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# Sentinel lakes: a network for the study and management of mountain lakes in the French Alps

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## Abstract

High-altitude lakes are vulnerable ecosystems that require protection and sustainability management, although their overall functioning is still poorly understood. In France protected area managers and scientists are cooperating to address this problem. The creation of a mountain lake observatory at the scale of the French Alps will be a priority to provide an evaluation and decision support tool to the management of protected areas. It will require a standardized monitoring of the lakes from the northern to the southern Alps to have a set of data (physicochemical, biological...) which are consistent on the whole territory before extending them to other mountain ranges. Once validated and analyzed by scientists, the data will constitute a key component for sharing information between different stakeholders in the framework of this network. The network allows the synergy between multidisciplinary research and managers on identified studied sites. The goal is both to detect modifications in the ecological state of lakes (modifications which could be linked to changes in "lake-uses" (tourism, fishing etc)) and progress on the understanding of specific ecological process in order to, *in fine*, apply the adapted remediation. Asters, Conservatoire d'Espaces Naturels de Haute-Savoie, has the mission to encourage exchanges and to coordinate scientific activities of this network. In 2016, the first description of the data set will be available and presented. Year after year, scientists will be able to analyze the evolution thanks to a regular gathering of data. This will enable them to improve the protection and management of these habitats.

**Keywords:** limnologie, lacs d'altitude, monitoring, changement climatique

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