

# New research on the Late Pleistocene in the Lim Channel, Istria

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As a part of the multidisciplinary project entitled ‘Archaeological Investigations into the Late Pleistocene and Early Holocene of the Lim Channel, Istria’, archaeological research has been conducted at four sites: Romuald’s Cave, Abri Kontija 002, Pećina at Rovinjsko Selo and Lim 001 (Figure 1). There is much debate on issues related to biological and behavioural continuity, to patterns of changes and adaptations during this crucial period, and to external factors (e.g. changes in ecology and climate). For example, a clearer insight is needed into how climatic change affects the ecology of specific regions, including changing sea levels. Additionally, there continues to be debate centring on who produced the earliest (Initial) Upper Palaeolithic industries in Europe. To achieve a more precise insight into long-term diachronic changes and cultural relations around the Adriatic, and to document the presence of Middle and Upper Palaeolithic humans in Istria, we concentrated on a single microregion (the Lim Channel in Istria, Croatia). Here we report work on the two sites that to date have yielded Pleistocene material: Romuald’s Cave and Abri Kontija 002.

Romuald’s Cave is located on the eastern slopes overlooking the Lim Channel (Figures 1, 2, 3a). During previous excavations, extensive faunal remains were found (including cave and brown bear, cave lion, cave hyena, elk, red deer, alpine chamois, alpine ibex and other species; Malez 1968, 1981). Prehistoric pottery was found in the uppermost layers, while lower layers yielded stone tools collectively described as “younger Aurignacian and early Gravettian” (Malez 1981: 130). Two juvenile human teeth were also retrieved from the

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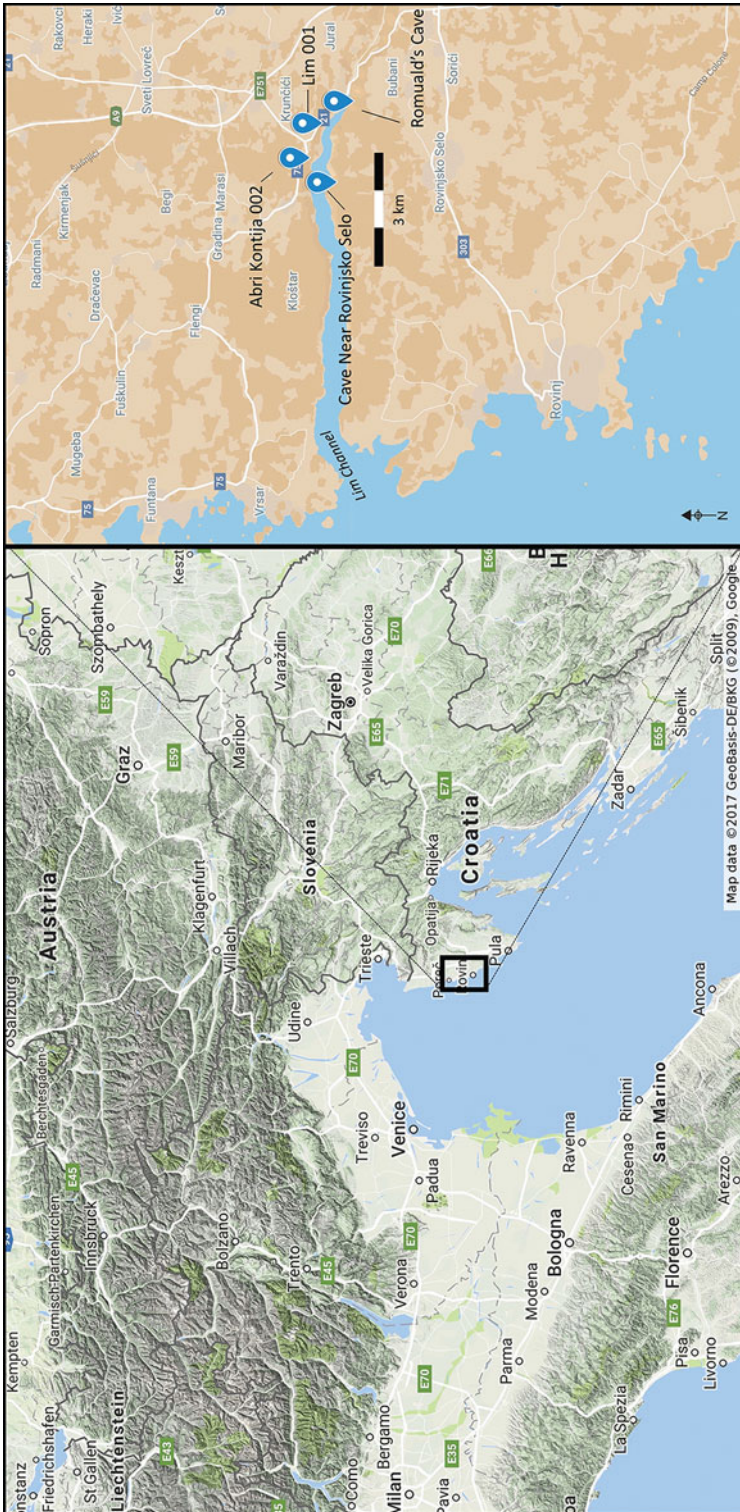


Figure 1. Location of investigated sites.

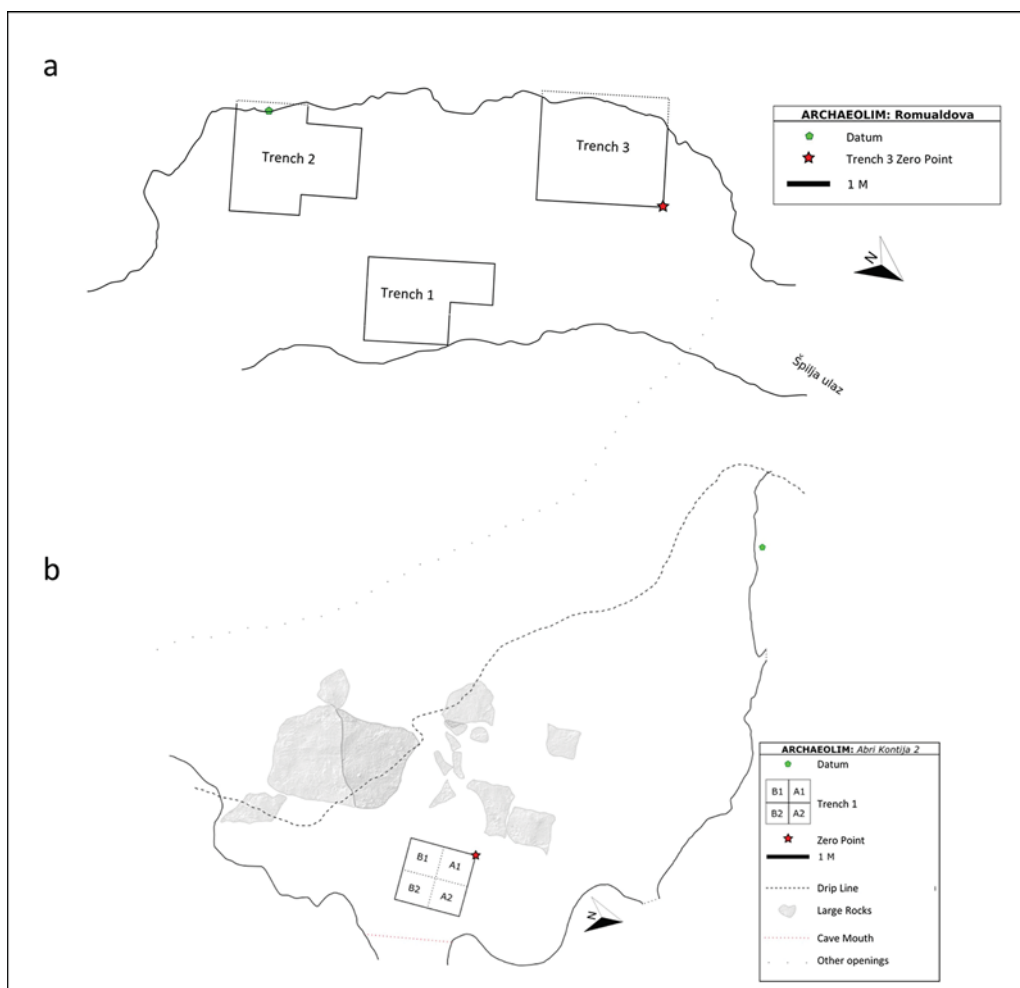


Figure 2. Position of trenches (a–b) (map by J.C.M. Ahern/I. Janković).

Palaeolithic layers (Malez 1968) and are demonstrably modern human (Janković *et al.* 2017). D. Komšo (2003, 2008) excavated two trenches in the first cave chamber (trenches 1 and 2; Figure 2a), in which he found faunal remains, Bronze Age pottery and several tools that, based on typology, could be assigned to the Middle Palaeolithic (Mousterian).

Our excavations started in 2014 (Janković *et al.* 2016). During three seasons, we collected numerous archaeological and palaeontological finds. Initially, we cleaned a previously excavated trench (part of trench 2 on Figures 2a & 3b) and collected samples for radiometric dating. Alongside faunal remains of the aforementioned taxa, we found several Mousterian tools in layers dated to over 48 kya (Figure 3c). We also excavated a new trench (trench 3 on Figures 2a, 3d, 4), the upper layers of which yielded Bronze Age pottery fragments (Figure 5a) and the fragmented remains of at least two individuals dated to 3150±46 years cal BP (Janković *et al.* 2015). The middle stratigraphic sequence yielded Pleistocene faunal



Figure 3. a) Geophysical work in front of Romuald's Cave; b) excavations at trench 2; c) Mousterian lithics from trench 2; d) excavations at trench 3 (photographs by J.C.M. Abern/I. Janković).

remains but very few lithic finds (Figure 5b). In the lower sequence (layers 20–22, Figure 4), however, numerous Mousterian-type lithic finds were found (Figure 5c). This corresponds with radiometric results from trench 2. Faunal, lithic and geoarchaeological analyses are in progress, as is radiometric dating of samples.

Abri Kontija 002 is located on the northern side of the Lim Channel (Figures 1 & 6a). In 2007, D. Komšo opened two small ( $0.4 \times 0.4\text{m}$ , excavated to about 0.4m in depth) test trenches from which he collected 20 lithic artefacts. Our work began in 2014 and continued for three seasons. We opened a  $1.5 \times 1.5\text{m}$  trench (expanded 1.5m southwards in 2016) on the plateau in front of the small cave opening that is now filled with sediment (Figures 2b & 6b). The entire stratigraphic sequence was very rich in archaeological remains. Traces of fire and burnt bones, faunal remains, ochre and several thousand lithic finds (including tools and small chips) were recovered (Figure 6c–d). Consistent traces of burning throughout all layers, the quantity and technological properties of lithic finds, and preliminary archaeozoological analysis all suggest either continuous or frequent human presence at the site and *in situ* production of tools. Faunal remains are highly fragmented, with some displaying traces of cutting and burning. Horse and goat are the most frequently encountered taxa, but red deer, alpine marmot, hare and other species are also present.

Romuald's Cave—north-east profile  
Scale 1:10

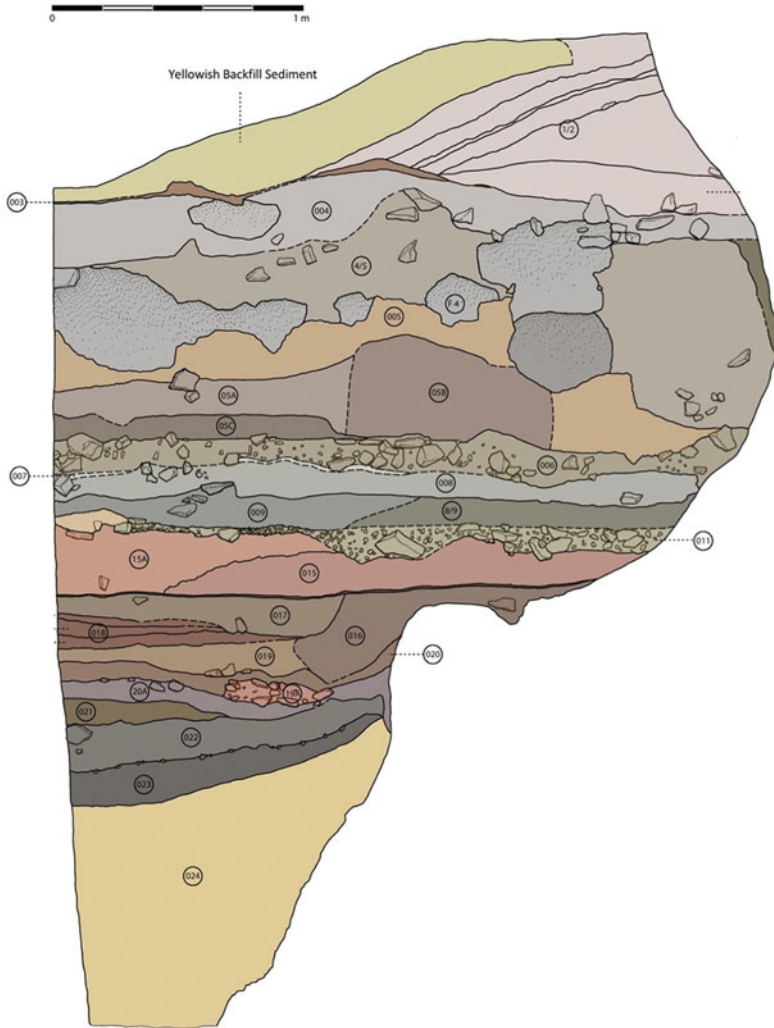


Figure 4. Stratigraphic (north-east) profile of trench 3 at Romuald's Cave (illustration by I. Krnjcar/J.C.M. Ahern/I. Janković).

Radiometric dating of the site is in progress, but preliminary results, combined with the initial results of the lithic analysis, suggest a Late Upper Palaeolithic time frame for human presence at the site. The data suggest that this is potentially a crucial site for understanding various issues regarding Upper Palaeolithic human occupation of the region. Analyses of data and comparisons with other sites (e.g. Šandalja II near Pula in Istria) are ongoing.

Results to date demonstrate the presence of both Mousterian and Upper Palaeolithic people in this microregion. At Romuald's Cave, differences are apparent between the

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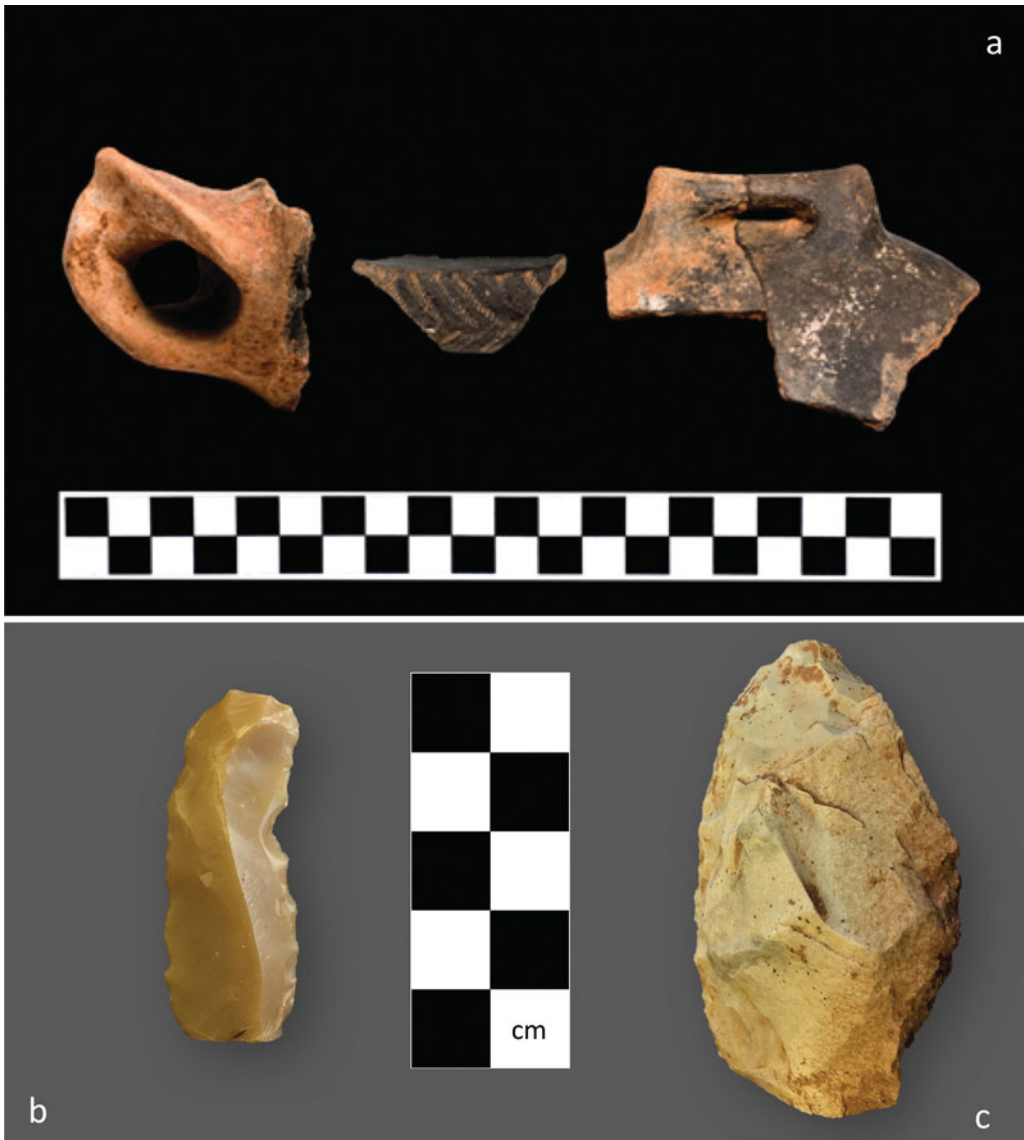


Figure 5. a) Bronze and Iron Age pottery from trench 3; b) Upper Palaeolithic blade; c) Middle Palaeolithic finds from trench 3 (illustrations and photographs by D. Maršanić/J.C.M. Abern/I. Janković).

Mousterian and Upper Palaeolithic occupations. Mousterian people exclusively used the first cave chamber and produced tools using local materials, while Upper Palaeolithic humans also used the central and rear cave areas and produced tools using non-local raw materials. Dating and certain faunal specimens suggest that Mousterian occupation occurred during a colder period (Marine Isotope Stage 3), when conditions severely limited occupation north of the Alps. The Abri Kontija Upper Palaeolithic occupation indicates a largely continuous use of the cave for human habitation. As excavations at these sites

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Figure 6. a) Abri Kontija 002 site during excavations; b) site and selected finds; c–d) selected Upper Palaeolithic lithic tools (photographs by J.C.M. Ahern/I. Janković).

proceed, we expect to encounter older Pleistocene strata, which will allow for further examination of the project's goals.

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