



生态学报

ACTA ECOLOGICA SINICA

第41卷 第24期 Vol. 41 No. 24 2021

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

E方知库
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 41 卷 第 24 期

2021 年 12 月 (半月刊)

目次

生物多样性调查评估专栏

- 澜沧江西双版纳段鱼类组成和物种多样性..... 付贵权,秦 涛,陈小勇,等 (9557)
- 中国大陆沿海水鸟栖息地保护优先区及空缺分析..... 段后浪,于秀波,石建斌,等 (9574)
- 珍稀濒危植物长白松(*Pinus sylvestris* var. *sylvestrifomis*)天然种群生存压力 张建亮,郭子良,钱者东,等 (9581)
- 世界自然遗产地陆生藻类物种多样性比较研究..... 晏 妮,张 腾,熊康宁,等 (9593)
- 生物多样性保护优先区抽样调查策略研究——以武陵山地区为例..... 吉晟男,崔绍朋,邓怀庆,等 (9604)
- 豚草入侵对新疆伊犁河谷林下本地草本植物群落结构的影响..... 柳晓燕,朱金方,李飞飞,等 (9613)
- 埋深和播种密度对豚草种子出苗及幼苗生长的影响 熊韞琦,赵彩云,赵相健 (9621)
- 不同入侵程度下飞机草对喀斯特地区土壤理化性质的影响..... 朱金方,柳晓燕,李俊生,等 (9630)
- 综合物理防控技术对盐城大丰港互花米草的控制效果..... 李飞飞,高珂晓,朱金方,等 (9637)
- 放猪干扰对四川夹金山植物群落特征和生物量的影响..... 郝建锋,余飞燕,姚小兰,等 (9645)
- 不同人类干扰背景下横断山南段保护优先区规划研究..... 宋成文,王文礼,刘冬梅,等 (9655)
- COVID-19 疫情期间城郊森林公园 O_3 变化对 NO_2 减排响应的多重分形模式 张 娇,刘春琼,吴 波,等 (9669)
- 典型喀斯特流域旱雨季交替下溶解硅的输送特征..... 郝 卓,高 扬,张晴雯,等 (9681)
- 共享社会经济路径下中国 2020—2100 年碳排放预测研究..... 张 帆,徐 宁,吴 锋 (9691)
- 泥炭沼泽湿地关键元素地球化学特征及其对碳排放的影响机制..... 余 珂,张 尹,吕雪艳,等 (9705)
- 俄罗斯东部城镇化与生态环境协调发展的时空演变特征..... 初楠臣,张平宇,吴相利,等 (9717)
- 基于遥感总初级生产力的天山-塔里木绿洲地区生态系统脆弱性研究 ... 王鹤松,何 敏,闫 薇,等 (9729)
- 四川省生物多样性与生态系统多功能性分析..... 杨 渺,肖 燚,欧阳志云,等 (9738)
- 云冷杉红松林掘根倒木及其微立地对凋落叶分解速率及养分释放的影响..... 陈 佳,段文标,曲美学,等 (9749)
- 高寒植物叶片性状对模拟降水变化的响应..... 王常顺,吕汪汪,孙建平,等 (9760)
- 荒漠草原-灌丛镶嵌体的植被稳态转变特征 于 露,王红梅,郭天斗,等 (9773)
- 古尔班通古特沙漠白梭梭枝干光合及其影响因素..... 冯晓龙,刘 冉,马 健,等 (9784)
- 阔叶红松林不同演替阶段灌木器官的 N、P 分配特征 吴一博,金光泽 (9796)
- 干旱与湿润区流域时变水热耦合参数的归因分析..... 赵香桂,黄生志,赵 静,等 (9805)
- 植株密度和氮素互作对垂穗披碱草生物量分配的影响..... 段媛媛,王淳忆,张曹莉,等 (9815)
- 黄土区不同恢复年限草地群落生物量及根冠比对氮添加的响应..... 樊勇明,李 伟,温仲明,等 (9824)

我国西南喀斯特地区 2001—2018 年植被净初级生产力时空演变	洪辛茜,黄 勇,孙 涛 (9836)
长白山林线过渡带树岛土壤微生物群落结构和生态功能	马锐骛,吴 辉,王志瑞,等 (9847)
三峡库区马尾松人工林土壤酶活性和微生物生物量对氮添加的季节性响应	王丽君,程瑞梅,肖文发,等 (9857)
广州市典型绿地土壤水分入渗特征	杜建会,方 政,林志斌 (9869)
植物-土壤反馈与草地群落演替:菌根真菌和土壤病原菌的调控作用	张 静,王 平,杨明新,等 (9878)
林下植被和凋落物对寒温带森林生长季土壤 CH ₄ 通量的影响	高明磊,满秀玲,段北星 (9886)
杨树人工林幼林阶段林下植被管理对土壤微生物生物量碳、氮酶活性的影响	张贾宇,余 婷,鄂晓伟,等 (9898)
大兴安岭地区兴安落叶松林步甲群落多样性时间动态分析	马美轩,宋悦心,桑卫国,等 (9910)
基于野外观测检验动物廊道选址模型的准确性——以白头叶猴为例	陈秋彤,刘骏杰,覃子浏,等 (9920)
基于 MaxEnt 模型的甘肃安西极旱荒漠国家级自然保护区北山羊生境评估	李 龙,王 亮,温阿敏,等 (9932)
基于最大熵生态位模型的中华穿山甲潜在适宜生境预测	塔 旗,李言阔,范文青,等 (9941)

专论与综述

农作物景观生态研究:概念框架与研究方向	刘珍环,陆晓君 (9953)
根际微生物组中细菌趋化系统的生态功能	孙 雨,常晶晶,田春杰 (9963)
草原畜牧业温室气体排放现状、问题及展望	庄明浩,贡布泽仁,张 静,等 (9970)
植被群落特征对城市生态系统服务的影响研究进展	韩宝龙,束承继,蔡文博,等 (9978)

学术信息与动态

中国荒漠草原的研究态势与热点分析——基于文献计量研究	陈 林,曹萌豪,宋乃平,等 (9990)
多重压力下生态系统可持续发展探究——IGU-GFE 地理学与可持续研讨会简述 ...	詹天宇,赵文武 (10001)

期刊基本参数:CN 11-2031/Q * 1981 * m * 16 * 450 * zh * P * ¥90.00 * 1510 * 43 * 2021-12



封面彩图提供:丁大鹏 E-mail: 28835652@qq.com

致谢:生物多样性调查评估专栏 由中国环境科学研究院肖能文研究员(xiaonw@163.com)和李俊生研究员(ljsh@craes.org.cn)组稿;本专栏得到生态环境部自然保护生态司大力支持。

ACTA ECOLOGICA SINICA Vol.41, No.24 December, 2021 (Semimonthly)

CONTENTS

Biodiversity Survey and Assessment

Composition and species diversity of fishes in Xishuangbanna reach of Lancang River	FU Guiquan, QIN Tao, CHEN Xiaoyong, et al (9557)
Identifying conservation priority sites and gap for the waterbirds habitat along coastal wetlands in mainland China	DUAN Houlang, YU Xiubo, SHI Jianbin, et al (9574)
Survival pressure of a rare and endangered plant natural population of <i>Pinus sylvestris</i> var. <i>Sylvestriformis</i>	ZHANG Jianliang, GUO Ziliang, QIAN Zhedong, et al (9581)
Terrestrial algae diversity of the two world natural heritage sites in China	YAN Ni, ZHANG Teng, XIONG Kangning, et al (9593)
Sampling survey strategy in biodiversity conservation priority areas: the case of Wuling Mountains	JI Shengnan, CUI Shaopeng, DENG Huaqing, et al (9604)
Effect of invaded <i>Ambrosia artemisiifolia</i> on understory native plant community structure in Yili River Valley of Xinjiang	LIU Xiaoyan, ZHU Jinfang, LI Feifei, et al (9613)
Effects of burial depth and planting density on seedling emergence and growth of <i>Ambrosia artemisiifolia</i> of different seed sizes	XIONG Yunqi, ZHAO Caiyun, ZHAO Xiangjian (9621)
Effects of different invasion degrees of <i>Chromolaena odorata</i> on physical and chemical properties of soil in karst areas	ZHU Jinfang, LIU Xiaoyan, LI Junsheng, et al (9630)
Effect of comprehensive physical control technologies on <i>Spartina alterniflora</i> in Dafeng Port, Yancheng	LI Feifei, GAO Kexiao, ZHU Jinfang, et al (9637)
Effects of grazing disturbance on vegetation community characteristics and biomass in Jiajin Mountain, Sichuan Province	HAO Jianfeng, YU Feiyan, YAO Xiaolan, et al (9645)
Research on the planning of priority protected areas in the southern section of Hengduan Mountain under the background of different human disturbance	SONG Chengwen, WANG Wenli, LIU Dongmei, et al (9655)
Multifractal pattern of the response of O ₃ concentration change to NO ₂ emission reduction in suburban forest park during the COVID-19 epidemic	ZHANG Jiao, LIU Chunqiong, WU Bo, et al (9669)
Characteristics of dissolved silicon transport in typical karst watershed in alternating wet and dry season	HAO Zhuo, GAO Yang, ZHANG Qingwen, et al (9681)
Research on China's CO ₂ emissions projections from 2020 to 2100 under the shared socioeconomic pathways	ZHANG Fan, XU Ning, WU Feng (9691)
Geochemical characteristics of key elements in peatland and its underlying potential impact on carbon emission	YU Ke, ZHANG Yin, LÜ Xueyan, et al (9705)
Spatiotemporal evolution characteristics of coordinated development between urbanization and ecological environment in eastern Russia	CHU Nanchen, ZHANG Pingyu, WU Xiangli, et al (9717)
Ecosystem vulnerability in the Tianshan Mountains and Tarim Oasis based on remote sensed gross primary productivity	WANG Hesong, HE Min, YAN Wei, et al (9729)
Relation of biodiversity and ecosystem multifunctionality in Sichuan Province	YANG Miao, XIAO Yi, OUYANG Zhiyun, et al (9738)
Effects of uprooted treefalls and their microsites on decomposition rate and nutrient release of litters in <i>Picea koraiensis</i> - <i>Abies nephrolepis</i> - <i>Pinus koraiensis</i> forest	CHEN Jia, DUAN Wenbiao, QU Meixue, et al (9749)
Responses of plant leaf traits to simulated rainfall changes in alpine region	WANG Changshun, LÜ Wangwang, SUN Jianping, et al (9760)
Bistable-state of vegetation shift in the desert grassland-shrubland anthropogenic Mosaic area	YU Lu, WANG Hongmei, GUO Tiandou, et al (9773)
Photosynthetic characteristics and influencing factors of <i>Haloxylon persicum</i> stems (different diameter classes) in Gurbantonggut desert	FENG Xiaolong, LIU Ran, MA Jian, et al (9784)
Nitrogen and phosphorus allocation traits of shrub organs at different successional stages in the mixed broadleaved-Korean pine forest	WU Yibo, JIN Guangze (9796)

- Comparative analysis of the attribution of time-varying water-heat coupling parameters in arid and humid basin ZHAO Xianggui, HUANG Shengzhi, ZHAO Jing, et al (9805)
- Effects of interaction between plant density and nitrogen application rate on allocation of above/underground biomass of *Elymus nutans* DUAN Yuanyuan, WANG Chunyi, ZHANG Caoli, et al (9815)
- Responses of grassland community biomass and root-shoot ratio to nitrogen addition in different restoration years on the Loess Plateau FAN Yongming, LI Wei, WEN Zhongming, et al (9824)
- Spatiotemporal evolution of vegetation net primary productivity in the karst region of southwest China from 2001 to 2018 HONG Xinqian, HUANG Yong, SUN Tao (9836)
- Soil microbial community structure and ecological function in the tree island at the treeline ecotone of Changbai Mountain MA Ruiao, WU Hui, WANG Zhirui, et al (9847)
- Seasonal responses of soil enzyme activities and microbial biomass to nitrogen addition at different levels in *Pinus massoniana* plantation in the Three Gorges Reservoir area WANG Lijun, CHENG Ruimei, XIAO Wenfa, et al (9857)
- Soil infiltration characteristics of typical green space in Guangzhou City DU Jianhui, FANG Zheng, LIN Zhibin (9869)
- Plant-soil feedbacks and succession dynamics of plant community in grassland: the roles of mycorrhizal fungi and soil pathogens ZHANG Jing, WANG Ping, YANG Mingxin, et al (9878)
- Effects of understory vegetation and litter on soil CH₄ flux during growing season in cold temperate forest in China GAO Minglei, MAN Xiuling, DUAN Beixing (9886)
- Effects of understory vegetation management on soil microbial biomass carbon and nitrogen and extracellular enzyme activities in the early stages of poplar plantation ZHANG Jiayu, SHE Ting, E Xiaowei, et al (9898)
- Temporal-dynamics of ground beetles in *Larix gmelinii* forest in Greater Khingan Mountains, China MA Meixuan, SONG Yuexin, SANG Weiguo, et al (9910)
- Testing accuracy of the animal corridor site selection models based on field observations: A case study of white-headed langur (*Trachypithecus leucocephalus*) CHEN Qitong, LIU Junjie, QIN Ziliu, et al (9920)
- Assessment of habitat suitability of *Asiatic ibex* (*Capra sibirica*) in the Gansu Anxi Extreme-Arid Desert National Nature Reserve based on MaxEnt model LI Long, WANG Liang, WEN Amin, et al (9932)
- Predicting the potential distribution of Chinese pangolin using the MaxEnt model TA Qi, LI Yankuo, FAN Wenqing, SHAN Jihong, et al (9941)
- Review and Monograph**
- The conceptual framework and research direction of cropping landscape ecology LIU Zhenhuan, LU Xiaojun (9953)
- Ecological functions of the bacterial chemotaxis systems in rhizosphere microbiome SUN Yu, CHANG Jingjing, TIAN Chunjie (9963)
- Greenhouse gas emissions from grassland animal husbandry: current status, problems and future perspectives ZHUANG Minghao, Gongbuzeren, ZHANG Jing, et al (9970)
- Research Advances in the impact of vegetation community characteristics on urban ecosystem services HAN Baolong, SHU Chengji, CAI Wenbo, et al (9978)

《生态学报》
Acta Ecologica Sinica

入选“中国科技期刊卓越行动计划”;入围“中国科协生态学领域高质量科技期刊 T1 区”

《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主办的生态学高级专业学术期刊,半月刊,主编傅伯杰院士。本刊坚持百花齐放、百家争鸣,产生于科学性、立足于学术性、着眼于实践性、服务于社会性的办刊宗旨,依靠和团结广大生态学科工作者,为生态学基础理论和应用研究搭建国内一流的学术交流平台,促进生态学研究深入发展,为我国培养和造就生态学科人才,为国民经济建设和发展提供知识创新服务。

《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。所刊文章类型有: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。《生态学报》为国内一流领军期刊;国际生态学 Q1 类期刊;期刊总被引频次居中国自然科学期刊第 1 名,影响因子居生态学学科中文期刊第 1 名;连年获得“中国百种杰出学术期刊”、“中国最具国际影响力学术期刊”和“期刊数字影响力 100 强”等荣誉称号;获得中国科协 TOP50 科技期刊和中国科协中文精品科技期刊建设项目资助;中国科协生态学领域高质量科技期刊 T1 区期刊;中国科技期刊卓越行动计划入选期刊。

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 谢武双 于恩逸 朱晶莹 编辑 宗静 彭小琼

生态学报
(SHENGTAI XUEBAO)
(半月刊 1981 年 3 月创刊)
第 41 卷 第 24 期 (2021 年 12 月)

ACTA ECOLOGICA SINICA
(Semimonthly, Started in 1981)
Vol. 41 No. 24 (December, 2021)

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	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
国内发行	全国各地邮局	Subscribe by	Science Press Tel: 010-64017032, 010-64017539 E-mail: journal@cspg.net
发行代号	82-7	Domestic issue	All Local Post Offices in China 82-7
国外发行	中国国际图书贸易总公司	Foreign issue	China International Book Trading Corporation Add: P.O.Box 399 Beijing 100044, China
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		



ISSN 1000-0933 CN 11-2031/Q 定价 90.00 元