



A combined approach to understand trophic interactions between *Cercopagis pengoi* (Cladocera: Onychopoda) and mysids in the Gulf of Finland

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Limnol. Oceanogr., 52(2), 2007, 685-695 | DOI: 10.4319/lo.2007.52.2.0685

ABSTRACT: We use molecular markers, feeding experiments, and stable isotopes to understand trophic interactions between native mysids, *Mysis mixta* and *Mysis relicta*, and a recent invader to the Baltic Sea, the cladoceran *Cercopagis pengoi*. In feeding experiments, both mysid species ingested *C. pengoi* at a maximum of 16 prey mysid⁻¹ d⁻¹ and a specific consumption rate of 0.15 d⁻¹, similar to rates reported for predation on other prey species. The frequency of predation on *C. pengoi* assayed by molecular diet analysis of field-collected mysids varied between 5% and 43% depending on mysid size and species. Surprisingly, it was consistently higher in juveniles than in adults and in *M. mixta* than in *M. relicta*. The results of stable isotope analysis corroborate those of feeding experiments and molecular analysis and indicate a higher contribution of *C. pengoi* to the nutrition of juveniles and *M. mixta*. These ontogenetic and interspecific differences in mysid predation on *C. pengoi* are likely to reflect differences related to their different migratory behavior. Thus, despite its low relative abundance, *C. pengoi* is readily consumed by mysids; this may impact lower food web interactions and the nutrition of mysids in the invaded ecosystems.

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