

Earliest known European common hippopotamus fossil reveals their Middle Pleistocene dispersal

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The skull of *Hippopotamus amphibius* of Cava Montanari. Cranium in dorsal (A), ventral (B), right lateral (C), left lateral (D) and posterior (E) views. Mandible in occlusal (F) right lateral (G) and left lateral (H) views. Scale bar 10 cm. Credit: Mecozzi et al., 2023, PLOS ONE, CC-BY 4.0 (creativecommons.org/licenses/by/4.0/)

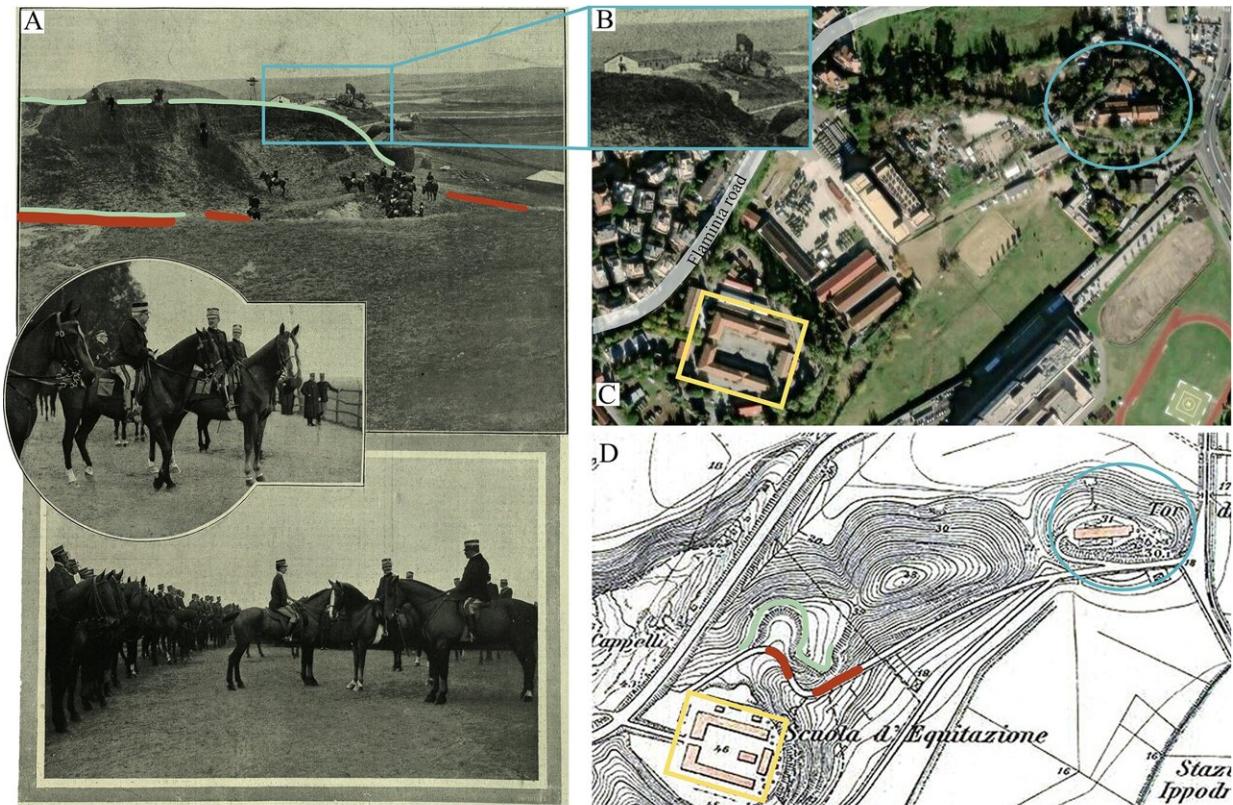
Modern hippos first dispersed in Europe during the Middle Pleistocene, according to a study [published](#) Nov. 22, 2023 in the open-access journal *PLOS ONE* by Beniamino Mecozzi of the Sapienza University of Rome and colleagues.

Modern [hippos](#), *Hippopotamus amphibius*, arose from African ancestors during the Quaternary, a time when hippos were widespread in Europe. However, the details of the modern species' origin and dispersal into Europe are unclear and highly debated.

In this study, Mecozzi and colleagues provide new insights via analysis of a fossil hippo [skull](#) from the study area of Tor di Quinto in Rome.

The skull of Tor di Quinto, currently housed at the Earth Science University Museum of Sapienza University of Rome, is among the most complete hippo specimens known from Pleistocene Europe, but its significance has been unclear due to uncertainties about its age and where exactly it was originally excavated.

Following restoration of the skull in 2021, researchers were able to analyze the composition of sediments found within the skull cavities, revealing a match to the local Valle Giulia Formation, indicating a geologic age for this skull between 560,000–460,000 years old. Cranial and dental morphologies also confirmed the identity of this skull as the modern species *Hippopotamus amphibius*.



- Mediaeval tower (a, b, c, d)
- Riding school ("Scuola d'Equitazione") (c, d)
- Quarry front (a) and halfcircular morphologies in plain view (d)
- Small road visible on the historical photo (a) and topographical map (d)

Historical picture of the Tor di Quinto area from the archive of the Istituto Superiore per la Protezione e la Ricerca Ambientale (ISPRA, A, B) and the same area today. Credit: Mecozzi et al., 2023, PLOS ONE, CC-BY 4.0 (creativecommons.org/licenses/by/4.0/)

This research reveals this skull to be the oldest known fossil of this modern hippo species in Europe. These results shed light on the history of hippos in Europe, reinforcing the hypothesis of an early dispersal during the Middle Pleistocene and bolstering broader understanding of the deep history of these large mammals.

Hippos are highly influential species within modern and ancient

ecosystems, and they are valuable indicators of past climate and [environmental conditions](#).

The authors add, "Restoring the mammal skeletons exposed at the University Museum of Earth Science, Terra, Sapienza University of Rome offers new data for old fossils. The multidisciplinary study of the skull from Cava Montanari (Roma) redefines the first dispersal of *Hippopotamus amphibius* in Europe."

More information: Reinforcing the idea of an early dispersal of *Hippopotamus amphibius* in Europe: Restoration and multidisciplinary study of the skull from the Middle Pleistocene of Cava Montanari (Rome, central Italy), *PLoS ONE* (2023). [DOI: 10.1371/journal.pone.0293405](#). [journals.plos.org/plosone/article/journal.pone.0293405](#)

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