



生态学报

ACTA ECOLOGICA SINICA

第39卷 第10期 Vol. 39 No. 10 2019

ISSN 1000-0933 CN 11-2031/Q

中国生态学学会
中国科学院生态环境研究中心

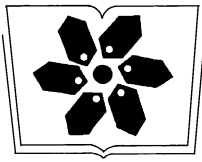
主办



科学出版社
Science Press

出版

生态知库
Eco-Environmental
Knowledge Web



中国科学院科学出版基金资助出版

生态学报

(SHENGTAI XUEBAO)

第 39 卷 第 10 期

2019 年 5 月 (半月刊)

目次

专论与综述

- 可持续生态学..... 吕永龙,王一超,苑晶晶,等 (3401)
- 海岛生态物联网建设:概念和模型 常立侠,张海杰,张飞宇,等 (3416)
- 动物的共生菌固氮..... 金明霞,王 怡,嵇保中,等 (3426)

生态系统服务专题

- 黄土高原生态系统服务权衡与协同时空变化及影响因素——以延安市为例..... 孙艺杰,任志远,郝梦雅,等 (3443)
- 基于生态系统服务价值重构的干旱内陆河流域生态安全格局优化——以张掖市甘州区为例..... 王 云,潘竟虎 (3455)
- 罗霄山区生态用地时空演变及其生态系统服务功能的响应——以井冈山为例..... 璩路路,刘彦随,周 扬,等 (3468)
- 基于格网的伏牛山区土地利用变化对生态服务价值影响研究..... 郭椿阳,高 尚,周伯燕,等 (3482)
- 南宁市湖库型饮用水源景观结构与涵养功能关系耦合优化..... 黄良美,陈 蓓,田 艳,等 (3494)
- 泸沽湖生态系统格局变化及其驱动力 马 赫,石龙宇,付 晓 (3507)

土壤生态专题

- 模拟降水减少对中亚热带杉木人工林土壤甲烷吸收的影响..... 王全成,陈勿琼,杨智杰,等 (3517)
- 杉木 N、P 代谢对模拟土壤增温及隔离降雨的响应 方 璇,王 健,王 彬,等 (3526)
- 沙化草地土壤碳氮磷化学计量特征及其对植被生产力和多样性的影响..... 宁志英,李玉霖,杨红玲,等 (3537)
- 荒漠草原土壤相对湿度对猪毛蒿表型可塑性的影响..... 陈 林,苏 莹,李月飞,等 (3547)
- 基于容器分区处理探究黑麦草生长对喀斯特不同土壤生境和水分的响应..... 宋海燕,张 静,李素慧,等 (3557)
- 原始红松林退化演替后土壤氮矿化特征变化..... 张秀月,付岩梅,刘 楠,等 (3566)
- 硬化地表对不同树种土壤微生物群落结构和功能的影响..... 于伟伟,陈媛媛,汪旭明,等 (3575)
- 呼和浩特市大青山白桦根际土壤细菌群落结构研究..... 高秀宏,李 敏,卢 萍,等 (3586)
- 不同土壤深度对宁夏石嘴山盐碱地细菌菌群多样性的影响 水 燕,徐增洪,刘国锋 (3597)
- 目标树经营初期对柏木人工林土壤线虫群落的影响..... 尹海锋,苏 宇,郭茂金,等 (3607)
- 黄土高原典型植被恢复过程土壤与叶片生态化学计量特征..... 高德新,张 伟,任成杰,等 (3622)
- 闽江口互花米草淤积作用对其自身和短叶茳芏残体分解及硫养分释放的影响..... 王 杰,孙志高,何 涛,等 (3631)

基于 SPEI 指数的淮河流域干旱时空演变特征及影响研究	夏 敏,孙 鹏,张 强,等 (3643)
青藏高原气候变化对农牧民开垦的影响	杨 柳,阎建忠,王 盼,等 (3655)
尕斯库勒湖不同密度下甘肃马先蒿根系分叉数与连接数、分支角度的关系	李雪萍,赵成章,任 悦,等 (3670)
青海省森林细根生物量及其影响因子	唐立涛,字洪标,胡 雷,等 (3677)
沙地樟子松天然林南缘分布区林木竞争、空间格局及其更新特征	潘磊磊,KWON SEMYUNG,刘艳书,等 (3687)
唐古特白刺叶性状及叶片 $\delta^{13}\text{C}$ 、 $\delta^{15}\text{N}$ 沿降水梯度的变化特征	董 雪,李永华,辛智鸣,等 (3700)
1994—2016 年和田绿洲植被覆盖时空变化分析	董弟文,阿布都热合曼·哈力克,王大伟,等 (3710)
半干旱黄土区苜蓿退化对坡面草本植物分布及多样性的影响	王子婷,杨 磊,李 广,等 (3720)
天山雪岭云杉林粗木质残体储量特征	李 翊然,常顺利,张毓涛 (3730)
两种不同保护模式下坡垒种群发育特征	张 丽,杨小波,农寿千,等 (3740)
海岛植物不同演替阶段植物功能性状与环境因子的变化规律	张增可,郑心炫,林华贞,等 (3749)
基于因子分析的南湾水库水源地浮游植物生物完整性评价	胡 俊,沈 强,陈明秀,等 (3759)
2000—2015 年丹顶鹤重要繁殖地景观格局变化研究	张婷婷,彭昭杰,张昊楠,等 (3770)
北京西山绿化树种 $\text{PM}_{2.5}$ 吸附量及叶表面 AFM 特征分析	鲁绍伟,蒋 燕,李少宁,等 (3777)
学术信息与动态	
基于文献网络分析的生态文明研究评述	陈 盼,施晓清 (3787)

期刊基本参数:CN 11-2031/Q * 1981 * m * 16 * 396 * zh * P * ¥90.00 * 1510 * 36 * 2019-05



封面彩图提供:施永鑫 西北师范大学城市规划与旅游景观设计研究院 E-mail: yangtuskuiy@hotmail.com
(本刊客座编辑李巍 推荐)

ACTA ECOLOGICA SINICA Vol.39, No.10 May, 2019 (Semimonthly)

CONTENTS

Review and Monograph

- The ecology of sustainability: Progress and prospect LÜ Yonglong, WANG Yichao, YUAN Jingjing, et al (3401)
- An ecological Internet of Things for islands: Concept and model CHANG Lixia, ZHANG Haijie, ZHANG Feiyu, et al (3416)
- Nitrogen fixation of symbiotic bacteria in animals JIN Mingxia, WANG Yi, JI Baozhong, et al (3426)

Ecosystem Services Special Column

- Spatial and temporal changes in the synergy and trade-off between ecosystem services, and its influencing factors in Yanan, Loess Plateau SUN Yijie, REN Zhiyuan, HAO Mengya, et al (3443)
- Establishment of ecological security patterns based on ecosystem services value reconstruction in an arid inland basin: A case study of the Ganzhou District, Zhangye City, Gansu Province WANG Yun, PAN Jinghu (3455)
- Spatio-temporal evolution of ecologically-sustainable land use in the luoxiao mountains and responses of its ecosystem services: A case study of Jinggangshan City in Jiangxi Province QU Lulu, LIU Yansui, ZHOU Yang, et al (3468)
- Effects of land use change on ecosystem service value in Funiu Mountain based upon a grid square GUO Chunyang, GAO Shang, ZHOU Boyan, et al (3482)
- Coupling relationship optimization of landscape structure and conservation function of lake and reservoir drinking water sources in Nanning, China HUANG Liangmei, CHEN Bei, TIAN Yan, et al (3494)
- Ecosystem spatial changes and their driving forces in the Lugu Lake Area MA He, SHI Longyu, FU Xiao (3507)

Soil Ecology Special Column

- Effects of precipitation exclusion on soil methane uptake under *Cunninghamia lanceolata* plantation in mid-subtropical China WANG Quancheng, CHEN Congqiong, YANG Zhijie, et al (3517)
- Effects of simulated soil warming and precipitation exclusion on N and P metabolisms in *Cunninghamia lanceolata* FANG Xuan, WANG Jian, WANG Bin, et al (3526)
- Stoichiometry and effects of carbon, nitrogen, and phosphorus in soil of desertified grasslands on community productivity and species diversity NING Zhiying, LI Yulin, YANG Hongling, et al (3537)
- Effects of heterogeneous habitats on phenotypic plasticity of *Artemisia scoparia* in the desert steppe of China CHEN Lin, SU Ying, LI Yuefei, et al (3547)
- Growth response of *Lolium perenne* L. under different soil habitats and water conditions based on container partition in a karst area SONG Haiyan, ZHANG Jing, LI Suhui, et al (3557)
- Characteristics of soil nitrogen mineralization in the degraded and successional primitive Korean pine forest in the Lesser Khingan Mountain, Northern China ZHANG Xiuyue, FU Yanmei, LIU Nan, et al (3566)
- Effects of land pavement on the structure and function of soil microbial community under different tree species YU Weiwei, CHEN Yuanyuan, WANG Xuming, et al (3575)
- Bacterial community in the rhizosphere soil of *Betula platyphylla* in the Daqing Mountains, Hohhot GAO Xiuhong, LI Min, LU Ping, et al (3586)
- Effect of depth on bacterial diversity in saline-alkali soil in Shizuishan region in Ningxia SHUI Yan, XU Zenghong, LIU Guofeng (3597)
- Effects of early crop-tree release on soil nematode communities in a *Cupressus funebris* plantation YIN Haifeng, SU Yu, GUO Maojin, et al (3607)
- Ecological stoichiometry characteristics of soil and leaves during the recovery process of typical vegetation on the Loess Plateau GAO Dexin, ZHANG Wei, REN Chengjie, et al (3622)
- Effects of siltation by *Spartina alterniflora* invasion on decomposition of and sulfur release by *S. alterniflora* and *Cyperus malaccensis* in tidal marshes of the Min River Estuary WANG Jie, SUN Zhigao, HE Tao, et al (3631)
- Temporal and spatial characteristic of drought in Huai River Basin based on standardized precipitation evapotranspiration index XIA Min, SUN Peng, ZHANG Qiang, et al (3643)

- Impacts of climate change on the reclamation of farmers and herdsmen in the Tibetan Plateau YANG Liu, YAN Jianzhong, WANG Pan, et al (3655)
- Relationship between root forks and link number, branch angle of *Pedicularis kansuensis* under different density conditions in Gahai Wetland LI Xueping, ZHAO Chengzhang, REN Yue, et al (3670)
- Forest biomass and its influencing factors in Qinghai Province TANG Litao, ZI Hongbiao, HU Lei, et al (3677)
- Tree competition, spatial pattern, and regeneration of a Mongolian pine natural forest in the southern geographical edge PAN Leilei, KWONG SEMYUNG, LIU Yanshu, et al (3687)
- Variation in leaf traits and leaf $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ content in *Nitraria tangutorum* along precipitation gradient DONG Xue, LI Yonghua, XIN Zhiming, et al (3700)
- Spatio-temporal variations in vegetation cover in Hotan Oasis from 1994 to 2016 DONG Diwen, Abdirahman · Halik, WANG Dawei, et al (3710)
- Effects of alfalfa (*Medicago sativa* L.) degradation on herbage distribution and diversity in the semi-arid Loess Plateau WANG Ziting, YANG Lei, LI Guang, CHAI Chunshan, et al (3720)
- Attributes of coarse woody debris in *Picea schrenkiana* forests of Tianshan Mountains LI Xuanran, CHANG Shunli, ZHANG Yutao (3730)
- Comparative study on population development characteristics of *Hopea hainanensis* base in two different protection modes ZHANG Li, YANG Xiaobo, NONG Shouqian, et al (3740)
- Summary of changes in plant functional traits and environmental factors in different successional stages of island plants ZHANG Zengke, ZHENG Xinxuan, LIN Huazhen, et al (3749)
- Phytoplankton index of biotic integrity based on factor analysis for water source assessment HU Jun, SHEN Qiang, CHEN Mingxiu, et al (3759)
- Landscape dynamics of the important breeding habitats of the red-crowned crane during 2000—2015 ZHANG Tingting, PENG Zhaojie, ZHANG Haonan, et al (3770)
- Relationship between adsorption capacity of $\text{PM}_{2.5}$ and leaf surface characteristics of AFM for typical greening trees in the Western mountains of Beijing LU Shaowei, JIANG Yan, LI Shaoning, et al (3777)

《生态学报》2019 年征订启事

《生态学报》是由中国科学技术协会主管,中国生态学学会、中国科学院生态环境研究中心共同主办的生态学高级专业学术期刊,创刊于 1981 年,报道生态学领域前沿理论和原始创新性研究成果。坚持“百花齐放,百家争鸣”的方针,依靠和团结广大生态学科工作者,探索生态学奥秘,为生态学基础理论研究搭建交流平台,促进生态学研究发展,为我国培养和造就生态学科人才和知识创新服务、为国民经济建设和发展服务。

《生态学报》主要报道生态学重要基础理论和应用研究的原始创新性科研成果。主要刊载文章类型有:研究综述;研究论文;学术信息与动态,生态学新理论、新方法、新技术介绍;新书评介及开放实验室介绍等。欢迎广大科技工作者、科研单位、高等院校、图书馆等订阅。

《生态学报》半月刊,大 16 开本,280 页,国内定价 90 元/册,全年定价 2160 元。

办公电话: 010-62941099, 010-62843362

E-mail: shengtaixuebao@rcees.ac.cn

投稿网址: www.ecologica.cn

执行副主编 孔红梅

责任编辑 刘 昕 全 元

编辑 朱晶莹 宗 静 彭小琼

生 态 学 报

(SHENGTAI XUEBAO)

(半月刊 1981 年 3 月创刊)

第 39 卷 第 10 期 (2019 年 5 月)

ACTA ECOLOGICA SINICA

(Semimonthly, Started in 1981)

Vol. 39 No. 10 (May, 2019)

编 辑 《生态学报》编辑部
地址:北京海淀区双清路 18 号
邮政编码:100085
电话:(010)62941099
www.ecologica.cn
shengtaixuebao@rcees.ac.cn

主 编 傅伯杰
主 管 中国科学技术协会
主 办 中国生态学学会
中国科学院生态环境研究中心
地址:北京海淀区双清路 18 号
邮政编码:100085

出 版 科 学 出 版 社

印 刷 北京宝昌彩色印刷有限公司

国内发行 全国各地邮局

发行代号 82-7

国外发行 中国国际图书贸易总公司

发行代号 M670

订 阅 科学出版社期刊发行部
010-64017032, 010-64017539
或扫描封底二维码

广告经营 京海工商广字第 8013 号

Edited by Editorial board of
ACTA ECOLOGICA SINICA
Add: 18, Shuangqing Street, Haidian, Beijing 100085, China
Tel: (010)62941099
www.ecologica.cn
shengtaixuebao@rcees.ac.cn

Editor-in-chief FU Bojie
Supervised by China Association for Science and Technology
Sponsored by Ecological Society of China
Research Center for Eco-environmental Sciences, CAS
Add: 18, Shuangqing Street, Haidian, Beijing 100085, China

Published by Science Press
Add: 16 Donghuangchenggen North Street,
Beijing 100717, China

Printed by Beijing Baochang Color Printing Co., Ltd,
Beijing 100094, China

Subscribe by Science Press
Tel: 010-64017032, 010-64017539
E-mail: journal@cspg.net

Domestic issue All Local Post Offices in China 82-7

Foreign issue China International Book Trading M670
Corporation
Add: P.O.Box 399 Beijing 100044, China



ISSN 1000-0933

CN 11-2031/Q

定价 90.00 元