

Enacting the Handbook for Measures to Prevent Typhoon Damage to Planted Trees in Cities

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1. Introduction

Planted trees in cities, beside roads and in parks for example, are damaged, even falling over, under the impact of powerful wind during typhoons. In addition to damaging surrounding structures or blocking traffic, they can even injure people.

So in order to mitigate typhoon damage to trees planted in cities, we have taken Okinawa, which is struck by more typhoons than other parts of Japan, as an example to perform a fact-finding survey of typhoon damage to clarify the causes of this damage, and based on the results, establish tree planting methods to nurture trees highly resistance to typhoon damage.

2. Outline of the Handbook for Measures to Prevent Typhoon Damage

This handbook consists of the following four chapters

(1) Factors causing typhoon damage

Typhoon damage is broadly categorized as fallen trees, bent trees, broken trunks, and broken branches, and the causes of these types of damage are ① typhoon exceeding a specific scale (Fig. 1), ② selection of species unsuited for conditions at the location, ③ insufficient planting base, ④ low quality planting, and ⑤ low quality maintenance

(2) Basic typhoon damage prevention measures

In order to mitigate typhoon damage to trees planted in cities, it is important to correctly plan, design, and execute the tree planting. Specifically, it is necessary to give full consideration to ① selecting species, ② layout, ③ providing the planting base (Fig. 2), and ④ installing support columns.

(3) Measures taken when a typhoon

arrives

Before a typhoon arrives, a tree management system is quickly established, the soundness of the trees confirmed, and preventive measures taken at trees which are vulnerable to damage (pruning, installing a wind blocking net, etc.). When a typhoon arrives, emergency measures are taken to deal with damaged trees (cutting down and removing, etc.), and after the typhoon has passed, full-scale measures to deal with damaged trees (standing the trees or replacing the support columns, etc.) are taken and the causes of the damage are clarified.

(4) Daily maintenance

In order to nurture highly typhoon resistant trees planted in cities, it is important to regularly check the soundness of trees, and to do so, necessary to ① perform daily inspections and (,) ② soundness surveys and ③ appropriately manage all trees.

3. Announcement of the results

The results are explained based on trees and the tree planting environment of Okinawa, but the basic typhoon damage prevention measures can be applied in all regions of Japan, so the results have been

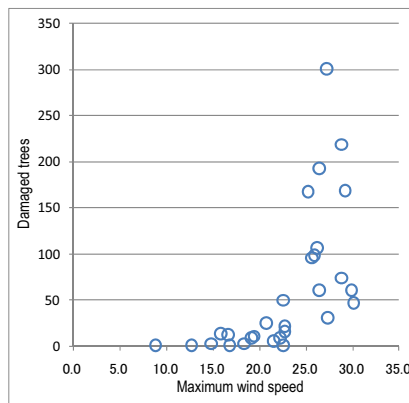


Figure 1. Maximum Wind Speed and Number of Damaged Trees

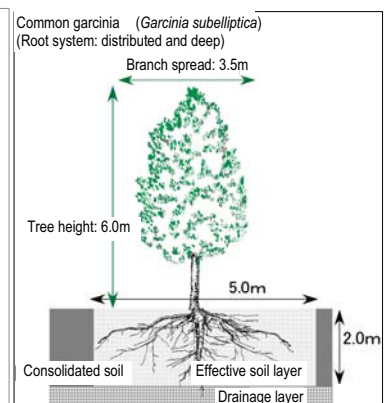


Figure 2. Example of Provision of the Tree Planting Base

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We look forward to this handbook being used as a basic document to be applied to improve tree planting technologies in Okinawa and throughout Japan, contributing to the conservation of rich green living environments.

<http://www.nilim.go.jp/lab/ddg/index.htm>