

# XXV Congresso AIOL

On-line – 30 giugno-2 luglio 2021

Contributi innovativi dell'oceanologia e della limnologia alla  
conoscenza, al recupero e alla salvaguardia delle risorse  
acquatiche minacciate dai cambiamenti globali

Strumenti e approcci innovativi nelle scienze acquatiche in un  
mondo che cambia

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## **Can artificial flumes effectively simulate a field experiment? Evidences from a study on the effects of flow intermittence on ecosystem processes**

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Artificial flumes have been often used to simulate processes occurring in natural conditions, as they can be used to simplify the set of abiotic factors that influence a biotic response, as in the case of flow intermittence and consequent riverbed drying, which is becoming increasingly frequent in mid-elevation streams and rivers in the Alpine area. Due to the highly dynamic flow regimes of intermittent streams and interactions among multiple environmental factors, result from such flumes simulations require evaluation and, if necessary, calibration with data from field experiments. We therefore compared the results of a flume experiment simulating leaf litter processing with those obtained from natural field data. In both experiments, we sampled the macroinvertebrate community and measured leaf decomposition rates at comparable time intervals. We observed consistent patterns in both spatial and temporal total  $\beta$ -diversity and leaf mass loss in the two experiments. Where flowing water was present during the whole experiment, leaf litter decomposition was faster and macroinvertebrate communities were more stable and taxonomically richer. These results highlight drying events as a key influence on ecological communities, and suggest that flume experiments can provide an effective proxy for naturally-occurring processes in stream ecosystems.

## **Glass eels (*Anguilla anguilla*, L. 1758) recruitment evaluation through a new sampling method**

**Cinzia Podda (1)\*, Jacopo Culurgioni (2), Giovanna Chessa (2), Riccardo Diciotti (2), Marco Maxia (2), Alessio Musu (1), Francesco Palmas (1), Gabriele Sanna (2), Melissa Serra (1), Andrea Sabatini (1)**

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The status of European eel population depends on the extent of glass eel recruitment. There are few and fragmentary available data concerning this phenomenon. We report a one-year glass eels survey carried out between 2020 and 2021 in three estuaries (Pula, Pramaera and Coghinas rivers, Sardinia, Italy) using a novel experimental monitoring tool, the “Flottante” trap, a mobile floating shelter made up of ten superimposed sheets of geomat (size 50x50 cm). To understand the recruitment dynamics in these river mouths, monthly samplings were carried out during new moon week. The temporal trend showed a general correspondence with glass eel recruitment data obtained with the experimental protocol normally used (fyke nets). The observed differences in terms of abundance, biometrics are site-dependent and probably linked to local environmental conditions. This evidence suggest that the sea surface currents could play a leading role in the dispersion of glass eels arriving from the sea. Anyway, the “Flottante” trap can be considered a reliable and easily usable sampling method that we can implement in a new sampling protocol to support the recovery of this critically endangered species.