

On the Construction of Wetland Bird Habitat and Bird Watching Tourism

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Abstract: Bird diversity is of great significance to the construction of wetland ecosystem. Bird habitat construction is an important part of wetland planning and design. To explore the construction of wetland bird habitat and the development of bird watching tourism is conducive to enhancing the public awareness of the protection of wetland birds and their habitats. In this paper, 500 hectare wetland model which is of great significance to the regional ecological environment and the development of bird watching tourism is selected as the research object. Based on the analysis of wetland types, the market value method, alternative method and ecological value method are used to preliminarily estimate the value of species habitat, and GIS technology is used to build the spatial habitat model of birds, using chi square test and t-test as the analysis method of habitat simple variables, this paper explores the construction of bird habitat and the way of bird watching tourism, so as to provide basis for the protection and preliminary exploration of wetland and its birds. This study shows that the development coefficient of the two stages in 2016 is 0.58, that is to say, the capital construction cost of the nature reserve accounts for 58% of the functional value of the biological habitat, thus it can be concluded that the average functional value of the 500 hectare wetland biological habitat is 17.5537 million yuan. The study also shows that in the current stage of sustainable economic development, it is very important to protect the wetland environment and develop bird watching tourism.

1. Introduction

Bird watching tourism is a kind of tourism activity aiming at observing, appreciating and recording the characteristics and behaviors of birds. It is a kind of tourism mode that tourists observe birds and explore their habitats without changing the ecosystem of wild birds. Wetland has a variety of species and resources, and has important economic, social and ecological value. With

the further development of wetland tourism in recent years, ecological bird watching tourism has gradually become a global trend of comfortable tourism.

In the study of birdwatching in China, many studies tend to focus on the value, significance and macro theory of birdwatching, but lack of in-depth analysis of the characteristics and purposes of crowd behavior. The academic research on birdwatching activities and birdwatching tourism should learn from each other and make common progress, but in our country, they are not closely linked, and in most of the research, there is still a big gap between reality and theory. The overall characteristics of Chinese birdwatchers are high income and high educational background. The target market can be defined by reference to the distance from the destination and various forms of participation, and then more birdwatchers' tourism products can be innovated and designed to meet the needs of various levels of ecological birdwatchers, improve ecological benefits, and promote the progress of tourism in various areas.

With regard to water resource constraints in wetland areas, priority management strategies are essential for ecosystem protection and restoration, especially during the breeding season of waterfowls. Steen studied the development of a spatial conservation priority approach based on remote sensing and GIS to identify wetland areas that require special conservation measures during the breeding season. After spatial information is extracted from Landsat 8 time series data, the regions with high protection priority are identified by the method of maximum entropy and weighted linear combination (WLC). Steen's research results show that the construction of habitat suitability map of waterbirds in Hammond wetland during nesting period can evaluate the change of habitat suitability before the end of nesting period, and determine the area providing suitable conditions for a long period. Steen's method of spatial conservation priority for remote sensing and GIS has high accuracy, but lacks stability [1]. The coastal landscape of central Chile is an important habitat for resident and migratory birds, and its estuarine environment is an important habitat, providing a rest place and food resources for a large number of waterfront birds in the process of migration. Pareek evaluated the composition and abundance of benthos communities in the foraging area and their local spatial distribution in the foraging area in order to study the specific habitats selected by shorebirds based on the availability of food in the tidal wetland of the Aconcagua River in central Chile. Pareek found that the total number of registered benthic invertebrates was 11514, corresponding to 25 taxa, among which crustaceans, polychaetes, oligochaetes and insects were the main taxa. Pareek's results show that the selected nutritional items reflect the main distribution of shorebirds. Pareek's study assessed the composition and abundance of benthos community in the foraging area, with high accuracy, but low feasibility [2].

In this paper, the 500 hectare wetland model is chosen as the research object, the market value method, alternative method and ecological value method are used to preliminarily estimate the value of species habitat, and the GIS technology is used to build the spatial habitat model of birds, the chi square test and t-test are used as the analysis methods of habitat simple variables, and the construction of bird habitat and the way of bird watching tourism are explored, To enhance the understanding of wetland in all aspects, and to provide the research basis for wetland habitat construction and bird protection.

2. Wetland Bird Habitat and Bird Watching Tourism

2.1. Wetland Resources and Wetland Tourism

(1) Wetland tourism resources

Wetland is closely related to human reproduction and production activities. It is one of the most characteristic natural landscapes in nature and also one of the most important living areas for people. It not only provides guarantee for human's various activity resources, but also plays an ultra-high

environmental efficiency and role. It is called "the kidney of the earth", which plays an irreplaceable role in runoff regulation, beautification of the environment, climate regulation and other aspects, and is attached great importance by the global human beings. China's wetlands are characterized by a wide range of resources, complete species and many biological resources, which provide good conditions for wetland tourism. The main wetland tourism resources in China can be divided into swamp wetland, Lake wetland, river wetland, shallow water area, beach wetland and artificial wetland [3-4].

(2) Wetland tourism

One of the important ways to achieve sustainable tourism is to develop wetland tourism, which focuses on developing a tourism mode that can not only increase social and economic benefits, but also call on human beings to protect the ecosystem. Wetland tourism should be defined as a tourism activity with decorative wetland as the tourism destination, which advocates human beings to actively live in harmony with nature, understand and observe wetland species, natural landscape and historical civilization. This kind of tourism activities should not disturb the ecological environment of the wetland itself to create economic development opportunities for local economic interests. Wetland tourism has been developed for a long time in foreign countries, and some famous wetland tourism destinations have a series of mature development and design.

Wetland tourism has the functions of sightseeing, knowledge seeking, physical fitness and vacation. In wetland habitat planning, the establishment of bird watching center and the construction of a series of tourism facilities in the transition area of the reserve can attract more domestic and foreign tourists and scientific research experts and scholars interested in wetland to come to tourism and exploration. Wetland tourism is so popular not only because it meets people's spiritual needs for green and comfortable ecological environment, but also because it has unparalleled natural advantages to meet people's material needs for leisure tourism [5].

2.2. Bird Habitat and Construction Development Ideas

Bird habitat can provide abundant food sources, suitable breeding sites, avoid natural enemies and bad weather conditions to protect the survival and reproduction of birds. On the one hand, wetland is the habitat of birds and the unique natural environment for the survival of birds. On the other hand, birds are tourists who "vote with their wings" in Urban Wetland Park. The richness of birds directly reflects the benefit and attraction of park development and construction. At the same time, the characteristics of bird species and distribution will have different responses to various influencing factors of urban wetland, and bird activities can also evaluate the health level of urban wetland ecosystem. Therefore, in the planning and design of Urban Wetland Park, attention should be paid to purposeful and directional changes and construction of bird habitat, protection of ecosystem food chain, improvement of water quality, improvement of bird habitat adaptability and increase of bird species[6-7].

At present, China's wetland tourism still needs to be further developed and improved, lacking successful and diverse wetland tourism projects. Therefore, according to the development experience and construction methods of foreign wetland tourism, combined with the practice of planning wetland tourism destinations in recent years, the development ideas of wetland tourism can be summarized as follows:

(1) Adhere to the principle of ecological balance, and implement and protect sustainable utilization approaches that conform to the original characteristics of wetland ecosystem.

(2) In order to develop wetland tourism reasonably, it is necessary to divide wetland tourism destinations scientifically.

(3) As a kind of soil with high value, wetland should protect its original production capacity and

additional benefits.

2.3. Suggestions for Developing Wetland Bird Tourism

(1) Local governments and relevant departments should attach importance to the ecological value and social benefits of wetlands, formulate local wetland protection legislation, strengthen wetland management, strictly control various development methods, seriously crack down on and stop the behaviors of disturbing and destroying wetlands, and strengthen the protection of wetland ecological environment. To carry out beach reclamation activities in accordance with the law, to further explore the impact of beach reclamation on biodiversity protection and wetland ecosystem, and to scientifically determine the scope, sequence and scale of beach reclamation in accordance with the law. Control the environmental pollution around the wetland, strengthen the monitoring of pollution sources and environment, ensure the stable discharge of industrial pollution sources up to the standard, strengthen the prevention and control of aquaculture pollution by pollution sources, and restore and reconstruct the degraded wetland in time. Strengthen cooperation with scientific research institutions and ecological management, control the further spread of population, and realize the sustainable development of wetland ecosystem [8].

(2) To protect wetland ecosystem and wetland resources and improve bird habitat is one of the effective measures to promote the construction of Wetland Nature Reserve. According to the resource situation, counties and districts in coastal areas should plan and construct a batch of wetland reserves as soon as possible, actively apply for inclusion in national or provincial nature reserves, and then carry out three-phase research. The analysis on the development of bird watching tourism in coastal beach wetland is expected to be approved as the "list of international important wetlands" by the international wetland Bureau. First, to improve the level of protection can win the policy and financial support of wetland protection. Second, it can also enhance the confidence of enterprises and social investors, and attract more tourism investment [9].

(3) We will protect bird resources and severely crack down on all killing of birds. In order to protect birds, coastal areas should strengthen the protection of birds and their habitats, save and protect endangered birds, gradually establish bird protection centers and monitoring bases, publicize the importance of bird protection, and improve the level of bird protection. With the development of tourism, it is more necessary to establish the awareness of national ecological protection and bird protection, and prohibit all behaviors that disturb birds and destroy their habitat. The forestry bureau, Agricultural Bureau, public security and other departments should further improve their understanding, widely publicize laws and regulations on wildlife protection, conscientiously perform their duties, strengthen law enforcement inspection and supervision, and effectively prevent hunting. We will fight against the illegal killing and trafficking of wild birds and protect their superior natural environment [10].

(4) Plan to build more national and even world-class bird watching bases, wetland bird watching bases and "Bird Paradise". Through the development of large-scale birdwatching projects at home and abroad, wetland birdwatching tourism has become the focus of tourism planning. However, the development of birdwatching base is a series of highly scientific projects, involving many fields such as society, economy, resources and environment. It is necessary to carry out further scientific planning based on careful analysis, research and scientific demonstration. For the location of bird watching point, it is better to choose a place far away from the industrial park, wharf and gate, set up an open wetland area according to the tide advance and retreat trend, and establish a hidden bird watching point in the hidden place. The Birdwatching base shall not allow sea reclamation, prohibit hunting on the beach and to a large extent, breed enough birds as food, and feed them manually when necessary. In wetland, waterfowl must have some micro islands and high stakes to keep high

tide [11].

(5) The development of bird watching tourism products is a new product of travel agencies, so travel agencies should diversify according to the demand characteristics of the tourism market. According to the different motives and needs of tourists, the development of bird watching tourism products should be carried out at different levels. For example, due to specific purposes such as bird surveys, bird bundling, bird photography, professional birdwatchers tend to stay for a long time and have high requirements for tourist reception services. For this market, they can carry out birdwatching photography tour, birdwatching popular science tour, birdwatching theme festivals and activities tour and other tourism products. The main purpose of public birdwatchers is to get close to nature, relax and popularize bird knowledge. In the process of product development, they can plan and combine the characteristics of bird resources, coastal wetland landscape, marine landscape and cultural resources in various regions to improve the richness and interest of bird watching tourism products [12].

(6) To establish a high-quality tour guide team with unique wetland ecological environment and abundant bird resources is the premise of developing wetland bird watching tourism. The guide must also be familiar with the distribution of local birds and master the rules of bird migration and stay. In foreign countries, birdwatching guide has become a lucrative and respected profession, but at present, China's birdwatching guide just started in a short time, professional guide is very scarce. In order to develop wetland bird watching tourism, it is necessary to introduce and cultivate high-quality tour guides and improve their professional knowledge and ability. Bird watching tour guides should not only have the professional quality of traditional tour guides, but also have the knowledge of biology, ecology, natural geography and environmental protection. Only in this way, the knowledge of bird watching and ecology can be scientific, and the concept of knowledge and ecology can be fully transferred to tourists, guide tourists to experience and appreciate nature, and at the same time, enhance the sense of responsibility, and promote the harmonious coexistence of human and nature.

2.4. Bird Watching Tourism

Birdwatching originated from Britain in the 18th century. After more than two hundred years, it has gradually become a global outdoor trend activity project, and it is also one of the most popular forms of ecotourism. With the change of times and society, the specific location of bird watching tourism will change a lot to reduce the pressure of tourists' dependence on the environment. At the same time, bird watching tourism needs less construction facilities, which helps to save the requirements of human and material resources, so bird watching tourism based on bird resources is more likely to attract a large number of domestic and foreign tourists. The wetland has many natural environment, scenic resources and biological diversity, which makes many rare and endangered birds and migratory birds rely on the wetland for their main habitat and breeding places. The coastal wetland in China has a large area, a variety of wetland plants and a large number of benthos, which is an important place for bird migration, and it has rich wild bird resources, and has a huge development of wetland bird watching tourism Potential.

The development strategy of bird watching tourism:

(1) Further develop and utilize the economic benefits of bird watching tourism

Bird watching is an important way of eco-tourism, which has little impact on the ecological environment. At the same time, because of the long industrial chain and high economic benefits, it is the first choice to develop eco-tourism. In foreign countries, ecological bird watching has become an important entertainment project, which plays an inestimable role in increasing employment, economic income and tax revenue. In China, the development time of ecological birdwatching is

relatively short, but the development process is relatively fast, the number of visitors to the wetland birdwatching industry increases rapidly, and with the growth of tourist demand, China's economic level and people's living quality level, birdwatching tourism industry will show an increasing market development trend in China, and the national bird resources are rich and diverse, and ecological birdwatching tourism has a broad city Field development space. Therefore, it is extremely necessary to strengthen the investment in the eco birdwatching industry, vigorously develop the production and manufacturing innovation of the tourism equipment and products needed for Eco birdwatching, make full use of the potential economic benefits of birdwatching tourism, gradually improve the service level of eco birdwatching tourism, and form a relatively complete industry and Eco birdwatching tourism system.

(2) Development and design in line with ecological birdwatchers

Due to the different characteristics of bird watchers, the different motives and behaviors of bird watching and the different levels of demand, the impact of bird watching tourism products on economy, society and ecology is also different, and the consumption demand is also very different. This requires the development of ecological industry while protecting wetland species when developing and managing ecological bird watching tourism and designing specific content. When planning eco bird watching tourism marketing products, we should develop and design tourism products suitable for different bird watching groups according to the differences of eco bird watching, and gradually cultivate them in animal activities. The most popular activity is wildlife observation, so when we study bird watching tourists, we usually meet the needs of developing ecological bird watching tourism with a wide range of tourism.

3. Experiment and Analysis

3.1. Experiment Design

(1) Research object

The 500 hectare wetland model which is of great significance to the regional ecological environment and the development of bird watching tourism is chosen as the research object.

(2) Evaluation on the function of wetland important species habitat

1) Market value method, or productivity method, is usually a method to determine the economic value of habitat by studying the change of the quality and quantity of some species within the protection and affecting the estimated price of species exchange on the market. This evaluation is limited to the economic value of several types of resources with a small amount, and often underestimates the economic value of the research area.

2) The substitution method can replace the cost of building and maintaining the reserve with the value of providing habitat function for species. However, due to the influence and limitation of objective factors, the value of this function is usually underestimated.

3) Ecological value method, which is the concept of development and dynamic, mainly depends on people's willingness to pay, and determines its real value through the subjective understanding of resource value. It combines Pearce's growth curve (S-curve) with social development level and people's living standard, and estimates the value of ecological services based on people's actual social expenditure and the value of ecological functions. It is characterized by the reciprocal of Engel's coefficient T as the abscissa to determine the coefficient of development stage.

(3) Establishment of analysis model for bird habitat research

According to the number of birds, the method of sampling line and sampling point is used to study the spatial species of designated bird population, and the habitat type of target birds is evaluated by environmental characteristics. After the range distribution of bird population and community is obtained, the species and area of bird or bird community can be divided in depth. At

the same time, from the trend of population distribution, we can also distinguish the main and secondary, high-quality and low-quality habitat types. They can only be carried out on the existing forest trails, but not set up sample lines. Therefore, the application of sample line method is greatly limited. The sample method is easy to implement, random or systematic, and suitable for complex and changeable habitats. The transfer function of the sampling system is :

$$\Phi = \frac{C_z}{R_z} = \frac{M_z}{D_z} \quad (1)$$

The spatial habitat model of birds is established by using GIS technology to reflect the conditions of birds to habitat. In the study of the relationship between birds and individual habitat characteristics, chi square test and t-test were used to analyze simple habitat variables. When dealing with the influence of multiple variables on the habitat, the multivariate statistical analysis method is used. It is a way to explore the relationship between organisms and the habitat, and it can be used to test the essential relationship between various factors between birds and the habitat.

3.2. Estimation Process and Result Analysis

(1) Estimation of functional value of biological habitat

Firstly, the value of habitat function is estimated by substitution method, that is, the cost of constructing and maintaining the reserve is used to replace the value of habitat function. Secondly, this is the estimated value of habitat function value of wetland important species, so the ecological value method is used to modify the estimated results. The calculation formula of urban development stage coefficient is as follows:

$$\lambda = 1/(1 + e^{-1}) \quad (2)$$

Where: λ is the coefficient of development stage, e is the base of natural logarithm. In addition:

$$t = T - 3 = 1/En - 3 \quad (3)$$

Where t is the reciprocal of Engel's coefficient. According to the ratio of the average per capita consumption expenditure of urban residents to the food consumption expenditure of urban residents in 2016, the development stage coefficient calculated according to Pearce's growth curve is shown in Table 1:

Table 1. Urban development coefficient

Stage	Per Capita Consumption Expenditure	Food Consumption Expenditure	$t = T - 3 = 1/En - 3$	$\lambda = 1/(1 + e^{-1})$
Stage1	7800	2290	0.334	0.57
Stage2	8800	3720	0.311	0.42

According to Table 1, according to the statistics of the average national economic and social development in 2016, the per capita consumption expenditure of the city's residents is 8800 yuan / person and the food consumption expenditure of the city's residents is 3720 yuan / person. Engel coefficient is 0.311, which is in the stage of affluence. After calculation, we can get that the development coefficient of the city at the present stage is 0.58, that is to say, the capital construction cost of the nature reserve accounts for 58% of the functional value of the biological habitat, so we can get the average functional value of the 500 ha wetland biological habitat is 17.5537 million

yuan.

The estimation results of this study are calculated on the basis of the specific investment of the reserve, which can roughly reflect the specific situation of the designated area. According to the ecological value method, we know that the value of habitat function of important species in Wetland Nature Reserve is 17.5537 million yuan. For the estimation of the functional value of the protected area habitat, because of the deviation of the survey data, the difference of the calculation method, and the defects of the research on the selected wetland survey area, there will be some errors between the judgment results and the actual value. However, in terms of specific situation, the assessment results of this method show that people pay attention to habitat under the current social and economic development conditions.

(2) Bird watching tourism and urban construction

China has a variety of tourism resources, especially in recent decades, the urban construction has been strengthened and the city has changed dramatically. The construction of wetland habitat and the development of bird watching tourism have attracted a large number of domestic and foreign tourists. From 2008 to 2016, the difference between the annual total income change of China's average urban tourism and the annual income of habitat tourism is shown in Figure 1:

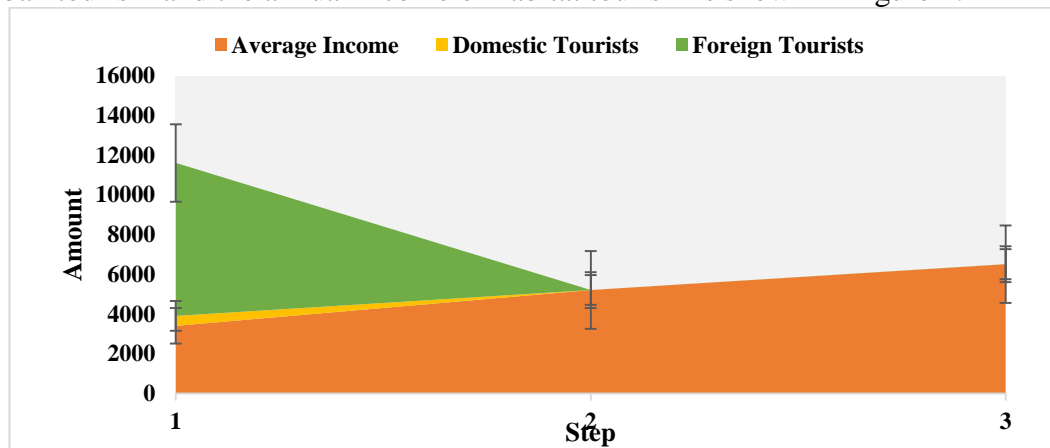


Figure 1. Annual income of urban tourism and habitat Tourism

As shown in Figure 1, the annual total income of the average urban tourism industry and the annual income of habitat tourism are growing. Innovate and develop bird watching routes, increase publicity and promotion, and establish a certain number of simple ecological bird watching platforms and ecological bird watching pavilions under the condition of not damaging the ecological landscape and normal life of birds, so that tourists can fully integrate into nature and enjoy the harmony between people and birds. On the basis of the original traditional birdwatching route, the innovation and development of birdwatching tourism route will make the new and old birdwatching routes have their own style and characteristics. On this basis, we will continue to increase capital investment, carry out a wide range of wetland protection, publicity and scientific research activities, strive to advocate the construction of natural environment protection zones and the protection of bird species resources, enhance the awareness of ecological protection and expand the participation of global human beings. Through photography association, bird friends association or animal lovers Association, rare birds exhibition and national and municipal bird protection exhibition are held, calling on the whole society to pay attention to birds and love them. Taking the lead of the government departments, the "bird loving Festival" or "bird loving week" will be actively held, and the publicity will be expanded, which can widely attract a variety of social organizations, mainly school teachers and students, tourism lovers, and scientific research, to form an ecological bird watching tourism team.

(3) Land restoration price and market development space

In order to compare the value differences among mines, cultivated land and wetlands, the area to be restored, unit price for restoration and market space of the three land types are recorded as shown in Figure 2:

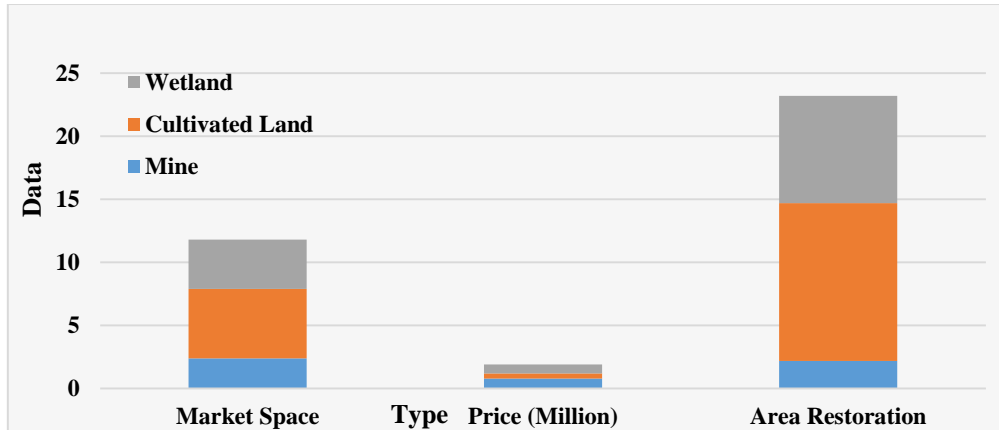


Figure 2. Area to be restored, unit price and market space of three land types

It can be seen from Figure 2 that the price of land restoration is very expensive, but the available market space is large. The use of a variety of financing means, such as the transfer of business rights, franchising and other ways, is conducive to solving the problem of attracting foreign investment extensively, strengthening the construction of bird watching infrastructure in response to the lack of capital investment in the reserve, and increasing the social capital investment for the development of Wetland bird watching tourism. The Internet, official account, television media and newspapers and magazines are used to publicize the protection of natural and rare birds, and enhance public awareness and participation in environmental protection. On the basis of not interfering with the normal life of birds, expanding the construction of reserve, bird watching equipment, bird rescue facilities and patrol facilities is conducive to the protection of bird resources and wetland bird watching tourism activities.

(4) Number and proportion of wetland biological species

In order to study the proportion of wetland biological species and analyze its value, the number and distribution percentage of wild animals, birds and fish are shown in Figure 3:

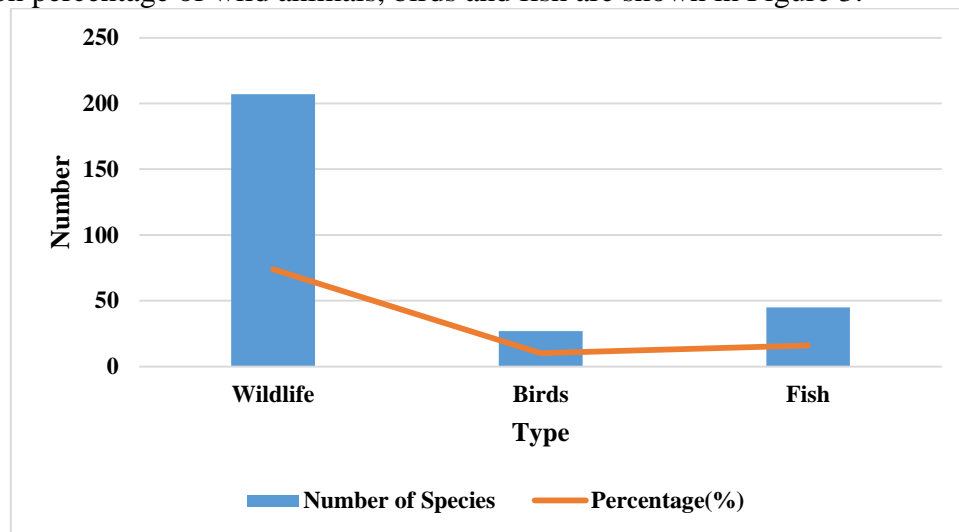


Figure 3. Number and proportion of wetland biological species

As shown in Figure 3, the number of bird species in wetland is significantly lower than that of wild animals and fish. In the context of rapid urbanization, it is more and more difficult for people to experience the natural scenery. Abundant and diverse birds are of great value to wetland habitat construction and birdwatching tourism, and have indisputable attraction to global tourists. In this paper, bird watching tourism is a kind of ecotourism experience project based on wetland development. It refers to the observation of wild birds with binoculars. By comparing them with traditional landscape tourism, birdwatching is more understanding and scientific. Bird watching in China began in 1996. Many birdwatchers, journalists and environmental protection volunteers took the lead in launching birdwatching activities in Beijing. Through outdoor birdwatching, birdwatching survey, birdwatching, birdwatching photography exhibition and other activities, in-depth birdwatching activities are carried out. Bird watching organizations have also been established. By the end of 2016, 42 bird watching organizations had been established nationwide, and the number of bird watchers increased by 41% every year.

(5) Tourism consumption

In order to more directly reflect the tourism income of wetland birds, human landscapes and nature reserves, the consumption proportion and growth of the three tourism modes are compared as shown in Figure 4:

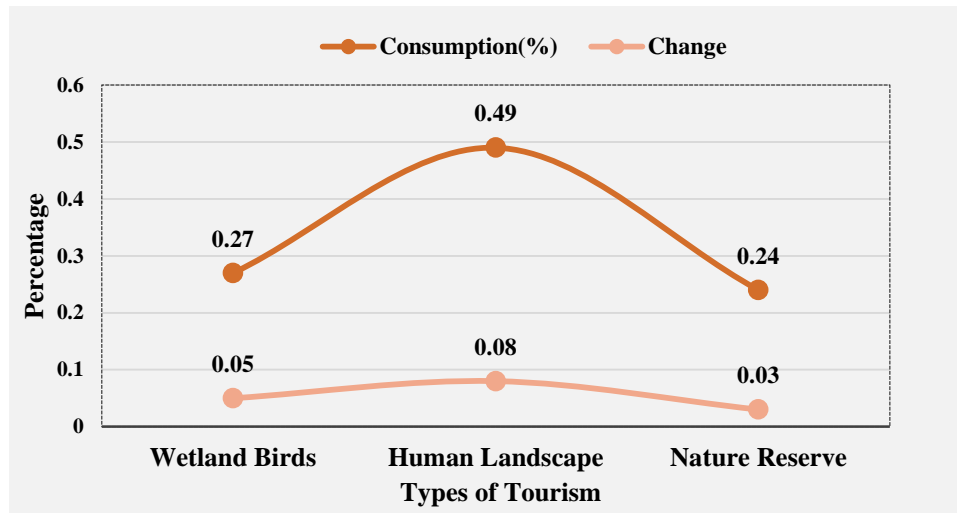


Figure 4. Consumption proportion and growth change of three tourism modes

It can be seen from Figure 4 that the consumption of the three tourism modes shows an upward trend, but the income of wetland birds is relatively low. Therefore, it is one of the effective measures to protect wetland ecosystem and wetland resources and improve bird habitat environment to develop bird watching tourism, promote the construction of Wetland Nature Reserve and establish nature reserve. Relevant development measures are as follows:

- 1) Strengthen management and control, and improve the sustainable utilization level of wetland ecotourism resources.
- 2) Plan wetland eco-tourism in different areas in a directional way.
- 3) Comprehensively renovate and protect the wetland ecological environment.
- 4) Strengthen cooperation between tourism and other industries, and make full use of regional tourism resources.

(6) GIS and multivariate statistical analysis technology

For the construction and use of GIS based model and multivariate statistical analysis technology, the comparison of their use conditions and application effects in different scopes is shown in Table 2:

Table 2. GIS and multivariate statistical analysis technology

Model	Proficiency	Price	Effect	Quality
Small Scale	High	High	Obvious	High
Large Scale	Low	High	Inefficient	Low

Table 2 shows that the assessment model of bird habitat suitability based on GIS and multivariate statistical analysis technology is conducive to the exploration of bird habitat quality. GIS technology, which has been applied and improved continuously, has been widely used in the spatial evaluation and determination of bird habitat. GIS technology and corresponding multivariate statistical analysis provide technical support for the assessment of the quality and suitability of bird habitat in a large scale. Combined with habitat model, it is an extremely effective method to evaluate bird habitat.

Generally speaking, the radio telemetry technology is simple in operation and limited in tracking range, so it is suitable for small-scale research; GPS satellite tracking space is large, not limited by the climate conditions, the quality of the data obtained mainly depends on the proficiency of personnel. The main problem is that the equipment is relatively expensive and difficult to be widely used.

4. Conclusion

This paper expounds the wetland resources and wetland tourism, as well as the idea of habitat construction and development, suggestions and bird watching tourism. At the same time, using the market value method, alternative method and ecological value method to preliminarily estimate the value of species habitat, using GIS technology to build the spatial habitat model of birds, using chi square test and t test as the analysis method of simple habitat variables, and exploring the construction of bird habitat and the way of bird watching tourism. In the planning and design of wetland habitat, it is still a long way to achieve the harmonious coexistence between adults and nature to prohibit human invasion and build suitable bird habitat.

This study shows that: the development coefficient of two stages in 2016 is 0.58, that is, the basic construction cost of the nature reserve accounts for 58% of the functional value of the biological habitat, It can be concluded that the average functional value of 500 ha wetland biological habitat is 17.5537 million yuan, which further explains the importance of protecting wetland environment and developing bird watching tourism at this stage.

Although many scholars have made outstanding achievements in wetland habitat construction and bird watching tourism research, at the same time, in view of some limitations of this study, we hope to solve other problems that are easy to be ignored while meeting the needs. For example, in the process of tourism development, wetland scenic spots must be guided by the concept of sustainable development; Based on the protection of wetland ecological environment, the development is carried out. On the one hand, it is necessary to fully display all projects before the start-up, and resolutely stop projects damaging the wetland ecological environment. On the other hand, we should do a good job in tourism management. First of all, the number of tourists should be prevented from exceeding the carrying capacity of the wetland environment, thus damaging the environment. Second, it is necessary to prevent tourists' improper behavior from damaging the wetland ecological environment. In a word, we should develop on the basis of protection, do a good job of protection after the completion of development, and do a good job in resource protection and development. Wetland bird watching tourism will have a broad development prospect.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

Conflict of Interest

The author states that this article has no conflict of interest.

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