

Tourist Behaviors in Wetland Park: A Preliminary Study in Xixi National Wetland Park, Hangzhou, China

PAN Lili¹, CUI Lijuan^{2,3}, WU Ming⁴

(1. College of Tourism, Zhejiang Gongshang University, Hangzhou 310018, China; 2. Institute of Wetland Research, Chinese Academy of Forestry, Beijing 100091, China; 3. Laboratory of Tree Breeding and Cultivation, State Forestry Administration, Beijing 100091, China; 4. Research Institute of Subtropical Forestry, Chinese Academy of Forestry, Hangzhou 311400, China)

Abstract: Public education as well as tourism and leisure are the two important functions of national wetland park, and tourist behaviors act as the guiding factor in the national wetland park construction and management. As the first national wetland park in China, Xixi National Wetland Park, located in Hangzhou City, Zhejiang Province, will give constructive instructions to the construction and management of other wetland parks and ecotourism resorts. This paper analyzed the tourist behaviors in Xixi National Wetland Park. By the observation, in-depth interview and questionnaire, the results show that tourists in wetland parks are different from those in the other common destinations, and they are also different from those strict eco-tourists. In fact, the tourists in wetland park have unique characteristics, such as the intense perception to the functions of wetland ecosystem and the environment impact behaviors. Those tourists are preferred to natural landscapes in their motivations and expectations. Wetland landscapes are the main image to those tourists in the Xixi National Wetland Park. Tourist expectation, experience and satisfaction are all critical factors for the success of the planning and management in national wetland parks. Based on the results, some measures for the sustainable development of wetland parks, including to optimize wetland theme landscape and tourism products, to improve tourist facilities and services, to enhance quality of visitor experiences, and to implement total quality management based on tourist characteristics, are given to national wetland park ecotourism.

Keywords: tourist behavior; ecotourism; Xixi National Wetland Park; China

1 Introduction

As a unique ecosystem, wetland has environmental, economic and social service functions. In the ecosystem service function of wetland, tourism and scientific education are very important, and they can be easily perceived by the public, too. Wetland ecotourism and education tourism are both the new effective wetlands resources exploitation. Xixi National Wetland Park in Hangzhou City, Zhejiang Province, was formally established as the first national wetland park on February 2, 2005 by State Forestry Administration of China, and officially opened to the public on May 1 in the same year. And now there are about 20 national wetland parks in China. The establishment of national wetland park is

a new attempt in the wetland protection and utilization, and how to develop ecotourism becomes a key issue for the national wetland park.

Many researchers have interest in eco-tourists, and the behavioral approach has been the optimal method to research ecotourism and nature destination (Kerstetter *et al.*, 2004). Tourist behavior analysis is the most important content to carry out sustainable tourism (Obua and Harding, 1996). In ecotourism resorts, such as national park, tourists prefer to observe wild animals and hike (Glen and Philip, 1998). They expect that they can have chances to watch animals closely (Derrin *et al.*, 1997). One of the primary challenges facing ecotourism management is to establish a profitable and ecologically sustainable industry, while simultaneously achieving a

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Corresponding author: PAN Lili. E-mail: pllzsu@yahoo.com.cn

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satisfying experience for visitor and raising standards of living in the host community (Lim and McAleer, 2005). The managers should enhance tourist experiences about nature (Glen and Philip, 1998). The explanation services are important and can decrease tourism negative environment impact (Hwang *et al.*, 2005). By environment education tourists can change their behaviors and take part in directly maintaining and protecting nature (Lim and McAleer, 2005). Orams (1995) argued that ecotourism management strategies should attempt to move ecotourism experiences beyond more enjoyment to a more active role which incorporated learning, attitude and behavioral change. The contemporary park management faces a number of challenges including minimization of the impact of increasing park visitation on resources, development of effective public relations and educational programs in parks, implementation of viable park marketing and planning programs and effective park visitor risk management, so understanding the nature of park visitors is important for dealing with those difficulties above (Galloway, 2002). The rejuvenation and utilization of wetland are always the topics to researchers, while few literatures are about wetland tourism. In fact, tourism is an important function of wetland, and the recreational use of wetlands is not conflict with their conservation objectives, however decisions concerning the protection of wetlands should precede recreational planning (Bacon, 1987).

In recent years, Chinese scholars have paid much attention to wetland tourism, and the studies were mainly about the development of wetland tourist resources and

some issues of typical wetland ecotourism destinations, such as the Dongting Lake wetland (Xiong *et al.*, 2003; Wang *et al.*, 2004; Sheng, 2006), Hengshui Lake wetland (Feng *et al.*, 2006), Huanghe (Yellow) River Delta wetlands (Li *et al.*, 2004), Poyang Lake wetland (Lu and Liu, 2003), Xianghai wetland (Sun and Wang, 2004) and so on. The characteristics of wetlands tourism resources, development modes, and others were discussed, but those researches mainly concerned macroeconomic issues. There are few in-depth case researches, especially about wetlands tourists.

This paper took Xixi National Wetland Park as the typical case to conduct a survey on tourists in wetland parks. Based on the analysis of tourist behavior, some measures about the construction and management of national wetland parks were suggested.

2 Study Area and Method

Xixi National Wetland Park is located in the west of Hangzhou City, 16 km away from the city center, covering 10.08 km² (Fig. 1). Xixi wetland is a typical artificial urban wetland, cultural wetland and agricultural wetland, where there are pristine natural landscape and profound cultural heritage. More than 70% of the Xixi wetland is ports, ponds and other water areas.

In this paper, questionnaires, field observation, indepth interviews and other methods were used to tourist surveys. Questionnaire content included the demographic characteristics, spatial behaviors, preferences, expectation, experiences and other aspects. Most of items

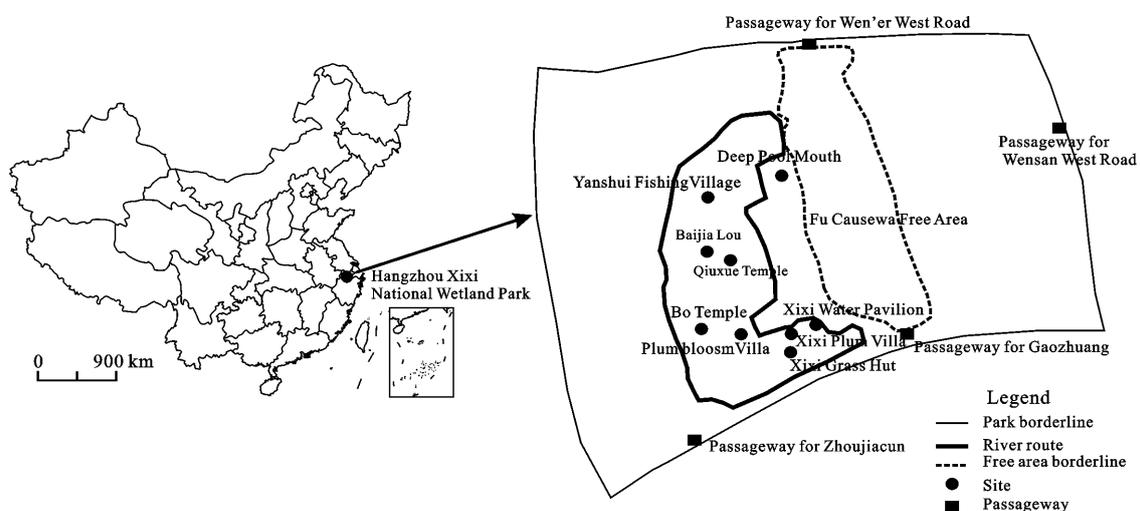


Fig. 1 Location sketch of Xixi National Wetland Park

had selective answers, and some problems required tourists to give their own ideas in the questionnaires. The survey was made from March to June in 2006. The purposive sampling method was adopted, and the respondents were the visitors who had a complete travel experience. The samples included groups and individuals, and totally 141 questionnaires were returned. Furthermore, field observation, track survey and random interview were all used in this paper in order to record the words and behaviors of tourists and assist the questionnaires. In order to ensure validity, one pretest was conducted before the formal questionnaires.

3 Tourist Behaviors in Xixi National Wetland Park

The surveys in this paper show that tourist behaviors in Xixi National Wetland Park are different from other common tourism destinations.

3.1 Demographic characteristics

The demographic characteristics of tourists in this study included basic information such as original place, age, occupation, family structure, monthly income, and education degree (Table 1). From the findings of the survey, many tourists of Xixi National Wetland Park were from the nearby area, of which the tourists from Zhejiang Province accounted for 72.00%. The main tourists were young and middle-aged, and the ones from 19 years old to 40 years old accounted for 77.20%. Students, white-collars, science and education staffs were the main part of tourists, which accounted for 74.34% of the total respondents. The singles and the families with children occupied the main part of the respondents. In the survey result, unmarried tourists accounted for 50.47%, and the married and with children ones accounted for 40.19%. Many tourists had higher education, and 59.82% of the respondents were the undergraduates and above.

3.2 Tourist expectation and preference

Usually there are large amounts of tourists in the Xixi National Wetland Park at weekends. Most of respondents tour together with their families, relatives and friends. Compared to cultural attractiveness, the natural scenery in Xixi National Wetland Park was relatively appealing to the public. "Sharing happiness with friends" and "enjoying the beautiful wetlands" were consid-

Table 1 Tourist demographic characteristics in Xixi National Wetland Park

	Basic attribute	Tourist proportion (%)
Original place	Zhejiang Province	72.00
	Shanghai Municipality	16.00
	Guangdong Province	2.00
	Shandong Province	2.00
	Shanxi Province	2.00
	Anhui Province	1.00
	Beijing Municipality	1.00
	Hainan Province	1.00
	Jiangsu Province	1.00
	Liaoning Province	1.00
Yunnan Province	1.00	
Age	<18 years	7.02
	19–30 years	50.88
	31–40 years	26.32
	41–50 years	11.40
	51–60 years	4.39
	>60 years	0.00
Occupation	Office-bearer	8.85
	Business staff	23.01
	Professional/technical staff	19.47
	Serving, selling and trading staff	4.31
	Worker	2.65
	Peasant	0.88
	Soldier	0.00
	Student	31.86
	Retiree	1.77
	Others	6.19
Family structure	Unmarried	50.47
	Married and without child	9.35
	Married and with children	40.19
Monthly income	<1000 yuan	24.47
	1000–2000 yuan	14.89
	2000–3000 yuan	25.53
	3000–4000 yuan	8.51
	4000–5000 yuan	10.64
	>5000 yuan	15.96
Education degree	Junior high school and below	4.67
	Senior high school or technical secondary school	11.21
	Junior college	24.30
	Undergraduate	43.93
	Undergraduate above	15.89

ed to be the main purpose of their tours, and the last two were "learning local culture" and "learning wetlands knowledge" (Table 2).

Table 2 Tourist motivations (five scores evaluation)

Tourist motivation	Average score
Sharing happiness with friends	4.07
Enjoying beautiful wetlands	4.07
Having family fun	4.01
Health	3.99
Leisure and vacation	3.93
Enjoying rural landscape	3.92
Learning local culture	3.55
Learning wetlands knowledge	3.49

From Table 3, we can see that in the Xixi National Wetland Park tourists expected to walk and visit by boat. To tourists, a boat was the most favorite traffic vehicle. Contrarily those vehicles which were not appropriate for the wetland ecotourism, such as horse and dooly, were not accepted by the tourists. This showed that tourists were more interested in wetland water and wetland landscape in Xixi National Wetland Park. Some tourism activities, such as natural sightseeing, rural experience and wetland science learning and so on, were highly expected by the most of respondents, but on the contrary the history and culture attractions relatively had lower expectations. Majority of 64.23% tourists thought that they came to Xixi National Wetland Park to enjoy the idyllic view, to collect food, to picnic, to boat, and to go fishing, and some to learn wetland knowledge and watch birds reached to more than 20%. The percents of knowing about culture history and architecture, drinking tea, recreation in house, shopping and other activities were much lower.

3.3 Spatial behaviors and perception of tourists

There are some theme sites in Xixi National Wetland Park, including Deep Pool Mouth, Xixi Family, YanShui Fishing Village, Qiuxue Temple, Xixi Plum Blossom Villa, Bo Temple, Xixi Water Pavilion and so on. The survey showed that tourists only visited several sites in their trips, and 54.73% of tourists visited two or three sites and the less visited more than four sites. The visit rates of each site were different. Xixi Plum Blossom Villa, Yanshui Fishing Village, and Xixi Water Pavilion were more attractive. By the observation and interviews with the tourists it was found that Xixi Plum Villa and Xixi Water Pavilion were closer to the entrance, visitors could visit them on foot or by boat, so they had the highest rate of visiting. Yanshui Fishing Village was far from the park entrance, but it was the important sea port, so it had a higher visit rate, too.

Table 3 Expectant activities and traffic vehicles of tourists in Xixi National Wetland Park

Expectancy	Basic attribute	Tourist proportion (%)	
Activities	Enjoying idyllic view	64.23	
	Collecting food	45.99	
	Picnic	34.31	
	Boating	33.58	
	Going fishing	25.55	
	Learning wetlands knowledge	21.17	
	Watching bird	21.17	
	Tasting delicious food	18.98	
	Seeing historical and cultural sites	17.52	
	Tour residential areas	16.06	
	Drinking tea	16.06	
	Theatrical performances	10.22	
	Stadiums pleasure	5.11	
	Buying tourist souvenirs	1.46	
	Others	0.00	
	Traffic vehicle	Walk	56.52
		Manpower boat	48.55
Electric power boat		31.16	
Horse		14.49	
Bike		13.77	
Electric power bus		5.80	
Dooly		4.35	
Others	0.72		

This research used the open-end questionnaire to study the wetland perception of Xixi wetland. The main item was wetland ecological functions including tourism and leisure site, biodiversity conservation, water resources protection, climate regulation, science and education, planting and breeding, and preventing flood in cities. Another was wetland landscapes including plant, animal and culture view. Most of tourists had visited few wetland destinations before tour to Xixi. However, tourism and leisure functions, biodiversity conservation, water resources protection, climate regulation, and other important functions were considered as the main functions of wetland by the tourists, of which tourism and leisure function was thought as an important function of wetlands by 66.14% of the visitors (Table 4). Biodiversity protection, the protection of water resources and climate were considered as functions by tourists of 65.35%, 54.33% and 50.39%, respectively. Tourists were more interested in Xixi's typical wetland landscape. In the effective questionnaires, perception for those per-simmon trees with relatively obvious features was higher, which reached to 34.43%, and mulberry, plum,

Table 4 Perception of functions and landscapes in Xixi National Wetland Park

	Basic attribute	Perception (%)
Ecological function	Tourism and leisure	66.14
	Biodiversity conservation	65.35
	Water resources protection	54.33
	Climate regulation	50.39
	Science and education	26.77
	Planting and breeding	25.98
	Preventing flood in city	9.45
	Others	1.57
Landscape	Plant	
	Persimmon	34.43
	Mulberry	29.51
	Plum	21.31
	Honeysuckle	19.67
	Bamboo	19.67
	Water shallot	11.48
	Peach	9.84
	Water nymph	9.84
	Reed	8.20
	Camphor	6.56
	Animal	
	Birds	
	Birds (The respondents can't distinguish the bird names)	56.82
	Egret	34.09
	Widgeon	18.18
	Others	11.56
	Fish (shrimp)	9.09
	Insect	9.09
	Pheasant	4.55
	Frog	2.27
	Culture	
	Residential architecture	27.78
	Folk custom	25.00
	Xixi Family	19.44
	Yanshui Fishing Village	16.67
	Xixi Grass House	11.11
	Qiuxue Temple	8.33
	Bo Temple	8.33
	Palace	5.56
	Plum and Bamboo Village	5.56
	Baijia Lou	5.56
Xixi Water Pavilion	5.56	
Xixi Plum Blossom Villa	2.78	

honeysuckle and bamboo more or less impressed on the tourists, too. During the interview, some of tourists talked about wetland plants, such as water nymph, reed and camphor. Birds were the main interests of the respondents, and some tourists said that they had ever seen egret widgeon, pheasants and other animals in their tour to Xixi. The tourist guides in Xixi also introduced egret information to all the visitors. The tracking survey

to tourists also found that they displayed tremendous enthusiasm to the wetland animals, and visitors who had not seen the wetland birds in the journey felt disappointment. Tourist perception on the cultural landscape was relatively lower.

3.4 Evaluation and experience of tourists

Tourists' evaluation to Xixi National Wetland Park was at the middle-level. As the assessment of five scores, the overall impression score was 3.65, of which natural landscape had the highest score reaching to 3.86, the sanitation conditions and human environment were the second, and food service and price had relatively lower score. About 90.48% of the visitors thought they increased the understanding level of wetland through the Xixi wetland tourism, they would recommend Xixi wetland to the relatives, and would revisit at some time. Those who did not catch the wetland theme would not recommend and revisit in the future. The survey also found that tourists felt dissatisfaction in the aspects of restaurant, interpretation, shop and so on (Table 5).

Table 5 Survey result on dissatisfactory services

Service	Satisfactory degree (%)
Restaurant	35.05
Interpretation	32.99
Shop	24.74
Water closet	21.65
Teahouse	14.43
Tour boat	13.40
Chair	10.31
Pavilion	8.25
Footway	7.22
Science popularization museum	7.22
Park	6.19
Dock	6.19

4 Suggestions from perspective of tourist behaviors

4.1 To optimize wetland theme landscape and tourism products

4.1.1 To highlight wetland theme landscape

Tourists had higher perception on the wetland theme landscape, so Xixi National Wetland Park should highlight the uniqueness of wetlands in attraction, landscape, facility, image and services in order to differentiate from the common natural and rural destinations. It should also continue to develop wetland plant park, wetland science museums and other theme sites by enriching typical plants, promoting wetland animals breeding, and

highlighting different wetland theme landscapes in each zone. The existing theme sites need to be developed and strengthened so that tourists can distinguish each spots and choose their favorite sceneries according to their preferences. Water, as a soul of wetland, should be used fully, so the wetland water-related attractions and activities should be developed to increase tourism products spirituality around the wetland water.

4.1.2 To enrich tourist products

A series of ecotourism attractions relative to urban wetlands, cultural wetlands and farming wetlands should be developed. At present the main attractions are just the sightseeing landscapes, and Xixi National Wetland Park needs to exert more efforts to popularize tourism products, ecological leisure products, and cultural products in the future, especially education tourism that should be reinforced in whether contents or concepts. The unique geographical position makes Xixi National Wetland Park as a recreational space for urban residents in Hangzhou. The pleasure-seeking and friends and family weekend leisure trips are the main tour purposes of tourists. The follow-up development should enhance leisure products to make the tourists gain mental and bodily pleasure through watching wetland landscapes.

4.2 To improve tourist facilities and services

Although the overall evaluation on the Xixi National Wetland Park from tourists is better, many tourists are dissatisfied with facilities and services, especially with restaurants. As the all parks open and the tour routes become much longer, improving the catering facilities become Xixi National Wetland Park's important measure to enhance satisfaction of tourists. Another key problem is to perfect interpretation systems. In order to deal with the tourists' dissatisfaction with explanation information, nameplate, guide map and so on, Xixi National Wetland Park must improve interpretation systems, enhance the training of tourism guiders, and make full use of the diversified media guide to help visitors to understand wetlands. In peak tour periods, the park should further strengthen the management of tourists and upgrade the quality of services.

4.3 To enhance quality of visitor experiences

4.3.1 To enhance products participation

Now most of the attractions in Xixi National Wetland Park are static landscapes, but the tourists wish to par-

ticipate more actively in some products. Xixi National Wetland Park should strengthen the participation of tourism products, and take some flexible and diversified ways to add interests and participation of attractions. The interaction between the visitors and the attractions should be improved, and those activities tourists can directly participate should be developed. And it needs to highlight the particularity of the wetland ecosystem in a flexible way and add the conventional tourist funs, so that tourists can experience the unique of Xixi wetland in a pleasant atmosphere.

4.3.2 To enhance tourists' awareness of environment protection

The wetland ecological tourism must protect ecosystem and environment. Ecotourism destinations need to protect resources and environment while visitors can receive a unique travel experience. It needs to take effective measures to help visitors understand the wetland ecotourism particularity, restore self-discipline, control the behavior and consumption patterns which are likely to have impact on the wetland ecosystems. Adding some knowledge of wetland protection and ecosystem in the promotion activities is very important, which would make tourists understand the wetland ecosystems and wetland tourism particularity before their trips and then reduce the gap between the expectation and the experience and increase the tourist's satisfaction.

4.3.3 To enhance quality of services

Tourists gave highly evaluation to the natural landscape, but dissatisfied with facilities and services, which make it important to enhance services quality. The improvement should be done: to establish the awareness that service is a part of tourism products, to strengthen professional training for staff, and to enhance the quality of practitioners in the further development. The training of staffs for the communication between the staffs and visitors is most important. Furthermore, on the basis of providing standardized services, Xixi National Wetland Park should provide personalized service according to tourists' different hobbies and individual requests, such as the guidance and basic service for photography lovers, personalized services for tourists, researches, and self-help tourists.

4.4 To implement total quality management

4.4.1 Implementation of environmental management

Most of tourists had a higher perception on the ecologi-

cal functions of wetlands, also showed a stronger environmental awareness. But for some tourists destroyed the environment, legal, economic, planning, technological and educational measures should be effectively used to control all possible damages to the environment, facilities and activities, to coordinate the development of ecotourism, wetland systems protection and community development, to meet the needs of tourists while protecting wetland resources, and to prevent environmental pollution and ecological destruction. Human activities and the maintenance of wetland ecosystems will be in the harmonious development of economic, social and environmental benefits.

4.4.2 Brand management

Xixi National Wetland Park is the first national wetland park, which make it have brand advantages. In the construction and management, it should maintain brand and establish a good reputation based on fully understanding tourists' demand trends, and take measures to consolidate primary advantage as the first wetland park in China, at the same time to enhance their global reputation.

4.4.3 Establishment of monitoring mechanism

The quality management is a long-term task, which needs to set up a special management agent and build a suitable monitoring mechanism to supervise the environmental quality, service quality, product development of the park, and the number, characteristics and quality of visitors, so as to timely provide effective management measures in light of the existing issues. It is an effective means to control and manage the tourist center, the key theme sites and environmentally sensitive areas in upgrading the environmental quality, service quality and product quality in Xixi National Wetland Park.

5 Conclusions and Discussion

The aim of national wetland park is to achieve the balance point between the essence of wetland ecosystem characteristics and the needs of tourists and behavior characteristics. In order to achieve this balance, the first is to balance the uniqueness of wetlands and the tourist expectation. It can fully embody the theme of wetlands in the construction and management. For example, wetland parks can explain the wetland ecosystem in the characteristics with tangible and effective use of explanation system and activate tourism products. The second

is to seek the balance between the wetland resources protection and the tourist negative impacts, which can be achieved through sustainable development, such as the development of ecotourism products and popular science knowledge, education for tourists, effective tourism space, and the implementation of environmental management strategy.

The tourist behaviors have an important impact on the management of wetland ecotourism. This article conducts a survey on tourists in a wetland park. The surveys show that the tourists in wetland parks are different from other common destinations. They are full of curiosity about water, flora and fauna, and hope to gain unique experiences through wetlands trip and close contact with wetlands, and have interests in participating in the interesting tourism activities. Based on the characteristics of tourists, the authors suggested that Xixi National Wetland Park should optimize the wetland landscape and products, improve tourist facilities and services, enhance visitor's experience and implement quality management development.

How to construct and manage the national wetland park is still a new field in current China. More attention should be paid on tourist behaviors in wetland parks, so as to clarify interaction mechanisms of the wetland ecosystem. There are many issues remains to deal with.

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