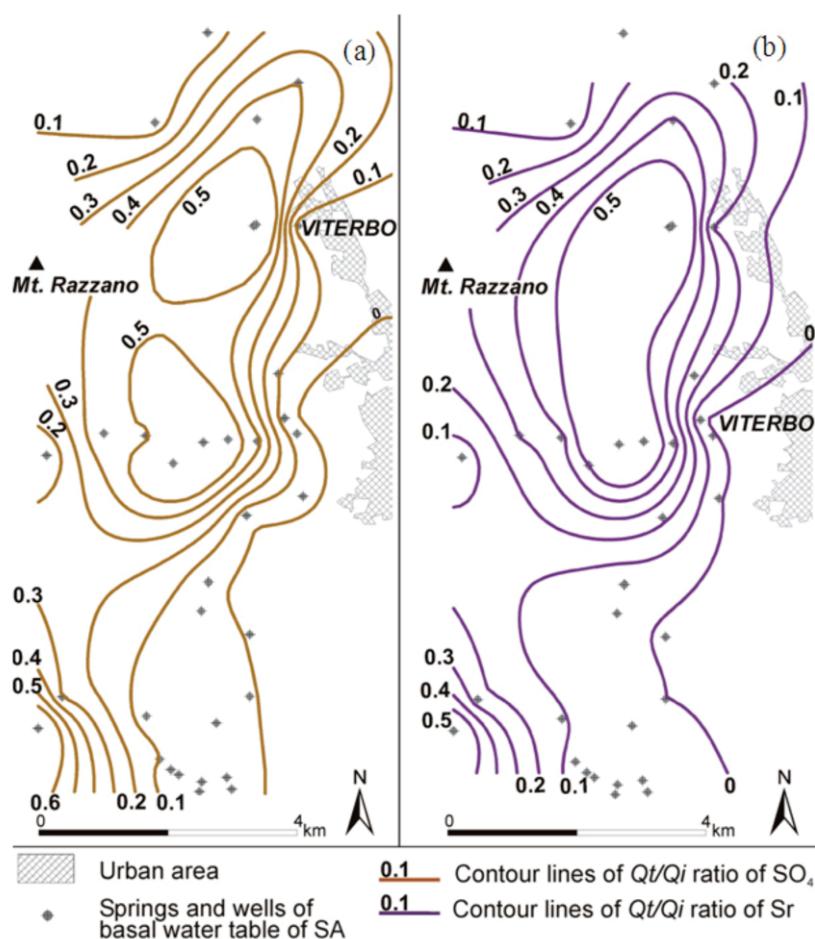


# Journal of Water Resource and Protection

Editors-in-Chief: Jian Shen Ni-Bin Chang



ISSN: 1945-3094



# Journal Editorial Board

ISSN: 1945-3094 (Print) ISSN: 1945-3108 (Online)

<http://www.scirp.org/journal/jwarp>

---

## Editors-in-Chief

<b>Prof. Jian Shen</b>	College of William and Mary, USA
<b>Prof. Ni-Bin Chang</b>	University of Central Florida, USA

## Editorial Board

<b>Prof. Sam Atkinson</b>	University of North Texas, USA
<b>Dr. Amitava Bandyopadhyay</b>	Universtiy of Calcutta, India
<b>Prof. Peter Dillon</b>	Trent University, Canada
<b>Dr. Jane Heyworth</b>	University of Western Australia, Australia
<b>Dr. Madan Kumar Jha</b>	Indian Institute of Technology, India
<b>Prof. Zhaohua Li</b>	Hubei University, China
<b>Dr. Pan Liu</b>	Wuhan University, China
<b>Prof. Jiho Min</b>	Chonbuk National University, Korea (South)
<b>Dr. Dhundi Raj Pathak</b>	Osaka Sangyo University, Japan
<b>Prof. Ping-Feng Pai</b>	National Chi Nan University, Chinese Taipei
<b>Dr. Mohamed Nageeb Rashed</b>	South Valley University, Egypt
<b>Dr. Dipankar Saha</b>	Ministry of Water Resources Government of India, India
<b>Prof. Vladimir Soldatov</b>	National Academy of Sciences, Belarus
<b>Prof. Matthias Templ</b>	Vienna University of Technology, Austria
<b>Prof. Aswani K.Volety</b>	Florida Gulf Coast University, USA
<b>Prof. Muqi Xu</b>	Chinese Academy of Sciences, China
<b>Prof. Xiaohua Yang</b>	Beijing Normal University, China
<b>Dr. Y. Jeffrey Yang</b>	US Environmental Protection Agency, USA
<b>Prof. Fan Zhang</b>	Chinese Academy of Sciences, China
<b>Prof. Xiyang Zhang</b>	Chinese Academy of Sciences, China
<b>Dr. Chunli Zheng</b>	Xi'an Jiaotong University, China

## TABLE OF CONTENTS

**Volume 4    Number 4**

**April 2012**

**The Intra-Annual Variability of Discharge, Sediment Load and Chemical Flux from the Monitoring:  
The Yukon River, Alaska**

K. A. Chikita, T. Wada, I. Kudo, Y. Kim.....173

**Seasonal Dynamics of Nutrient Loading and Chlorophyll A in a Northern Prairies Reservoir,  
Saskatchewan, Canada**

M. Hecker, J. S. Khim, J. P. Giesy, S.-Q. Li, J.-H. Ryu.....180

**MIC in Circulating Cooling Water System**

P. Xu, Z. Y. Xu, J. Wang, Y. J. Zhang, L. Zhang.....203

**Zinc and Lead Biosorption by *Delftia tsuruhatensis*: A Bacterial Strain Resistant to Metals Isolated from  
Mine Tailings**

D. A. Bautista-Hernández, L. I. Ramírez-Burgos, E. Duran-Páramo, L. Fernández-Linares.....207

**Reassessment of the Resources of a Deep Aquifer System under Physical and Chemical Constraints:  
The Maastrichtian Aquifer**

C. H. Kane, M. Diene, M. Fall, B. Sarr, A. Thiam.....217

**The Dynamics of Domestic Water Vending in Enugu North L.G.A. of Enugu State, Nigeria**

E. C. Onyenechere, E. I. Eleazu, O. D. Azuwoke, S. Osuji, C. F. Igwe.....224

**Conceptual Hydrogeological Model and Groundwater Resource Estimation in a Complex  
Hydrothermal Area: The Case of the Viterbo Geothermal Area (Central Italy)**

A. Baiocchi, F. Lotti, V. Piscopo.....231

---

The figure on the front cover is from the article published in *Journal of Water Resource and Protection*, 2012, Vol. 4, No. 4, pp. 231-247 by Antonella Baiocchi, Francesca Lotti and Vincenzo Piscopo.

# **Journal of Water Resource and Protection (JWARP)**

## **Journal Information**

### **SUBSCRIPTIONS**

The *Journal of Water Resource and Protection* (Online at Scientific Research Publishing, [www.SciRP.org](http://www.SciRP.org)) is published monthly by Scientific Research Publishing, Inc., USA.

#### **Subscription rates:**

Print: \$59 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### **SERVICES**

#### **Advertisements**

Advertisement Sales Department, E-mail: [service@scirp.org](mailto:service@scirp.org)

#### **Reprints (minimum quantity 100 copies)**

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### **COPYRIGHT**

Copyright©2012 Scientific Research Publishing, Inc.

All Rights Reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as described below, without the permission in writing of the Publisher.

Copying of articles is not permitted except for personal and internal use, to the extent permitted by national copyright law, or under the terms of a license issued by the national Reproduction Rights Organization.

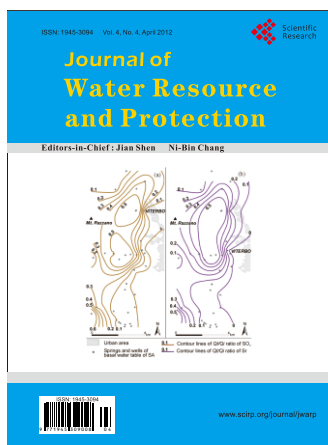
Requests for permission for other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works or for resale, and other enquiries should be addressed to the Publisher.

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

### **PRODUCTION INFORMATION**

For manuscripts that have been accepted for publication, please contact:

E-mail: [jwarp@scirp.org](mailto:jwarp@scirp.org)



**Call for Papers**

# Journal of Water Resource and Protection (JWARP)

<http://www.scirp.org/journal/jwarp>

ISSN:1945-3094 (Print), 1945-3108 (Online)

JWARP is an international refereed journal dedicated to the latest advancement of water resource and protection. The goal of this journal is to keep a record of the state-of-the-art research and promote the research work .

## Editors-in-Chief

Prof. Jian Shen  
Prof. Ni-Bin Chang

College of William and Mary, USA  
University of Central Florida, USA

## Editorial Board

Prof. Sam Atkinson  
Dr. Amitava Bandyopadhyay  
Prof. Peter Dillon  
Dr. Jane Heyworth  
Dr. Madan Kumar Jha  
Prof. Zhaohua Li  
Dr. Pan Liu  
Prof. Jiho Min  
Dr. Dhundi Raj Pathak  
Prof. Ping-Feng Pai  
Dr. Mohamed Nageeb Rashed

Dr. Dipankar Saha  
Prof. Vladimir Soldatov  
Prof. Matthias Templ  
Prof. Aswani K. Volety  
Prof. Muqi Xu  
Prof. Xiaohua Yang  
Dr. Y. Jeffrey Yang  
Prof. Fan Zhang  
Prof. Xiyang Zhang  
Dr. Chunli Zheng

## Subject Coverage

This journal invites original research and review papers that address the following issues in water resource and protection. Topics of interest include, but are not limited to:

- Agricultural Water Management
- Aquatic Conservation: Marine and Freshwater Ecosystems
- Ecology and Management of Inland Waters
- Economic, Sociological, and Environmental Considerations of Water Resources
- Ground Water Monitoring & Remediation
- Innovative Technologies and Engineering Solutions for Water Resources Protection
- Mine Water and the Environment
- Monitoring, Modeling and Prediction of Water Pollution
- Sea Water Utilization
- Surface and Ground Water Systems and Water Pollution Control
- Urban Water
- Water, Air & Soil Pollution
- Water and Environment
- Water Chemistry and Technology
- Water History
- Water Policy
- Water Purification and Wastewater Treatment
- Water Quality and Ecosystems Modeling
- Water Quality Assessment
- Water Quality, Exposure and Health
- Water Research & Education
- Water Resources and Climatic Change
- Water Resources Management
- Water Resources Protection and Sustainable Use
- Water Resources Restoration and Management
- Water Science and Technology

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the JWARP.

## Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

## Website and E-Mail

<http://www.scirp.org/journal/jwarp>

Email: [jwarp@scirp.org](mailto:jwarp@scirp.org)