

# e-Abstract booklet



25 - 30 July 2022

Dear e-ICOC participants,

After uncertain and trying times that affected all of us worldwide, we are delighted to welcome you to the first virtual International Conference on Copepoda. As co-organizers of the online e-ICOC we had three objectives in mind when we started putting the event together in March at very short notice: (1) to re-unite copepodologists after a 5-year interruption in the organization of physical ICOCs and create the opportunity for all to participate in the most appropriate international scientific platform for disseminating your research, (2) to give priority to early-career researchers who need to present their work as part of their career milestones by waiving registration fees and creating a significant number of time slots for students, and (3) to promote diversity and inclusion.

Bearing those objectives in mind we are proud to announce that 242 researchers from 46 countries have registered for e-ICOC, and that over half of the registrants are students. Due to this unprecedented interest the conference programme is jam packed and to avoid parallel sessions in an online meeting we had to extend the conference by an extra day. Over the course of six days 136 participants (69 students and 67 professionals) from 32 countries will present symposium talks, oral presentations and posters (with or without lightning talk). We have a team of moderators in place who will not only ensure that time keeping will be strictly observed but also that you will be looked after so that you can present your research in the best possible circumstances.

This abstract booklet is designed to provide you with an easy entry into the range of talks and posters that will be presented during the meeting. However, you are encouraged to consult the scientific programme on the e-ICOC website (<https://e-icoc-2022.com>) for the timing of other events such as the WAC Business Meeting, the election of WAC Officers, and the presentation of the Monoculus Award for exceptionally devoted service and contributions to the activities of WAC, the Zbigniew Kabata Award for best student oral presentation and additional student awards for best oral/poster presentations.

We wish you all an exciting e-ICOC and look forward to meeting many of you virtually during the conference and in person in 2024 in Japan when the physical ICOC cycle resumes!

With kind regards

**Rony Huys & Alexandra Savchenko**  
**Co-organizers of e-ICOC**



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NOTE THAT ALL TIMES REFER TO BRITISH SUMMER TIME (GMT+1)

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## THURSDAY 28 JULY

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## RS3-02

**Copepods coping with harsh environments: a case study in a deglaciating Alpine area**

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Climate change and progressive glacier loss are leading to rapid ecological shifts in alpine aquatic systems. Rock glaciers and paraglacial features such as proglacial lakes, moraines, and taluses can alter the gradients of glacial influence along alpine river networks, but the ecological responses are still little studied. We investigated the copepod communities of different stream types within two catchments in a deglaciating area of the Italian Alps. We analysed the influence of habitat conditions on copepod communities in different microhabitats (e.g., mineral substrates, bryophytes). We used an index of habitat mildness based on water temperature, channel stability, turbidity, and organic detritus, to measure the difference in community metrics over a gradient of habitat amelioration, driven by the mixing of distinct stream types and their interactions with paraglacial features. The taxonomic metrics (number of taxa, total densities, Shannon diversity) showed a bimodal distribution, peaking at intermediate mildness (one rock-glacial station) and at maximum mildness (one krenal station). Bryophytes acted as local scale multipliers of mildness as they store more detritus and provide shelter, and hosted higher abundance of copepods. Whilst harpacticoids were collected in all stream types and stations, cyclopoids were present only in the intermediate mildness stations, and particularly in a rock-glacial and one rhithral stations. In fact, harpacticoid communities included several cold stenothermic taxa (e.g., *Bryocamptus* (*Arcticocamptus*) *alpestris*, *Moraria alpina*, *Hypocamptus paradoxus*, *H. ruffoi*, *Maraenobiotus vej dovskyi*), whereas the cyclopoid assemblages included only generalist, euryecious taxa (e.g., *Eucyclops serrulatus*, *Acanthocyclops* cf. *einslei*, *Paracyclops* sp.), lacking the adaptation to the harsh conditions of high elevation streams. Communities composition of rock-glacial sites differed from the one of the other stream types, particularly it was very different from the glacial sites, and closed to the rhithral and krenal ones. Particularly relevant is the effect of rock glacial streams on invertebrates in general, and on copepods specifically, although the hydrology and ecology of such high-elevation stream types is still scarcely known. Under progressive deglaciation, rock glaciers and paraglacial features will increasingly influence the copepod communities of alpine river networks. As they host a high number of taxa and individuals than in non-glacial locations, rock glacial streams may act as stepping stones facilitating copepods colonisation following glacier retreat. After glacier loss, rock glacial streams may represent climate refugia for cold adapted taxa and/or krenal specialists, because the slow thawing of their ice might sustain cold water conditions for a longer period of time.