

Effects of Extreme Flood Pulse on Dissolved Iron in Amur River Basin

Baixing Yan, Jiunian Guan, Hui Zhu and Duian Lv

Key Laboratory of Wetland Ecology and Environment, Northeast Institute of Geography and Agroecology, Chinese Academy of Sciences, 4888 Shengbei Str., Changchun 130102, China, yanbx@neigae.ac.cn

Abstract

In order to reveal the influence of extreme flood on dissolved Fe and the relationship between dissolved iron and DOM, we monitored the dissolved iron and DOM in the Songhua River, Harbin City, during the flood process caused by Typhoon Bolaven and in Tongjiang City during the Songhua-Amur River Flood in 2013. The results showed that the total dissolved Fe concentration fluctuated from 0.19 to 0.32 mg/L averaged at 0.25 mg/L, in Harbin section of Songhua River. The total dissolved Fe concentration in Tongjiang section of Songhua River during the flood period in 2013 varied from 0.55 to 0.77 mg/L, with the average concentration of 0.67 mg/L. Fe concentrations during the flood period were significantly higher than that at usual time. The ionic Fe was significantly negatively correlated with DOC, SUVA₂₅₄ and SUVA₂₈₀ ($p < 0.01$) which indicates DOM can increase the complex form of Fe, and further to raise the contents of dissolved Fe.

Keywords: Amur River, dissolved iron, flood