Perception Differences between Managers and Visitors on Landscape Changes in Urban Woodlands' Understory: A case in suburban Tokyo

*Bao Guo[1], Toru Terada[1]

1. Graduate School of Frontier Sciences, The University of Tokyo

1. Introduction

Urban woodlands both provide environmental benefits and increase human well-being. In Japan, the woodlands are facing problems of depletion and abandonment, due to rapid urbanization and change in lifestyle. Since the 1990s, more and more woodland conservation activities have been carried out by citizens and non-profit organizations, whose members volunteer to help manage urban woodlands.

Understory, which usually refers to small trees and shrubs, plays an important role in woodland conservation, as it is intrinsically related to biodiversity and appearance, and changes significantly through management. An improperly managed woodland results in aggressive understory species gradually taking over all the space, thereby leading to poor biodiversity, which may not be appreciated by people.

People may appreciate the same landscape differently. Such differences lead to a conflict on how woodlands should be managed, or the existing woodlands do not meet the public demand. Understanding perception helps to set up a management strategy for better conservation, to mitigate the differences so that more people can enjoy the woodlands. Although landscape changes in understory is an important aspect of woodland conservation, little is known about how different groups of people perceive such changes.

This study aims to increase understanding of people's perception of landscape changes in woodlands' understory vis-à-vis management. To achieve this aim, three objectives were proposed: 1) to identify group differences in perceptions of landscape changes in understory associated with weeding; 2) to identify group differences in perceptual factors; and 3) to discuss how the factors influence group differences in perception.

2. Methodology

A sample woodland was chosen from the No.1 Neighbourhood Park in Kashiwa City, a suburb of Tokyo Metropolitan Area. A trail camera recorded landscape changes in understory before and after weeding. Three scenes documenting the changes were collected and made into time-lapse videos, A) dense vegetation before weeding; B) open woodland in the first month after weeding; and C) recovering understory in the second month after weeding.

Then, a questionnaire survey using the time-lapse videos assessed respondents' perception of landscape changes in understory, and investigated factors influencing people's perception, such as knowledge and demographics. In all, 95 valid responses were collected from managers (members of non-profit organizations managing the neighbouring woodlands) and visitors (people who have visited the study area).

3. Results and Discussion

The results indicate that in a dense understory before weeding, visitors' perceptions of naturalness and species richness were significantly higher than those of managers. However, such differences were not found in the following two scenes. This shows that the managers distinguished between the meanings of species richness and naturalness, while the visitors did not. Such a difference suggests a possibility that certain routine woodland management; may be perceived by visitors as a loss of species richness.

The other difference of perception was found in perceived safety, including "safe from crime" and "safe from pests" when understory started to recover in the second month after weeding, where rated means of the visitor group were lower than those of the manager group. This suggests that visitors' perception of safety is more sensitive to recovering understory than managers'.

The two groups differed significantly in nature relatedness and all items of knowledge, with the manager group rating higher. Such differences could be interpreted by the different aims of visiting the woodland, the experience in it, and recreational and management activities. Influential factors differed between the groups as well. Nature relatedness was positively correlated to visitors' perception, while knowledge of species negatively influenced managers' perception.

Keywords: Urban woodland, Understory vegetation, Landscape perception, Time-lapse video

Perception differences between visitors and managers

$*p<0.05; **p<0.01$