

# Journal of Environmental Hydrology

ISSN 1058-3912

Electronic Journal of the International Association for Environmental Hydrology

---

JEH Volume 13 (2005), Paper 7 Posted April 26, 2005

---

## SEASONAL HYDROCHEMISTRY OF GROUNDWATER IN THE BARRIER SPIT SYSTEM OF THE CHILIKA LAGOON, INDIA

*J.K. Tripathy*

*K.C. Sahu*

*Ocean Science and Technology, Department of Ocean Development, Berhampur University, Berhampur, Orissa, India*

---

### **ABSTRACT**

*A detailed hydrochemical analysis was carried out on groundwater samples collected from the barrier-spit system of the Chilika lagoon on the east coast of India. The water quality in both pre- and post-monsoon periods and the interactions with the sea water throughout the year were characterized. The concentrations of major ions were measured quantitatively. Results show that during the post-monsoon season, the salinity level, as indicated from the TDS values, is lower, and groundwater contains higher concentrations of Ca and HCO<sub>3</sub> ions as compared to other major ions. In the pre-monsoon season, the TDS values increased to a high value, with all the major ions showing higher values. The high values indicate seawater encroachment into the fresh water aquifer, which was confirmed by ionic ratios. The concentration of TDS, Na and Cl in the post-monsoon groundwater was within permissible drinking water limits. The concentrations during the pre-monsoon season were not within permissible limits. It is recommended that during this period, pumping from bore wells be minimized to control seawater intrusion.*

---

**Reference:** *Tripathy, J.K. and K.C. Sahu. 2005. Seasonal hydrochemistry of groundwater in the barrier spit system of the Chilika Lagoon, India, Journal of Environmental Hydrology, Vol. 13, Paper 7.*

---

### **CONTACT:**

*Dr. J.K. Tripathy*

*Ocean Science & Technology Cell for Marine Coastal Ecology*

*Berhampur University, Bhanja Bihar*

*Berhampur, Orissa, India*

**E-mail:** [jkt1231@rediffmail.com](mailto:jkt1231@rediffmail.com)

---

[Return to HydroWeb Homepage](#)