



XXIV Congresso dell'Associazione Italiana di Oceanologia e Limnologia

Centro Congressi, Area della Ricerca del CNR
Bologna, 5 – 7 Giugno 2019



Serie storiche e indagini attuali per costruire un futuro sostenibile per gli ambienti acquatici

Conoscenza ed esperienza, binomio inscindibile per la gestione integrata del territorio



Time series and current surveys to build a sustainable future for aquatic environments

Knowledge and Experience, an inseparable pair for the integrated land management

Con il patrocinio di:



With the endorsement of:

Effects of local and global stressors on a large and deep lake south of the Alps: Present status and perspectives of LTER investigations in Lake Garda

The limnological investigations of the LTER research site of Lake Garda (Macrosite IT08-Subalpine lakes) are based on a wide multidisciplinary approach aimed at understanding the long-term temporal effects of climate change and anthropogenic pressures on biotic communities and ecosystem functionality. Specific activities include the assessment of the nutrient impacts (P, N, Si) and climatic fluctuations; the identification of factors favouring the development of cyanobacteria, the genetic characterization of toxigenic strains, the measurement of several toxins classes (e.g. hepato- and neurotoxins), and the evaluation of their impact on the use of water resources for drinking and recreational purposes; the reconstruction of the lake secular evolution based on the paleolimnological study of plankton remains in deep sediments; the identification and impact of alien and cryptogenic species. Over the last few years, investigations have been complemented by additional research lines including metagenomics and metabolomic profiling. Microbial and cyanobacterial communities have been and are studied using High Throughput Sequencing techniques and massive amplification of 16S rRNA genes with MiSeq Illumina technologies. Related approaches are underway for the characterization of heterotrophic and photosynthetic protists based on the analysis of 18S rRNA genes. The characterization of bioactive molecules in cyanobacterial species isolated from Lake Garda is performed using semi-targeted metabolomic analysis with LC-MS. The general significance and value originating from the introduction of these new tools in the completion of data collected with traditional methods and in the understanding of the long-term changes of large lakes will be evaluated and discussed with a selection of results obtained from the investigations carried out in recent years in Lake Garda. The vitality and progress of scientific research in Lake Garda and in the other LTER large lakes should be founded not only on the adoption and updating of new conceptual models, but also on the opening towards new technologies.

Salmaso N.,
Boscaini A.,
Monica Tolotti,
Cerasino L.

Research and
Innovation Centre,
Fondazione Edmund
Mach, Via E. Mach 1,
38010 San Michele
all'Adige, Italy

