

Current situations and issues of risk management in protected areas; A case study of the Oirase Stream Area in Towada-Hachimantai National Park, Japan

Shigemitsu Shibasaki¹, Shin Onodera¹, Tetsuya Aiko², Takahiro Tsuge³, Yasushi Shoji²
Kazunari Yamaki⁴

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Background

A beach tree along the Oirase Stream fell on a tourist in August 2003. The injured person became paraplegic because of the accident and sued the Forest Agency (FA) and the Aomori prefecture (AP) for lack of appropriate management. Both authorities rebutted the claim, for the accident happened in a special protection zone and the visitors in principle are responsible for their own safety. In February 2009, the Supreme Court admitted that the Oirase Stream Area (OSA) should be regarded as "a tourist site" regardless of the zoning category considering the large number of annual visitors (500 thousand people). Finally, the Supreme Court ordered the defendants to pay in all 247 million yen to the claimant in damages.

This research aims to illustrate the current risk management system of the OSA. In particular, personal interviews were conducted with public authorities to know how these authorities were involved in risk controls. A visitor questionnaire was also carried out in the OSA. The data were analyzed by using factor analysis and cluster analysis to clarify the visitor profiles with regard to risk preference.

Defining Risk

There are a variety of definitions of risk such as "the chance of injury or loss as defined as a measure of the probability and severity of an adverse effect to health, property, the environment, or other things of value" (National Standard of Canada 1997:3). Our research focused both on risks to individual visitors and on risks to public authorities (Visitor Safety in the Countryside Group 2005).

Risk management system of the OSA

Almost all lands and forests in the area are owned by the FA. Tourism facilities such as footpaths, toilets, and a visitor center were constructed by the Tourism Division of the AP on land borrowed from the FA. Further, the FA has been delegating the management of the forests adjacent to the footpaths to the Tourism Division of the AP. There is also a national road -Route 102- that runs along the boardwalks. The cliffs around Route 102 and the route in itself are managed by the Road Construction Division of the AP. The AP strengthened the monitoring activity of the beach trees after the accident of 2003 and set up signs warning about the risk of falling beach trees/branches. However, there exists neither coordination among the institutions nor a comprehensive management plan to promote truly collaborative management.

Results of the visitor questionnaire

We received a valid response from 915 people, of which 57% are males. Further, 40 % of the respondents came from Kanto District (including Tokyo), followed by 37% from Tohoku District (including Sendai), and 16% from Chubu/Kinki District (including Nagoya and Osaka). People aged

¹ Iwate University, 3-18-8 Ueda, Morioka, Iwate, 020-8550, JAPAN, shiba@iwate-u.ac.jp, onoderashin_ra@msn.com

² Hokkaido University, tetsu@res.agr.hokudai.ac.jp, yshoji@for.agr.hokudai.ac.jp

³ Konan University, tsuge@center.konan-u.ac.jp

⁴ Forestry and Forest Products Research Institute, yamaki@ffpri.affrc.go.jp

over 50 comprised 64% of all respondents; while the percentage of young people aged less than 20 were only 10%.

The factor analysis helped us extract three principal components:

- the component pertaining to the injuries/deaths occurring outside the footpaths;
- the component pertaining to the injuries/deaths caused by natural factors such as falling rocks or trees;
- the component pertaining to injuries/deaths occurring on the footpaths and caused by the safety failure of facilities, such as the collapse of boardwalks.

The cluster analysis showed that the visitors can be classified into four groups:

- Group 1 visitors who think that public authorities should take responsibility for the injuries/deaths happened on the footpaths and caused by safety failure of facilities;
- Group 2 visitors who think that public authorities should take responsibility for the injuries/deaths caused by natural factors;
- Group 3 visitors who think that public authorities should take responsibility for injuries/deaths occurring outside the footpaths;
- Group 4 visitors who think that any injuries/deaths occurring in the OSA should be treated as the responsibility of the victim.

Visitors' profiles by group

The members of Group 3 tend to be aged over 50, while those of Group 1 tend to be comparatively young. The Group 3 visitors urged the AP to monitor the beach trees outside the footpaths more frequently, while the Group 1 and Group 4 visitors did not feel the necessity of any such monitoring activities.

Discussions

After the tragedy, the risk management system of the OSA has been gradually improving. However, the inclusion of even more institutions and other various stakeholders is necessary. Our research further found that there are four types of visitors with regard to risk preference. Public authorities need to conduct management activities considering the type of visitors they are targeting.

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