

## MIW2024 workshop

Non-conventional use of the Largo tool in BIIGLE2.0 for taxon identification

Pre-workshop requirement:

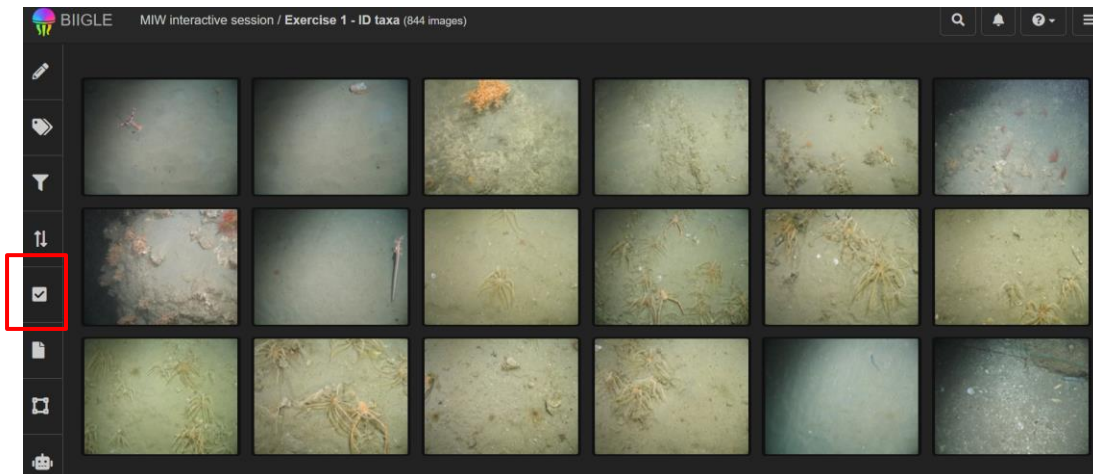
Follow the link that will add you to the annotation sessions in the BIIGLE project, even if you already have a BIIGLE account you will still need to use the link:

<https://biigle.de/project-invitations/e5ee7341-f3b8-46ff-ab29-fc85e7ce80d7>

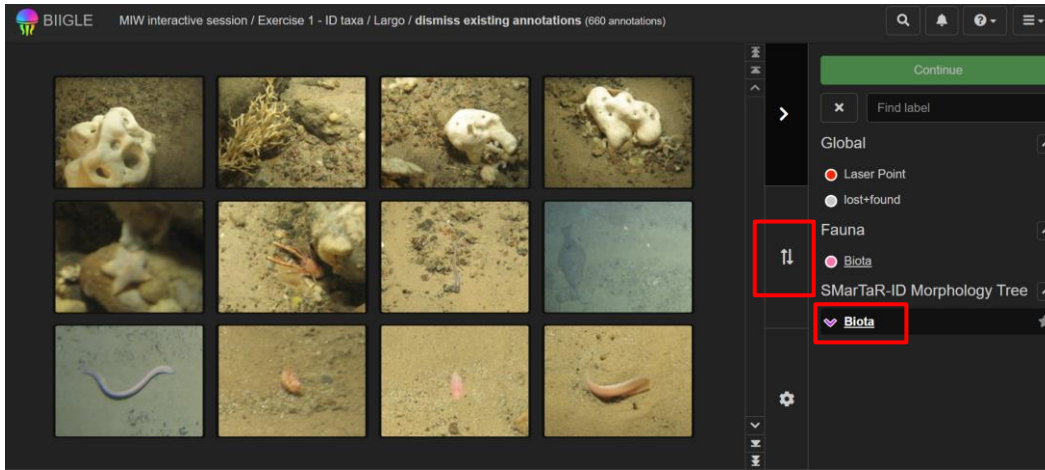
Interactive session instructions:

### Exercise 1

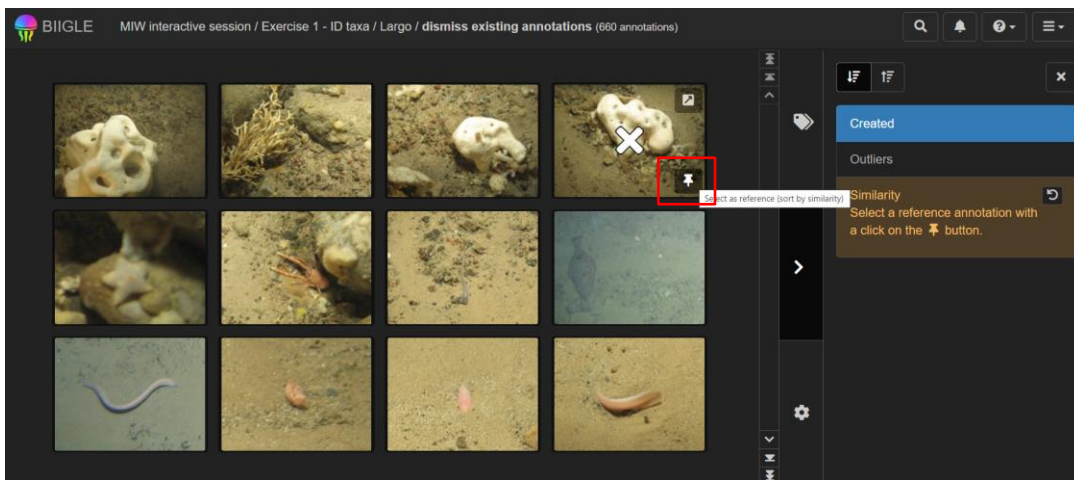
1. Go to the Exercise 1-ID taxa volume in the MIW interactive session project
2. In the volume view, go to the Largo button (see below in red)



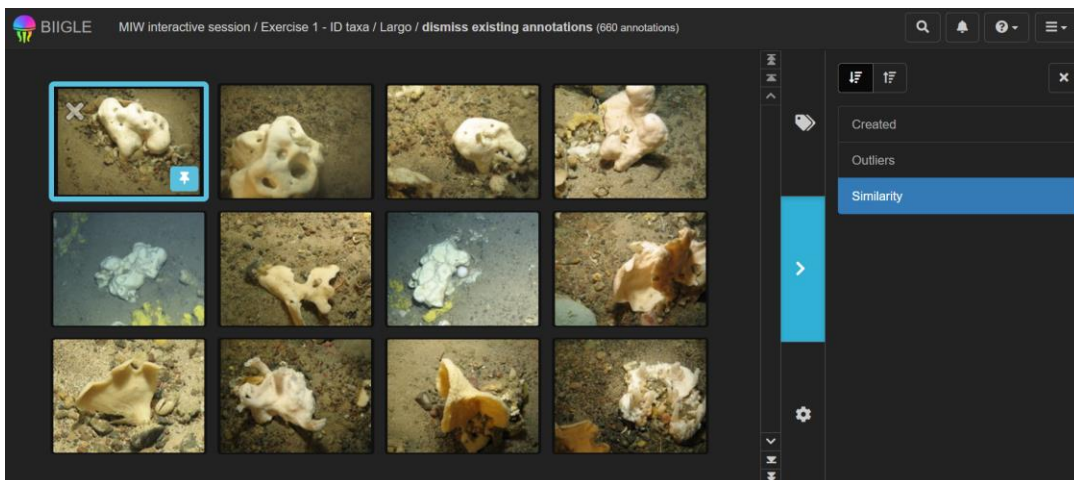
3. Using the SMarTaR-ID morphology Tree for exercise 1 – identify annotation to broad taxonomic categories. Click on 'Biota' on the label tree to display annotations which have been assigned the label (N = 660).



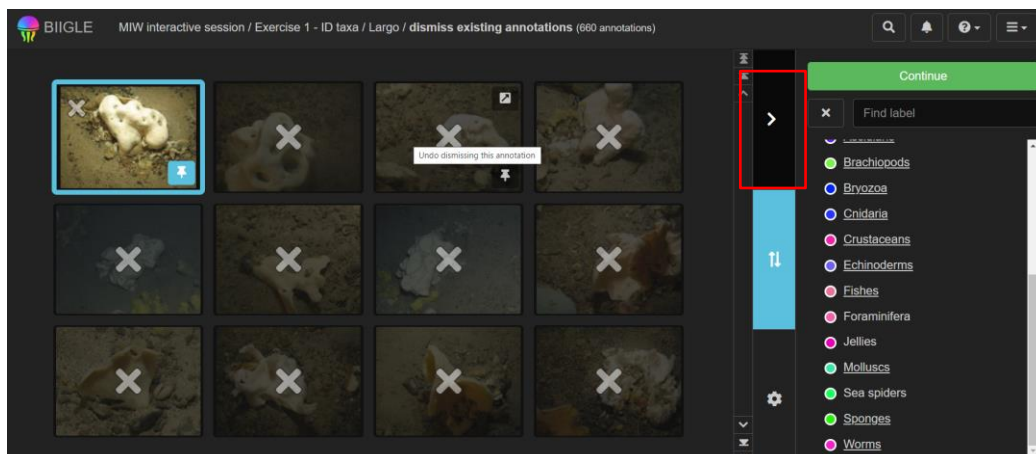
- To aid sorting of the annotations, click on the 'sort patches' and choose the similarity option (see above - left hand red box).



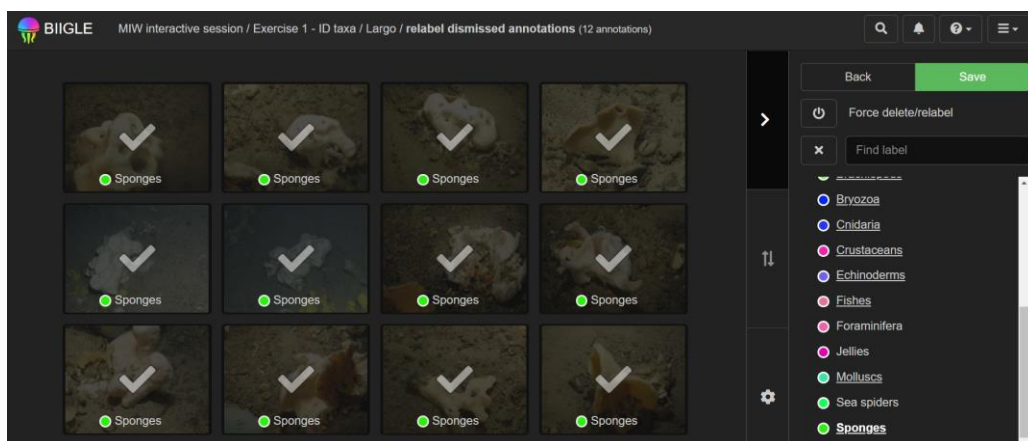
- Decide which taxa you would like to sort first – best to look for distinct morphology. Click on the similarity symbol at the bottom right of chosen annotation. BIIGLE will display all annotations that it thinks are similar. In this example, I have chosen sponges to sort.



6. Click on thumbnails you want to relabel.



7. Go to the label tree tab and press continue to relabel annotations.
8. Chose a new label, i.e. could be broad (sponges) or finer morphology/taxonomic category. Then attach to annotations by clicking on them (multiple can be chosen using the Shift button).



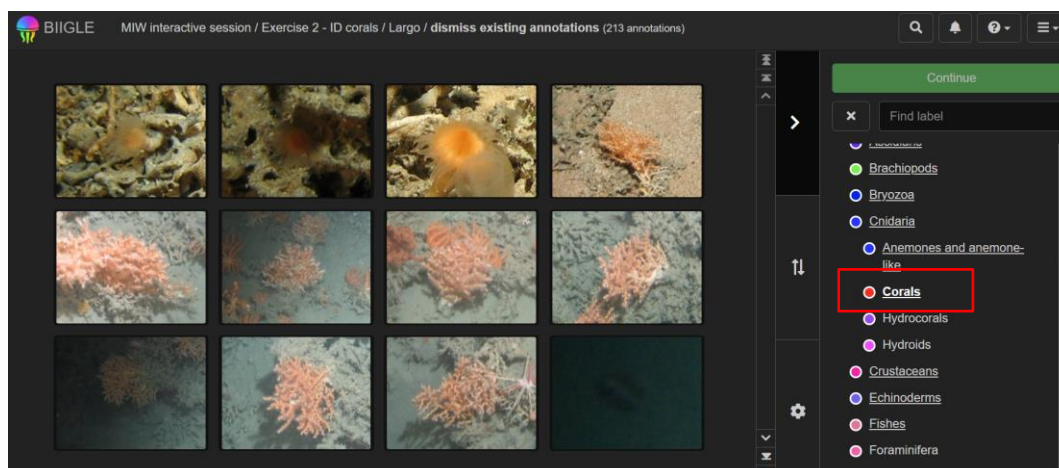
9. Click save. For these exercises, the force delete/relabel button **does not** need to be activated. The annotations will be relabelled and you can start a new largo session.
10. Repeat steps 4-9 for other taxa.
11. Once complete you can Largo the labels you have assigned to make sure you are happy with identifications.

## Exercise 2 – ID coral taxa

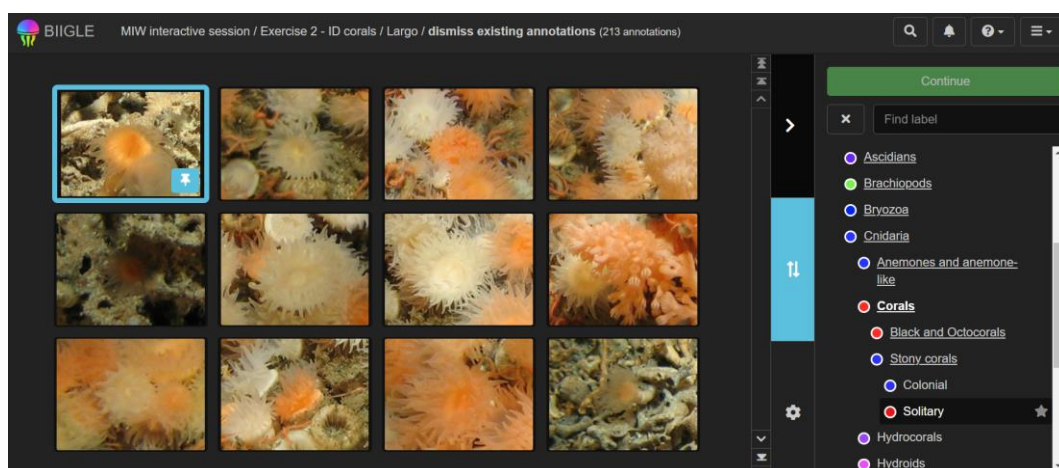
Initial Largo you can identify to broad taxonomy, i.e. corals. Then second stage Largo can be sorting into finer categories, either morphology or taxonomy (families, species etc.).

1. Go to Exercise 2 volume, click to view the volume display.

2. Begin a new Largo session, choose the label 'Corals' on the SMarTaR-ID label tree. By filtering out other groups of taxa, it is easier, faster and more accurate to now sort into finer resolution identifications.



3. Repeat steps from exercise 1 to sort thumbnails of similar morphologies to aid relabelling. In this example I have chosen a cup coral for the similarly sort and then relabelled as Solitary, but could as easily identify to OUT/species level.
4. Thumbnails can be labelled from the coral section – see example below of solitary cup corals.



This system of top-down identification of biota from images can be used for pre-existing label trees for morphological types, broad taxonomy or OTU/species level (see below) or you can make your own label tree. The number of steps can be determined by expertise.

