

Morphomeristic study of sympatric *Barbus* species from a man-made reservoir in upland Kenya

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Abstract

The small *Barbus* are a widely distributed group of freshwater fishes in Africa whose taxonomy is yet to be resolved. This study used morphomeristic analysis of characters to distinguish and describe sympatric *Barbus* species of Chepkoilel reservoir in upland Kenya. A total of 51 fish were collected in November 2007, and 21 morphometric measurements and nine meristic counts were determined on each specimen. Data were entered in an Excel spreadsheet and exported to the PAST programme for analysis using principal component analysis (PCA). The significance of important characters identified in the PCA was determined using nonparametric Mann–Whitney *U* tests at $\alpha = 0.05$. The specimens belonged to three species: *Barbus kertenii*, *B. paludinosus* and *B. jacksonii*. A PCA on their morphometric characters revealed no clear separation of polygons suggesting the species had similar body morphometry. However, a PCA on raw meristics showed complete separation of *B. paludinosus* and *B. jacksonii* on the first principal component, which was defined mostly by the number of lateral line scales, branched dorsal rays, branched pectoral rays and branched ventral rays. Our study provides more characters useful for distinguishing the *Barbus* species in addition to those stated in their respective original species descriptions