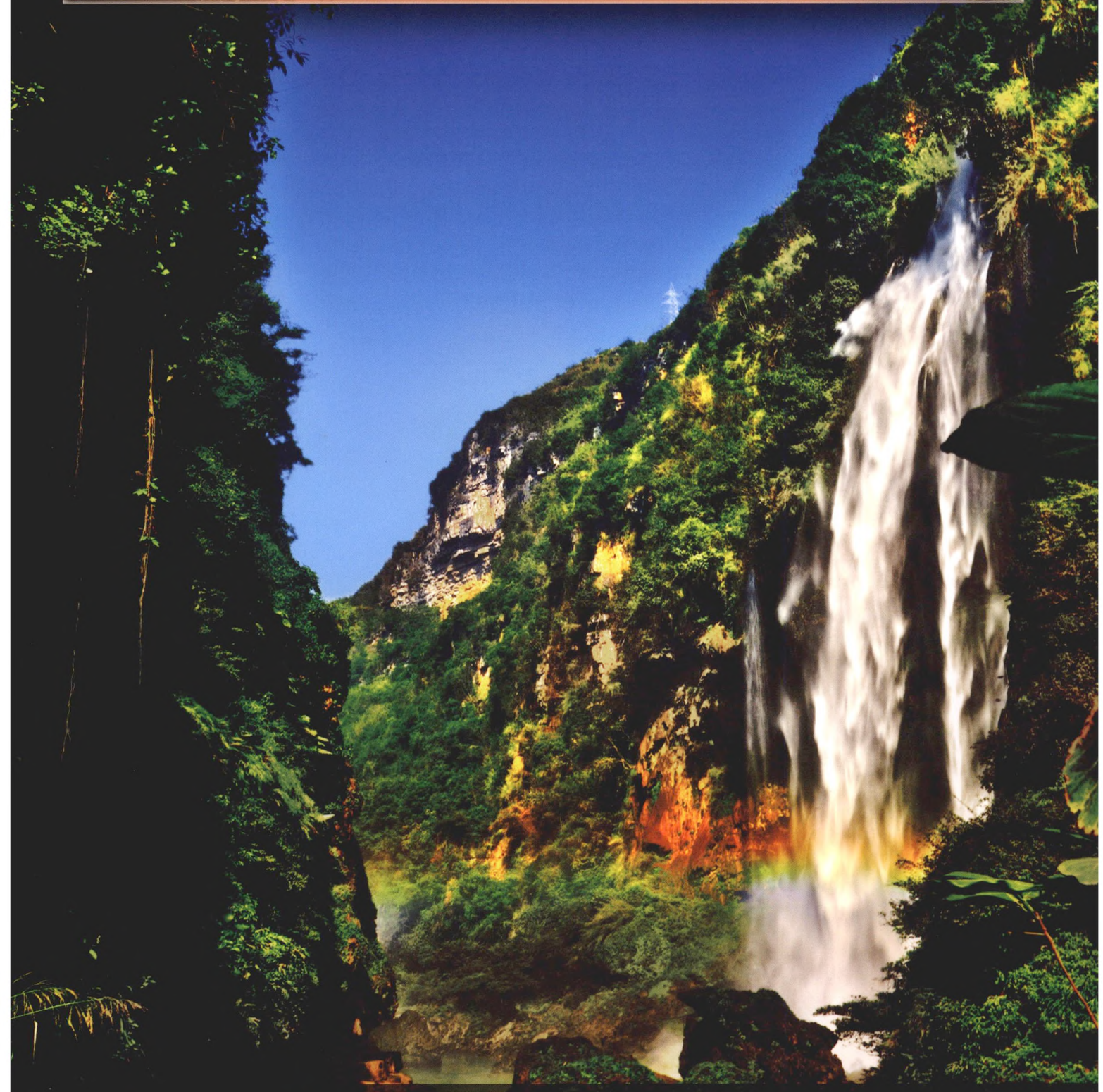




生态学报

ACTA ECOLOGICA SINICA

第39卷 第12期 Vol. 39 No. 12 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

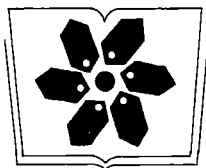


科学出版社
Science Press

出版



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 12 期 2019 年 6 月 (半月刊)

目 次

专论与综述

- 生态系统服务流研究进展..... 王嘉丽,周伟奇 (4213)
- 城市能源代谢生态网络分析研究进展..... 穆献中,朱雪婷 (4223)

研究论文

- 基于胁迫梯度假说和互惠理论的海三棱藨草种群恢复技术..... 陈雅慧,袁琳,曹浩冰,等 (4233)
- 闽江口秋茄凋落叶分解碳氮磷元素动态特征与水解酶活性..... 张雨雪,胡伟芳,罗敏,等 (4242)
- 三峡水库消落带现存植物自然分布特征与群落物种多样性研究..... 郭燕,杨邵,沈雅飞,等 (4255)
- 鄱阳湖滨藕塘生境中白鹤取食行为研究..... 植毅进,卢萍,戴年华,等 (4266)
- 中国海洋渔业产业生态系统脆弱性时空演化及影响因素..... 李博,金校名,杨俊,等 (4273)
- 基于历史情景的 FLUS 模型邻域权重设置——以闽三角城市群 2030 年土地利用模拟为例.....
..... 王保盛,廖江福,祝薇,等 (4284)
- 深圳市福田区三维城市景观格局变化特征..... 付凤杰,刘珍环,黄千杜 (4299)
- 无定河流域不同地貌区径流变化归因分析..... 任宗萍,马勇勇,王友胜,等 (4309)
- 土地利用类型对渭河流域关中段地表水硝酸盐污染的影响..... 张妍,毕直磊,张鑫,等 (4319)
- 工业园区循环经济关联与生态效率评价——以福建省蛟洋循环经济示范园区为例.....
..... 徐凌星,杨德伟,高雪莉,等 (4328)
- 不同大豆连作年限对黑土细菌群落结构的影响..... 刘株秀,刘俊杰,徐艳霞,等 (4337)
- 秸秆颗粒还田对黑土土壤酶活性及细菌群落的影响..... 徐忠山,刘景辉,逯晓萍,等 (4347)
- 模拟增温对青藏高原高寒草甸土壤供氮潜力的影响..... 宗宁,石培礼 (4356)
- 秸秆生物质炭对土壤结构体与活性碳分布、转化酶动力学参数及小麦生长的影响.....
..... 姬强,马媛媛,刘永刚,等 (4366)
- 晋西北不同土地管理方式对土壤碳氮、酶活性及微生物的影响..... 刘爽,王雅,刘兵兵,等 (4376)
- 不同基因型转 *Bt* 水稻种植对土壤螨类群落的影响..... 宋莹莹,王龙,李立坤,等 (4390)
- 茶园害虫匮乏期天敌与蚊虫的空间关系..... 张书平,余燕,李尚,等 (4400)
- 山东银莲花叶片形态结构对异质生境和海拔变化的响应..... 于文英,高燕,逢玉娟,等 (4413)
- 抚育择伐对马尾松林主要树种空间分布格局及其关联性的短期影响..... 王晓荣,曾立雄,雷蕾,等 (4421)
- 温度植被干旱指数在 2000—2015 年松嫩平原土壤湿度中的应用..... 吴欣睿,那晓东,臧淑英 (4432)
- 树种水平的大兴安岭地上生物量变化特征及其与气候和干扰的关系..... 张庆龙,梁宇,贺红士,等 (4442)
- 光强对杉木幼苗形态特征和叶片非结构性碳含量的影响..... 刘青青,马祥庆,黄智军,等 (4455)
- 黄顶菊对入侵地群落动态及植物生长生理特征的影响..... 祁小旭,王红岩,林峰,等 (4463)
- 不同时间尺度小流域径流变化及其归因分析..... 叶晶萍,刘政,欧阳磊,等 (4478)

| | |
|---------------------------------------------------------------|-------------------------------|
| 西藏河谷地区人工种草的投入产出比较分析..... | 潘影, 武俊喜, 赵延, 等 (4488) |
| 2000—2016年秦岭山地植被覆盖变化地形分异效应 | 赵婷, 白红英, 邓晨晖, 等 (4499) |
| 外源有机酸对镉胁迫下秋华柳镉积累特征的影响..... | 陈红纯, 吴科君, 李瑞, 等 (4510) |
| 东北天然针阔混交林凋落物磷素空间异质性及其影响因素..... | 秦倩倩, 王海燕, 李翔, 等 (4519) |
| 武夷山不同海拔黄山松细根性状季节变化..... | 周永姣, 程林, 王满堂, 等 (4530) |
| 盐分和干旱对沙枣幼苗生理特性的影响..... | 陈春晓, 谢秀华, 王宇鹏, 等 (4540) |
| 宁夏荒漠草原蒙古冰草(<i>Agropyron mongolicum</i>)种群小尺度空间分布及其关联性 | 许爱云, 刘金龙, 米世明, 等 (4551) |
| 跨区域森林生态补偿的演化博弈分析——基于主体功能区的视角..... | 潘鹤思, 柳洪志 (4560) |
| 河北太行山南段树木年轮指示的167年来相对湿度变化研究 | 王亚军, 张永, 邵雪梅 (4570) |
| 黄河河龙区间退耕还林前后淤地坝拦沙特征分析..... | 梁越, 焦菊英 (4579) |
| 学术信息与动态 | |
| 《巴黎协定》实施细则: 卡托维兹气候变化大会介评 | 康美美, 赵文武 (4587) |

期刊基本参数: CN 11-2031/Q * 1981 * m * 16 * 380 * zh * P * ¥90.00 * 1510 * 39 * 2019-06



封面彩图提供: 刘国华 中国科学院生态环境研究中心 E-mail: ghliu@rcees.ac.cn

ACTA ECOLOGICA SINICA Vol.39, No.12 June, 2019 (Semimonthly)

CONTENTS

Review and Monograph

Ecosystem service flows; Recent progress and future perspectives WANG Jiali, ZHOU Weiqi (4213)

Research progress on ecological network analysis of urban energy metabolism MU Xianzhong, ZHU Xueting (4223)

Research Paper

The stress-gradient hypothesis and facilitation theory-based restoration technique for *Scirpus mariqueter* population CHEN Yahui, YUAN Lin, CAO Haobing, et al (4233)

Carbon, nitrogen, and phosphorus dynamics and hydrolytic enzyme activities during foliar litter decomposition of *Kandelia obovata* in a mangrove population of the Min River estuary ZHANG Yuxue, HU Weifang, LUO Min, et al (4242)

Study on the natural distribution characteristics and community species diversity of existing plants in the Three Gorges Reservoir GUO Yan, YANG Shao, SHEN Yafei, et al (4255)

Foraging behaviour of Siberian Cranes in lotus pond habitats surrounding Poyang Lake ZHI Yijin, LU Ping, DAI Nianhua, et al (4266)

Spatio-temporal evolution and influencing factors for marine fisheries industry ecosystem vulnerability in China LI Bo, JIN Xiaoming, YANG Jun, et al (4273)

The weight of neighborhood setting of the FLUS model based on a historical scenario: A case study of land use simulation of urban agglomeration of the Golden Triangle of Southern Fujian in 2030 WANG Baosheng, LIAO Jiangfu, ZHU Wei, et al (4284)

Three-dimensional urban landscape pattern changes: A case study in the Central Business District of Futian, Shenzhen FU Fengjie, LIU Zhenhuan, HUANG Qiandu (4299)

Runoff changes and attribution analysis in tributaries of different geomorphic regions in Wuding River basin REN Zongping, MA Yongyong, WANG Yousheng, et al (4309)

Effects of land-use types on nitrate pollution of surface water in Guanzhong area in the Weihe River basin ZHANG Yan, BI Zhilei, ZHANG Xin, et al (4319)

Evaluating the network nexus and efficiency of circular economy: A case study of Jiaoyang eco-industrial park XU Lingxing, YANG Dewei, GAO Xueli, et al (4328)

Effects of continuous cropping years of soybean on the bacterial community structure in black soil LIU Zhuxiu, LIU Junjie, XU Yanxia, et al (4337)

Effects of returning granulated corn stover on soil enzyme activities and bacterial community in black soil XU Zhongshan, LIU Jinghui, LU Xiaoping, et al (4347)

Effects of simulated warming on soil nitrogen supply potential in an alpine meadow on the Tibetan Plateau ZONG Ning, SHI Peili (4356)

Effects of biochar application on the distribution of soil aggregates and active organic carbon, kinetic parameters of soil invertase, and wheat growth JI Qiang, MA Yuanyuan, LIU Yonggang, et al (4366)

Effects of different land management practices on soil carbon and nitrogen, enzyme activities, and microbial diversities northwest of Shanxi LIU Shuang, WANG Ya, LIU Bingbing, et al (4376)

Effects of *Bacillus thuringiensis* rice with single and fused transgenes on the soil mite community SONG Yingying, WANG Long, LI Likun, et al (4390)

Spatial relationship between natural enemies and *Mosquitoes* in the absence of insect pests in tea garden ZHANG Shuping, YU Yan, LI Shang, et al (4400)

Response of leaf morphology and structure of *Anemone shikokiana* to heterogeneous habitats and altitude changes YU Wenying, GAO Yan, PANG Yujuan, et al (4413)

Short-term effects of selective cutting on the spatial distribution and association of dominant tree species in *Pinus massoniana* stands WANG Xiaorong, ZENG Lixiong, LEI Lei, et al (4421)

- Application of temperature vegetation dryness index in the estimation of soil moisture of the Songnen Plain WU Xinrui, NA Xiaodong, ZANG Shuying (4432)
- Changes in species-level biomass and its relationship with climate and forest disturbances in the Great Xing'an Mountains ZHANG Qinglong, LIANG Yu, HE Hongshi, et al (4442)
- Effects of light intensity on the morphology characteristics and leaf non-structural carbohydrate content of Chinese fir seedlings LIU Qingqing, MA Xiangqing, HUANG Zhijun, et al (4455)
- Effects of *Flaveria bidentis* invasion on the community composition and performance of native plants grown in invaded soil QI Xiaoxu, WANG Hongyan, LIN Feng, et al (4463)
- Runoff changes and their attributions in a small watershed during different time scales YE Jingping, LIU Zheng, OUYANG Lei, et al (4478)
- Comparison of the benefits of conservation and forage planting grasslands in the river valley area of Tibet PAN Ying, WU Junxi, ZHAO Yan, et al (4488)
- Topographic differentiation effect on vegetation cover in the Qinling Mountains from 2000 to 2016 ZHAO Ting, BAI Hongying, DENG Chenhui, et al (4499)
- Effects of exogenous organic acids on the characteristics of Cd accumulation of *Salix variegata* under Cd stress CHEN Hongchun, WU Kejun, LI Rui, et al (4510)
- Spatial heterogeneity and factors affecting phosphorus in the litter of a natural *Picea jezoensis* var. *microsperma* (Lindl.) W.C. Cheng & L.K.Fu and *Abies nephrolepis* (Trautv.) Maxim. mixed forest in northeastern China QIN Qianqian, WANG Haiyan, LI Xiang, et al (4519)
- Seasonal changes of fine root traits in *Pinus taiwanensis* Hayata at different altitudes in the Wuyi Mountains ZHOU Yongjiao, CHENG Lin, WANG Mantang, et al (4530)
- Effects of salt and drought on the physiological characteristics of *Elaeagnus angustifolia* L. seedlings CHEN Chunxiao, XIE Xiuhua, WANG Yupeng, et al (4540)
- Fine-scale spatial distribution pattern and association of *Agropyron mongolicum* population in desert steppe in Ningxia XU Aiyun, LIU Jinlong, MI Shiming, et al (4551)
- The evolutionary game analysis of cross-regional forest ecological compensation—based on the perspective of the main functional area PAN Hesi, LIU Hongzhi (4560)
- The study of variation in relative humidity from May to July during the past 167 years in the Southern Taihang Mountains in Hebei Province WANG Yajun, ZHANG Yong, SHAO Xuemei (4570)
- Characteristics of sediment retention by check-dams before and after the “Grain for Green” project in the He-Long Reach of the Yellow River LIANG Yue, JIAO Juying (4579)

《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 谢武双 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 12 期 (2019 年 6 月)

ACTA ECOLOGICA SINICA
(Semimonthly, Started in 1981)
Vol. 39 No. 12 (June, 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