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## Abstract

We used a numerical model (the bioaccumulation model) to analyze the radioactivity concentrations of radioactive cesium in organisms living in sea areas, focusing specifically on Japanese whiting (*Sillago japonica*) in Tokyo Bay. The radioactivity concentrations of radioactive cesium in Japanese whiting in the period between March 11, 2011 and August 31, 2013 were spatiotemporally analyzed using the model. The concentration of  $^{134}\text{Cs}$  in Japanese whiting obtained using the model was  $0.18 \text{ Bq} \cdot \text{kg}^{-1}$  on August 20, 2011, and this concentration then gradually decreased. The concentration of  $^{137}\text{Cs}$  in the whiting was  $0.36 \text{ Bq} \cdot \text{kg}^{-1}$  on April 25, 2013, and this concentration remained essentially unchanged afterwards. These two tendencies agreed with the experimental measurements obtained in the present study. Therefore, the model is useful for spatiotemporal analysis of radioactivity concentrations of radioactive cesium in Japanese whiting living in Tokyo Bay. The committed effective dose—calculated based on the radioactivity concentration of  $^{137}\text{Cs}$  in Japanese whiting obtained using the model—was 0.03 mSv, which is smaller than the allowable internal exposure dose due to food consumption specified by the Ministry of Health, Labour and Welfare.