**Calice Morphology Protocol**

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Shape, polygon

Description automatically generatedDesired morphometrics:

ID Intercorallite distance

(We’ll use density as A

proxy for this)

C Calice circumference

H Calice height

(widest distance)

W Calice width

(perpendicular to CH)

A Calice area

CC Corallite circumference

CH Corallite height

(widest distance)

CW Corallite width

(perpendicular to CH)

CA Corallite area

D Calice depth

Materials

* Stereo microscope
* Microscope light
* Either a microscope camera or a phone with an adapter to connect it to the microscope
* Ruler or measuring device
* Computer with ImageJ

Microscope set up

1. Turn on stereo microscope and microscope light
2. Set up scope with black side of plate showing and ruler in view
3. Set up camera

Computer Set up & Photographing

A picture containing black

Description automatically generated

1. Make sure that ruler and sample are
   1. In view
   2. In focus
   3. Not over or under saturated (adjust light as needed)
2. For each sample, take one photo of the label followed by one photo of the calices
3. Save photos to the desktop, label the photo with the sample name
4. Upload photos to the drive

Measuring Calices

1. Randomly select 5 corallites to measure.
   1. Do not measure corallites that are cut off around the edges.
   2. If there are enough full calices, do not use any along the growing edge of the coral fragment. Usually these are much smaller and deformed.
2. Open imageJ
3. Set the scale for each image
4. Use the straight line measuring tool to measure:
   1. Calice height – the widest point of the circle
   2. Calice width – perpendicular to the line used for calice height
   3. Corallite height - the widest point of the circle
   4. Corallite width – perpendicular to the line used for calice height
5. Use the area measuring tool to measure:
   1. Calice area
   2. Corallite area
6. Overlay a box onto the coral skeleton, making it as large as can fit on the skeleton. Record the area of the box (a) and the number of calices (n) within the box (if the center of the calice is in the box then it counts.
7. In the data file calculate the calice density in calices/cm^2 (d): n/a = d

References

Todd et al. 2004c

Ow & Todd 2010