



生态学报

ACTA ECOLOGICA SINICA

第38卷 第12期 Vol. 38 No. 12 2018

ISSN 1000-0933 CN 11-2031/Q

城市群生态安全格局构建专辑

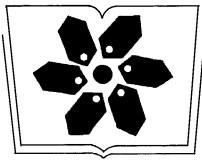
中国生态学会
中国科学院生态环境研究中心

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 12 期 2018 年 6 月 (半月刊)

目 次

导读	陈利顶 (I)
城市生态安全内涵与安全格局	
城市生态安全格局构建:目标、原则和基本框架	陈利顶,景永才,孙然好 (4101)
城郊生态系统土壤安全:问题与挑战	赵方凯,杨磊,陈利顶,等 (4109)
基于生态系统服务供需的城市群生态安全格局构建框架	景永才,陈利顶,孙然好 (4121)
城市化及其景观格局演变对生态安全的影响	
京津冀特大城市群生态安全格局时空演变特征及其影响因素	王振波,梁龙武,等 (4132)
京津冀城市群地区影响城镇化的关键要素识别及其交互作用	孙涛,孙然好,陈利顶 (4145)
闽三角城市群生态环境脆弱性及其驱动力	林金煌,胡国建,祁新华,等 (4155)
基于土地利用格局变化的北京市生境质量时空演变研究	冯舒,孙然好,陈利顶 (4167)
基于人水关系的京津冀城市群水资源安全格局评价	鲍超,邹建军 (4180)
基于多边界改进的京津冀城市群生态系统服务价值估算	刘金雅,汪东川,张利辉,等 (4192)
近 20 年白洋淀湿地水文连通性及空间形态演变	张梦嫚,吴秀芹 (4205)
基于栖息地风险评价模型的海岸带滩涂湿地风险评价——以闽三角为例	陈晔倩,李杨帆,祁新华,等 (4214)
京津冀地区景观稳定性评价	徐秋阳,王巍巍,莫 懼 (4226)
城市化的生态环境效率及其与城市生态安全的关系	
高温天气植被蒸腾与遮荫降温效应的变化特征	王晓娟,孔繁花,尹海伟,等 (4234)
京津冀城市群用水效率及其与城市化水平的关系	海霞,李伟峰,王朝,等 (4245)
京津冀城市群能源供需与城市化的关系模式	王朝,李伟峰,海霞,等 (4257)
城市空气污染对周边区域空气质量的影响	别同,韩立建,何亮,等 (4268)
京津冀城市群空间扩张及其经济溢出效应	别小娟,孙涛,孙然好,等 (4276)
闽三角城市群生产-生活-生态时空格局演化与功能测度	金星星,陆玉麒,林金煌,等 (4286)
生态安全评价与安全格局构建	
区县尺度下的河流生态系统健康评价——以北京房山区为例	曹宸,李叙勇 (4296)
京津冀城市群土地利用生态风险的时空变化分析	汪翡翠,汪东川,张利辉,等 (4307)
基于生态足迹法的闽三角城市群生态安全评价	魏黎灵,李岚彬,林月,等 (4317)
耦合生态系统服务供求关系的生态安全格局动态分析——以闽三角城市群为例	黄智洵,王飞飞,曹文志 (4327)

权衡城市扩张、耕地保护与生态效益的京津冀城市群土地利用优化配置情景分析	刘菁华,李伟峰,周伟奇,等 (4341)
考虑滑坡敏感性的天津市蓟州区生态网络构建.....	王志恒,汪东川,胡炳旭,等 (4351)
基于电路理论的南京城市绿色基础设施格局优化.....	刘 佳,尹海伟,孔繁花,等 (4363)
基于陆海统筹的海岸带城市群生态网络构建方法及应用研究.....	殷炳超,何书言,李 艺,等 (4373)
京津冀城市群生态网络构建与优化.....	胡炳旭,汪东川,王志恒,等 (4383)
城市生态安全格局构建具体技术与管理对策	
基于不同保护目标的河道内生态需水量分析——以琉璃河湿地为例.....	李咏红,刘 旭,李盼盼,等 (4393)
湿地公园鸟类栖息地营建研究——以北京琉璃河湿地公园为例.....	刘 旭,张文慧,李咏红,等 (4404)
城市再生视野下高密度城区生态空间规划方法——以厦门本岛立体绿化专项规划为例.....	董 菁,左 进,李 晨,等 (4412)
京津冀城市群区域产业协同的政策格局及评价	马海涛,黄晓东,罗 奎 (4424)
基于 BP 神经网络的京津冀城市群可持续发展综合评价	孙 湛,马海涛 (4434)
其它	
海河流域面源污染风险格局识别与模拟优化	孔佩儒,陈利顶,孙然好,等 (4445)
黄淮海地区耕地复种指数的时空格局演变.....	李 卓,刘淑亮,孙然好,等 (4454)
基于农牧业产品和生活用水的京津冀地区水足迹时空特征研究.....	程 先,孙然好,陈利顶,等 (4461)
海河流域河流生境功能识别及区域差异	孙然好,程 先,陈利顶 (4473)
绿地滞尘效应和机理评估进展	马克明,殷 哲,张育新 (4482)
近 30 年来京津冀地区湿地景观变化及其驱动因素	吕金霞,蒋卫国,王文杰,等 (4492)
基于 Citespace 软件的生态风险知识图谱分析	祝 薇,向雪琴,侯丽朋,等 (4504)
城市扩张导致京津冀区域生境质量下降.....	邓 越,蒋卫国,王文杰,等 (4516)
快速城市化背景下广西典型城市景观空间格局动态比较研究.....	梁保平,雷 艳,覃业努,等 (4526)

ACTA ECOLOGICA SINICA Vol.38, No.12 June, 2018 (Semimonthly)

CONTENTS

The Concept of Urban Eco-security and Eco-security pattern

- Urban eco-security pattern construction: targets, principles and basic framework CHEN Liding, JING Yongcai, SUN Ranhao (4101)
- Soil security in peri-urban ecosystems: problems and challenges ZHAO Fangkai, YANG Lei, CHEN Liding, et al (4109)
- A theoretical research framework for ecological security pattern construction based on ecosystem services supply and demand JING Yongcai, CHEN Liding, SUN Ranhao (4121)

Urbanization and the Effects of Urban Landscape Change on Eco-security

- Study of the evolution and factors influencing ecological security of the Beijing-Tianjin-Hebei Urban Agglomeration WANG Zhenbo, LIANG Longwu, FANG Chuanglin, et al (4132)
- Identification of key factors and mutual effects of urbanization and Eco-environment in the Beijing-Tianjin-Hebei urban agglomeration SUN Tao, SUN Ranhao, CHEN Liding (4145)
- Ecological environmental vulnerability and its driving forces in urban agglomeration in the Fujian Delta region LIN Jinhuang, HU Guojian, QI Xinhua, et al (4155)
- Spatio-temporal variability of habitat quality based on land use pattern change in Beijing FENG Shu, SUN Ranhao, CHEN Liding (4167)
- Evaluation of water resource security patterns in the Beijing-Tianjin-Hebei urban agglomeration based on human-water relationships BAO Chao, ZOU Jianjun (4180)
- Estimation of the ecosystem service value of the Beijing-Tianjin-Hebei urban agglomeration based on multi-boundary improvement LIU Jinya, WANG Dongchuan, ZHANG Lihui, et al (4192)
- Changes in hydrological connectivity and spatial morphology of Baiyangdian wetland over the last 20 years ZHANG Mengman, WU Xiuqin (4205)
- Assessing ecosystem risk in coastal wetland of the South Fujian Golden Delta using a habitat risk assessment model based on the land-use effect on tidal flat wetland CHEN Yeqian, LI Yangfan, QI Xinhua, et al (4214)
- Evaluation of landscape stability in Beijing-Tianjin-Hebei region XU Qiuyang, WANG Weiwei, MO Li (4226)

The Eco-Environmental Effects of Urbanization and Urban Eco-security

- Characteristics of vegetation shading and transpiration cooling effects during hot summer WANG Xiaojuan, KONG Fanhua, YIN Haiwei, et al (4234)
- Interactions between water use efficiency and urbanization level in the Beijing-Tianjin-Hebei megaregion, China HAI Xia, LI Weifeng, WANG Zhao, et al (4245)
- Analysis on the relationships between energy supply and demand and urbanization in the Beijing-Tianjin-Hebei urban agglomeration, China WANG Zhao, LI Weifeng, HAI Xia, et al (4257)
- Impact of urban air pollution on surrounding areas in Beijing, Tianjin, and Hebei Provinces BIE Tong, HAN Lijian, HE Liang, et al (4268)
- Urban expansion and its spillover effects on economic growth in the Beijing-Tianjin-Hebei urban agglomeration BIE Xiaojuan, SUN Tao, SUN Ranhao, et al (4276)
- Research on the evolution of spatiotemporal patterns of production-living-ecological space in an urban agglomeration in the Fujian Delta region, China JIN Xingxing, LU Yuqi, LIN Jinhuang, et al (4286)

Assessment on Urban Eco-security and Eco-security Pattern Design

- Health assessment of river ecosystem at the district and county scales: A case study of Fangshan district in Beijing CAO Chen, LI Xuyong (4296)
- Spatiotemporal analysis of the dynamic changes in land use ecological risks in the urban agglomeration of Beijing-Tianjin-Hebei region WANG Feicui, WANG Dongchuan, ZHANG Lihui, et al (4307)
- Evaluation of the ecological security of Urban Agglomeration on Min Delta based on ecological footprint WEI Liling, LI Lanbin, LIN Yue, et al (4317)

Dynamic analysis of an ecological security pattern relying on the relationship between ecosystem service supply and demand: a case study on the Xiamen-Zhangzhou-Quanzhou city cluster	HUANG Zhixun, WANG Feifei, CAO Wenzhi (4327)
Scenario simulation balancing multiple objectives for optimal land use allocation of the Beijing-Tianjin-Hebei megaregion	LIU Jinghua, LI Weifeng, ZHOU Weiqi, et al (4341)
Research on the ecological network construction of Jizhou district in Tianjin	WANG Zhiheng, WANG Dongchuan, HU Bingxu, et al (4351)
Structure optimization of circuit theory-based green infrastructure in Nanjing, China	LIU Jia, YIN Haiwei, KONG Fanhua, et al (4363)
Development and application of an ecological network model for a coastal megalopolis based on land-sea integration	YIN Bingchao, HE Shuyan, LI Yi, et al (4373)
Development and optimization of the ecological network in the Beijing-Tianjin-Hebei metropolitan region	HU Bingxu, WANG Dongchuan, WANG Zhiheng, et al (4383)
Practices on Urban Eco-security Pattern Design and Management	
Analysis of ecological water requirement of rivers for different purposes: the case of Liuli River	LI Yonghong, LIU Xu, LI Panpan, et al (4393)
Planning and restoration of bird habitats in a wetland park: a case study of the Liuli River wetland park in Beijing	LIU Xu, ZHANG Wenhui, LI Yonghong, et al (4404)
Research on ecological spatial planning method in high-density area under the urban regeneration vision: a case study of a three-dimensional greening plan on Xiamen Island	DONG Jing, ZUO Jin, LI Chen, et al (4412)
Policy pattern and assessment of regional industrial coordination within the Jing-Jin-Ji urban agglomeration	MA Haitao, HUANG Xiaodong, LUO Kui (4424)
Assessment of the sustainable development of the Beijing-Tianjin-Hebei urban agglomeration based on a back propagation neural network	SUN Zhan, MA Haitao (4434)
Others	
Identification and optimized simulation of non-point source pollution risk patterns in the Haihe River Basin	KONG Peiru, CHEN Liding, SUN Ranhao, et al (4445)
Identifying the temporal-spatial pattern evolution of the multiple cropping index in the Huang-Huai-Hai region	LI Zhuo, LIU Shuliang, SUN Ranhao, et al (4454)
Spatial and temporal patterns of the water footprint in the Beijing-Tianjin-Hebei region with consideration of crop and animal products and domestic water	CHENG Xian, SUN Ranhao, CHEN Liding, et al (4461)
Identification of aquatic ecosystems and regional characteristics in the Haihe River Basin, China	SUN Ranhao, CHENG Xian, CHEN Liding (4473)
Advancement in the method and mechanism of the green space dust retention effect	MA Keming, YIN Zhe, ZHANG Yuxin (4482)
Wetland landscape pattern change and its driving forces in Beijing-Tianjin-Hebei region in recent 30 years	LÜ Jinxia, JIANG Weiguo, WANG Wenjie, et al (4492)
Knowledge mapping analysis of ecological risk research based on Citespace ...	ZHU Wei, XIANG Xueqin, HOU Lipeng, et al (4504)
Urban expansion led to the degradation of habitat quality in the Beijing-Tianjin-Hebei Area	DENG Yue, JIANG Weiguo, WANG Wenjie, et al (4516)
Comparison of changing landscape patterns in the rapidly urbanizing cities of Guangxi	LIANG Baoping, LEI Yan, QIN Yenu, et al (4526)

《生态学报》2018 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,促进生态学研究深入发展,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,同时也刊登生态学新理论、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》为半月刊,大 16 开本,280 页,国内定价 90 元/册,全年定价 2160 元。

国内邮发代号:82-7,国外邮发代号:M670

标准刊号:ISSN 1000-0933 CN 11-2031/Q

全国各地邮局均可订阅,也可直接与编辑部联系购买。欢迎广大科技工作者、科研单位、高等院校、图书馆等订阅。

通讯地址:100085 北京海淀区双清路 18 号 电 话:(010)62941099; 62843362

E-mail: shengtaixuebao@rcees.ac.cn 网 址: www.ecologica.cn

本专辑执行主编 陈利顶

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 12 期 (2018 年 6 月)

ACTA ECOLOGICA SINICA

(Semimonthly, Started in 1981)

Vol. 38 No. 12 (June, 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:北京东黄城根北街 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 地址:东黄城根北街 16 号 邮政编码:100717 电话:(010)64034563 E-mail: journal@ cspg.net	Distributed by	Science Press Add: 16 Donghuangchenggen North Street, Beijing 100717, China Tel: (010)64034563 E-mail: journal@ cspg.net
订 购	全国各地邮局	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
CN 11-2031/Q

国内外公开发行

国内邮发代号 82-7

国外发行代号 M670

定价 90.00 元