# Different approaches for evaluating benthos quality in Lake Maggiore

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**Introduction:** in 2008-2010 a wide sediment characterization was performed in lake Maggiore (Pallanza Bay) to investigate spatial and temporal distribution of Mercury and DDT. In this context, as part of a series of investigations being carried out by ENVIRON International, benthic community studies were performed to assess the potential impact from chemical exposure.
Benthos status was evaluated analyzing different lines of evidence (chemistry, toxicity and benthos quality). The following presentation focuses on different approaches used for evaluation of benthos community status.

**Methods:** A combination of Sediment Profile Imaging (SPI) and Plan-View (PV) camera survey was performed in October in 149 stations throughout the Pallanza Bay and in the last kilometer at the mouth of the Toce River where it enters the Pallanza Bay. The purpose of the reconnaissance SPI/PV survey was to characterize the sediments with this innovative optical coring technology, providing a better understanding of animal-sediment relationships by documenting gradients in sediment grain size, transport patterns, geochemical processes, and benthic community dynamics.

**Fig. 1:** Profile image obtained by SPI camera; tubificid oligochaetes appear to be the dominant infaunal assemblage. Scale: width = 14.5 cm.

Moreover, to analyze benthic macroinvertebrates species composition and to monitor seasonal differences in their community, grab samples were collected during 2010 in stations characterized by different chemical composition. Oligochaetes and chironomids were identified to species and different benthic quality indices were applied to evaluate the ecological status of the investigated sites.

The following presentation will discuss the results of each survey and will offer a comparison between the two sets of results; strengths and limitations of the two different techniques will be highlighted.