



Development time of *Acartia* spp. in the southern Baltic Sea

L. Dzierzbicka-Głowacka (1), B. Brzezińska (2)

(1) Institute of Oceanology, Polish Academy of Science, Poland

(2) Institute of Oceanography, University of Gdansk, Poland

(dzierzb@iopan.gda.pl)

Quantitative expressions are presented describing the effects of temperature and food concentration on the development time of specific size-classes of *Acartia* spp. in the southern Baltic Sea. The calculations were made on the basis of a zero-dimensional population model which was calibrated for *Acartia* spp. at environmental conditions typical for the southern Baltic Sea. Most of the coefficients used in the model are taken from the literature. Where data are lacking, coefficients are estimated from knowledge about similar species. The ingestion rates dependant on the development stage, food supply, temperature and weight of the animals are estimated after experimental data of Ciszewski and Witek (1977) for *Acartia bifilosa* at 15°C from the Gdańsk Depth. The development of *Acartia* spp. for investigated stages computed with the copepod model was used to obtain the stage duration. Transformation of these data gave a relationship between time and temperature and food concentration: $D = (a \log Food - b) \ln T - c \log Food + d$. Empirical model computed here may be used with good precision in mathematical models of pelagic communities.