

Carbon and nitrogen isotopic features of the bivalve *Corbicura japonica* and *Corbicura leana* in the Harai River (Mie Prefecture, central Japan) –preliminary report

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In order to eventually reveal factors controlling distribution and abundance of the bivalve Unionidae group in the Harai River, the branch of the Kushida River, Mie Prefecture, central Japan, the bivalve *Corbicura* as alternatives were analyzed for carbon and nitrogen isotope ratios. Dissolved components of water samples and isotopic compositions of suspended particulate matter were also analyzed. Sample collection was performed in summer (July 28th, 29th and August 8th) and autumn (October 24th and 25th) in 2016; *Corbicura* samples were collected at 4 sites (*C. leana* from the two upstream sites and *C. japonica* from the two downstream estuary sites), water samples at 15 localities and particulate matter at 5 localities. In summer, PO₄³⁻ increased downstream from 0.03 to 0.12 ppm. In October, concentrations of PO₄³⁻ and NO₃⁻ increased downstream. Concentrations of these nutrients were significantly higher than the midstream water of the Kushida River (less than 0.01 ppm for PO₄³⁻ and 2 ppm for NO₃⁻, respectively) (Sugitani et al., 2014). While carbon and nitrogen isotope ratios of *Corbicura* ranged relatively widely from -25.5 to -22.2 and from 5.6 to 10.4 per mil, respectively, samples of each population (n=10) clustered closely with each other. Additionally, seasonal variation can be seen, though small. Data of two populations of *C. leana* and one population of *C. japonica* comprised an array showing a negative correlation between carbon and nitrogen isotope ratios. Population of *C. japonica* collected from the lowermost locality was distributed outside of this array and shows a positive correlation between carbon and nitrogen isotope ratios. Distribution of *C. japonica* samples in this study was significantly lower in carbon and nitrogen isotope ratios than those reported by Kasai and Nakata (2005), who analyzed *C. japonica* and *C. leana* in the Kushida River and demonstrated that terrestrial organic matter was significantly important even for *C. japonica* diet. On the other hand, distribution of *C. leana* samples in this study was lower in nitrogen isotope ratios, while similar or higher in carbon isotope ratios than those reported by Kasai and Nakata (2005). The results of this study suggest that corbicura diet could vary significantly, depending on localized food sources. We are going to continue periodic samplings and analyses to reveal dynamics of food sources of *C. japonica* and *C. leana* and its relation to environmental factors.

Reference

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