

## Distribution of ingestion rate of suspension feeding bivalves and primary production of microalgae on the sandy tidal flat, Japan

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Food resources of the dense patches of suspension feeding bivalves, including *Ruditapes philippinarum* and *Arcuatula senhousia*, have been considered as transportation of allochthonous organic matter derived from primary producers on Midori River Tidal Flats, Japan. However, there are no direct evidence of primary production of microalgae in this area. In this study we estimated secondary production of *A. senhousia* in addition to primary production of phytoplankton and microphytobenthos on the Midori River Tidal Flats, and discussed quantitative evaluation of their feeding activity on the habitat. The secondary production of *A. senhousia* was  $1.6 \pm 0.7 \text{ g C m}^{-2} \text{ d}^{-1}$ , consisting with the total primary production of phytoplankton ( $0.05 \pm 0.04 \text{ g C m}^{-2} \text{ d}^{-1}$ ) and microphytobenthos ( $0.31 \pm 0.33 \text{ g C m}^{-2} \text{ d}^{-1}$ ). If we assumed that growth efficiency of *A. senhousia* was 19%, their daily feeding rate reached  $7.8 \text{ g C m}^{-2} \text{ d}^{-1}$ , which was approximately 22 times higher than that of the primary productivity. Thus, the dense patches of *A. senhousia* should consume primary producers in 22 times wider area than that of their habitat area.

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