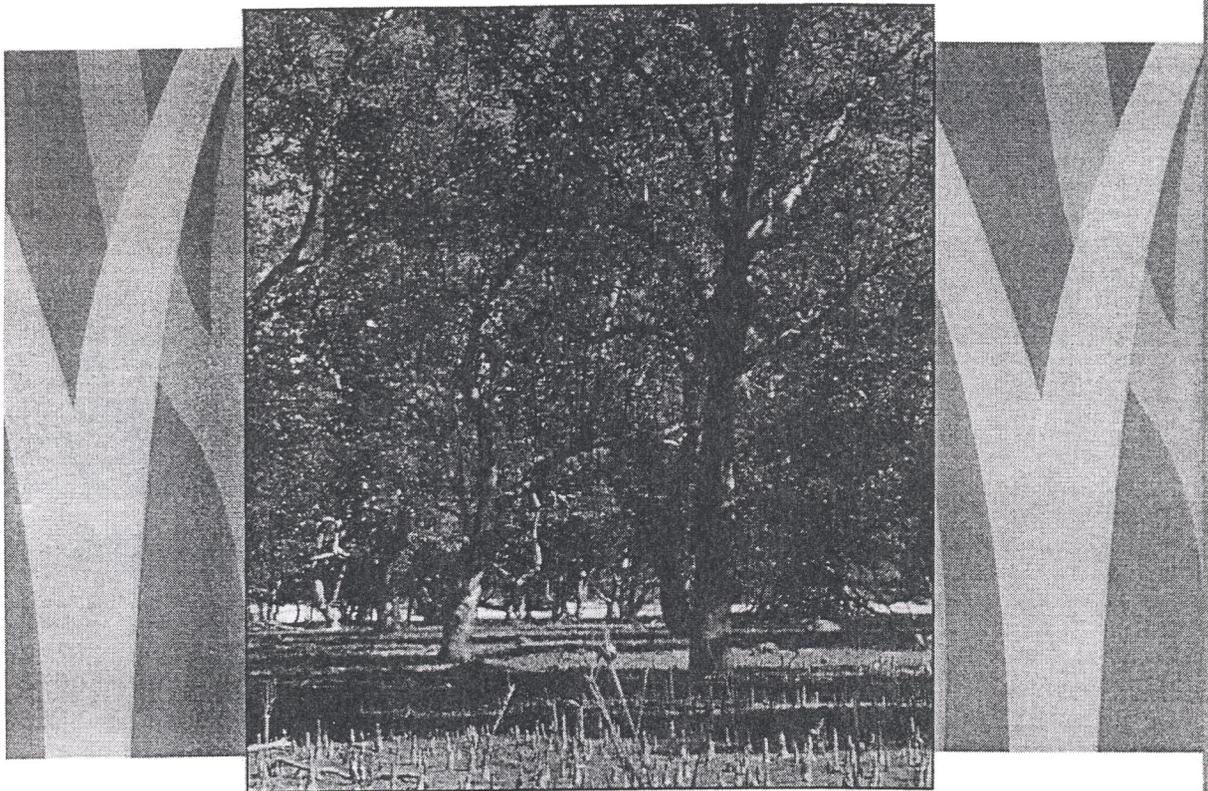Forests and Society: The Role of Research

POSTER ABSTRACTS

vol. 3

XXI IUFRO WORLD CONGRESS 2000
7 – 12 August 2000
Kuala Lumpur

FORESTS AND SOCIETY: THE ROLE OF RESEARCH

POSTER ABSTRACTS
V0LUME 111

XXI IUFRO WORLD CONGRESS
7-12 August 2000
Kuala Lumpur
MALAYSIA

International Union of Forestry Research Organisation

Division 4
Inventory, Growth, Yield, Quantitative and Management Sciences

Coordinator

Prof. Dr. Klaus GADOW V.

University of Goettingen

Institut für Forsteinrichtung und Ertragskunde

Büsgenweg 5, D-37077 Göttingen, Germany

fax: +49-551-399787

tel: +49-551-393472

e-mail: kgadow@gwdg.de

reform movements of the educated classes at that time. Apart from forest-specific reasons, mentalities of that time form the conditions and the basis for the formation of the permanent forest movement in Germany.

Drawing Stand Profiles by a Computer Programme

Alper Aytekin, Selman Karayilmazlar, Erol Kirdar, Zonguldak Karaelmas
Zonguldak Karaelmas University, Faculty of Forestry, 74100 Bartin, Turkey
FAX: +90.0378.2277421, Email: Mehmet Sabaz [peyzaj74@turnet.net.tr]

A stand profile contains silvicultural and yield elements like stand density, crown closure, slope, exposure, relief, stand canopy projections, regeneration success, diameter, height and increment. Such as stated above, stand profiles that have wide contents, in practice, provide important clues at choosing and applying methods, and form an important ground to carry out more truth and productive studies, putting forward structural state of a stand with the stand profile previously, obtains advantages in cases of choosing a method and monitoring effects of the method on the stand structure and reduces faults.

Turkey's forest areas have very different stand structures depend on different ecological conditions. So forestry practices have important differences. The most suitable way to determine these differences before applying is putting forward stand profiles of the stands. For Turkeys forest managing, stand profiles have great importance because of significant differences among forested areas.

Nowadays, like every scientific fields, computer aided studies are increasing from day to day in forestry too. At forestry studies, one of the most suitable topics that can be realized on computer program is to draw stand profiles and to obtain three-dimensional appearance on the computer. Stand profiles prepared with the aid of computer provide many advantages to the forest managers such as learning of forest structure detailed and previously. These advantages become more important especially silvicultural practices. Thus, forest managers can watch effects if a chosen method on computer screen and can give up to apply the method because of its unsuitableness. Besides choosing of silvicultural regimes, allowable

cuts can be determined with the stand profiles. Because a stand profile has a sample plot peculiarity.

Top and front view of stand profile can be monitoring with the aid of computer program. It can be changed tree data or removed on stand profile. Thus, last state of stand profile can be observed. Program is tested many experimental fields. It has been obtained successful results. Forestry will acquire time and new ideas will occur with the aid of computer program.

The Integration of Individual Tree Growth Model and GIS in Forest Ecosystem Management

Fong Long Feng, Shiuan - Der Lee
National Chung Hsing University, Dept. Forestry, Taichung, China-Taipeh
Tel: 886-4-2854060, FAX: 886-4-2873628, Email: flfeng@nchu.edu.tw

Growth model is very important to offer the reasonable projection and prediction of growing stock in the decision making of forest management. Individual growth model is used to simulate the tree crown, diameter of breast height and tree height of interested tree. The competition indicator (CI) of each individual tree were estimated under the concept of circular zone of influence with the size and distance of adjacent trees. The CI is used to judge the surviving growth and mortality risk of each individual tree. The growth pattern of individual trees in the stand reacted the complex growing history and the pattern of beginning stand. To study the description and analysis of spatial relationship are the most important direction in forest research. Geographic information system (GIS) is used to integrate tree location map and the attribute data of individual tree; the plot position map and stand attribute data; the landscape map and mosaic attribute data. The information of the status and change of spatial pattern in tree, stand and community, ecosystem and landscape levels could be analyzed and displayed in multi-scale maps. The spatial individual tree growth model and GIS database could be used to simulate the growing stock and stumpage price under different thinning criteria. The data of five different density plots of *Cryptomeria japonica* and *Cunninghamia lanceolata* were used to develop and simulate in different scenarios in the paper.

Keywords: Spatial analysis, Circular zone of influence, Individual tree location

INDEX