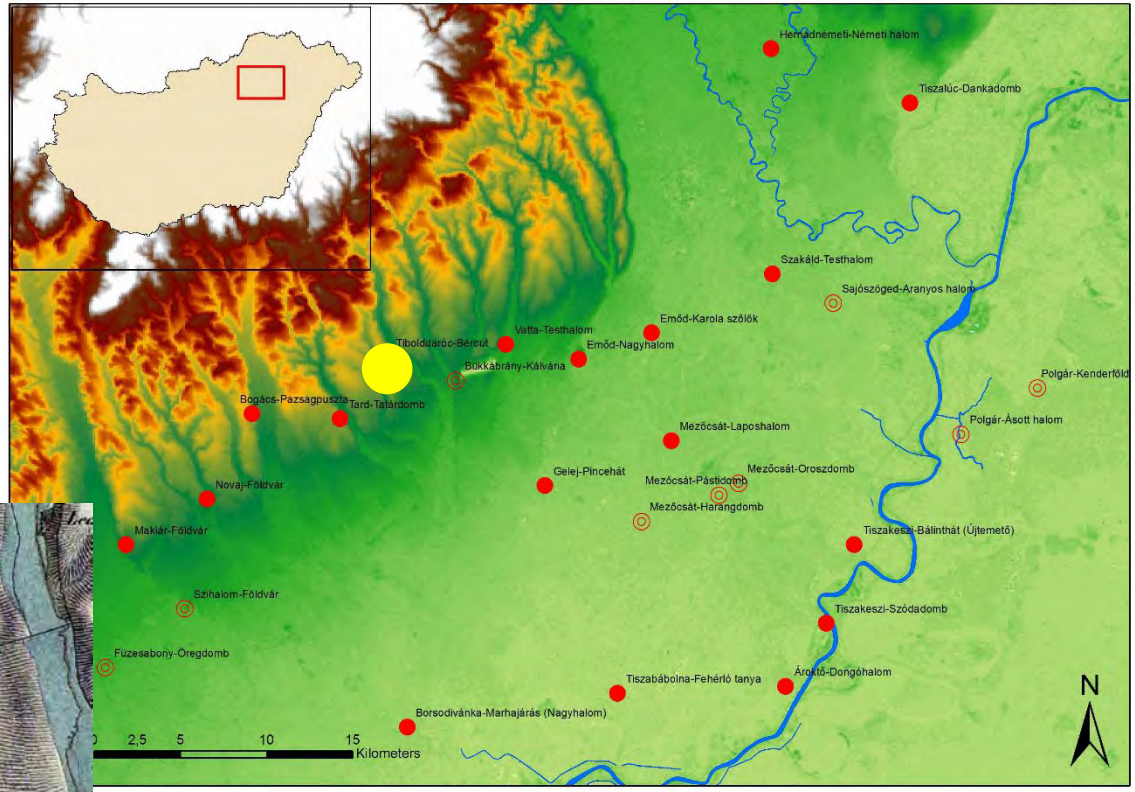


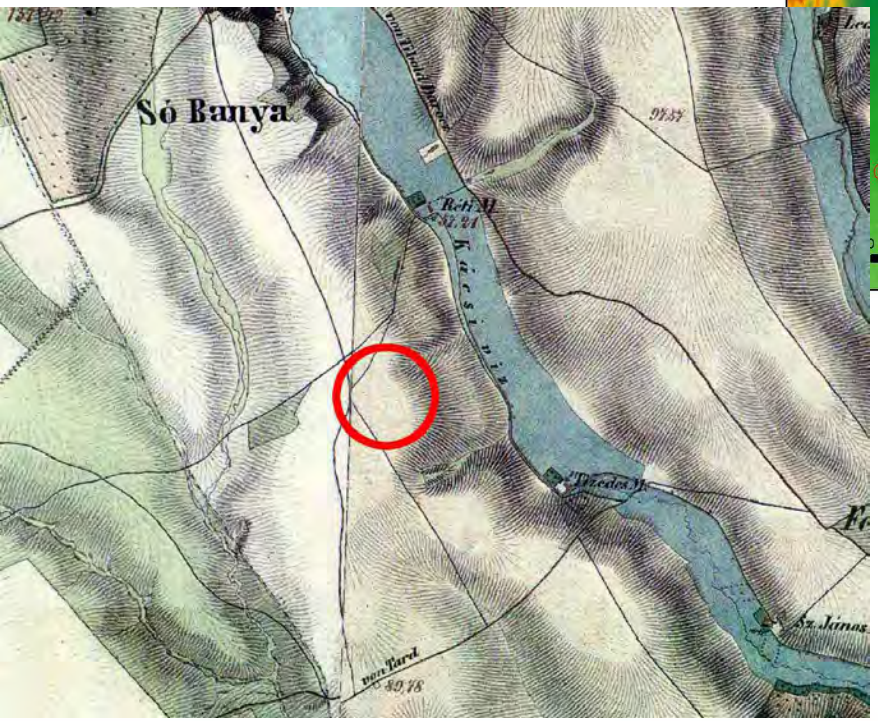


BORBAS 2019

► Tard-Tatárdomb. Radiocarbon dates from houses in the outer settlement mapped on the magnetometry of the site.

► Tibolddaróc-Bércút





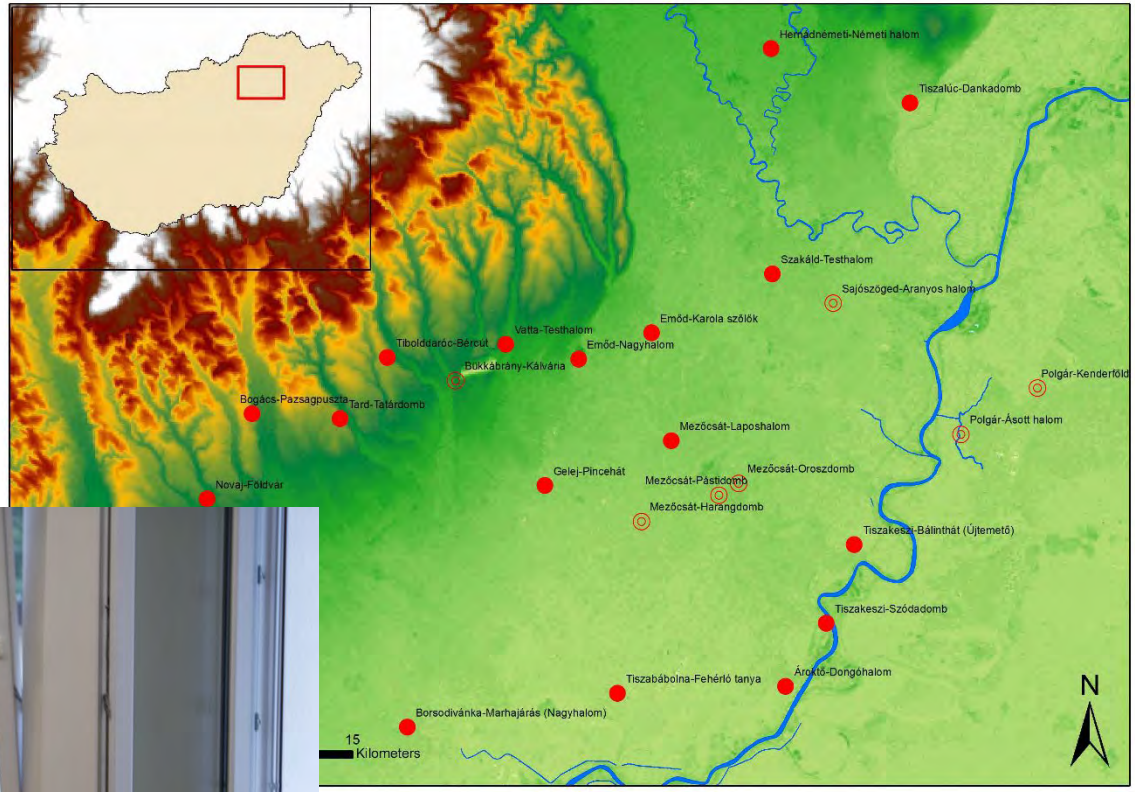
BORBAS 2019

BORBAS 2019

BORBAS 2019

BORBAS 2019

► Social Life on BORBAS Tells



BORBAS 2019

BORBAS 2019

BORBAS 2019

BORBAS 2019

2020

Excavation

- Borsodivánka-Marhajárás (Nagyhalom)

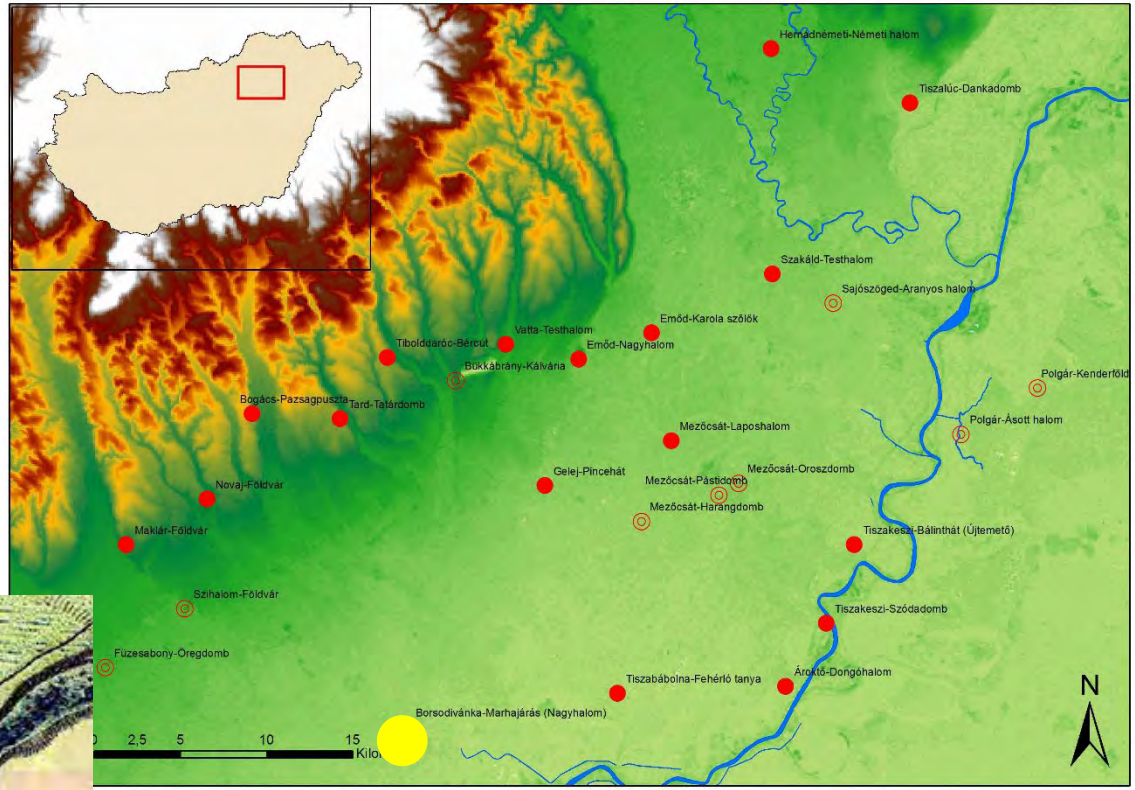
Bronze Age Tell Communities in Context

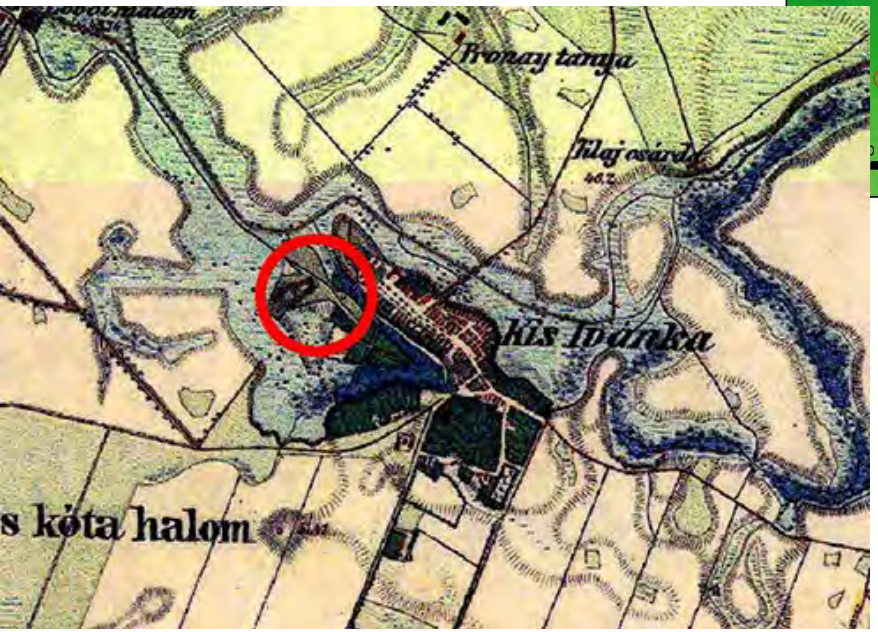
An exploration into culture, society, and the study of European prehistory – Part 2

Tobias L. Kienlin

BORBAS 2020

► Borsodivánka-Marhajárás (Nagyhalom)





BORBAS 2020

BORBAS 2020

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S1080
S1104
S 1080
S1104
S 1094
S1103
S1102
S54
S55
S1120
S7

S56
S54
S55
S7.1
S56
7.2
S19

BORBAS 2020

Archäobotanisch-mikromorphologische Untersuchungen

Im Verlauf der Grabungsarbeiten fielen deutlich geschichtete, weißlich-graue Ablagerungen auf, die auch im Bereich des möglichen Gebäudebefundes vorhanden sind (Abb. 6). Sie verlaufen unterhalb und oberhalb der „Abfallschicht" (Abb. 3). Um zu klären, woraus diese Lagen bestehen, wurden mikromorphologische Proben genommen (Abb. 6.2).

Erste Ergebnisse zeigen, dass es sich bei den „weißen Lagen" um dicht geschichtete Phytolithe von Poaceaen handelt, die offensichtlich von verschiedenen Gräsern stammen. Vergleichbare Befunde („white layers") kennt man auch aus Tellsiedlungen im Nahen Osten (Albert et al. 2008) – aus dem europäischen Raum sind bis heute kaum dokumentiert.

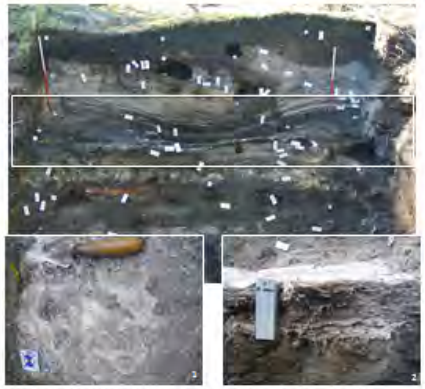


Abb. 6: Weißlich-graue Ablagerungen im Bereich es möglichen Gebäudebefundes (weißer Kasten oben)

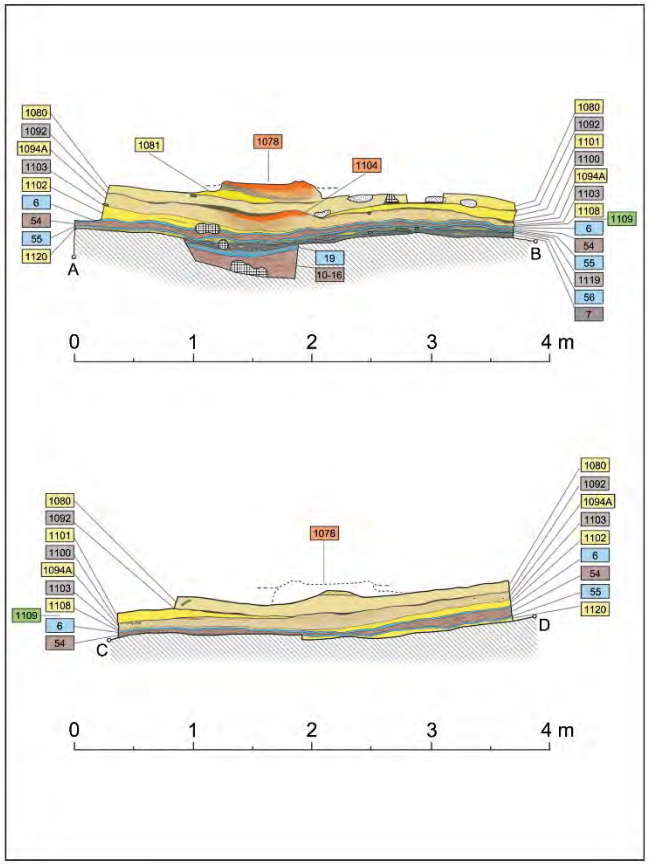
Zusammensetzung der „weißen Lagen"

A REM-Aufnahme der im Verband vorhandenen dendritischen Phytolithen

B Dünnschliffaufnahme eines silifizierten Epidermisfragmentes, mit dendritischen Phytolithen

C Dünnschliffaufnahme der dicht gelagerten Phytolithen unterschiedlicher Poaceaen

BORBAS 2020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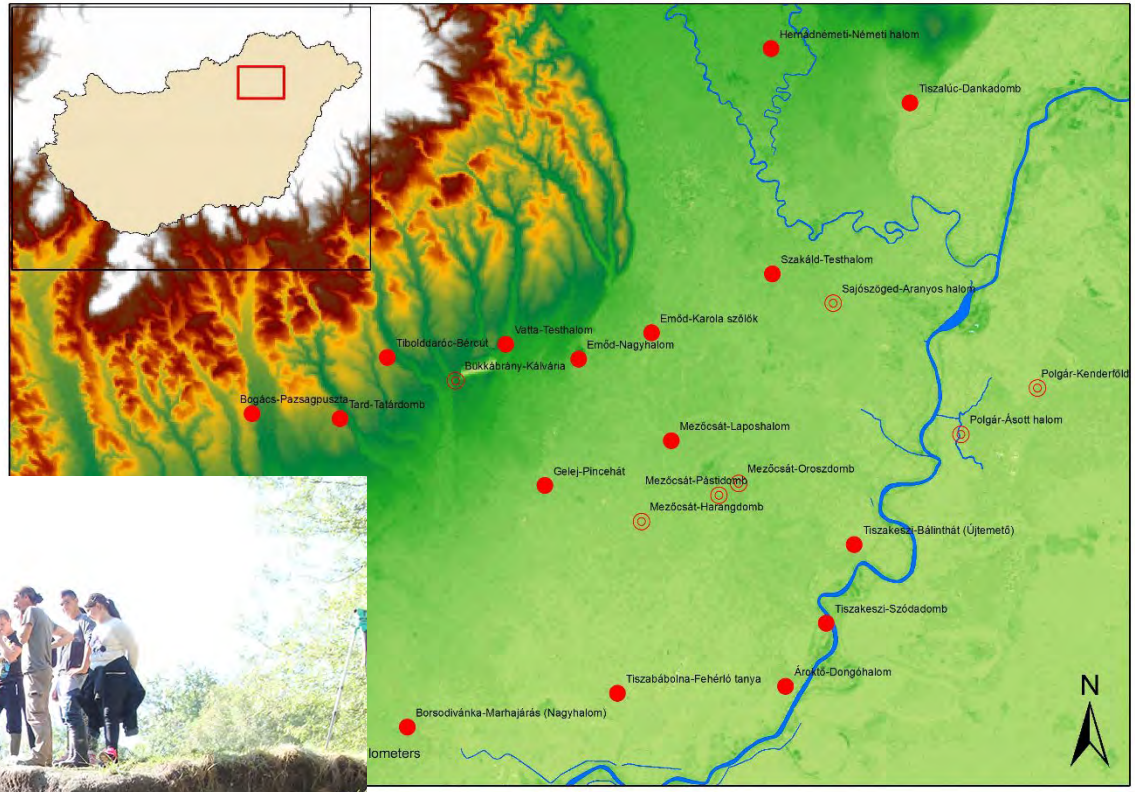
BORBAS 2020

▲ ► Transport of soil samples and pottery to Tübingen and Köln for flotation and drawing

► Social Life on BORBAS Tells



▲ ► Bronze Age friends and colleagues at Borsodivánka

BORBAS 2020

BORBAS 2020

▲ BORBAS 2020 on youtube:

https://youtu.be/0209VelUSCc

2021

Systematic Core Drilling

- Maklár-Baglyashalom
- Novaj-Földvar
- Bükkábrány-Kálvária
- Gelej-Pincehát

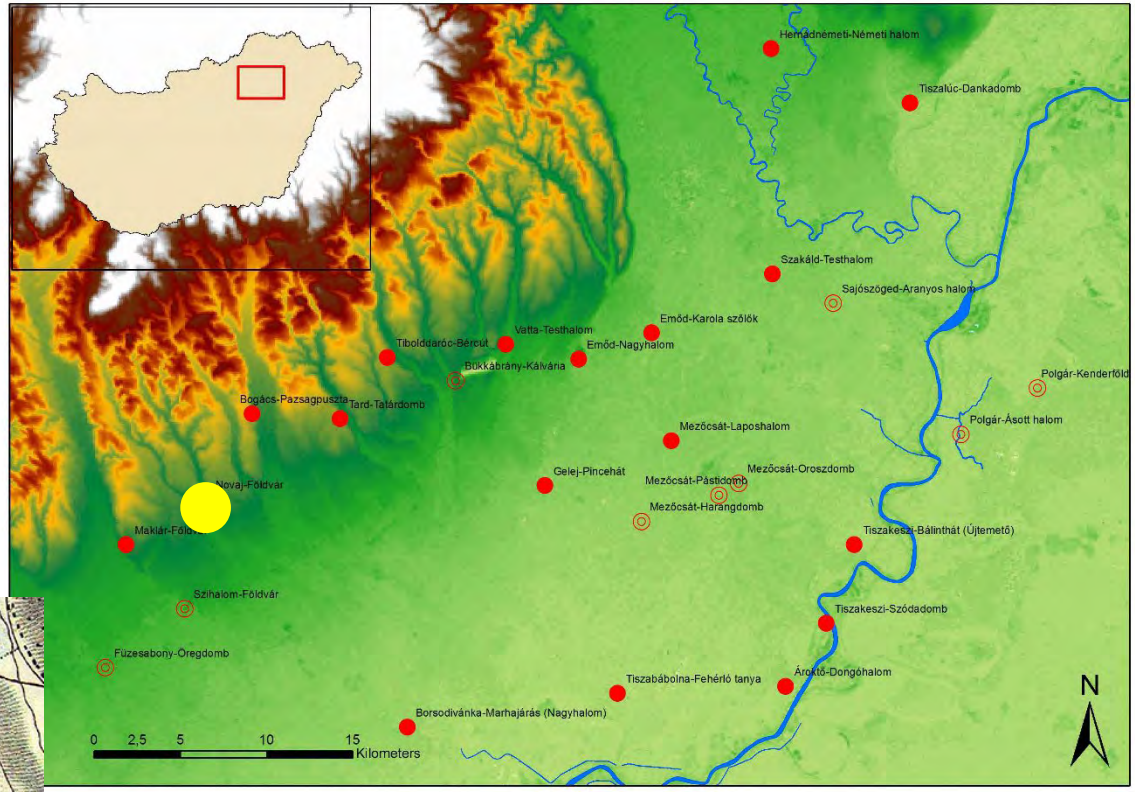
Magnetometer Survey

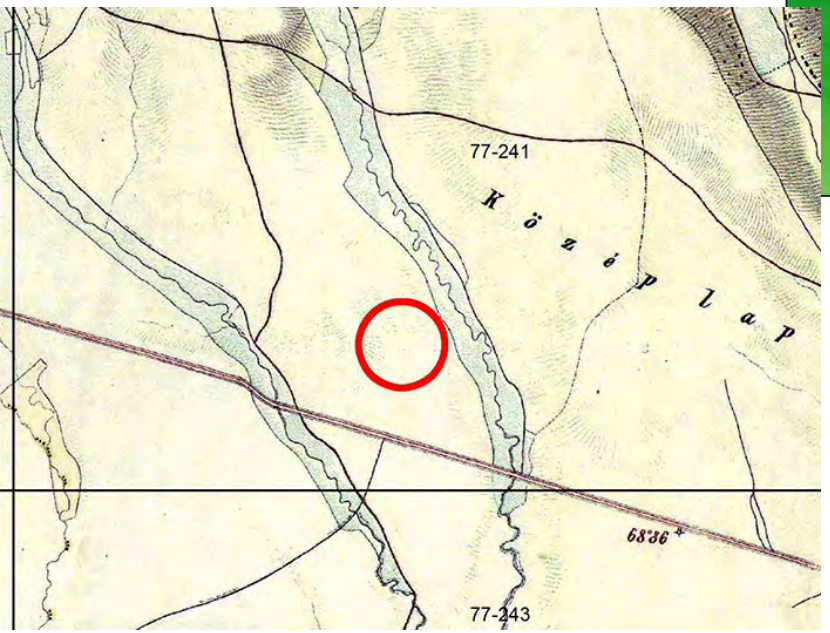
- Bükkábrány-Kálvária
- Gesztely-Hernádkak
- Vatta-Testhalom

Excavation

- Borsodivánka-Marhajárás (Nagyhalom)

► Novaj-Földvár





BORBAS 2021

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BORBAS 2021

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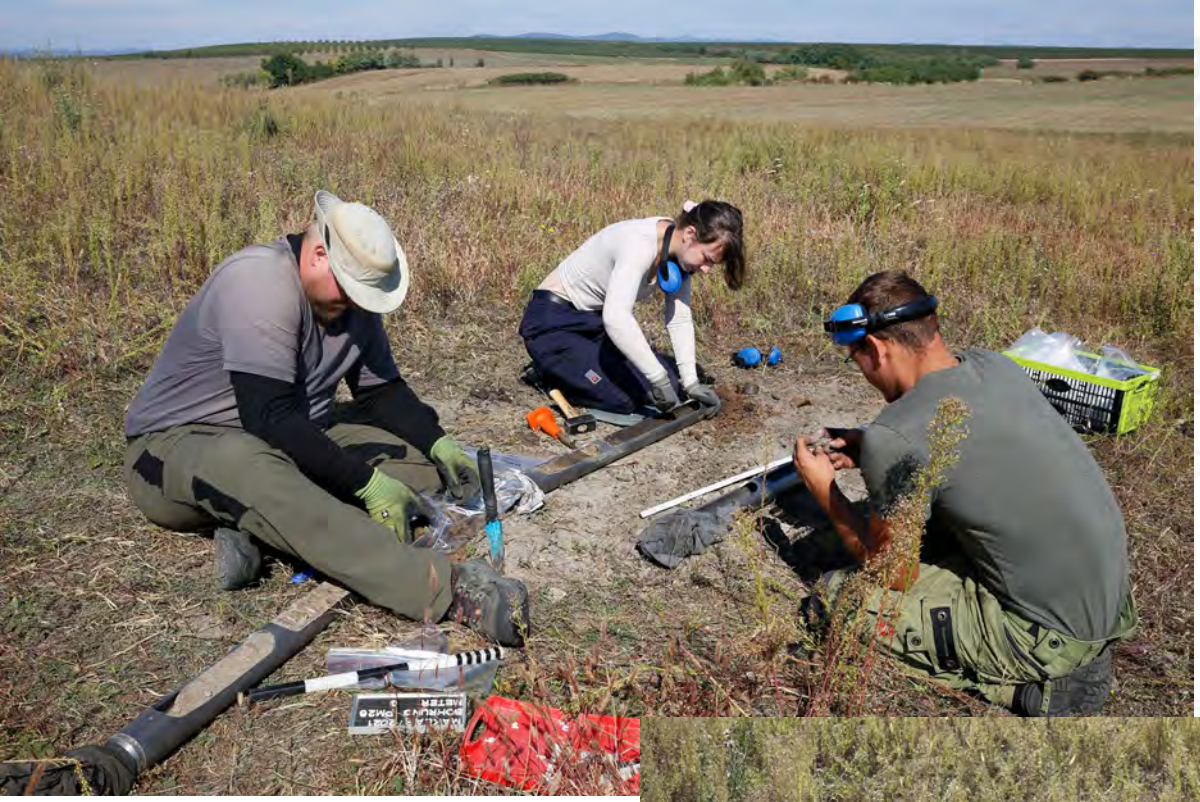
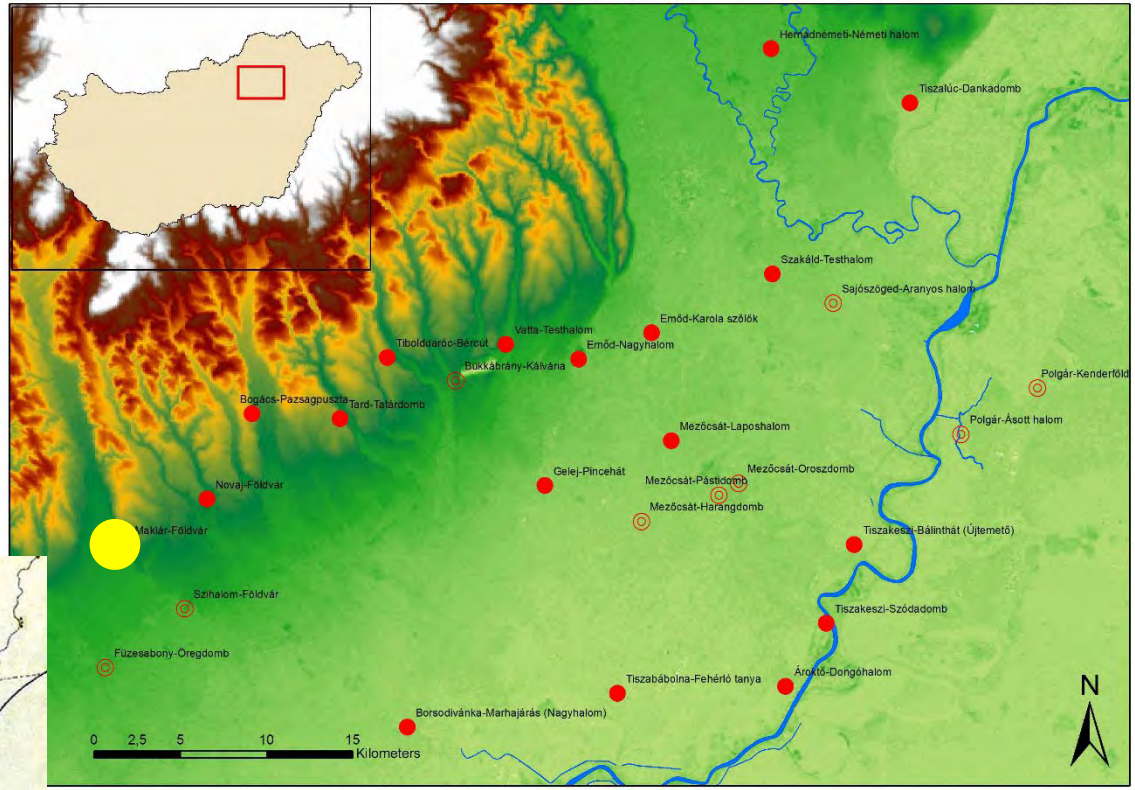
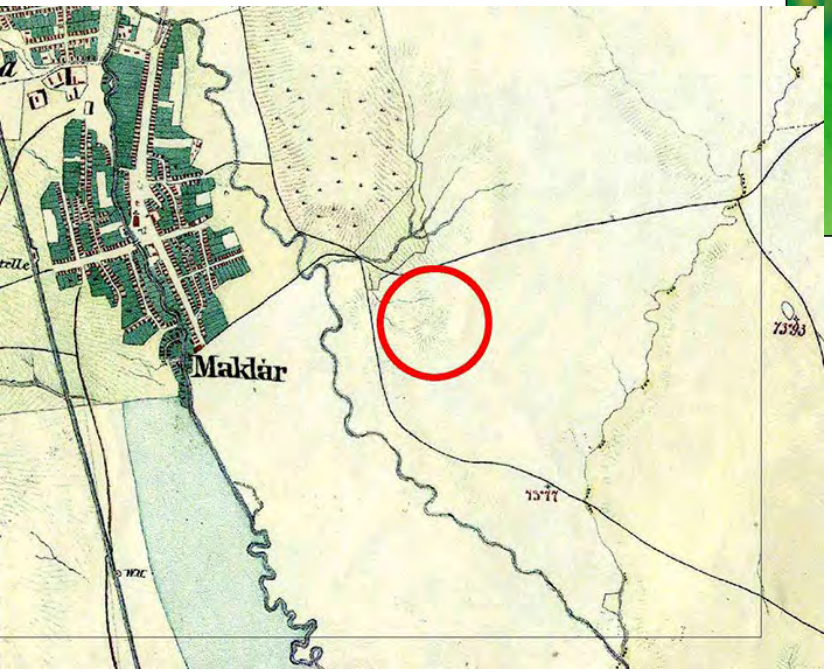


BORBAS 2021

► Maklár-Baglyashalom

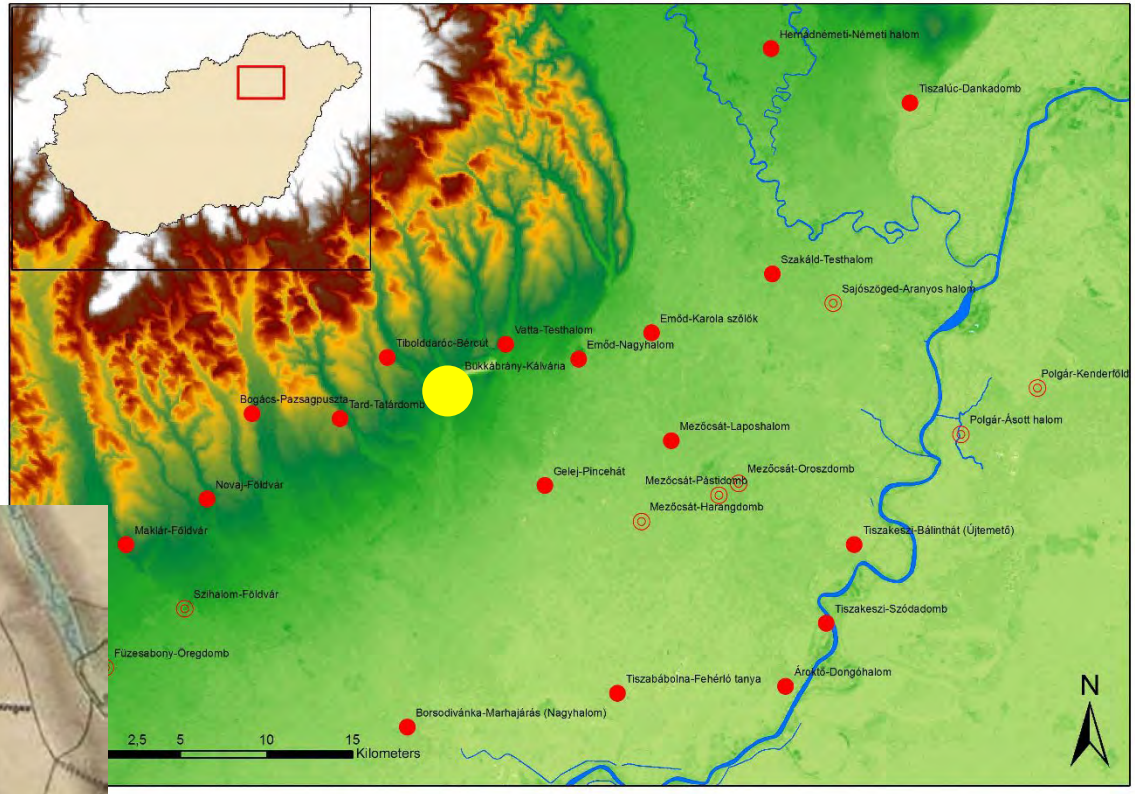




BORBAS 2021

BORBAS 2021

► Bükkábrány-Kalvaria



BORBAS 2021

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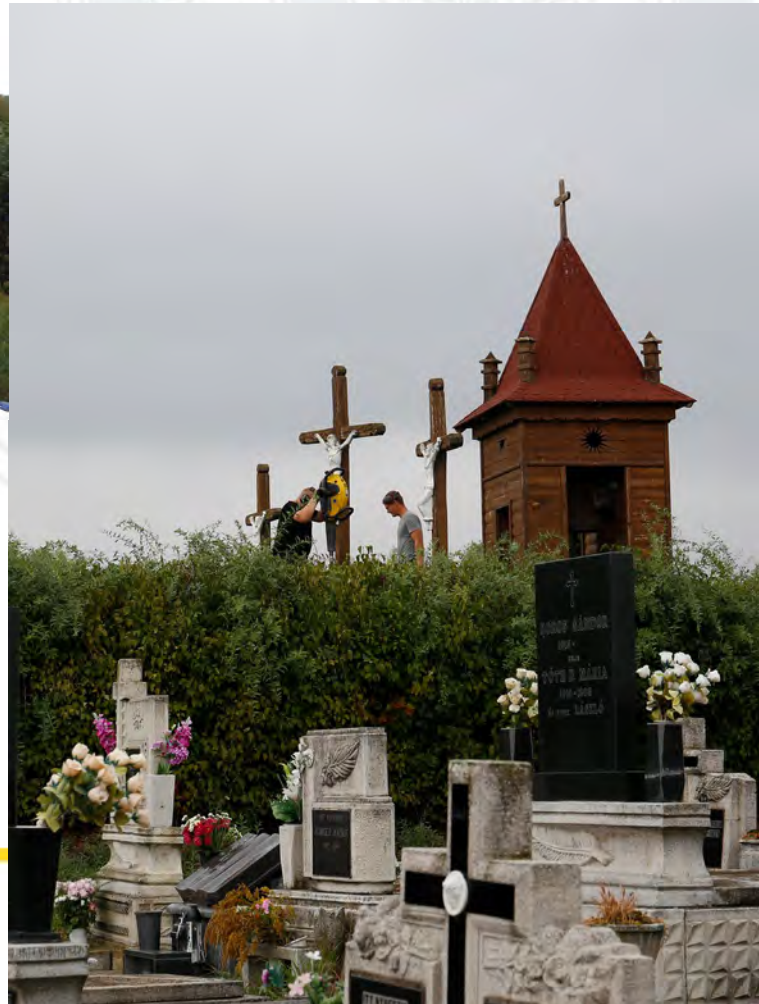
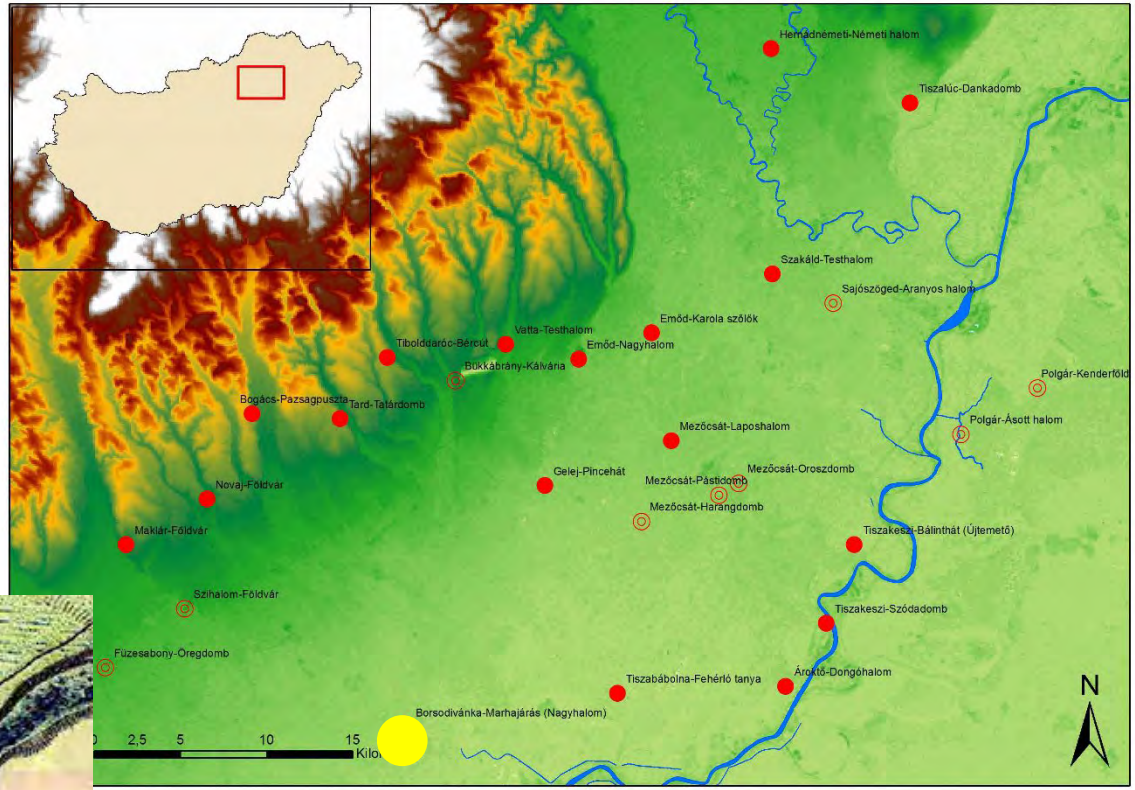
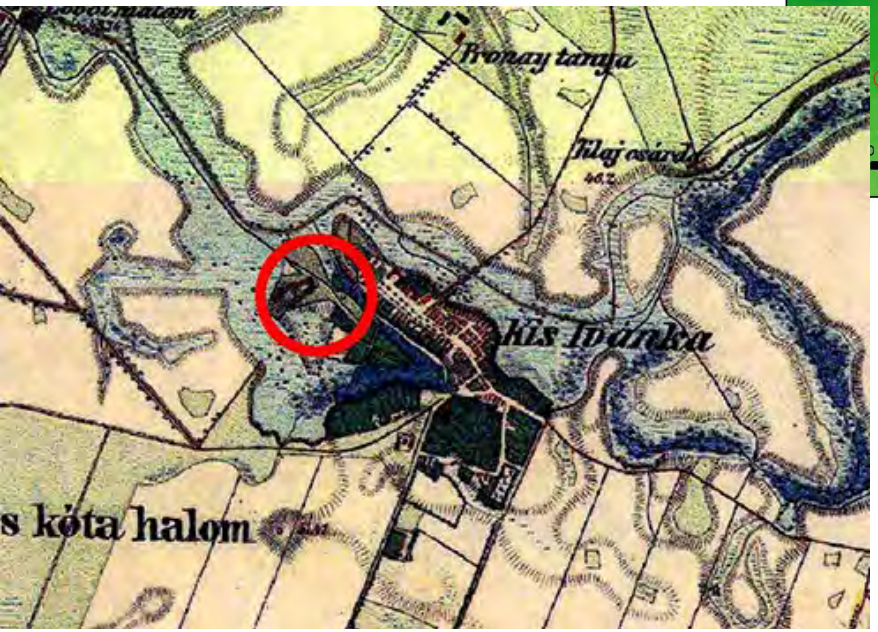


BORBAS 2021

► Borsodivánka-Marhajárás (Nagyhalom)





BORBAS 2021

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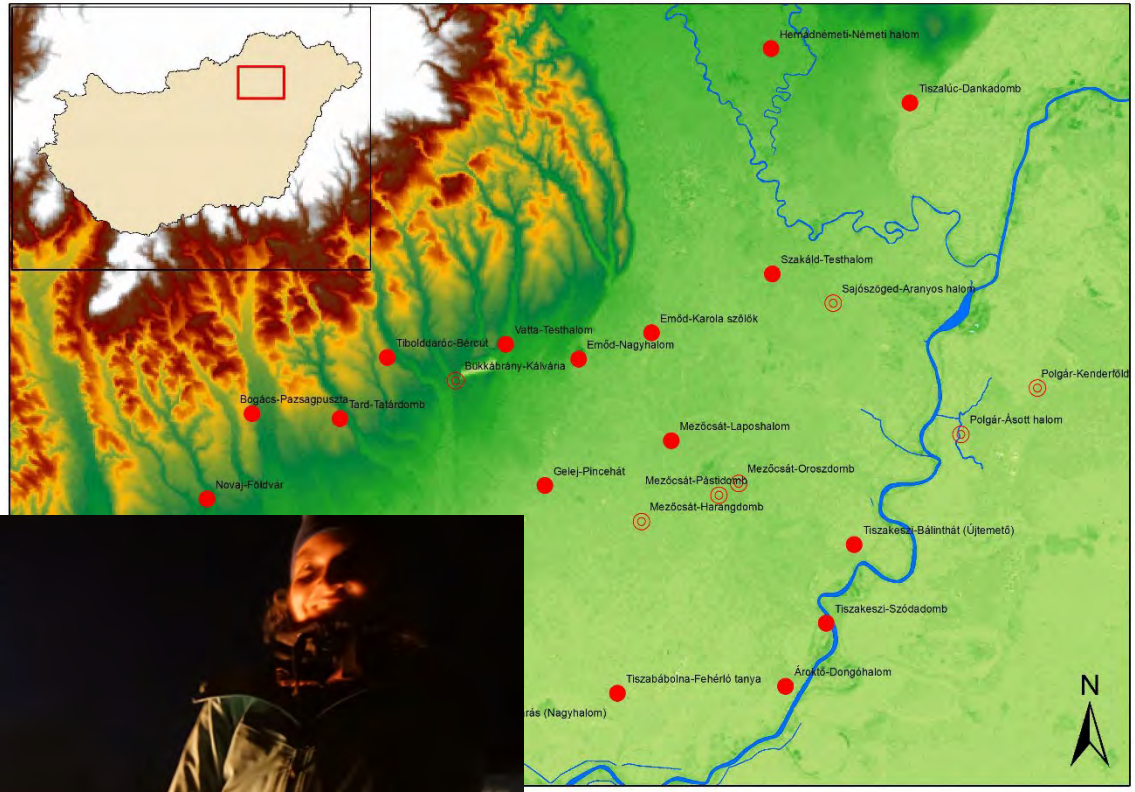
BORBAS 2021

► Social Life on BORBAS Tells



BORBAS 2021

▲ Accomodation in Bükkábrány.

BORBAS 2021

▲ ► Tour of the new museum of Bükkábrány.

BORBAS 2021

▲ An excursion to the Late Neolithic site of Vésztő-Mágor.

BORBAS 2021

BORBAS 2021

BORBAS 2021

BORBAS 2021

▲ Tour of the museum of Nyíregyháza.

BORBAS 2021

LIQUI
MOLY
KUPFERPASTE
Copper Paste
Pasta ramata
Pasta de cobre
Für thermisch hochbelastete Verbindungen.
For connections placed under high thermal loads.
Per giunti sottoposti ad altissime sollecitazioni
Para conexiones sometidas a altas temperaturas
Para uniões sujeitas a grandes cargas térmicas.

BORBAS 2021

BORBAS 2021

BORBAS 2021

BORBAS 2021

BORBAS 2021

2022

Systematic Core Drilling

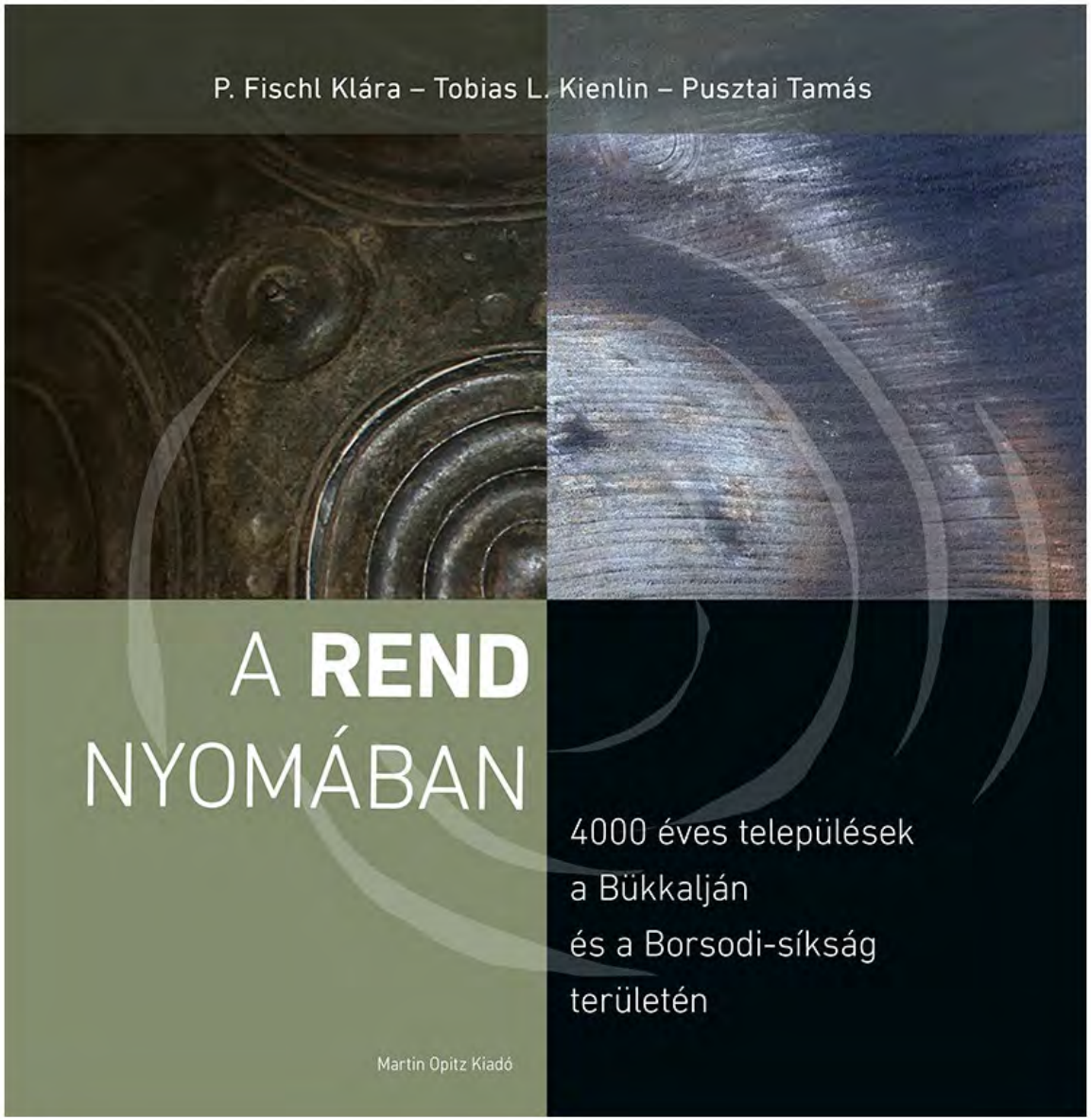
- Bükkábrány-Kálvária
- Mezőkövesd-Bosnyákdomb
- Vatta-Testhalom

Magnetometer Survey

- Mezőkövesd-Bosnyákdomb
- Vatta-Testhalom

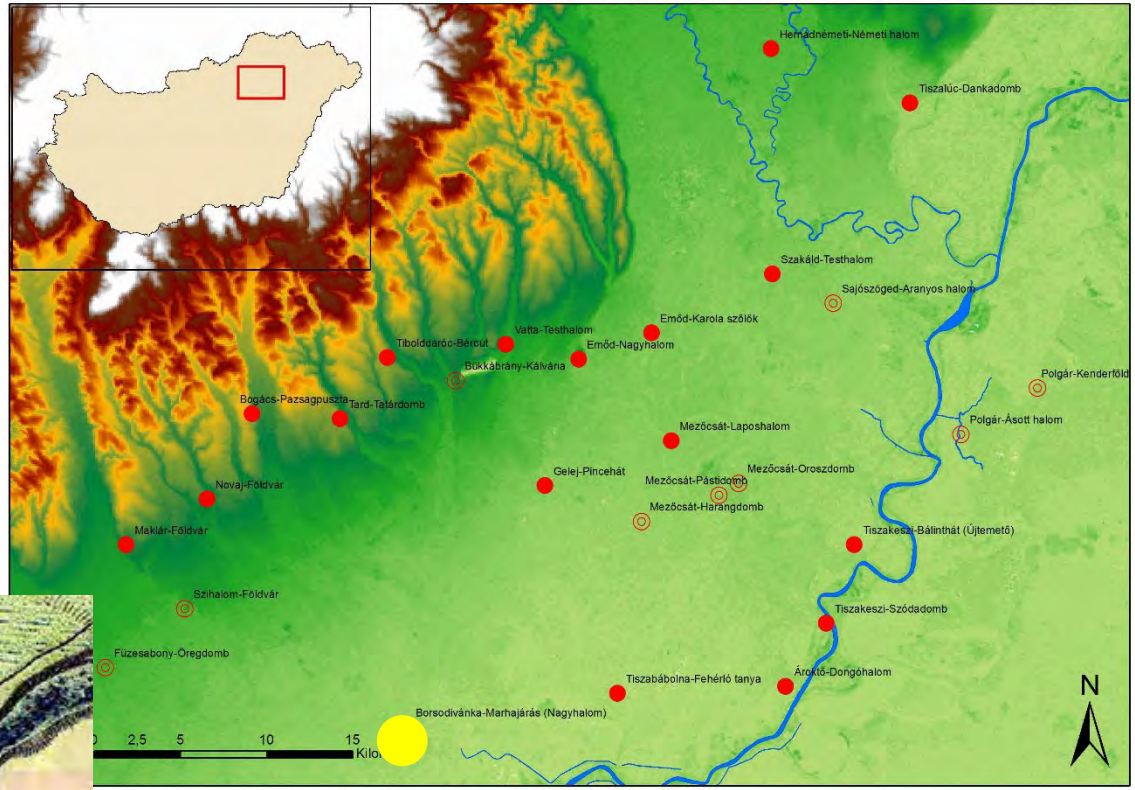
Excavation

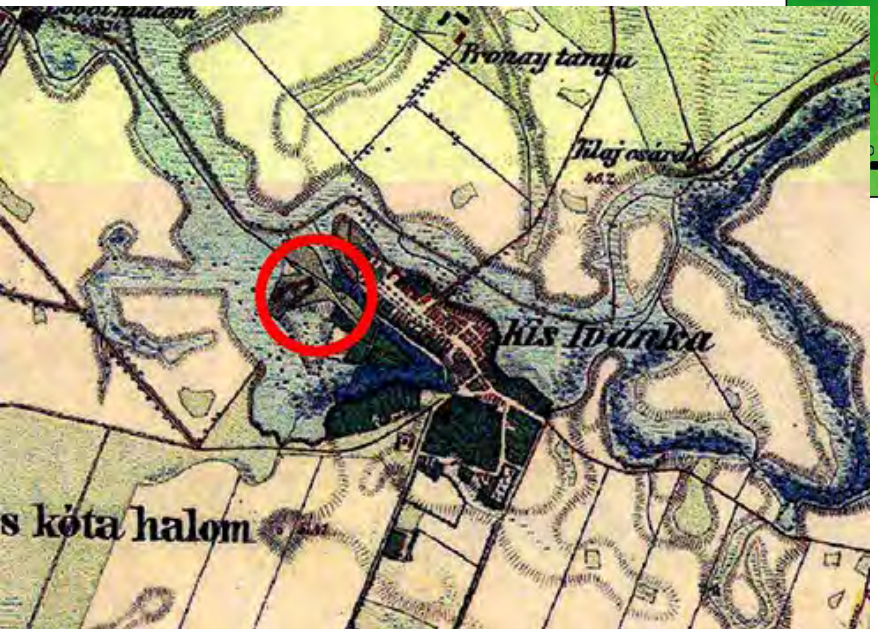
- Borsodivánka-Marhajárás (Nagyhalom)
- Bükkábrány-Kálvária

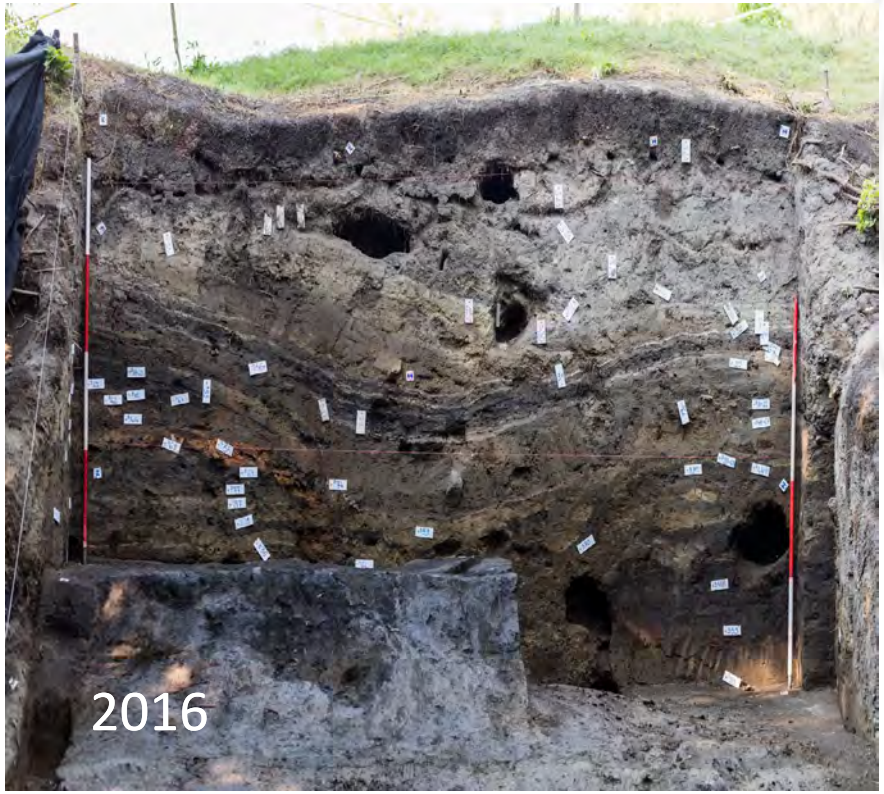

P. Fischl Klára – Tobias L. Kienlin – Pusztai Tamás
A REND
NYOMÁBAN
4000 éves települések
a Bükkalján
és a Borsodi-síkság
területén
Martin Opitz Kiadó

BORBAS 2022

► Borsodivánka-Marhajárás (Nagyhalom)







BORBAS 2022

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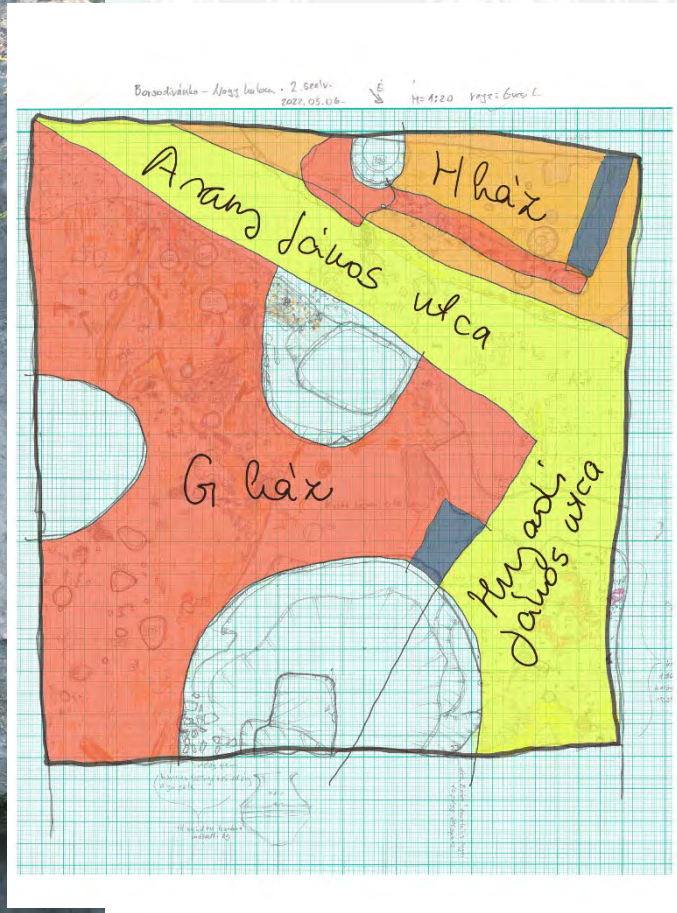

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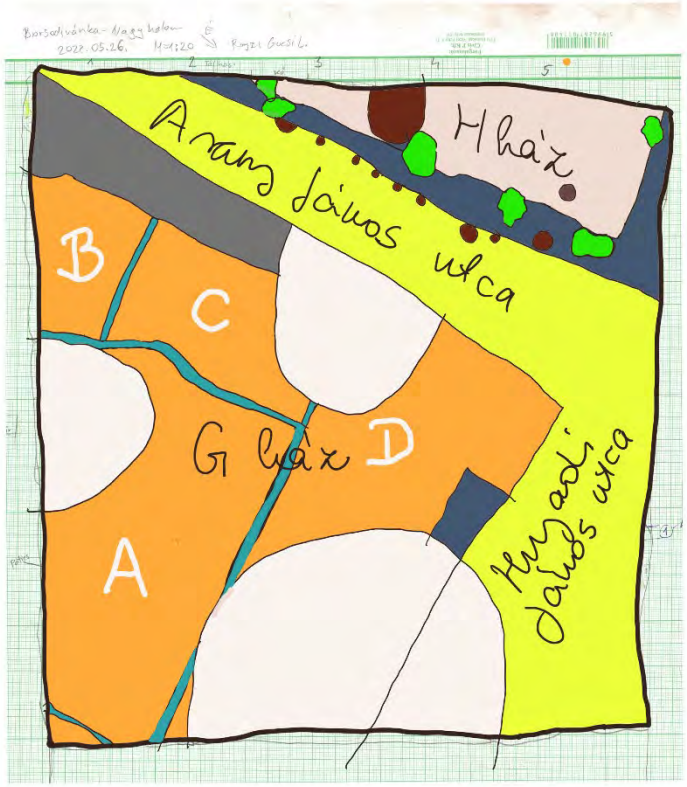
Borsodivánka - Nagy kelem
2022. 05. 26.
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Ruzsi Gusti L.
Arany János utca
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C
G ház
D
A
Hunyadi János utca

BORBAS 2022

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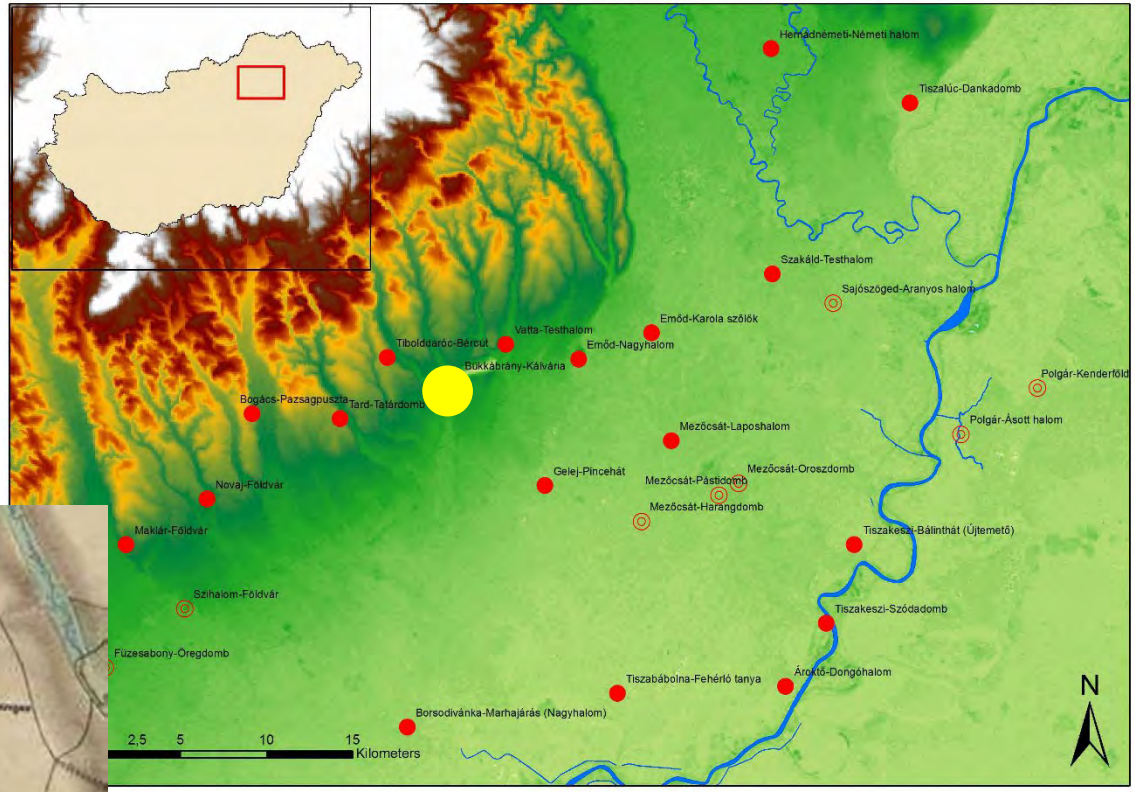
BORBAS 2022

► Bükkábrány-Kalvaria



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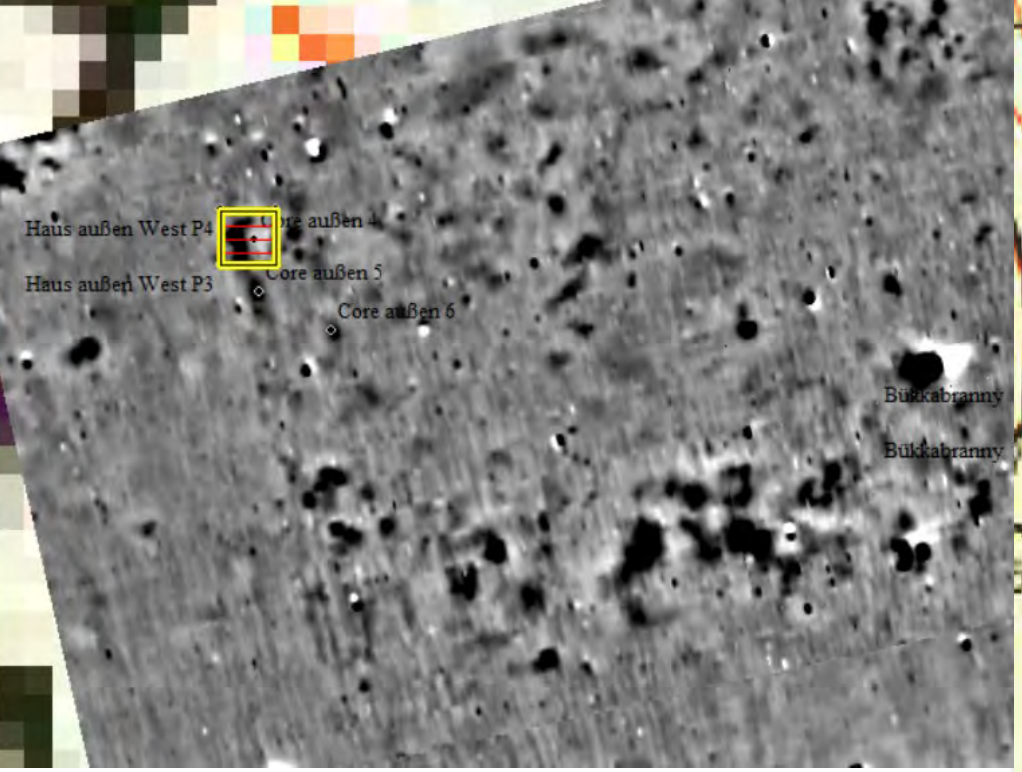
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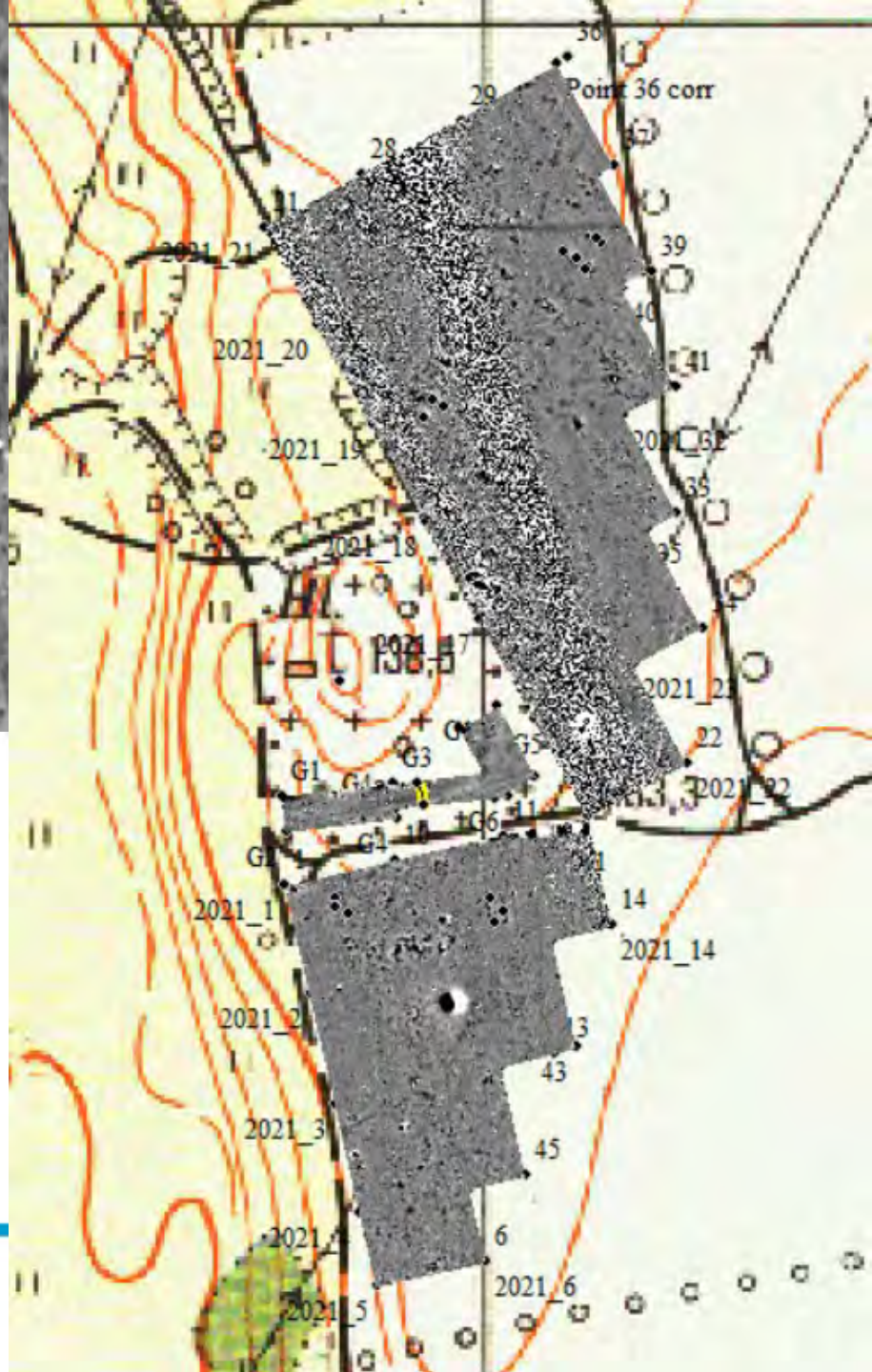
Bükkabranny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BORBAS 2022

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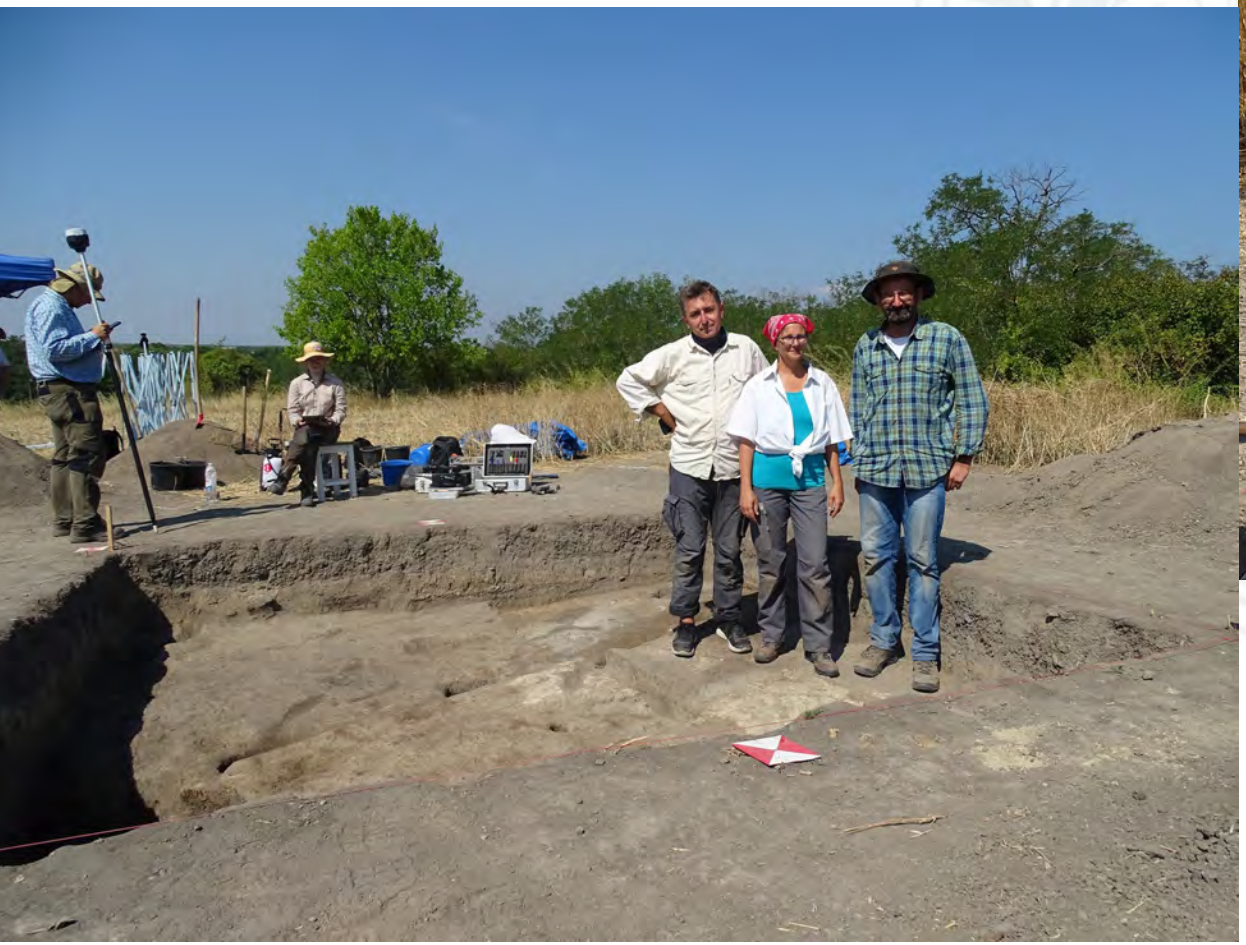
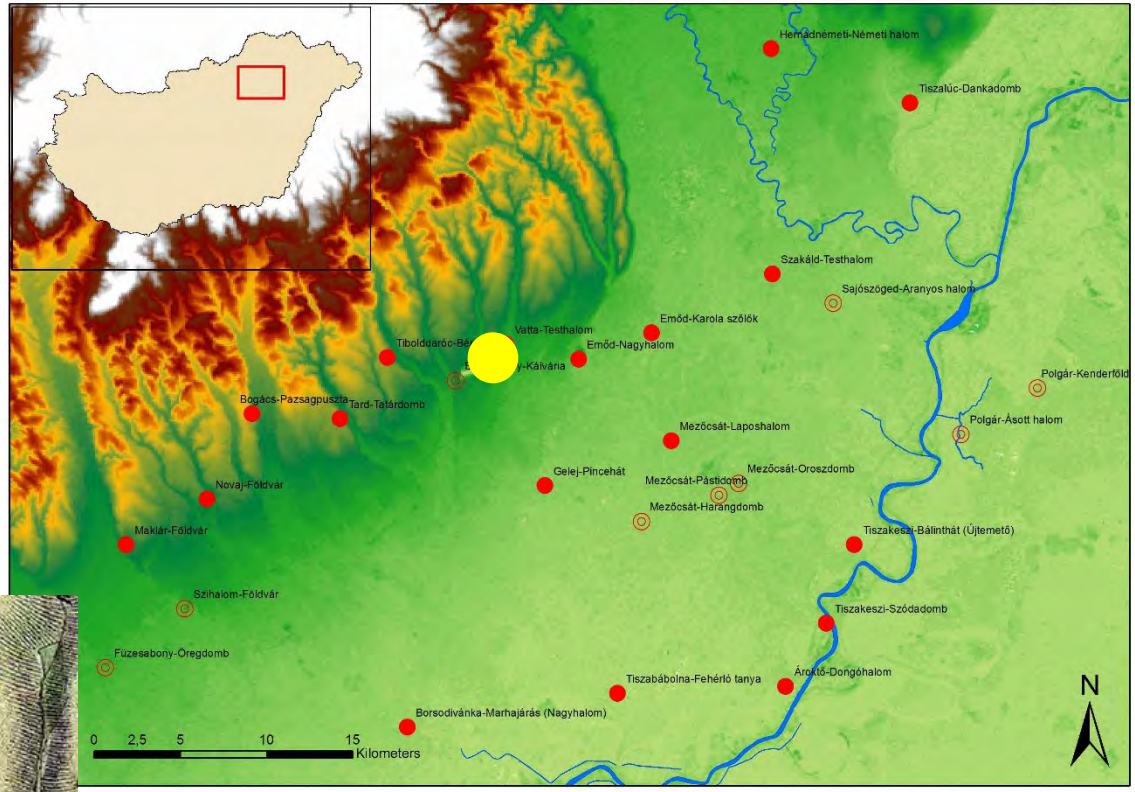


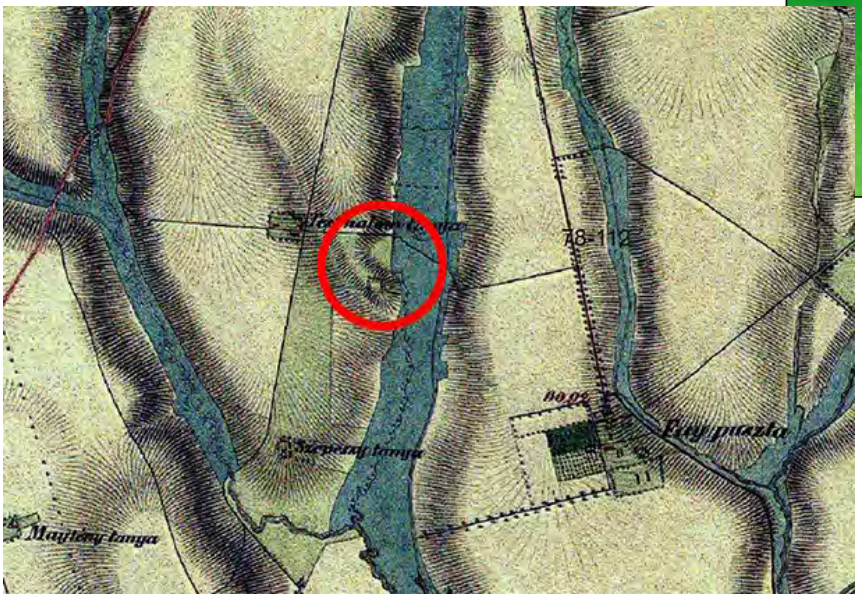
BORBAS 2022

BORBAS 2022

BORBAS 2022

► Vatta-Testhalom





► Magnetometry in search of a continuation of the EBA/MBA cemetery

► Sampling for radiocarbon dating the cemetery of Vatta

BORBAS

► Workshop 10 Years BORBAS

BORBAS 2022

BORBAS 10

10 Years Anniversary and Workshop

29-30 AUGUST 2022
JÓSZERENCSE HÁZA
JÓKAI ST 1., BÜKKÁBRÁNY

SUNDAY 28. AUGUST, 2022
Arrival of the guests

MONDAY 29. AUGUST, 2022

9.00-10.00 Registration
10.00-10.10 Opening

BLOCK 1. BORBAS PROJECT

10.10-11.00 Tobias L. Kienlin: *10 Years BORBAS: Aims and Approaches*
11.00-11.20 Klára Fischl: *In the wake of the order — book presentation*
11.20-11.40 Astrid Röpke: *The tell of Borsodivánka-Nagyhalom — linking Archaeobotany and Micromorphology*
11.40-12.00 Gian-Luca Paul: *The Middle Bronze Age cemetery of Vatta-Telekoldal-dűlő: Preliminary results*
12.00-12.20 Michael Schmied: *Hand in and in field and lab — 3 years of joint archaeological research: Possibilities, chances and results of a new cooperation*
12.30-14.00 LUNCH

BLOCK 2. OTHER PROJECTS AND RESEARCH FROM THE CARPATHIAN BASIN TELL CULTURES

14.00-14.20 Alexandra Gâvan, Marian Lie, Tobias Kienlin, Nadine Nolde, Tanja Zerl, Astrid Röpke, Gruia Fazecaș, Florin Gogâltan: *Living together or apart? Unravelling the development, internal organization, and social structure of a complex Bronze Age tell settlement at Toboliu, western Romania. Preliminary results (2020—2022)*
14.20-14.40 Viktória Kiss, Edit Merster, János Dani, Erika Gál, Anett Gémes, Tamás Szeniczey, Krisztián Kiss, Kristóf Fülöp, Gabriella Kulcsár, Vajk Szeverényi, Ashley McCall, Anikó Horváth, László Palcsu, István Major, Mihály Molnár, Tamás Hajdu: *Bronze Age settlements and cemeteries in the vicinity of Tiszafüred – 15 years of excavation*
14.40-15.00 Magdolna Vicze, Marie Louise Stig Sørensen: *Százhalombatta Project — reflection on results*
15.00-15.20 Attila Gyucha, William A. Parkinson, Paul R. Duffy, Danielle Riebe: *Prehistoric pathways to sustainable growth: Comparative trajectories of settlement nucleation during the Neolithic and Bronze Age — a new program in the Körös region*
15.20-15.40 COFFE BREAK
15.40-16.00 Eszter Melis: Bronze Age borderzone in the territory of northwestern Hungary
16.00-16.20 Nóra Szabó: Spatial analysis of Middle Bronze Age settlement networks
16.20-16.40 D. Oravkinová, M. Cheben, T. Lieskovský, P. Moska, I. Murín, T. Nováček, J. Petřík, K. Sláviček: *Spišský Štvrtok under revision: The results of the archaeological excavation in 2020*
16.40-17.00 Jerrod Seifert, Ashley Lingle, Paul R. Duffy, Attila Gyucha, William A. Parkinson: *The Vésztő-Mágor Conservation and Exhibition Program — goals, methods and the first season*

BLOCK 3. POSTER SECTION

17.00-17.20 Beáta Tugya: *Archaeozoological results of the BORBAS project*
17.20-18.00 Balázs Ádám: *Bronze Age tell settlements in the Bihar Region*
Archaeological Exhibition Bükkábrány – Guided Tour
18.00 Dinner, campfire, bath

THUESDAY, 30. AUGUST, 2022
Excursion to tell settlements of the Bükk foothill zone and the Borsod plain
Visit of the tell excavation at the site of Borosdivánka-Nagyhalom

Nemzeti Kulturális Alap · MISKOLCI EGYETEM · ELKH Eötvös Loránd Research Network · MNM Magyar Nemzeti Múzeum

MINDENNEK
JÓSZERENCS
HÁZA
BÜKKÁBRA
A REND
BÜKKALJA
BORSODI-
MEZŐSÉG

BORBAS 2022

MINDENNE
MEGVAN
A PÁRJA
TIPPEK, HOGYAN
LEGYÉL A MÚLT
TITKAINAK
KUTATÓJA
HERMAN
MÚZE
University
of Cologne

BORBAS 2022

BORBAS 2022

VÁNDORLÓ
BÁNYA PITKRI

► Excursion to Borsod sites following the workshop

BORBAS 2022

BORBAS 2022

BORBAS 2022

GLASGOW22
SOIL SCIENCE

BORBAS 2022

► Pictures of an exhibition …
The touring exhibition on the BORBAS project following the workshop (Mezőcsat)

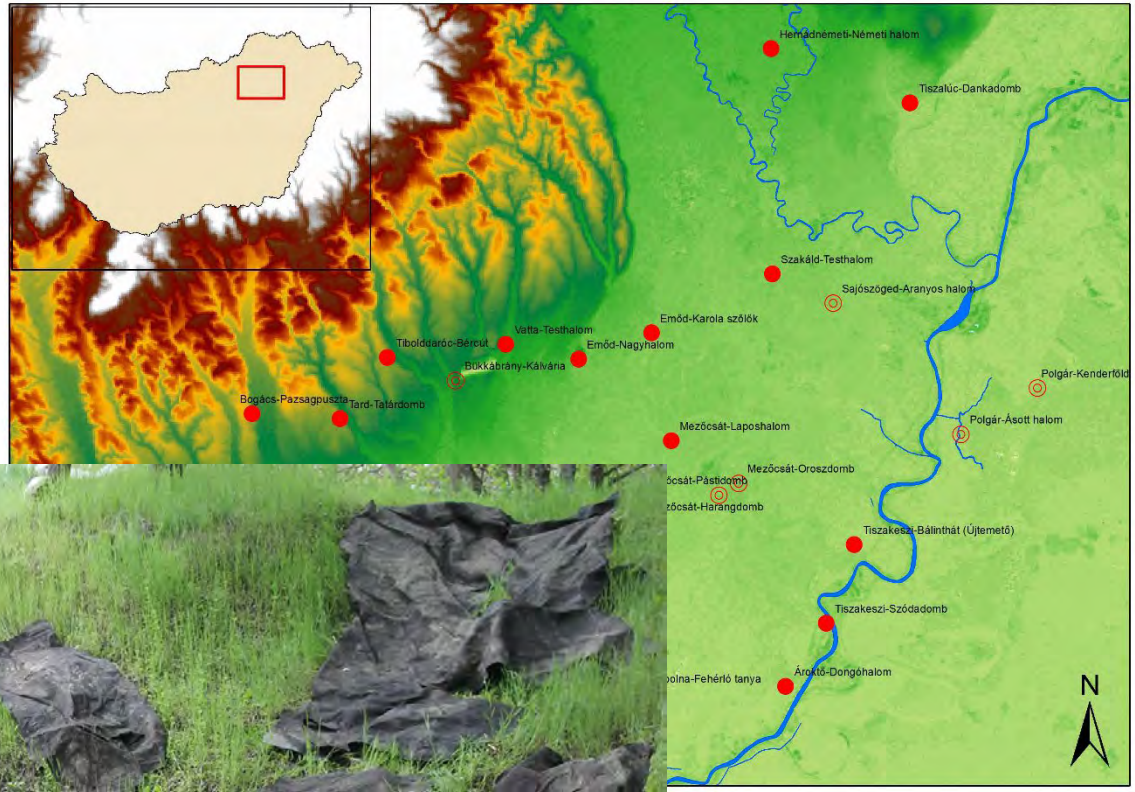
► Pictures of an exhibition …
The touring exhibition on the BORBAS project following the workshop (Borsodivánka)

► Pictures of an exhibition …
The touring exhibition on the BORBAS project following the workshop (Miskolc)

► Pictures of an exhibition …
The touring exhibition on the BORBAS project following the workshop

► Pictures of an exhibition …
The touring exhibition on the BORBAS project following the workshop

► Social Life on BORBAS Tells



► Accomodation in Borsodiváinka

► Accomodation in Bükkábrány

BORBAS 2022

► Castle Boldogkö

Köszönjük a figyelmet

► Core drilling at Late Neolithic Gönc-Kenderföldek in the Hernád valley

BORBAS 2022 – abroad

► Core drilling at Late Neolithic Gönc-Kenderföldek in the Hernád valley

► Participating in the core drillings of the Toboliu project, county Oradea (RO)

BORBAS 2022 – abroad

Linking Archaeobotany and Micromorphology on Bronze Age Tells in the Carpathian region

Tanja Zerl[1], Astrid Röpke[1], Mirijam Zickel[1], Klára P. Fischl [2], Marian Lie[1], Alexandra Gavan[1], Tobias L. Kienlin[1]

[1] University of Cologne (Germany), [2] University of Miskolc (Hungary)

Introduction

The analysis of plant residues from archaeological sediments can reveal plenty of information not only on the diet, but also on architectural techniques, spatial and temporal changes of settlement activity and palaeoenvironmental conditions. In order to obtain more detailed information on these aspects, linking archaeobotanical macro-remain analysis with micromorphological investigations has proven to be particularly useful. Using thin section original parts of the archaeological material can be analysed with their complex interactions between organic and mineral material and thus provide important information on the depositional history of the macro-remains and the matter in which they were embedded.

The potential of this method combination is illustrated by two case studies in the Carpathian region.
During excavations of the Middle Bronze Age tell settlements of Toboliu Dâmbu Zănăcanului (Bihor County, Romania) and Borsodivánka-Nagyhalom (Hungary) (Fig. 1) correlated samples for archaeobotanical and micromorphological analyses were collected from different archaeological contexts (Fig. 2–3).
The different sample types were analysed in the Laboratory of Archaeobotany, Departement of Prehistoric Archaeology, University of Cologne, and the results were subsequently combined.

Fig. 1: Locations of the tell settlements Toboliu Dâmbu Zănăcanului (Romania) and Borsodivánka- Nagyhalom (Hungary)

Toboliu Dâmbu Zănăcanului

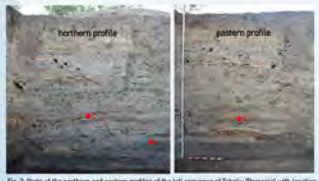


Fig. 2: Parts of the northern and eastern profiles of the tell sequence of Toboliu (Romania) with location of the presented layers/samples marked in red

Borsodivánka-Nagyhalom

Fig. 3: Profile of the tell sequence of Borsodivánka-Nagyhalom (Hungary) with location of the presented layers/samples marked in red

1 architectural features

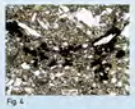


Fig. 4

A platform (housefloor, S312) built of clayey silt is contaminated with charred macro remains, as shown by macros- and microscopic plant coal fragments in the thin section (Fig. 4) (PPL).

Fig. 5

In this layer numerous charred plant remains belonging to the settlement noise were found, which were mixed with the clay during construction, of the platform, including threshing remains such as chaff of *Triticum dicoccum* (Fig. 5, left) and weeds seeds, e.g. of *Polygonum convolvulus* (Fig. 5, center) and *Galium spurium* (Fig. 5, right).

Fig. 6 Fig. 7

The first house floor sequence (S36) is composed of several chaff-tempered floors, indicated by elongates dendritic (Fig. 6) left in pseudomorphic voids (*pv*) (Fig. 7). Fragments of domestic waste can be seen in the occupation layer on top of it (Fig. 7 upper part) (PPL).

Fig. 8

Fragmented charcoal and bones were found directly on the housefloor, as well as charred threshing remains with chaff (*Triticum monococcum*, Fig. 8, left) and weeds (*Galium spurium*, Fig. 8, right).

2 domestic waste

Fig. 9

A gray (ashy) layer (S207) with accumulated domestic waste formed above a destruction layer with burnt daub. It consists of ash and silty sediments with micro- and macroscopic charred remains, phytoliths andbones. In the lower part also faecal spherulites are present. Planar voids are remnants of decayed plant fragments, they indicate trampling (Fig. 9) (PPL)

Fig. 10

This layer contained a large number of discarded charred cereal remains (e.g., chaff of *Triticum timophevi*, Fig. 10, left) and legumes (*Pisum sativum*, Fig. 10, center), as well as gathered plants (e.g., *Cornus mas*, Fig 10, right) and some weeds. Due to the lack of a dung component (→phosphat) no mineralised plant remains were found.

Fig. 11

Waste deposits in the middle part of the tell sequence (S07)are characterized by its phosphate-rich groundmass (total phosphate: 8656 ppm) (due to a distinct dung component) with phytoliths layers, buliforms are present indicating reed (*Phragmites australis*) (Fig. 11) (PPL).

Fig. 12

Besides animal food waste (fish scales, bones) numerous plant macro-remains were found. On the one hand, charred chaff (e.g. from *Triticum spelta*, Fig. 12, left) and charred diapores of weeds and grassland species (e.g. *Trifolium*; *Melilotus*), on the other hand (due to the phosphate), many plant remains were mineralised, such as *Lens culinaris* (Fig. 12, center) and *Daucus carota* (Fig. 12, right).

3 special features

Fig. 13

A burned mass finding with charred cereals were found inside a house (S213). The cereal caryopsis can even be seen in the thin sections (Fig. 13) (PPL).

Fig. 14

The mass find consits of carred *Hordeum vulgare* karyopses (n = 2688) (Fig. 14) together with only a few weed seeds (e.g. *Bromus* spec. and *Galium spurium*). It is likely, that the well cleand cereal charred by accident and then remained in the house after it was abandoned.

Fig. 15

Several phytolith layers in Borsodivanka occur during the phase of waste accumulation (see above). In total, macroscopically five phytolith layers with a thickness up to 3 cm could be counted. In thin section (Fig. 15), the multilaminated phytolith layers are clearly visible (PPL). These layers might have been served as coverage of the waste deposits.

Fig. 16

Very few macroremains were found in the phytolith layers. The few that were present are mostly mineralised or uncharred, hard-shelled stone kernels of *Sambucus ebulus* (Fig. 16).

Results

The approach of linking archaeobotanical and micromorphological analyses opens up new possibilities by the investigation of multiphase settlement sites.

- The respective results complement each other to provide a more comprehensive picture of living patterns on the tells.
- A more detailed description of archaeobotanical, micromorphological and archaeological contexts especially in reworked materials is given.
- The complex origins and uses of cereal remains (cooking, firing, processing, annealing) can be identified.
- A determination of taphonomic conditions and their causes is facilitated.

References:

T. L. Kienlin/K. P. Fischl/T. Florian, Borsod Region Bronze Age Settlement (BORBAS). Catalogue of the Early to Middle Bronze Age Tell Sites Covered by Magnametry and Surface Survey. Universitätsforschungen zur prähistorischen Archäologie 311 (Bonn 2018).

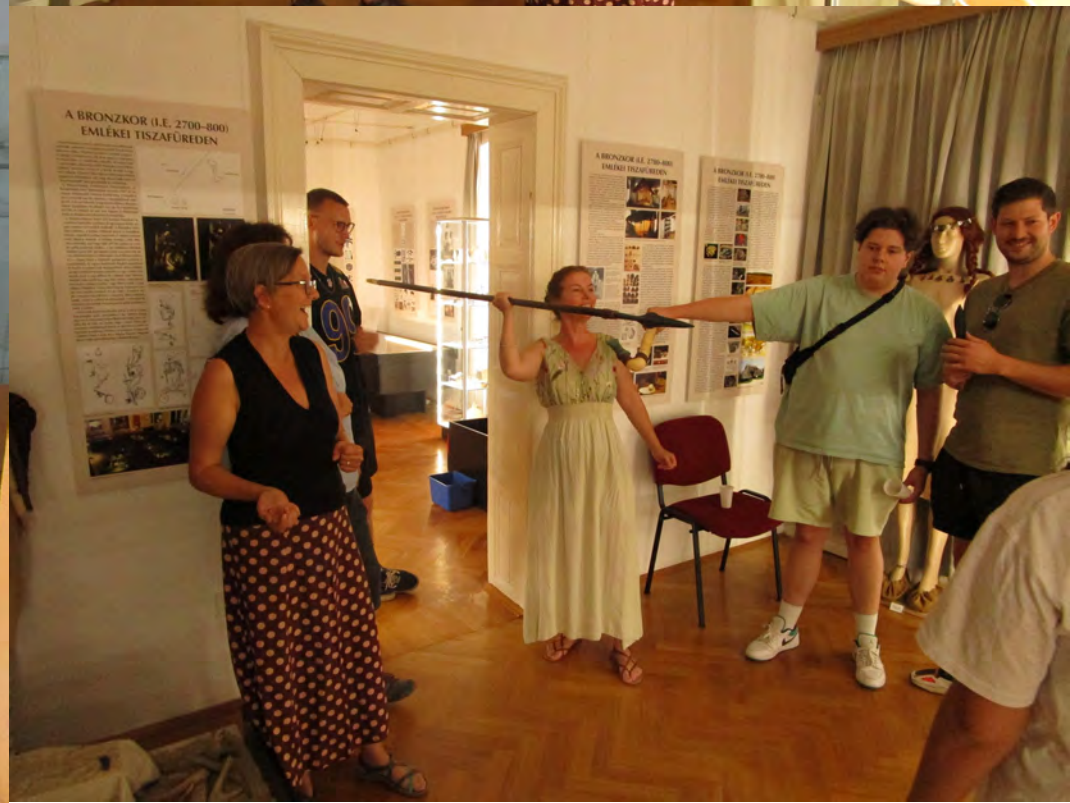
M. A. Lie/A. Gavan/C. Cordoş/T. L. Kienlin/B. Fitzcarp/P. Gogâltan, The Bronze Age Tell Settlement at Toboliu (Bihor County, Romania). A Brief Outline of Recent Investigations. In: K. P. Fischl/T. L. Kienlin (eds.), Beyond Circles – The Enclosure Phenomenon. Current Approaches to Settlement and Burial in the North-eastern Carpathian Basin and Adjacent Areas. Universitätsforschungen zur prähistorischen Archäologie 345 (Bonn 2019) 359–368.

BORBAS 2022 – abroad

► Great Hungary excursion of the Department of Prehistoric Archaeology Cologne
(Budapest, Magyar Nemzeti Múzeum)

► Great Hungary excursion of the Department of Prehistoric Archaeology Cologne
(Százhalombatta)

► Great Hungary excursion of the Department of Prehistoric Archaeology Cologne
(Tiszafüred)



► Great Hungary excursion of the Department of Prehistoric Archaeology Cologne
(Bükkábrány and Tiszabábolna)

► Great Hungary excursion of the Department of Prehistoric Archaeology Cologne
(Toszeg-Laposhalom)

2023

Systematic Core Drilling

- ► Ároktő-Dongóhalom
- ► Borsodivánka-Marhajárás (Nagyhalom)
- ► Sály (LBA)

Magnetometer Survey

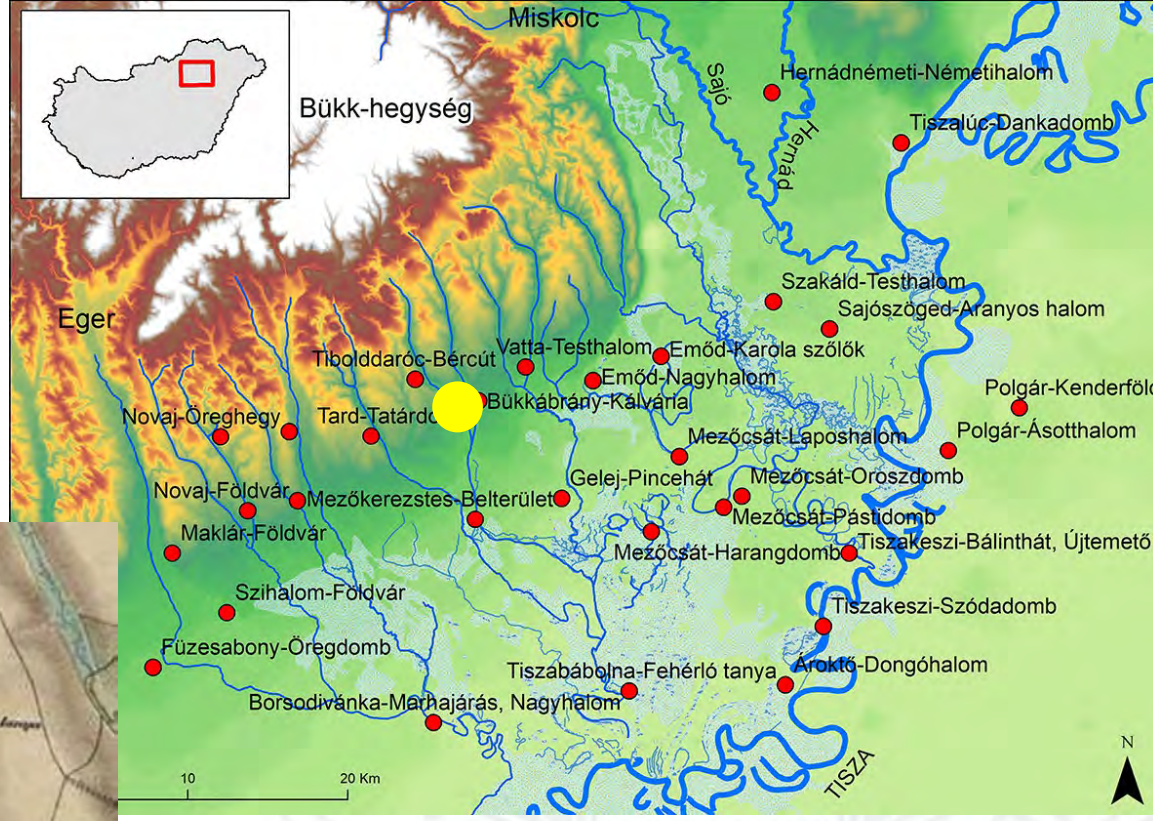
- ► Sály (LBA)

Excavation

- ► Borsodivánka-Marhajárás (Nagyhalom)
- ► Bükkábrány-Kálvária

UNIVERSITÄTSFORSCHUNGEN
ZUR PRÄHISTORISCHEN ARCHÄOLOGIE
Aus dem Institut für Ur- und Frühgeschichte der Universität zu Köln
Band 391
Bronze Age Landscape at Gelej
Archaeological researches at
Gelej-Pincehát, Gelej-Kanális dűlő and
Gelej-Beltelek dűlő
edited by
Klára P. Fischl
2023
VERLAG DR. RUDOLF HABELT GMBH, BONN

► Bükkábrány-Kalvaria



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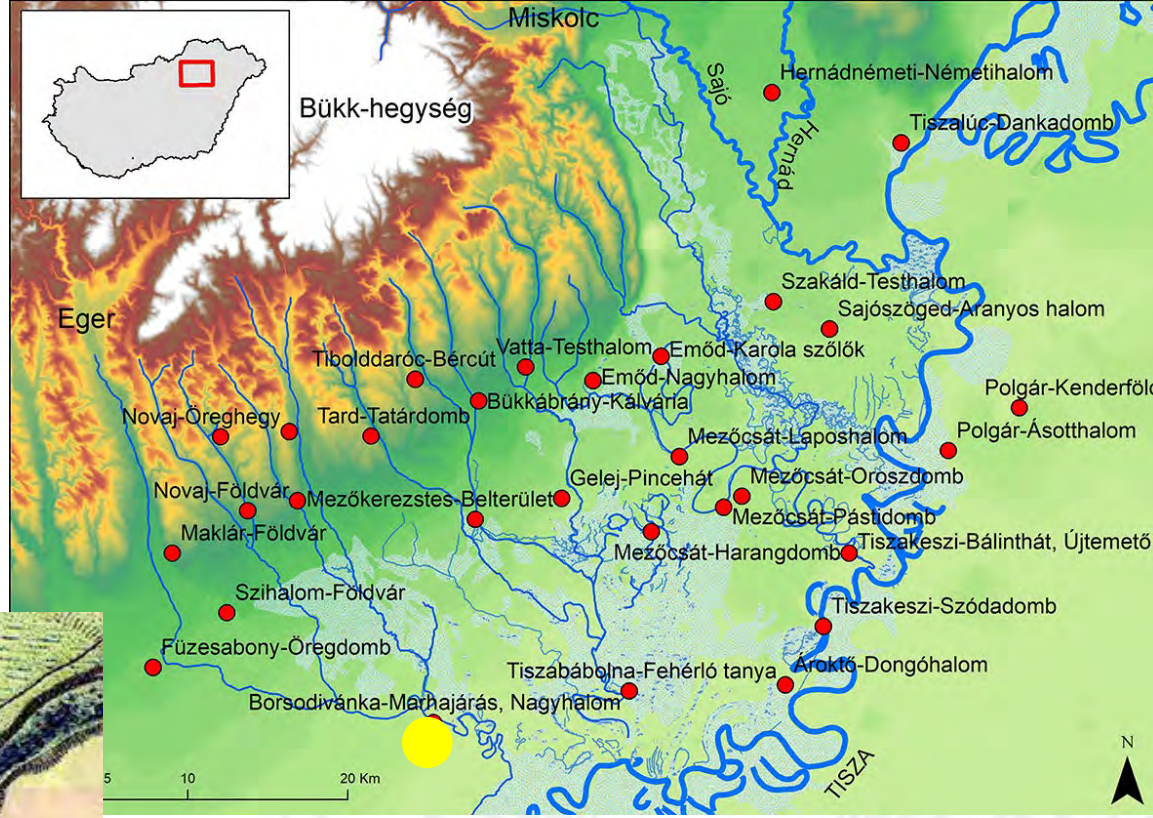
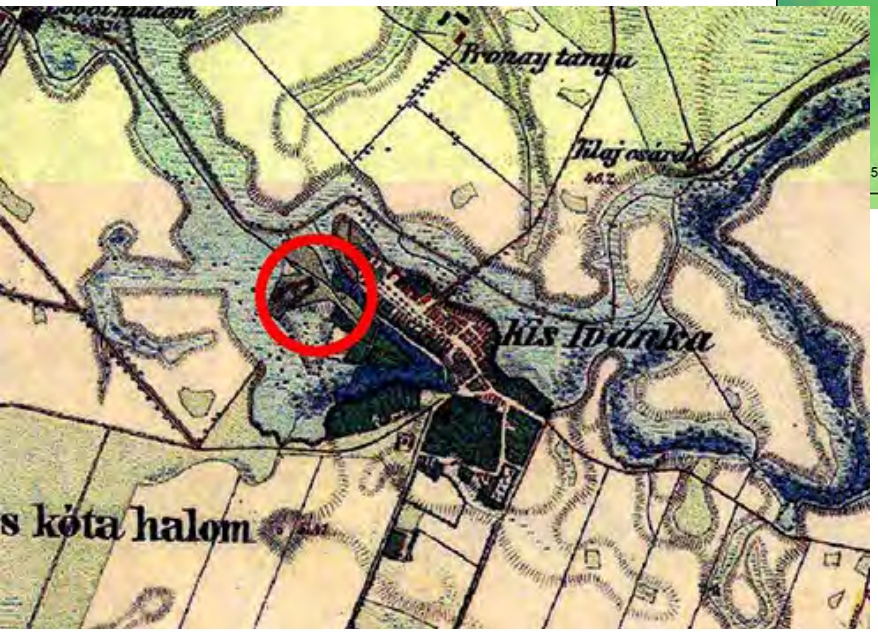
► Borsodivánka-Marhajárás (Nagyhalom)





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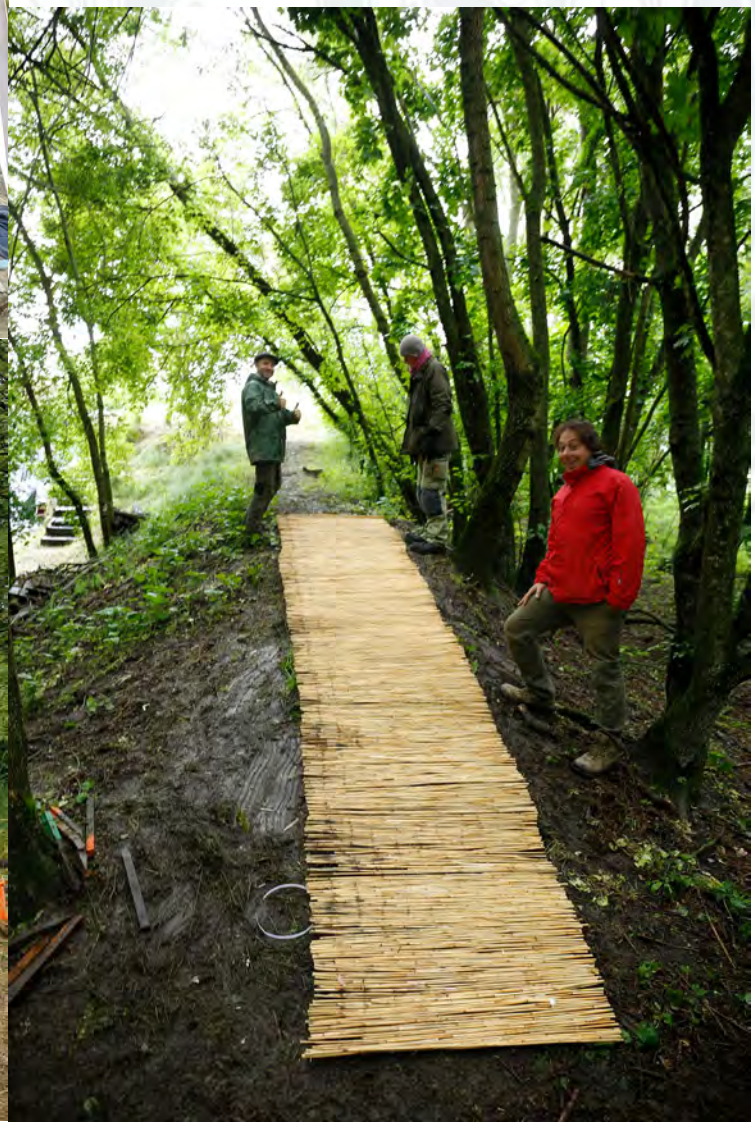

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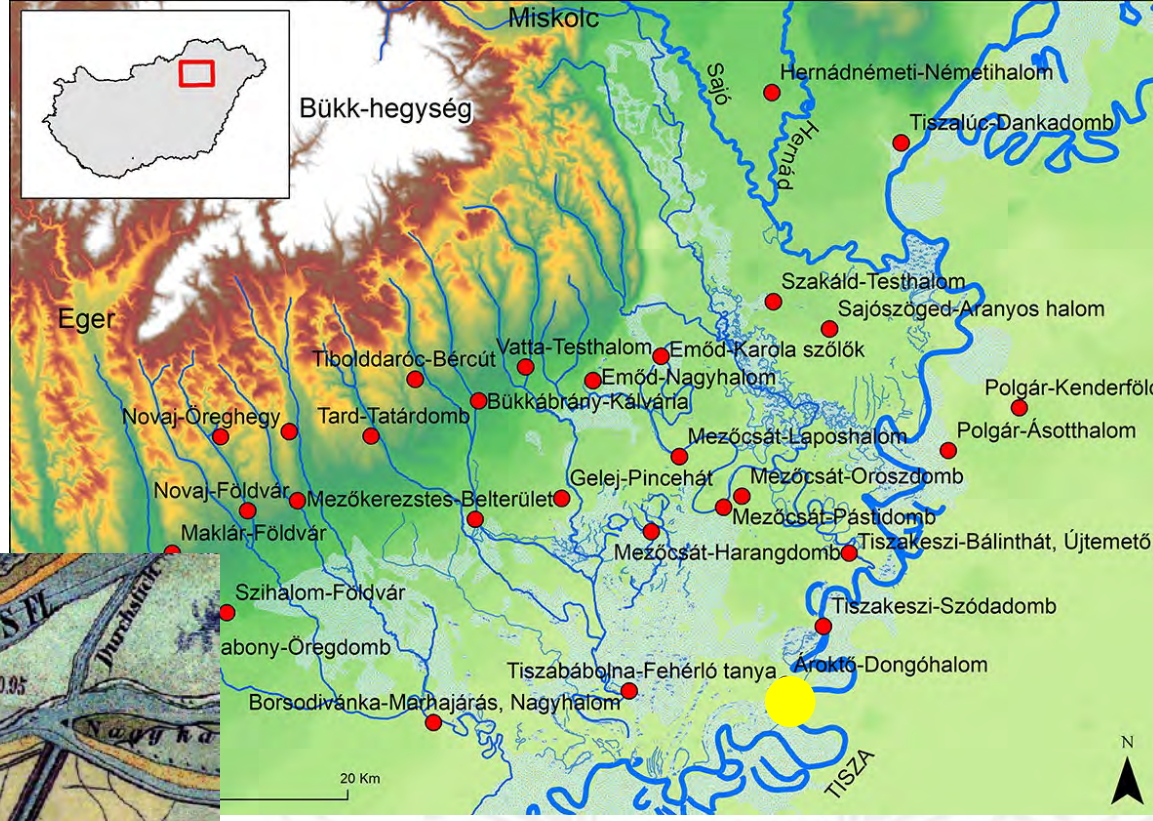
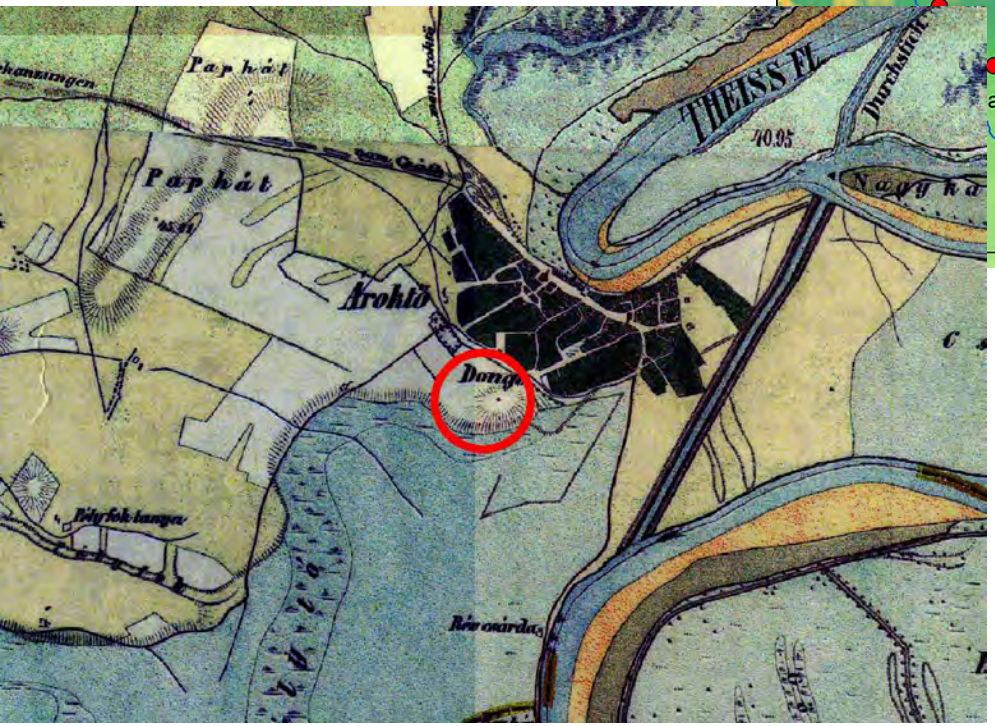
► Ároktő-Dongóhalom





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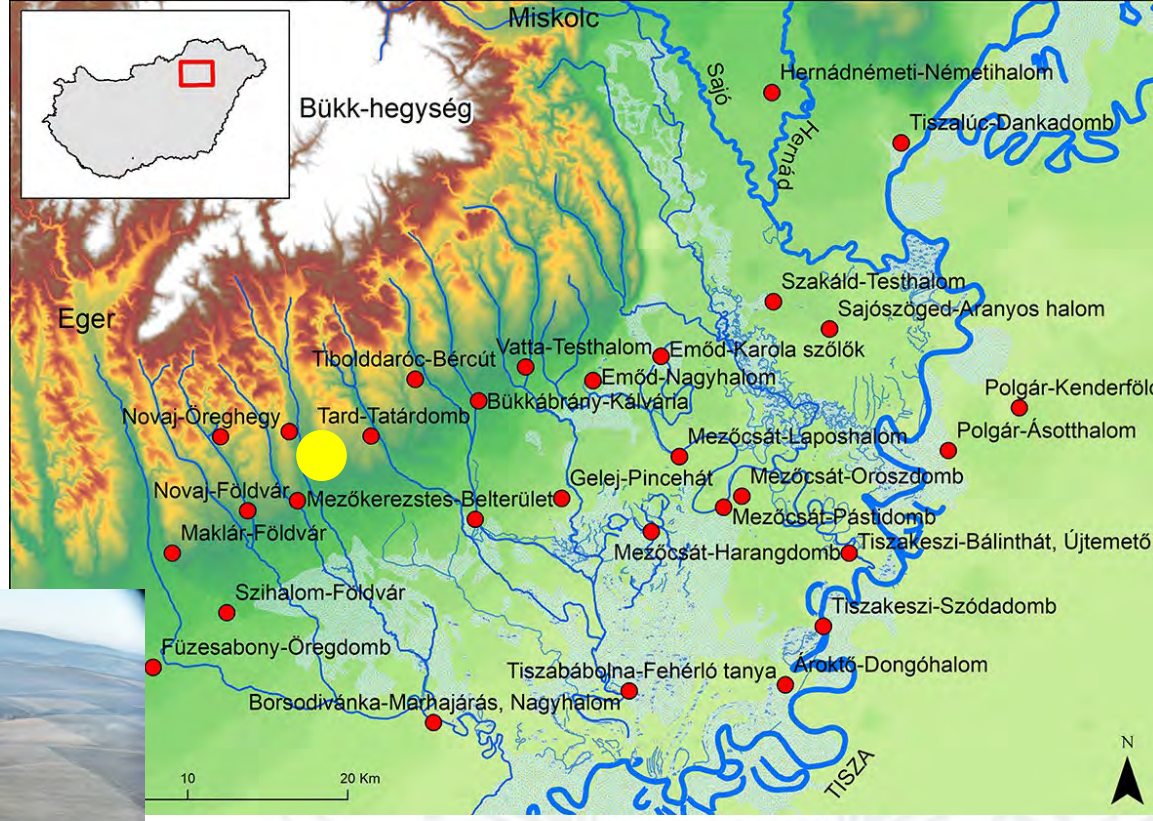
► Saly (LBA)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Hernád
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Tiszalúc-Dankadomb
Szakáld-Testhalom
Sajószöged-Aranyos halom
Vatta-Testhalom
Emőd-Karola szőlők
Emőd-Nagyhalom
Tiboldddaróc-Bércút
Bükkábrány-Kálvária
Novaj-Öreghegy
Tard-Tatárdomb
Polgár-Kenderföld
Polgár-Ásotthalom
Mezőcsát-Laposhalom
Gelej-Pincehát
Mezőcsát-Oroszdomb
Novaj-Földvár
Mezőkerezstes-Belterület
Mezőcsát-Pástidomb
Maklár-Földvár
Mezőcsát-Harangdomb
Tiszakeszi-Bálinthát, Újtemető
Szihalom-Földvár
Tiszakeszi-Szódadomb
Füzesabony-Öregdomb
Tiszabábolna-Fehérló tanya
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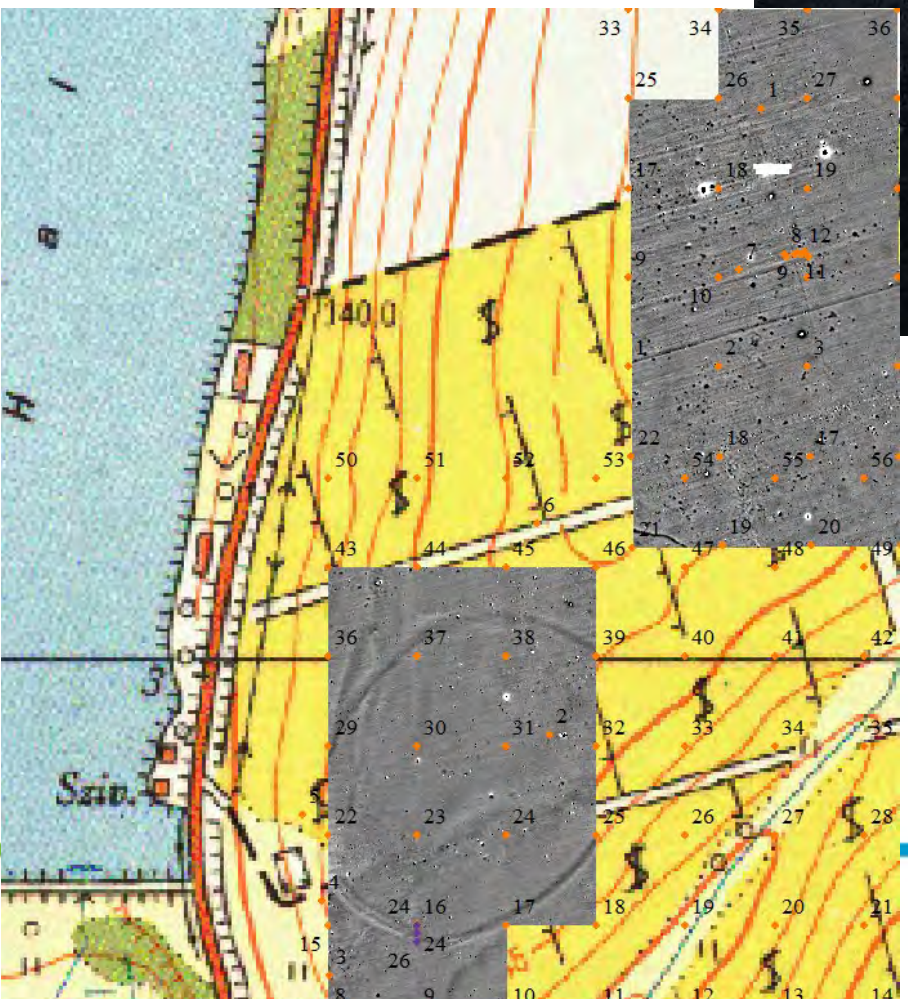
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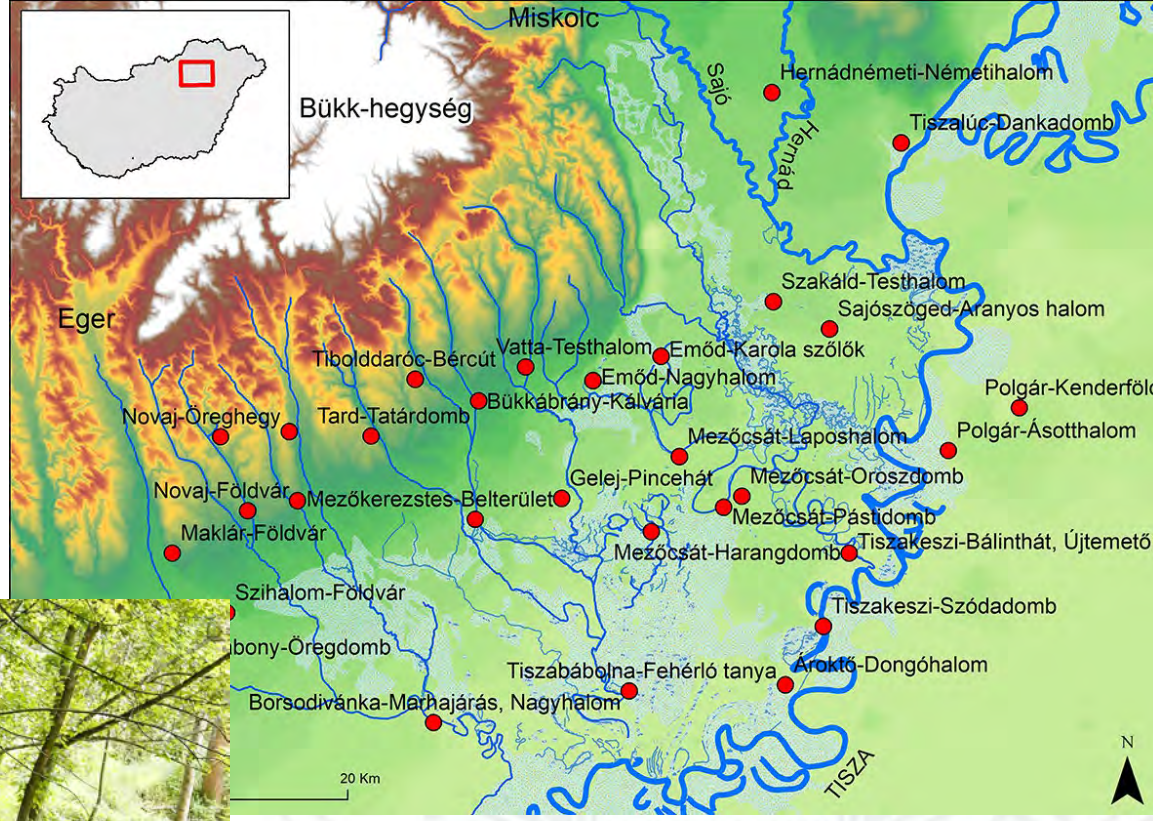
► Social Life on BORBAS Tells



► Accomodation in Borsodivánka

BORBAS 2023

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2024

Systematic Core Drilling

- ► Bogács-Pazsagpuszta
- ► Gelej-Pincehát
- ► Mezőcsát-Oroszdomb
- ► Sajószöged-Aranyoshalom
- ► Tiszakeszi-Bálinthát Újtemető

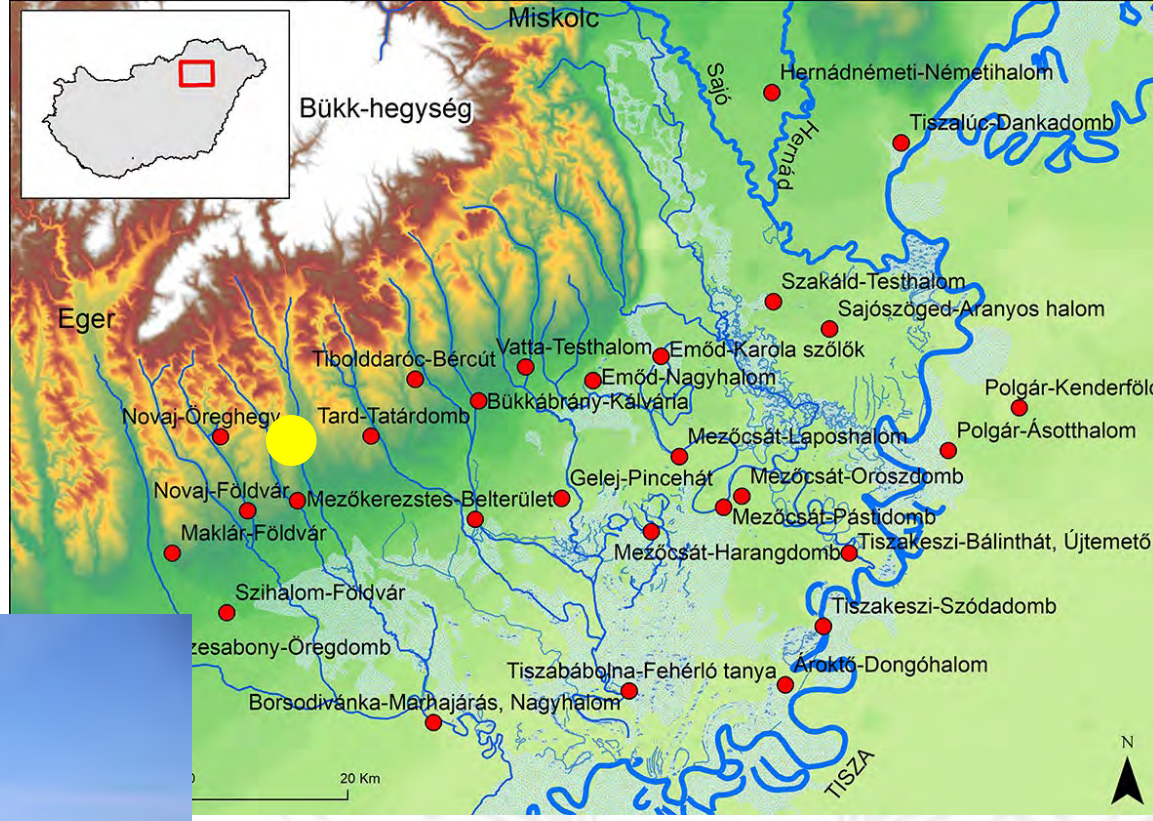
Soil Chemistry

- ► Emőd-Nagyhalom

Excavation

- ► Borsodivánka-Marhajárás (Nagyhalom)

► Bogács-Pazsagpuszta



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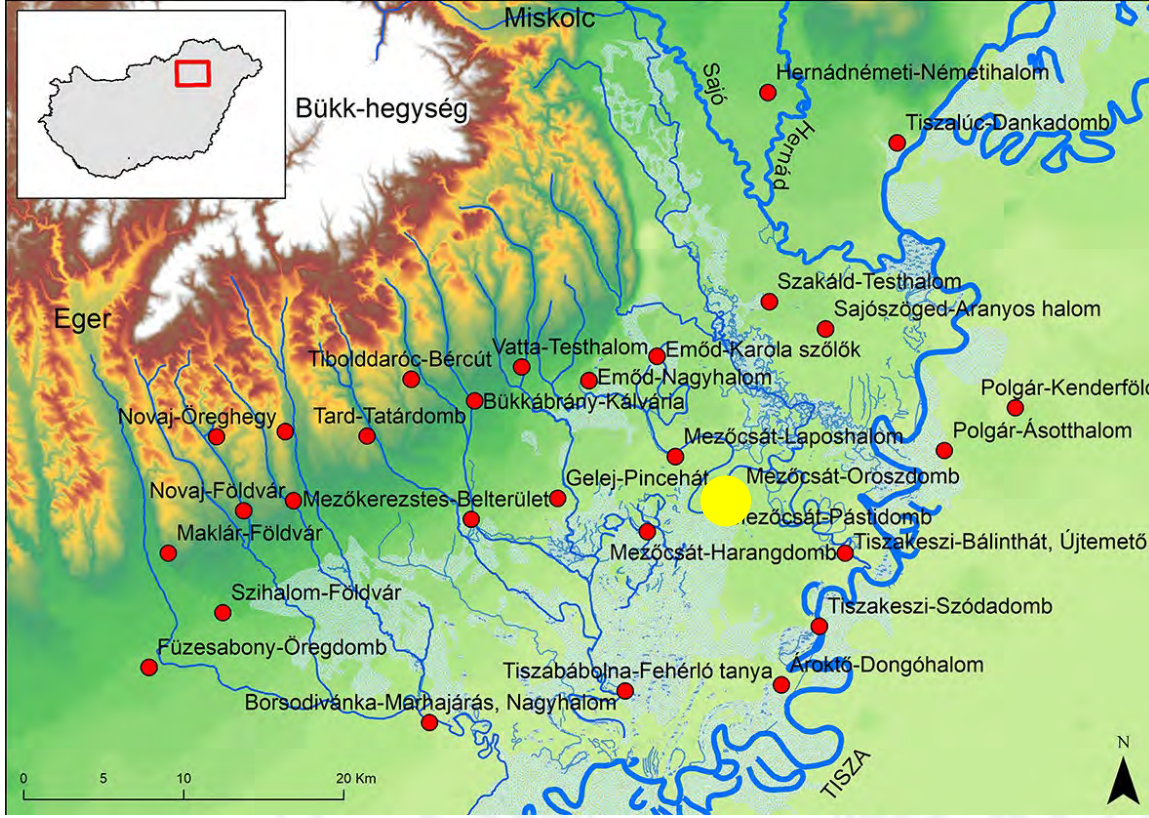
► Mezőcsát-Oroszdomb



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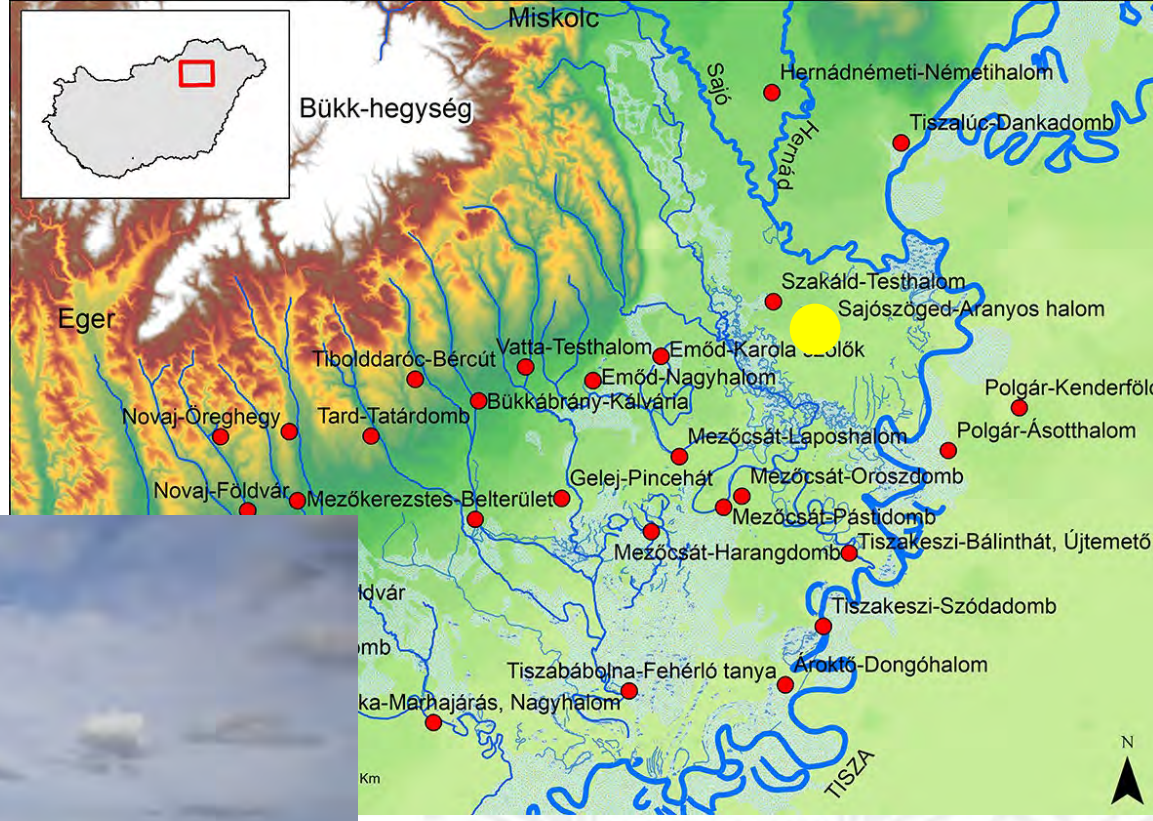

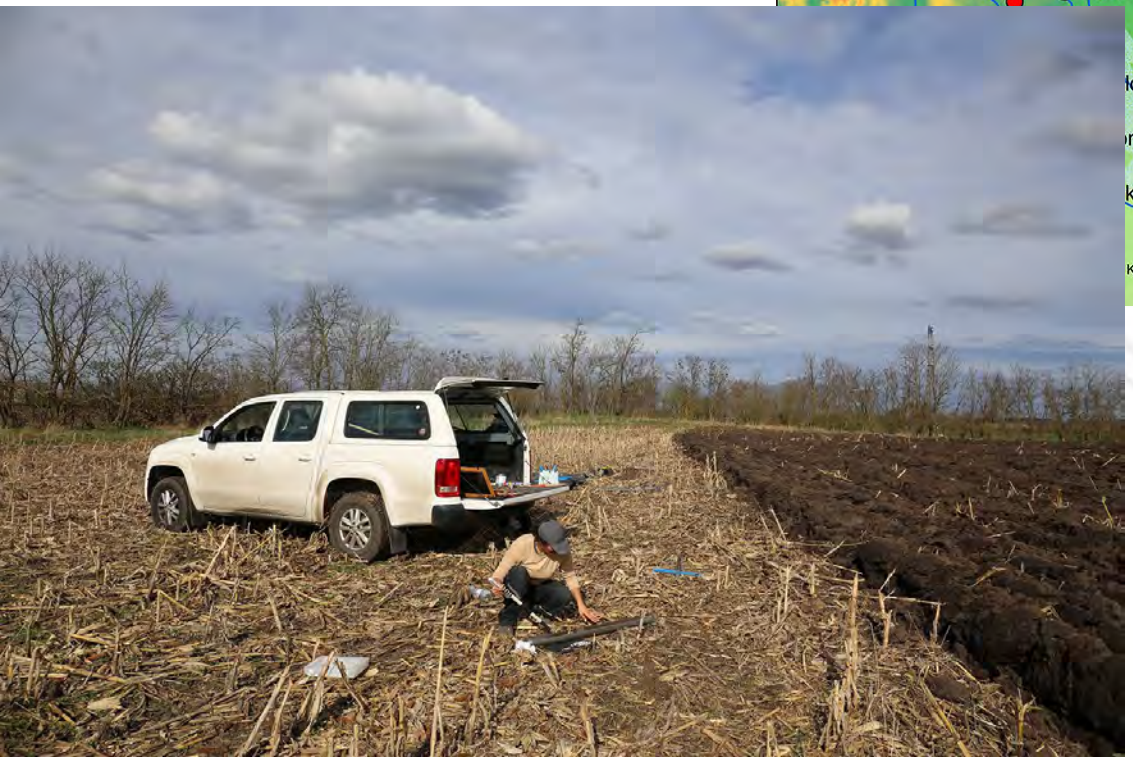

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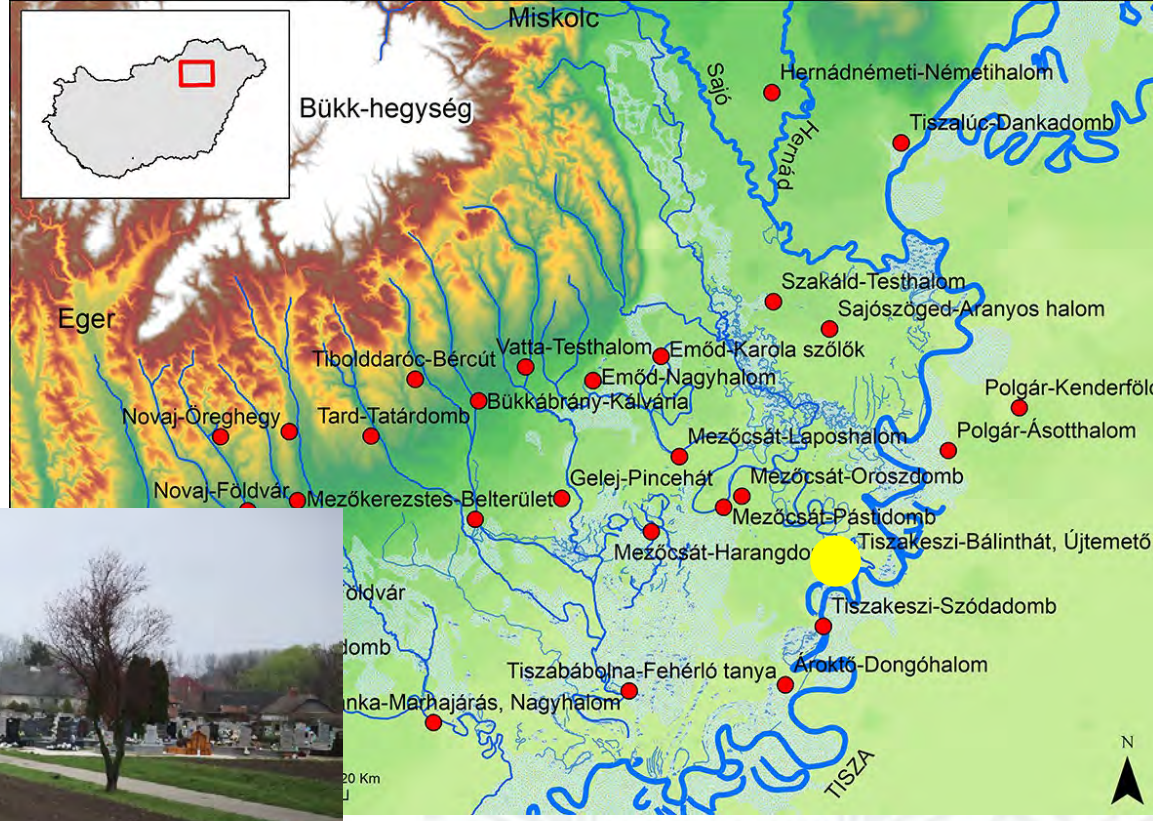

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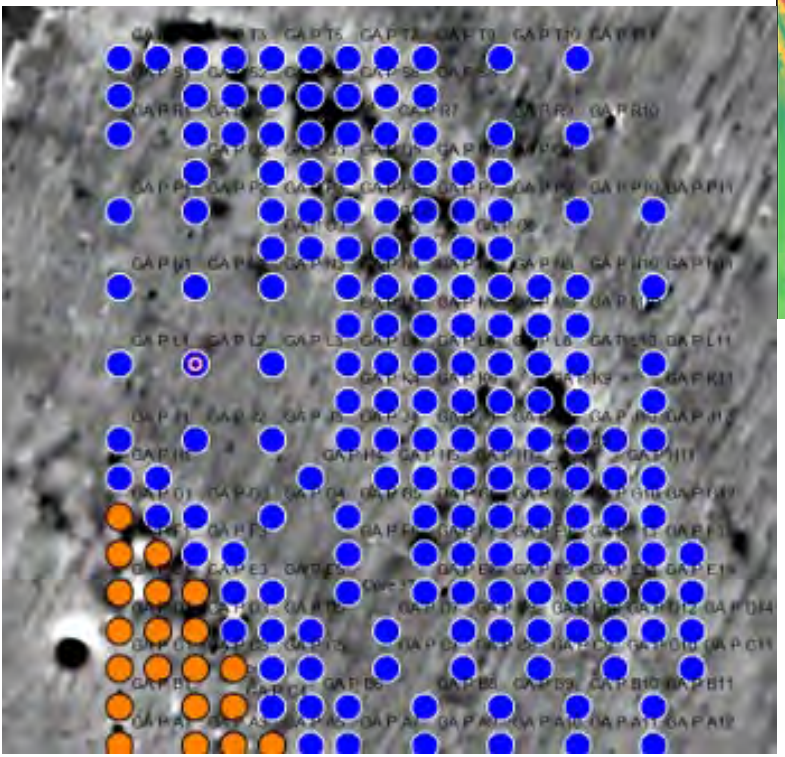

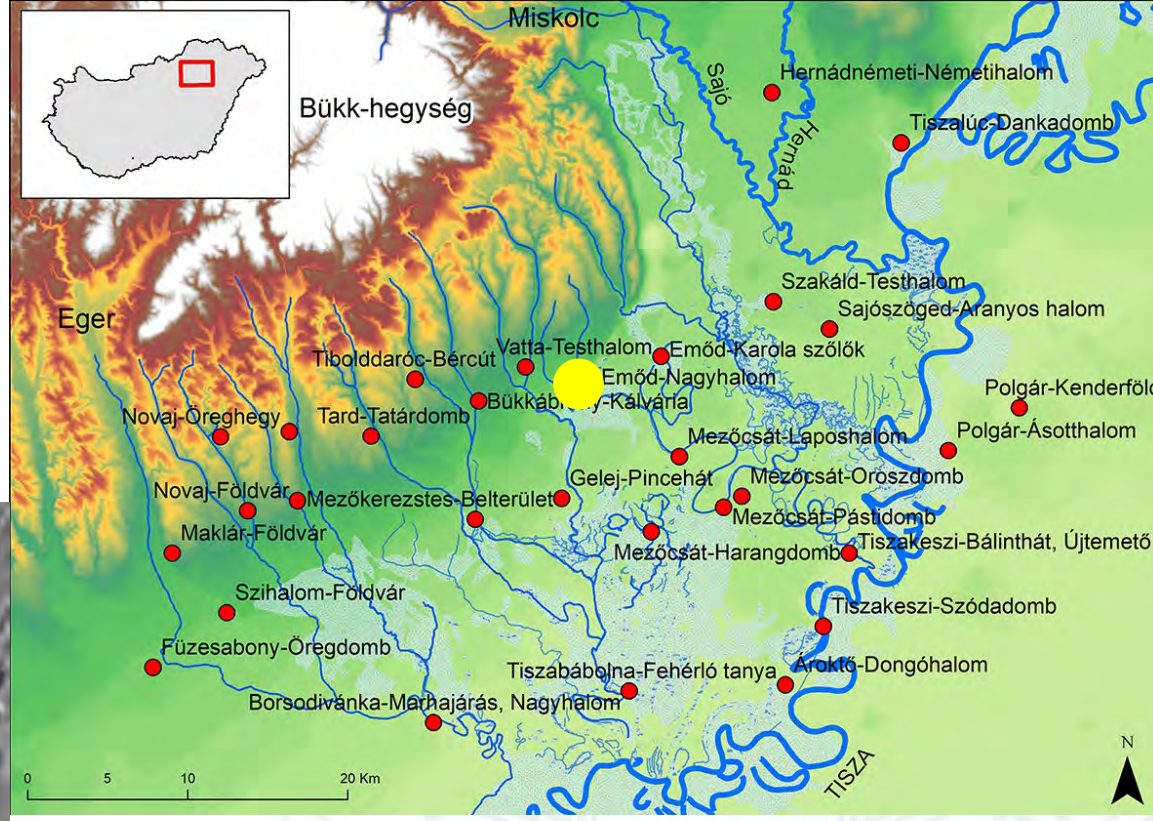

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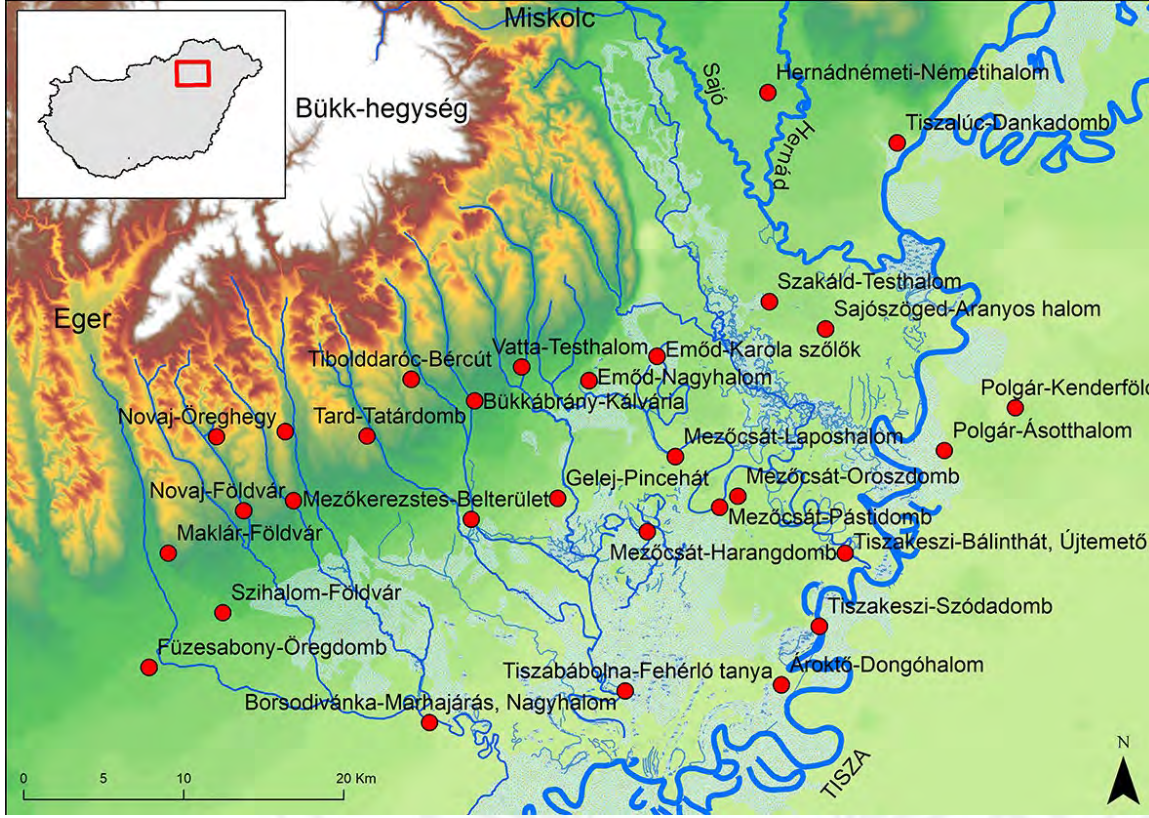
► Social Life on BORBAS Tells



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UNIVERSITY OF MISKOLC
Universität
zu Köln
MUZEUM

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2025

Systematic Core Drilling

- ► Tiszakeszi-Szódadomb
- ► Szakáld-Testhalom

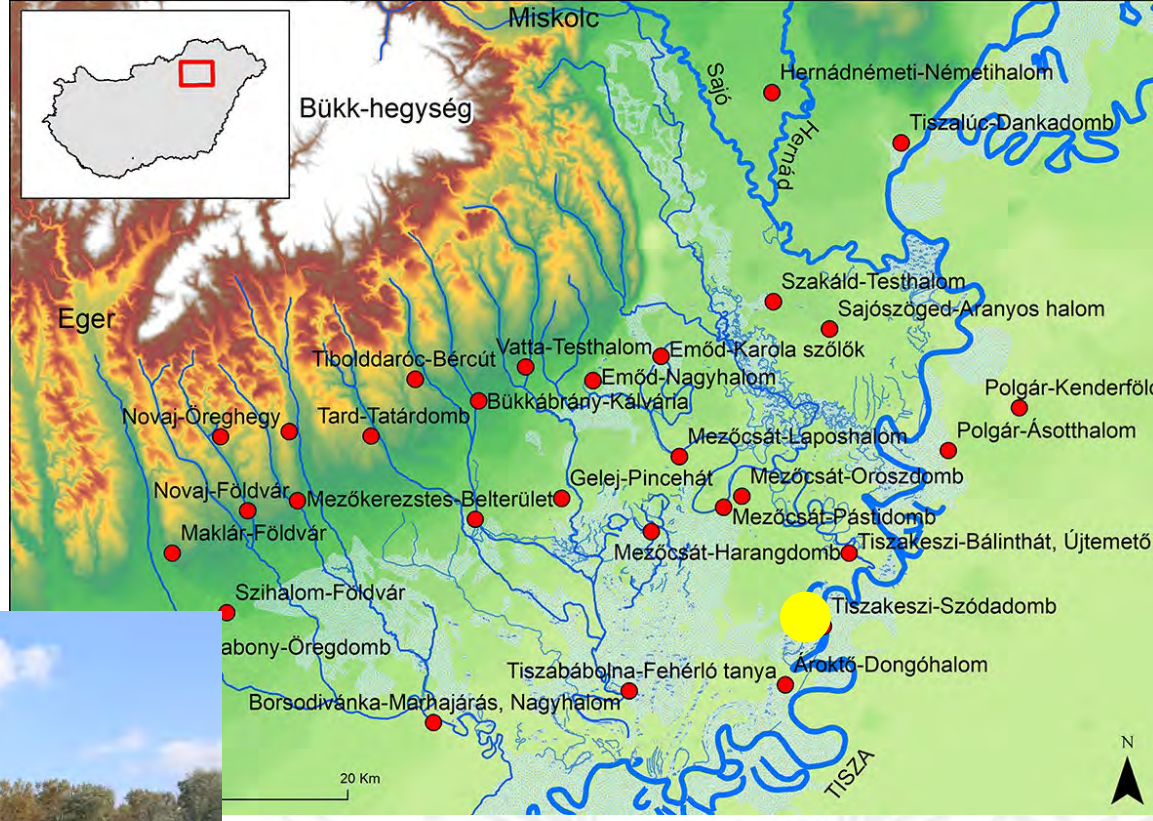
Magnetometer Survey

- ► Mezőkeresztes-Lengyel tanya
- ► Szakáld-Testhalom

Soil Chemistry

- ► Emőd-Nagyhalom

► Tiszakeszi-Szódadomb



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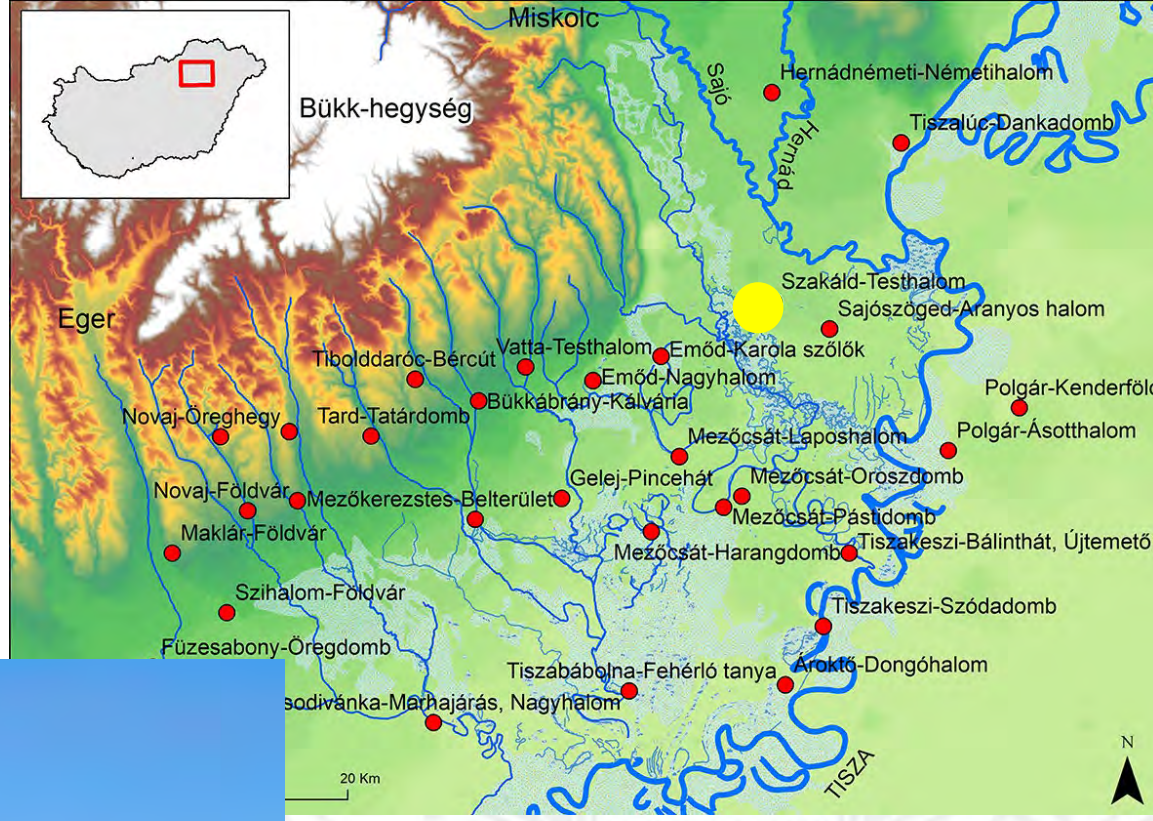
► Szakáld-Testhalom



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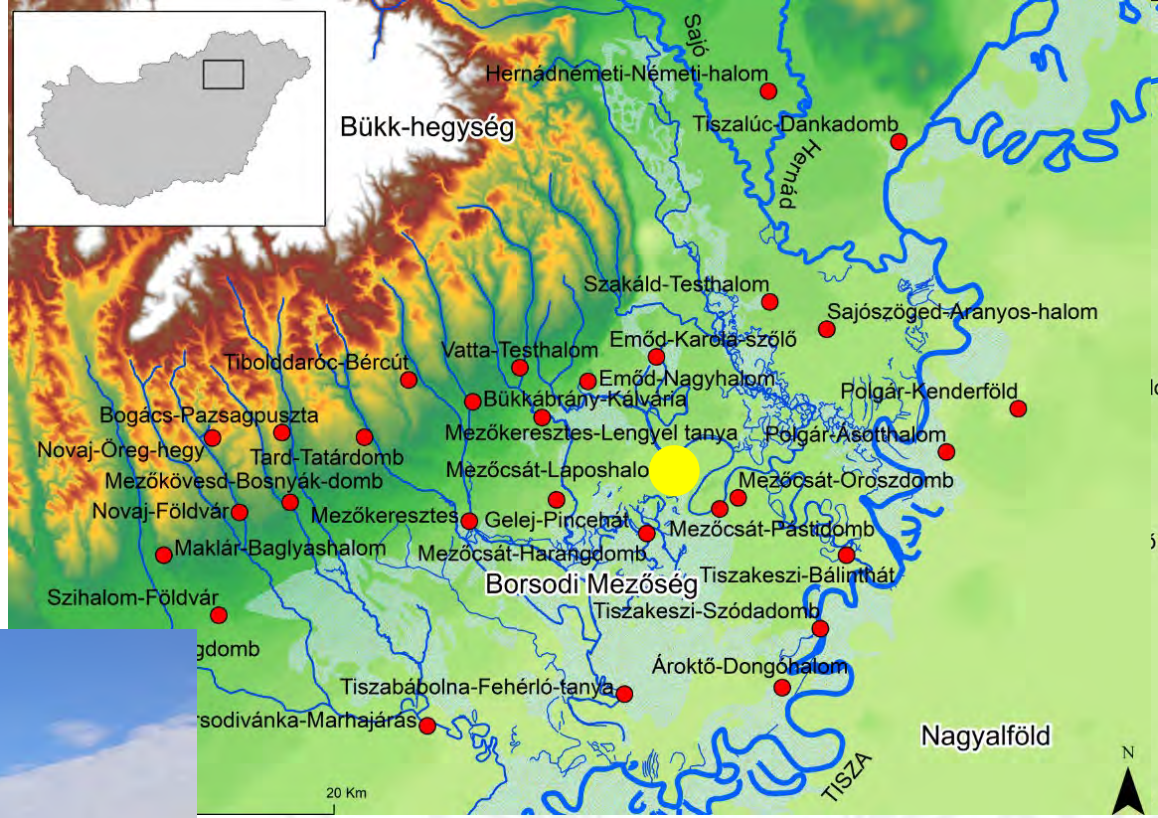
► Mezőkeresztes-Lengyel tanya



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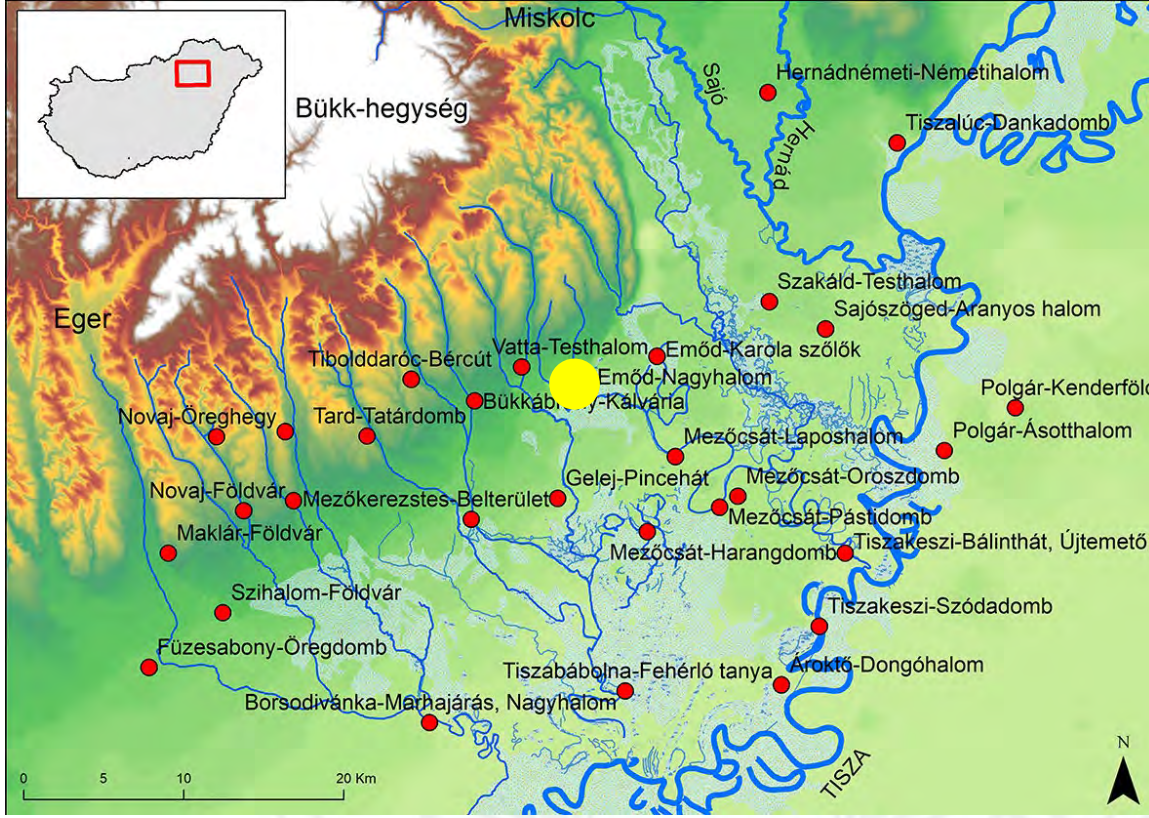

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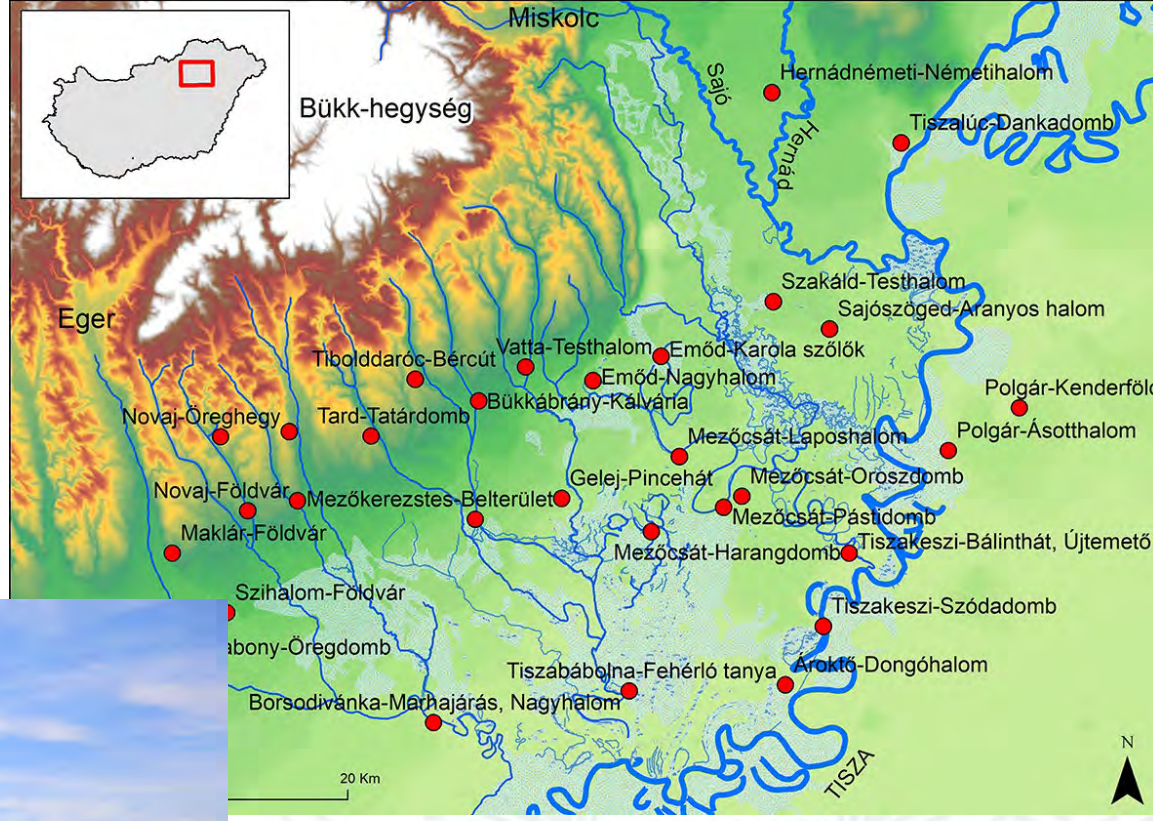
SAPIENS

► Social Life on BORBAS Tells



BORBAS 2025

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2026

Magnetometer Survey

- ► Igrici-Szőke hát (LBA)
- ► Arnót (Hernád)
- ► Ináncs (Hernád)
- ► Megyaszó (Hernád)
- ► Vatta

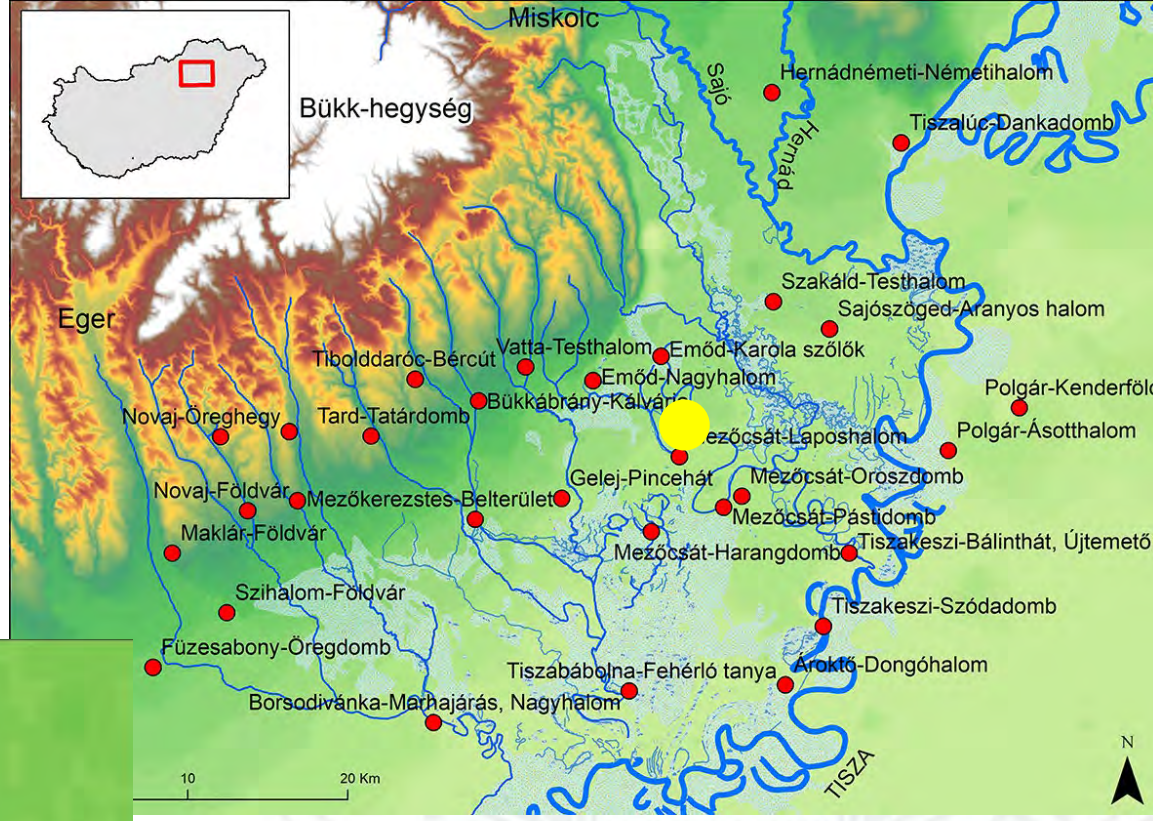
Systematic Core Drilling

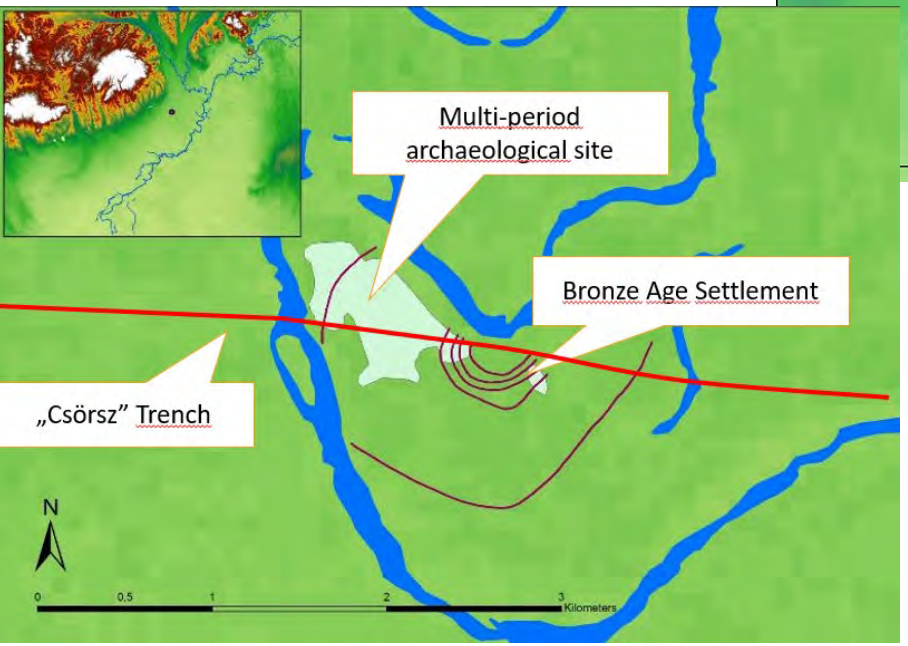
- ► Igrici (LBA)

Soil Chemistry (‘ashy’ layers)

- ► Emőd-Nagyhalom
- ► Maklár-Baglyashalom
- ► Mezőcsát-Laposhalom
- ► Szakáld-Testhalom

► Igrici-Szőke hát (LBA ‘megasite’)





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Pit 4
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d1
Ditch 2 East 0m
Ditch 2
Ditch 3 West 1
Pit 54
Ditch 4 T1 C1 A
Ditch 4 Transect West 1
Ditch 4 Transect West 2
Ditch 4 add1
Pit 79
Pit 87
Pit 50
Pit 54
Pit 74
Pit 86
Pit 51
Pit 52
Pit 75
Pit 62
House 1D
House 1A
House 1B
House 1C
Ditch 5 Transect West
D1 T1 C1
Matola-csatorna

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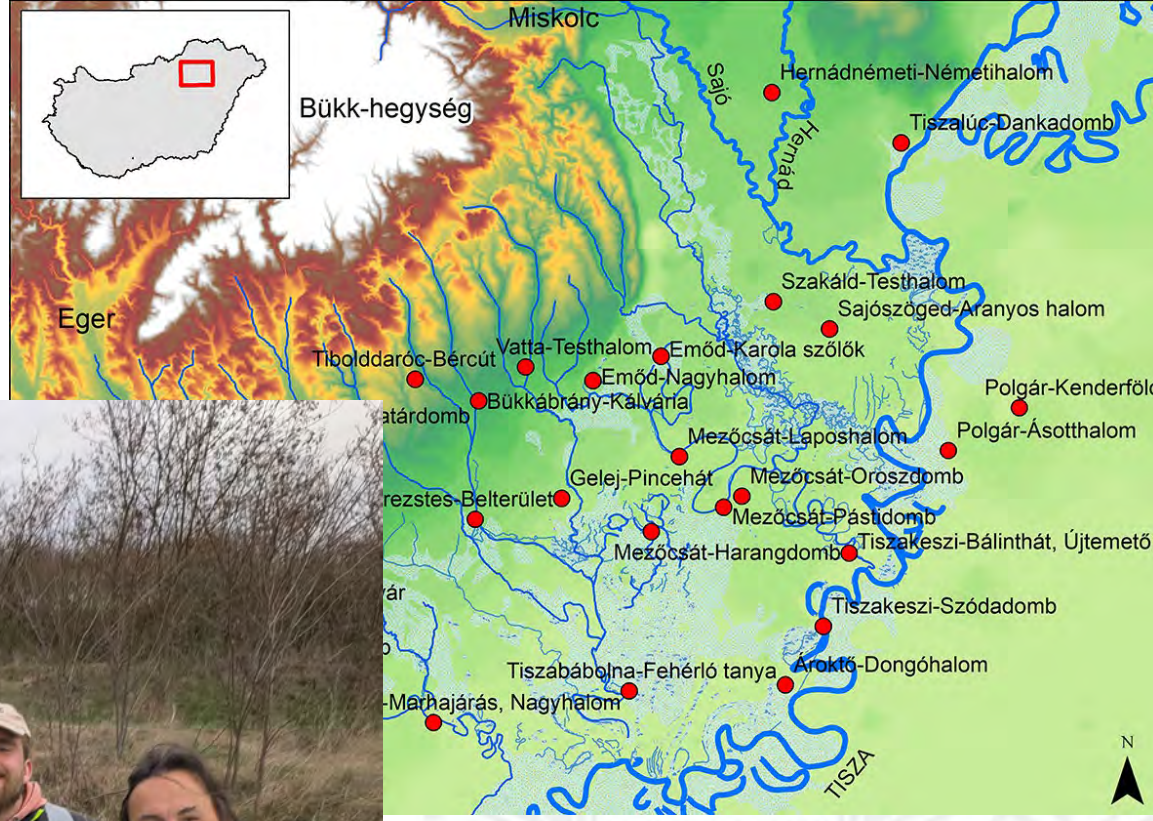
► Social Life on BORBAS Tells



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