Metadata for dataset "benthic\_functional\_response\_DB\_withMAXMIN.csv" - Accompanying the 2019 manuscript: "Biomass encounter rates limit the size scaling of feeding interactions" - By Daniel Barrios-O’Neill, Ruth Kelly & Mark C. Emmerson

**study** Grouping variable identifying discrete studies.

**study\_experiment** Full citation details. ‘experiment’ indicates data is associated with this study.

**vol\_cm3** Volume of the experimental arena in cm3, where given and/or relevant (3D interactions).

**footprint\_cm2** Footprint of the experimental arena, where given and/or relevant (2D interactions).

**temp\_C** Experimental temperature in °C.

**time\_d** Experimental duration in days.

**pred\_type** Phylum or class of consumer.

**pred\_sp** Species of consumer.

**interaction** A grouping variable identifying the consumer search strategy. AC\_mob: an actively searching consumer and mobile resources (i.e. capable of post-detection escape via movement). AC\_stat: an actively searching consumer and static resources (i.e. incapable of post-detection escape via movement). SW: an \*obligate\* sit and wait predator (e.g. anemones). F: a filter feeder. D: a deposit feeder.

**dim** The dimensionality of the interaction space (3D or 2D).

**pred\_g** The wet mass of the consumer in g. Either as given by the study, or estimated using conversion factors from the literature.

**prey\_type** Phylum, class or type of resource.

**prey\_sp** Species of resource, where appropriate or given.

**pred\_g** The wet mass of the resource in g. Either as given by the study, or estimated using conversion factors from the literature.

**Columns min\_den to max\_gm2** relate to the original experimental set ups, from which parameters are derived

**R** The consumer-resource mass ratio.

**capture** The estimated capture rate of the consumer from the fitted functional response model. Where the scaling exponent (**q**) is >0, the capture rate is the search coefficient. Units are experimental (i.e. units of experimental area or volume, and time).

**q** The scaling exponent of the generalised functional response, estimated from model fits.

**handling** The estimated handling time of the consumer from the fitted functional response. 0 indicates a Type I fit. Units are in experimental time.

**cap.g.prey** The capture rate in grams rather than individuals (as in **capture**).

**cap.g.m2.d** The capture rate in grams per m2 (or m3) per day.

**cap.pred.g** The consumer mass specific capture rate in grams of resource per m2 (or m3) per day per g of consumer.

**handling.d** The handling time in days.

**handling.gd** Time in days required to handle 1 gram of resource.

**MFR** The maximum feeding rate of the consumer in grams per day.

**MFR.pred.g** The consumer mass specific MFR. i.e. grams of resource handled per gram of consumer per day.

**HSD** The half-saturation resource density. i.e. the resource density in grams per m2 or m3 at which resource consumption is MFR/2. For Type 1 functional responses this value cannot be calculated, and for gradually saturating responses values will be well above field-relevant densities.

**HSD.pred.g** The consumer mass specific HSD in g of resource per m2 or m3 per gram of consumer.

**slopes.g.m2.d** Equivalent to **cap.g.m2.d** (identical units)for fixed-capture rate responses (Type I or II). Where **q** !=0 this value represents the steepest part of the response.

**slopes.pred.g** As per **slopes.g.m2.d** but corrected to consumer mass (i.e. per gram of consumer)