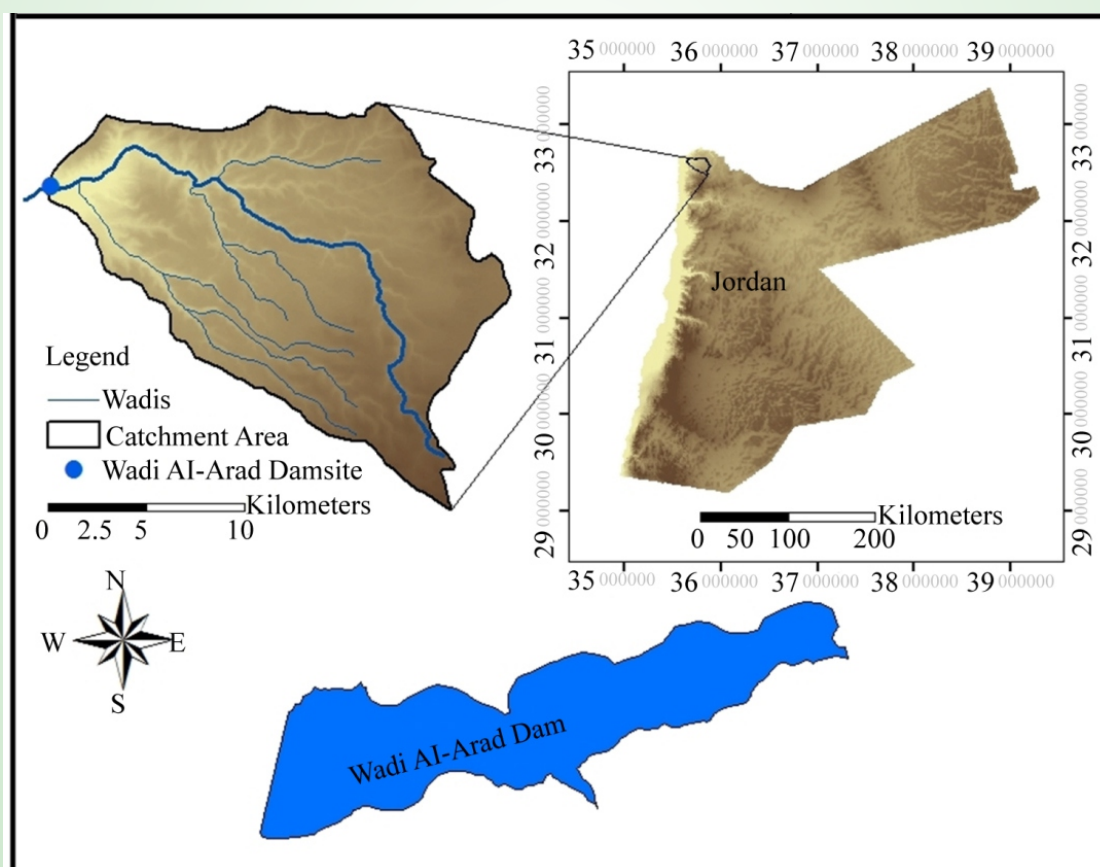


# Journal of Environmental Protection



ISSN: 2152-2197



# Journal Editorial Board

ISSN: 2152-2197 (Print), 2152-2219 (Online)

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

---

## Editors-in-Chief

**Prof. Thangarasu Pandiyan**  
**Prof. Qingren Wang**

National Autonomous University of Mexico (UNAM), Mexico  
University of Florida, USA

## Editorial Board

**Prof. Josh T. Ackerman**  
**Dr. Nanjappa Ashwath**  
**Prof. Jayajit Chakraborty**  
**Prof. Shuguang Deng**  
**Prof. Larry Eugene Erickson**  
**Prof. Ludmila A. Golovleva**  
**Prof. Chin-Pao Huang**  
**Prof. Madan Kumar Jha**  
**Prof. Ganesh Raj Joshi**  
**Prof. Rameshwar S. Kanwar**  
**Prof. Hyun-Joong Kim**  
**Prof. Raghava R. Kommalapati**  
**Prof. Ashok Kumar**  
**Prof. Robert Li**  
**Prof. Roberto Manfredi**  
**Prof. Krishna Mazumdar**  
**Prof. Jiangming Mo**  
**Prof. Subhash C. Mojumdar**  
**Prof. Saied Mostaghimi**  
**Dr. Shaibal Mukerjee**  
**Prof. Pucheng Pei**  
**Prof. Alexey V. Polonikov**  
**Dr. Mohammad Nahid Siddiqui**  
**Prof. Gilbert Sigua**  
  
**Prof. Emilson Caputo Delfino Silva**  
**Prof. Hongwen Sun**  
**Prof. Xiangjun Tian**  
**Prof. Cornelia Vasile**  
**Prof. Qingwei Yang**  
**Dr. Ierotheos Zacharias**

US Geological Survey, USA  
Central Queensland University, Australia  
University of South Florida, USA  
New Mexico State University, USA  
Kansas State University, USA  
Russian Academy of Sciences, Russia  
University of Delaware, USA  
Indian Institute of Technology Kharagpur, India  
United Nations Center for Regional Development (UNCRD), Japan  
Iowa State University, USA  
Seoul National University, South Korea  
Prairie View A&M University, USA  
University of Toledo, USA  
United States Department of Agriculture-Agricultural Research Service, USA  
University of Bologna, Italy  
Indian Statistical Institute, India  
Chinese Academy of Sciences, China  
University of Guelph, Canada  
Virginia Polytechnic Institute and State University, USA  
US Environmental Protection Agency, USA  
Tsinghua University, China  
Kursk State Medical University, Russia  
King Fahd University of Petroleum & Minerals, Saudi Arabia  
United States Department of Agriculture-Subtropical Agricultural  
Research Station, USA  
Georgia Institute of Technology, USA  
Nankai University, China  
Chinese Academy of Sciences, China  
Laval University, Canada  
Chongqing Jiaotong University, China  
University of Patras, Greece

## Table of Contents

**Volume 7    Number 8**

**July 2016**

**Shared Management of Water Resources among Sovereign States in Latin America: The Case of the River Plate Basin**

O. K. B. Calhman, M. A. G. M. Hora.....1089

**Dispute over Water Resource Management—Iraq and Turkey**

S. W. Al-Muqdadi, M. F. Omer, R. Abo, A. Naghshineh.....1096

**Integrating Lithostratigraphic Units and GIS-Analysis Techniques to Modified Surface Water Quality Index**

M. Ibrahim, H. Al-Mashakbeh.....1104

**Using Isotope Technology for Surface Water Environment Research in Southern Hanoi**

V. T. Anh, T. K. Minh, T. V. Giap, H. L. Anh, N. T. Cong, N. H. Thinh, V. Hoai.....1113

**Effect of Fertilization on the Dynamics and Activity of Iron-Reducing Bacterial Populations in a West African Rice Paddy Soil Planted with Two Rice Varieties: Case Study of Kou Valley in Burkina Faso**

C. H. Otoidobiga, A. Sawadogo, Y. Sinaré, I. Ouédraogo, P. Zombré, S. Asakawa, A. S. Traore, D. Dianou.....1119

**Evaluation of Land Degradation and Socio-Environmental Issues: A Case Study of Semi Arid Watershed in Western Rajasthan**

S. Jamal, A. Javed, Y. Khanday.....1132

# **Journal of Environmental Protection (JEP)**

## **Journal Information**

### **SUBSCRIPTIONS**

The *Journal of Environmental 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: \$79 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 AND REUSE RIGHTS FOR THE FRONT MATTER OF THE JOURNAL:**

Copyright © 2016 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

#### **COPYRIGHT FOR INDIVIDUAL PAPERS OF THE JOURNAL:**

Copyright © 2016 by author(s) and Scientific Research Publishing Inc.

#### **REUSE RIGHTS FOR INDIVIDUAL PAPERS:**

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

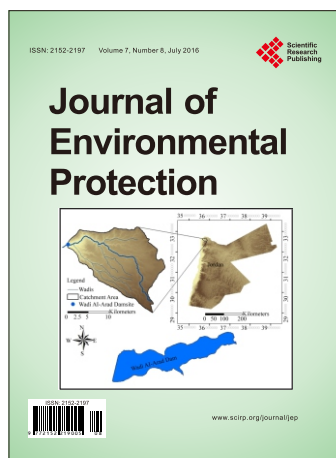
#### **DISCLAIMER OF LIABILITY**

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: [jep@scirp.org](mailto:jep@scirp.org)



## Journal of Environmental Protection (JEP)

ISSN: 2152-2197 (Print) ISSN: 2152-2219 (Online)

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

JEP is an international refereed journal dedicated to the latest advancement of Environmental Protection. The goal of this journal is to keep a record of the state-of-the-art research and promote the research work in these fast moving areas.

### Editors-in-Chief

**Prof. Thangarasu Pandiyan**

National Autonomous University of Mexico (UNAM), Mexico

**Prof. Qingren Wang**

University of Florida, USA

### Subject Coverage

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

#### ● Air pollution and air quality

Air pollution monitoring and modeling  
Air pollution prevention and control  
Air quality measurement and management  
Sources of air pollution  
Urban/indoor air pollution and control

#### ● Environmental pollution and public health

Chemical pollutants and its effects on health  
Effects of air pollution on public health  
Food and drug safety control  
Global climate changes and human health  
Land pollution and its effects on health

#### ● Ecosystem restoration, toxicology and sustainability

Ecosystem restoration  
Environmental toxicology  
Greenhouse gas emission monitoring and solutions  
Hazardous materials management  
Radiation safety in atomic industry  
Solid waste management  
Sustainable development of environment and ecosystem

#### ● Hydrology and water quality

Ground water pollution control  
Hydrobiology and water pollution  
Methods of monitoring water quality  
Modeling and measuring of water pollution

#### ● Wastewater treatment and utilization

New wastewater treatment technologies  
New water purification technologies  
Purification of drinking-water supplies  
Treatment, disposal and discharge of wastewater

#### ● Environment assessment and policy

Environmental impact assessment  
Environmental policy  
Risk assessment of contaminated environments  
Water resources and quality assessment  
Water resource protection and sustainable use

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 *JEP*.

### 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/jep>

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

## ***What is SCIRP?***

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

## ***What is Open Access?***

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost
- Guaranteed targeted, multidisciplinary audience



**Scientific  
Research  
Publishing**

**Website: <http://www.scirp.org>**

**Subscription: [sub@scirp.org](mailto:sub@scirp.org)**

**Advertisement: [service@scirp.org](mailto:service@scirp.org)**