

# New Zealand mustelids and the ecomorphometrics of mandibles

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In many translocated species, a change in diet to items available in a new habitat stimulates changes in the morphology of the skull and in particular the mandible. The consequences for the size and shape of the bones are now commonly studied using new morphometric techniques, which provide the opportunity to document more information on micro-evolutionary processes and adaptation.

Three species of mustelids were introduced to New Zealand from Britain in the 1880s (*Mustela furo*, *M. erminea*, and *M. nivalis*), and have remained isolated from their relatives overseas ever since. The size distribution of prey items available to mustelids in New Zealand vary with gender and habitat, so some changes might be expected. I had access to collections of all three species, plus associated databases of relevant information including: sex, age, year collected, body size, diet and habitat. As yet there has been no study that examined the mandibular morphometric differences of New Zealand mustelids, and correlated the shapes to their sexual dimorphism, diet, and phylogeny.

My aim was to discover if New Zealand mustelids show phenotypic variation in mandible morphology, and if so to use landmark based geometric morphometrics to correlate this variation to the extensive background data available on the same animals. So far I have found that allometry within sexes accounts for all differences in shape between males and females in all species. Between-species allometry accounts for only a small percentage of the differences in mandible shape. Further analyses are in progress.