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DIETARY GENERALISM OF PLEISTOCENE COYOTES FROM THE MCKITTRICK AND RANCHO LA BREA ASPHALT SEEPS, SOUTHERN CALIFORNIA, U.S.A.

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The consequences of the terminal Pleistocene extinctions have cascaded down to modern ecosystems: large predators like dire wolves (*Aenocyon* (formerly *Canis*) *dirus*) went extinct at the end of the last Ice Age, while smaller canids including coyotes (*Canis latrans*) survived to the present-day. An oft- cited hypothesis for this differential survival is that generalist coyotes could switch food sources when prey became endangered. Here, to test this hypothesis of generalism, we analyzed body size and dietary ecomorphology in coyotes from the Pleistocene-age McKittrick asphalt seeps on the southern end of the Central Valley of California, comparing them to the same species preserved at the Rancho La Brea (RLB) asphalt seeps in Los Angeles. McKittrick's arid inland environment likely hosted a less abundant and/or diverse prey set than the verdurous coastal environment of RLB; therefore, we predicted that McKittrick coyotes would be smaller, with more specialist traits than McKittrick. We examined McKittrick coyotes (122 lower jaw elements) at the University of California Museum of Paleontology, Berkeley, CA, and RLB coyotes (42 lower jaws) from three deposits (Pleistocene: Pits 4 and 13; Holocene: Pit 10) at the La Brea Tar Pits & Museum, Los Angeles, CA. We collected 15 linear measurements of the jaws and teeth and combined six of these into three indices reflecting dietary function: relative blade length, relative lower molar grinding area, and relative jaw depth. Inter-deposit comparisons at RLB show that, based on the length of the lower carnassial (m1L) as a body-size proxy, Pleistocene coyotes were larger than Holocene, supporting previous work. Among Pleistocene deposits, McKittrick m1L was larger and jaws were deeper than in their coastal counterparts (especially Pit 4), although other size metrics overlapped. Larger body size at McKittrick may be the result of a cooler climate; alternatively, limited prey may have led to more competition between canids, favoring larger size and deeper jaws for competitive advantage. Coyote grinding area was smaller at McKittrick than Pleistocene RLB, although other functional indices were similar; smaller grinding area with no corresponding decrease in blade length supports decreased ability to chew tough matter but not necessarily greater ability to slice meat. Coyotes are more variable in multiple traits at McKittrick than RLB, suggesting generalist feeding across the population; however, McKittrick simply may span more broadly across time than individual RLB deposits. In several metrics, McKittrick coyotes overlap with Pit 13, the RLB deposit where dire wolves exhibited heavy tooth wear and fracture; concurrent tooth-wear work will help evaluate the possibility of tough times at McKittrick. As poor preservation at McKittrick limited our data, ongoing work includes measuring more intact specimens to improve understanding of the dietary habits that allowed coyotes to thrive to the present.

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