

**Table 1.** Reference lines traced on fish photographs to aid the measurement of morphometric parameters (Table 2).

Reference line	Description
A	Midline drawn from the centre of the tail towards the mouth. It should cross the tip of the upper jaw, or the tip of the snout. This line should do the best possible job at cutting the fish in two halves.
B	Drawn parallel to A touching the lowest edge of the body (excluding fins).
C	Drawn parallel to A touching the highest edge of the body (excluding fins).
D	Drawn perpendicular to A touching the anterior tip of the premaxilla (upper jaw). There may be few exceptions (e.g. some blennies), where D corresponds to the tip of the snout but not to the premaxilla. If the lower jaw is longer than the upper jaw, also draw line Di.
E	Drawn perpendicular to A at the point where the rays of the tail start in the middle of the tail (this line marks the end of the standard length).
F	Drawn perpendicular to A at the narrowest point of the caudal peduncle.
G	Drawn perpendicular to A touching the posterior margin of the operculum (i.e. bone structure that covers the gills).
H	Drawn parallel to A cutting the eye in halves.
I	Drawn perpendicular to A cutting the eye in halves.

**Table S2.** Morphometric parameters taken on fish photographs using ImageJ.

Code	Measurement	Description	Original code (Reference)
MT1	Body surface area	Area of polygon drawn following the contour of the body excluding fins, and up to the narrowest point of the caudal peduncle.	M5 (Bellwood et al., 2014)
MT2	Standard length	Length from the most anterior point on the head (Di when present, otherwise $D \times A$ ) to the posterior of the hypural plates ( $E \times A$ ).	M1 (Bellwood et al., 2014)
MT3	Maximum body depth	Measured perpendicular to the midline (A) at the deepest part of the body (excluding fins).	M2 (Bellwood et al., 2014)
MT4	Head length	Horizontal distance from the most anterior point on the head (Di when present, otherwise D) to the posterior margin of the operculum (G).	Head length (Barnett et al., 2006)
MT5	Head depth	Measured at the vertical of the orbit centroid (along I).	Hd (Toussaint et al., 2016)
MT6	Eye diameter	The largest internal diameter of the orbit (along H).	M9 (Bellwood et al., 2014)

MT7	Anterior of orbit centroid	Measured horizontally from the orbit centroid ( $H \times I$ ) to the tip of the snout ( $B \times H$ ).	M14 (Bellwood et al., 2014)
MT8	Posterior of orbit centroid	Measured horizontally from the orbit centroid ( $H \times I$ ) to the posterior margin of the operculum ( $G \times H$ ).	M13 (Bellwood et al., 2014)
MT9	Anterior of orbit	The horizontal distance from the anterior margin of the orbit to the anterior margin of the body (along H). For fish species with very anterior eyes (e.g. longfins) MT8 may be close, or equal to, zero.	M12 (Bellwood et al., 2014)
MT10	Snout length	The horizontal distance from the anterior margin of the orbit to the tip of the snout (D).	M8 (Bellwood et al., 2014)
MT11	Eye position	Vertical distance from the orbit centroid ( $H \times I$ ) to the bottom of the body ( $B \times I$ ).	Eh (Toussaint et al., 2016)
MT12	Oral gape position	Vertical distance from the tip of the premaxilla to the bottom of the body (B).	Mo (Toussaint et al., 2016) M18 (Bellwood et al., 2014)
MT13	Maxillary jaw length	Length from the tip of the premaxilla to the intersection between the maxilla and the mandible (i.e. the corner of the mouth).	Jl (Toussaint et al., 2016)
MT14	Orbit centroid to mouth	Angled from the orbit centroid ( $H \times I$ ) to the anterior tip of the premaxilla.	M17 (Bellwood et al., 2014)
MT15	Eye-mouth angle	Angle between MT14 and a horizontal line intersecting the tip of the premaxilla.	A3 (Bellwood et al., 2014)
MT16	Narrowest depth of caudal peduncle	Measured perpendicular to the midline (A) at the narrowest point of the caudal peduncle (F).	M4 (Bellwood et al., 2014)

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