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Geoarchaeological approach of the Middle Eure valley (Paris Basin, France): benchmarks for reconstructing both palaeoenvironments and human occupations during the Mid- and Late Holocene

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Geoarchaeological approach of the Middle Eure valley (Paris Basin, France): benchmarks for reconstructing both palaeoenvironments and human occupations during the Mid- and Late Holocene

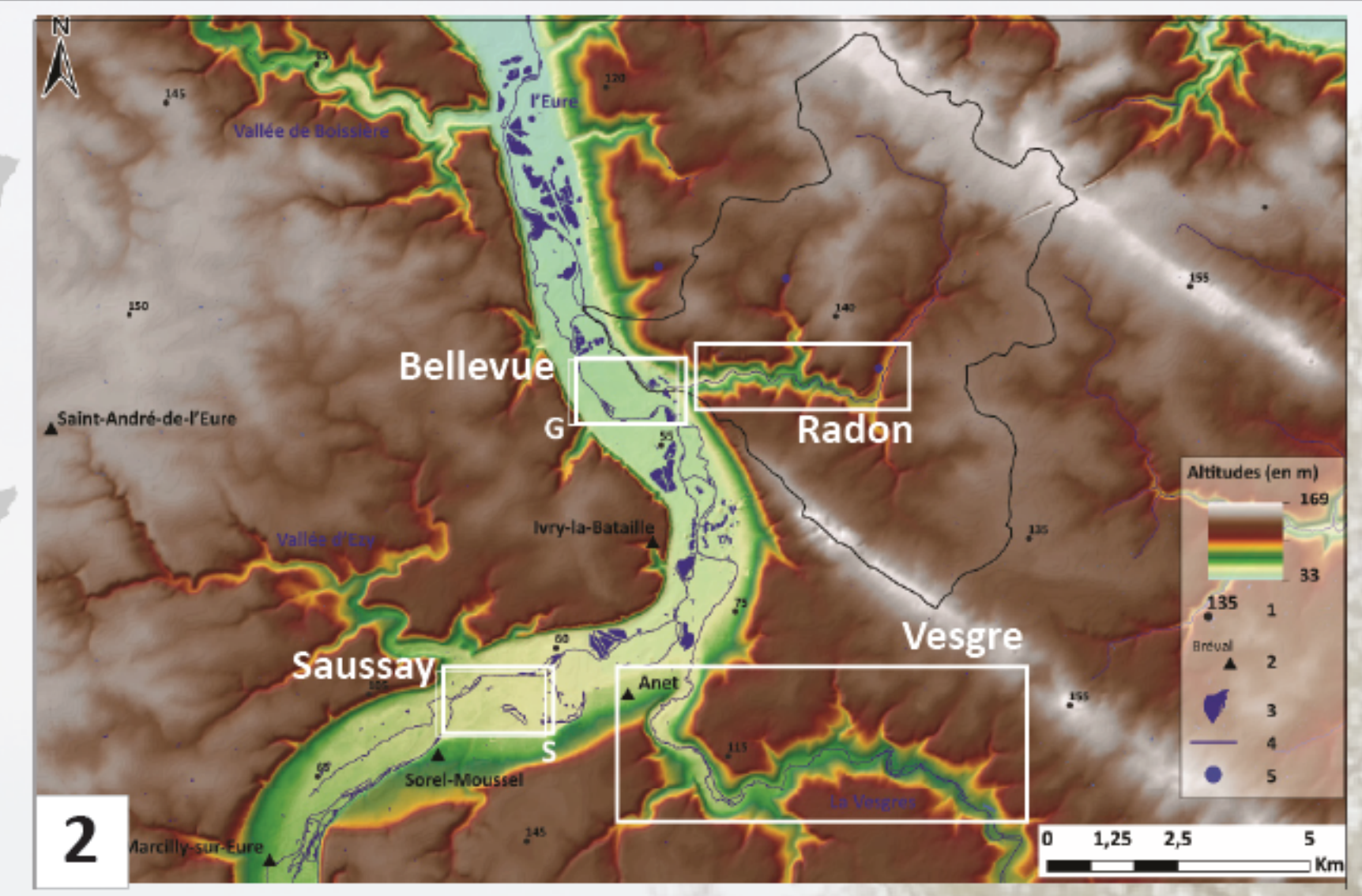


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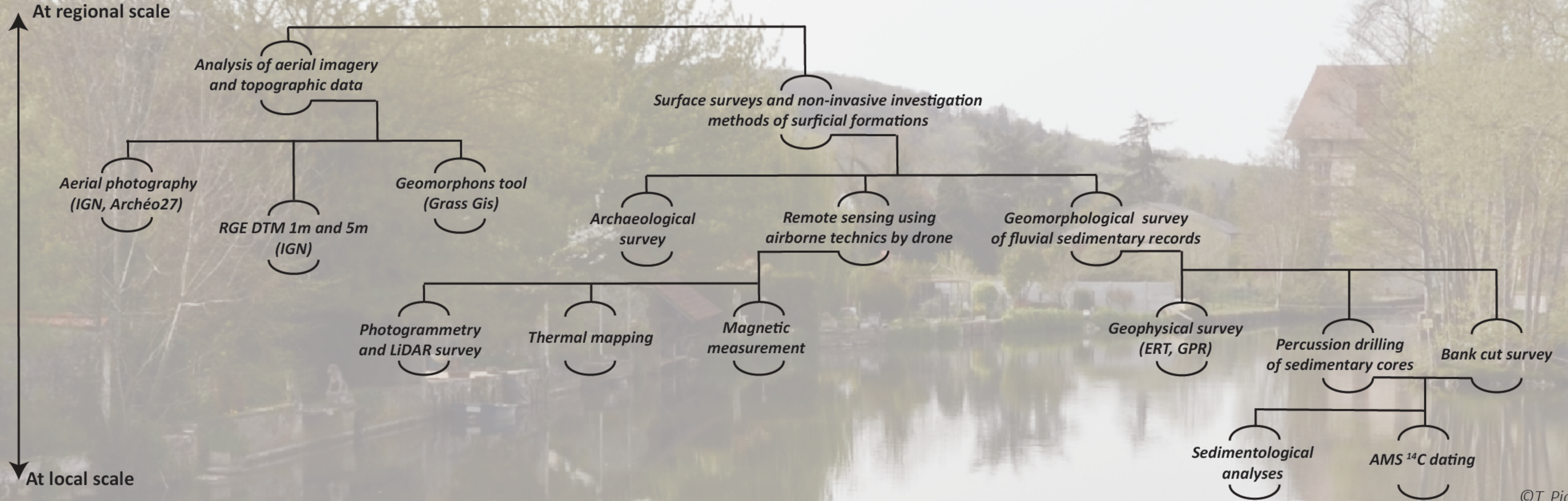
1. The Middle Eure valley: contextual elements

- A poorly unexplored area in the paleoenvironmental, (geo)archaeological and historical field
- A mainly agricultural area (80%) = very few preventive archaeological excavations
- A rich archaeological and historical past but no obvious traces are visible on the ground
- An appropriate context to carry out a geoarchaeological approach at various spatial and temporal scales



1. The Eure catchment area ; 2. Topographical context of the Middle Eure valley and location of the four surveyed areas, ©T. Piau, 2022

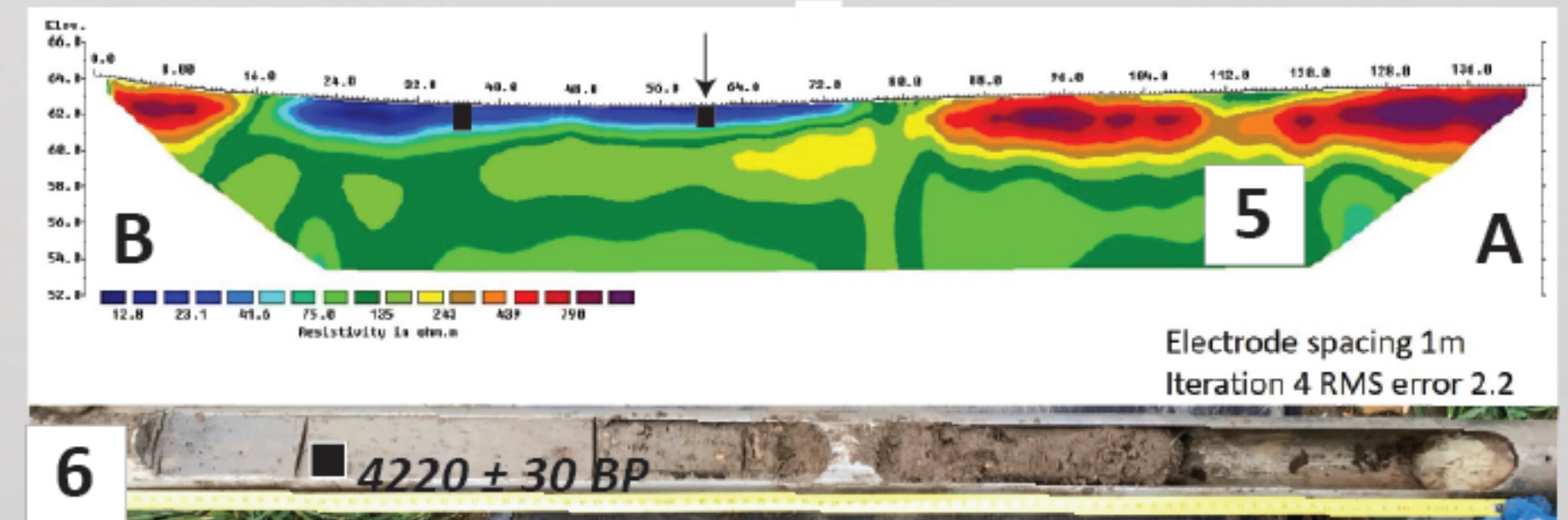
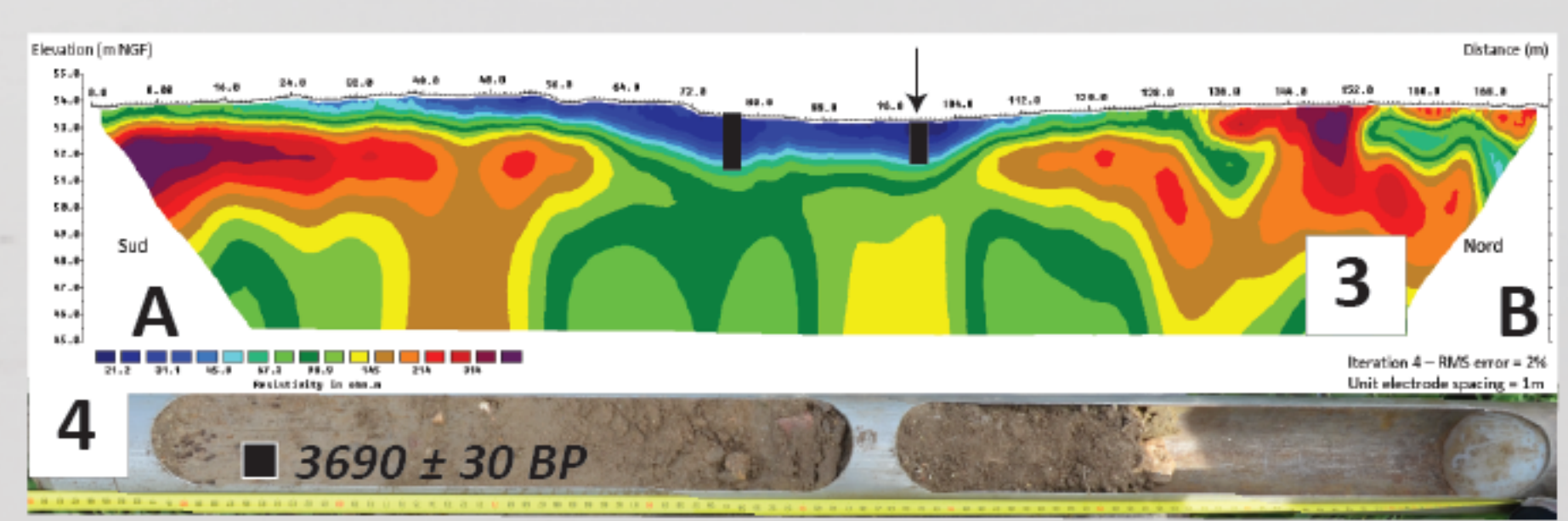
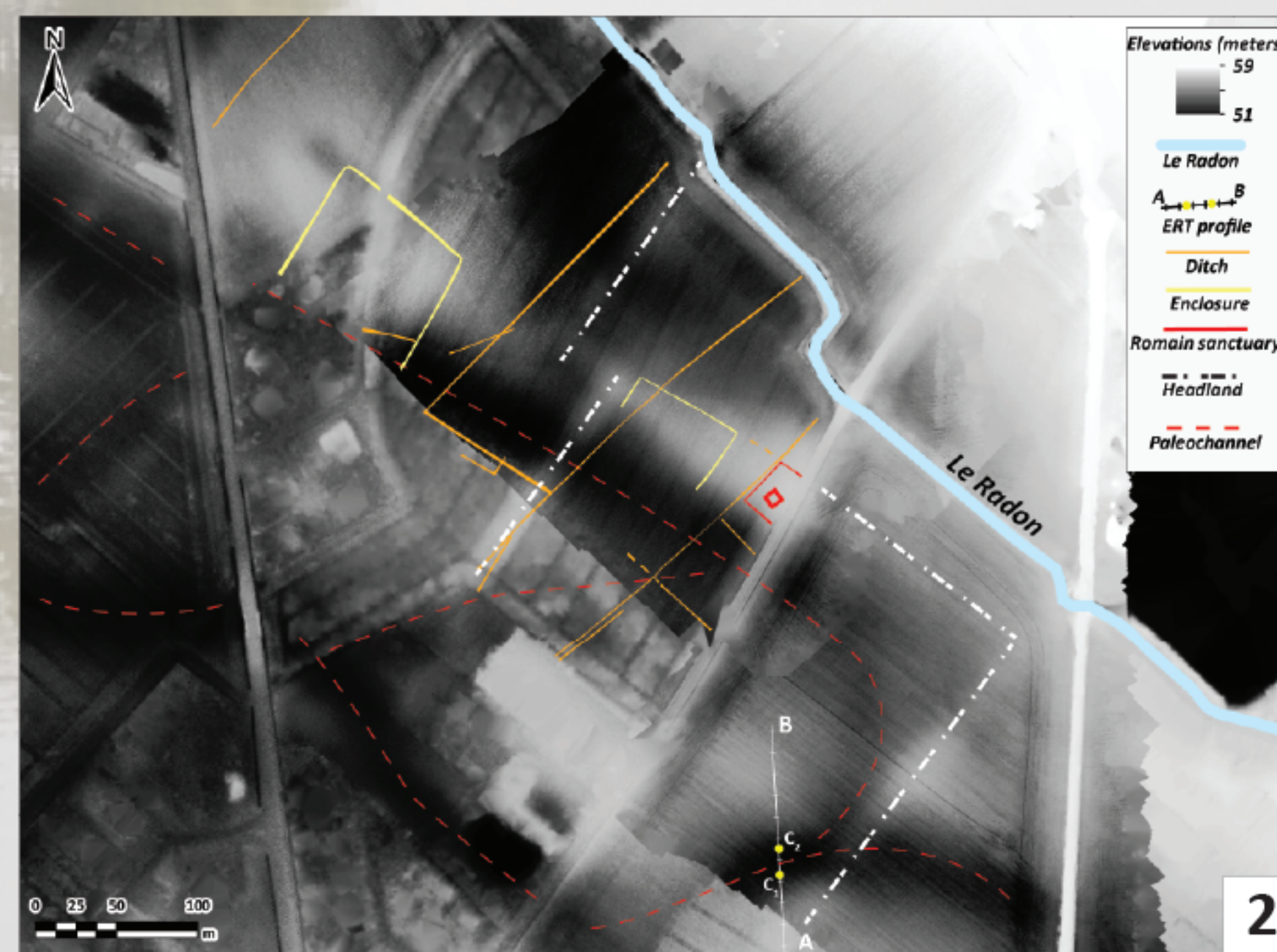
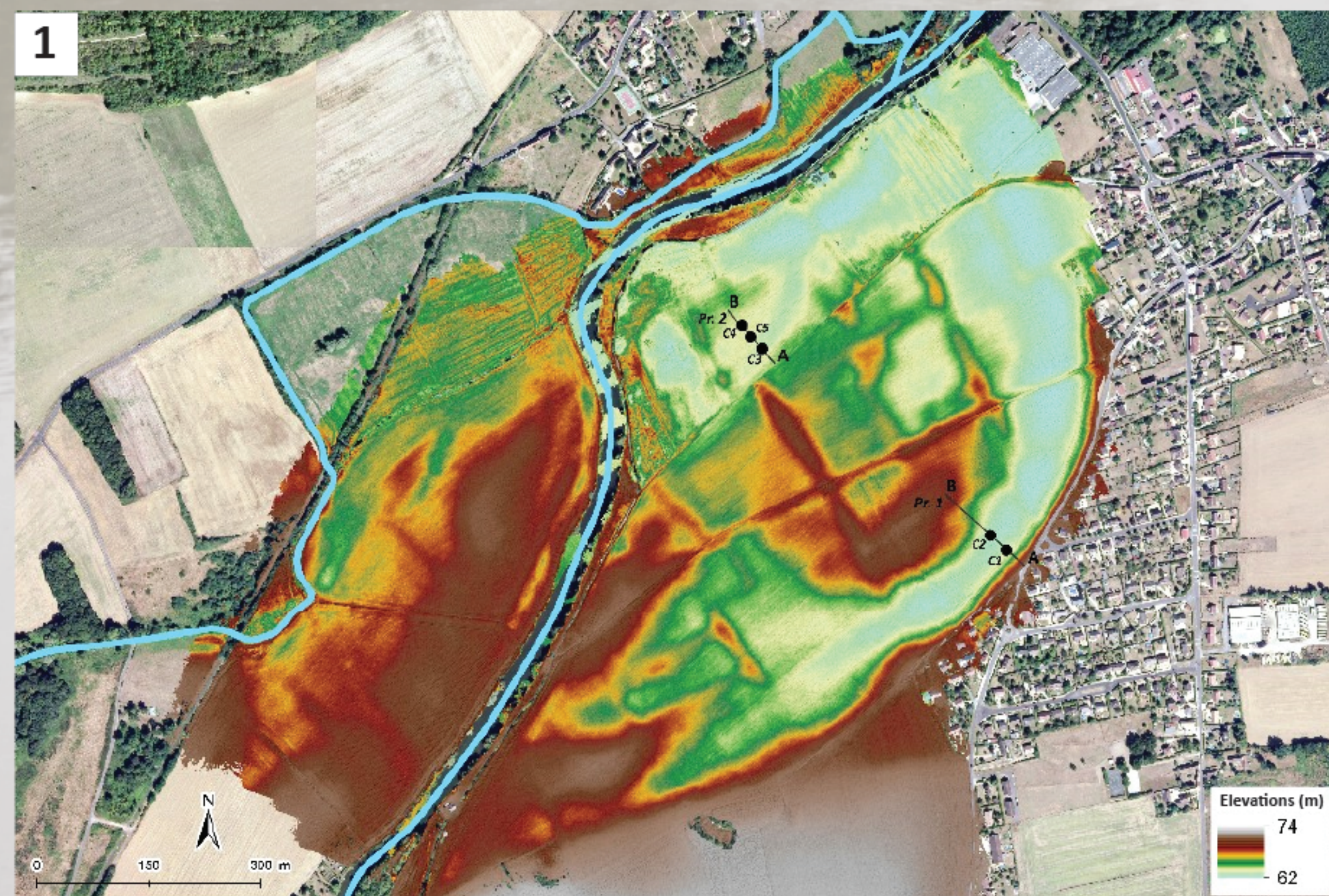
2. A multi-scalar and diachronic geoarchaeological approach



©T. Piau, 2022

3. Reconstruction of the hydro-sedimentary dynamics of the Eure catchment

- A synchronous metamorphosis of the fluvial continuum between 4800 and 4000 cal. BP [Late Neolithic - Early Bronze Age]
- The Eure channels are disconnected from the main fluvial flow axis and infilled by a detrital sedimentation
- Peat sediments can be locally detected between 3500 and 1200 cal. BP [Bronze Age - Early Middle Ages]



- On the right bank sub-watersheds, a silty sand sedimentation from the Late Middle Ages [around 1200 cal. BP]

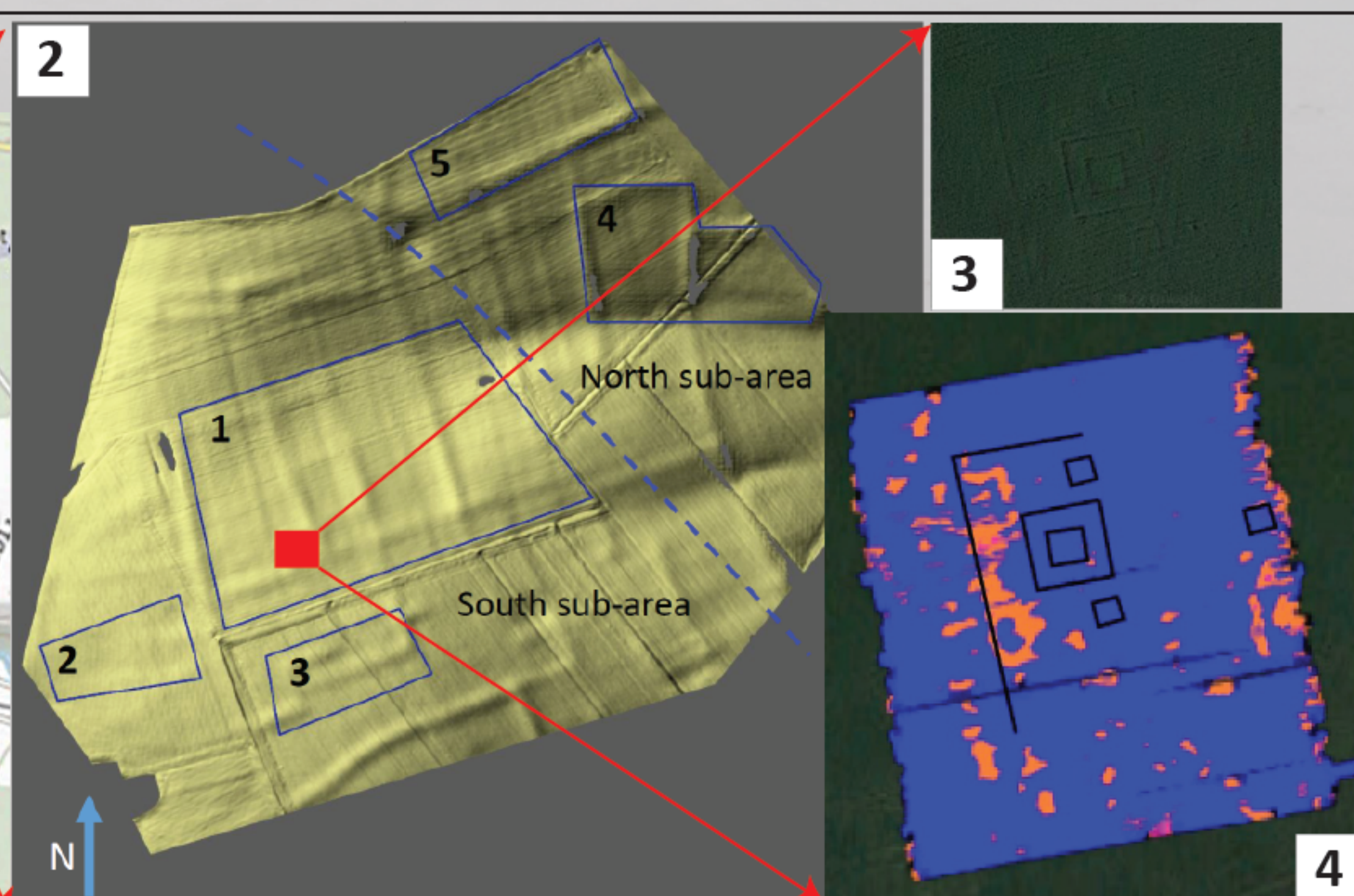
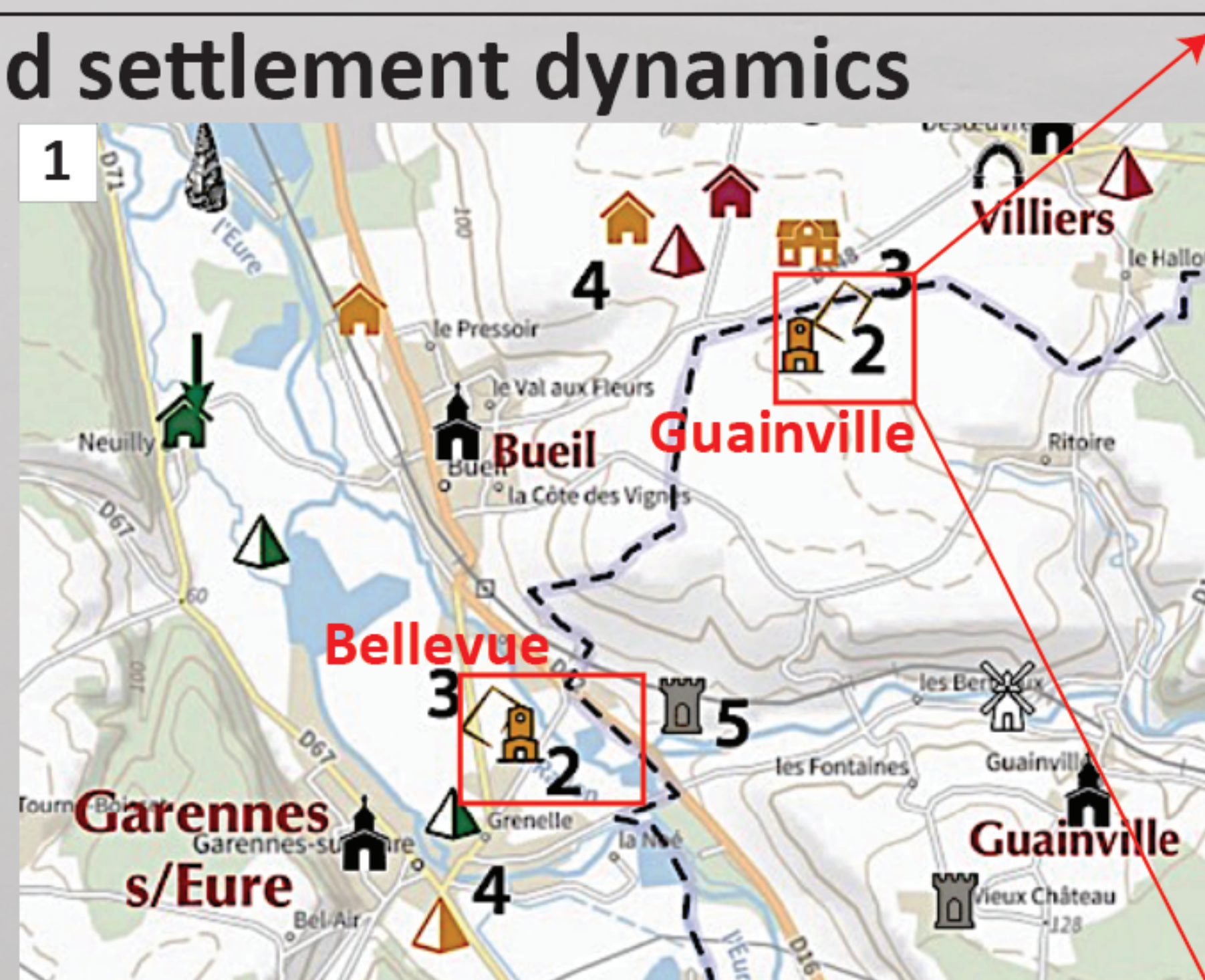
- An increase of the hydrodynamic activity during the Little Ice Age [around 500 cal. BP]

- A growing soil erosion under the effect of large-scale upland-clearing, anthropogenic modifications of the riverbed and climate forcings

Topographical and archaeological contexts (LiDAR surveys) of the Saussay (1) and Bellevue (2) areas ; ERT profiles and sedimentary cores of Bellevue (3, 4) and Saussay (5, 6) paleochannels, ©T. Piau, 2022

4. Mapping of human occupation and settlement dynamics

- Undated ditch enclosures and Roman sanctuary in the neighbourhood of abandoned channels of the Eure river at Bellevue
- A privileged settlement on the high points of the alluvial plain = montille, alluvial terrace
- On the plateau of the right bank of the Eure, slight traces of ancient or medieval remains revealed by the analysis of LiDAR and magnetic measurement using airborne technics by drone



1. Topographical and archaeological contexts of the Middle Eure valley ; 2. LiDAR survey, ©F. Dugast, 2022 ; Aerial photo (3) and magnetic map (4) of the Roman sanctuary of Guainville, ©Google Earth and Le Tellier, 2022