

ARMS Processing – Big Organisms Vouchering

During this step, the organisms > 2-mm are morphosorted and individually vouchered. Typically, an ARMS unit yields 50 to 150 organisms depending on deployment time and types of habitat.

Materials:

- 1 photo tray containing the 2-mm fraction
- 1 bucket of filtered seawater
- 1 seawater squeeze bottles
- 1 90% ethanol squeeze bottles
- At least 1-Liter of 90% ethanol
- Clove oil
- Anhydrous magnesium chloride in solution
- Assortment of Tupperware and cups (50-100)
- 1 glass bowl
- Assortment of vials and tubes (different sizes from 2-mL to 50-mL)
- Set of whirlpicks
- Tweezers, soft tweezers, tea spoons
- 1 camera with 60-mm lens
- 2 strobes on gorilla pods
- Black background (e.g.: black velvet fabric)
- 1 Deep glass petri dish (10-15-cm in diameter)
- Specimen labels
- Field spreadsheet
- Pencils, markers

Procedure:

1. Prepare a container with seawater and mix in few drops of clove oil (to relax the crustaceans)
2. Prepare a container with 50% seawater and 50% magnesium chloride solution (to relax the mollusks and echinoderms)
3. Fill some cups and Tupperware with seawater
4. Using the spoons and tweezers, collect all the animals in the 2-mm tray and separate them by morphospecies. It can be helpful to first sort the animals by taxonomical groups (shrimps, crabs, gastropods etc.) in bigger Tupperware before sorting them down to morphospecies in the cups

5. Relax the organisms before taking photographs by bathing them in the clove oil or magnesium chloride bath depending on their taxonomy (see above)
6. When 5 or fewer organisms per morphospecies are present, photograph each animal separately with and without their respective specimen label
7. Transfer each specimen into an adequate vial or whirlpack (depending on their size) and fix in 90% ethanol with the specimen label in the container. The ratio of specimen:ethanol should be at least 5:1
8. Record the specimens' information in the field spreadsheet
9. If more than 5 organisms per morphospecies are present, select 5 organisms and individually voucher each one of them as described in steps 5 to 7. Take a group photo of the rest of the specimens with a single label and bulk preserve them. Fill out the field spreadsheet, make mention of the number of organisms in the bulk sample and link the group to the 5 individually preserved specimens
10. When possible, preserve the organisms in the freezer or the fridge

Illustrations:



Photo tray containing the 2-mm fraction after sieving

Specimens are individually sorted and attached a unique field number



Specimens are fixed after sorting and individual photography