

## Rostral reconstruction of South American hippidiform equids: New anatomical and ecomorphological inferences

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The Pleistocene *Equus* (*Amerhippus*) and hippidiforms frequently occur together in the South American fossil record, suggesting a possible case of sympatry and syntopy. Although resembling each other in their overall morphology, their rostra show distinct differences. While *Equus* (*Amerhippus*) resembles extant horses, hippidiforms are characterised by slender nasal bones, a retracted nasal notch at the level of M2–M3 or posterior to M3, and the presence of dorsal preorbital fossae of variable depth. Here we present an anatomical reconstruction of the muzzle of hippidiforms based on homologous patterns in the extant horse *Equus caballus*, together with a morphofunctional analysis of their rostra and a comparative analysis of premaxillary shape. The rostral morphology of hippidiforms suggests the presence of a developed upper lip with prehensile function, as occurs in extant black rhinoceros. This prehensile structure could be ecomorphologically related to browsing, thus reducing niche overlap with *Equus* (*Amerhippus*), and hence competitive pressure.

**Key words:** Mammalia, Perissodactyla, Equidae, hippidiforms, anatomical reconstruction, ecomorphology, Pleistocene, South America.

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