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Evaluating Ecosystem Service Valuation in China Based on the IGBP Land Cover Datasets

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Based on the 1 km² IGBP global land cover dataset, the ecosystem service valuation of China and its provinces were estimated by using the Costanza's eco-value. As a result, the eco-value of the whole China was 40 690 hundred million RMB, which was lower than the valuation in by others. Probably there were two reasons: the ecological environment in China was destroyed seriously during 1990s, which led to a lower eco-value. On the other hand, due to the scale dependence of eco-value, the 1 km² land cover dataset would overlooked those land types, whose areas were less than 1 km² while the eco-value was higher. However, the problem can be solved easily by increasing the resolution. Different classification methods brought about different dataset types. Comparing the GDP with the eco-value of the provinces, we can find that eco-value were less than the GDP, showing that the economic development disjointed with the environment sustainable management. Land cover is used as a proxy for ecosystem service, the value of NDVI were the promise of land classification. At the same time, the authors analyzed the relationship between the NDVI value and the eco-value. The regression model gave a good coefficient ($R^2=0.789$), which showed the assessment of eco-value based on land cover were feasible. Further more, land cover dataset can be used to assess the dynamics eco-value. Because of the measure resolution and the inaccuracy of the calculating method, the eco-value in the paper is a conservative and lower value.

【Key Words】 : **IGBP land cover ecosystem service value NDVI China**

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【References】

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- 1 GUO Qi-qiang et al(Institute of Plateau Ecology,Linzhi,Tibet 860000);[Value Evaluation of the Forest Ecosystem Service Function in the Linzhi Area of Tibet](#)[J];Journal of Anhui Agricultural Sciences;2009-18
- 2 DENG Zhao-ping~1,2, GUO Ni~1, WANG Jie-min~1,3, MA Jin-hui~2(1. Institute of Arid Meteorology of China Meteorological Administration, Key Laboratory of Arid Climatic Change and Reducing Disaster of Gansu Province, Key Open Laboratory of Arid Climate Change and Disaster Reduction of China Meteorological Administration, Lanzhou Gansu 730020, China; 2. Key Laboratory of Western China's Environmental Systems of Ministry of Education of China, Lanzhou University, Lanzhou Gansu 730000, China; 3. Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Science, Lanzhou Gansu 730000, China); [Vegetation Cover Variation in Northwest China during the Past 22 Years](#)[J]; Journal of Glaciology and Geocryology; 2006-05
- 3 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
- 4 Hao Huimei, Ren Zhiyuan, Xue Liang, Jiang Yanfei (College of Tourism and Environmental Science, Shanxi Normal University, Xi'an 710062); [Quantitative Study on Response of Ecosystem to Land Use/Cover Changes in Yulin Area Based on 3S Technology](#)[J]; Progress in Geography; 2007-03
- 5 LI Yang-bing~(1,2), WANG Shi-jie~1, ZHOU De-quan~(1,2)(1. College of Geography and Biology Science, Guizhou Normal University, Guiyang 550001, China; 2. State Key Laboratory of Environmental Geochemistry, Institute of Geochemistry, Chinese Academy of Sciences, Guiyang 550002, China); [RESEARCH ON THE](#)

- institute of Geochemistry, Chinese Academy of Sciences, Guiyang 550002, China); [RESEARCH ON THE ECOSYSTEM SERVICE EVALUATION OF MAOLAN KARST FOREST](#)[J]; Geology-geochemistry; 2005-02
- 6 WEI Huan-qi¹, LIU Ying^{1,2}(1. College of Geography and Environment, Jiangxi Normal University, Nanchang 330022, China; 2. Key Laboratory of Poyang Lake Wetland and Watershed Research, Ministry of Education, Jiangxi Normal University, Nanchang 330022, China); [Analysis on land use change and ecological services value in Poyang Lake ring](#)[J]; Guangdong Agricultural Sciences; 2009-07
- 7 CHENG Ying¹, XU Dian-xiang², GUO Ni³(1. Gansu Provincial Meteorological Bureau, Lanzhou 730020, China; 2. Jiuquan Meteorological Bureau, Jiuquan 735000, China; 3. Institute of Arid Meteorology & Key Open Laboratory of Arid Climate Change and Disaster Reduction, China Meteorological Administration; Key Laboratory of Arid Climate Change and Disaster Reduction of Gansu Province, Lanzhou 730020, China); [Analysis on the Vegetation Change in the Qilian Mountains since Recent 22 Years](#)[J]; Arid Zone Research; 2008-06
- 8 ZHENG Jian-wei et al (School of Environmental Science and Engineering, Nanjing University of Information and Science and Technology, Nanjing, Jiangsu 210044); [Assessment of Ecosystem Service Value of Natural Reserve in Hainan Island](#)[J]; Journal of Anhui Agricultural Sciences; 2009-31
- 9 WANG Bing¹, WEI Jiang-sheng², HU Wen¹(1. Research Institution of Forest Ecology, Environment and Protection, CAF, Beijing 100091, China; 2. College of Ecology and Environment Science, Inner Mongolia Agricultural University, Hohhot 010019, China); [The Assessment of Forest Ecosystem Services Evaluation in Qiandongnan of Guizhou Province](#)[J]; Journal of Guizhou University (Natural Science Edition); 2009-05
- 10 MA Jian-wei¹, ZHANG Song-zhi¹, GUO Xiao-long¹, ZHANG Hui-jun¹, CHEN Li-tong², ZHAO Chang-ming²(1. Xiaolongshan Research Institute of Forestry, Tianshui 741022, China; 2. School of Life Sciences, Lanzhou University/Key Laboratory of Arid and Grassland Ecology of Ministry of Education, Lanzhou 730000, China); [Evaluation on Service Function of the Forest Ecosystem of Xiaolong Mountain](#). [J]; Journal of Ecology and Rural Environment; 2007-03

【Citations】

Chinese Journal Full-text Database

3 Hits

- 1 SHI Pei-li¹, LI Wen-hua¹, HE Wei-ming² and XIE Gao-di¹ (1. Institute of Geography and Resources, Chinese Academy of Sciences, Beijing 100101 China; 2. Key Laboratory of Environmental Change and Natural Disaster, the Ministry of Education of China.); [Economic Estimation of Ecosystem Services of Natural Forests in Western Sichuan, China](#)[J]; Journal of Mountain Research; 2002-01
- 2 YU Guirui, XIE Gaodi, YU Zhenliang and WANG Qiufeng (Institute of Geographical Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing 100101).; [Important ecological topics on regional scale ecosystem management in China](#). [J]; Chinese Journal of Applied Ecology; 2002-07
- 3 JIANG Yan Ling and ZHOU Guang Sheng (Laboratory of Quantitative Vegetation Ecology, Institute of Botany, Academia Sinica, Beijing 100093); [ESTIMATION OF ECOSYSTEM SERVICES OF MAJOR FOREST IN CHINA](#)[J]; ACTA PHYTOECOLOGICA SINICA; 1999-05

【Secondary References】

Chinese Journal Full-text Database

10 Hits

- 1 XIE Wei-guang et al (College of Tourism and Resource Management, Zhejiang Normal University, Jinhua, Zhejiang 321004); [Research Review of Ecological Compensation in China](#)[J]; Journal of Anhui Agricultural Sciences; 2008-14
- 2 XU Ji-quan (School of Geographical Sciences, Fujian Normal University, Fuzhou 350007, China); [Evaluation of Forest Ecosystem Services Function](#)[J]; Journal of Changchun Normal University; 2006-06
- 3 YIN Jian-hui, LU Xin-shi (Grassland Resource and Ecology Laboratory, Beijing Forestry University, Beijing 100083, China); [Calculation System Construction of Grassland Ecological Service Value](#)[J]; Acta Agrestia Sinica; 2009-02
- 4 LI Yang-bing, JIANG Li, BAI Xiao-yong (School of Geography and Biology, Guizhou Normal University, Guiyang 550001, China); [CHARACTERISTICS OF KARST ROCKY DESERTIFICATION LAND IN THE SUBTROPICAL ZONE IN CHINA](#)[J]; Resources and Environment in the Yangtze Basin; 2006-03
- 5 ZHANG Wen-guang^{1,2}, HU Yuan-man¹, LIU Miao^{1,2}, YANG Zhao-ping^{1,2}, CHANG Yu¹, LI Xiu-zhen¹, YANG Meng^{1,2}, WEN Qing-cun^{1,2}(1. Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang 110016, China; 2. Graduate University of Chinese Academy of Sciences, Beijing 100039, China); [ESTIMATION OF THE GAINS AND LOSSES OF ECOSYSTEM SERVICE VALUES BASED ON LAND USE/COVERAGE CHANGE — A CASE OF UPPER REACHES OF MINJIANG RIVER](#)[J]; Resources and Environment in the Yangtze Basin; 2007-06
- 6 ZENG Qun^{1,2,3}, YU Guang-ming², ZHANG Wen-bo⁴, CHE Yi², LIN Xiao-wei²(1. State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, Wuhan University, Wuhan 430079, China; 2. College of Urban and Environmental Sciences, Huazhong Normal University, Wuhan 430079, China; 3. Editorial Department of Journal, Huazhong Normal University, Wuhan 430079, China; 4. School of History-culture and Tourism, Gannan Normal University, Ganzhou 341000, China); [ASSESSMENT OF ENVIRONMENTAL IMPACT FOR LAND USE PLANNING: AN ECOLOGICAL SATISFACTION APPROACH](#)[J]; Resources and Environment in the Yangtze Basin; 2009-06

[APPROACH\[J\];Resources and Environment in the Yangtze Basin,2009-00](#)

LIU Zhao-shun,LI Shu-jie (College of Earth Sciences,Jilin University,Changchun

130061,China);[OPTIMIZATION OF LAND USE STRUCTURES BASED ON ECOSYSTEM SERVICES](#)

[VALUE — — A CASE STUDY IN WANZHOU,CHONGQING\[J\];Resources and Environment in the Yangtze Basin;2009-07](#)

Gao Qiong, Li Yuehui, Xiao Duning, Hu Yuanman(Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang 110016, P. R. China);[Assessment of Forest Ecosystem Service Functions in Shenyang\[J\];Journal of Northeast Forestry University;2008-02](#)

JIN Ying-hua1,2,ZHOU Dao-wei2,JIANG Shi-cheng2,CHEN Qing-lei2(1.College of Urban and Environmental Sciences,Northeast Normal University,Changchun 130024,China;2.Institute of Grassland Science,Northeast Normal University,Changchun 130024,China);[Research on climate changes and combinational law of temperature and precipitation during growing season in the eastern ecotone between agriculture and animal husbandry in Northern China\[J\];Journal of Northeast Normal University\(Natural Science Edition\);2007-04](#)

FENG Yan-fen1,2,WANG Fang2,YANG Mu-zhuang2(1.Land Research Center,Sun Yat-Sen University,Guangzhou 510275;2.School of Geographical Science,Guangzhou University,Guangzhou 510006,China);[Research on the Ecological Compensation Standard\[J\];Geography and Geo-Information Science;2009-04](#)

China Proceedings of conference Full-text Database

1 Hits

Wang Chunxiao Guo Zongxiang Yang Huaiyu Yang Zhengyong (College of Economics and

Management,Shanghai Ocean University Shanghai 201303);[Contingent Valuation of the Environmental Damage Costs of Freshwater Aquaculture Ecosystem — — A case from Dianshan Lake Water Conservative Area\[A\];\[C\];2008](#)

【Secondary Citations】

Chinese Journal Full-text Database

10 Hits

CHEN Zhi_jian (Institute of Mountain Hazards and Environment, Chinese Academy of Science & Ministry of Water Conservancy, Chengdu 610041 PRC);[THE STRATEGIC POSITION AND THE ECOLOGICAL AND ENVIRONMENTAL FUNCTION OF THE UPPER REACHES OF THE YANGTZE RIVER\[J\];JOURNAL OF MOUNTAIN RESEARCH;2000-03](#)

Mr.Xu Huacheng is a Professor in Beijing Forestry Univeraity;[The View of Forest Value\[J\];World Forestry Research;1993-04](#)

HUANG Xing Wen,CHEN Bai Ming (Commission for Integrated Survey of Natural Resources,Chinese Academy of Sciences,Beijing 100101,China);[The theory and application about the regionalization of Chinese ecological assets\[J\];ACTA ECOLOGICA SINICA;1999-05](#)

OUYANG Zhi Yun WANG Xiao Ke MIAO Hong (Research Center for Eco Environmental Sciences,Chinese Academy of Sciences,Beijing 100080,China);[A primary study on Chinese terrestrial ecosystem services and their ecological-economic values\[J\];ACTA ECOLOGICA SINICA;1999-05](#)

Fang Jingyun; Liu Guohua; Xu Songling (Research Center for Eco-Environmental Science, Chinese Academy of Sciences, Beijing, 100085);[BIOMASS AND NET PRODUCTION OF FOREST VEGETATION IN CHINA\[J\];ACTA ECOLOGICA SINICA;1996-05](#)

SUN Yu Jun\ WANG Xiao Ke\ WANG Ru Song (Department of System Ecology,Research Center for Eco Environmental Sciences, the Chinese Academy of Sciences,Beijing,100080,China);[THE CHARACTERISTICS OF ECO ENVIRONMENTAL QUALITY IN FIVE FINGER MOUNTAIN NATURE RESERVE\[J\];ACTA ECOLOGICA SINICA;1999-03](#)

Dang Chenglin, Huang Ruifu(Institute of Ecology and Geobotany, Yunnan university, Kunming 650091).;[Redundancy in Ecosystems and the Model for Trophic Structure.\[J\];CHINESE JOURNAL OF ECOLOGY;1997-04](#)

Hu Dan (Research Center for Eco Environmental Sciences, Beijing 100080).;[An indicating framework for ecosystem sustainability.\[J\];CHINESE JOURNAL OF APPLIED ECOLOGY;1997-02](#)

Ouyang Zhiyun, Wang Rusong and Zhao Jingzhu (Research Center for Eco Environmental Sciences,Academia Sinica,Beijing 100080). Chin.J.Appl.Ecol.,1999,10(5):635~640.;[Ecosystem services and their economic valuation.\[J\];CHINESE JOURNAL OF APPLIED ECOLOGY;1999-05](#)

Zeng Dehui, Jiang Fengqi, Fan Zhiping and Du Xiaojun (Institute of Applied Ecology, Academia Sinica, Shenyang 110015).;[Ecosystem health and sustainable development for human\[J\];CHINESE JOURNAL OF APPLIED ECOLOGY;1999-06](#)

