

Prey and predators in the So'a Basin, Flores: Dietary reconstructions through Ca and Sr isotopes in fossil enamel of insular Pleistocene taxa from Indonesia

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The Pleistocene fossil record of Flores, a small, oceanic island in the Indonesian archipelago, contains evidence of highly endemic species between ~1.4 Ma and the Late Pleistocene. An array of the endemic species displays insular dwarfism and gigantism, including giant species of rat, turtle, bird, and lizard (Komodo dragons), and small species, including pygmy elephants and a diminutive hominin (*Homo floresiensis*). Insular dwarfism and gigantism are hypothesized to be driven by increased food resource competition and reduced predation pressures, yet little is known about food web interactions of these taxa.

Here we conduct calcium ($\delta^{44/42}\text{Ca}$) isotope analyses, as a trophic level proxy, combined with radiogenic strontium isotope analyses ($^{87}\text{Sr}/^{86}\text{Sr}$), to compare dietary and spatial niches, on fossil dental enamel from dominant terrestrial fauna from various Early to Middle Pleistocene sites from the So'a Basin, central Flores, which may have coexisted with *H. floresiensis*. Taxa include two predators - Komodo dragons (*Varanus komodiensis*) and crocodiles (undetermined Crocodylian species) – and three herbivores - pygmy elephants (*Stegodon sondaari*), a medium-sized elephant (*Stegodon florensis florensis*), and giant rats (*Hooijeromys nusatenggara*).

Preliminary Sr isotope compositions show insights into the roaming ranges of taxa. Calcium isotope compositions indicate varying diets between herbivore taxa and through time.

Carnivore taxa have distinct Ca isotope compositions that may reflect niche partitioning. Reconstructions of these dietary behaviours reveal how various prey and predator species interacted, co-existed, and persisted throughout the Pleistocene on a small island with precarious conditions.