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Study on the Tourism Garbage Management in Huangshan Mountain Scenic Spot

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Abstract. Huangshan Mountain Scenic Spot is the representative of mountain scenic spot in China. Environmental Protection is a constant and unremitting work of successive managers. Due to the limitation of the fragile ecological environment, the limitation of elevation and terrain, the seasonal difference in tourist arrivals, and the spatial difference of scenic spots distribution, it is very difficult to collect and transfer tourism garbage in mountains scenic spot. According to the tourist arrivals in the recent years, the general characteristic of garbage distribution in Huangshan Mountain Scenic Spot is calculated by using per capita production method. The result show that the total garbage capacity has not reached the top at present, but is not enough in the middle and long term with the increasing number of tourists. Strengthening the education of tourists' environmental protection awareness is the solution to this challenge from the source. At last, this paper put forward the path of it.

1. Introduction

Huangshan Mountain Scenic Spot is the representative of mountain scenic spot in China. Because of its outstanding contribution to the protection and management of tourism resources, it has been praised by the United Nations Educational and Scientific and Cultural Organization (UNESCO). The tourism management specialty of Huangshan University was founded in 1985. It is one of the first eleven colleges and universities to develop tourism higher education in China and the first tourism major in Anhui Province. Integrating of enterprises with universities becomes the trend of Chinese higher education development according to a document released by the State Council of China in 2017[1]. Strengthening the education of tourists' environmental protection awareness is the solution to this challenge from the source. This paper put the path of integrate the tourism garbage management and education in Huangshan Mountain Scenic Spot.

The path not only improve the environmental management ability of Huangshan Mountain Scenic Spot, but also promote the construction of local, high-level and applied university in Huangshan University.

2. The characteristics of tourism garbage management in Mountain scenic spot

The whole process of urban tourism garbage treatment is in a two-dimensional plane, while the mountain-type scenic spots in the first three links of the whole process of tourism waste treatment is obviously three-dimensional characteristics. The conventional waste collection mode in scenic spots

(Fig. 1) is mostly a mixed collection of garbage, or simply coarse collection of recyclable metals, plastics, paper and glass for sale to waste operators for recycling.
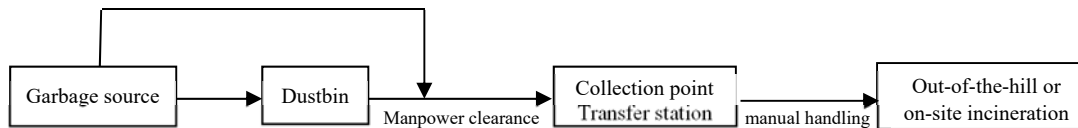

Fig.1 Conventional garbage collection mode in the scenic area

Due to the limitation of elevation and terrain, especially the road forms such as ladder, curved track, bridge, ropeway and so on, it is very difficult to collect and transfer tourism garbage in mountains scenic spot. The characteristics are:

2.1 fragile ecological environment
Mountain-type scenic spots are mainly natural scenery resources, with landforms, vegetation, water scenes, temple views, pavilions and pavilions as the representative of a variety of scenic spots are very rich, at the same time, due to the altitude relationship, the climate change of mountain-type scenic spots is complex. Easy to form clouds, snow and snow landscape, sunrise, sunset and other natural landscape, tourists have a strong attraction. At the same time, mountain-type scenic spot is also a kind of scenic area which depends on the ecological environment greatly. Its ecosystem is fragile and ecological restoration is difficult. The quality of the ecological environment directly affects the economic development of the scenic spot. How to reduce and control the impact of tourism activities on the ecological environment is the focus of scenic spot management.

2.2 differences in tourism space and traffic conditions
The mountain-type scenic spot has a wide area and a large volume. However, due to the special terrain of the mountains, there is little flat land in the scenic spot, and the space and region for tourists to visit are often relatively narrow. Compared with other types of scenic spots, mountain scenic spots are very inconvenient.

2.3 seasonal differences in tourist arrivals
For scenic spots, the structural differences of tourism products often lead to different demand-time elasticity of scenic spots. Generally speaking, the tourism products developed with natural landscape as the main body, light, peak season tourist volume is very different, seasonal is very obvious. Most of the mountain-type scenic spots with natural landscape as the main body are restricted by the climatic conditions, which leads to this characteristic. The huge difference of tourist volume in peak season, irregular distribution of tourist waste, and many factors affecting the collection and transportation system of tourist waste have increased the difficulty of operation and management of tourist waste collection and transportation system in mountain scenic spots.

2.4 the spatial difference of scenic spots distribution
Because of its large elevation difference and the special terrain of the mountains, the scenic spots in the mountain-type scenic spots are widely distributed and there are many sightseeing routes, which leads to the unbalanced spatial distribution of tourists. At the same time, because the traffic is not convenient, most areas need to walk, the tour time is also longer.

3. The general characteristics of garbage distribution in Huangshan Mountain Scenic Spot
The total garbage capacity in Huangshan Mountain Scenic Spot is calculated by using per capita production method [2]. the formula is:

$$q \times m = Q \tag{1}$$

q——per capita garbage production; m——the total garbage capacity; Q——disposal scale of garbage sorting point.

According to the General Plan of Huangshan Mountain Scenic Spot [3], the amount of garbage generated by the residents in the scenic spots is 1.3 kg / d, 0.3 kg / d for non-accommodation tourists and 1.0 kg / d for service personnel and resident population.

Huangshan Mountain Scenic Spot has 4 disposal points of garbage, which are in Laodaokou, Tianhai, Beihai and Xihai. They all have brick kiln incinerators, which are responsible for the disposal of garbage in Yuping scenic spot, Tianhai scenic spot, Beihai scenic spot and Xihai scenic spot respectively. The processing scale is 1500 kg / d. According to the internal data of Management of Huangshan Mountain Scenic spot, the average occupancy rate of tourists in the scenic spots in the past two years is 22.9%. The number of service personnel in scenic spots is closely related to the number of tourists. And the proportion of mountain service personnel in recent years is basically between 0.5 ‰ and 0.7 ‰ of the number of tourists in that year. The proportion of service personnel to the number of visitors is 0.6 ‰.

Because the core scenic spots are capricious in population, garbage is mainly generated by residential tourists, non-residential tourists and service personnel. According the formula (1),
$$1.3×m×22.9\%+0.3×m×77.1\%+1.0×m×0.6‰=1500×4$$
m=11329, that is the daily solid waste capacity of the scenic spot is 11329 people / day, and the annual solid waste capacity is 4135085 people / year. At present, the highest year of tourists' arrivals is 2017, reaching 3.3687 million. Compared with the annual solid waste capacity of 413.5085 million people. The total garbage capacity has not reached the top at present.

With the development of China's economy and society and the improvement of public living standards, people's demand for tourism has also increased in recent years. In the foreseeable future, the tourist arrivals will be further increased and even explosive growth may occur, and the annual solid waste capacity of the scenic area will face a severe challenge. The total garbage capacity is not enough in the middle and long term with the increasing number of tourists. Strengthening the education of tourists' environmental protection awareness is the solution to this challenge from the source.

4. The path of integration of management and education in tourism garbage management

In order to strengthen the education of tourists' environmental protection awareness, Huangshan Mountain Scenic Spot establishes a cooperative relationship with Huangshan University. And the path of integration of industry and education has been found. The cooperation between the two sides is reflected in:

4.1 tourist's environmental education

Tourism speciality in University can cooperate with Scenic spot in the tourist's environmental education. In the off-line channel, the students of tourism management can volunteer for environmental protection by coming to the scenic spots to propagandize the environmental vulnerability knowledge and the civilized environment behaviour of the mountain-type scenic spots to the tourists. At the same time, in the on-line channel, students can participate in the maintenance and operation of the official WeChat platform in the scenic spot, and popularize environmental protection knowledge to tourists.

4.2 Scientific research cooperation

The teachers of tourism management in school of tourism, Huangshan University take scientific research cooperation with the employees of Garden development branch of Huangshan Tourism Development CO.LTD. By comparing with urban scenic spots, they conclude the characteristics of tourism garbage management in Mountain Scenic Spot (Fig.1). On this basis, the research team summarize the tourist garbage collection and transportation mode in Huangshan Mountain Scenic Spot. According to the forecast of the tourist quantity, the output of the garbage in the Huangshan Mountain Scenic Spot is calculated, and the future amount of garbage can be predicted according to the human and material resources of the garbage treatment.

4.3 cultivation cooperation

The cultivation cooperation includes two aspects, students of Huangshan University and employees of Garden development branch.

For students, classroom learning and field trips are combined. Specifically, in the course of Tourism Planning and Development, the teacher firstly provides course preparation materials in the network teaching platform, such as environmental protection video, PPT, and electronic book, assign pre-study tasks to students. Secondly, the basic theory of environmental protection in tourist destinations, the necessity of garbage management and procedures of it are explained by teacher in the classroom. Thirdly, under the guidance of teacher and manager, students come to the work site of garbage collection in Huangshan Mountain Scenic Spot, experience the process of garbage collection first-hand, contact the staff of garbage collection, and communicate with each other on the spot. Many of the tour sections of the Huangshan Mountain Scenic Spot are near the cliffs. And the staff usually need to put the safety rope on the cliff and go down to the cliff to pick up the garbage if they find the garbage in the process of the garbage inspection. When students witness first-hand the thrilling process of garbage collection，they really appreciate the greatness of the sanitation workers and feel the importance and difficulty of Huangshan tourism garbage collection by combining with the knowledge of learning in class. At last, the understanding of garbage management knowledge is deepened.

As the aspect of the employees, they need to Learn new knowledge in the field of tourism environmental protection, broaden the field of vision, renew ideas, and improve the level of technology. Throughout the year engaged in specific garbage removal and management work, the employees accumulated rich experience in concrete practical work. Blended learning is beneficial to the improvement of these experiences to the theoretical level, as well as the exchange and promotion of experience. Based on the blended learning, the professional training of on-the-job staff can also be divided into two forms, on-line and off-line. The off-line styles are subject training and continuing education. Subject training can focus on the themes of challenges and countermeasures faced by garbage disposal, the successful practices of garbage management in similar scenic spots at home and abroad, and so on. Continuing education include study for junior college or bachelor degree. In the on-line port, WeChat learn and communicate groups is a popular way for employees.

Fig.2 The path of integration of management and education in tourism garbage management

5. Conclusions

This paper summarizes the path of integration of management and education in tourism garbage management. This research extends the theory of Blended Learning from students or employees to the compounds of students, employees and the tourists. This is an innovative exploration. On the one hand, the development of higher education in tourism management is promoted in the direction of practice, and on the other hand, the improvement of the management ability of the waste management in the scenic area is also promoted.

Acknowledgments

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