ISSN 1674-6767 CN 65-1278/K

# Journal of Arid Land F早区科学

Vol. 16 No. 1 January 2024 (Monthly)



Sponsored by

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

Press 🤌 Springer

# Journal of Arid Land

## 干旱区科学

# Contents

## Volume 16, Number 1, 31 January 2024

#### **Research article**

- 1 Parkland trees on smallholder farms ameliorate soil physical-chemical properties in the semi-arid area of Tigray, Ethiopia Selam LJALEM, Emiru BIRHANE, Kassa TEKA, Daniel H BERHE
- 14 Ecological effect of the plantation of *Sabina vulgaris* in the Mu Us Sandy Land, China NAN Weige, DONG Zhibao, ZHOU Zhengchao, LI Qiang, CHEN Guoxiang
- 29 Regulation effects of water and nitrogen on yield, water, and nitrogen use efficiency of wolfberry GAO Yalin, QI Guangping, MA Yanlin, YIN Minhua, WANG Jinghai, WANG Chen, TIAN Rongrong, XIAO Feng, LU Qiang, WANG Jianjun
- 46 Spatiotemporal changes of gross primary productivity and its response to drought in the Mongolian Plateau under climate change ZHAO Xuqin, LUO Min, MENG Fanhao, SA Chula, BAO Shanhu, BAO Yuhai
- Land use change and its driving factors in the ecological function area: A case study in the Hedong Region of the Gansu Province, China
  WEI Zhudeng, DU Na, YU Wenzheng
- 91 Spatiotemporal characteristics and driving mechanisms of land use/land cover (LULC) changes in the Jinghe River Basin, China
  WANG Yinping, JIANG Rengui, YANG Mingxiang, XIE Jiancang, ZHAO Yong, LI Fawen, LU Xixi
- 110 Response of ecosystem carbon storage to land use change from 1985 to 2050 in the Ningxia Section of Yellow River Basin, China LIN Yanmin, HU Zhirui, LI Wenhui, CHEN Haonan, WANG Fang, NAN Xiongxiong, YANG Xuelong, ZHANG Wenjun
- 131 Spatiotemporal variations in ecosystem services and their trade-offs and synergies against the background of the gully control and land consolidation project on the Loess Plateau, China WANG Jing, WEI Yulu, PENG Biao, LIU Siqi, LI Jianfeng

The cover photo was taken by Mr. YANG Jun.

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, GeoRef, Chinese Science Citation Database, Chinese Scientific and Technical Papers and Citation Database, and China Academic Journals Integrated Online Database.

# **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)

#### Members

ABDULLAEV, Alishir (Uzbekistan) ABUDUWAILI, Jilili (China) AKSOY, Hafzullah (Turkey) AL-MAKTOUMI, Ali (Oman) ASHIQ, Ahmad K. (Pakistan) CHEN, Fahu (China) CHEN, Mingjie (USA) CHEN, Yaning (China) CYFFKA, Bernd (Germany) DEMAEYER, Phillipe (Belgium) DING, Jianli (China) DISSE, Markus (Germany) 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) KARTHE, Daniel (Germany) LI, Frank Yonghong (China) LI, Yan (China) MOORE, Nathan J. (USA)

LEI, Jiagiang (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) **ŁUPIKASZA**, Ewa (Poland) MALIK, Ireneusz (Poland) MOSTAFAEIPOUR, Ali (Iran) MYAGKOV, Sergey (Uzbekistan) PIRASTEH-ANOSHEN, Hadi (Iran) SALEHNIA, Nasrin (South Korea) SHI, Peijun (China)

SHAO, Ming'an (China) ZHANG, Chi (China)

TIAN, Changyan (China) TIKUNOV, Vladimir S. (Russia) WANG, Xinping (China) WANG, Yuan (China) WELP, Martin (Germany) WU, Bo (China) XIA, Cecilia (Australia) XIA, Jun (China) XIAO, Wenjiao (China) YANG, Weikang (China) ZHANG, Daoyuan (China) ZHANG, Haivan (China) ZHANG, Xiaolei (China) ZHANG, Xiying (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

Vol. 16 N Edited by Address:

YANG, Jinhua (China)

# Journ

hua (China)	YUAN, Junfeng (China)	ZHANG, Haiyan (China)		
<b>al of Arid Land</b> 干旱区科学 o. 1 31 January 2024 (Mon	ISSN 1674-6767 CN 65-1278/K			
: The Editorial Office of Journal of Arid Land			Manuscript system	V
818 South Beijing Road, Urumqi 830011, Xinjiang, China				
Tel: +86-991-7827352	Fax: +86-991-7827	Fax: +86-991-7827335		2
E-mail: xjjal@ms.xjb.ac.cn	Website: http://jal	Website: http://jal.xjegi.com		

Launched in: 2009

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 Huazhongtu Digital Printing Co. Ltd.

Distributed by: Springer-Verlag GmbH Germany, part of Springer Nature for print version and electronic version outside China Science Press and China Post Group Co. Ltd. for print version in China

Distribution method: Print version and electronic version

Copyright © Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Science Press and Springer-Verlag GmbH Germany, part of Springer Nature 2023

