

Kenji Taki (2006)

Biomass and production of the euphausiid *Euphausia pacifica*  
along the coastal water off north-eastern Japan

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東北沿岸海域における*Euphausia pacifica*のバイオマスと生産量

*Euphausia pacifica* is the dominant euphausiid in the North Pacific Ocean. Many endemic and migrant fishes, marine mammals and sea birds depend on the species as food throughout the year. *E. pacifica* is also a food item for many fishes off the north-eastern Pacific coast, and their biomass and production have been actively studied. Off the Japanese coast, biomass and production of the species have been studied only in Toyama Bay, Sea of Japan (Iguchi and Ikeda, 1999), but such studies have not yet been conducted off the Pacific coast of north-eastern Japan. In this study, biomass and production (flesh, moult and egg) of *E. pacifica* were investigated, and the results were compared with the same species from other regions as well as other euphausiid species.

Biomass and production of *Euphausia pacifica* off south-eastern Hokkaido (41-43°N), Sanriku (38-41°N), and Joban (36-38°N) were investigated every two months using Norpac nets and cylindrical-conical nets from March 1997 to February 1998. The body length (BL) was divided into 1mm increments (<1-24mm BL). Production (P) was calculated as the sum of somatic (Pg; flesh), moults (Pe) and egg (Pr) Production ( $P=P_g+P_e+P_r$ ).

High biomass was found in summer-autumn off south-eastern Hokkaido, and in the late winter-early summer off Sanriku and Joban. Annual mean biomass was 381, 314 and 258 mg C/m<sup>2</sup> off south-eastern Hokkaido, Sanriku, and Joban, respectively. The total production (sum of flesh, moults and eggs) during the survey period off south-eastern Hokkaido (3829 mg C/m<sup>2</sup>) was comparable with that off Sanriku (3872 mg C/m<sup>2</sup>); both were much higher than that off Joban (2243 mg C/m<sup>2</sup>). Somatic production during the survey period contributed the highest proportion (51.5-70.9%) to the total production in each coastal area. The somatic production-biomass ratio in each coastal area (5.2-6.9) was an intermediate value among euphausiid species previously reported. This effect resulted from the stagnated growth of adults during summer-winter, coupled with continuous occurrence of larvae which show high growth rate throughout the year off Sanriku and Joban, and the numerous larvae occurring in October off south-eastern Hokkaido.