Distrubution of saline-freshwater in shallow groundwater in the lower reaches of Nabaki River, the Kujukuri Plain, Chiba Prefecture, Japan

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Kujukuri Plain, Chiba Prefecture is a coastal area, which is of low topography and also one of the places in where land subsidence is reported to have been occurring for over 40 years. Nabaki River is a tidal river located in the sourth of the Kujukuri Plain and the seawater flowing into the river from the mouth at high tide time is reported. Therefore, the distribution of salt and fresh groundwater and possible influence of the tidal river to the surrounding groundwater is required to understand. In this study, we discuss to reveal the distribution of salt-fresh groundwater and a process of groudwater salinization by the method of resistivity survey and water chemistry. The overall tendency is that the shallower part of the subsurface (about 3 to 5 m) has a higher resistivity value and the deeper part (deeper than about 5 to 7 m) has a low value. It is interpreted that freshwater exists in the subsurface shallower part and groundwater with high salt concentration is distributed in the deeper part. On the other hand, in some areas, the groundwater with high salt concentration (low resistivity zone) indicated a distribution that sloped from shallow to deep with the distance from the Nabaki River, and the effect of the tidal river is suggested as one of the factors.

Keywords: Nabaki River, Resistivity survey, saline-freshwater, shallow groundwater

