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**LAKE ORTA 25 YEARS AFTER THE LIMING INTERVENTION: WHAT PHYTOPLANKTON ASSEMBLAGES COULD TELL US ABOUT THE RECOVERY OF THE LARGEST ACIDIC LAKE IN THE WORLD.**

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Lake Orta (N. Italy) became the world's largest acidic lake, after a dramatic industrial pollution, dating back to the late 1920. The lake was limed in 1989-1990: since then, a recovery of the chemical and biological conditions gradually took place.

Concerning phytoplankton, the gradual decrease of the chlorophytes and the noticeable increase of the diatoms, reappearing in the pelagic phytoplankton after decades, were the most outstanding features of the post-liming assemblages.

However, the most recent study, carried out in 2001, pointed out that, comparing the assemblages of lakes Orta and Maggiore, the complete recovery was not yet reached. In particular, a decadal comparison (1990-2001) between the two ecosystems, shows that, although the taxa number increased in Lake Orta after the liming, some differences in terms of functional diversity are clear.

Since 2001 detailed taxonomic analyses are lacking. However, between 2005 and 2013 some samples, analysed in both lakes using *in vivo* fluorimetry, show that the dominance of chlorophytes is still a distinctive trait of Lake Orta, although the importance of the diatoms is now greater than in previous years and their dynamics is following a pattern comparable with that observed in Lake Maggiore.