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# The Cultural Ecology Protection and Management of Urban Forests in China

Ying ZHANG\*, Weiming SONG, Ke CHEN, Chunjing GOU

School of Economics and Management, Beijing Forestry University, Beijing 100083, China

**Abstract** Forests have economic, ecological, social and cultural functions. Forests Cultural ecology, the counterpart of forest ecology, is the integration of human spirit formed on the basis of natural forest and living systems. In recent years, China's urbanization rate has increased from 28% in 1993 to 45.68% in 2008, and ecological protection of urban forest has made great progress, but insufficient attention was paid to the forest cultural ecology protection and the relevant regulatory was not well performed. In order to strengthen the protection of forest cultural ecology and the management, the study showed that the social economic development of China has become mature and entered the consumption phase, besides, cultural ecology protection of forest will be the essence of urban forestry development in the future, so more and more attention will be paid to the protection of urban forest cultural ecology, especially with the enhancement of urbanization in China. The study suggests that protection of urban forest cultural ecology should be included into the forest legislation and management. The development planning of urban forest development should be strengthened to highlight the organic combination of material wealth production and spiritual wealth production, and finally promote protection of urban forest culture and the development of green culture.

**Key words** Urban forest, Cultural ecology production, Green Culture, Legislation, Management

Cultural ecological production is a newly emerging issue in the process of urban architecture planning and conservation in recent years. It refers to the protection of urban civilization environments, which takes by the building layout as the dominating factor, certain architectural style as the tone, and comprehensively reflects the idea of "the beauty of order". A city will be an unsound city if we only emphasize its beautiful architectural order, but ignore the protection for its cultural ecology, such as history, culture, art and science, as well as its intrinsic value. As one of the elements of urban infrastructure, urban forests play important roles in economy, ecology, society and culture. In recent years, though we has made great progress on the forest protection and management of China's urban economic, ecological function conservation, the protection and management of social and cultural functions is relatively backward. To change the situation and to play a valuable role, analysis on cultural ecology protection and management of China's urban forest is conducted.

## 1 The definition of forest cultural ecology

Currently, "culture" is defined with different opinions. Generalized culture mainly refers to all the material and spiritual products created by human society. While narrow culture refers to all intellectual products, including language, literature, art. Forest culture is a cultural phenomenon or spiritual expression for the background of forest. Forests are colorful systems of living and natural. It gives us sensory impact for its different forms, shape, color,

smell and taste. It affects people's emotions and thoughts, so as to stimulate people to appreciate the beauty, to find beauty, finally to create beauty<sup>[1]</sup>. Therefore, forests cultural ecology is the integration of human spirit formed on the basis of natural forest and living systems. It corresponds with the forest ecology, forest ecosystems are biomes in which trees act as the major part, such as plants, animals and micro – organisms and their abiotic environment, for example light, heat, water, air and soil. Forest ecology is the vectors of cultural ecology, it emphasizes the material aspects. While forest cultural ecology belongs to the humanities spiritual level, it is produced in the interaction between human and the forest ecosystem. It is a narrow forest "cultural." The protection and management of forest cultural ecology just means the protection and management of humanistic spiritual content and products about forest.

## 2 Status and problems of cultural ecology protection on China's urban forest

Statistics show that China's urbanization rate has increased from 28% in 1993 to 45.68% in 2008. In 2008, the number of Chinese cities is 655, 462 more than that in 1978, among which the number of the cities at prefecture level and above rise from 111 in 1978 to 287. There is a population of 371.56 million, 1.2 times over that in 1978. Land area of National City is 622 000 km<sup>2</sup> (excluding municipal county), 2.2 times of increase compared with that in 1978, of which has built area of 28 000 km<sup>2</sup>. GDP of 15.7 trillion Yuan is achieved in cities at prefecture level and above, which accounts for 62.9% of the national GDP. There is still a large gap compared with the level of more than 60 percent forest coverage in some developed cities in the world<sup>[2]</sup>. In addition, we haven't pay sufficient attention on the issue of forest cultural ecology

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\* Corresponding author. E-mail: zhangyin@bjfu.edu.cn

gy, and the protection and management of social and cultural functions is relatively backward and it has not been on the agenda. Specific perform as the following:

In the first place, the scale of forest protection in city continues to expand, but the management about social and cultural functions of forest has not been given due attention. In the protection of urban forest, many people simply put forest protection equivalent to the establishment of nature reserves, forest parks and conducting forest tourism. At the end of 2010, China has built up to 2 538 nature reserves, including 303 National Natures; the total area of nature reserves is 148 943 000  $\text{hm}^2$ , including 91.203 million  $\text{hm}^2$  area of national nature reserve, it accounts for 15.1% of the land area. The number of forest park built is 2458, of which the number of national forest parks is 731, the area of forest parks accounts for 11.09% of the total area of nature reserves. In addition, the number of China's forest tourism is 332.9 million in 2010; the income from forest tourism is 25.481 billion Yuan<sup>[3]</sup>. In the nature reserves and forest parks established, there are considerable parts which belong to the city's jurisdiction. But many people did not fully understand the significance why we build nature reserves and forest parks, many places purely focus on the economic income and tourism, while failed to get full attention on the protection and management in spiritual, educational, cultural and recreational purposes, they even could not recognize the importance of protecting the forest cultural ecology, let alone the effective management<sup>[4]</sup>.

In the second place, in terms of forest legislation, the stereotype thought of resource economy still exist, which disabled the cultural functions of forest. The *Forest Law of People's Republic of China* (hereinafter refers to as *Forest Law*) stipulates that forest law is created to protect the environment and provide forest products, to meet the needs of economic construction and living. Though it abandons the stereotype thought which takes economy resource as orientation to some extent, it has not yet highly emphasized the development of forest resources from aspect of ecosystem. From the height of ecosystem to from the development of forest, we should not only emphasize economic functions of forests, but also the ecology and cultural ecology function. The way is not complete, nor comprehensive only stressing the economic functions of forests and neglecting or weakening forest cultural ecology function from a legislative point of view<sup>[5]</sup>. So is for the urban forest. it is also affected by neglect or weakness of forest cultural ecology function in *Forest Law*, it lacks protection and management of the forest cultural ecology.

In the third place, in the of protection urban forest, compulsive restoration and conservation in engineering-type are mainly used; the diversity of forest cultural ecology is ignored. Since the founding of our country, we has made great progress on forestry, forest ecological protection has recovered to some extent. However compulsive restoration and conservation in engineering-type are mainly used, especially in urban forest. The main way to take the project is to create a large variety of plantations and landscape.

On aspect of the protection, it also usually takes the protection of engineering approach, which may help to manage but lack of asymmetry and diversity from the perspective of forest cultural ecology and the heritage of personality and history culture about forest culture. Although famous trees in some place are protected, the protection of their human environment is also ignored, which lead to the loss of the cultural meaning of these famous trees<sup>[6]</sup>.

In the fourth place, there are some disadvantages in forest management, which affect the protection of urban forest. Generally the management of forest resources in China is lagging behind, especially in terms of management philosophy, which restricts the development of forest resources. Cultivation of forest resources is a public welfare undertaking whose primary purpose is to improve the ecological environment. Its special need for national policy supporting and financial security has become the consensus of the world<sup>[6]</sup>. Especially in the development of urban forest, the main purpose is to improve the urban environment, including urban culture ecological environment. The development of urban forest should be constructed, planned, protected and managed by the government. In recent years, the understanding of urban forest protection has improved. However, forestry management is totally lagging. There is inadequate investment in the protection and management of forest cultural ecology. All above affect the development of urban forest cultural ecology.

### 3 The management content and the significance of urban forest ecological protection

#### 3.1 The significance of urban forest ecological protection

The GDP per capita has reached \$ 4 000 in China. The development of socio-economic has been on the stage of maturity and consumption. The next stage is to pursuit life of quality<sup>[7]</sup>. According to Maslow's hierarchy of needs theory, when a person's low-level requirements, such as physiological needs, security needs and emotional needs are met, their needs will rise to a senior level, such as the respect needs and self-actualization needs. During the same period, a person may have several needs, but there is always a dominant demand in different times, it plays a decisive role on people's behavior. A kind of need will not disappear because of its higher level need. The demands of different levels are interdependent and overlapped, when the demand of high-level is developed, the demand of low level still exists only with the greatly reducing degree of impact on behavior<sup>[8]</sup>. Maslow and other behavior psychologists believe that the structure of most people's needs hierarchy of a country is directly related to its level of economy, science, and technology, culture and people's education. In underdeveloped countries, the vast majority of demand is the physical needs and security needs, while a small proportion of people has higher demand. While in developed countries, it is just on the opposite. Although China has a big gap between rich and poor, but the GDP per capita and income per capita has increased annually, the pursuit of life quality and environmental quality has become the main theme of socio-economic development. The im-

provement of life quality and environmental needs the support of good environmental and healthy ecosystems. The protection of urban forest ecological and ecosystems plays an important role in the improvement of urban residents' life quality and environment quality. If we still do not pay sufficient attention to the protection, management, earlier planning and arrangement of urban cultural ecology and still rely on getting resource economy from it, the urban forest will fail to meet the higher demand of social economic development. Therefore, for the development of urban forest in the future, the protection and development of its ecology will be the basis while the protection and management of its cultural ecology will be the soul, to which much attention should be paid. Besides, that explains why should we protect the cultural ecology of urban forest.

### 3.2 The management of urban forest cultural ecology

Once recognize the importance of forest cultural ecology, the management should be performed from the systematic perspective<sup>[9]</sup>.

Firstly, the property right should be given to promote the protection of cultural ecology. Some culture ecological products are coupled with the basic properties of property right, such as profitability, exclusivity and tradability and so on. Therefore, in the protection of urban forest, the properties of property right should be given, the management and incentive – related should be promoted. In addition, it is conducive to get legal recognition and protection by giving it the properties of property right, it will improve the efficiency of resource allocation of urban forest cultural ecology resource.

Secondly, the management of legal system about urban forest cultural ecology. Mainly recognize the existence of urban forest cultural ecology from the perspective of forest legislation, and modify and improve the existing Forest Law be in safeguarding national interests, while we respect property right of forest cultural ecology of individuals and legal entities. Again, make the comprehensive evaluation of urban forest cultural ecology. The comprehensive evaluation of urban forest cultural ecology is the key of the management. It considers the prospects and harmonious development of environment and economic, social. It reveals the rules among balance of urban forest ecosystem, socio – economic activities and human needs. It takes into account demands of different urban forest resource and determines the demand of cultural ecology as the basis to manage forest cultural ecology.

Finally, make information management of the culture ecological resource, such as the resource quantity, the quality, occurrence conditions, distribution, *etc.* To achieve the information value of urban forest cultural ecology resource and the intended target through the information collection, processing, organizing, controlling, planning, using, *etc.*

In addition, in the management of forest cultural ecology, hierarchical management should be conducted based on the resource quantity, the quality, occurrence conditions, *etc.* Namely, manage protection respectively in accordance with the key cities of history and culture and general ones<sup>[10]</sup>.

## 4 Priorities in urban forest cultural ecology protection

The development of forestry has gone through three stages: Satisfying the need of timber and forest products, multi – objective utilization of forest resources, forest ecosystem management. The protection and development of forest cultural ecology will become the new direction. According to statistics, China's urbanization rate is 46.59%, there is a big gap from average level 70% of developed countries. The rate of urban green coverage is 38.2%; forest coverage rate is about 34.27%<sup>[2]</sup>. According to the meaning of cultural ecology protection, we should protect and construct our city not only from the history and culture, architectural cultural characteristics, street culture and other aspects, but also from the green culture, urban landscape and other aspects.

Urban forest is an important part of urban infrastructure. It plays an crucial role in the protection and development of urban forest cultural ecology. First, the urban forest contains a lot about the history, culture and social significance; it has an important influence on the formation of urban humanity, the improvement of the quality and the training of the character, as well as the edification of different national character and spiritual. As a saying goes: "It takes ten years to grow trees but a hundred years to rear people." Always, there are a lot of famous trees in the city with rich history and culture. The old trees witnessed the changes of a city, they contains various historical, cultural meanings of a city. The protection of these trees is the foundation of urban forest cultural ecology protection and management; it depends on not just the conservation department but also urban planners. Second, the building is a history books of stones, it directly reflects the solidified history of the city's character<sup>[11]</sup>. The urban forest is the spirituality carrier of a city, it absorbs and enhances the urban culture. Good urban forest is the lifeline of urban residents' life. It reflects the fresh side of urban culture and enriches urban culture considerably. Third, urban forest urban is the bearers and preachers of green culture. Green is an important part of the city landscape. Green culture is reflected not only by the green landscape but also the by its plants and trees. Many cities impresses the tourists for its unique native trees and flowers<sup>[11]</sup>. Green culture is a culture that seems the harmony of man and nature, man and man, human beings as the pursuit. It is a culture which is designed and created to improve the conditions for human survival and development. It is wished to make a positive outcome. The basic point is to combine the production of material wealth and spiritual wealth. In urban construction and development, urban landscape layout can only obtain an inexhaustible motive force for urban development by making the green concept going throughout the global culture. For example, in the construction of city parks and green spaces, we should respect nature, we should continuously nurture and research local native species, retain life, retain culture. Meanwhile, we should fully protect the existing urban green areas, water bodies, wetlands; we should deal with the relationship between urban construction and environmental protection

probably. We should create a harmonious ecology pattern of man and nature, man and man, humans themselves and so on. Therefore, along with the acceleration of urbanization, the key of urban forest cultural ecology protection and management is green culture and urban landscape, which are supporting of urban inner spiritual.

## 5 Main measures of urban forest cultural ecology protection

Protection of urban forest cultural ecology should be included in the forest legislation and planning. Nowadays, protecting ecological environment, prohibiting pollution and controlling pollution have become a worldwide consensus. But the ecological and environmental protection does not equal to the culture ecological environment protection. Therefore, we must have a correct understanding of forest cultural ecology protection, and then protect the urban forest cultural ecology protection from a legislative point. Forest Law can be a law both based on economy resource and supporting ecology and culture. In legislation, it is firstly emphasized that the forest resources is an important ecological factor, and forest resources have functions of economy, society and culture, not merely an economic function. Protection system of forest ecology is designed and built in the overall framework of environmental law. Sustainability and optimal utilization of forests should be seemed as legislative purpose from its ecological attributes.

Secondly, the planning should be strengthened in the management, the combination of the production of material wealth and spiritual wealth should be highlighted. The harmony of man and nature, man and man, man and himself should be pursued in management. Currently, the role of native trees and flowers is ignored in the protection and management of cultural ecology. We disregard the laws of nature that we move the southern species to north or waste of money to create a large area of artificial turf. What we have done makes some human story widely circulated no longer exist in its cultural and ecological environment. We make them unable to pass through and be promoted. All of these are performance violate the protection law of cultural ecology. American architect Saarinen said: "The city is an open book, from which you can see its ambitions. I can tell you what does your dweller in pursuit of in culture once I see your city."<sup>[8]</sup>. Similarly, urban forest which is lack of cultural ecology protection is intrinsic forest of no spiritual support and lack of roots and soul. It is an incomplete understanding of forest ecosystem management.

Once again, the management of urban forest resources should be strengthened, and the development of green culture should be promoted. The management of full urban forest resource includes not only the expanding of the resource area, the improvement of the forest age, tree species and the tree structure, the improvement of forest productivity and utilization, requirements of urban residents for the ecological environment, and so on. Currently, many people study the forest "ecological culture", "ecological civilization", "green culture". These are another important content of forest resource management, as well as the protection and

management of forest cultural ecology. Therefore, strengthening the urban forest resource management, promoting the protection of forest cultural ecology and the development of green culture, is an important content to improve the urban forest ecosystem management.

## 6 Conclusions

Totally, our current protection and management of urban forest cultural ecology are not paid insufficient attention. Its relevant development lags behind. Future urban forest ecological protection is the basis; cultural ecology protection urban forest is the soul. China's social and economic development has entered a stage of mature propulsion and consumption, in the next stage, we are in the pursuit life of quality. In this period, urban forest cultural ecology will play an important role. Therefore, along with the continually rising of China's urbanization rate, it is an important issue placed in front of us that how to use legislation, planning and management and other means to protect the resources of urban forest cultural ecology. Serious investigate and treating is needed. Urban forest resources and ecological management in China has made considerable progress, both the "ecological culture" and "green culture" are important content of protection and management of urban forest, as well as the essential part of improving quality of life for residents and well-being index. Urban forest needs not only protection but also the attention to the protection and management of cultural ecology.

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