

# Analyzing the Problems of Nature Trails of National Park – Case Studies on Odaesan and Seoraksan National Park –

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## Abstract

This research focuses on analyzing the problems of guideline signs, facilities and length of nature trails of Odaesan and Seoraksan national park, and aims to help the preservation of nature by increasing the efficiency of children's learning of nature by observing the usage of nature trails in the children's point of view. On-site research and questionnaire research took place in November 2008 and february 2008. Considering the contemporary problems, we have proposed the location change of guideline signs to be suitable for children and also the change of its design for children's increased attention.

**Key Words** : Odaesan national park, Seoraksan national park, Nature trails, Nature interpretation

## 1. Introduction

The origin of national park is Yellowstone national park in U.S.A which was founded in 1872. It began with the idea of permanently preserving the nature of Rocky mountains and at the same time, facilitating the nature for the welfare of people.

Despite the history of USA being only 200 years long, it already has the century long history of national park system. This system has affected various countries around the world and those countries now have their own systems varying on their environmental and social backgrounds. Large areas with primitive state of nature are protected as national parks and is provided for usage of people. National park system consists of three categories which are ① Nature area, ② Historical and cultural asset area and ③ field recreation area. Related to this, national parks in Swiss, Germany, Mongolia and Russia have the characteristic of nature protection research and the national parks in

Africa have the characteristic of wild life protection. Also, because UK has the nature characteristic of many low hills, one of its objectives is to use the parks for field recreations.

In 1969, IUCN defined the global definition of national park as follows : national park needs to be relatively large in area, it needs to maintain several (1~7) ecosystems that cannot be disrupted by the development and possession by human, its animals, plants, topographical locations and habitats need to preserve scientific, educational, and leisure-enjoyable values, and it needs to have an excellent nature scenery. Also, governments need to be able to prevent or eliminate development and possession of the location as soon as possible, make efficient moves to preserve the ecological, topological or aesthetic characteristics of the time of designation, and allow explorations only for special purposes such as inspiration, education, culture and leisure.

At present, IUCN divides protection, usage and management methods of nature resources into 6 categories, and category II, which is national park, differ to the objectives of national parks written in the national park law of Korea. Category II of IUCN is as

follows : areas that are being protected and managed for the protection of ecosystem and leisure usage, land and nature areas of waters that are designated for following purposes : ① protect ecological characteristics of one or more ecosystems for present and future generations ② prevent gathering of resources and usage of land which are against the purpose of designation, and ③ provide opportunities of exploration for mental, educational and leisure factors which may coexist environmentally and culturally<sup>1)</sup>.

In Korea, Jirisan national park was first designated as national park in 1967, and so far, 20 places are temporarily designated as national park in Korea. According to the designation standards of national park in clause 3 of the natural park law, National park is a park which represents the ecosystem or natural and cultural scenes of Korea and is designated by the government for its durable protection and usage, considering land preservation, location and usage convenience.

The subjects of the case studies are Seoraksan national park and Odaesan national park, which were designated as Korea's 5th and 11th national park in 1970 and 1975, respectively.

At present, each national park has developed nature trails for the durable usage and the park encourages educational opportunities by establishing the upright views of educational, ecological, aesthetic and scenery values and the importance of nature.

Beginning with the first developed nature trails of Naejangsan national park in 1992, Seoraksan national park and Odaesan national park have developed the nature trails and have introduced guiding programs in 1998 and 2000, respectively.

The nature trails should be provided to everyone without distinction of age or sex and should be used for their understandings of nature and also provide chances to learn more about the nature. However, at present, the trails are established at the already existing mounting climbing route and therefore cannot fulfill its purpose. Also, another problem is that nature guideline signs are targeted to adults which, as a result, are inefficient for the children to understand.

If the intended purpose of designation of national parks is to enhance their preservation and usage, the

nature trails and the nature guideline signs are above all important, especially to children if considering education for them may affect the following generation.

There are Pre-existing researches related to this such as research on the attitudes of visitors toward nature trails facilities of Halasan national park<sup>2)</sup>, natural trails plan for health improvement<sup>3)</sup>, conscience of visitors on the usage of national park<sup>4)</sup>, the function of natural trails of Seoraksan national park in the aspect of environment education<sup>5)</sup>, and activation of nature guide of Odaesan national park. This research focuses on the nature trails of Odaesan and Seoraksan national park by analyzing the problems of various factors such as guideline signs, facilities, length and height and attractiveness of guideline signs that are subjected to children and suggesting improvement proposals that may lead to increased learning of all visitors, including children, on the nature and, hereof, contribute to sound usage and preservation of national parks.

## 2. Materials and Methods

The nature trails of Sogumgang area of Odaesan national park(approximately 2.5 km) is chosen as the subject of our research. The on-site research took place from september 20th to November 11th, 2007 and the questionnaire research took place from November 7th to November 25th, 2007.

As for Seoraksan national park, the on-site research took place in Biseonda, Guryangjang and Biryong waterfall areas from september 20th to september 10th, 2008. The questionnaire research took place in November 9th and 11th, 2008. 100 visitors anticipated in the research, 50 people from each national park.

Also, in November 2008 at Seoraksan national park, we adhered several sign proposals on a hard board and asked 900 visitors for their choices of preferences.

In this research, a child is defined as those under the age of 13 with average height of 1 m 30 cm. According to OECD, the standard of a child is those of age between 0 to 14 and the lexical definition of a child in the western countries is male or female with age below 15 without his or her own rational judgement. In this research, considering the facility usage of guideline signs, we have standardized a child as those of age from 7 to 13.

### 3. Results and Discussion

#### 3.1. Length of the nature trails

A preexisting research shows that the standard lengths of a trail are approximately 2.4 km for the nature trails developed in various forests in USA, 1.6 km for the department of conservation in UK, and 1 to 2 km for Japan.

In the case of nature trails in Sogeumgang of Odaesan national park, the length in total is 3.7 km - addition of 2.5 km, from Mooreung valley to Guryong waterfall and 1.2, from Guryong waterfall to Manmulsang. Considering the trail is a round trip, its actual length is 7.4 km which is far longer than any standards. As shown in the questionnaire result in figure 1., 75% have responded the trail length to being 'long' or 'very long'. The trails in Seoraksan national park are also about 1.8 km in Gunyangjang and 2.4 km in Biryong waterfall area. As shown in the questionnaire research in figure 2., 75% have responded the trail length to being 'long' or 'very long', which shows similar pattern as Odaesan. According to the conscience research of the visitors of the two national parks, most of the respondents believe the trail is long or too long and find the return trails to be wearisome.

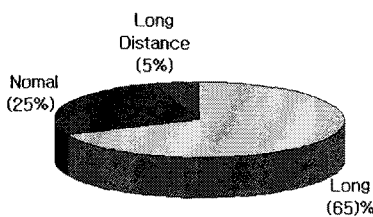


Fig. 1. Conscience research on nature trail of Sogeumgang route in Odaesan national park.

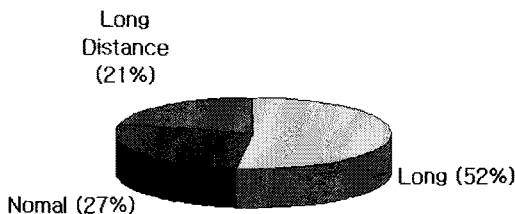


Fig. 2. Conscience research on nature trail of Seoraksan national park.

#### 3.2. Safety problems of nature trails

It is important that the trail is wide enough for people to walk past each other without bumping each other's shoulders to sustain pleasant condition. Considering the characteristic of human behavior, 1.5 to 2 m width is the standard for two people to walk past each other.

However, in the cases of the route of Odaesan and Seoraksan, most of the trail width are smaller than 1.5 m. This proportion would increase if railings and piers with the width of smaller than 1 m are considered. Also, cliffs are situated at the other side of the routes with the width of approximately 1.5 m, which is very dangerous for children to use. It is dangerous for children, especially in winter seasons, because there are many sites with frozen grounds steep slopes and large rocks on the route surface.

#### 3.3. The problem of the guideline signs in the children's point of view

If a person is considering the height of signs in the standard of 3rd grader of elementary school, the height needs to be lower than 1 m 30 cm. However, as shown in the result of table 1, by measuring every height of 23 guideline signs in Sogeumgang route, we found out that 43% of the signs are installed higher than children's average height, making it hard to be used effectively. Related to this, as shown in figure 3., 65% of the questionnaire respondents responded that improvements are needed, which also points out this problem.

The purpose of the nature guideline signs in national parks are to provide the visitors with informations by considering locations, heights, contents and overall designs for most efficient visibility. Seoraksan national park provides information on plants and wild birds of Seorak with the overall guideline signs, ecology guide-

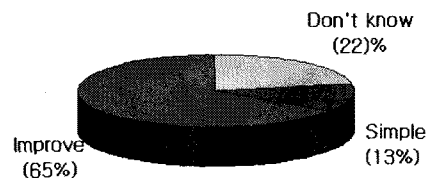


Fig. 3. Conscience research on guideline signs in children's point of view.

**Table 1.** Measurement result of the heights of nature guideline signs in Odaesan national park

No.	Height of the sign (m)	No.	Height of the sign (m)	No.	Height of the sign (m)
1	0.35~1.32	9	1.00~1.27	17	0.65~0.95
2	1.05~1.62	10	0.98~1.23	18	0.7~1.00
3	1.07~1.38	11	0.95~1.30	19	0.69~1.25
4	1.07~1.38	12	0.65~0.95	20	1.18~1.49
5	1.09~1.45	13	1.40~1.70	21	1.30~1.60
6	1.20~1.78	14	1.05~1.25	22	1.10~1.35
7	1.18~1.77	15	0.95~1.22	23	1.03~1.30
8	0.80~1.12	16	0.65~0.90		

(From Mooreung valley to Guryong Valley: 2.5 km area)

line signs, name tags of trees, which are all quadrilateral, and resting places which are installed at the areas from Sogongwon to Biryong waterfall and from Sogongwon to Bisungdae. According to the research on the degree of interest to these guideline signs in the children's point of view, only 1 out of 10 children was interested in the signs per hour and rest of the children passed by without noticing them. On the basis of this result, by randomly surveying the preferences of 900 visitors among the three signs(the preexisting quadrilateral signs and 2 newly manufactured proposal signs we have prepared were adhered on a hard board and asked to chose the more appropriate sign for the park), we found out that 15% chose the preexisting sign, which is composed of simple color, and 85% paid more attention to newly designed signs, which mixes with the background and is descriptive and colorful.

#### 4. Conclusions

Through the research, we have found out the length of the trails are longer than the standard and the same result was obtained from the conscience research on the visitors. Also, we were found out the problems on pathway width, pavement of ground, freezing of ground in winter, safety of facilities and height of the nature guideline signs.

On the basis of above results, for more efficient usage of nature trails and more effective usage by children, we have proposed the following improvement proposals :

1) About 2 km length of excursion-type nature trails needs to be established to improve learning efficiency of nature trails developed in Seoraksan and Odaesan.

2) Additional guide signs of caution need to be installed in the areas with pathway smaller than 1.5 m in width and establish safety device in the area that are adjacent to the cliff.

3) Number of nature guideline signs should remain as it is but at the same time, installation of attractive and non-quadrilateral signs for children is needed, in areas where the environmental or ecological aspect needs to be emphasized, to attract children's attention and strive for better learning environment. Also, the signs need to be installed in the right height for children.

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