






# Journal of Arid Land

干旱区科学

Vol. 11 No. 5 October 2019



**Sponsored by**

-  Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences
-  Science Press
-  China Society of Natural Resources

# Contents

Volume 11, Number 5, October 2019

- 637 **Monitoring the impact of climate change and human activities on grassland vegetation dynamics in the northeastern Qinghai-Tibet Plateau of China during 2000–2015**  
XIONG Qinli, XIAO Yang, Marwa Waseem A HALMY, Mohammed A DAKHIL, LIANG Pinghan, LIU Chenggang, ZHANG Lin, Bikram PANDEY, PAN Kaiwen, Sameh B EL KAFRAWAY, CHEN Jun
- 652 **Mapping desertification potential using life cycle assessment method: a case study in Lorestan Province, Iran**  
Abolfazl RANJBAR, Somayeh HEYDARNEJAD, Sayed H MOUSAVI, Roohallah MIRZAEI
- 664 **Reinvestigation of the scaling law of the windblown sand launch velocity with a wind tunnel experiment**  
ZHANG Yang, LI Min, WANG Yuan, YANG Bin
- 674 **Influence of salinity and moisture on the threshold shear velocity of saline sand in the Qarhan Desert, Qaidam Basin of China: A wind tunnel experiment**  
LI Chao, DONG Zhibao, YIN Shuyan, CHEN Guoxiang, YANG Junhui
- 685 **Spatio-temporal variation of soil moisture in a fixed dune at the southern edge of the Gurbantungut Desert in Xinjiang, China**  
ZHU Hai, HU Shunjun, YANG Jingsong, Fidele KARAMAGE, LI Hao, FU Sihua
- 701 **Wind regime for long-ridge yardangs in the Qaidam Basin, Northwest China**  
GAO Xuemin, DONG Zhibao, DUAN Zhenghu, LIU Min, CUI Xujia, LI Jiyang
- 713 **Impacts of water resource planning on regional water consumption pattern: A case study in Dunhuang Oasis, China**  
ZHANG Xifeng, JIN Xin, BAI Xiao, JIANG Yanbin, HE Chansheng
- 729 **Ecological biomass allocation strategies in plant species with different life forms in a cold desert, China**  
FAN Lianlian, DING Junxiang, MA Xuexi, LI Yaoming
- 740 **Effects of biochar on water movement characteristics in sandy soil under drip irrigation**  
PU Shenghai, LI Guangyong, TANG Guangmu, ZHANG Yunshu, XU Wanli, LI Pan, FENG Guangping, DING Feng
- 754 **Effects of temperature on flowering phenological traits of *Populus euphratica* Oliv. and *Populus pruinosa* Schrenk populations, Xinjiang, China**  
LI Zhijun, ZHANG Xiao, ZHENG Yaqiong, QIU Aijun, ZHANG Ling
- 764 **Modified non-rectangular hyperbola equation with plant height for photosynthetic light-response curves of *Potentilla anserina* and *Elymus nutans* at various growth phases in the Heihe River Basin, Northwest China**  
LIU Junjie, WANG Xiaoping, RONG Zhanlei, GAO Yunfei, ZHANG Guangde, WANG Wenbin, GE Lijuan, MAO Yahua, GUO Zhaoxia, WANG Qingtao, ZHAO Chuanyan
- 774 **Effects of water stress and NaCl stress on different life cycle stages of the cold desert annual *Lachnoloma lehmannii* in China**  
Jannathan MAMUT, TAN Dunyan, Carol C BASKIN, Jerry M BASKIN
- 785 **Physiological and biochemical appraisal for mulching and partial rhizosphere drying of cotton**  
Rashid IQBAL, Muhammad A S RAZA, Muhammad F SALEEM, Imran H KHAN, Salman AHMAD, Muhammad S ZAHEER, Muhammad U ASLAM, Imran HAIDER

The cover photo is taken by Dong Wenping.



## Editorial Board of Journal of Arid Land

### Chief Editor

CHEN, Xi (China)

### Executive Editor-in-Chief

YU, Ruide (China)

### Associate Editors

ALLEN, Michael F. (USA)

ARNDT, Stefan K. (Australia)

COHEN, Yehezkel (Israel)

DONG, Zhibao (China)

KARTHE, Daniel (Germany)

LI, Frank Yonghong (China)

LI, Yan (China)

MOORE, Nathan J. (USA)

SHAO, Ming'an (China)

ZHANG, Chi (China)

### Members

ABDULLAEV, Alishir (Uzbekistan)

ABUDUWAILI, Jilili (China)

AKSOY, Hafzullah (Turkey)

ASHIQ, Ahmad K. (Pakistan)

BATBUYAN, Batjav (Mongolia)

CHEN, Fahu (China)

CHEN, Yaning (China)

CYFFKA, Bernd (Germany)

DEMAEYER, Phillipe (Belgium)

DONG, Yunshe (China)

DROBYSHEV, Yuliy I. (Russia)

DZIKITI, Sebinasi (South Africa)

ELSHAER, Hassan M. (Egypt)

FAKHERAN, Sima (Iran)

GROLL, Michael (Germany)

GUAN, Kaiyun (China)

JASHENKO, Roman V. (Kazakhstan)

LEI, Jiaqiang (China)

LI, Baoguo (China)

LI, Lanhai (China)

LI, Larry (USA)

LI, Longhui (China)

LI, Wenjun (China)

LI, Xinrong (China)

LI, Yuqiang (China)

LIU, Hongyan (China)

LIU, Shiyin (China)

LIU, Xuejun (China)

LUO, Geping (China)

LUO, Yi (China)

MALIK, Ireneusz (Poland)

MOSTAFAEIPOUR, Ali (Iran)

MYAGKOV, Sergey (Uzbekistan)

PAN, Xiangliang (China)

SHI, Peijun (China)

STROBL, Josef (Austria)

TIAN, Changyan (China)

TIKUNOV, Vladimir S. (Russia)

WANG, Xiping (China)

WANG, Yuan (China)

WELP, Martin (Germany)

XIA, Cecilia (Australia)

XIA, Jun (China)

XIAO, Wenjiao (China)

YANG, Tao (China)

YANG, Weikang (China)

ZHANG, Xiaolei (China)

ZHANG, Xiyang (China)

ZHANG, Yuanming (China)

ZHAO, Wenzhi (China)

ZHOU, Qiming (Hong Kong of China)

ZHU, Xuan (Australia)

ZUBOVICH, Alexander V. (Kyrgyzstan)

ZUO, Xiao'an (China)

### Editors

LIU, Bin (China)

LIU, Na (China)

WANG, Qingqing (China)

YUAN, Junfeng (China)

ZHANG, Haiyan (China)

**Edited by:** The Editorial Office of Journal of Arid Land, 818 South Beijing Road, Urumqi 830011, Xinjiang, China

Tel: +86-991-7827352

Fax: +86-991-7885320

E-mail: xjja@ms.xjb.ac.cn

Website: <http://jal.xjegi.com>

**Superintended by:** Chinese Academy of Sciences

**Sponsored by:** Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Science Press and China Society of Natural Resources

**Published by:** Science Press and Springer-Verlag GmbH Germany, part of Springer Nature

**Printed by:** Xinjiang Xinhua Printing Plant

**Abstracted/indexed by:** Science Citation Index Expanded, Current Contents/Agriculture, Biology & Environmental Sciences, Scopus, Cambridge Science Abstract, VINITI Abstracts Journal, Centre for Agriculture and Bioscience Abstracts, Index Copernicus, Ulrich's Periodicals Directory, Japan Science and Technology Agency, Chinese Science Citation Database, and China Academic Journals Integrated Online Database.

**Copyright** © Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Science Press and Springer-Verlag GmbH Germany, part of Springer Nature 2019

CN 65-1278/K

国内邮发代号: 58-419  
万方数据

ISSN 1674-6767



9 771674 676198