response was observed for leachate exposure. ETS activity in control groups was temperature-sensitive, increasing significantly at 30°C; however, pollutant exposure did not significantly alter ETS activity at either temperature.
These findings show the complex interplay between temperature and pollutant toxicity, with elevated temperatures intensifying the adverse effects of Cu and BPA on marine organisms. The results highlight the vulnerability of marine and aquatic ecosystems to compounded stressors, suggesting that rising global temperatures and pollution may synergistically threaten biodiversity and ecosystem stability.

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3.17.P-Th253 Toxicological Evaluation of Plastic and Antifouling Paint Leachates on Two Life Stages of an Estuarine Copepod: *Nitokra spinipes*, in the Context of Global Change

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Plastic production soared to 400 million tons with a substantial proportion finding its way from inland areas to riverine and coastal environments. Within aquatic environments, plastics and biocide boat coatings undergo physical and chemical degradation, leaching chemicals from the polymer's matrix. These leachates have been found to have deleterious effects on aquatic organisms, such as copepods, crustaceans or fish. Furthermore, global change is currently increasing the frequency and magnitude of environmental stressors (i.e., increased temperatures), inducing negative effects in organisms. To the best of our knowledge, the combined effects of plastic-associated chemicals and global change remain largely unexplored. So, this study aims to evaluate the effects of leachates from plastic debris and boat coatings on *Nitokra spinipes*, a harpacticoid copepod key-species to estuarine food webs, in the context of global change. First, the most common observed plastics in an estuarine environment was established by sampling plastic items from the water column of the Iser estuary in Nieuwpoort, Belgium, via a manta net coupled to an aquatic drone; and from the banks using three quadrats of 50 x 50 cm randomly deployed along the tide line. After identifying polyethylene (PE) and polypropylene (PP) as the most abundant polymers as well as coating particles, leachates were produced using pristine PP and a Hemper's boat coating (7 days, at room temperature, in the dark). The toxicity of the leachates was then assessed by exposing *N. spinipes* adults and nauplii at 22°C and 25 °C (+3 °C, RCP 8.5 scenario, IPCC 2021). A significant toxicity was observed from the coating's leachates on nauplii development and mortality, whereas none was observed for the PP-leachates. Our results on adults showed a synergistic negative effect of the coating s leachates when combined to higher temperature (after 72 h, EC50 at 22°C = 44.7 ± 16.88% and EC50 at 25°C = 6.52 ± 10.73%). To conclude, coating's leachates exhibited significant toxicity in both life stages affecting greatly the adults when combined with elevated temperature. Our findings suggest that the predicted increase in temperature will aggravate the leachates toxicity on copepods and could lead to a cascading effect on the food web. Our results contribute to the risk assessment of plastic and coatings related litter in regional estuaries and help filling the knowledge gap on combined stressors effects on organisms.

3.17.P-Th254 Combined Effects of Plastic Pollution and Global Change on a Benthic Primary Consumer, *Nitokra spinipes*

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In estuarine waters, organisms are subject to multiple stressors in the environment, including anthropogenic pollutants such as plastic, and fluctuating physical-chemical parameters due to tidal and freshwater inputs. However, due to global change, physical-chemical parameters are predicted to be shifted towards new extremes in estuaries. For example, recurring extreme salt intrusion events will increase due to a higher frequency in heatwaves and draughts, more acidic water events will happen. Alongside these stressors, estuaries are considered reservoirs of plastic pollution, but the assessment of the combined effects of these parameters on primary benthic consumers, along generations, is lacking. Therefore, we aim to assess the combined effects of multiple stressors (pH, salinity, plastic particle forms) on a benthic estuarine primary consumer, *Nitokra spinipes*, across multiple generations. Using both