

Palaeoenvironment and fluvial history of river Danube between the Neolithic settlement sites of Vinča and Starčevo, Serbia

Neolithic site Starčevo - Grad

The type site of the Neolithic Starčevo Culture, Starčevo - Grad, is located near the left side of the river Danube, some 7 km away from the Vinča site. The occupational period is Early Neolithic, dated to the 7th and 6th millennium BC. Starčevo culture on the territory of modern-day Serbia precedes the Vinča culture and is a part of a larger cultural complex named Starčevo-Körös-Criș, which covered a large area of the Balkans.

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First results

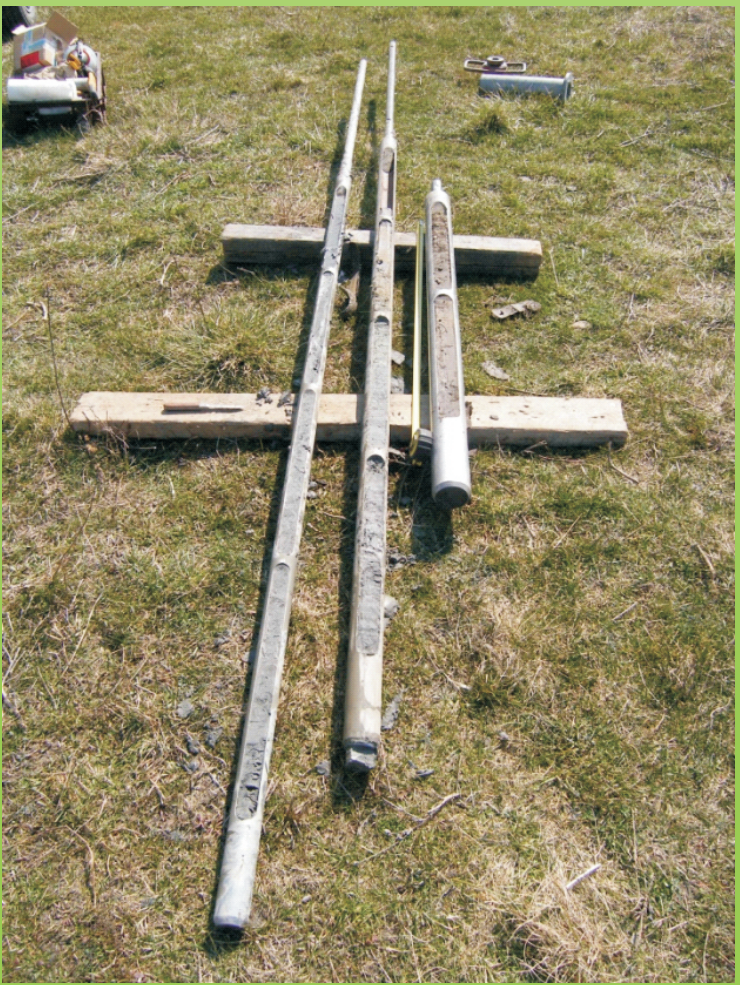
Drilling was conducted at seven locations in the two likely oldest Holocene meander bows. From each channel one core (STAR 2, STAR 6) was collected for sedimentary analyses. Here we present the results of the analyses of core STAR 6. Cores STAR 2, STAR 6 and STAR 7 were additionally collected for optical stimulated luminescence (OSL) dating. Here we present preliminary infrared stimulated luminescence (IRSL) age of polymineral fine grains (4-11 μm) for STAR 6. Drilling cores showed a clear distinction of basal, more sandy layers pointing to the former position of the river channel, and more fine-grained alluvium at the top, indicating sedimentation on the floodplain at times when the channel position had shifted. The more sandy deposits > 210 cm below ground level (b.g.l.) point to the presence of the former river channel. The bottom of the past river bed was not reached in this core. The upper part presents mostly silty alluvium. The uppermost part (0 - 65 cm b.g.l.) represents late Holocene colluvium. The IRSL-ages may have to be regarded as maximum ages, due to insufficient bleaching. Yet they show that a channel might have been active close to Starčevo in Neolithic times.

Neolithic site Vinča - Belo brdo

The type site of the Neolithic Vinča Culture, Vinča - Belo brdo, is located on the right hand side of the river Danube, some 14 km downstream of Belgrade in Serbia. Main occupational period is Middle to Late Neolithic (ca. 5600 - 4200 BC). The long occupation time produced more than 9 meters of settlement layers and a wealth of finds that provided archaeologists with a detailed understanding of the chronological sequencing and cultural development of the Neolithic period in the central Balkan area.

Geoarchaeological investigations

The palaeofluvial landscape between Vinča and Starčevo is regarded as an interesting area to reconstruct the interaction and communication of the two partly simultaneous settlements that are located near the banks of Danube. To address these questions, the position of the Danube during Neolithic times is of immense importance. Our investigations focused on the two likely oldest meanders, in the northeast and close to Starčevo.



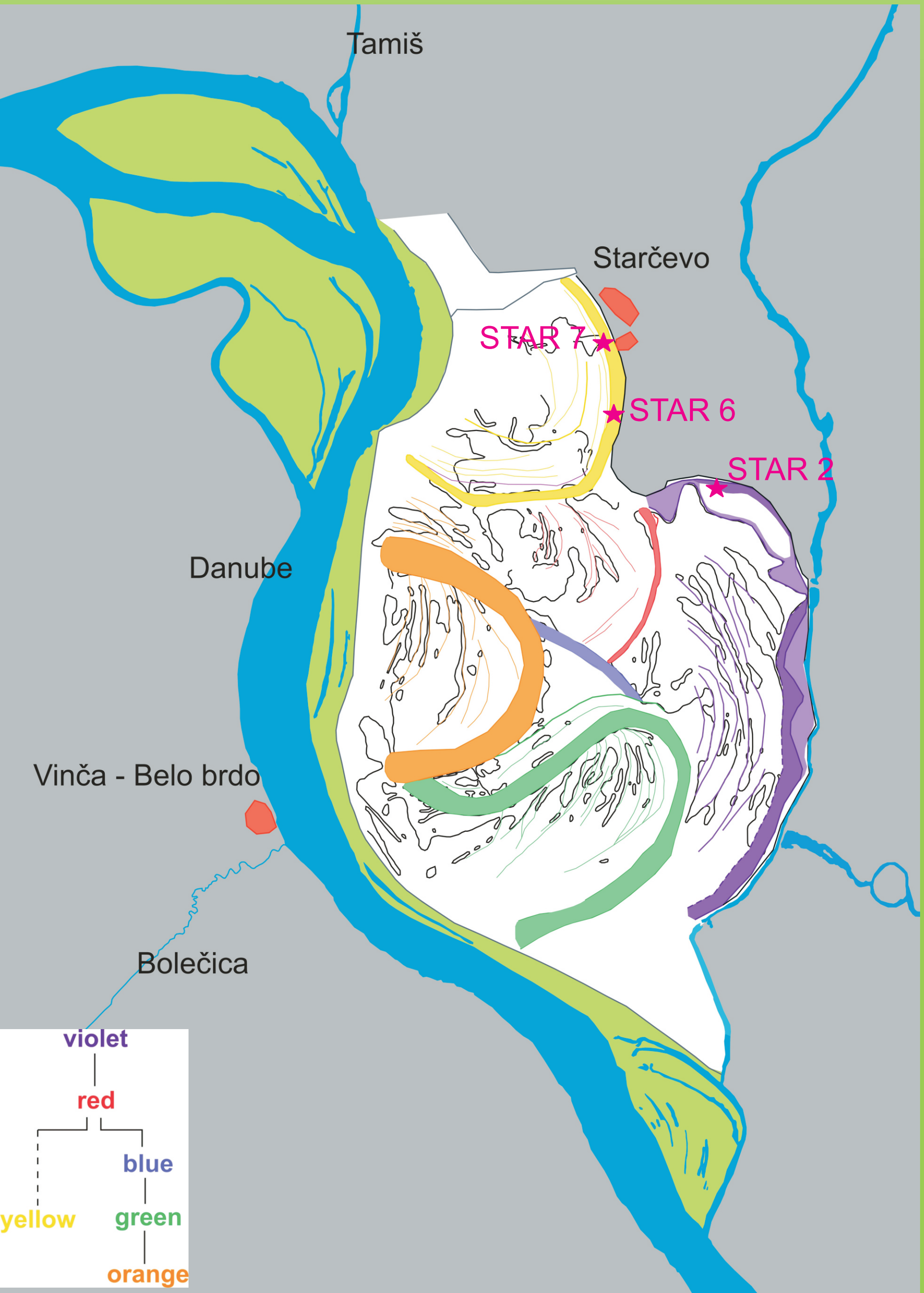
Drilling cores



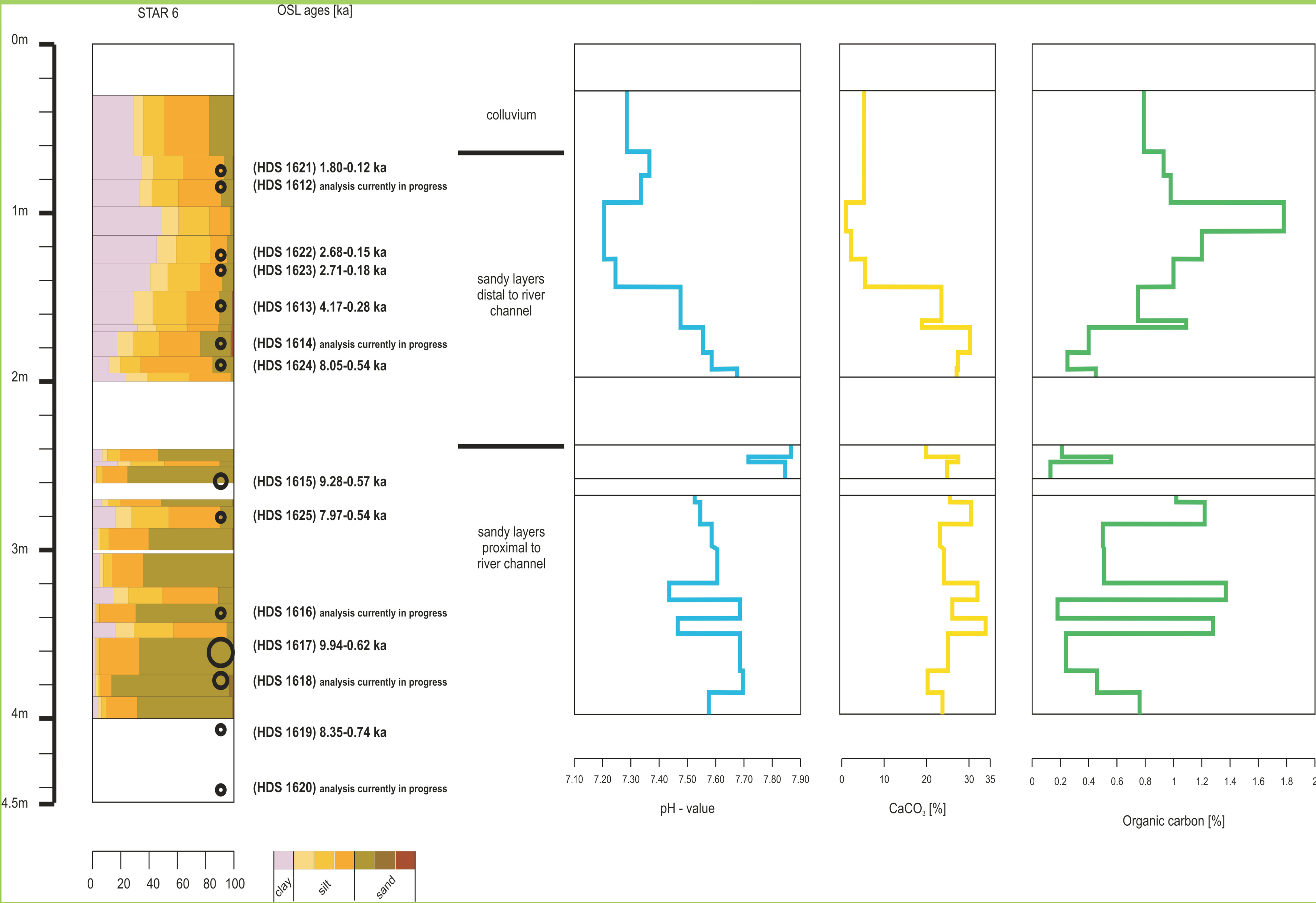
Drilling location - view from Starčevo towards Vinča

Old Danube channels

Evaluation of historical maps and satellite imagery was conducted in order to reconstruct former positions of the Danube in Holocene times. Archaeological remains from the Neolithic, including settlements such as Starčevo and Vinča itself are located on river terraces to the north, east and south of the actual river bed. The area of interest is in between the prehistoric settlements. Inspection of old maps suggested that the human-induced alterations and regulations that took place in past centuries did not influence the archaeolandscape much. Some of the old channel courses are still visible. Detailed analyses showed six major positions of former meander bows, marked on the map in different colors. Also shown are the drilling positions at the two likely oldest meander bows, close to the Starčevo site.



Schematic map of old Danube channels with drilling locations



Sedimentological analyses of core STAR 6 taken from an old Danube channel infill. Site Starčevo is located on this old channel