

S24: Salmaso. The large lakes south of the Alps: Current limnological status, with a special focus on Lake Garda

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Do new identified species always have to be classified as allochthonous species?

- Increasing sampling effort
- Introduction of new more efficient laboratory methods
- Adoption of new taxonomic manuals and/or new taxonomic criteria
- Increasing in the abundance of "new" taxa, formerly present with inocula

Excluding cases in which the appearance of alien species can be unequivocally documented, for the remaining "new" taxa the term cryptogam is used.

The term refers to species whose origins are unknown or not unambiguously documented.

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About

The large lakes south of the Alps: Current limnological status, with a special focus on Lake Garda

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The large lakes south of the Alps (DSL: Garda, Maggiore, Como, Iseo and Lugano) are one of the most important lake districts in Europe. In the last decades, the DSL showed a tendency to oligotrophication, warming of the water column, decrease in the frequency of full mixing episodes followed by a lower supply of nutrients to the upper layers. In Lake Garda, the decrease of nutrients caused a decline of the mesotrophic cyanobacterium *Planktothrix rubescens* (microcystin producer), which was partially replaced by *Tychonema bourellyi* (anatoxin-a producer), a "new" species identified in 2014. The discovery of *Tychonema* can be considered a paradigmatic example of the unknown biodiversity in the DSL. To solve this gap, high throughput sequencing has been recently used to analyze bacteria, cyanobacteria, protists and fish. The new approach has been extended to the whole Alpine region within the EU Alpine Space project Eco-AlpsWater (www.alpine-space.eu/projects/eeco-alpswater).

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