

# Leptograpsus crab morphology manuscript

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## ##Introduction

*Leptograpsus variegatus* is a species of small shore crab found throughout the Southern Pacific, including on the shores of western Australia where the crabs dataset was collected (Campbell and Mahon 1974). These crabs play an important role in the flow of nutrients through mangrove ecosystems, where they break down mangrove leaves and provide particulate organic matter to many species of detritivores (Camilleri 1992).

## ##Data

Data for this project was originally collected and published in Campbell and Mahon ( 1974).

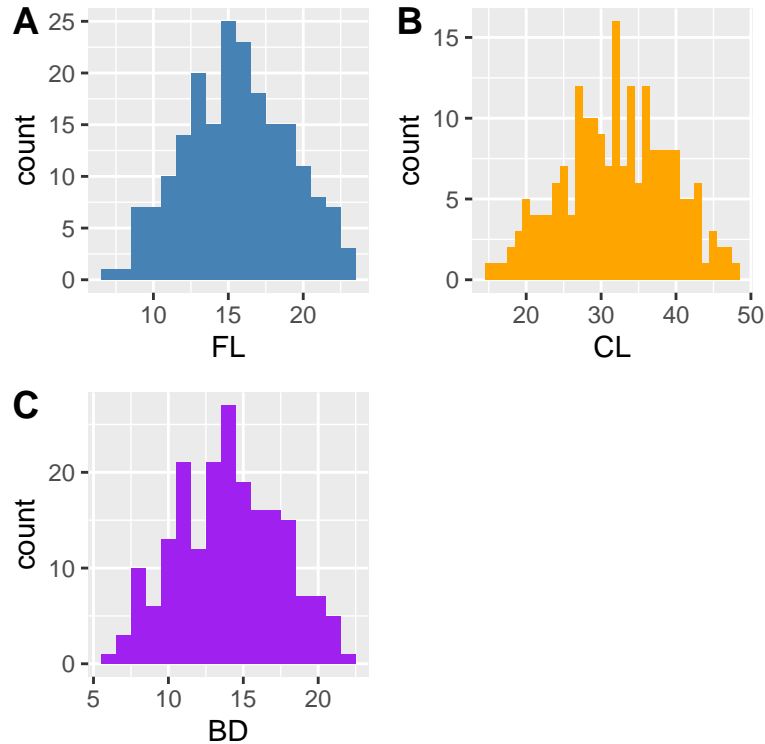


Figure 1: Histograms showing distributions of frontal lobe (FL), carapace length (CL), and body depth (BD).

We used R version 4.4.0 (R Core Team 2024) and the following R packages: prereg v. 0.6.0 (Aust and Spitzer 2022), rmarkdown v. 2.28 (Xie et al. 2018, 2020; Allaire et al. 2024).

## ##Results

Results of the PCA demonstrated some distinction between blue and orange morphs along the first principal component, and a larger distinction between males and females along the second axis of variation as seen in Figure 2.

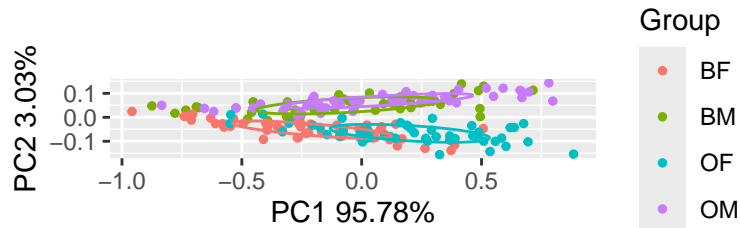


Figure 2: PCA biplot showing first (95.78% of total variation) and second (3.03% of total variation) axes of variation in the crabs dataset. Groups are as follows, OM (orange males), OF (orange females), BM (blue males), BF (blue females).

## ##References

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