

The conception, connotation, and prospects of "Wetland City"

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Abstract: Wetlands can provide human with various kinds of ecosystem services, such as, regulating and storing flood, Puri Fying water body, providing supplementary groundwater, etc. In the future, the demand for urban wetlands'll be increasing greatly, since urban wetlands had been the important compo nent of urban ecological environment. In recent years, the Ramsar convention successively put forward the ' wetland City ' and its certification criteria and work Process, etc. Combining with the historical background of the serious situation of wetland protection and management, rapid growth of Ur Banization, functional retrogression of urban wetland, the conception and the connotation of "wetland city" were , and further researches of "Wetland City" in the were prospected. In ' Wetland City ' would create beneficial conditions to improve the comprehensive competitiveness city, implementing ecological protection policy, enhance the level of wetland protection and management in CHINA.

Keywords: Wetland; Wetland City; urbanization; connotation; Prospects

with social progress and development , human life for high quality Increasing requirements , Environmental quality requirements for urban areas are also constantlyImprove , Increasing demand for wetlands (Bertrab *et al* , 2010). City only covers the surface of the earth 2, But it uses the world 75% Natural Resources , and produces all global waste 70% (Zhang Minshun etc ,2015). There is an urgent need to Find a balance between urbanization and eco-security , Therefore, the ecological has been proposed in recent years city , Green City , building concepts such as forest cities and sponge cities , and keep pushing (Wu Jong etc , , State Forestry Administration , 2009

Zhang Hongwei , 2009). Wetlands as the most important ecosystem class type one , can provide climate control for urban residents , purified water and air , Eco -Education, multiple eco-service features such as entertainment (Lee) Mandarin etc ,2002; Chi Lijuan , 2006). Reasonable use of wetlands, Avoid further degradation of wetlands by urban development , make wetlands City It is particularly important for the city to play its due role in sustainable development . 2016 year , The State Council issued Wetland protection and repair system Scenario to implement total wetland area control , Promote Wetland eco-work can wait for specific requirements , This also for the future of China's urban wetland

Protection and management provide new ideas .

1. Our country Wetland City background and implications of

1.1 Wetland Protection Management situation is grim

past Grieving , in the increasing frequency of human activity and social through Jinan High speed background , All

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types of natural wetlands in the country are presented shrink, vanishing trend, Has caused our country 30% days above then wetlands disappear (Groun etc, 2012). wetland Ecosystem Damage, Directly resulted in the national surface water quality of the country worry, 2016 the year of our country 60% the Surface Water monitoring section above the is a III class and the following (China People's Republic Environmental Protection Department, 2017).

1.2 Urbanization in a fast-growing phase

before the reform and opening up, China's urbanization has long been stagnating State. since the reform and opening-up, Our country's urban population has multiplied. , calendar year average growth in 4% , level of urbanization has been increased to 50% above (Fang Lin ,2009). But urbanization in China quality is significantly lower than its urbanization rate , The urbanisation process is too fast to can exceed its space-carrying capacity , triggers a series of eco-environmental problems (Fang Lin etc, 2011). estimated to 2030 year , China will still be in Fast urbanizing phase , future will have near ten * million population living in city , will inevitably face market ,Resources and public services constraint (Fang Lin ,2009; Bashusong , 2010). at the same time , urbanization the process is accompanied by a change in the landscape pattern of the city , More and more from The ecosystem is replaced by it , where wetlands become urbanized process one of the fastest degraded natural ecosystems in (Shing ,2015). 1.3 Urban wetland ecosystem services decline

There are many ecological problems in our country today , and wetland ecology Service feature recession particularly highlighted , flood storage for wetlands like , Water quality purify , supplementing functional decline in groundwater , creates a series of environments problem , particular in city area (Li wenhua , 2002 Wang Hao , .. Most areas of our country rainfall is subject to monsoon control , precipitation set , flood season floods with greater water . flood control in recent years because of the city and its surrounding wet to be weakened , Many large and medium-sized cities in the country waterlogging disaster frequency , year Nanjing 7.18 Rainstorm , % year Beijing 7.21 Torrential rain event , 2015 year Changsha 4.7 Rainstorm etc . at the same time , Many large and medium-sized cities still face water resources short missing , problem of falling groundwater level , such as Baoding , Beijing , Shenyang etc City groundwater level continues to decline , water Resources not available effect plus (Zhao Wei ,??Amber , 2010). addition , Lake , Large area of wetlands such as rivers disappear , Make the water in the city wetland clean function problem , surface water pollution is severe in some cities , City City Groundwater quality deterioration (Gao Cunrong etc ,; Zhenglijie , 2016).

2. Wetland City The concept of and its proposed process

Research and practice on urban wetlands at home and abroad have a big long history , River in urban planning construction Rivers , Lake , Swamp wetlands such as are important planning layout essentials and Objects (Tilton , 1995), like ancient Roman city underground drainage system and river channel , Ancient South Garden of the country, etc. . and urban wetlands as a whole research , in The end of the century became the focus of urban environmental research . but " Wetland City " " " is a relatively new concept in our country and even globally . . annual year Wetland Convention Party Assembly (Cop one) through the first . 11 resolution : encouraging parties to explore possible " wet " city " authentication plan , Building a positive relationship with wetlands offers branding opportunities , Promote city visibility , This is Wet to City , " first entry into People's Field of vision (Ramsar , 2012).

2014 Year , pilot launched in Korea and Japan Wetland Village for authentication , and organize the Wetland Village related standards for certification research Ramsar (, 2014). Preliminary proposed " Wetland village " authentication related criteria : ① must be associated with wetlands of international Importance ; ② must The has to be implemented by establishing an effective management system to make wetlands reasonable use Target ; ③ Certification should also consider the value and utility of wetlands , Wetlands about planning for protecting management , Policy should also be considered in the ; ④ should Have a separate body for " Urban Wetlands "Authentication and continuous monitoring .

2015 Year Wetland Convention Conference of the parties (C O P) decision Negotiate XII. Ten The presents the , approves parties to voluntarily establish Wetland City city" authentication system , The city is adjacent to the International wetlands or complies with the relevant standards City can be certified as " Wetland City " , and proposes aWetland Public approximately " Wetland City " certified standard . " Wetland City " must All meet the following 7 conditions : ① Candidate cities must have one place or multiple international wetlands , or other important wetlands all or part ,, adjacent to or in the city , providing ecosystem service for the city ②; The corresponding measures are taken to protect wetlands and the services they provide ,, including biodiversity and hydrological integrity ; ③ has been implemented wetland restore Complex or wetland management measures ; ④ Consider urban integrated land use planning Challenges and opportunities for wetlands ⑤ encourage stakeholders to create Wetland Mission Center to promote wetland protection , Improve wetland protection public sense ⑥ The city has already established a " Wetland City " Certification CommitteeMeeting Specialized agencies , Responsible for submitting to Wetland Convention Related files Technical Support , Perform authentication obligations ; ⑦ The city wetland provides a tune section Services , Provisioning Services , Cultural Services and support services and other ecosystems Services (Ramsar, 2016). The Wetland Convention ""also gives the Wet to City, " specific authentication Workflows , and have wetland City "" certifications in Focus . " Wetland City " try a class like " International Important wetlands "" as administrative form , Strengthen the city wet and Its biodiversity protection management , enhance its ecosystem service works , Promote sustainable urban ecosystem development .

3.1 Wetland City The concept and connotation of

3.1 Similar Concepts

Forest City The reference to originated from the century era US and Canada , and % The age was introduced to our country . in our country , " Forest City" "Construction" emphasizing urban ecosystems with forest vegetation for Principal , urban and rural integration in city ecological construction . year years , on the first Chinese urban Forest forum , Guiyang first to become country home Forest City (Li Xinping, 2011). National Forest City rating related urban planning , tree selection , integration of water Systems Connectivity indicator , and city forest coverage , Forest Eco -Network, forest health , Public Leisure , Eco culture "" Special indicators for rural greening (country Home Forestry Bureau , 2007). China's National Forest cities develop faster , up to 2016 end , nationwide 118 a city granted "" Country forest cities [] . forest cities ""proposed effectively promote The development of urban forestry in China .

SpongeBob City is based on the theory of urban stormwater management development , is the concept of new generation urban stormwater management , emphasizesCity handles storms like sponges , The ability of natural events such as floods , International General terms "" Low impact development rainwater system build (Lee Junchi,2015; Yang yang , 2015). current , China successively Announcement of two groups of central financial support Sponge City construction pilot , including page Batch ,, second batch first. in SpongeBob City eco-Design and planning The Wetland plays an important role in this . For example , off The Life Science Park of Zhongguancun, Beijing, adopts constructed wetland collection and rainwater-purifying Greenland system , The cell called the earth Life 2007 Tianjin Bridge Wetland System , through fill ,form a bubble Eco Sponges , while solving city waterlogging , play a comprehensive eco-Services features (Shenning etc ,2016); A similar wetland Eco Engineering also in Qinhuangdao Binhai , Harbin Qun Li National Wetland Public Project successfully applied (Yu kongjian, 2015).

3.2 Wetland City connotation

The long history of urban evolution shows that , Wetlands are not only the city's most Important Construction conditions , and become its urban landscape and culture is an important part of . " Wetland City " " construction target is not ancient The simple developed pipeline drainage and storage project in Rome , but as the ancient Waterscape garden

of our country Jiangnan , Beijing ancient Imperial City City planning Construction and natural harmony Co-Prosperity Urban development model . this vs .SpongeBob City "" make city resilient to environmental changes and natural disasters a target with a significant difference (construction Qiu baoxing , 2015). " wet " city "More attention to the overall restoration and protection of urban wetlands ,

to provide a more appropriate living environment for both humans and wildlife , Repair and promote city wetlands " kidney " function , and then slow down nature disaster procedures ,, diversifying the city's water safety .

is essentially , Wetland City is based on urban wetlands ecosystem as a whole , the, not only emphasizes human beings in The role of the city , same focus on wildlife ,natural landscape functions in urban ecosystems , and particularly strong Wetlands have been transferred to the role of Habitat . and currently " SpongeBob City " City ""Building still people-core , emphasize human action and Labor structure in flood water storage , through the SpongeBob Build set , bring rain down , hysteresis , Purify , backto , last through the pipe network , Pump Station to achieve water resources management , to Reduce the pressure of city waterlogging (North Beijing University of Architecture , 2015). " Wetland City " with clear The difference between , Fundamentally changing the traditional concept of urban construction , through a wet Restore and upgrade of ecosystem services features , achieving effective storage flood , Objective of purifying water quality and supplementing groundwater , and for Human andWildlife provides suitable habitats , to achieve harmony between man and nature . " wet " city " has a certain similarity to forest cities , But there are also many different ,main performance Wetland City " pay more attention to its ecology system Services , sustainable administration , Human Welfare , and Forest City Special emphasis on forest coverage , Urban Green and urban greening .

4. Wetland City Research Outlook

4.1 Wetland City positioning

Wetland City as something new , to our country's wet to protect management has important positive significance . But how to locate The Future " Wetland City " application and development in our country , with our existing Wetland Protection Management system convergence is the first question we need to address questions . 2017 year , My country's already started. " International Wetland City " set work , and proposed its provisional method of nomination . future based on my The state of the city wetland construction and management utilization , in extensive research , analysis " Forest City SpongeBob City base for concepts and positioning such as on top of, OKWetland City Future positioning of , To specify that it can give City resident benefits , developing different scales and regions " wetlands City Building positioning Research ,and further standardize our country's International Wetland City " identify nomination work . The

4.2 Wetland City Authentication Indicator system and evaluation method research Combining the characteristics of cities and wetlands in China , from Eco ,

Policy Regulations , Economic Development , Social livelihood , Control Technology Dimensions off , launch Wetland City "" Construction Restrictions , Development excellentpotential and authentication criteria etc Research . impact " Wetland City " comment set Wetland rate , Wetland Ecosystem Health , Wetland eco-quality amount ,Quantitative study of specific indicators such as wetland management system , The presents the China " Wetland City Authentication Indicator system and evaluation method . and Knots in China Wetland management status , launch " Wetland City " the authentication program and management mechanism research . plus , different areaWetland City "" The assessment criteria are inconsistent , For example our coastal areas with the West There is a big difference between the northern arid regions of the north. , must combine different The characteristics of the area determine the standard of recognition .

4.3 China Wetland City Condition Analysis for construction

from policy regulations , Economy , Social , Technology 4 level discussion Wetland City Building conditions and

major factors for . Policy Act regulation level primary analysis Red Line control laws and regulations , fiscal Policy , Departmental coordination mechanism , Assessment criteria and methods , Monitoring Mechanism ; by Jinan level primary analysis land ownership , source of funds , Economic Benefits etc ; Social Level analysis Community co-management , propaganda mechanism ; technology Layer surface main analysis Urban wetland construction Technology , Wetland monitoring Technology ,,, use technology etc .

5. Epilogue

The effect of urban wetland protection and management not only directly affects the city Water safety and ecological security , and affect the lives of city dwellers quality and urban wildlife habitats . a wetland element blends with city planning construction Wetland City to give full play to the wetland ecosystem services function , Protect Ecological security , Show City Wetland features , promote their city's overall competitiveness .

2015 Year , The Communist Party of the CPC , The State Department issued a Eco-Civilization System Reform general scheme , arable land , Woodland , Prairie , WetlandsThe is important in building space planning systems . current related research on wetland in urban and rural space planning system more missing , difficult to meet future technology support requirements for wetland conservation management . simultaneous , Next years the authentication of " Wetland City " will also become wet ConventionImportant content for work . so , Our country launch Wetlands city " Authentication research and practice are particularly important , will help improve my National Wetland Protection Management level , for implementation Wetland Protection Security system scheme "" is important ., and Wetland Convention " track provides technical support .

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