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The origins of the enigmatic Falkland Islands wolf

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The origins of the extinct Falkland Islands wolf (FIW), *Dusicyon australis*, have remained a mystery since it was first recorded by Europeans in the seventeenth century. It is the only terrestrial mammal on the Falkland Islands (also known as the Malvinas Islands), which lie ~460 km from Argentina, leading to suggestions of either human-mediated transport or overwater dispersal. Previous studies used ancient DNA from museum specimens to suggest that the FIW diverged from its closest living relative, the South American maned wolf (*Chrysocyon brachyurus*) around 7 Ma, and colonized the islands ~330 ka by unknown means. Here we retrieve ancient DNA from subfossils of an extinct mainland relative, *Dusicyon avus*, and reveal the FIW lineage became isolated only 16 ka (8–31 ka), during the last glacial phase. Submarine terraces, formed on the Argentine coastal shelf by low sea-stands during this period, suggest that the FIW colonized via a narrow, shallow marine strait, potentially while it was frozen over.

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