AIOL APS ETS
Associazione Italiana di Oceanologia e Limnologia

XXIX Congresso AIOL

3-6 giugno | Ancona, Italia

Auditorium Orfeo Tamburi | Mole Vanvitelliana | Banchina Giovanni da Chio 28

Abstract book

"Shaping aquatic science for the future we envision"

Con il contributo di

Con il patrocinio di

Shaping aquatic science for the future we envision

XXIX Congresso
Associazione Italiana di Oceanologia e Limnologia

Abstract book

Ancona, 3 – 6 Giugno 2025

Organizing committee

- Silvia Bianchelli (Università Politecnica delle Marche)
- Chiara Pennesi (Stazione Zoologica Anton Dohrn, Calabria Marine Centre - CRIMAC)
- Gian Marco Luna (CNR-IRBIM)

Scientific committee

- Domenico D'Alelio, Stazione Zoologica Anton Dohrn, Napoli
- Silvia Bianchelli (Università Politecnica delle Marche)
- Chiara Pennesi (Stazione Zoologica Anton Dohrn, Calabria Marine Centre - CRIMAC)
- Gian Marco Luna (CNR-IRBIM)
- Alessandro Bellino, Università degli Studi di Salerno
- Martina Austoni, CNR-IRSA, Verbania
- Andrea Fenocchi, Università degli Studi di Pavia
- Vincenzo Manna, OGS, Trieste
- Michela Rogora, CNR-IRSA, Verbania
- Cecilia Teodora Satta, Università degli Studi di Sassari
- Monica Tolotti, Fondazione E. Mach, Istituto Agrario di S. Michele all'Adige, S. Michele all'Adige (Trento)

Contents

Evaluating freshwater macroinvertebrates metrics for trout farming impacts on stream ecosystems

Andrea Chemello[1*], Francesca Ciutti[1], Nico Salmaso[2, 3], Adriano Boscaini[2], Gabriele Consoli[2], Filippo Faccenda[1], Cristina Cappelletti[1]

[1]Technology Transfer Center, Fondazione Edmund Mach, Via Edmund Mach, 1 - 38098 - San Michele all'Adige (TN), Italia
[2]Research and Innovation Centre, Fondazione Edmund Mach, Via Edmund Mach, 1 - 38098 - San Michele all'Adige (TN), Italia
[3]National Biodiversity Future Center, Piazza Marina, 61 - 90133 - Palermo (PA), Italia

Corresponding author: *and.chemello@gmail.com*

Aquaculture can impact the health of stream ecosystems through the input of nutrients, organic matter, suspended solids, drugs, and chemicals. However, no specific biological indices have been developed to assess these impacts. In this study, we aim to compare and evaluate the performance of different macroinvertebrate indices in detecting such alterations. The Filiera ASTRO project (CUP J38H23001450007), funded by "Piano Nazionale Complementare – PNC" (MASAF), promotes sustainable and competitive mountain aquaculture in Trentino, one of the main producers of salmonids in Italy. Within the project, three farms planning to install filters were selected to assess mitigation measures. In summer 2024, before filter installation, quantitative macroinvertebrate samples were collected upstream and downstream of each farm discharge. IBE and main compositional and functional feeding groups metrics were applied. Preliminary data from the three farms showed a significant increase in %OC (oligochaetes and chironomids) in downstream stations. In the two most impacted sites, this was accompanied by a decrease in 1-GOLD, ASPT, and %grazers, along with an increase in %filter feeder. These results are consistent with literature showing a shift toward pollution-tolerant taxa feeding on fine organic particles discharged from farm effluents. Morphological data will be compared with bulk eDNA metabarcoding taxa list to develop an integrated approach for assessing trout farm impacts.