《Journal of Natural Resources》 2009-02

Study on the Impact of Socio-economic Driving Factors of Land Use Change on the Ecosystem Service Values in Fujian Province

YAO Cheng-sheng1,ZHU He-jian2,Lü Xi1,LIU Yao-bin1(1.Economic Development Research Center of Central China,Nanchang University,Nanchang 330047,China;2.Natural Resources Research Centre,Fujian Normal University,Fuzhou 350007,China)

Based on XIE Gao-di's coefficient of ecosystem services value,the land use change in Fujian province from 1995 to 2005 and the ecosystem services value change caused by it were quantitatively analyzed;and we also analyzed the correlation and sensitivity between the changes of ecosystem services value and the social economic impact factors of land use change including the total population amount,GDP and the urbanization level.The results showed: ①From 1995,the ecosystem services value of farmland,forest and grassland decreased 5.51%,0.39% and 7.23% respectively;while the value of garden plot,construction land and waters increased 9.61%,23.03% and 2.27%.Because of the ecosystem services value decreased by 17.14×108 yuan which was much greater than the value increased by 9.47×108 yuan,the total ecosystem services value of Fujian province decreased 7.67×108 yuan in total,and the annual average decreased was 0.697×108 yuan.②The changes of ecosystem services value in Fujian province had a obvious negative correlation with the total population amount,GDP and the urbanization level,which meant that socio-economic development had great pressure and obvious negative effect on the environment;from 1995 to 2005,the average environmental price for the socio-economic development was 0.697×108yuan/yr-1.③The changes of ecosystem services value in Fujian province lack sensitivity with the total population amount,GDP and the urbanization level;combined with the viewpoints of system science,the environment was the key parameter in the population-economy-environment combined system,and had a decisive effect on it,therefore more attention should be paid to the protection of the environment.Relatively speaking,the changes of ecosystem services value was most sensitive to the population increase,and had less sensitivity to the urbanization level and the least sensitivity to the GDP increase.Over the past 11 years,the sensitivity coefficient of the changes of ecosystem services value to the total population amount,GDP and the urbanization level had been increased 24.45,39.67 and 23.67 times respectively,which meant that the environmental price of the same amount of socio-economic development was dramatically increased year by year.

【Key Words】： **land use ecosystem services valuation change sensitivity Fujian province**

【Fund】： 江西省教育厅科技项目(GJJ08014);; 福建省自然科学基金项目(D0610013)

【CateGory Index】： F301.2

【References】

Chinese Journal Full-text Database 10 Hits

1 ZOU Jin-lang et al(Institute of Poyang Lake Eco-economics,Jiangxi University of Finance and Economics,Jiangxi Province,Nanchang,Jiangxi 330013);Response of Ecosystem Service Value Based on Land Use Changes and Analysis of Its Driving Factors in Hilly Region with Red Soil[J];Journal of Anhui Agricultural Sciences;2011-09

2 XIE Lijian,ZHOU Suhong,YAN Xiaopei(Center for Urban and Regional Research,Sun Yat-Sen University,Guangzhou510275,China);A Review of the Recent Researches on China's Urbanization and Global Environmental Change[J];Progress in Geography;2010-08

3 WU Hai-zhen1,Aruhan2,GUO Tian-bao1,SUN Zi-ying2,(1.College of Geographic Science,Inner Mongolia Normal University,Hohhot,Inner Mongolia 010022,China;2.College of Eco Environment,Inner Mongolia Agricultural University,Hohhot,Inner Mongolia 010019,China);Impacts of Land Use Change on Ecosystem

3 Agricultural University,Hohhot,Inner Mongolia 010019,China);Impacts of Land Use Change on Ecosystem Services Value in Duolun County of Inner Mongolia Based on RS and GIS[J];Scientia Geographica Sinica;2011-01

4 Mamattursun·EZIZ 1,2,Hamid·YIMIT 2,3,Dilara·NIJAD 2,WEI Bin 2(1.Postdoctoral Station for Theoretical Economics,Xinjiang University,Urumqi,Xinjiang 830046,China; 2.Key Laboratory of Oasis Ecology,Ministry of Education,Urumqi,Xinjiang 830046,China;3.College of Geographical Science and Tourism,Xinjiang Normal University,Urumqi,Xinjiang 830054,China);The Response of Ecosystem Services Value to Land Use Change in Keriya Oasis,Northern Slope of Kulun Mountain[J];Scientia Geographica Sinica;2012-09

5 ZOU Jin-lang1,WANG Jin-zheng1,WANG peng2,LE Wen-nian3 1.Institute of Poyang lake Eco-economics,Jiangxi University of Finance and Economics,Nanchang 330013;2.Jiangxi University of Finance and Economics Library,Nanchang 330013;3.Land Consolidation and Rehabilitation Center of Jiangxi Province,Nanchang 330006;Response of Ecosystem Service Value Based on Land Use Changes and Analysis of its Driving Factors in Typical Hilly Region with Red Soil[J];农业科学与技术(英文版);2010-Z2

6 MA Li-bang,NIU Shuwen,YANG Li-na,MA Li(College of Earth and Environmental Science/Key Laboratory of Western China's Environmental Systems,Lanzhou University,Lanzhou 730000,China);Service Value of the Ecosystem and Regional Sustainable Development of Dunhuang City[J];Journal of Ecology and Rural Environment;2010-04

7 YANG Zhao-ping,GAO Ji-xi,SHEN Wei-shou,LIU Bo,ZOU Chang-xin(Nanjing Institute of Environmental Sciences,Ministry of Environmental Protection,Nanjing 210042,China);Research on Ecosystem Service in China Based on Analysis of Literature[J];Journal of Ecology and Rural Environment;2011-06

8 YE Yan-qiong,ZHANG Jia-en,LI Yun,LI Yi-mian(1.South China Agricultural University,a.Institute of Tropical and Subtropical Ecology;b.Key Laboratory of Ecological Agriculture of Ministry of Agriculture of the People's Republic of China;c.Key Laboratory of Agro-ecology and Rural Environment of Guangdong Regular Higher Education Institutions,Guangzhou,Guangdong 510642,China);Impact of Socio-economic Driving Factors of Agricultural Land Use Change on Agroecosystem Service Values in Guangdong Province[J];Research of Agricultural Modernization;2011-06

9 MAO Chang-bao1,2,CHEN Yong1(1.Institute of environment and regional Development,Sichuan University,Chengdu610064,China;2.Institute of Population Research,Sichuan University,Chengdu610064,China);The Driving Force and Prediction of the Evolution of Land Use and Ecosystem Services Value——A case Study of Jiangsu Province[J];Research of Soil and Water Conservation;2010-04

10 ZHANG Fei,KONG Wei (School of Urban and Environment,Huaiyin Normal University,Huai'an 223300,China);ECOLOGICAL EFFECT EVALUATION ON FARMLAND NON-AGRICULTURAL CONVERSION BASED ON ECOSYSTEM SERVICE VALUES IN YANGZHOU CITY[J];Resources & Industries;2010-06

【Citations】

Chinese Journal Full-text Database 10 Hits

1 XIE Chun-hua~1,2,WANG Ke-lin~1,CHEN Hong-song~1,ZHANG Ming-yang~1(1.Institute of Subtropical Agriculture,Changsha 410125,China;2.The Graduate School of The Chinese Academy of Sciences,Beijing 100039,China);EFFECTS OF LAND USE CHANGE ON THE ECOSYSTEM SERVICES VALUE IN THE DONGTING LAKE AREA[J];Resources and Environment in the Yangtze Basin;2006-02

2 ZHANG Bao-lei1,2,ZHANG Shu-min3,ZHOU Qi-gang1,2,ZHOU Wan-cun1(1.Chengdu Institute of Mountain Hazards and Environment,Chinese Academy of Sciences,Chengdu 610041,China;2.Graduate University of Chinese Academy of Sciences,Beijing 100039,China;3.Shandong economic University,Jinan 250014,China);DYNAMICS IN LAND USE AND ECOSYSTEM SERVICE——A CASE OF DANING RIVER WATERSHED IN THREE GORGES RESERVOIR AREA[J];Resources and Environment in the Yangtze Basin;2007-02

3 PENG Jian, WANG Yanglin, ZHANG Yuan, LI Weifeng, WU Jiansheng, CHEN Dawei(College of Environmental Sciences, Peking University, Beijing 100871, China);Land Use Change and Its Ecological Effect in the Ecotone of Northwest of Yunnan Province, China:A Case Study of Yongsheng County[J];Acta Geographica Sinica;2004-04

4 Li Xiubin(Institute of Geography,Chinese academy of Science and the State Planning ommission of P.R.China,Beijing 100101);A REVIEW OF THE INTERNATIONAL RESEARCHES ON LAND USE/LAND COVER CHANGE[J];ACTA GEOGRAPHICA SINICA;1996-06

5 YAO Cheng-sheng ZHU He-jian(Research Center of Natural Resources,Fujian Normal University,Fuzhou 350007 China);Emergy Analysis and Assessment of Sustainability on the Eco-economic System of Fujian Province[J];Journal of Fujian Normal University(Natural Science Edition);2007-03

6 CAI Bang-Cheng,LU Gen-Fa~*,SONG Li-Juan,HUANG He-Ping,HAN Shang-Fu,CHEN KE-Liang (State Key Laboratory of Pollution Control and Resource Reuse,School of the Environment,Nanjing University,Nanjing 210093,China).;Variation of ecosystem services' value of Kunshan based on the land use change[J];Acta Ecologica Sinica;2006-09

7 MIN Jie,GAO Wei,LI Xiao-yun,ZHANG An-lu(Land Management Department of Huazhong Agricultural University,Wuhan 430070);Analysis on Spatial-Temporal Changes of Land Use and Ecosystem Services Value in Wuhan City[J];Journal of Soil and Water Conservation;2006-04

8 XIAO Yu, XIE Gaodi and AN Kai (Institute of Geographical Science and Natural Resource Research, Chinese Academy of Sciences, Beijing 100101, China);Economic value of ecosystem services in Mangcuo Lake drainage basin[J];Chinese Journal of Applied Ecology;2003-05

9 WANG Zong-ming, ZHANG Shu-qing, ZHANG Bai (Northeast Institute of Geography and Agricultural Ecology, Chinese Academy of Sciences, Changchun 130012, China). China Environmental Science, 2004,24(1):125~128;Effects of land use change on values of ecosystem services of Sanjiang Plain, China[J];China Environmental Science;2004-01

10 HUANG Qing~(1,2),SUN Hong-bo~(1,2),WANG Rang-hui~(1),ZHANG Hui-zhi~(1)(1.Xinjiang Institute of Ecology and Geography,Chinese Academy of Sciences,Urumqi 830011,China;2.Graduate School of the Chinese Academy of Sciences,Beijing 100039,China);Effect of Oasis Land-use and Land-cover Change on Ecosystem Service Values in Typical Mountain-Oasis-Desert System in Arid Region[J];Journal of Desert Research;2007-01

【Co-citations】

Chinese Journal Full-text Database 10 Hits

1 Cui Ying1 et al.(1 College of Resources and Environmental Science,Xinjiang University,Urumqi 830046,China;2 Key Laboratory of Oasis Ecology in Xinjiang,Urumqi 830046,China);Analysis on Dynamic Change in Land Utilization in Karamay City,Xinjiang[J];Anhui Agricultural Science Bulletin;2009-05

2 Tang Juan1,2 et al.(1 College of Resources and Environmental Science,Xinjiang University,Urumqi 830046,China;2 Key Laboratory of Oasis Ecology in Xinjiang,Urumqi 830046,China);Variation of Ecosystem Services Value in the City of Turpan Based on the Land Use Change[J];Anhui Agricultural Science Bulletin;2011-01

3 WANG Zhao-hua et al(College of Geography and Environment,Northwest Normal University,Lanzhou,Gansu 730070);Study on the Effect of Land Use Change on the Ecoenvironment in Hexi Region[J];Journal of Anhui Agricultural Sciences;2006-01

4 SONG Cheng-shun et al (Department of Urban-rural Planning and Resources Science,Xianning College,Xianning,Hubei 437005);Analysis of Land Use Change in Dongting Lake Plain[J];Journal of Anhui Agricultural Sciences;2006-11

5 TANG Jin-hua (Xianning College,Xianning,Hubei 437101);Analysis of the Driving Force of Land Use Change in Nanchang City[J];Journal of Anhui Agricultural Sciences;2006-12

6 LI Qian et al (College of Resources and Environmental Science,Southwest China Normal University,Chongqing 400715);Analysis of the Social Driving Force of Land Use Change in Yongchuan of Chongqing[J];Journal of Anhui Agricultural Sciences;2006-13

7 ZHANG Cai-yun et al (Department of Urban and Resources Sciences,Nanjing University,Nanjing,Jiangsu 210093);Analysis of Land Use Change and Driving Force of Wujiang City[J];Journal of Anhui Agricultural Sciences;2006-15

8 WANG Li-ping et al (Department of Urban and Resource Sciences,Nanjing University,Nanjing,Jiangsu 210093);Study on the Change of Regional Land Use Structure in Chongzuo City[J];Journal of Anhui Agricultural Sciences;2006-17

9 LI De-yi et al(College of Geography and Resource Management,Ludong University,Yantai,Shandong 264025);Analysis of Land-use Dynamic Change in Penglai City Based on RS and GIS and its Mechanism[J];Journal of Anhui Agricultural Sciences;2006-20

10 DONG Jie et al(College of Environment and Planning,Liaocheng University,Liaocheng,Shandong 252059);Analysis of Spatial-temporal Change and Driving Mechanism of Land-use Structure in Shandong Province[J];Journal of Anhui Agricultural Sciences;2006-20

China Proceedings of conference Full-text Database 10 Hits

1 ZHANG Jin-gao (China University of Geosciences,Wuhan 430074,China);Applying the Scientific Views of Development to Construct Discipline System Featured with Earth System Science[A];[C];2005

2 ANWAER Maimaitiming1,2,3, ZHANG Xiaolei2 (1. School of Geographic Sciences and Tourism of Xinjiang Normal University, Urumqi 830054, China; 2.Institute of Ecology and Geography of Chinese Academy of Science, Urumqi 830011, China; 3.Graduate Institute of Chinese Academy of Science, Beijing 100049, China);Harmony Degree Analysis between Urbanization and Eco-environment in Southern Xinjiang Based on Fuzzy Mathematics[A];[C];2010

3 TANG Xiumei1,2, CHEN Baiming1, LU Qingbin3, SONG Wei1 (1.Institute of Geographic Sciences and Natural Resources Research,Chinese Academy of Sciences, Beijing 100101,China; 2.Gradate University of Chinese Academy of Sciences,Beijing 100049,China ; 3. Chinese Research Academy of Environmental Sciences, Beijing 100012,China);Primary Exploration on the Ecological Land Use Classification in Beijing[A];[C];2010

4 FAN Shenglong (Collage of Environment and Resources Sciences,Fujian Agriculture and Forestry University, Fuzhou 350002, China);Study on Cropland Expropriation Compensation from the Perspective of Cropland Value——A Case Study of Fujian Province[A];[C];2010

5 Ge Shao-yun (Northwest University for Nationnalites,Lan zhou 730030,China);Research on the Drainage Environment enduring Ecological Compensation Mechanism In Ethnic Area——Take the ecological protection and construction projects of Yellow River important water supply ecological functions area of Gannan Tibetan Autonomous Prefect[A];[C];2009

Autonomous Prefect[A];[C];2009

6 Zhang Fengtai~1 Su Weici~(1,2) Zhao Weiquan~1 (1.Department of Geography,Chongqing Normal University,Chongqing,400047,China 2.Research Center of Environment and Development of Karst Resources,Guiyang,Guizhou,550001,China);A Research on the Service Value Change in the Urban Ecosystem of Chongqing Based on the LUCC[A];[C];2009

7 Zhang Benyun~(1,2) Shen Huaifei~2 Zheng Jinggang~2 Wu Guoxi~2 (1.Institute of Surveying and Mapping,Information Engineering University,Zhengzhou 450052,China;2.Urban and Environmental Institute,Xuchang University,Xuchang 461000 China);GIS-based Analysis on the Landscape Spatial Patterns of Land-use in Henan Province[A];[C];2008

8 Su Chao-yang Miao Chang-hong (Research Center of Yellow River Civilization and Sustainable Development and College of Environment and Planning,Henan University,Kaifeng 475004,China);Based on the Value of Ecosystem Services of Land Use Planning assessment in Kaifeng[A];[C];2008

9 Cui Feng (College of Humanities and Social Sciences,Nanjing Agriculture University,Nanjing 210095,China);Quantitative Judgment for Coordinated Development of Costal City's Ecological Environment and Tourist Economy——A Case Study of Shanghai City[A];[C];2008

10 Li Yangbing, Tan Qiu, Bai Xiaoyong, Wang Shijie (College of Geography and Biology Science, Guizhou Normal University, 550001; National Key Laboratory of Environmental Geochemistry, Geochemistry Institute of CAS, 550002: Guiyang, China);Landscape pattern variation and its ecological effects of karst area[A];[C];2006

【Co-references】

Chinese Journal Full-text Database 10 Hits

1 XIE He-fang et al(Key Laboratory of Soil and Water Conservation & Desertification Combating of Ministry of Education,College of Soil and Water Conservation,Beijing Forestry University,Beijing 100083);Analysis of Water Quality Time Course Evolution Pattern of Baihe Waters[J];Journal of Anhui Agricultural Sciences;2009-24

2 TONG Xin-fang et al(School of Resource and Environmental Science,Guangxi Teacher's College,Nanning,Guangxi 530001);Guangxi Ecosystem Service Value Spatial Distribution and Ecological Protection Countermeasure[J];Journal of Anhui Agricultural Sciences;2010-07

3 TANG Jia et al(Tibet Argricultural and Animal Husbandy College,Linzhi,Tibet 860000);Research Progress of Evaluation Services Function of Forest Ecosystem[J];Journal of Anhui Agricultural Sciences;2010-31

4 CHEN Xi-rui et al(Department of Tourism and Environment,Xi'an University of Arts and Science,Xi′an,Shaanxi 710065);Research on Land Use Change and Its Ecosystem Services Value in Hancheng City[J];Journal of Anhui Agricultural Sciences;2010-34

5 ZHANG Zhi qiang 1,2 , XU Zhong min 1 , WANG Jian 1 , CHENG Guo dong 1 (1.State Key Laboratory of Frozen Soil Engineering, CAREERI,CAS, Lanzhou Gansu730000, China; 2.ScientificInformation Center for Resources and Environment, CAS;Value of the Ecosystem Services in the Heihe River Basin[J];Journal of Glaciolgy and Geocryology;2001-04

6 ZHAO Wen zhi, CHENG Guo dong (State Key Laboratory of Frozen Soil Engineering, CAREERI, CAS, Lanzhou Gansu, 730000, China);Ecohydrology——A Science for Studying the Hydrologic Mechanisms of Ecological Patterns and Processes[J];Journal of Glaciolgy and Geocryology;2001-04

7 JIAO Yuan-mei 1,2, MA Ming-guo 1, XIAO Du-ning 1 (1.State Key Laboratory of Frozen Soil Engineering, CAREERI, CAS, Lanzhou Gansu 730000, China; 2.Tourist and Geography Department, Yunnan Normal University, Kunming Yunnan 650092, China);Research on the Landscape Pattern of Zhangye Oasis in the Middle Reaches of Heihe River[J];Journal of Glaciology and Geocryology;2003-01

8 WANG Shu-gong, KANG Er-si, LI Xin(Cold and Arid Regions Environmental and Engineering Research Insttute, Chinese Academy of Sciences, Lanzhou Gansu 730000, China);Progress and Perspective of Distributed Hydrological Models[J];Journal of Glaciology and Geocryology;2004-01

9 DUAN Jian-jun1, WANG Yan-guo1,WANG Xiao-feng2,MAO Wei-yi3,ZHANG Xiong-wen1,WANG Jin1,GAO Qian-zhao4,SHEN Yong-ping4,WANG Shun-de1(1.Aksu Hydrological and Water Resources Bureau, Aksu Xinjiang843000, China; 2.Changji Hydrological and Water Resources Bureau, Changji Xinjiang831100, China; 3.Xinjiang Climate Center, rümqi Xinjiang830002, China; 4.Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, Lanzhou Gansu730000, China);Impact of Climate Change and Human Activities on the Water Resources and Ecological Environments in the Tarim River Basin in 1957—2006[J];Journal of Glaciology and Geocryology;2009-05

10 PENG Jian~1),2) WANG Yanglin~1),2) CHEN Yanfei~1),2) LI Weifeng~1),2) JIANG Yiyi~1),2)(~1)College of Environmental Sciences, Peking University, Beijing, 100871; ~2)Center for Digital City and Urban Landscape, Shenzhen Graduate School, Peking University, Shenzhen, 518057);Economic Value of Urban Ecosystem Services:A Case Study in Shenzhen[J];Acta Scicentiarum Naturalum Universitis Pekinesis;2005-04

【Secondary References】

Chinese Journal Full-text Database 10 Hits

DENG Qian-ting et al (College of Information,South China Agriculture University,Guangzhou,Guangdong

1 510642);The Analysis and Measurement of Land Use Change and Ecosystem Services Value[J];Journal of Anhui Agricultural Sciences;2011-12

2 ZHANG Fei et al(School of Environmental Science and Engineering,Guangzhou University,Guangzhou,Gungdong 510006);Adsorption Behavior of Thallium by Red Soil and Loess[J];Journal of Anhui Agricultural Sciences;2011-21

3 ZHOU De-cheng,ZHAO Shu-qing,ZHU Chao(College of Urban and Environmental Sciences,and Key Laboratory for Earth Surface Processes of the Ministry of Education,Peking University,Beijing 100871,China);The Impact of the Grain for Green Project on the Land Use/Cover Change in the Northern Farming-pastoral Ecotone, China —A Case Study of Kezuohouqi County[J];Scientia Geographica Sinica;2012-04

4 TENG Yao-hua et al(Songtao County Environmental Protection Bureau,Tongren,Guizhou 554100);Dynamic Evaluation of the Effect of Land Use Change on Eco-environment[J];Journal of Anhui Agricultural Sciences;2012-19

5 HU Yun-feng1,YAN Yan1,YU Guo-mao1,LIU Yue1,2,ALATENG Tuya3(1.Institute of Geographic Sciences and Natural Resources Research,Chinese Academy of Sciences,Beijing 100101,China; 2.Graduate University of the Chinese Academy of Sciences,Beijing 100049,China;3.Inner Mongolia Normal University,Hohhot,Inner Mongolia 010022,China);The Ecosystem Distribution and Dynamics in Xilingol League in 1975-2009[J];Scientia Geographica Sinica;2012-09

6 Mamattursun·EZIZ 1,2,Hamid·YIMIT 2,3,Dilara·NIJAD 2,WEI Bin 2(1.Postdoctoral Station for Theoretical Economics,Xinjiang University,Urumqi,Xinjiang 830046,China; 2.Key Laboratory of Oasis Ecology,Ministry of Education,Urumqi,Xinjiang 830046,China;3.College of Geographical Science and Tourism,Xinjiang Normal University,Urumqi,Xinjiang 830054,China);The Response of Ecosystem Services Value to Land Use Change in Keriya Oasis,Northern Slope of Kulun Mountain[J];Scientia Geographica Sinica;2012-09

7 LU Jian-shu 1,WU Quan-yuan 2,ZHANG Zu-lu 2,LIU Yang 3(1.The Key Laboratory of Coast and Island Development of Ministry of Education,Nanjing University,Nanjing 210093,China;2.College of Population Resource and Environment,Shandong Normal University,Jinan 250014,China;3.State Key Laboratory of Pollution Control and Resource Reuse,School of the Environment,Nanjing University,Nanjing 210046,China);Land Use Change and Ecological Security Assessment in Jining City Based on RS and GIS[J];Scientia Geographica Sinica;2012-08

8 KONG Da1,WANG Guo-qiang2,GONG Wen-feng1(1.College of Water Conservancy and Electric Power Engineering,Heilongjiang University,Harbin 150080,China;2.Water Scientific Research Institute of Harbin City,Harbin 150001,China);Land use and its change in the value of ecosystem services based on RS and GIS[J];Journal of Engineering of Heilongjiang University;2011-04

9 CHEN Neng-wang,WANG Long-jian,LU Ting(Fujian Provincial Key Laboratory for Coastal Ecology and Environmental Studies/ Environmental Science Research Center,Xiamen University/Coastal and Ocean Management Institute,Xiamen University,Xiamen 361005,China);Watershed Scale Ecosystem Services:Progress and Prospective[J];Journal of Ecology and Rural Environment;2012-02

10 YAO Yao,ZHOU Zhong-xue(College of Tourism and Environment,Shaanxi Normal University,Xi'an 710062,China);Influence of Land Use Change on Service Function of Ecosystem and Their Relationship:Taking Example for Guanzhong Area[J];Acta Agriculturae Jiangxi;2012-04

【Secondary Citations】

Chinese Journal Full-text Database 10 Hits

1 ZHANG Zhi qiang 1,2 , XU Zhong min 1 , WANG Jian 1 , CHENG Guo dong 1 (1.State Key Laboratory of Frozen Soil Engineering, CAREERI,CAS, Lanzhou Gansu730000, China; 2.ScientificInformation Center for Resources and Environment, CAS;Value of the Ecosystem Services in the Heihe River Basin[J];Journal of Glaciolgy and Geocryology;2001-04

2 LI Yan~1,ZHAO Kun~1,FANG Jing-yun~1,XIE Ping~2 (1. Department of Ecology, Peking University, Beijing 100871, China; 2. Institute of Hydrobiology, The Chinese Academy of Sciences, Wuhan 430072, China);LAND USE CHANGE IN URBAN LAKE WATERSHED ——A CASE STUDY AT DONGHU LAKE, WUHAN[J];Resources and Environment in the Yangtze Basin;2004-03

3 NING Long-mei~(1,2), WANG Xue-lei~1, WU HOU-Jian~1(1.Institute of Geodesy and Geophysics,The Chinese Academy of Sciences, Wuhan 430077,China;2.School of Resource and Environmental Sciences,Wuhan University,Wuhan 430072,China);ON CHANGES OF WETLAND ECOLOGY LANDSCAPE PATTERN OF WUHAN CITY BY RS AND BIS[J];Resources and Environment in the Yangtze Basin;2005-01

4 ZHANG Bao-lei1,2, ZHOU Wan-cun1, MA Ze-zhong1,2 (1.Chengdu Institute of Mountain Disaster and Environment, The Chinese Academy of Sciences, Chengdu 610041,China; 2.Graduate School of The Chinese Academy of Sciences, Beijing 100039,China);EXPOLORATIONS ON METHOD OF AUTO-CLASSIFICATION FOR THE MAIN TYPES OF GROUND OBJECTS IN THE THREE-GORGE REGION[J];Resources and Environment in the Yangtze Basin;2005-04

5 CHEN Bai ming 1, LIU Xin wei 1, YANG Hong 2 (1 Institute of Geographic Sciences and Natural Resources Research,CAS, Beijing 100101 2 Land consolidation and rehabilitaion center,the Ministry of Land and Resources, Beijing 100035) ;Review of Most Recent Progresses of Study on Land Use and Land Cover Change[J];Progress In Geography;2003-01

LI Kendong 1,2 ,ZHUANG Dafang 2,WANG Hongzhi 3,WU Shengjun 1(1 Institute of Geodesy and Geophysics, CAS, Wuhan 430077, China; 2 Institute of Geographic Sciences and Natural Resources Research, CAS, Beijing 100101, China;3 Faculty of Life Science, Hubei University, Wuhan 430062, China);Spatial-temporal Changes of the Land Use/Cover in the Dongting-Lake Area during the Last Twenty Years[J];Progress In Geography;2003-02

Wang Xiulan Bao Yuhai (Institute of Remote Sensing Application, Chines Academy of Sciences,Beijing 100101);STUDY ON THE METHODS OF LAND USE DYNAMIC CHANGE RESEARCH[J];PROGRESS IN GEOGRAPHY;1999-01

CHEN Siqing 1,2 , LIU Jiyuan 2 , ZHUANG Dafang 2 , XIAO Xiangming 2,3 (1. Institute of Remote Sensing Applications,CAS,Beijing100101, China; 2. In stitute of Geographic Sciences and Natural Resources Research,CAS,Beijing100101, China;3. Institute for the Study of Earth,Oceans and Space,University of New Hampshire,Durham,NH03824, USA);Quantifying Land Use and Land Cover Change in Xilin River Basin Using Multi-temporal Landsat TM/ETM Sensor Data[J];Acta Geographica Sinica;2003-01

LI Haitao1*, LIAO Yingchun1, YAN Maochao1, HU Dan2(1. Institute of Geographic Sciences and Natural Resources Research, CAS, Beijing 100101, China; 2. Research Center for Eco-Environmental Sciences, CAS, Beijing 100085, China);Emergy Evaluation and Assessment of Sustainability on the Eco-Economic System of Xinjiang[J];Acta Geographica Sinica;2003-05

JIA Yanan 1, 2 , YUAN Daoxian 1, 2 (1. College of Resource and Environment Sciences, Southwest China Normal University, Chongqing400715, China;2. Institute of Karst Geology, CAGS, Karst Dynamics Laboratory, Ministry of Land and Resources, Guilin541004, China);The Impact of Land Use Change on Karst Water in Shuicheng Basin of Guizhou Province[J];Acta Geographica Sinica;2003-06