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Preface

This volume in the IUFRO (International Union of Forest Research Organizations) World Series presents selected papers from the conference 'Forestry Serving Urbanised Societies', held in Copenhagen, Denmark, during August 27th-30th, 2002. This event was jointly organised by IUFRO (as the first European Regional Conference), EFI (European Forest Institute), and the Danish Centre for Forest, Landscape and Planning (*Forest & Landscape Denmark*) as local host. We would like to thank all three organisations for their contributions to the success of the conference. Our particular gratitude goes to *Forest & Landscape Denmark's* Director General Dr Niels Elers Koch, tireless and inspiring conference chairman, and to the IUFRO Secretariat in Vienna for assisting with this publication.

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The editors
Copenhagen, November 2003

Table of contents

Working group 4.01: Mensuration and modelling in the context of urban forestry

Working group 6.03.02: Trends in forest terminology - Urban forestry

Working group 6.14.00(1): Urban forestry - Advances in social and health aspects

Working group 6.14.00(2): Urban forest resources and advances in ecological research

Working group 6.14.00 (3): Urban forestry as a development tool

Working group 6.18.00: Gender issues in forestry serving urbanised societies

'Forestry Serving Urbanised Societies'

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1 Urbanisation and forests

Continuing urbanisation is one of the main factors influencing use and management of urban and to a certain extent rural landscapes today. Presently, more than half of the world's dwellers live in urban areas. As a result of urbanisation, attention towards the role of forests, parks, trees and other greenspace in contributing to sustainable and liveable cities and towns has increased. The expanding body of scientific literature on urban green resources, their current and potential functions, their appreciation by urban dwellers, and how to plan, design, establish, conserve and manage them, testifies of this growing awareness.

But urbanisation does not only concern the inner-city or peri-urban green spaces, as forests and natural resources at large are also affected by it. The dominance of urban values, norms, preferences and use has led to an emphasis on a wide range of forest and nature goods and services. In the case of forestry, in many Western countries timber production is regarded of equal importance as social and environmental services, as acknowledged in new forest and nature policies. Recreational use of forest and nature is higher than ever before, and increasing attention is given to the impacts of green areas on human health and well being. Environmental services that are prioritised include water regulation and protection, carbon sequestration, protecting against erosion and land degradation, and biodiversity. Urbanites demand these and other services, and are doing so more and more vocally, demanding to be actively involved in natural resource decision making. The traditional legitimacy of foresters and other natural resource professions is being challenged.

Urbanisation has also led to a blurring between urban and rural areas, and a need to go beyond traditional land-use and planning boundaries. The urban-rural divide, policy-makers are stressing, today is not more than an artificial and counterproductive distinction. In order to develop sustainable natural resource management for urbanising societies, more integrative approaches are needed that recognise the influence of urbanisation on forests and other green areas at large.

2 Conference 'Forestry Serving Urbanised Societies'

The issues outlined above were addressed at the international conference 'Forestry Serving Urbanised Societies', held in Copenhagen, Denmark during 27-30 August 2002. The event was held as European Regional Conference of the International Union of Forest Research Organizations (IUFRO), in collaboration with the European Forest Institute (EFI) and the *Danish Centre for Forest, Landscape* and

Planning, host of the European Urban Forestry Research and Information Centre (EUFORIC). It discussed the need for structural changes in forestry and related professions in order to adapt to current demands. Many of the approximately 200 scientists and policy-makers from 40 countries stressed the need to develop natural resource management from its traditional rural roots to further embrace the urban dimension. Traditional forestry expertise has to be combined with new knowledge and skills, including conflict management, public relations, public participation, policy sciences, marketing, and landscape architecture and ecology. Not in the least, forestry has to encompass a partnership approach and alliances have to be formed with those other professions, as well as laymen with a vested interest in forests. The development of urban forestry, a multidisciplinary approach to all forest and tree resources in and near our cities and towns, may act as an example in this respect.

The conference had the following objectives:
· To define the role of forestry and forest research within an increasingly urban society.
· To identify and explore promising scientific and technological findings with regard to the urban aspects of forestry and the prevailing role of urban decision makers.
· To identify new directions and strategies in forest research in the context of extended networking within forest research and with other disciplines to meet urban demands.

Invited as well as voluntary papers were presented during 8 plenary and 17 parallel sessions. The papers included in this volume provide a good cross-section of the material presented at the conference. Additional conference papers were published earlier in the journal *Urban Forestry & Urban Greening* (Vol. 1, issues 2 and 3)[1].

3 Roles of forests and trees in urban areas

Forests, trees and other greenspace have been highly appreciated parts of cities and towns for ages, as the Estonian example presented by *Läänelaid & Sander* shows. Different roles of greenspace in cities, ranging from providing an important contribution to subsistence to aesthetic values, have been recognised.

The aesthetic and especially recreational benefits of forests, parks and trees in urban areas have often been in focus, also from a research perspective. Today, research is stressing the need to distinguish between different users of urban greenspace; the example from Denmark shows that children have their very own ways of perceiving their urban environment (*Guldager & Carstensen*). Recent years have also brought

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[1] Reference to some of the latter papers is made through 'UFUG 1(2)' and 'UFUG 1(3)', respectively.

about increasing attention for other social services provided by urban green, and most notably health benefits. An expanding body of research, with important contributions from medicine and (environmental) psychology, has demonstrated that urban greenspace can help improve physical and mental health, as described in the papers by *Rachel Kaplan, Stephen Kaplan*, as well as *De Vries*. Greenspace provides an attractive and inviting setting for active forms of recreation, important for example in combating obesity and hearth diseases. Its presence can help reduce stress and mental fatigue.

The multiple environmental services provided by forests and trees in urban environments have also become recognised. Well-known research work in the United States presented at the conference (see *McPherson* in UFUG 1(2)) has come a long way in assessing and quantifying the environmental benefits of trees in urban forestry, for example in terms of air pollution reduction, carbon requestration, stormwater regulation, and cooling effects. Forests and trees also have a large potential in restoring degraded and polluted lands, creating more attractive settings for living, working and recreating, as shown by the examples from Germany (*Hüttl & Gerwin*) and the United Kingdom (*Jones*).

Environmental aspects are not only important on the 'benefit' side of the equation. One of the main tasks of urban greenspace managers is to deal with the often very difficult biotic and abiotic site conditions in and near cities and towns. While trees can help reduce air pollution, they are of course first and foremost negatively affected by it (*Paoletti et al.*). Urban tree health and vitality is also closely related to urban soils, as shown by *Makarova & Koolen* for the case of Moscow. Applying bio-waste compost may be one way to improve soil conditions, as studied in Vienna, Austria (*Stockinger & Sieghardt*). Every year the mass media report on forest fires at the urban-rural interface, e.g. in the European Mediterranean and in parts of the USA. Fires are especially devastating at the urban-rural interface, where the potential loss of property and lives is high (*Rego & Martins*). Therefore, integrated fire management strategies in close cooperation with citizens are called for (*Smith et al.*). Stresses are also biotic; many greenspace managers are preoccupied with combating pests and diseases on urban trees. Having nature in and close to town can result in conflicts with people, as demonstrated by *Montag et al.* (UFUG 1(3)) who describe wildlife conflicts at the urban-rural interface.

Competition for land and issues is very high in urban settings, as described by *Krott*. Therefore, the development, management and conservation of forests and trees in urban areas needs to be based on sound arguments, not in the least in an economic sense. Cost-benefit assessments that try to quantify and incorporate the various socio-cultural, environmental, and economic aspects are called for. *Price* (UFUG 3(1)) for social and aesthetic benefits and *McPherson* (UFUG 2(1)) for environmental benefits outline the state of art in greenspace benefit quanti-

fication. Sound inventories and monitoring of forest and tree resources are crucial to these assessments, as well as to planning and management at large. Examples presented at the conference show that a wide variety of approaches and tools is in use across the world (*Hernandez; Panahi et al.; Pourhashemi et al.*), and that Geographical Information Systems (GIS) are increasingly used as powerful tool to compile, present and analyse information.

4 Urban forestry as innovative approach

Emerging problems such as infestations of pests and diseases led to the call for more integrative approaches within urban greenspace planning and management. Especially when looking at forests and trees in urban areas, the need was felt for interdisciplinary approaches to manage greenspace resources for multiple benefits. Urban forestry, in brief defined as the planning and management of forest and tree resources in and near urban areas in order to provide multiple benefits to urban communities, emerged in North America during the 1960s (*Miller*). In line with recent developments and innovations in urban ecology and urban planning (*Tjallingii*), it embraces partnership approach between multiple professions, and takes an integrative perspective on all forest, tree and associated vegetation in and near cities and towns.

Urban forestry has gradually gained the attention of scientists, policy-makers and greenspace managers in other parts of the world as well. In Europe, research networks have been set up and urban forestry is considered in an increasing number of tertiary education programmes. *Palijon* provides a brief status of urban forests and urban forestry in different parts of Asia, noting for example significant research needs for the further development of the field. In many Asian countries, aesthetics and recreation are not the principal concerns, and urban forests are primarily seen in terms of their environmental services and livelihood con-tributions. Some of the challenges faced in Latin-American cities are described for the case of Curitiba, Brazil by *Spathelf & Nutto*.

Participation and inclusiveness are key characteristics of the urban forestry approach. The need to involve stakeholders in decision-making is illustrated by *Ackermann & Talbot*. They describe efforts to replace exotic forest stands at Table Mountain near Cape Town, and the objections of local residents to tree cutting.

Another important challenge for urban forestry is how to integrate different aspects and functions in design, planning and management. *Tyrväinen et al.* present Finnish research aimed at finding ways to combine ecological and aesthetic values in urban forest management. The incorporation of aesthetics in new ways of looking at and describing forest stands is touched upon by *Tronde*. As adapted and new types of forest management are developed, there is a need to test and demonstrate these, for example in special demonstration forests (*Von Gadow* in UFUG 1(2)).

Although recognising the innovative character of the urban forestry approach, both *Krott* and *Simson* raise words of caution. Urban forestry may soon run out of steam, they argue, if it is left to stand on its own without the needed integration with other urban policies and issues. Much needed funding, for example, could be generated through linking up with urban development schemes (*Krott*).

5 Impacts of urbanisation on forestry at large

While forests and trees in and close to urban agglomerations may be most heavily affected by urbanisation, forests and forestry at large also experience its effects. Urban values and norms are often directing decision-making also for more rural forests (*Elands et al.*). The current paradigm of sustainable forest management, which has become broadly accepted across large parts of the world, has strong roots in urbanisation (*Paschalis*), as urban societies have called for multiple, sustainably-produced goods and services. This poses major challenges to the forestry profession.

Juslin describes how providing forest products to urbanised societies required adaptations in terms of marketing. Forest ownership is also affected by urbanisation, as for example demonstrated by *Schraml* (UFUG 1(3)) who mentions how many forest owners in Germany today are urban dwellers. Forest ownership also diversifies in terms of the role of female forest owners, who bring in their own values and preferences (*Boon & Anthon, Nilsson, Oldrup*). Gender issues have become acknowledged as a key topic within modern forestry, for example in follow up to Local Agenda 21 (*Späth*) and they require inclusion e.g. in forestry curricula. *Lewark* and *Schmaltz* describe the role of gender issues in forestry education at the global level, as well as for a specific German case.

The need for partnerships and cooperation across borders and disciplines requires common 'language' and terminology. Efforts to achieve this for forestry include the multi-stakeholder development of an international forestry thessaurus (*Petrokofsky et al.*) and the establishment of the Global Forest Information Service by IUFRO and others.

By involving experts from different disciplines, the conference contributed to the dialogue between foresters and other professionals taking care of forests and trees in urbanised societies. The need for these professionals to fully engage with urbanising societies was stressed, and although important steps in this direction have been taken much remains to be done in the years to come. Institutions such as IUFRO and EFI, for example through EUFORIC as its Project Centre on urban forestry have an important role to play in this further 'urbanisation' of forestry.