

## TABLE OF CONTENTS

### Preface

#### Theme – I BASIC HYDROLOGICAL AND LIMNOLOGICAL PROCESS IN LAKE ECO SYSTEMS

Enhancing bio-significance of urban lakes 1 - 7  
*Dhirendra Devarshi and Reena Mathur*

Water budget of drinking water supply sources : 8 - 13  
Osmansagar and Himayatsagar Lakes, Hyderabad  
*V.V.S. Gurunadha Rao, G. Suryanarayana\*, B.A. Prakash,  
K. Mahesh, N. Pavankumar, T. Bhaskar Reddy and M. Ramesh*

Sustainable ground water management using temple 14 - 22  
tanks for urban micro-watersheds  
*C. Nedunchezian and G. Ravikumar*

Ecological study of Pong dam : A wetland of 23 - 30  
Himachal Pradesh, India  
*Anil Kumar, Ashwani Wanganeo and Kuldip Kumar*

Lake water budget of Mir-Alam-Tank, Hyderabad City 31 - 37  
*K. Mahesh Kumar, V.V.S. Gurunadha Rao, S. Sankaran  
B.A. Prakash and P. Yadaiah*

Stochastic modelling of rainfall at Udaipur 38 - 48  
*S.R. Bhakar and Raj Vir Singh*

Anthropogenic impact on hydrological balance 49 – 57  
and water quality in Sambhar Lake, Rajasthan  
*Narendra K. Meena*

#### Theme – II LAKE WATER QUALITY PROBLEMS – MONITORING, ASSESSMENT AND REMEDIATION

A review of lake eutrophication and mitigation 58 – 70  
measures  
*Prajakta Harkare, Prakash Kelkar and Madan Nanoti*

Water quality of small Jabalpur Lakes : A case study <i>Sanjay Tignath, Medha Jha, S.K. Mishra and U.C. Chaube</i>	71 - 78
Evaluation of nutrient loadings and carrying capacity of Bhoj wetland ecosystem <i>Mogali J. Nandan, C. Padmakar, Amit V. Kshirsagar and R.N. Yadava</i>	79 - 85
Lake water quality & budget of Durgamcheruvu Lake near Hitec city, Hyderabad <i>B.A. Prakash, V.V.S. Gurunadha Rao, S. Sankaran, K. Mahesh Kumar and P. Yadaiah</i>	86 - 91
Water quality and eutrophication status of some lakes of different regions in Jammu & Kashmir (India) <i>Omkar Singh, S.P. Rai, Vijay Kumar, K.K.S. Bhatia and V.K. Choubey</i>	92 - 100
Biological control of aquatic weeds in reservoirs <i>Manwinder Singh, Vijay Kumar and P.L. Saini</i>	101 - 106
Lentic water quality of Bhubaneswar, the temple city of Orissa <i>P.C. Mishra and R.K. Patel</i>	107 - 111
Aquatic weeds : Problems, control and management to boost lake environment <i>S.M. Mathur and Priti Mathur</i>	112 - 118
<b>Theme – III APPLICATION OF NEW TECHNOLOGIES IN LAKE STUDIES – ISOTOPE APPLICATIONS, REMOTE SENSING, GIS AND MODELLING</b>	
A satellite imagery and GIS based study on the urbanization and the pollution of the Oussudu Lake as indicated by aquatic weed infestation <i>K.B. Chari and S.A. Abbasi</i>	119 - 127
Water quality assessment in Lakes using remote sensing <i>Jeppiaar, Radha Krishnan and N. Manoharan</i>	128 – 130

Optimization model for controlling lake water pollution <i>P.S. Mahar and R.P. Singh</i>	131 - 134
Evaluation of recent trends of sedimentation in Indian lakes using $^{210}\text{Pb}$ and $^{137}\text{CS}$ dating techniques <i>Bhishm Kumar, S.P. Rai, Rm.P. Nachiappan, Surjit Singh, V.K. Diwedi, Pankaj Mani and U. Saravanakumar</i>	135 - 145
Shrinkage of Udaipur lakes study using remote sensing & GIS analysis <i>Suparn Pathak and J.R. Sharma</i>	146 - 150
Hydrological status of a few tanks in Mysore : A study using GIS & remote sensing <i>Karthik G., Mysooru R., Yadupathi Putty and Manjunath K.C.</i>	151 - 160
Study of the storage potential of small lakes and its utilization using remote sensing and GIS <i>Inayathulla M, Pradeep G, Meera N. Dhakappa and B.K. Hema</i>	161 - 168
Modelling and simulation of phytoplankton, nutrients and dissolved oxygen concentrations in Chilika Lagoon <i>Anumeha Dube and Girija Jayaraman</i>	169 - 176
Use of genetic algorithms approach for irrigation planning in man made lakes <i>K. Srinivasa Raju</i>	177 - 184
Modelling health of a lake: a case study <i>B.K. Bindhu and S. Mohan</i>	185 - 193
Isotopic investigations of groundwater component in the Lake Pichhola, Udaipur <i>M.Someshwar Rao, Bhishm Kumar and S.D. Khobragade</i>	194 - 203

**Theme – IV IMPACT OF HUMAN INTERFERENCE AND  
LAND USE CHANGES ON LAKE ECO-SYSTEMS**

- Slaying the beauty of Naini Lake : A geographical and environmental perspective 204 - 212  
*Manisha Tripathi*
- Effect of urbanisation on Deepar Beel in the city of Guwahati, Assam, India 213 - 222  
*V.K. Dwivedi, K.K.S. Bhatia and B.C. Patwari*
- Environmental impact assessment of urban lakes on ground water regime in Hyderabad city 223 - 229  
*V.V.S. Gurunadha Rao*
- Impact of human interference and land use changes on the Nainital region 230 - 238  
*Ajay S. Rawat and G.L. Shah*
- Impact of human activities on the lakes of Brij Region 239 - 244  
*S. Sharma and A.K. Sharma*
- Impact of urbanization on the trophic status of Kumaun Lakes, Uttaranchal 245 - 255  
*S.P. Rai, Bhishm Kumar and Rm. P. Nachiappan*
- The influence of catchment modifications on two fresh water lakes of Udaipur 256 - 262  
*Usha Pandey and J. Pandey*
- Thermal ecological studies at Rana Pratap Sagar 263 - 273  
*P.C. Verma, L.L. Sharma, Niranjana Sarang, Anil Kumar and A.G. Hegde*

**Theme – V   MANAGEMENT, CONSERVATION AND  
REJUVENATION STRATEGIES FOR LAKES  
INCLUDING PEOPLES' PARTICIPATION**

Water management of Pushkar Sarovar and its rejuvenation <i>B S Bhavanishankar</i>	274 - 281
Urban lakes of India : An overview of the present status and projections for future <i>V.K. Dwivedi and V.K. Chaubey</i>	282 - 291
Preserving wetlands : Learning the hard way <i>Tej Razdan</i>	292 - 299
Hydrological simulation for rejuvenation of the Hussain Sagar Lake, Hyderabad, <i>Kapil Gupta</i>	300 - 311
Hydrological and ecological balance of urban lakes <i>Anil Mehta</i>	312 - 320
Rejuvenation of urban lakes in dry tropics : Problems and perspectives <i>J. Pandey and M.S. Yaduvanshi</i>	321 - 328
Management and conservation of lakes : A case study <i>Jagdish H. Godihal, Munish Sharma and Bijlee Deshmukh</i>	329 - 335
Catchment areas and their preservation to their original shape and use <i>Y.C. Agrawal</i>	336 - 348
Strategies for management of Pichhola Lake and its catchment at Udaipur, Rajasthan <i>V.K. Dwivedi and A.K. Bhar</i>	349 - 358
Environmental problems of Vembanad – Kol Wetland and management strategies <i>Jayakumar P, K N Remani, Nirmala E and Jalaja T K</i>	359 - 367

Status of natural wetlands in Assam : Prospects for development and management <i>U.M. Hazarika, M.K. Jose and S.C. Patra</i>	368 - 375
Prioritization of water quality parameters for management of a typical lake in South India <i>K.K.S. Bhatia, Omkar Singh and S.D. Khobragade</i>	376 - 382
Rejuvenation of Urban Lakes of Bhubaneswar city and their role in recharge to groundwater <i>P.N. Naik</i>	383 - 387
Strengthening peoples' participation in lake conservation <i>Divya Sharma</i>	388 - 396
Hydrological study for the rehabilitation of Chetpet Tank Chennai <i>M. Ravichandran, T.M. Iyyappan, M. Krishnaveni and K. Karunakaran</i>	397 - 403
Evaluation of ground water recharge from lakes <i>Henk Gijsselhart and K A S Mani</i>	404 - 414
Lake water balance <i>Hans Leenen and M. Om Prakash</i>	415 - 432
Hyderabad lake environment management ( HELM) software <i>Sanjay Sangal</i>	433 - 452
Hydrological investigations on lake Pichhola, Udaipur (Rajasthan) for its conservation and management <i>S.D. Khobragade, K.K.S. Bhatia, C. S. P. Ojha, D.S. Rathore, Bhishm Kumar and K.D. Sharma</i>	453 - 474

## **Authors' Index**

## **Coloured Photographs Referred in Papers**