**Metadata “combined\_post\_imputation\_data”**

**Functional beta diversity of New Zealand fishes: characterising morphological turnover along depth and latitude gradients, with derivation of functional bioregions**

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In total, there were 144 species recorded across the 47 depth-by-location cells, and 509 species-by-cell occurrences. The original dataset comprised a complete set of 15 raw morphological measurements for 722 individuals observed in video footage (136 of these required some random-forest imputation, and missing traits were remeasured for 4 individuals), plus 291 museum specimens (1013 individuals in total).

Descriptions for each of fifteen morphological measurements obtained directly from individual fish observed in Baited Remote Underwater Stereo-Video (Stereo-BRUV) footage or museum specimens. Descriptions are adapted from Appendix A Villeger *et al.* (2010). For a diagram illustrating the raw morphological measurements taken from individual fishes identified in video footage (stereo-BRUVs) or from museum specimens see Fig. S1 of Myers *et al.* in press.

**Columns:**

ID.indiv = A unique identifier for every individual, excluding individuals coming from the museum dataset.

Genus\_Species = Scientific name, shown as Genus\_species.

Number = An indicator of different individuals within the same species across the dataset.

mBd = Maximum body depth

Ml = Mouth length. For individuals coming from the BRUV dataset, *Ml* is derived from a sequence of three measured 3D points within a single frame, and are obtained internally within EventMeasure software ([www.seagis.com.au](http://www.seagis.com.au)), using the “Head Morphometrics” feature of EventMeasure version 4.4. See also Appendix A Villeger *et al.* (2010) for a description which was used to capture museum specimens’ Ml.

Mo= Mouth open; distance from the top of the mouth to the bottom of the head along the head depth axis.

Uj = Upper jaw length; measured as the distance from the tip of the jaw (premaxilla), to the posterior end of the maxilla.

Lj = Lower jaw length; measured from the anterior tip of the lower jaw to the corner of the mouth along the dentary section of the mandible.

Ed = Maximum eye diameter

Hl = Head length; length between the most anterior point of the upper jaw (snout) to the posterior edge of the operculum.

Hd= Head depth; along the vertical axis of the centre of the eye.

Eh = Eye height; length between the centre of the eye and the ventral surface of the head.

PFb = Body depth at the insertion of the pectoral fin along the dorso-ventral axis.

PFl = Pectoral fin length; length between the insertion of the pectoral fin and the posterior end of fin along the medial axis of the body.

PFi = Pectoral fin insertion; distance between the insertion of the pectoral fin to the bottom of the body.

CPd = Caudal peduncle depth; the minimum dorso-ventral caudal distance.

CFd = Caudal fin depth; the maximum dorso-ventral caudal distance.

TL = Total body length.

NA.num = A count of NA’s representing the missing morphological measurements.

TL type = Indicates where the “TL” measurement terminated. TL = total body length, FL = fork length, SL = standard length (2 instances when there was a defect in the caudal fin), NA = TL for individual was imputed.

Origin = Origin of data. Complete rows of data (BRUV), museum specimen (Museum), imputed (BRUV\_Imputed), remeasured (Remeasured)

**Rows:**

15 morphological measurements and associated information for each of 1013 individual fishes.

**References**

Myers E. M. V., Anderson M. J., Liggins L., Harvey E. S., Roberts C. D. & Eme D. (in press) High functional diversity in deep-sea fish communities, and increasing intra-specific trait variation with increasing latitude. *Ecol. Evol.*

Villéger S., Miranda J. R., Hernández D. F. & Mouillot D. (2010) Contrasting changes in taxonomy vs. functional diversity of tropical fish communities after habitat degradation. Appendix A: Functional characterization of fishes. *Ecol. Appl.* **20,** 1512-1522.