Desalination and Water Treatment
www.deswater.com

32 (2011) 291–296
August

1944-3994 / 1944-3986
doi: 10.5004/dwt.2011.2713

Influence of non-point source pollution on water quality of Wetland Baiyangdian, China

Yingxia Li[a]*, Junhua Ma[a], Zhifeng Yang[a], Inchio Lou[b]

[a]*State Key Laboratory of Water Environment Simulation, School of Environment, Beijing Normal University, Beijing, 100875, China*
Tel. +86 (10) 58800830; Fax +86 (10) 58800830; email: yingxia@bnu.edu.cn
[b]*Department of Civil and Environmental Engineering, University of Macau, Macau SAR, China*

Received 4 August 2010; Accepted in revised form 18 December 2010

ABSTRACT

Nine sampling sites were evenly set up in Wetland Baiyangdian. A total of 478 grab samples were tested from March 2000 to December 2008. Analysis was conducted on the changes of pH, temperature and concentrations of dissolved oxygen (DO), chemical oxygen demand (COD), 5-day biochemical oxygen demand (BOD_5), ammonia nitrogen (NH_3-N), total phosphorus (TP) and total nitrogen (TN) along time. Results showed that average concentrations of DO, COD and BOD_5 in the rainy season were 28%, 7% and 6% lower than those in the dry season, respectively. Average concentrations of NH_3-N, TN and TP in the rainy season were 48%, 27% and 47% more than those in the dry season, respectively. DO concentration decreased by more than 1 mg/L in the rainy season due to non-point source pollution. These results demonstrated that non-point source pollution was a quite important pollution source to Wetland Baiyangdian. Nitrogen and phosphorus pollution in Wetland Baiyangdian mainly came from non-point sources. To reduce the TN and TP concentrations in the wetland, fertilizer utilization needs to be better controlled in the surrounding farmlands.

Keywords: Wetland Baiyangdian; Non-point source pollution; Rainy season; Total nitrogen; Total phosphorus; Dissolved oxygen

* Corresponding author.