

INTERNATIONAL MOUNTAIN CONFERENCE

#IMC22

SEPTEMBER 11 - 15 2022

## >> SYNTHESIZE MOUNTAINS OF KNOWLEDGE <<

## **Submitted Abstract**

ID IMC22-FSAbstr- 668

First Author First Name	Marco (1,2) Cantonati
Submitting Author	
First Name	Marco
	marco.cantonati@unibo.it
Co-Authors	Filippini, Maria (1); Gargini, Alessandro (1); Segadelli, Stefano (3)
>> E-Mails will be not listed	···· / ··· ·· / // ··· 2 / ····· · · / // ·· 2 ···· · · / ·/
Organisations	1: Alma Mater Studiorum University of Bologna, Italy
5	2: MUSE - Museo delle Scienze, Trento, Italy
	3: Emilia-Romagna Region, Geological, Seismic & Soil Survey, Bologna,
Country	Italy
Region	Western Europe
 Title	Investigating Present And Past Mountain Freshwater Ecosystems In The
	Alps And The Apennines.
Keywords	Springs, High-Mountain Lakes, Mires, Global Change, Paleoecology
-	
Туре	List Of Focus Session
Focus Session ID	04



INTERNATIONAL MOUNTAIN CONFERENCE

SEPTEMBER 11 - 15 2022

>> SYNTHESIZE MOUNTAINS OF KNOWLEDGE <<

Abstract

Mountain freshwater ecosystems are of undisputed relevance, not only as strategic water resources but also for the important biodiversity they shelter and for the ecosystem goods and services they provide. Therefore, research on mountain aquatic habitats should be fostered not only in mountain regions but also in administrative geographic areas where economic reasons determine an emphasis of policy and management on the more productive lowlands. Our aim is to provide a synthetic overview on research themes that we pursued in the Alps and Apennines in the last decades, with an emphasis on those planned for the years to come. The main topics of investigations that we carried out in the Alps are as follows: springs (in particular springs in National Parks and other types of nature preserves) as sites of paramount importance for aquatic biodiversity conservation); characterization of the biodiversity of high-mountain lakes under the pressure of water-spilling for hydropower (artificial snow) generation, eutrophication, and acidification risk; neo- and paleolimnology of a high-mountain lake on holocrystalline substratum (early-warning system & archive of global-change effects for the whole Late Glacial and Holocene); paleoecological study of mountain mires (diatoms and chemical characteristics of peat cores) with a focus on grazing effects; ecological effects of water-level fluctuations in mountain lakes. Research topics tackled in the Apennines are as follows: explorative research on the biodiversity of springs representative of the lithotypes and ecomorphological spring types found in the Emilia-Romagna Region; springs as hotspots of landscape-level (#) diversity; limestone-precipitating springs (LPS) and conceptual models of LPS' distribution to support the implementation of regional LPS information systems. Both in the Alps and in the Apennines we dealt with springs as ideal sites where to develop our understanding of geo-biodiversity relationships and ecohydrogeological approaches. An important research program to be continued in the Alps is long-term ecological research (first data collected in the early 1990s) on selected mountain springs and on a hyper-dilute high-mountain lake. New research themes that are being developed in the Apennines: spring discharge as an indicator of climate change throughout the last century as related to evapotranspiration increase and snow-fall decrease, innovative methods to evaluate the resistance and resilience capability of small mountain springs to climate-change effects; environmental archives (paleoecological study of a small mountain lake and associated mire), recorded data, and modeling to understand and predict changes in the frequency of extreme-precipitation events during the Holocene.

Research Area Mountain Regions Innrain 52f 6020 Innsbruck Austria WWW.IMC2022.INFO

imc2022@uibk.ac.at +43 512 507 54442