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Abstract

In order to elucidate characteristics of the water current and halocline in brackish Lake Takahoko, which has been partitioned by a levee with water gates at the center, in Aomori Prefecture, the salinity, current direction/velocity, wind direction/velocity and water level were observed from July to November 2015. The water level in the Lake Takahoko varied with tide within smaller tidal range in comparison to that at costal sea area. Air pressure also had effects to the water level variation. The lake water mainly flew to east or west direction affected by hydrological configuration with main river mouths at west end and a channel to sea at east end, lake shape which is wider in east-west direction, and frequently eastern and western wind. Salinity of lake water was higher in the east area from the levee than in the west area, showing a significant effect of levee to salinity in the lake. A halocline was formed during most of the observation period, though we found its occasional collapse by strong wind. From the Richardson number, which are indicators of halocline structural stability, it was shown that the halocline was very stable at the center.