

From sample to library: The ZooSCAN pathway unraveled

Mortelmans Jonas, Amadei Martínez Luz, Deneudt Klaas and Hernandez Francisco

Flanders Marine Institute (VLIZ), InnovOcean site, Wandelaarkaai 7, 8400 Ostend, Belgium
E-mail: jonas.mortelmans@vliz.be

Zooplankton is ubiquitous in marine environments and the zooplankton species composition is often used to determine the ecological quality of marine water bodies. Furthermore, being at the base of the food chain, thus serving as food for higher trophic levels, zooplankton is a crucial component of the marine ecosystem.

As zooplankton samples are difficult to obtain, and historical samples are simply absent, the Flanders Marine Institute (VLIZ) is generating a sample library as part of the Belgian LifeWatch observatory: through monthly campaigns, zooplankton is sampled at 9 (to 17) stations, following an unbiased, traceable, and documented sampling protocol. First samples were collected during surveys in 2013, and after an initial period of optimization, the protocol was fixed in January 2014.

The maintenance of such a well-documented and accessible sample library is of major importance, for it can provide important insights on historical phenomena, assess baselines, trends, or simply exploit these historical samples with new techniques previously unavailable. The protocol includes the use of the ZooSCAN (HYDROPTIC), a tool used to process large samples of zooplankton semi-automatically. The device is used to (1) generate a digital copy of zooplankton samples, (2) process and analyze collected zooplankton samples in a fast and semi-automatic way, and (3) capture data on rapidly degenerating gelatinous plankton.

Users for zooplankton samples and abundance data, can simply browse through the LifeWatch Data Explorer, available at <http://lifewatch.be/en/lifewatch-data-explorer>, to assess availability of the samples. Shortly, the interface specifically dedicated to the sample library will be launched.

During the VLIZ Marine Science Day, the possibilities of the ZooSCAN, the sample library, and the monthly LifeWatch surveys will be elaborated.

Keywords: LifeWatch; sample library; library; ZooSCAN; demo