

PA-31.

## **The limnological survey of a coastal lagoon in Korea (Lake Songjiho)**

Heo, Woo-myung<sup>1</sup>, Sangyong Kwon<sup>2</sup>, Sangha Lee<sup>1</sup>, Jisun Choi<sup>1</sup>, and Bomchul Kim<sup>2</sup>

<sup>1</sup>Dept. of Environmental Eng., Samchok National University, Samchok, 245-711,  
Korea,

<sup>2</sup>Dept. of Environmental Science, Kangwon National University, Chunchon, 200-701,  
Korea.,

Physicochemical parameters, plankton community structure, and sediment were surveyed from 1988 to 2002 at two months interval in a eutrophic coastal lagoon (Lake Songji, Korea). It has well-developed littoral zone of floating-leaved aquatic plants. The lake basin is separated from the sea by a narrow sand dune, and a shallow sill divides the lake basin into two subbasins. Because of seawater infiltration the lake water is brackish. And stable stratifications and chemoclines are maintained all through the year at 1-2m depth, which seems to suppress vertical dispersion of materials. DO was often very low ( $<1 \text{ mgO}_2 \text{ L}^{-1}$ ) in hypolimnion. Secchi disc transparency was in the range of 0.5-2.7 m. TP, TN, and Chl. a concentration in the epilimnion was 0.015-0.396  $\text{mgPL}^{-1}$ , 0.223-3.521  $\text{mgNL}^{-1}$ , and 0.5-129.8  $\text{mgm}^{-3}$ , respectively. TSI was in the eutrophic range of 54 to 62. Sediment was composed of silt and coarse silt. COD, TP, and TN content of sediment were 51.4-116.9  $\text{mgO}_2\text{g}^{-1}$ , 0.04-1.46  $\text{mgPg}^{-1}$  and 0.12-1.03  $\text{mgNg}^{-1}$ , respectively. In September 2001 a total of 49 phytoplanktonic species were identified with a maximum cell density of 23,350  $\text{cells mL}^{-1}$ , when a chlorophyte *Schroederia judayi* was dominant species accounting for 20,417  $\text{cells mL}^{-1}$ . The lake showed unique limnological features of a brackish lagoon in the respect of biological community, chemical characteristics, and physical phenomena.