Zooplankton biomass, ash, density and composition

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Methods:

Collection of zooplankton samples is carried out during each time-series cruise. Tows are oblique and done during the morning (usually between 9 and 10 am) using a BONGO type net (Figure 1) with receptacles of 60cm opening diameter and two different mesh sizes, 200 and 500 microns. A flow meter (General Oceanics) is placed before the 500 micron mesh, in the center of the net's opening in order to calculate the volume of water filtered through the net during the deployment.



Figure 1: BONGO net used for zooplankton tows during CARIACO cruises. Left: BONGO in the water; center and right: deployments of the BONGO.

The tows cover a depth between 200m deep to the surface. In order to reach that depth, 200m of cable are released and the ship is set into motion so that the cable has an angle of 40-45 degrees (measured with a clinometer) during the entire tow (10-15 minutes). The ship's speed during the tow is maintained around 1-1.5 knots. As the ship moves, the net is pulled upwards at a speed of 1 m/s.

Once on the surface, the nets are washed with seawater to move any organism caught down to the receptacle. Its contents are then emptied inside glass jars and kept refrigerated until processing.

In the lab, samples are split in two, using a Folsom splitter (Figure 2). One of the halfs is used to determine dry weight (biomass), as well as ash (inorganic remains). If further analyses are required, this half is further split in $\frac{1}{4}$. Samples are washed with DI water to eliminate salt excess and dried for 48 hours at 60°C in pre-weighted crucibles. Samples are then calcined in a muffle furnace at 450°C for 4 hours. From the remaining half, aliquots are extracted and placed in a 10 ml. Bogorov chamber in order to count and identify taxonomic groups present. Identification and count are done using a stereomicroscope Baush & Lomb (7x). Processed samples are fixed with formaline 5% neutralized with borax, labeled and stored in the collection maintained at the Museo

Oceanológico Hermano Benigno Román (MOBR - EDIMAR). The manuals used for zooplankton identification are Newell&Newell (1977); Tregouboff & Rose (1978) and Boltosvkoy (1981).

