



生态学报

ACTA ECOLOGICA SINICA

第38卷 第20期 Vol. 38 No. 20 2018

ISSN 1000-0933 CN 11-2031/Q



中国生态学会

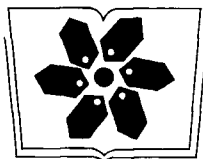
中国科学院生态环境研究中心

主办



科学出版社
Science Press

出版



中国科学院科学出版基金资助出版

生态学报

(SHENGTAI XUEBAO)

第 38 卷 第 20 期 2018 年 10 月 (半月刊)

目 次

专论与综述

- 湖泊湿地生态系统服务研究进展 徐昔保, 杨桂山, 江 波 (7149)
- 生态系统服务与景观格局集成研究综述 梁友嘉, 刘丽珺 (7159)

研究论文

- 海拔梯度对祁连山青海云杉林乔木层和土壤层碳密度的影响 曾立雄, 雷 蕾, 王晓荣, 等 (7168)
- 长三角典型城郊土地利用变化及其土壤碳氮响应 李守娟, 杨 磊, 陈利顶, 等 (7178)
- 樟子松人工林原产地与不同自然降水梯度引种地土壤和植物叶片生态化学计量特征
..... 赵姗宇, 黎锦涛, 孙学凯, 等 (7189)
- 马尾松林采伐迹地火烧黑炭对土壤活性碳氮库的影响 王玉哲, 刘俊第, 严 强, 等 (7198)
- 两个放牧率下藏羊粪在高寒草甸的分解特征 颜才玉, 孙 义, 刘 阳, 等 (7208)
- 丰容对圈养雌性岩羊活动时间分配的影响 张致荣, 王爱善, 滕丽微, 等 (7216)
- 繁殖期高体鳊鲂对化学预警信息的行为响应及其与生理状态的关联 张 嬿, 付世建, 夏继刚 (7223)
- 三峡库区不同水文类型支流大型底栖动物对蓄水的响应 杨振冰, 刘园园, 何蕊廷, 等 (7231)
- 耕作方式对玉-豆轮作地表节肢动物多样性及其营养结构的影响 朱新玉, 刘 洁, 贺 振, 等 (7242)
- 闽三角区域生态系统服务重要性评价及其空间分布 朱立晨, 王豪伟, 唐立娜 (7254)
- 城市空间形态离散度指数 NDIS 构建与应用 贾玉秋, 唐立娜, 桂柳鸣 (7269)
- 辽宁省潜在蒸散时空变化特征与成因 曹永强, 李维佳 (7276)
- 呼伦贝尔草原区 CO₂ 源、汇及时空分布模拟研究 王 伟, 方青青, 王国强, 等 (7288)
- 基于土地利用变化的黄土丘陵区生境质量时空演变特征——以榆中县为例 刘春芳, 王 川 (7300)
- 基于土地利用变化的江苏沿海地区生态风险格局 许凤娇, 吕 晓 (7312)
- 北京市森林生态安全预警时空差异及其驱动机制 陈 妮, 鲁莎莎, 关兴良 (7326)
- 城市扩张过程中不透水面空间格局演变及其对地表温度的影响——以乌鲁木齐市为例
..... 周玄德, 郭华东, 孜比布拉·司马义 (7336)
- 卧龙自然保护区生态系统服务福祉贡献评估: 当地居民的视角 徐建英, 王 清, 魏建瑛 (7348)
- 江西武夷山中亚热带南方铁杉针阔混交林群落组成与结构 陈 斌, 赵家豪, 关庆伟, 等 (7359)
- 盐分胁迫对啤酒大麦幼苗生长、离子平衡和根际 pH 变化的影响 岳小红, 曹 靖, 耿 杰, 等 (7373)
- 贵州赤水常绿阔叶林不同层次树木空间分布格局和竞争的关系 张昊楠, 薛建辉 (7381)
- 2011—2016 年武夷山甜槠常绿阔叶林乔木层群落动态 丁 晖, 徐 辉, 徐鲜钧, 等 (7391)

黑河流域高寒草甸生态系统水分收支及蒸散发拆分研究..... 童雅琴,王 佩,李小雁,等 (7400)

祁连山东部青杆年内径向生长动态对气候的响应..... 牛豪阁,张 芬,于爱灵,等 (7412)

海拔变化对高原湿地优势植物叶绿素荧光特性的影响..... 李 晖,田 昆,刘国栋,等 (7421)

基于 Biome-BGC 模型及树木年轮的太白红杉林生态系统对气候变化的响应研究 李书恒,侯 丽,史阿荣,等 (7435)

尔海-则岔地区紫果云杉种群结构与动态特征 赵 阳,齐 瑞,焦 健,等 (7447)

1964—2015 年海南省八门湾红树林湿地及其周边土地景观动态分析 徐晓然,谢跟踪,邱彭华 (7458)

我国大陆黄檗潜在分布区及分布适宜性评价..... 黄治昊,周 鑫,张孝然,等 (7469)

杉木人工林凋落物生态化学计量与土壤有效养分对长期模拟氮沉降的响应..... 沈芳芳,吴建平,樊后保,等 (7477)

旱生芦苇对地下水位变化的生态响应及适应机制..... 玛丽娅·奴尔兰,刘卫国,霍举颂,等 (7488)

五台山林线过渡带华北落叶松格局过程和尺度分析..... 贾美玉,张金屯,梁 钰,等 (7499)

干旱胁迫下胡杨实生幼苗氮素吸收分配与利用 马晓东,钟小莉,桑 钰 (7508)

期刊基本参数:CN 11-2031/Q * 1981 * m * 16 * 372 * zh * P * ¥90.00 * 1510 * 35 * 2018-10



封面彩图提供:胡 煜 《中国科学》杂志社有限责任公司 E-mail: huyu@scichina.org

ACTA ECOLOGICA SINICA Vol.38, No.20 October, 2018 (Semimonthly)
CONTENTS

Review and Monograph

Progress in lake-wetland ecosystem services XU Xibao, YANG Guishan, JIANG Bo (7149)
Integration of ecosystem services and landscape pattern: A review LIANG Youjia, LIU Lijun (7159)

Research Paper

Effect of altitudinal variation on carbon density in arbor layer and soil layer of *Picea crassifolia* forest in Qilian Mountains
..... ZENG Lixiong, LEI Lei, WANG Xiaorong, et al (7168)
Land use change and its influence on soil organic carbon and total nitrogen in a typical peri-urban watershed of the Yangtze
River delta LI Shoujuan, YANG Lei, CHEN Liding, et al (7178)
Responses of soil and plant stoichiometric characteristics along rainfall gradients in Mongolian pine plantations in native and
introduced regions ZHAO Shanyu, LI Jintao, SUN Xuekai, et al (7189)
Effects of black carbon on soil labile carbon and nitrogen pools in a *Pinus massoniana* plantation subjected to slash burning
..... WANG Yuzhe, LIU Jundi, YAN Qiang, et al (7198)
Decomposition characteristics of Tibetan sheep feces from two stocking rates in alpine meadows
..... YAN Caiyu, SUN Yi, LIU Yang, et al (7208)
Effect of enrichment on activity budgets of captive female blue sheep
..... ZHANG Zhirong, WANG Aishan, TENG Liwei, et al (7216)
Chemical alarm cue-induced behavioral responses and their relations with reproductive physiological status in *Rhodeus ocellatus*
..... ZHANG Qiang, FU Shijian, XIA Jigang (7223)
Responses of benthic macroinvertebrates in tributaries of different hydrological regimes in the Three Gorges Reservoir region to
reservoir impoundment YANG Zhenbing, LIU Yuanyuan, HE Ruiting, et al (7231)
Response of ground-dwelling arthropod community diversity and its trophic structure in relation tillage regimes under maize-soybean
rotation ZHU Xinyu, LIU Jie, HE Zhen, et al (7242)
Importance evaluation and spatial distribution analysis of ecosystem services in Min triangle area
..... ZHU Lichen, WANG Haowei, TANG Lina (7254)
Study on the formulation and application of the urban spatial form dispersion index (NDIS)
..... JIA Yuqiu, TANG Lina, GUI Liuming (7269)
Spatio-temporal distribution characteristics of potential evapotranspiration and impact factors in Liaoning Province
..... CAO Yongqiang, LI Weijia (7276)
Simulation of CO₂ source, sink, and flux temporal and spatial distributions in Hulun Buir grassland
..... WANG Wei, FANG Qingqing, WANG Guoqiang, et al (7288)
Spatio-temporal evolution characteristics of habitat quality in the Loess Hilly Region based on land use change: a case study in
Yuzhong County LIU Chunfang, WANG Chuan (7300)
Ecological risk pattern based on land use changes in Jiangsu coastal areas XU Fengjiao, LÜ Xiao (7312)
Spatio-temporal differences and the driving mechanism of early warnings of forest ecological security in Beijing
..... CHEN Ni, LU Shasha, GUAN Xingliang (7326)
Spatial pattern evolution of impervious surfaces and its influence on surface temperature in the process of urban expansion: a case
study of Urumqi ZHOU Xuande, GUO Huadong, Zhibibula · Simayi (7336)
Assessment of the contribution to human well-being by ecosystem services in Wolong Natural Reserve from the perspective of
local communities XU Jianying, WANG Qing, WEI Jianying (7348)
Community composition and structure of a mid-subtropical coniferous (*Tsuga chinensis* var. *tchekiangensis*) and broadleaf mixed
forest in Jiangxi Wuyishan, China CHEN Bin, ZHAO Jiahao, GUAN Qingwei, et al (7359)
Effects of different types of salt stress on growth, ion balance and rhizosphere pH changes in beer barley seedlings
..... YUE Xiaohong, CAO Jing, GENG Jie, et al (7373)
Spatial patterns and competition among trees of different height classes in Guizhou, Chishui evergreen broadleaved forest
..... ZHANG Haonan, XUE Jianhui (7381)

Community dynamics of arbor layer in the *Castanopsis eyrei* evergreen broad-leaved forest in the Wuyi Mountains, Fujian Province, southeastern China in 2011—2016 DING Hui, XU Hui, XU Xianjun, et al (7391)

Water budget and evapotranspiration partition in an alpine meadow ecosystem in the upstream of the Heihe River, China TONG Yaqin, WANG Pei, LI Xiaoyan, et al (7400)

Intra-annual stem radial growth dynamics of *Picea wilsonii* in response to climate in the eastern Qilian Mountains NIU Haoge, ZHANG Fen, YU Ailing, et al (7412)

Impacts of change in altitude on chlorophyll fluorescence characteristics of dominant plants in plateau wetland LI Hui, TIAN Kun, LIU Guodong, et al (7421)

Response of *Larix chinensis* forest ecosystem to climate change based on Biome-BGC model and tree rings LI Shuheng, HOU Li, SHI Arong, et al (7435)

The population structure and dynamic characteristics of *Picea purpurea* at the Gahai-zecha area ZHAO Yang, QI Rui, JIAO Jian, et al (7447)

Dynamic analysis of landscape changes in Bamen port and the surrounding lands of Hainan Province from 1964 to 2015 XU Xiaoran, XIE Genzong, QIU Penghua (7458)

Suitability assessments of potential distribution areas for Amur corktree in mainland China HUANG Zhihao, ZHOU Xin, ZHANG Xiaoran, et al (7469)

Litterfall ecological stoichiometry and soil available nutrients under long-term nitrogen deposition in a Chinese fir plantation SHEN Fangfang, WU Jianping, FAN Houbao, et al (7477)

Ecological response and adaptation mechanism of *Phragmites australis* to changes in groundwater level Maria · Nurlan, LIU Weiguo, HUO Jusong, et al (7488)

Spatial pattern and process of *Larix principis-rupprechtii* at different scales in the timberline ecotone of Mount Wutai JIA Meiyu, ZHANG Jintun, LIANG Yu, et al (7499)

Characteristics of nitrogen absorption, distribution, and utilization by *Populus euphratica* seedlings under drought stress MA Xiaodong, ZHONG Xiaoli, SANG Yu (7508)

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

ISSN 1000-0933 CN 11-2031/Q 国内邮发代号:82-7,国外邮发代号:M670

办公电话: 010-62941099, 010-62843362 E-mail: shengtaixuebao@rcees.ac.cn

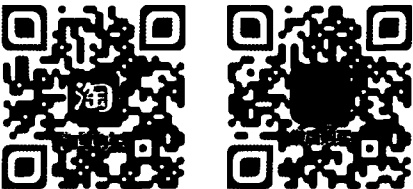
投稿网址: www.ecologica.cn

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 38 卷 第 20 期 (2018 年 10 月)

ACTA ECOLOGICA SINICA
(Semimonthly, Started in 1981)
Vol. 38 No. 20 (October, 2018)

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	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
主 编	傅伯杰	Editor-in-chief	FU Bojie
主 管	中国科学技术协会	Supervised by	China Association for Science and Technology
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	Sponsored by	Ecological Society of China Research Center for Eco-environmental Sciences, CAS Add:18, Shuangqing Street, Haidian, Beijing 100085, China
出 版	科 学 出 版 社 地址:北京东黄城根街 16 号 邮政编码:100717	Published by	Science Press Add:16 Donghuangchenggen North Street, Beijing 100717, China
印 刷	北京宝昌彩色印刷有限公司	Printed by	Beijing Baochang Color Printing Co., Ltd, Beijing 100094, China
发 行	科学出版社期刊发行部 电话购阅:010-64017032, 010-64017539 或扫描封底二维码购阅	Distributed by	Science Press Tel:010-64017032, 010-64017539 E-mail: journal@cspg.net
订 购	全国各地邮局:邮发代号 82-7	Domestic	All Local Post Offices in China
国外发行	中国国际图书贸易总公司 地址:北京 399 信箱 邮政编码:100044	Foreign	China International Book Trading Corporation Add:P.O.Box 399 Beijing 100044, China
广告经营	京海工商广字第 8013 号		
许 可 证			



ISSN 1000-0933 国内邮发代号 82-7 国外发行代号 M670 定价 90.00 元
CN 11-2031/Q