

Using Aerial Photos Data and Shannon Diversity Index to Study on the Disturbed Factors of the Nanjenshan Ecological Reserve.

Shou-Tsung Wu¹ Yeong-Kuan Chen²

Abstract

A dynamic ecosystem is composed of animal, plant, and environment. In order to keep the biodiversity and make the strategy of management, it is essential for understanding vegetation succession. In a dynamic ecosystem, there are many disturbed factors, so to know where and how they work is the most important thing for understanding vegetation succession.

In this study, disturbed factors of vegetation society are decided by references and survey data, land cover types at Nanjenshan ecological reserve were interpreted from aerial photos of 1976, 1989, and 1997. Those classified digital data were used to derive Shannon diversity index for mining the dynamics change of landscape ecosystem in different disturbed factor. T-test was applied to detect the landscape differentiability between every two periods.

Results of this study show that the moisture, northeaster monsoon, road establishment, afforestation, and human exploitation are actually the disturbed factors of vegetation society. The Nanjenshan ecological reserve is effective in tending to a stable high-density forest vegetation society, but the administrative department should make proper strategies for the disturbed factors individually.

【Keywords】 Shannon diversity index, landscape change, GIS, aerial photo data.

1. Professor, The Department of Forestry, National Taiwan University.

2. Graduate student, The Department of Forestry, National Taiwan University.