

Understanding the Distance Between Humans and Brown Bears That Tourists Consider Appropriate: A Case Study at Shiretoko National Park, Japan

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Introduction

This study's purpose was to understand distance between humans and brown bears that domestic and foreign tourists consider appropriate at Shiretoko National Park in northern Japan. The national park is well known as an important brown bear habitat (Itoh et al., 2013; Sato et al., 2008), and its rich ecosystem attracts many tourists. On the other hand, the management of conflicts between tourists and brown bears is a critical issue in this location. To date, there have been no recorded fatal accidents involving brown bears and tourists. Behind this is the consensus among Japanese tourists that wild brown bears are dangerous (e.g. Kubo and Shoji, 2016). Thus, keeping a safe distance from these bears is considered important. Park managers have also provided information on the park's bears based on this idea.

In recent years, however, many foreign tourists have visited the national park (the number of foreign tourists to Japan reached 6.2 million in 2011, but increased to 24.0 million in 2016). Under these circumstances, park managers have noticed that the safe distance between brown bears and humans as considered by foreign tourists is different from that of Japanese tourists. Park managers are aware that some foreign tourists are not frightened by bear encounters. Thus, park managers need to provide different types of bear information for these foreign tourists, and may need to alter the current management system, primarily for Japanese tourists. However, little is currently known about the distance between brown bears and humans as considered safe by domestic and foreign tourists.

Methods

Regarding the desirable distance from brown bears, we applied a method to measure the social norm of acceptable change (Kim and Shelby, 2006) and asked respondents to evaluate an illustration showing varying distances between brown bear and humans. Questionnaire surveys were conducted at the Shiretoko National Park in 2016 and 2017. One survey was for domestic tourists, and the other was for foreign tourists.

In these surveys, we defined five distances and asked respondents to rate their level of desirability to maintain these distances between themselves and brown bears on a five-point Likert-type scale (1 = highly undesirable and 5 = highly desirable). The distances are as follows:

1. (Remote observation) You cannot usually observe the bear without special assistance (e.g., tour boat and/or vehicle, or guided tour).
2. (Observation by using binoculars) It is difficult to observe the bear with the naked eye, but it can be observed using binoculars.
3. (Observation with the naked eye) You can observe the bear with the naked eye. However, if you approach too closely, the bear will run away.

4. (Nearly touching) You can observe the bear with the naked eye. If you approach too closely, it will remain.
5. (Animals approaching) The bear cheerfully approaches, even when you are not attempting to feed it.

The distances between “Nearly touching” and “Animals approaching” is not different, but the behavior of brown bear is different. The result of domestic tourists has already reported by Aikoh et al. (2016).

Results

Figure 1 shows the average rating for each distance. The figure shows a horizontal axis representing the average rating on a five-point Likert-type scale, and a vertical axis depicting each distance between the person and the brown bear.

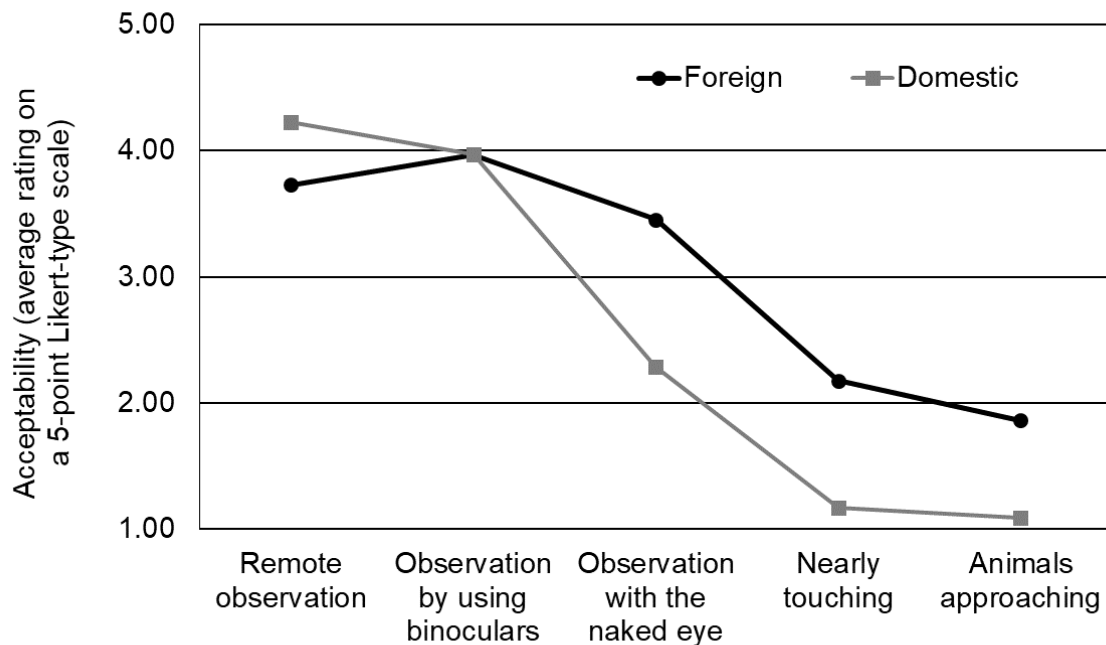


Figure 1: Distance between humans and brown bears and the average value of evaluation
*The result of domestic tourist is from Aikoh et al. (2016)

On average, both Japanese and foreign tourists considered it desirable to keep longer distances from brown bears; as the distances become shorter, the ratings drop. However, data reveal that foreign tourists consider shorter distances more appropriate than Japanese tourists on average. The ratings for distances “Observation with the naked eye” through “Nearly touching” differ between Japanese and foreign respondents (t -test; $p < 0.05$). The ratings for distance “Animals approaching” were not statistically significant among either group. Intuitively, these findings seem to demonstrate that both Japanese and foreign tourists negatively evaluated distance “Animals approaching”. However, this conclusion is incorrect. Rather, non-negligible foreign tourists (13.8%) regarded distance “Animals approaching” as either desirable or highly desirable. In contrast, only 0.7% of Japanese tourists responded the same. The statistical significance of distance “Animals approaching” seems to be lost because the variance of the rating for foreign tourists increased.

Discussion

The results showed that Japanese and foreign tourists considered different distances between themselves and brown bears to be appropriate. These findings indicate that park managers need to provide different types of information on brown bears for foreign tourists. In particular, it is necessary to promptly respond to tourists who consider distance “Animals approaching” desirable.

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