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# Preface

As the world began serious preparations for celebrating the new millennium, IUFRO also took stock of its role and activities. The Executive Board encouraged research units to address their research efforts to major global problems and issues, to begin preparations for the 21st IUFRO Congress in 2000, to prepare web pages, state-of-knowledge reports, and technical terminologies relevant to their own discipline, and to encourage technology transfer to developing countries, especially in collaboration with the Special Programme for Developing Countries (SPDC).

The scientific work of the Union continued and expanded with greater numbers of technical meetings and publications than ever before, as described in the subsequent reports of individual Divisions. IUFRO's own publications were widely disseminated and received great commendation while arrangements were finalized to establish a IUFRO Research Series commercially published by CABI, following competitive tendering by three publishing companies. Four issues of IUFRO News were published and distributed to all member institutions; these were highly informative and were widely welcomed, particularly by staff in institutions that have few other sources of external information. One issue was the Structure News with addresses of office-holders, and one was the Congress Information Package for IUFRO's quinquennial Congress in Malaysia during August 2000.

The Executive Board continued to establish and encourage the work of Task Forces to address specific issues; these involve individuals from several Divisions and often specialists from outside the Union and they attempt to bring together relevant knowledge of a particular topic and to identify gaps in our knowledge. The current Executive Board has always accepted that, in order to continue support for forest research, IUFRO has to play a major role in portraying the work of science to policy-makers and administrators so that they can appreciate the value of the research and recognize the need for new science.

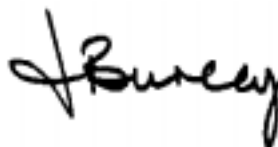
To strengthen the links between science and policy a new Task Force was established, temporarily led by the Coordinator of Division 6, Dr Niels Elers Koch. The President and Senior Officers of the Union made strenuous efforts to represent IUFRO at many international and inter-governmental meetings and processes. These included the Helsinki Process (European forests) and Montreal Process (boreal and temperate forests outside Europe); the Inter-governmental Forum on Forests of the United Nations Commission on Sustainable Development; and the International Consultation on Research and Information Systems in Forestry - this latter meeting was organized by

the Governments of Austria and Indonesia in Gmunden, Austria, and the administrative organization was provided by the IUFRO Secretary and his staff. IUFRO was also formally represented at a number of Division and regional meetings including the First Latin American Forestry Congress in Chile. The President made a number of speeches of welcome, overview or congratulation at national meetings organized by IUFRO member institutions.

Links flourished between IUFRO and international or regional institutions including the Centre for International Forestry Research (CIFOR) in Indonesia; two members of CIFOR staff retired from that organization but remained on the IUFRO Executive Board (Drs Dennis Dykstra and Tim Boyle) while the Director General, Professor Jeff Sayer, is a permanent observer. The Executive Board's annual meeting was excellently hosted by Centro Agronómico Tropical de Investigación y Enseñanza (CATIE) in Costa Rica of which the Director General, Dr Ruben Guevara, is a member of the Board. The Board's Policy and Planning Committee were marvellously hosted in Jerusalem, Israel, by Board member Menachem Sachs. Preparations for the Congress in 2000 gained momentum with strong support from the Congress Organizing Committee led by Dr Abdul Razak and Dr Rahim Nik of the Forest Research Institute of Malaysia. The Congress Scientific Committee agreed on the broad structure, topics, speakers, session organizers, scientific tours, and procedures for inviting, screening and accepting papers. A major effort is being made to enhance the scientific quality of the papers and discussions at the Congress.

I use this preface to highlight some general activities of the Union in the year and particularly to illustrate some of the efforts of the Executive Board. However, the scientific work of the Union is done by the research units, particularly the Working Parties, led by volunteer Coordinators and Deputy Coordinators. With the exception of Secretariat and SPDC staff, all IUFRO officers are volunteers and I would like to express my appreciation and congratulations to them all for their prodigious activities in 1998.

Supporting us all, however, the salaried staff in the Vienna headquarters work far beyond the call of duty and make devoted efforts to ensure the smooth running of our Union which is recognized globally as the largest and most effective voluntary, non-governmental network organization; to them too I offer my sincere thanks.



*Professor Jeff Burley  
President*

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## DIVISION 1 - SILVICULTURE

**Period of report :** Jan 1998 - Dec 1998  
**Coordinator:** Lisbeth Sennerby-Forsse  
**Deputy Coordinators:** John Parotta  
Menachem Sachs  
Rodolfo Salazar

### **Introduction**

Division 1 includes the study of forest and ecosystem management; stand establishment and treatment (including fertilisation); agroforestry; biomass for energy; restoration of degraded sites; mountain zone and arid zone silviculture; tropical, boreal and temperate zone silviculture; and natural (extensive) and artificial (intensive) silvicultural systems.

The Division currently consists of 9 Research Groups (RG) with 30 Working Parties (WP), in total 39 units. Division officers total about 100 with an additional 4 or so vacancies. The officers represent more than 40 nations.

### **Web pages**

Thanks to our webmaster, Jerry Vanclay, the Division's web pages were completed and all units received their own homepages. However, about half the number of units (mostly WPs) did not submit any information about the scope and activities of the group. All working units were repeatedly asked to provide updated and relevant information about unit activities to the homepage. We will keep trying to get the officers in charge to respond and to submit a short statement about each active unit.

### **Divisional activities**

The preparations for the IUFRO World Congress 2000 started in fall 1998, and Deputy Coordinator John Parotta became the representative for Division 1 in the Scientific Committee. In order to help out with the communication within the Division, Jerry Vanclay established a new mailing list and two circular letters were sent out to Division 1 officers requesting proposals and preparations for meetings and participation at the Congress.

It was agreed that Division 1 should try to find good authors for state-of-the-art reports concerning activities related to the themes of four of our research groups. These were RG 1.05.00 (Stand establishment, treatment and amelioration), 1.09.00 (Integrated Research in Biomass for Energy), 1.15.00 Agroforestry and 1.17.00 Restoration of degraded sites.

The major event within Division 1 during 1998 was the interdivisional Conference in Seoul, October 12-17, 1998 "Forest Ecosystems and Land Use in Mountain Areas".

The Conference was organized jointly by IUFRO Divisions 1, 4, 6 and 8. The number of participants was about 400, including 100 delegates from 27 countries.

As Division Coordinator I was member of the advisory board for the Seoul Conference, but, unfortunately, I was not able to participate in the Conference myself. On my request, some discussions on behalf of Division 1 were led by Prof. Lars Christersson, Coordinator of RG 1.09.00. He had organized an informal meeting with the members present to discuss the potential involvement of RGs and WPs at the IUFRO World Congress as well as possible changes of officers in Division 1 Research Groups and Working Parties.

As representative of Division 1 I also participated in the IUFRO Division 8 Conference "Environmental Forest Science" in Kyoto, Japan, 19-23 October 1998, and presented an invited paper on "Production and Environment - Two Sides of the Same Coin or Incompatible Goals?" published by Kluwer Academic Publishers (Forestry Sciences Vol. 54) and edited by K. Sassa (C, Div 8).

### **Changes in Research Groups and Working Parties**

The following changes of officers took place:

**WP 1.05.14:** New deputy coordinator is Dr. Isabel CAÑELLAS, Spain.

**WP 1.17.00:** New deputy coordinator is Coert GELDENHUYS, South Africa.

**WP 1.17.01:** New coordinator is Reinhard HUETTL, Germany, and deputy coordinator is Yadi SETIADI, Indonesia.

**WP 1.17.03:** New coordinator is David LAMB, Australia.

**WP 1.17.04:** New coordinator is Nir ATZMON, Israel, and deputy coordinators are Victor M. CASTILLO, Spain, and Sunil PURI, India.

### **Report of Activities by Working Units**

**RG.1.09.00:** A joint meeting between IEA (International Energy Agency) and IUFRO RG 1.09.00 about Short Rotation Forestry was held in Uppsala at SLU in June 3-5, 1998, with participants from Chile, Croatia, Denmark, EU, Estonia, Finland, France, Ireland, Italy, The Netherlands, UK and US. The total number of participants was about 60. The programme contained indoor sessions and excursions to look at energy forest plantations and harvesting machinery. The next meeting will be held in the US during the summer of 1999. An ad-hoc meeting on information concerning EF was held in Seoul at the interdivisional meeting in October (L Christersson, Sweden).

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## ***Divisional Meetings 1998***

- **1.13.00:** Conference on Forest Vegetation Management and Ecosystem Sustainability. 24-28 August 1998. Sault St Marie, Ontario, Canada.
- **Div. 1.00.00:** International Workshop on Sustainable Management of African Rainforest Today. Libreville, Gabon, Africa, October 12-16 1998. Joint venture with FORAFRI, CIRAD, CIFOR and FAO.
- **Divs. 1, 4, 6, and 8:** Forest Ecosystems and Land Use in Mountain Areas. Seoul Korea, October 12-17, 1998.
- **1.05.00:** Workshop on long-term Silvicultural Research sites: Promoting the Concept - Protecting the Investment. Victoria, B.C., Canada, Oct. 25-28 1998. Joint venture with Natural Resources Canada, Canadian Forest Service, British Columbia Ministry of Forests.
- **1.15.04:** Process-based Research in Sustainable Agriculture - Integrating Social, Economic and Ecological Perspectives. November 1998, Pretoria, South Africa. Contact: F. Sinclair
- **1.05.06:** The Science of Managing Forests to Sustain Water Resources, Sturbridge, MA, USA, November 9-11. Co-sponsored by 1.05.06 "Multiple-use silviculture, Society of American Foresters, Water Resources Working Group, National Association of State Foresters, Water Resources Committee, Massachusetts Metropolitan District Commission, Division of Watershed Management, USDA Forest Service, Northeastern Area State and Private Forestry, University of Massachusetts Extension.
- **1.07.00:** Aménagement Intégré des Forêts Naturelles des Zones Tropicales Sèches en Afrique de l'Ouest. Ouagadougou, Burkina Faso, November 16-20, 1998.

*Lisbeth Sennerby-Forsse  
Coordinator*

## **DIVISION 2 - PHYSIOLOGY AND GENETICS**

***Coordinator:*** Eric Teissier du Cros  
***Deputy Coordinators:*** Ladislav Paule  
Robert J Luxmoore

### ***Introduction***

The most important event of 1998 was the "Fourth IUFRO Consultation on Forest Genetics and Tree Improvement", organised in technical collaboration with FAO, hosted by the Chinese Academy of Forestry, Beijing, China, August 22-28, 1998. The scientific programme was organized by Csaba Matyas (2.02.00) whom IUFRO thanked by asking Ladislav Paule (2.00.00) to present its Distinguished Service Award to him in November.

During the opening ceremony President Burley conferred IUFRO's distinction of Honorary Membership on Howard Kriebel.

The title of the Consultation was: "Contribution of genetics to the sustained management of global forest resources". The eight scientific sessions were:

- 1- Situation and challenges for forest genetics and breeding (moderated by Jeffery Burley).
- 2- Adaptive potential of populations (Gerhard Müller-Starck).
- 3- Genetic resources and the changing environment (David Karnosky).
- 4- Managing genetic resources under traditional silviculture (Gösta Eriksson).

- 5- Maximising production in a sustained way (Wang Huoran).
- 6- Conservation of forest genetic resources (Francis Yeh).
- 7- Development of a coherent global framework for action in the conservation and sustainable utilisation of forest genetic resources (Pierre Sigaud).
- 8- Research policy in forest genetics and breeding (Howard Kriebel).

More than 100 scientists from 33 countries came to the following recommendations:

*"The objective was to reach a consensus on directions and priorities for research in forest genetics and tree improvement at a time when critical financial support for long-term tree improvement research has declined while world-wide demand for wood and fibre production is continuously increasing. In setting priorities, it was recognised that a balance will be needed between long-term genetic improvement research and short-term research focused on the new technologies.*

*A major research focus will be the genetic background of the adaptive potential of forest trees. This will require the testing of phenotypic variability and plasticity in trees over time in diverse and changing environments, using suitable process-related markers. Research on genetic diversity should be integrated with research on forest ecosystems and conservation of gene resources, particularly in relation to expected global environmental*

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*change. More information will be needed on the genetic consequences of mode of reproduction, breeding and gene flow mechanisms and population structure and size.*

*There is evidence that properly managed breeding can maintain or even increase genetic variation relative to natural populations and at the same time maximise wood production and reduce the logging pressure on natural forests. In breeding and gene conservation research, the order of priority should be (1) species of current high socioeconomic value; (2) species with clear potential or future value and (3) species of currently unknown value. Gene conservation must be part of silviculture in managed natural forests. New information will be needed on the effects of different forest interventions on adaptive genetic variability in forest ecosystems varying from mature natural stands to fibre farms.*

*In view of future demand for forest products, tree improvement will continue to be a key factor in sustainable forest development. However, it will be necessary to demonstrate to the forest constituency and the general public that wise management of forest resources with a strong focus on genetic improvement is fully compatible with gene conservation, and that it is an integral part of the overall maintenance and enhancement of biological diversity. Tree improvement research deserves long term commitment by the public sector in co-operation with private agencies, supported in developing countries by international and non-governmental agencies. ”*

Papers and recommendations will be published in 1999.

### **Structural changes**

**2.02.00. Conifer breeding and genetic resources.** A new Deputy Co-ordinator has been nominated : Roman Volosyanchuk.

**2.02.15. Breeding and genetic resources of five-needle pines.** New coordinating team after 11 September 1998 : Chair, S. Schlarbaum, Co-chairs : I. Blada, H.B.Kriebel.

**2.04.08. Cytogenetics.** New coordination. Chair : Zelimir Borzan, Croatia. Co-chairs : Helmut Guttenberger, Yoshihiro Toda.

### **Activities, Publications and Plans**

**2.01.11. Shoot growth physiology.** 150 Members. The group maintains communication through the TREEPHYS bulletin board at the following address : “TREEPHYS@LISTSERV.OKSTATE.EDU”.

**2.01.12. Canopy processes.** 80-100 members. **Publication.** Forests at the Limit : Environmental Constraints on Forest Function. Tree Physiology 18 (8/9) 1998. Peter J. Dye and Rozanne Poulson, Eds. **Plans.** Canopy Dynamics and Forest Management. A Missing Link ? Workshop to be held 1-11 August 1999 in Estonia, Finland and Sweden. Co-sponsored by 2.01.15. Chairman of the organising committee Prof. Seppo Kellomäki, Joensuu Univ., Finland.

**2.01.13. Root physiology and symbiosis.** 200 members. **Activities.** July 20-24, 1998, International Symposium “ The Supporting Roots: Structure and Function ” in Bordeaux, France. **Publications.** (1) The Bordeaux meeting will be published in a special issue of Plant and Soil. (2) Topa, M.A., Rygiewicz, P.T. and Cumming J.R.(eds.), 1996. Dynamics of Physiological Processes in Woody Roots. Tree Physiology. 16: 877-1046. **Plans.** September 26-30, 1999, Second International Symposium, “ Dynamics of Physiological Processes in Woody Roots ”, Nancy, France. Dr. Michel Chalot, chair of organising committee.

**2.01.15. Whole plant physiology.** **Publication.** The published proceedings of the Canopy Processes/Whole Plant Physiology Workshop held in South Africa in May 1997 is now available : Forests at the Limit: Environmental Constraints on Forest Function, Edited by Peter J Dye and Rozanne Poulson, Tree Physiology Volume 18 (8/9) 1998. **Plans.** See 2.01.12.

**2.01.16. Physiology of sexual reproduction.** 60 members. **Plans.** Meeting planned in Europe as a pre- or post- congress event.

**2.02.05. Breeding and Genetic Resources of Pacific North-West Conifers.** 158 members. **Activities.** A meeting was held in connection with the Western Forest Genetic Association and the North Western Forest Biology Association in Victoria, B.C., Canada, on June 21-26, 1998. 280 participants from 13 countries attended this meeting, which was structured in 5 main fields of forest biology: Genetics, Physiology, Ecology, Silviculture and Conservation. A pre-meeting tour was organised in Vancouver Island on June 17-20 to visit various experiments related to breeding programs. A 2.02.05 technical session was held in Cowichan Lake Research Station on June 26. **Publications.** Conference proceedings are available from: <http://www.uvcs.uvic.ca/conf/>. **Plans.** The next meeting will be in 2001 in Scotland with a pre-meeting tour in France.

**2.02.11. Norway spruce breeding and genetic resources.** 100 members. **Activities.** Establishment of a bibliography on genetics, breeding and genetic resources of Norway spruce, in cooperation with the EUFORGEN Norway spruce network. Revision of the database of measurement data from the IUFRO 1964/68 provenance trials. **Publications.** Genetics and breeding of Norway spruce, Eds T. Skrøppa, L. Paule & D. Gömöry. Proceedings from the 1997 Norway

Spruce Symposium. **Plans.** Complete the bibliography on Norway spruce and have it established as an on-line searchable database. **Comments.** The WP has a close collaboration with the EUFORGEN Norway spruce network, which has regular meetings and has published 3 publications during 1995-98 related to the conservation of Norway spruce genetic resources.

**2.02.13. Breeding and conservation of Mediterranean conifers.** Currently 27 members. The participants' list is being completed. **Activities.** Participation of B. Fady and F. Ducci at the workshop on Mediterranean Firs in Montpellier, France, organised by Forêt Méditerranéenne, January 1998. **Publications.** Ducci F., Proietti R., Favre J. M., 1998. Le genre *Abies* en Italie: écologie générale, gestion sylvicole et ressources génétiques. Forêt Méditerranéenne, XIX Marseille. **Plans.** Cypress training course, Florence, Italy, 16-20 March 1999. Meeting on pines of section *halepensis* organised by the University of Jerusalem, Israel, February 1999. Possible WP meeting in 2001.

**2.02.15. Breeding and genetic resources of five-needle pines.** 30 members. **Plans.** Meeting: "Genetics and Improvement of Five-Needle Pines", Knoxville, Tennessee, USA, 16-20 November 1999.

**2.02.20. Breeding and genetic resources of southern pines.** **Plans.** WP workshop "The Future of Pine Genomics" in conjunction with the SFTIC (Southern Forest Tree Improvement Conference), July 11-14 in New Orleans, USA.

**2.04.06. Molecular biology of forest trees.** **Plans.** Joint IUFRO and International Wood Biotechnology symposium on Forest biotechnology: into the next millennium. July 11-16, 1999, Oxford, U.K. Organiser Malcolm Campbell.

**2.04.08. Cytogenetics.** 100 members. **Activities.** WP Meeting "Cytogenetic Studies of Forest Trees and Shrubs. Review, Present Status, and Outlook on the Future", Graz, Austria, September 6-12, 1998, organised by Professor Dr. Helmut Guttenberger. Participants from 10 countries.

### **Publications**

Proceedings of a WP Meeting held in Tampere, 1995, during the IUFRO Congress, "Cytogenetics" in a Forest Genetics special issue, 3(3) 125-172, 1996, Zelimir Borzan and Howard B. Kriebel, eds. 200 copies of "Cytogenetic Studies of Forest Trees and Shrub Species", 1997, are available free of charge from the IUFRO Secretariat or from Dr. Viktoria Varga, E-mail : [viki@efe.hu](mailto:viki@efe.hu). Proceedings of the Meeting held in Graz to be published in 1999 as a special issue of the Forest Genetics. **Plans.** Next meeting in 2002, Kumamoto, Japan.

**2.04.09. World Directory of Forest Geneticists and Tree Breeders.** **Publications.** Directory published as a hard copy in 1998. Also available via the WP web page on Dendrome.

**2.08.01. Tropical species breeding and genetic resources.** **Plans.** Forest genetics for the next millennium, 8-13 October 2000, Durban, South Africa.

**2.08.02. Improvement and Culture of Nitrogen Fixing Trees.** **Publications.** Newsletter (NFT NEWS) on IUFRO Web and print. Next issue in early 1999.

**2.08.04. Poplar and willow breeding and genetic resources.** 200 members. **Plans.** International Poplar Symposium II, Orléans, France, 14-18 September 1999.

**2.08.05. Genetics of Quercus.** 100 members. **Activities.** Implementation of list server-based Email discussion group for working party members and others interested in the subject of oak genetics. **Publications.** Steiner, K. C. (ed.). 1998. Diversity and Adaptation in Oak Species. Proceedings of a conference of IUFRO Working Party 2.08.05 held Oct. 12-17, 1997, College of Agricultural Sciences, The Pennsylvania State University, University Park, Pennsylvania, U.S.A. 297p. Available from Dr. Kim C. Steiner, Ferguson Building, University Park, PA 16802, USA. **Plans.** May 20-25, 2000, Zagreb, Croatia. A joint meeting with 1.06.00 "Improvement and Silviculture of Oaks" on the subject of "Silviculture and Genetic Diversity in Oaks".

*Eric Teissier du Cros  
Coordinator*

## **Distinguished Service Award**

*In 1998 the IUFRO Distinguished Service Award was presented to:*

Helmut BRANDL, Germany  
Jiro KIKKAWA, Australia  
Csaba MATYAS, Hungary  
Harold K. STEEN, USA  
Simeun TOMANIC, Croatia

## **Obituary**

Dipl. Ing. Otmar Bein, IUFRO Secretary from 1973 to 1987, passed away in early 1998 at the age of 74. We express our sincere appreciation for his services to IUFRO and his contributions to the development of the Secretariat.

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## DIVISION 3 - FOREST OPERATIONS AND TECHNIQUES

**Coordinator:** Dennis P. Dykstra  
**Deputy Coordinators:** Ann Merete Furuberg-  
Gjedtjernet  
William Cordero

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### 1. Introduction

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The principal Division-wide activity in 1998 was the **Division 3 Officers' Mid-term Meeting**, which was held in Zurich, Switzerland, from 12-15 July. The meeting was attended by 25 officers of Division 3, or nearly one-third of the 92 officers in the Division. **IUFRO President Jeffery Burley** also attended part of the first day's afternoon session. Participants came from 19 countries and represented seven of the Division's nine Research Groups and 11 of the 20 Working Parties.

Two particularly important subjects raised during the meeting were the Division's involvement in the subplenary sessions of the IUFRO World Congress 2000 and the nomination of officers for the five-year term that will begin after the 2000 Congress. Altogether nearly a full day was spent in discussion of these two items. The consensus that emerged was delivered to the Executive Board at its meeting in Turrialba, Costa Rica, in September, and as a result Division 3 has been designated to organize or co-organize four of the 20 subplenary sessions and will have 13 group sessions during the 2000 Congress.

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### 2. Changes in Division 3 Research Groups and Working Parties; Appointment

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The following changes proposed by the Division have been accepted by the Executive Board at its September meeting:

- **3.02.02**, "Stand Treatment Operations"—Deputy Coordinator **Gordon Adam** (UK) has resigned his position due to a change in responsibility that takes him out of research.
- **3.09.00**, "Economics and Harvesting of Thinnings"—the following change has been made in the Research Group's leadership: Coordinator **Risto Lilleberg** (Finland) has become Deputy Coordinator, with former Deputy Coordinator **Pieter D. Kofman** (Denmark) becoming Coordinator.
- **3.10.00**, "Harvesting, Wood Delivery and Utilization"—Deputy Coordinator **John Gaskin** has left IUFRO member organization LIRO and has resigned his post. The Research Group has replaced him with **Piotr Paschalis** (Poland).

- **3.10.02**, "Harvesting and Utilization of Tree Foliage"—the Working Party's name has been changed to "**Harvesting and Utilization of Nonwood Tree Biomass**".
- **Juhani Paivanen** (Finland) has been appointed to serve as the Division 3 representative on the new Task Force "Water and Forests".

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### 3. Awards to Division 3 Scientists

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At the Executive Board meeting in September, Distinguished Service Awards were approved for two long-time participants in the activities of Division 3. **Professor Helmut Brandl** (Freiburg, Germany) was honored for a long history of activity in Division 3 and in other divisions as well, and especially in recognition of his key role in establishing what is now Research Group 3.08.00, "Small-Scale Forestry". **Professor Simeun Tomanic** (Zagreb, Croatia) was similarly honored for 30 years of active contributions to IUFRO Division 3 and for his role as chairman of the Croatian Organizing Committee for the IUFRO World Congress in Ljubljana (1986). Appropriate occasions will be found for the formal presentation of the awards to these two exceptional IUFRO activists, probably during 1999.

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### 4. Report of Activities by Division 3

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- Division 3 was heavily involved in the organization of the Sustainable Forest Management Task Force meeting, the "International Conference on Indicators for Sustainable Forest Management" which was held in Melbourne, Australia, 24-28 August 1998. Members of the Task Force are Chairperson **Alain Franc**, Deputy Coordinator of Division 8; **David Flinn**, Asia-Pacific Regional Representative; and **Dennis Dykstra**, Division 3 Coordinator. About 200 people from 38 countries attended the meeting, including IUFRO President **Jeffery Burley** and both Vice Presidents, **Les Whitmore** and **Risto Seppälä**. The *Proceedings* includes the full text of the keynote address by **Stephen Bass**, stakeholder statements from five grassroots organizations involved with forestry issues, summaries of group discussions on important forest sustainability indicators, the Conference Resolutions, and extended abstracts of posters presented at the meeting. For information about obtaining copies of the *Proceedings* contact **David Flinn**, Centre for Forest Tree Technology, P.O. Box 137, Heidelberg, Victoria 3084, Australia; *tel.* +61 3 9450 8700, *fax* +61 3 9450 8715, *e-mail:* d.flinn@dce.vic.gov.au.

- Two meetings co-sponsored by **Division 3** were held in Zvolen, Slovakia, during September and October 1998 in connection with a celebration of the **Centennial of Organized Forestry Research in Slovakia**. The first meeting, co-sponsored with the Joint FAO/ECE/ILO Committee on Forest Technology, Management and Training, was on the subject of "Improving Working Conditions and Increasing Productivity in Forestry" and took place from 9-12 September. Meeting documents may be downloaded in either WordPerfect or Adobe Acrobat formats, in English, French, and Russian, from <http://www.unece.org/trade/timber/y-jc-22.htm>. The second meeting, an international conference on "Forests and Forestry Research for the Third Millennium," was held from 11-14 October and was co-sponsored by **3.10.00**. For information about results and publications from the meeting, contact **Jan Ilavský** D3.10.02, Director of the Forest Research Institute, T.G. Masaryka 22, SK-060 9 Zvolen, Slovakia; fax +421 855-5321883, e-mail: [ilavsky@fris.sk](mailto:ilavsky@fris.sk).
- **3.04.00** "Operational Planning and Control; Work Study", and **3.06.00** "Forest Operations under Mountainous Conditions", organized an ad-hoc session on forest operations in the Division 8 conference "Environmental Forest Science" held 19-23 October 1998 in Kyoto, Japan. The ad-hoc session was on "Environmental Aspects in Forest Transportation Infrastructure". For information about the Division 3 sessions contact **Masami Shiba** D3.04.02 and D3.06.01, Kyoto University Forest, Faculty of Agriculture, Kyoto University, Sakyo-ku, Kyoto 606-01, Japan; fax +81 75 7536451, e-mail: [mshiba@kais.kyoto-u.ac.jp](mailto:mshiba@kais.kyoto-u.ac.jp).
- **3.06.00**, "Forest Operations under Mountainous Conditions", **3.07.00** "Ergonomics", and **3.10.00** "Harvesting, Wood Delivery and Utilization" have announced that the *Proceedings* of the joint FAO/IUFRO seminar on "Forest Operations in Himalayan Forest, Consideration of Ergonomic and Socio-Economic Problems" (held 20-23 October 1997 in Thimpu, Bhutan) are now available on the World Wide Web at <http://www.upress.de/abstracts/3-933146-12-7.html>. Participants at the meeting included 26 foreigners representing 10 countries, plus about 50 people living and working in Bhutan. The *Proceedings* have been edited by **Hans R. Heinemann** and **John Sessions**. As far as is known, this is the first time the full proceedings of a meeting organized by IUFRO have been distributed via the Web. In addition to several options for downloading the proceedings, provision has been made so that they can also be ordered through the above Web site in either hardcopy or on CD-ROM. Anyone lacking access to the World Wide Web can obtain information about ordering the publication from **Hans R. Heinemann** Swiss Federal Institute of Technology, Forest Engineering, ETH-Zentrum HG G 23.2, CH.8092 Zürich, Switzerland; fax +41 1 632-1146, e-mail: [heinemann@waho.ethz.ch](mailto:heinemann@waho.ethz.ch).
- **3.07.00** "Ergonomics", together with the Human Factors Group of Liro Limited (formerly known as the Logging Industry Research Organisation), held a meeting 17 February 1998 on "Human Factors in Forestry" at Rotorua, New Zealand. The purpose of the meeting was to bring together human factors researchers to discuss challenges and solutions posed by the forest industry of the future. Contact: **Richard Parker**, Liro Ltd. P.O. Box 2244, Rotorua, New Zealand; fax +64 7 346-2886, e-mail: [Richard@Liro.fri.cri.nz](mailto:Richard@Liro.fri.cri.nz).
- **3.08.00** "Small-Scale Forestry" organized a symposium on "Integrating Environmental Values into Small-Scale Forestry" from 16-20 August 1998 in Vancouver, B.C., Canada. There were 45 participants from 16 countries. Proceedings will be published soon. Contact: **Paul Mitchell-Banks**, University of British Columbia, 468-2206 East Hall, Vancouver, B.C. V6T 1Z3, Canada; fax +1 604 224-1860, e-mail: [pmbanks@unixg.ubc.ca](mailto:pmbanks@unixg.ubc.ca).
- **3.08.00** has also announced that the *Proceedings* of its symposium "Sustainable Management of Small Scale Forestry" held in Kyoto, Japan in September 1997 have been produced. For information about obtaining copies, contact **Yoshinao Murashima**, Graduate School of Agriculture, Kyoto University, Shimagamo-Nakaragi-Cho, Sakyo-Ku, Kyoto 606, Japan; fax +81 75 7536191.
- **3.10.05** "Wood Delivery" participated with the New Zealand Forest Industries Exhibition and Liro Ltd. in a 23 February 1998 meeting on "Increasing Log Transport Efficiency" at Rotorua, New Zealand. Fifteen people representing five countries attended the eight presentations. Proceedings are in press. Contact: **Eric Amlin**, FERIC, 2601 East Mall, Vancouver, B.C. Canada V6T1Z4, fax +1 604 228-0999, e-mail: [eric-a@vcr.feric.ca](mailto:eric-a@vcr.feric.ca).
- **3.11.00** "Forest Operations and Environmental Protection", and **3.11.03** "Methods and Techniques for Site Protection and Improvement" participated 24-25 August 1998 in the "Third International Conference on Forest Vegetation Management" in Canada. Contact: **J A Zabkiewicz** D3.11.00, New Zealand Forest Research Institute, Private Bag 3020, Rotorua, New Zealand; fax +64 7 3479380, e-mail: [zabkiewj@fri.cri.nz](mailto:zabkiewj@fri.cri.nz). Information is also available at <http://www.infoshare.ca/cifweb/ifvm3.html>.
- **3.11.01** "Site Impact Caused by Forest Operations" and the Federal University of Paraná held a joint

seminar from 24-29 May 1998 on “Harvesting with Quality” at Curitiba, Brazil. Contact: **Prof. Jorge Malinowski**, College of Forestry, Federal University of Paraná, P.O. Box 2959, 80035-010 Curitiba-PR, Brazil; fax +55 41 2532-332. Information can also be obtained from: **Iwan Wästerlund** C3.11.01, e-mail: Iwan.Wasterlund@stek.slu.se.

- **3.11.02** “Forest Operations on Sensitive Sites” postponed the meeting that was planned for Malaysia during July 1998 on “Environmental Disturbance and Management in Steep Land Forest Operations”. The meeting is being rescheduled. Contact: **Jusoff Kamaruzaman** D3.11.02, Universiti Putra Malaysia, Faculty of Forestry, Serdang, 43400 Selangor, Malaysia; fax +60 3 9483745, e-mail: kamaruz@forr.upm.edu.my.

*Dennis P. Dykstra*  
Coordinator

### Structure of Division 3

Coordinating Unit	
3.00.00 Forest operations and techniques	
Research Group	Working Party
3.02.00 Operational methods in the establishment and treatment of stands	
	3.02.01 Stand establishment operations
	3.02.02 Stand treatment operations
	3.02.03 Nursery operations
3.04.00 Operational planning and control; work study	
	3.04.01 Planning and control
	3.04.02 Work study, payment, labour productivity
3.05.00 Forest operations in the tropics	
3.06.00 Forest operations under mountainous conditions	
	3.06.01 Accessibility of mountain forests
	3.06.02 Harvesting in mountain forests
3.07.00 Ergonomics	
	3.07.01 Physical work environment
	3.07.02 Psycho-social problems
	3.07.03 Health and safety
	3.07.04 Ergonomics in the timber industry
	3.07.05 Ergonomic assessment of mechanization
3.08.00 Small-scale forestry	
3.09.00 Economics and harvesting of thinnings	
3.10.00 Harvesting, wood delivery and utilization	
	3.10.01 Harvesting and product quality
	3.10.02 Harvesting and utilization of nonwood tree biomass
	3.10.03 Harvesting and tree processing
	3.10.04 Harvesting and forest energy
	3.10.05 Wood delivery
3.11.00 Forest operations and environmental protection	
	3.11.01 Site impact caused by forest operations
	3.11.02 Forest operations on sensitive sites
	3.11.03 Methods and techniques for site protection and improvement



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# DIVISION 4 - INVENTORY, GROWTH, YIELD, QUANTITATIVE AND MANAGEMENT SCIENCES

## *Changes in Leadership and Organization*

No changes in leadership and organization have been reported during the year. The Division IV structure with 29 IUFRO units, is as follows:

### **4.00.00**

Inventory, Growth, Yield, Quantitative and Management Sciences

- C Klaus v. GADOW, kgadow@gwdg.de
- D Harold E. BURKHART, burkhart@vt.edu
- D Victor K. TEPLYAKOV, tepl@aha.ru

### **4.01.00**

Mensuration, growth and yield

- C J.P. SKOVSGAARD, jps@fsl.dk
- D Todd H. MOWRER, tmowrer/rmrs@fs.fed.us

### **4.01.03**

Design, performance and evaluation of experiments

- C Andreas ZINGG, andreas.zingg@wsl.ch
- D Valerie LEMAY, lemay@unixg.ubc.ca

### **4.01.04**

Growth models for tree and stand simulation

- C Ivo KUPKA, kupka@lf.czu.cz
- D Margarida TOMÉ, magatome@isa.utl.pt

### **4.01.06**

Instruments and methods in forest mensuration

- C David A. MAC LEAN, dmaclean@fcmr.forestry.ca
- D Ralph L. AMATEIS, ralph@vt.edu

### **4.01.08**

Effects of environmental changes on forest growth

- C Kari MIELIKÄINEN, kari.mielikainen@metla.fi
- D Heinrich SPIECKER, instww@sun1.ruf.uni-freiburg.de

### **4.01.09**

Process-based models for predicting forest growth and timber quality

- C Annikki MÄKELÄ, annikki.makela@helsinki.fi
- D Joe LANDSBERG, Australia

### **4.02.00**

Forest resources inventory and monitoring

- C Risto PÄIVINEN, risto.paivinen@efi.fi
- D H. Gyde LUND, gklund@worldnet.att.net
- D Ashbindu SINGH, singh@edcmail.cr.usgs.gov
- D August Basil TEMU, atemu@cgnnet.com
- D Jerry VANCLAY, j.vanclay@cgiar.org

### **4.02.01**

Resource data in the tropics

- C Thelma KRUG, thelma@ltid.inpe.br

- D M. ATUL, fax: +91-1894-30530
- D Robert DAVIS, robert.davis@fao.org
- D Mohammed ELLATIFI, m.ellatifi@mailcity.com

### **4.02.02**

Multipurpose inventories

- C R.K. KOHLI, pulib@puniv.chd.nic.in
- D Yoshihiro NOBORI, ynobori@tdsl.tr.yamagat-u.ac.jp
- D Songkram THAMMINCHA, fforstkt@nontri.ku.ac.th

### **4.02.03**

Forest inventory on successive occasions

- C Chris BRACK, c.brack@anu.edu.au
- D Ed FRAYER, forestr@mtu.edu
- D Timothy G. GREGOIRE, timothy.gregoire@yale.edu
- D Ernest G. FOLI, fax: +233-51-60121

### **4.02.04**

Geographic and management information systems

- C Roman ALVAREZ, rab@igiris.igeograf.unam.mx
- D Kim DRALLE, kdr@sns.dk
- D Timo TOKOLA, timo.tokola@forest.joensuu.fi

### **4.02.05**

Remote sensing and world forest monitoring

- C Tomasz ZAWILA-NIEDZWIECKI, tzawila@igik.edu.pl
- D David EVANS, dle@sfr.msstate.edu
- D Sten FOLVING, sten.folving@jrc.it
- D Jusof KAMARUZAMAN, kamaruz@forn.upm.edu.my

### **4.02.06**

Resource data in the boreal regions

- C Anatoly X. SHVIDENKO, shvidenk@iiasa.ac.at
- D Vernon J. LABAU, 72114.447@compuserve.com
- D Steen MAGNUSSEN, smagnuss@nrncan.gc.ca

### **4.02.07**

Large Scale Forest Inventory and Scenario Modelling

- C: Tuula NUUTINEN, Tuula.Nuutinen@metla.fi
- D: Howard HOGANSON, hogan001@maroon.tc.umn.edu
- D: Bruce MANLEY, manleyb@fri.cri.nz

### **4.04.00**

Forest management planning and managerial economics

- C Walter SEKOT, h440t8@edv1.boku.ac.at
- D Janos GAL, jgal@efe.hu
- D Lauri VALSTA, lauri.valsta@metla.fi

### **4.04.01**

Inventory of stands

- C Otto ECKMÜLLNER, ottoeckm@edv1.boku.ac.at
- D Jerzy SMYKALA, fax: 48-22-224935

#### 4.04.02

Managerial economics

C Maurizio MERLO, merlo@ipdunidx.unipd.it

D Andrzej KLOCEK, fax: +48-22-491375

#### 4.04.03

Forest management planning methods

C Romualdas DELTUVAS, laa@nora.lzua.lt

D Marian IANCULESCU, fax: +40-1-3120403

#### 4.04.04

Economic planning systems for forest management

C David W. KLEMPERER, david.klemperer@vt.edu

D Masahiro AMANO, masahiro@ss.ffpri.affrc.go.jp

D Julio CENTENO, jcenteno@ciens.ula.ve

#### 4.04.06

Planning and economics of fast-growing plantation forests

C Oscar GARCÍA, ogarcia@montes.upm.es

D Peter BLANDON, greenhil@lgu.ac.uk

#### 4.04.07

SilvaPlan - Forest Management Terminology

C Othmar GRIESS, fax: +43-316-8050510

D Pierre SCHRAM, schrap@pt.lu

D Marten NIEUWENHUIS,  
neuwenh@agriculture.ucd.ie

#### 4.04.08

Nature conservation planning

C Renate BÜRGER-ARNDT, rbuerge@gwdg.de

D Hubertus VAN HENSBERGEN, hjvh@land.sun.ac.za

#### 4.11.00

Statistical methods, mathematics and computers

C Michael KÖHL, koehl@forst.tu-dresden.de

D Christoph KLEINN, ckleinn@catie.ac.cr

#### 4.11.01

Statistical methods

C George GERTNER, gertner@uxh.cso.uiuc.edu

D Zichun CHENG, fax: +86-733-8432850

#### 4.11.02

Mathematics

C Keith RENNOLLS, k.rennolls@greenwich.ac.uk

D Celia Gaillard DE BENITEZ, benitez@unsere.edu

#### 4.11.03

Expert systems and knowledge management

C Daniel L. SCHMOLDT, schmoldt@vt.edu

D Hannu SAARENMAA, hannu.saarenmaa@eea.dk

#### 4.12.00

Remote sensing technology and Geographic Information Systems (GIS)

C Barbara KOCH, ferninfo@sun2.ruf.uni-freiburg.de

D Yousif HUSSIN, Netherlands

D Matthias SCHARDT, schardt@joanneum.ac.at

#### 4.13.00

Managerial, social and environmental accounting

C Hans JÖBSTL, jöbstl@mail.boku.ac.at

### *Report of Activities 1998*

#### *Meetings*

##### 4.04.02/4.13.00

Ostia, Rome, Italy

15-18 April 1998

##### *Institutional Aspects of Managerial Economics and Accounting in Forestry*

Organized by Lorenzo Venzi, Universita Della Tuscia I-01100 Viterbo.

##### 4.01.08 (co-sponsor)

Nancy, France

14-16 May 1998

##### *Causes and Consequences of Accelerating Tree Growth in Europe*

Organized by Timo Karjalainen, EFI (see <http://www.efi/joensuu.fi>).

##### 4.01.00

Quebec, Canada

20-22 May 1998

##### *International Symposium on Spatial Accuracy*

Organized by: Dr. Kim Lowell  
([spatial.accuracy@scg.ulaval.ca](mailto:spatial.accuracy@scg.ulaval.ca)).

##### 4.02.00 (co-sponsor)

Lake Buena Vista, Florida, USA

1-3 June 1998

##### *First International Conference on Geospatial Information in Agriculture and Forestry* - held in Lake Buena Vista, Florida. Gyde Lund represented EFI and IUFRO 4.02 and gave a paper (co-authored by Sue Iremonger - WCMC). Over 700 people attended - mostly from the USA and mostly from the agriculture sector. The meeting combined oral presentations, interactive poster sessions, demonstrations, exhibits, and a tour to EPCOT Center in Disney World. Two-volume proceedings containing nearly 300 papers - all in English - are now available from ERIM International, Inc., P.O. Box 134008, Ann Arbor, MI 48113-4008 USA. The price is about \$125 US. A copy of the paper that Sue and Gyde prepared may be found at <http://home.att.net/~gklund/omissionpaper.html>. The paper lists some concerns and recommendations regarding global vegetation cover estimates. (email: [agriculture@erim.org](mailto:agriculture@erim.org))

#### 4.02.00/4.11.03

Rovaniemi, Finland  
8-12 June 1998

**Resource Technology '98.** International Symposium on Advanced Technology in Environmental and Natural Resources. World of Information - Meeting of the Networks. See <http://www.metla.fi/event/rt98/> IUFRO 4.02, under the leadership of Risto Paivinen, organized a session on Global Forest Information Service.

#### 4.02.00/8.01.00

Boise, Idaho, USA  
16-20 August 1998

**Integrated Tools for Natural Resources Inventories in the 21<sup>st</sup> Century.** Contact: Dr. Mark Hansen, USDA Forest Service, North Central Forest Experiment Station, 1992 Folwell Avenue, St. Paul, MN 55108 USA. Email: [hanse034@maroon.tc.umn.edu](mailto:hanse034@maroon.tc.umn.edu). Tel: +1-612-649-5148. Fax: +1-612-649-5285. URL <http://dendron.fr.umn.edu/burk/boise>

#### 4.01.09/2.01.15

Rovaniemi and Saariselkä, Finland  
August 30 - September 4, 1998

**Process-based Models for Forest Management.** Contact: Anniki Mäkelä, Department of Forest Ecology, P.O. Box 24 (Unioninkatu 40), FI-00014 University of Helsinki, Finland, Fax: +358-9-191-7605. e-mail: [annikki.makela@helsinki.fi](mailto:annikki.makela@helsinki.fi); Web site: <http://honeybee.helsinki.fi/pbmfim/>

#### Interdivisional Meeting of Divisions 1, 4, 6 and 8

Seoul, Korea  
12-17 October 1998

**Forest Ecosystems and Land Use in the Mountain Areas.** Contact: Don Lee, Seoul National University, College of Agriculture and Life Sciences, Department of Forest Resources, 103 Seodoondong, Suwon 441-744 Korea (Rep.) Tel: +82-331-2902327; Fax: +82-331-2931797; e-mail: [leedk@plaza.snu.ac.kr](mailto:leedk@plaza.snu.ac.kr)

#### 4.11.02/8.00.00

Kyoto, Japan  
Ad Hoc Session "**Quantitative Methods and Modelling in Environmental Science**" during the Conference "Environmental Forest Science", Contact: Alain Franc, University of Forestry, Ecole Nationale du Génie Rural, des Eaux et des Forêts, Département Mathématiques Appliquées et Informatique, 19 av du Maine, F-75732 Paris, France; Tel: +33-1-4549-8905; Fax: +33-1-4549-8827; e-mail: [franc@engref.fr](mailto:franc@engref.fr)

#### 4.11.00

26-29 October  
Jakarta, Indonesia

**Data Management and Modelling Using Remote Sensing and GIS for Tropical Forest Land Inventory, FIMP-**

INTAG/EU-IFSSP, Manggala Wanabakti Block IV Floor 5th,  
Jl. Gatot Subroto, PO Box 7612, Jakarta 10076, Indonesia;  
tel/Fax: +62-21-572-02-11

### Publications

- 1 Newsletter of **IUFRO 4.02 Forest Resource Inventory and Monitoring, IUFRO 4.11 Statistics, Mathematics, and Computers, IUFRO 4.12 Remote Sensing and GIS.** April 1998 issue. See: <http://iufro.boku.ac.at/iufronet/d4/wu40200/nl40200.htm> Jerry Vanclay is the newsletter editor.
- 2 Dallmeier, F.; Comiskey, J. A. 1998. **Forest Biodiversity, Research, Monitoring and Modeling - Conceptual Background and Old World Case Studies.** Volume 20. Man and the Biosphere Series. United Nations, Educational, Scientific and Cultural Organization, 7 Place de Fontenoy, 75700 Paris, France. ISBN 92-3-103408-1. Price: \$95 U.S. 671 p. This is part of the proceedings from a SI/MAB *Symposium on Measuring and Monitoring Forest Biological Diversity: The International Network of Biodiversity Plots* that was held in Washington, DC from 23-25 May 1995. IUFRO 4.02 was a co-sponsor. A companion publication, **Forest Biodiversity in North and South America: Research and Monitoring** (Volume 21) covering the rest of the papers presented at the symposium is due out in August 1998. Price for the 800-page Volume 21 will be \$95 US. See <http://www.unesco.org/publishing>
- 3 Lund, H. Gyde. 1998. **A Comparison of Multipurpose Resource Inventories (MRIs) Throughout the World.** EFI Working Paper 14. 46 p. ISBN 952-9844-47-6. ISSN 1237-5216. Price: 15 ECU or about \$16.40 USD. Abstract: To reduce costs and to improve efficiency, many countries are now developing multipurpose resource inventories. In 1997, IUFRO 4.02 conducted a world-wide survey of Ministries of Forestry and inventory specialists and a literature review to determine who is using multipurpose resource inventories and for what purposes. This working paper presents the results of that survey. To order the publication see <<http://www.efi.fi/publications/> or contact the European Forest Institute, Torikatu 34, FI-80100 Joensuu, Finland. Tel: +358-13-252-0229. Fax: +358-13-124-393. Email: [office@efi.fi](mailto:office@efi.fi).
- 4 Lund, H. Gyde (ed). 1998. **IUFRO Guidelines for Designing Multipurpose Resource Inventories.** A project of IUFRO 4.02.02. IUFRO World Series Vol. 8. 216 p. ISBN 3-901347-09-7. ISSN 1016-3263. FDC 524.61:524.63. Price \$30 US plus shipping and handling. Abstract: The guidelines provide basic information on Multipurpose Resource Inventories

(MRI) for the inventory planner and the decision maker at the provincial or national level although the instructions are useful at the local level as well. The guidelines are based upon a world-wide survey, a literature review and the personal experiences of nearly 60 contributing co-authors. We discuss the need for MRIs, the information requirements, support structure, and the design and implementation issues in depth. For instructions on how to order see <<http://iufro.boku.ac.at/publications/ws.htm>> or contact the IUFRO Secretariat, c/o Federal Forest Research Institute, Seckendorff-Gudent Weg 8, Austria. Tel: +43-1-877-0151; Fax: +43-1-877-9355.

- 5 ERIM. 1998. *Proceedings of the First International Conference on Geospatial Information in Agriculture and Forestry - Decision Support, Technology, and Applications*. Volumes I and II. 1347 p. Lake Buena Vista, Florida, USA. 1-3 June 1998. ERIM International, Inc., P.O. Box 134008, Ann Arbor, MI 48113-4008 USA. The price is about \$125 US.
- 6 Päivinen, R., Iremonger, S., Kapos, V., Landis, E., Mills, R., Petrokofsky, G., Richards, T. and Schuck, A. 1998. *Better access to information on forests*. Discussion

Paper on Impact of Information Technology. Report prepared for International Consultation on Research and Information Systems in Forestry 7-10 September 1998, Ort/Gmunden, Austria. 19 p.

- 7 Jöbstl, H., Merlo, M. and Venzi, L. 1998. *Symposium on Institutional Aspects of Managerial Economics and Accounting in Forestry*. Proc. of a combined symposium 4.04.02 and 4.13.00 in Ostia, Italy. The symposium program and resume can be found at (<http://iufro.boku.ac.at/iufro/iufro.net/d4/wu41300/otherdoc/ostipost.htm>): 447 p.
- 8 Gadow, K. v. and Hui, G.Y. 1998. *Modelling forest growth and thinnings* (in Chinese). Published by Cuvillier (Göttingen) and sponsored by IUFRO's *Special Program for Developing Countries (SPDC)*. The book is available from the Chinese Academy of Forestry, Beijing: 205 p.

Klaus v. Gadow  
Coordinator

## DIVISION 5 - FOREST PRODUCTS

**Coordinator:** John A Youngquist  
**Deputy Coordinators:** Cathy H H Wang  
András Winkler  
Christian G Sales

### *IUFRO Net*

Substantial progress has been made in the preparation of terms of reference documents and installing them on the IUFRO Home Page. All of the D5 Research Groups and Working Parties have prepared at least one descriptive page. Emphasis is now being placed on keeping the Division 5 database up-to-date and alive, by adding new information (e.g. publications, upcoming events, new or planned future activities, etc.), as appropriate.

IUFRO Congress 2000 and the Congress Scientific Committee – Dr. Cathy Wang is the Division 5 representative on this committee. Division 5 has received 233 summaries for presentation either orally or as poster presentations as of April 26, 1999. Plans are now being made to complete reviews of these summaries and provide comments back to the authors.

All Division 5 Conference – 2002 or 2003 - Bidding rules for all Division 5 Conferences, patterned after the IUFRO World Congress, have been drafted and are now posted on the Division 5 section of the IUFRO Home Page. The venue for the next Division 5 conference will be finalized prior to the IUFRO 2000 World Congress.

### *Changes in Division, Research Group and Working Party Leadership*

1. **5.01.00** – Wood Quality – Dr. John Phelps, University of Illinois, Carbondale, Illinois, USA, has assumed the position of Coordinator.
2. **5.01.02** - Natural Variations in Wood Quality - Dr. S.Y. (Tony) Zhang, Research Scientist, Forintek Canada Corp. Quebec, Canada is the new Coordinator for this Working Party.
3. **5.02.00** – Timber Engineering – Dr. Frederic Rouger, Centre Technique du Bois, Paris, France, has replaced Dr. Preben Hoffmeyer as Coordinator of this RG.
4. **5.03.04** – Protection from Fire – Dr. Shigehisa Ishihara has retired from this position, and Dr. Anton Osvald has assumed the leadership of this Working Party.

5. **5.05.05** – This Working Party on Protection of Composite and Reconstituted Products has been eliminated to avoid duplication with Research Group 5.03 activities.
6. **5.06.01** – Utilization of Forest Products from Dry Areas – Professor El Osta, the Coordinator of this Working Party, passed away in August of 1998. He was a good friend of IUFRO and worked hard to make this WP a very effective research organization. He will certainly be missed by all of us. Dr. Bernard Thibaut has assumed the leadership of this WP.
7. **5.08.00** – Production and Utilization of Bamboo and Related Species – Dr. Abdul Latif Mohmod has assumed the position of WP Coordinator.
8. **5.11.00** - Non-wood Forest Products - Dr. Shiva, Advisor and Founder, President, Centre of Minor Forest Products, Dehra Dun, India, is a Deputy Coordinator for this Research Group. Ms. Alka Shiva, President and Managing Director of the Centre of Minor Forest Products, is the Contact person for 5.11.00.

### ***Conferences, Workshops and Symposia***

June 10-11, UK

*Constructional, Structural and Serviceability Aspects of Multi-storey Timber Frame Buildings*

5.02.00 Timber Engineering

Vahik Enjily, Center for Timber Technology & Construction, BRE, Garston, Watford, WD 7JR, UK

Aug 17-19, Skelleftea, Sweden

*3rd International Wood Scanning Seminar*

5.04.00 Wood Processing

Eva-Stina Nordlund, Lulea University of Technology, Skelleftea Campus, Skeria 3, S-931 87 Skelleftea, Sweden.  
e-mail: Eva-Stina.Nordlund@tt.luth.se

Nov 30 – Dec 2, Rotorua, New Zealand

*Wood Coating Research, Wood Coating Applications and Coating Standards for Wood*

5.04.12 Surfacing and Finishing

B. Dawson, Manufacturing Technologies, New Zealand Forest Research Institute, Private Bag, Rotorua, New Zealand; e-mail: dawsonb@fri.cri.nz

### **Conferences and Workshops in Cooperation with other IUFRO Divisions**

Division 5 is emphasizing interdivisional cooperation as new conferences are being planned. The IUFRO World Congress 2000 provides several opportunities to move in

this direction.

### ***Division 5 Profile***

This document has been written and is now in place on the IUFRO Home Page on the World Wide Web. It provides background information on the focus of Division 5, what activities we participate in, and who provides the leadership.

### ***Preparations for the IUFRO World Congress***

The following sessions have been organized:

#### **Session A-5 “Sustainable Forest Management and Productivity”**

- “Efficiency of World Forestry Practices – A Status Report” by Dr. Clark Binkley, Hancock Timber Resource Group, Boston, MA, USA.
- “Sustainability of Raw Material Supply – Research Perspectives of a Multi-National Forestry Corporation” by Dr. Janna Puumalainen, Stora Enso Forest Development Oy Ltd., Imatra, Finland.
- “Sustainability of Raw Material Supply in Asia” by Dr. Woo-Kyun Lee, Korea University, Seoul, Korea
- “Current Timber Supply and Demand in Major Asian Countries – Taiwan as an Example” by Dr. Chen Shi-Chou, Department of Forestry, Council of Agriculture, China-Taipei

#### **Session B-1 “Forests and Society Needs – Wood Products”**

- “The Economic and Social Value of Plantation Wood” by Professor William Hyde, Department of Forestry, Virginia Polytechnic Institute and State University, Blacksburg, Virginia USA
- “Plantations for Fuelwood Production” by Professor Don K. Lee, Seoul National University, College of Agriculture and Life Sciences, Department of Forest Resources, Suwon, Republic of Korea
- “Plantation Grown Wood and the Environment” by Dr. Jim Bowyer, Director, Forest Products Management and Development Institute, University of Minnesota, Saint Paul, MN, USA
- “A World View of Plantation Grown Wood” by Mr. Jim Ball, Senior Forestry Officer, Plantations, Forestry Department, Food and Agriculture Organization of the United Nations, Rome, Italy

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**Session B-2 “Forests and Society Needs – Non-Wood Products”**

- “Production and Utilization of Bamboo, Rattan and Related Species: Management and Research Considerations”. By Dr. Abd Latif Mohmod. Forest Research Institute, Malaysia. Kuala Lumpur, Malaysia.
- “An Eastern United States Perspective of Issues Affecting the Management of Public Forests for Non-Timber Products”. By Dr. James L. Chamberlain, Dr. Robert J. Bush and Dr. A.L. Hammett. Center for Forest Products Marketing and Management, Virginia Polytechnic Institute and State University, Blacksburg, Virginia USA

- “Hiccups for Inequitable Distribution of Profits for NWP and Remedies”. By Dr. Devi Tewari, Division of Economics, School of Economics and Management, University of Natal, Durban, 4001 South Africa.
- “NWP Based Enterprises for Community Development” by Dr. Ana Doris Capitrano, The Ford Foundation, New Delhi, India.

John A Youngquist  
Coordinator

## **DIVISION 6 - SOCIAL, ECONOMIC, INFORMATION, AND POLICY SCIENCES**

**Coordinator:** Niels Elers Koch  
**Deputy Coordinators:** Perry J Brown  
Max Krott

### **1. Introduction**

- 1.1 The first All Division VI Conference will be held in Pretoria, South Africa, January 7-15 1999. The subject of the conference is *Contributions of Science to the Development of Forest Policies*. Dr. Harold Fred Kaiser will receive IUFRO's Distinguished Service Award.
- 1.2 A strong effort has been launched to achieve a comprehensive presentation on the IUFRO net of the division's units, their mandate and activities. To assist the working parties to get their information on the net, Mr. Alois Kempf has been nominated as web moderator for the whole Division VI net.

### **2. Changes during the year in Research Groups and Working Parties**

#### **2.1 Forest Recreation, Landscape and Nature Conservation (6.01)**

The Working Party 6.01.05 *Application of Recreation and Landscape Research*, has appointed a Deputy Chairman:

Mr. G. C. Chaudhary  
Department of Forest Farming  
Talland Shimla, India  
Phone: 91-177-221100

#### **2.2 Forest History (6.07)**

The Working Group 6.07.02 has changed its name from *History of Timber Trade and Timber Industry* to *Social and Economic History*. The Chairman is still Mr. Mauro Agnoletti.

#### **2.3 Social and Economic Aspects of Forest (6.11)**

- 2.3.1 Working Party 6.11.01 *Social and Economic Aspects of Forestry in Developing Countries* has announced a new topic for the 1999-2001 period: “*Poverty and Management of Forest Resources in developing countries*”

This topic appears as the most important and strategic forest management problem for a majority of developing countries during the next decade. Actually poverty appears as the major cause of deforestation in all these countries. Poverty reduction projects will receive important support from major donor agencies all over the world during the next ten years. It appears important that forest research organisations give appropriate answers to the demands of development projects.

#### **2.3.2 New chairman of 6.11.04 *Economic Evaluation of Multifunctional Forestry***

Dr. Linda Langner  
USDA Forest Service, RPA  
201 14 Street, S.W.  
Washington, D.C. 20250, USA

Phone: 202-205-1370  
Fax: 202-205-1546  
E-mail: llangner@worldweb.net

The co-chairman, Dr. Greg Arthand, University of Georgia, USA has retired.

2.3.3 The Working Party 6.11.05, *Economic Evaluation of Forest Damages* (J. Edward de Steiguer) has been terminated.

2.3.4 New Working Party, 6.11.07, *Integration of Sociological Research with Forest Management* has been established. The leadership comprises:

Chair: Dr. Anne P. Hoover  
Ecosystem Management  
Coordination Staff  
USDA Forest Service  
14<sup>th</sup> and Independence Ave. S.W.  
Washington D.C. 20090-6090  
USA  
Phone: 202-205-0899  
Fax: 202-205-1012  
E-mail: ahoover/wo@fs.fed.us

Deputy: Richard Broadhurst  
Forestry Commission  
231 Corstorphine Road  
Edinburgh EH12 7AT UK  
Phone: 44-131-314-6393  
Fax: 44-131-316-4344  
richard.broadhurst@forestry.gov.uk

The new Working Party 6.11.07 should provide a forum for furthering understanding and application of socio-logical research as it pertains to management of forests. Critical research areas of interest include: land tenure, land use patterns and practices, public participation, institutional arrangements, values, equity, attachment to place, cultural influences, and population characteristics and trends.

#### **2.4 Forest Policy and Forestry Administration (6.12)**

New chairman of Working Party 6.12.02 *Forestry Institutions and Administration*:

Peter Kanowski  
The Australian National University  
Canberra ACT 0200  
Australia  
Tel: +61 2 6249 5111  
Fax: +61 2 6249 5931  
E-mail: peter.kanowski@anu.edu.au

#### **2.5 Improving Education and Further Education in Forestry (6.15)**

The subdivision has appointed another Deputy Leader:

Mr. D. K. Khurana  
College of Forestry  
University of Horticulture and Forestry  
Solani 173 230, Himachal Pradesh  
India  
Phone: 91-1792-22736  
91-1792-52324 (office)  
Fax: 91-1792-52242

### **3. Report of Activities**

#### **3.1 Publications**

3.1. News of Forest History, Issue 27, November 1998  
*Forest History in Germany*. Published by IUFRO 6.07.00 in cooperation with the Austrian Forest Society Working Party on Forest History. *Elisabeth Johann*.

3.1.2 Europaforum Forstverwaltung 7 *Die Rolle der Staatsforstverwaltung in den Waldbezogenen Planungen. Praxisvergleich in Europa*. Published by IUFRO Working Party 6.12.02. *M. Krott and G. Bloetzer*.

3.1.3 For proceedings, minutes etc. from meetings, please refer to paragraph 3.2.

#### **3.2 Meetings 1998**

3.2.1 *History and Forest Resources*  
IUFRO Unit 6.07.02, Mauro Agnoletti, Florence, Italy,  
20-23 May

Approximately 120 participants from 5 continents attended the international conference that provided approximately 90 papers. The conference was an interdisciplinary meeting focusing mainly on economical and social aspects comprising paper presentations, field excursion, and a round table discussion about the experience in teaching forest history. Also a business meeting of Unit 6.07.00, *Forest History* was conducted. Proceedings are in process of being published.

3.2.2 *Multilingualism and Expert Cooperation in Forest Terminology, MEXFT'98*  
IUFRO Unit 6.03.02, Michele Kaennel Dobbertin;  
Kappel am Albis, Switzerland, 7-9 June

23 participants from 10 countries attended the workshop. The main conclusions of the workshop were:

1. A platform for identifying and addressing concrete cooperation needs in forest terminology should be established
2. The role of SilvaVoc as a clearing house for forest terminology should be reinforced. IUFRO Unit coordinators should provide SylvaVoc with subject-specific terms.

Information is available at the workshop's home page:  
[http://www.wsl.ch/wsldb/iufro/mexft\\_index.html](http://www.wsl.ch/wsldb/iufro/mexft_index.html).

3.2.3 *Experiences with New Forest and Environmental Laws in European Countries with Economies in Transition*  
 IUFRO Unit 6.13.00, Peter Herbst and Franz Schmithuesen, Ossiach, Austria, 24-28 June

The international seminar was opened by a presentation of IUFRO structures and activities (H. Schmutzenhofer) and by an invited lecture on "Forest Law in Constitutional States" (St. Wagner). The working sessions comprised in-depth analysis of the situation in 12 European countries. 22 participants representing 12 nations attended the meeting.

During the meeting, the structure and activities of IUFRO were presented and lectures of "Forest Legislation in Constitutional States" were given. The most extensive part comprised sessions on the situation in European countries with economies in transition. The whole range of possible stages of development of forest law and environmental legislation as well as problems concerning implementation and administration were covered with presentations and discussions.

The meeting was sponsored by the Austrian Government (Ministry of Agriculture and Forestry). Additional funds were provided by ETH Zurich and Forest Service International Group. Proceedings will be available in 1999.

3.2.4 *Extension Working Party 3<sup>rd</sup> International Symposium; IUFRO Unit 6.06.03; James E. Johnson, Virginia, USA, 19-24 July*

39 participants from 13 countries attended the workshop. The technical sessions were conducted in the following areas: Economic and Social Issues, Extension Research and Methodologies, Private Forest Land Management, Community and Agroforestry, and Extension Programmes and Successes.

As part of the field tour, participants visited a private forest that recently received the honour of "Outstanding Tree Farm of the Year" in Virginia. Proceedings from the symposium will be available in early 1999.

3.2.5 *Workshop on Forestry and Rural Development*  
 IUFRO Unit 6.11.02; Johan Barstad; Volda, Norway, 14-15 September

12 participants representing 7 countries attended the workshop. Apart from field studies, the workshop addressed the problems connected to using different segmented models based on examples from local development in the surrounding regions. Workshop proceedings are available from the organiser.

3.2.6 *Centralism and Regionalism in Forestry*  
 IUFRO Unit 6.07.00, Elisabeth Johann, Tharandt, Dresden, Germany, 7-9 October

Actual forest history in reflection of historical case-studies.

3.2.7 *International Symposium on Global Concerns for Forest Resource Utilization, Sustainable Use and Management.*  
 IUFRO Unit 6.16; Richard Haynes, Miyazaki, Japan, 5-8 October

The symposium gathered 164 researchers and 250 general participants from 37 countries.

The symposium had three objectives: understanding global forest sector issues, discussing the contribution of modelling efforts to forest sector analysis; and discussing the role of Japanese forest policy in a global sense.

Some papers discussed how forest sector analysis is a means to better inform policy debates, industrial or landowner decisions, or to describe future research challenges. What has changed over the past twenty years has been the growing complexity of questions, the need to deal with integrated issues, and the need to participate with politicians, interest groups, and citizens in the public debate about choices for forests and forest policy.

3.2.8 *Other meetings in 1998*

March 8-12  
 Freiburg, Germany  
*Modern forestry curricula - response to changes of the field of profession*  
 6.15.00 Improving education and further education in forestry; organized by Siegfried Lewark

May 4-8  
 Wuppertal, Germany  
 1st European Forum on Urban Forestry  
 6.14.00 Urban Forestry, organized by Max Krott

Aug 23-26  
 Quebec City, Canada  
*Co-operative Strategies for Forest Science Management and Leadership in an Increasingly Complex and*



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*Globalised World - Focus on Best Practices and Organisational Bench-marking*

6.06.00 Management of Forest Research; organized by Jean-Claude Mercier

August 23-30

Helsinki-Joensuu, Finland

*Multiple Use Forestry, a Student Excursion*

6.01.00 Forest Recreation, Landscape and Nature Conservation; organized by Tuija Sievanen

Sept 6-10

Slovenia

*European Forum for Forest Management*

6.12.02 Forest Institutions and Administration; organized by Dragan Matijasic

*Niels Elers Koch  
Coordinator*

## DIVISION 7 FOREST HEALTH

**Coordinator:** David F Karnosky  
**Deputy Coordinators:** Bo E Långström  
Kazuo Suzuki  
Manfred Tesche

### **Introduction**

Division 7 continues to be a vigorous, multidisciplinary division with four Research Groups: 7.01.00 (Physiology and Genetics of Tree/Phytophage Interactions), 7.02.00 (Pathology), 7.03.00 (Entomology), and 7.04.00 (Impacts of Air Pollution on Forest Ecosystems). Highlights of meetings in 1998 included the All-Division 7 Meeting on Pine Wilt in Tokyo, Japan, on October 26-30, 1998, coordinated by Division 7 Deputy Coordinator Kazuo Suzuki, and the 7.04.00 Air Pollution Meeting which was the "18<sup>th</sup> International Meeting for Specialists in Air Pollution Effects on Forest Ecosystems" held in Edinburgh, Scotland on September 21-23, 1998. Four other Division 7 Working Party meetings were held in 1998 and one other multiple Working Party meeting, and two meetings were held in 1999; thus, the Division continues to prosper.

The All-Division 7 meeting in Tokyo may serve as a model for our future All-Division 7 meetings, as Dr. Suzuki involved a truly multidisciplinary meeting that included scientists from all four major Division 7 Research Groups. In addition, the meeting was widely advertised to the public, included a session of public interaction, and received excellent press in the most influential Japanese newspapers. As a result of this successful meeting, the Pine Wilt Working Party was recreated in Division 7.

Division 7 Subject Group 7.04.00 "Impacts of Air Pollutants in Forest Ecosystems" had another banner year. Dr. Kevin Percy, 7.04.00 Coordinator, reports:

The IUFRO 18<sup>th</sup> International Meeting for Specialists in Air Pollution Effects on Forest Ecosystems, *Forest Growth Responses to the Pollution Climate of the 21<sup>st</sup> Century*, was held September 21-23, 1998 at Heriot-Watt University, Edinburgh, Scotland. The meeting was hosted by the Institute of Terrestrial Ecology - Bush Estate, UK, in collaboration with the UK Forestry Commission, Northern Forest Research Station. One-hundred thirty one scientists from 20 countries attended representing 7 IUFRO Regions, Northern Europe, Central Europe, Eastern Europe, Mediterranean, Northern Europe, Asia and Western Pacific.

The Scientific Committee with IUFRO Coordinators and Deputies adopted a new session structure, the objective of which was to stimulate activity within the six Working Parties. The two one-day plenary sessions were devoted to the two important air pollution issues, nitrogen deposition and ozone. Invited papers were augmented by a large and excellent contribution of poster papers. The final day comprised parallel Working Party sessions with speakers pre-selected to stimulate discussion in each discipline. This was judged to have worked very well, with the potential for more time allocated to Working Party sessions in 2000.

The meeting structure and superb local lodging and food arrangements, with all participants lodged together, resulted in attainment of the meeting goal; namely, a friendly exchange of high-quality science, enhanced and new collaborations between more-developed and less-developed programs with the IUFRO spirit and forestry foremost.

Other important highlights included a pre-meeting field tour to the ITE Deepsyke acid mist experiment in a Sitka spruce plantation. Participants were also treated to a private viewing of the Scottish Crown Jewels and a reception hosted by the Minister of Forestry and Agriculture for Scotland, Lord Sewell.

The Scientific Committee and IUFRO Coordinators/Deputies endorsed the model used in the previous 17<sup>th</sup> Research Group 1996 meeting in Florence, Italy and peer-reviewed manuscripts from the meeting will be published together in a special issue of *Water, Air and Soil Pollution* for greater impact and accessibility. The issue will also contain for the first time, summary state of science reports submitted by a rapporteur from each Working Party Session.

Since 1997, the Research Group has been working to address IUFRO's Strategic Goals for the New Millennium (*IUFRO News Special Issue*, December 1998). Objectives agreed upon by Group officers include an increased global viewpoint on major issues, increased collaboration between more- and less-developed research programs, and increased participation from under-represented regions such as South America, Africa and Asia. Progress has since been made on all three.

A number of important decisions were taken during the 7.04.00 business meeting held September 22 in Edinburgh. Among them, IUFRO 7.04.00 decided to:

- 1) hold the 19<sup>th</sup> meeting in 2000, rather than postpone it due to coincidence of the World Congress in Kuala Lumpur;
- 2) organize a speciality session at the World Congress to showcase the group's wide-range of activities, proud history and raise the air pollution-forestry science profile in Asia; this session is now arranged with invited papers on smoke pollution from increased forest fire activity in the region and by Asian air pollution-forest effects scientists;
- 3) to begin discussions on adjustment of the Working Parties for increased emphasis on forest sustainability and global scale-issues; and
- 4) to enhance collaboration between 7.04.00 and 2.04.00 on issues of environmental stresses related to forest genetics; a joint Division 2 and 7 meeting *Genetic Response of Forest Systems to Changing Environmental Conditions* will take place in Freising, Germany September 12-17, 1999 (*IUFRO News* Vol. 28, 1999, Issue 1).

## ***Changes in Division 7 Working Units***

### **New Working Unit Added:**

#### **7.02.10 - Pine Wilt Disease**

*Coordinator:* Marc J. Linit  
Department of Entomology  
University of Missouri

Columbia, MO 65211 USA  
Phone: 573-882-7779  
Fax: 573-882-1469  
E-mail: linit@missouri.edu  
<http://forent.insecta.missouri.edu>

*Deputy Coordinator:* Dr. Kazuyoshi Futai  
Kyoto University  
Graduate School of Agriculture  
Lab. Environmental Mycoscience  
Kyoto, Japan  
Phone: 075-753-6060  
Fax: 075-753-6173  
Email: futai@kais.kyoto-u.ac.jp

*Deputy Coordinator:* Christer Magnusson  
Norwegian Crop Research Institute  
Plant Protection Centre  
Fellesbygget, Aas N-1432, Norway  
Phone: +4764949288  
Fax: +4764949226  
Email: christer.magnusson@planteforsk.no

## ***Research Group Activities***

### **The following Division 7 meetings occurred in 1998:**

#### *7.02.06 Disease/Environment Interactions in Forest Decline*

March 16-21, Vienna, Austria  
"Complex Diseases in Forest Trees"  
Thomas Cech, Christian Tomiczek, Federal Forest Research Centre Vienna, Institute of Forest Protection, Seckendorff-Gudent-Weg 8, 1131 Vienna, Austria;  
Tel.: +43-1-87838-147; Fax: +43-1-877 59 07

#### *7.03.10 Methodology in Forest Insect and Disease Survey in Central Europe*

April 21-24, Ustron-Jaszowiec, Poland  
First Workshop of the new IUFRO Working Party 7.03.10 Methodology in Forest Insect and Disease Survey in Central Europe; Forest Research Institute; General Directorate of State Forests in Warsaw  
Wojciech Grodzki, Forest Research Institute, ul. Fredry 39, 30-605 Kraków, Poland; Tel/Fax: +48-12-266 39 64  
e-mail: zxgrodzk@cyf-kr.edu.pl

#### *7.03.09 Protection of Forests in the Tropics*

May 25-29, Chanthaburi Province, Thailand  
Workshop on "Pest Management in Tropical Forest Plantations"; The Royal Forest Department, Thailand; the FAO Forestry Research Support Programme for Asia and the Pacific (FORSPA); The Japanese International Cooperation Agency (JICA)

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Chaweewan Hutacharern, Royal Forest Department, 61 Paholyothin Road, Bangkok 10900, Thailand, Tel: +662-561-4292-433; Fax: +662-579-8775, 9576 e-mail: chahut@forest.go.th

*7.03.03 Insects Affecting Reforestation; 7.03.05 Integrated Control of Scolytid Bark Beetles; 7.03.07 Population Dynamics of Forest Insects*

June 1-4, San Juan, Puerto Rico

“Solving Forest Insect Problems Through Research” Fred Stephen, Department of Entomology; University of Arkansas, Fayetteville, AR 72701 USA

Tel: +1-501-575-3377; Fax: +1-501-575-2452

e-mail: fstephen@comp.uark.edu

*7.02.05 Rusts of Forest Trees*

August 2-7, Lapland, Finland

Working Party Meeting, Risto Jalkanen, Finnish Forest Research Institute, Rovaniemi Research Station, P.O. Box 16, FIN-96301 Rovaniemi, Finland; Fax: +358-16-33-64-640; E-mail: risto.jalkanen@metla.fi

*7.04.00 Impacts of Air Pollution on Forest Ecosystems*

September 21-23, Edinburgh, U.K.

“Forest Growth Responses to the Pollution Climate of the 21st Century”, Lucy J. Sheppard, Institute of Terrestrial Ecology, Bush Estate, Penicuik, Midlothian EH26 0QB, Scotland, U.K.; Tel.: +44-131-4454343; Fax: +44-131-4453943; website: <http://www.nmw.ac.uk/ite/press.html>

*Divisions 7 and 2*

October 2-14, Zvolen, Slovakia

“Forests and Forestry Research for the Third Millennium – Jubilee Conference”; Forest Research Institute Zvolen Ing. Miroslav Gecovic, Forest Research Institute, T.G. Masaryka 22, 96092 Zvolen, Slovak Republic,

Tel: +421/855/320 316-8; Fax: +421/855/321 883; e-mail: vedkonf10@fris.sk

*7.00.00 Forest Health*

October 26-30, Tokyo, Japan

“Symposium on Sustainability of Pine Forests in Relation to Pine Wilt and Decline”; ICPP Forest Pathology Group Forestry Agency of Japan; Symposium Secretariat, c/o Laboratory of Forest Botany, Graduate School of Agricultural and Life Sciences, The University of Tokyo, Bunkyo-ku, Tokyo, Japan; Fax: +81-3-5802 2958

e-mail: fukuda@fr.a.u-tokyo-ac.jp

## **Publications**

Day, K.R., Halldorsson G., Harding S. and Straw N. (1998) The Green Spruce aphid in Western Europe: ecology, status, impacts and prospects for management. Forestry Commission Technical Paper, 24 HMSO, London, 105 pp.

IUFRO WP 7.02.05 Rusts of Forest Trees Conference was held in Lapland, Finland on August 2-7, 1998. The proceedings (see IUFRO home page) have been published, and can be ordered from Dr. Risto Jalkanen, Finnish Forest Research Institute, Rovaniemi Research Station, P.O.Box 16, FIN-96301 Rovaniemi, Finland; fax: +358-16-33 64 640; e-mail: risto.jalkanen@metla.fi

Skrzypczynska, M. 1998. Insect pests and their parasitoids inhabiting cones of fir *Abies alba* Mill. in Poland. Anzeiger für Schädlingskunde, Pflanzenschutz, Umweltschutz, 71:50-52.

Skrzypczynska, M. 1998. Relationships between the number of seeds in the cones of *Abies alba* Mill. and their infestation with *Megastigmus suspectus* Borr. (Hym., Torymidae). Journal of Applied Entomology, 122:145-148.

Skrzypczynska, M. 1998. (State of knowledge of the entomofauna of cones and seeds of coniferous trees in Bialowieza Forest). Parki Narodowe i Rezerваты Przyrody 17.3(supl.):101-106. (in Polish with English summary).

Skrzypczynska, M., Koziol, M., Kosibowicz, M., 1998. Pheromone trapping of the spruce seed moth *Cydia strobilella* L. (Lep., Tortricidae) in southern Poland in 1996-1997. Anzeiger für Schädlingskunde, Pflanzenschutz, Umweltschutz, 71:96-99.

Skrzypczynska, M., Koziol, M., Kosibowicz, M., 1998. (Relationships between the number of seeds in the cones of Norway spruce *Picea abies* (L.) Karst. and their damage by insects in the Beskid Slaski Mts. and the Beskid Zywiecki Mts.) Sylwan, 142(9):33-41. (In Polish with English summary)

Watt, A.D., Stork, NE and Hunter, MD Eds.(1997) Forests and Insects. Chapman and Hall, London.

Witteczeck, K. 1998. (Insects damaging the cones and seeds of *Picea abies* (L.) Karst. in selected wood stands in the Gorce National Park). Parki Narodowe i Rezerваты Przyrody, 17(2):111-123. (In Polish with English summary)

*David F Karnosky  
Coordinator*

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## DIVISION 8 FOREST ENVIRONMENT

**Coordinator:** Kyoji Sassa  
**Deputy Coordinators:** Kamis Awang  
Timothy Boyle  
Alain Franc

environment as the Environmental Forest Science and searching for promising research fields and topics in the coming 21st century. The extended abstract volume including conference programme (262 pages) was published (a very limited number available from IUFRO Division 8 Secretariat), and the full text volume (658 pages) was published by Kluwer Academic Publisher as "Environmental Forest Science", Forest Science Series, Volume 54 (ISBN 0-7923-5280-7); available from Kluwer Academic Publisher (TEL: +31-78-639-2392, FAX: +31-78-639-2254, e-mail: services@wkap.nl).

### **Introduction**

Division 8 organized the first Divisional Conference in Kyoto, Japan, 19-23 October 1998. It was planned to examine the research content and the structure of the new Division. The Conference also aimed at integrating all fields of forest sciences and other related sciences dealing with

### **Kyoto Appeal**

Participants discussed the social need to develop "Environmental Forest Science" in the 21<sup>st</sup> century and concluded to release an appeal for cooperation and funding to related parties in the world. The full text is written below.

### **ENVIRONMENTAL FOREST SCIENCE** **For Sustainable Development**

#### **-Appeal from the 1998 IUFRO Kyoto Conference-**

#### ***Environmental Forest Science***

The international experts in the forest sciences hope to encourage coordinated research within the new field of Environmental Forest Science (EFS). EFS can play a pivotal role in helping to establish environment-friendly and sustainable development for our human communities in forested areas.

The first international conference on EFS was jointly organized by Division 8 "Forest Environment" of the International Union of Forestry Research Organizations (IUFRO) and Kyoto University on 19-23 October 1998, in Kyoto, Japan. Participants attended from 29 countries including representatives of the Food and Agriculture Organization of the United Nations (FAO), United Nations Educational, Scientific and Cultural Organization (UNESCO), the Science Council of Japan, the Japanese Forestry Society, the Japan Society of Erosion Control Engineering, the Japan Landslide Society, the Japan Forest Engineering Society, the International Research Association "INTERPRAEVENT", IUFRO-Japan.

The conference successfully demonstrated the multi- and interdisciplinary nature of EFS. Key components of EFS (forest ecosystems, forest hydrology, natural disasters in mountains, wildlife and biodiversity, forest and climate, and forest effects) were highlighted because of the important impacts they have on today's modern society. EFS is still in its initial development, but it is clear that this field has huge potential for helping to identify and solve problems related to modern development within our world's forested regions.

#### ***Appeal for Cooperation***

As a result of the IUFRO Kyoto conference, participants from the Environmental Forest Science community agreed to release the following appeal to all interested parties around the world.

- (1) The achievements of the EFS need to be recognized and enhanced. Accomplishments, most visible at the local scale include alleviation of floods, reduction of natural hazards, and the development of simultaneously more profitable and more environment-friendly forest practices.
- (2) All concerned (the general public, policy-makers and national and international funding agencies) need to be educated in the important aspects of EFS. These include, implementing sustainable development, protecting the natural environment, and mitigating natural and human-induced hazards.
- (3) EFS needs better recognition from the donor community of the world. Increased support of EFS will better utilize the existing national and international expertise in this new field of forest science.

## Changes

A new Working Party was set up: 8.01.07 *European Forest Ecosystems*. It continues the activity of the European Forest Ecosystems Research Network.

According to the discussion during the Kyoto Conference, 8.03 Environmental Influences decided to change its name to Forest Hydrology because of the greater research need and activity of forest hydrology. A new research group of 8.08 "Forests and Climate" was proposed by Prof. G. Scarascia-Mugnozza (Italy) and agreed. Those changes are to be proposed at the IUFRO-EB meeting in 1999 and officers will have to be decided.

## Activities

### 1) All Division 8 Conference

"Environmental Forest Science" was organized during 19-23 October in Kyoto. It was organized jointly by IUFRO Division 8 "Forest Environment" and Kyoto University, and co-sponsored by the Science Council of Japan (Liaison Committee for Forestry Science and Liaison Committee for Forest Engineering), The Japanese Forestry Society, The Japan Society of Erosion Control Engineering, The Japan Landslide Society, The Japan Forest Engineering Society, INTERPRAEVENT, IUFRO-Japan, Food and Agriculture Organization (FAO) of the United Nations.

**A: Plenary sessions/Panel Discussion:** The following invited lecturers talked in the Plenary session and their papers were published in the book "Environmental Forest Science":

SASSA, K. (Japan), SEPPÄLÄ, R. (Finland), SCHMUTZENHOFER, H. (Austria), SZARO, R. C. (Austria), RACKHAM, O. (U.K.), KOHLI, R. K. (India), KLIMO, E. (Czech Republic), LEE, D. K. (Korea), SENNERBY-FORSSE, L. (Sweden) SIDLE, R. C. (Canada), SHIBA, M. (Japan), WANG, H. H. (Taiwan), ZULKIFLI, Y. (Malaysia), FRANC, A. (France), INNES, J. L. (Switzerland).

**B: Concurrent Sessions:** The following sessions were organized by research group coordinators and also Ad-Hoc session organizers.

- \***Ecosystems** (10 papers), chaired by Takeda, T. (Japan) & Limtong, P. (Thailand)
- \***Forest Hydrology** (20 papers) chaired by Tani, M. (Japan) & Sidle, R.C. (Canada) / Fahey, B. (New Zealand) & Suzuki, M. (Japan)
- \***Natural Disaster** (30 papers) chaired by Goettle, A. (Germany) & Sammori, T. (Japan) / Chigira, M. (Japan) & Shoaei, Z. (Iran) / Fiebiger, G. & Mizuyama, T. (Japan)
- \***Wildlife and Biodiversity** (9 papers) chaired by Nakashizuka, T. & Mosseler, A. (Canada)
- \***Forest Culture** (4 papers) chaired by Rackam, O. (U.K.) & Ito, T. (Japan)

\***Quantitative Analysis** (5 papers) chaired by Franc, A. (France) & Rennolls, K. (U.K.)

\***Environmental Forest Engineering** (11 papers) chaired by Heinemann, H.R. (Switzerland) & Shiba, M. (Japan)

\***Allelopathy** (6 papers) chaired by Kohli, R.K.

\***Environmental Change / Site** (10 papers) chaired by Innes, J.L. (Switzerland) & Baker, T.G. (Australia)

## 2) Other activities

April 20-23, 1998, Meran, Italy

*Head Water 98*

convened by European Academy, Bozen, Italy, Standing Committee on Headwater Control and IAHS. Contact: Secretariat at Head Water 98: FAX:+39-471-306099, E-mail: HeadWater@ms.sinfo.interbusiness.it co-sponsored by (8.03.02)

May 4-8, 1998, Marienbad, Czech Republic

*FAO/IUFRO Joint Symposium*

European Forestry Commission, Working Party on the Management of Mountain Watersheds, IUFRO 8.04 Natural Disasters Contact: Albert Goettle, Bayerisches Staatsministerium für Landesentwicklung und Umweltfragen, fax: +49-89-92144302

May 11-14, 1998, Salzburg, Austria

*Workshop on Hazard Mapping in Torrent Watersheds*

Host : 8.04.01 Torrent Erosion and Control, 8.04.05 Hazard Mapping; Contact : Gernot Fiebiger & Erich Scheuringer Forest Technical Service in Torrent and Avalanche Control Paracelsusstr. 4, A-5027, tel; +43-662-878152, fax; +43-662-870215

May 25-29, 1998, Cracow, Poland

*Forest and Water*

Host : 8.03.02 Forest Hydrology  
Contact : Piotr Kowalik, Politechnical University of Gdansk, Faculty of Environmental Engineering, PL-80952, Poland; tel/fax: +48-58-47-24-21, e-mail: pkow@pg.gda.pl

June 15-18, 1998, Salzburg, Austria

*International Workshop on Hazard Mapping in Torrent Watersheds*

Host : 8.04.01 Torrent Erosion and Control; 8.04.05 Hazard Mapping; Contact : Gernot Fiebiger or Erich Scheuringer, Forest Technical Service in Torrent & Avalanche Control, District Salzburg & Hallein, Paracelsusstrasse 4, 5027 Salzburg, Austria; tel: +43-662-878152; fax: +43-662-870215

June 22-25, 1998, Brno, Czech Republic

*International Workshop on Spruce Monocultures in Central Europe - Problems and Prospects*

Host : 8.01.00 Ecosystems European Forest Institute - EFI; University of Agricultural Sciences Vienna; Mendel Faculty of Forestry and Wood Technology of the University of Agriculture and Forestry Brno; Contact : Emil Klimo, University of Agriculture and Forestry, Faculty of Forestry and Wood Technology, Zemedelsk 3, 61300 Brno, Czech Republic Tel:+420-5-4513-4038; Fax: +420-5-4521-1422; e-mail: mailto:uel@vszbr.cz

10-14 August, Joensuu, Finland  
*Wind and other abiotic risks to forests*  
IUFRO Working Party S8.03.04 Symposium. Contact : Mr. C.P. Quine, Wind Risk Project Leader, Forestry Commission Research Division, Northern Research Station, Roslin, Midlothian, Scotland, UK EH25 9SY;  
Phone: (+44)131 445 2176, Fax (+44)131 445 5124 ;  
(E-mail) M.A.X.Gust@forestry.gov.uk; (Home Page) <http://bamboo.mluri.sari.ac.uk/aair-home.html>

16-20 August, Boise, Idaho, United States  
*International Conference on the Inventory and Monitoring of Forested Ecosystems*  
Host : 8.01 Ecosystems, Society of American Foresters, Boise Cascade Corporation, USDA Forest Service  
Contact :  
(E-mail) [tburk@forestry.umn.edu](mailto:tburk@forestry.umn.edu)  
(Home Page) <http://dendron.fr.umn.edu/burk/boise/index.html>

Sep 28 - Oct 1, Smolenice, Slovak Republic  
*International Symposium on Floodplain Forest Ecosystems in Europe*  
Host : 8.01.00 Ecosystems European Forest Institute - EFI; Institute of Landscape Ecology of the Slovak Academy of Sciences Bratislava, University of Agricultural Sciences Vienna; European Network for Research on Forest Ecosystems - EFERN; Mendel Faculty of Forestry and Wood Technology, University of Agriculture and Forestry Brno; Contact : Emil Klimo, University of Agriculture and Forestry, Faculty of Forestry and Wood Technology, Zemedelsk 3, 61300 Brno, Czech Republic; Tel:+420-5-4513-4038; Fax: +420-5-4521-1422; E-mail: [uel@vszbr.cz](mailto:uel@vszbr.cz)

October, 12-17, Seoul, Korea  
*Forest Ecosystem and Land Use in the Mountain Area*  
Interdivisional Meeting Div.8 and Div.1 (8.01.00 Ecosystem)  
Contact: Don Lee, Seoul National University, [leedk@plaza.snu.ac.kr](mailto:leedk@plaza.snu.ac.kr)

Nov 16-20 Luso-Coimbra, Portugal  
*3rd International Conference on Forest Fire Research*  
Host : 8.05.00 Forest fire research  
Contact : ADAI, Apartado 3131, 3000 Coimbra, Portugal  
tel:+39-700-0732, fax:+39-700-0771, e-mail : [dxvuc@gemini.ci.uc.pt](mailto:dxvuc@gemini.ci.uc.pt)

Nov.30 - 1 Dec.1 Tokyo, Japan  
*IGCP Conference on Cultural Heritage and Natural Disasters*  
At the Canadian Embassy, Tokyo; organized by IGCP Japanese Committee, Landslide Research Council of Japan, UNESCO Division of Cultural Heritage, Kyoto University, Cosponsored by IUFRO Division 8, IAEG, ISSMGE; Contact: Kyoji Sassa, Landslide Section, Disaster Prevention Research Institute, Kyoto University, Uji, Kyoto 611-0011, Japan; tel: +81-774-38-4110; fax: +81-774-38-4300; Email: [sassa@scl.kyoto-u.ac.jp](mailto:sassa@scl.kyoto-u.ac.jp); IGCP-425 Home page:<http://landslide.dpri.kyoto-u.ac.jp/igcp/>

\*Division 8 Poster to illustrate the activities has been made in cooperation with IUFRO Secretary Heinz Schmutzenhofer.

*Kyoji Sassa  
Coordinator*

## TASK FORCE ON ENVIRONMENTAL CHANGE

**Coordinator:** John L. Innes  
**Committee:** Norbert Kraeuchi  
Haron Bin H.J. Abu Hassan  
Jacek Oleksyn  
David L. Karnosky

*The IUFRO Task Force on Environmental Change has continued its activities during 1998, working on the preparation of a series of state-of-the-art reports.*

### Reports

The reports are taking longer than expected, but now that a number of difficulties have been resolved, rapid progress is expected. The form of publication has been changed. Instead of the series: "Mitteilungen der Eidgenössischen Forschungsanstalt für Wald, Schnee und Landschaft", which no longer exists, the reports will be published

(subject to acceptance) as books by CABI Publishing, as part of the joint publishing effort between IUFRO and CABI.

The status of each of the reports is given below:

#### 1. *The impact of carbon dioxide and other greenhouse gases on forest ecosystems*

Karnosky (USA), Scarascia Mugnozza (Italy), Ceulemans (Belgium), Innes (Switzerland)

Publication: 1999

Report is well underway

#### 2. *Impacts and amelioration of air pollution in heavily polluted regions*

Innes (CH), Oleksyn (Poland)

Publication: 1999

Report is complete and has been accepted for publication by CABI.

3. *The impact of air pollution on forest trees in developing and transition countries (prov. title)*

Innes (CH), Abu Hassan (Malaysia),

Publication: 1999

Report is close to completion.

4. *The impact of UV-B radiation on forest ecosystems*

Percy (Canada), Huttunen (Finland)

Publication: 2000

Report is underway

5. *Utilization of forest products to offset global increases in carbon dioxide*

Karjalainen (Fin), Apps (Canada)

Publication: 1999

Report is underway

6. *The influence of environmental change on geomorphological hazards in forested areas*

Sidle (Canada), Chigira (Japan)

Publication: 2000

Report is underway

7. *The impact of global warming and changing precipitation patterns on forest ecosystems*

Kraeuchi (CH), Bugmann (USA)

Publication: Spring 2000

Report is underway

8. *The implications of environmental change for the socio-economic aspects of forestry*

Hoen (Norway)

Publication: 2000

Report is underway

9. *Forest management responses to environmental change*

Mohren (NL), Landsberg (Australia)

Publication: 2000

Status uncertain

To be published as the synthesis report (in IUFRO World Series)

10. *Environmental change and international forest policy*

Innes, Abu Hassan, Karnosky, Kräuchi, Oleksyn

Publication: mid-2000.

Status – Will be started when other reports are available.

One report has been cancelled, namely that dealing with landuse change and climate interactions. We had two reasons for this. Firstly, it proved extremely difficult to locate editors. Several people indicated that they were unwilling to spend time preparing a report for the “grey literature”, which anything to do with IUFRO was considered to be. This indicates to us a substantial need

to improve the image of IUFRO amongst scientists. Secondly, it has become apparent that the IPCC are organising a very similar report, and we do not wish to overlap with their activities.

### **Meetings**

No formal meetings have been arranged by the Task Force during the last 3 years. Instead, members of the Task Force Committee have attended several meetings on behalf of the Task Force, and have also organised several meetings (although outside the framework of IUFRO). Two books have been published as a result of these meetings and a further is underway:

*Transboundary Pollution and the Sustainability of Tropical Forests* (1997), edited by Haron Abu Hassan, Dahlan Taha, Mohd Puat Dahalan and Amran Mahmud. ASEAN Institute of Forest Management, Kuala Lumpur, ISBN 983-9518-07-0.

*Impacts of Climate Change on Forests* (1998), edited by Martin Beniston and John Innes. Springer Verlag, Berlin. Publication due 20 August 1998. ISBN 3-540-64681-7.

A further volume: *Interactions Between Biomass Burning and Climate*, edited by Martin Beniston, John Innes and Michel Verstraete. Publication will be published by Kluwer Academic in 1999.

### **Other activities**

The Task Force has established a database of scientists with known specialist areas. This currently has 107 names and addresses. Names and addresses have been supplied on several occasions in response to queries from EB members and others. All are available for contact at short notice in the event that an urgent question related to environmental change and forestry is raised by a member of the IUFRO EB or other party.

Following the IUFRO EB meeting in Turrialba, Costa Rica, the Task Force has taken on responsibility for Helsinki Resolution H4 “Strategies for a process of long-term adaptation of forests in Europe to climate change”. The Task Force will examine the basic requirements underlying this Resolution and make a recommendation to the President of IUFRO as to how to proceed further.

For the 2000 World Congress, the Task Force is jointly organising two sub-pleenary sessions with individual Divisions. In addition, a normal session is being organised, consisting of voluntary papers.

*John Innes  
Coordinator*

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## TASK FORCE ON FORESTS IN SUSTAINABLE MOUNTAIN DEVELOPMENT

**Coordinator:** Martin Price

Overall, the Task Force has not been particularly active. Nevertheless, activities during the year should lead effectively to the publication of the state-of-knowledge report for the Congress 2000. This will be linked to a number of other events of relevance in 1999 and 2000: the review of the Intergovernmental Forum on Forests at the UN Commission on Sustainable Development (CSD) in 2000 (the IFF has been asked to consider mountain forests in its 1999 meetings, and a report on the themes of the Task Force will be produced for the CSD 2000 meeting); FAO's Forest Resources Assessment; an electronic conference of the Mountain Forum on Mountain People, Forests, and Trees in April-May 1999.

### *State-of-knowledge report*

During summer 1998, a volunteer working at the Environmental Change Unit, University of Oxford, produced a bibliographic database of publications pertaining to the themes of the Task Force since 1992. This database derived principally from CABI's TreeCD. The database was subsequently used by Thomas Mather, a retired FAO official resident in Oxford, to produce the first draft of the table of contents for the state-of-knowledge report, including detailed suggestions of topics and possible authors. This draft was widely circulated to Task Force members, FAO staff, and experts around the world, asking for comments and indications of interest to contribute.

On 18 December, a meeting was held at FAO, Rome, to discuss further action towards the state-of-knowledge report. The meeting was attended by the Task Force coordinator, staff from FAO Forestry Department, and representatives from the Swiss Agency for Development and Cooperation (SDC). At the meeting, FAO and SDC indicated interest in providing partial funding towards the preparation of the report, and also made valuable comments on its content and potential contributors. With regard to the latter, a serious issue is that there should not be too great an imbalance between authors from industrialised and developing countries.

### *Meetings*

The Task Force coordinator presented the Task Force and its activities at three meetings: 1) 2<sup>nd</sup> International workshop on a European Project for Mountain Forests (Trento, Italy, 24-26 September); 2) 21<sup>st</sup> session, European Forestry Commission working party on the management of mountain watersheds (Marianske Lazne, Czech Republic, 6-9 October); 3) IUFRO Inter-divisional conference on forest ecosystems and land use in mountain areas (Seoul, Korea, 12-15 October).

*Martin Price  
Coordinator*

## TASK FORCE ON WATER AND FORESTS

**Coordinator:** Dr. Rob Vertessy  
**Deputy:** Prof. Piotr Kowalik

Our Task Force has now settled into a functioning unit, though correspondence between some members is still a bit sluggish. There have been quite a few developments since I was appointed Coordinator last November. These are outlined below.

### *Changes in Task Force Membership*

Our Task Force has been extended recently to include Dr Helmut Elsenbeer (University of Cincinnati, Ohio) and Dr Sampurno Bruijnzeel (Free University, Amsterdam). Both

are specialists in the field of tropical hydrology, widely published and respected, and close working colleagues of mine that I know I can rely on. Mr Jan Bosch (CSIR, South Africa) has asked to stand down and has recommended that his place be filled by Dr Peter Dye (also of CSIR, South Africa). I have happily agreed to his request as Peter is also an eminent researcher and a trustworthy contributor who I have had occasion to work with over the years.

### *State-of-knowledge Review*

It was agreed that our prime output would be a high quality book providing a 'state-of-knowledge review' on Water and Forests, and it is our hope to have this completed for



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presentation to the IUFRO Executive Board at KL2000. Potential chapter topics and authors have been identified, though we anticipate further additions to our list as the idea matures. It is our hope that we can publish this book in the IUFRO series.

### ***Sub-plenary session for Kuala Lumpur 2000***

Several members of the Task Force have agreed to attend the IUFRO World Congress 2000 in Kuala Lumpur and have prepared abstracts to underpin a special sub-plenary session on water and forests. We have submitted eight abstracts and expect another two to arrive soon. Our intention is to provide 'synthesis' papers on various forest hydrology topics that will become chapters in the 'state-of-knowledge review' book we are preparing. About half of the submitted abstracts have the right 'tone', so we have a bit of work yet to get everyone thinking on the same level.

It should be added that the Task Force started organising its activities alongside the IUFRO/UNESCO Tropical Hydrology meeting being organised by Drs Grip, Bonnell and Bruijnzeel in the week prior to Congress 2000. I will be

presenting at their meeting and they will present a paper on tropical forestry issues at our sub-plenary session.

### ***Plans***

#### **1) Upgrade of the Task Force Web Site**

#### **2) Forest Hydrology Gathering in Australia**

To help us plan our book and to prepare for KL2000, we are planning to hold a meeting in Australia in mid-November. This event will be by invitation only, so that we can keep it focussed on the needs of the Task Force. We will be inviting all Task Force members and about another 25 researchers for a week-long workshop on the state-of-the-art in forest hydrology. Through this mechanism, we plan to extend the scope of our book and widen the list of contributors.

*Rob Vertessy  
Coordinator*

## **REPORT FROM THE NORTHERN AMERICAN REGION**

### ***Canada***

As a major forest nation and a world leader in forest science and technology, Canada must ensure that its forest policies and practices integrate environmental, social and economic values. Achieving this goal is crucial to Canada's development and economic security. Canada has demonstrated that partnerships and collaborative efforts can produce national solutions of which Canada's National Forest Strategy is a good example.

**A National Forest Strategy 1998-2003** was produced to guide Canada's effort in sustainable forest management as we integrate the ecological, economic, social and cultural aspects of forest use and conservation. This current strategy is a collective attempt to develop a workable formula that reconciles the range of expectations placed on the forest and forest managers in nine strategic directions: Forest Ecosystems: Multiple Values; Forest Management: Practising Stewardship; Public Participation: Many Voices; The Forest Industry: A Global Competitor; Forest Science and Technology Management: A Team Approach; Communities and the Workforce: Living with Change; Aboriginal Peoples: Issues of Relationship; Private

Woodlots: A Growing Opportunity; and, The Global View: Canada on Stage. The implementation of this strategy will be overseen by the Canadian Council of Forest Ministers (CCFM).

The science commitments expressed in the strategy were not fully embraced, however, due in part to the lack of a mechanism to bring the forest research communities together in order to further consider and pursue science needs. Consequently, the Canadian Council of Forest Ministers organized a national forum of science and technology (S&T) leaders from industry, universities, Aboriginal and environmental groups, and government to develop a course of action to address forest sector S&T needs. Participants agreed on seven broad issues which formed the basis of the National Forest S&T Course of Action, tabled in 1998 as the science community's contribution to the National Forest Strategy. The community recognized that the real progress depended upon a national communication and coordination mechanism that would make the National Forest S&T Course of Action a vibrant and relevant document. FORCAST is the national coordinator and communication mechanism. This private, non-profit entity will provide

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the direction and infrastructure necessary to ensure that science and technology are aligned with national priorities.

The Canadian Forest Service followed up on its participation in the development of the **Canadian Biodiversity Strategy**, and was commended by the Commissioner of the Environment and Sustainable Development for its leadership in producing an implementation module *Biodiversity in the Forest: the Canadian Forest Service Three-Year Action Plan* for implementing this strategy. The Canadian Forest Service is making progress in many areas such as measuring the elements of biodiversity, understanding the impacts of human activities on biodiversity, and developing conservation options. In this regard, the Canadian Forest Service is working to improve access to regional natural history collections. In addition, the Canadian Forest Service is coordinating Canada's reporting on both its own Canadian as well as the international frameworks of criteria and indicators of sustainable forest management, both which contain indicators on biodiversity. The Canadian Forest Service's contribution to the conservation of genetic forest tree diversity continues with its national tree seed centre in Fredericton, complemented by basic research into genetic diversity of Canadian trees.

As secretariat to the Montréal Process, Canada is an active participant in the process for **Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests**. A set of technical notes containing rational definitions and measurement approaches for the Montréal Process criteria and indicators was published. A report highlighting the innovative work being undertaken by Montréal Process countries to implement C&I and promote sustainable forest management, is being prepared for presentation at the 8<sup>th</sup> Session of the UN Commission on Sustainable Development and the 12<sup>th</sup> IUFRO Congress in Kuala Lumpur, Malaysia, in the year 2000.

**Certification** is an active process in Canada. There are two main approaches to sustainable forest management (SFM) certification. The Canadian Standards Association (CSA) SFM standard CAN/CSA-Z808/9 approach is a forest management and performance certification system. Up to 1998, no forests have been certified to CAN/CSA-Z808/9. However, 15 major Canadian companies and a number of private woodlot owners have started to implement CSA-Z808/9 through internal reviews of their systems and operations in order to prepare for registration. The second certification process is the Forest Stewardship Council (FSC), which emphasizes forest management performance measurement more than the management systems approach. In Canada, the FSC Canadian initiative was formed in 1996. In addition to the environmental, social and economic chambers, a fourth chamber for aboriginal interest was added. Three regional groups are working in

developing regional standards: British Columbia, the Great Lakes - Saint Lawrence Region, and the Acadian Forest Region. The Acadian Forest Region has published its draft Certification Standards for Best Forest Practices.

Since the Houston G-7 Summit in 1990, Canada remains committed to the adoption of an international forest convention and is pursuing consensus on possible elements of such an instrument. Canada's efforts in support of a convention are aimed at building political momentum, both in Canada and internationally. In order for all interested parties to have the opportunity to reflect on the wide variety of issues inherent in such an issue, Canada and Costa Rica entered into a partnership to support the IFF's work. This partnership, referred to as the **Costa Rica-Canada initiative**, consists of a series of international meetings that provide for an open and neutral exchange of views. The initiative is in response to a request from many countries for more information on the objectives, benefits and substance of a convention.

### *United States of America*

The USDA Forest Service highlights for 1998 include programs in Forest Service Research, Forest Health Protection, Reforestation, Stand Improvement, and Natural Resources Projects.

**Forest Service Research** aims at restoring and maintaining forest health productivity while minimizing the negative societal impacts of disturbance processes. Research also evaluates potential effects of changing climate on forests and on future management needs. Program descriptions follow below.

A national campaign against Non-native Invasive Species (NIS), i.e., Asian longhorned beetle, was initiated in response to: 1) the increasing transport of NIS with increasing human travel and global trade; 2) the severe impacts of NIS on recreation, wildlife, biodiversity, wetlands and waterways; and 3) their contribution to the decline of U.S. threatened and endangered species.

A major area of Insect and Disease Research focused on the exotic insect, the gypsy moth. Outbreaks of gypsy moth result in defoliation that causes mortality and growth loss of millions of trees in mid-Atlantic and New England States and in eastern Canada. A statistical technique, classification, and regression tree analysis was used to develop decision charts for use by forest managers to predict mortality rates of individual trees when given the defoliation density. Thinning practices were also used to study their effects on gypsy moth population dynamics.

Since 1985, Sugar Maple Decline has affected up to 400,000 acres of forests in northwestern Pennsylvania. Threats to sugar maple are threats to the timber industry, to the maple

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sugar industry, and to the tourism industry, as the colourful autumn foliage of sugar maple is a key tourist attraction in the northeastern states. In 1998, a long term study was initiated to study the response of declining sugar maple to the application of dolomitic limestone. Results indicated that sugar maple is more vulnerable to environmental stresses on sites low in calcium and magnesium.

Research efforts were also focused on the ongoing impacts of short and long-term Changes in Climate on forest health and productivity. Relationships between climate changes and forests can have tremendous social and economic impacts. A study was conducted to examine the effects a changed climate will have on red oak or on the seedlings that might regenerate these stands. Using elevated carbon dioxide and drought stress, the findings indicated that photosynthesis and growth increased with increasing carbon dioxide and decreased with drought stress.

**The Forest Health Protection** program of the Forest Service provides a wide array of services to protect the trees and forests of the United States from insects and diseases, and man-made stresses. These services are provided to the State and Private Forestry, National Forest Systems, Bureau of Land Management and other Federal agencies.

State and Private Forestry (S&PF): The unprecedented ice storm that struck Maine, Vermont, New Hampshire and northern New York on January 5-10, 1998, has devastated northern forests, both urban and rural. The devastation has serious effects on people and the economy. State and Federal forestry agencies cooperated in an effective regional approach to forest recovery. The Northeastern Area, S&PF created a full time Ice Storm Recovery Team in the Durham, New Hampshire, Field Office. The team's mission is to lead in recovery and restoration of urban and rural forests damaged by the Northern Forest Ice Storm of January 1998, and minimize the negative economic, social, and ecological impacts on the region. The overall work that is accomplished focuses on the following: (1) planning and assessment, (2) technical assistance, (3) monitoring, (4) recovery and restoration, (5) information and education, (6) long-term stewardship, and financial management.

Bureau of Land Management: The news for the 1998 wildland fire season is how the well-known El Niño phenomenon affected burning conditions throughout the world and in particular the United States. A wet winter followed by a dry spring resulted in an abundance of dry, flammable vegetation in Florida. By mid May wildland fires were becoming uncontrollable, with the potential to create dangerous conditions for people and property. By June 16, over 50,000 acres had burned since the beginning of the year, and nearly 100 homes, and several structures and cars had been destroyed. A multi-agency, nationwide effort to assist Florida fire managers followed as firefighters, equipment, supplies, management personnel, and aircraft

responded to the call. Altogether, 7000 firefighters from 45 States were funnelled into the State. Throughout June and July, an estimated 45,000 people were evacuated as encroaching wildfires burned nearly 500,000 acres in the drought-stricken state. Finally, in late July, seasonal rains ended the dramatic Florida wildland fire season. Overall the U.S. wildland fire season was slow compared to recent years.

During the 1998 wildland fire season, several wildland fires were managed for resource benefits in Idaho, Montana and Arizona. As of December 18, 358 wildland fires contributed to resource benefits to 62,091 acres.

Under The **National Forest System Program**, Reforestation Accomplishment and Program, about 288,000 acres of National Forest System lands were reforested during 1998 using appropriated, reforestation trust (RTF), and Knutson-Vandenberg (K-V) funding sources. Contributed funds reforested an additional 4,997 acres, bringing the grand total of 1998 to 292,902 acres. Reforestation accomplishment by K-V funding occurred on a total of 170,596 acres, representing an 11.8% reduction from 1997 (193,446 acres). K-V reforestation acres continue to decline as a result of reduced harvest levels and a reduced amount of regeneration harvesting.

Under the Timber Stand Improvement (TSI) Program about 297,000 acres of National Forest System lands received TSI treatments during 1998 using appropriated, reforestation trust (RTF), and Knutson-Vandenberg (K-V) funding sources. Contributed funds treated an additional 3,392 acres, bringing the grand total for 1998 to 300,202 acres. This represents a modest increase from 1997 (270,639).

In October 1998, under **NATURAL RESOURCE AGENDA (NRA)** the Forest Service Chief Mike Dombeck awarded more than 100 NRA grants worth more than \$2 million at the National Leadership Conference. The Forest Service NRA focuses on recreation, roads, watersheds and sustainable forestry. The grants promote the Agenda's goals and empower Forest Service employees by encouraging innovation. Projects will restore national forest and grassland ecosystems, improve outdoor experiences, conduct research and provide assistance to communities, landowners and Tribes. Results will be monitored and shared with local communities.

*Carl Winget  
Executive Board Member Representing the  
Northern American Region*

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## REPORT FROM THE WESTERN PACIFIC REGION

IUFRO member institutes were very active throughout the Western Pacific Region throughout 1998. Overall, membership in the Region remained strong, with several new applications for membership in 1998 and only a limited number of withdrawals. Consistent with global trends, there was significant rationalisation of research activity in most Western Pacific nations during the year in response to funding pressures and allied issues.

IUFRO hosted several important meetings in the Region in 1998, all of which were very well attended. Without exception, these meetings had positive and tangible outcomes. Indications are that this actively will continue in 1999.

Regular contact was maintained with International Council members for the Region. It is a pleasure to report that Vanuatu nominated its International Council member in 1998. There is now only one nation in the Region that does not have an official International Council member.

The Regional member represented IUFRO at the 17<sup>th</sup> Session of the Asia-Pacific Forestry Commission held in Yogyakarta, Indonesia, from 23-27 February 1998. IUFRO initiatives in the Asia-Pacific Region were well received by the Commission. IUFRO was encouraged to maintain close future contact with the Commission in recognition of the importance of science to underpin adoption of sustainable forest management through a process of continuous improvement.

The International Council member for the Republic of Philippines requested through the Regional Member that the IUFRO Executive Board examine mechanisms to secure more funding, through IUFRO's Special Program for Developing Countries (SPDC), to support a wider

participation of young researchers from developing countries at international conferences. The SPDC Co-ordinator is now addressing this important issue.

Preparations for the 2000 IUFRO World Congress in Kuala Lumpur, Malaysia gained momentum in 1998. Several nations in the Region will be hosting post-Congress tours. Looking ahead, Australia is one of two countries that are formally bidding for the next Congress in the year 2005. A number of Western Pacific nations have already supported this bid. If Australia is successful, the Congress will be held in Brisbane and several neighbouring countries will be requested to host post-Congress tours.

The IUFRO Task Force on Sustainable Forestry, in collaboration with the Centre for International Forestry Research and the Food and Agriculture Organisation, organised a successful conference on Indicators for Sustainable Forest Management in Melbourne, Australia, in August 1998. Around 200 delegates from nearly 40 countries attended the meeting. Complementary meetings have been planned by the Task Force for Costa Rica in 1999 and France in 2000. The Task Force will present a strategic summary of these meetings to a special session of the Malaysian Congress in August 2000.

Finally, I wish to record my sincere thanks to International Council members of the Western Pacific nations for their cooperation and contributions in 1998, and I look forward to maintaining close communication with Council members in 1999 and beyond.

*D W Flinn*  
*Executive Board Member Representing the*  
*Western Pacific Region*

### Publications by the IUFRO Secretariat in 1998

#### **IUFRO World Series: ISSN 1016-3262**

*Vol. 8:* Lund, H.G. (ed.), 1998, IUFRO Guidelines for Designing Multipurpose Resource Inventories. Vienna, IUFRO, 1998 216 p. USD 30.-

*Vol. 9-de:* Griess O., Kurth, H. (eds.) 1998. Terminologie der Forsteinrichtung – Begriffe und Definitionen in deutscher Sprache, Entsprechungen in Englisch, Französisch, Spanisch, Italienisch, Portugiesisch, Ungarisch und Japanisch. IUFRO 4.04.07 SilvaPlan und SilvaVoc. Vienna. IUFRO, 1998.

#### **Annual Report 1997:**

Published in English, French, German and Spanish

#### **Occasional Papers: ISSN 1024-414X**

*Occasional Paper No. 10:* Financing Forest Sector Research: Theory and European Experiences (E. Hellström, M. Palo, B. Solberg; 1998)

*Occasional Paper No. 11:* Is Sustainable Development of the Russian Forest Sector Possible? (S. Nilsson, A. Shvidenko, 1998)

#### **IUFRO News: ISSN 02256-5145**

Volume 27: 2 regular issues, 1 Structure/Officeholders issue  
1 Congress Information Package  
1 Special Issue: 25<sup>th</sup> Anniversary - Secretariat in Vienna

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## IUFRO's Special Programme for Developing Countries 15 Years of Progress

This year was an important one for IUFRO's Special Programme for Developing Countries (IUFRO-SPDC) as it celebrated its 15<sup>th</sup> anniversary. During the 1981 IUFRO World Congress in Kyoto, Japan, IUFRO was formally requested in the Congress Declaration to undertake activity in "*...strengthening research related to forest resources in developing countries*". Accordingly, in 1983, IUFRO-SPDC was created and, since then, has always been co-located with the Secretariat in Vienna. Initial funding was provided by the World Bank and the United Nations Development Programme, together with critical assistance from a few other agencies and institutions.

### *IUFRO-SPDC's Evolving Strategy*

Under founding Coordinator Oscar Fugalli the SPDC focused on identifying research needs and priorities on a regional basis: Several workshops were organized in Asia, Africa and Latin America. With evolving world concerns SPDC's mission has broadened over the years from a focus on tropical developing countries to one *to expand and foster forestry research capacity in developing and economically disadvantaged countries*.

Thus, IUFRO-SPDC seeks to foster and assist the activities of IUFRO through special-purpose projects and activities in collaboration with forestry research and donor agencies of the international community. As part of IUFRO's global network of forestry research institutions, IUFRO-SPDC has a comparative advantage in bringing target-country scientists into collaborative research planning, training, and information exchange with their counterparts in other countries. IUFRO-SPDC not only implements projects but also acts as a *catalyst* to initiate, promote and foster ideas and working relationships. Its goals are revised and updated based on an evaluation process that relies heavily on feedback from cooperators and clients.

As IUFRO-SPDC looks toward the future, it intends to continue to refine and enlarge its efforts to expand and foster forestry research capacity in developing and economically disadvantaged countries. The team of IUFRO-SPDC will take all efforts to ensure that the Programme will develop as successfully as in the past and that it will have a bright and viable future.

### *Capacity Building in Africa*

IUFRO-SPDC is trying to play a leading role in creating the enabling environment for national forestry research institutions to upgrade the skills of professional foresters in Africa and to sustainably manage African forests and their resources. IUFRO-SPDC's approach to help achieve this

goal has been to appoint a special coordinator who is familiar with the situation in Africa and let him identify, in the region proper, the specific needs for forestry research capacity building, information, collaboration and networking expressed by scientists in the region.

With the help of Danida, IUFRO-SPDC since mid-1998 has a Deputy Coordinator for Africa, Dr. Atse Yapi, who represents IUFRO-SPDC concerns in Africa. His office is co-located with the Forestry Group of FAO, at their Regional Office for Africa in Accra, Ghana. Dr. Yapi works to foster IUFRO-SPDC's training and networking efforts in the region both by intensifying contacts and cooperation with other organizations and by organizing and supporting SPDC activities in Africa.

IUFRO-SPDC's Deputy Coordinator for Africa (DCA) has focused his efforts on the following areas: (1) Partnership development within Sub-Saharan Africa, (2) Training workshops, (3) Scientist assistance, (4) Forestry research capacity assessment, and (5) implementation of several of the elements outlined in the FORNESSA project in cooperation with AAS, FAO, and IFS.

The DCA has taken steps to foster a close working relationship with FORAFRI. FORAFRI Network is a regional forestry research project funded by France and executed by CIFOR and CIRAD (Centre de coopération International en Recherche Agronomique pour le Développement). It has a strong emphasis on scientific information dissemination, an area of interest to IUFRO-SPDC as well. This resulted in three concrete outputs: (1) IUFRO-SPDC's DCA was invited by CIFOR and CIRAD as a resource person to participate in the second Technical and Scientific Committee meeting of FORAFRI held in Yaoundé, Cameroon, in July 1998; (2) IUFRO-SPDC participated in and contributed financially to the planning of the October 1998 FORAFRI symposium in Libreville by sponsoring three forestry research scientists; (3) the FORAFRI Series (bibliographical country reports) is shared with IUFRO-SPDC's Office for Africa; and (4) a IUFRO-SPDC/CIRAD-Forêt joint training workshop is currently being planned to be held in Abidjan, Côte d'Ivoire.

Another highlight from this past year was our co-organization of a joint "Strategic Planning Workshop and Network Planning Session" with the African Academy of Sciences, and the International Foundation for Science in Harare, Zimbabwe. IUFRO-SPDC organized a two-day intensive course, 23-24 November, on Strategic Planning using our training modules. Dr. Grant Milne led the course that was targeted at scientists and research managers from African developing countries to improve their background in strategic planning prior to the development of a strategic plan for the African Academy of Sciences network which held its planning session immediately following the training

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session. Participants used the skills learned in strategic planning to develop the concept for the network and its first subject area topics. After consideration of more than 20 topics the group prioritized the first three for initial implementation. These are (1) community-based forest management; (2) natural forest management and biodiversity; and (3) reforestation/rehabilitation of degraded and saline areas. Further reports on the discussions at these sessions will be posted on the IUFRO-SPDC web site.

We also worked extensively on preparations for a 4-day training course on "Project and Human Resources Management" (4 days) held just after the Division 6 meeting in January 1999 in Pretoria, South Africa.

### **Capacity Building in Asia**

*BIOtechnology assisted REFORestation project (BIO-REFOR)*: In 1991, IUFRO-SPDC began the BIO-REFOR project based on the generous financial support of the Japanese Ministry of Foreign Affairs and strong technical support of IUFRO-JAPAN. This partnership has continued to grow and flourish over the years and the proceedings of the annual workshop clearly show substantial progress towards the overall objective of establishing the techniques needed to rehabilitate degraded forest lands in the Asia-Pacific region. All IUFRO-SPDC Coordinators have worked closely and with great comradery with their counterpart in Japan, currently Dr. Kazuo Suzuki of the University of Tokyo, responsible for the coordination of this project.

Early in November 1998, the 7th Annual International Conference of the BIOtechnology assisted REFORestation project was held in Manila, Philippines. This joint conference between the BIO-REFOR Project and the Japanese Society for the Promotion of Science (JSPS) was hosted by the National Institute of Molecular Biology and Biotechnology (BIOTECH) of the University of the Philippines, Los Baños, and sponsored by JSPS, BIO-REFOR, and IUFRO-SPDC.

IUFRO-SPDC Coordinator Dr. Robert C. Szaro delivered the Welcome Address. He expressed the thanks of all participants to Dr. Reynaldo E. de la Cruz and his staff who were responsible for putting together an exciting workshop that focused on biotechnology in the next century.

**The purpose** of the conference was to make a deliberate effort to determine trends and concerns in biotechnology and maximize opportunities for information exchange across countries. **Objectives** included the identification of trends and challenges for biotechnology for the next millennium; the discussion of strategies to address biotechnology concerns; and the promotion of mutual cooperation through the exchange of information among scientists and institutions in the region.

**Topics** of particular interest to ASEAN countries were discussed in the individual sessions and included man-

made forest and propagation technology relative to tropical forest trees and mycorrhizae in the Asian-Pacific region (BIO-REFOR); microbial utilization of plant resources in the tropics; biological pollution control and remediation of enclosed water bodies in ASEAN countries; development of manufacturing bio-process technology in the tropics; and exploitation and application of novel functions of microbial resources in the tropics.

The conference was followed by field trips to Zambales and Pampanga to visit a virgin forest, historical sites, and lahar areas around Mt. Pinatubo.

### **Capacity Building in Eastern Europe**

#### *Effects of Forest Health on Biodiversity in the Carpathian*

*Mountains*: The project was started with the convening of a research planning workshop in Smolenice, Slovakia, from November 4-6, 1997. The participants at the workshop agreed to the components and work activities that would lead to the successful completion of the project objectives. Based on the allocated budget of US\$ 178,000 from the USDA Foreign Agricultural Service over the span of the 3 year project, those involved agreed to work together to do the following: (1) phytosociological sampling in the first year at each of the 26 ozone monitoring sites (5 plots per site) to be evaluated two times during the vegetative season (beginning and end of the season) in 1998 (and perhaps in year 3 if funding allows); (2) bark beetle sampling for all three years in high- and low-pollution sites for each country; (3) genetics sampling of beech, spruce and fir trees at a heavily polluted site in Slovakia and a relatively clean-air site in Romania; (4) GIS activities will be accomplished by close cooperation of the IFER (the Czech Republic), Geosystems Romania and Ukrainian Scientific Research Institute of Forestry and Forest Melioration; (5) recommend the high desirability of using dendrochronology and geostatistics to identify historical patterns of growth declines and to associate these with pollutant levels if either additional funding was found or if it could be accommodated within the current project budget.

All efforts went especially well during the first year. The phytosociological sampling was completed on time and the results are currently undergoing analysis. The bark beetle sites were set up and sampled in all countries and the genetics team began its selection of trees and the collecting of samples. The GIS team was aided by an offer from ESRI (the creators of ARC Info) to come to the Czech Republic, install their software, and provide training for only the cost of paying the travel expenses of one of their experts. The project more than benefited by this exchange since the cost of the software alone is far more than the travel expenses. The group will also receive additional technical support from ESRI as data are accumulated.

The project has incorporated the dendrochronology work by minimizing indirect costs and using the savings to allow this work to add to the value of the overall project.

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We should also point out that no salaries are funded from the project and all are paid for by the respective institutions during the work.

### ***Capacity Building in Latin America***

Many of the activities that we had planned for Latin America were left for 1999 as Deputy Coordinator Dr. Wade Bowers returned to Canada early and we were unable to follow through on a variety of potential projects. However, we were able to provide support for the Latin American Congress in Chile in terms of enhancing participation at the Congress and in terms of developing a CD-ROM. We anticipate the arrival of a new Deputy Coordinator from the Canadian Forest Service who will be charged with developing further our activities in this region.

### ***Scientist Assistance Programme***

With the instructions from the Japanese Foreign Ministry to direct US\$ 70,000 to a Research Group meeting (6.16.00 in Miyazaki, Japan) we had very limited opportunities for scientist support this year but managed to do very well in soliciting additional support. We provided US\$ 5,000 each to the Division 2 Conference in China, the Division 8 Conference in Japan, and the Latin American Congress in Chile.

We also provided US\$ 7,500 to the Sustainability Congress in Australia. In addition to these core fund allocations we were successful in applying for AU\$ 30,000 for the Sustainability Congress from AusAid and another US\$ 25,000 for the Latin American Congress from the USDA Foreign Agricultural Service. We also provided small grants from the IUFRO Development Fund. Our total Scientist Assistance Programme in 1998 thereby exceeded US\$ 150,000 - a landmark amount for IUFRO-SPDC. Future assistance for IUFRO workshops and meetings will be more and more restricted to high profile meetings where we can successfully compete for additional support from other sources.

### ***Information Services***

Textbook Projects: The IUFRO-SPDC textbook project is off to a fast start. Two volumes have already been published, a third is in production, and a fourth multi-volume set is in the concept stage. We anticipate the third volume to be ready in the 2nd half of 1999.

No. 1 - Forestry and Environment in Pakistan by K.M. Siddiqui (in English) - Published

No. 2 - Modelling Forest Growth and Thinnings by K. v. Gadow and G. Hui (in Chinese) - Published

No. 3 - Forest Production for Tropical America by F. Wadsworth (in Spanish) - In Production

No. 4 - Silvicultural Practices in Africa (concept in cooperation with AAS, IFS, and IPGRI)

Training Manuals: Dr. Pat Reid (Director, School of Natural Resources, University of Arizona, Tucson, AZ) was in Vienna on a six month sabbatical from July through December. Dr. Reid worked hard on finishing a first draft of our latest training manual entitled "Handbook for Preparing and Writing Proposals". We are now in the process of circulating the first draft for comment and looking for potential partners in improving its content and scope.

IUFRO-SPDC on the Web: The IUFRO-SPDC web-site continues to expand its content. All relevant news items from the IUFRO-SPDC news inserts are now available on the web along with a current description of our programme, high-interest topical papers, for example "Ecosystem Management as an Approach for Sustainable Forests and their Biodiversity", and "Mechanisms for Forestry Research Capacity Building", and the latest developing country news. In the future, the IUFRO-SPDC web pages will also have copies of our publications and bibliographies, as they become available. These will include our training manuals in PDF format in English, French and Spanish.

IUFRO News Inserts: IUFRO-SPDC has now published a 6 page insert in IUFRO News, starting with Vol. 26 (4), 1997. This is designed to replace the news portion of the Information Bulletin and has the advantage of also informing the entire IUFRO membership on SPDC activities.

CD-Rom Production: IUFRO-SPDC cooperated with the IUFRO Secretariat and the Latin American Congress organizing committee to produce a CD-ROM with all abstracts and papers that were available prior to the Congress. The CD also included a complete copy of the IUFRO web site. The CD's were distributed to all participants at the Congress and to all IUFRO member organizations in Latin America.

### ***Personnel - News***

*Dr. Wade Bowers* from the Canadian Forest Service (CFS) has accepted a new managerial position with CFS in Newfoundland and left IUFRO-SPDC at the end of June. He had started as Deputy Coordinator for Programme on 1 April 1997.

*Eva-Maria Hütter*, Administrative Assistant, moved from the Secretariat to IUFRO-SPDC in May to replace the departed Martina Melville.

*Robert C. Szaro*, Coordinator  
*Atse M. Yapi*, Deputy Coordinator for Africa

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## SILVAVOC

The purpose of the SilvaVoc project on multilingual forest terminology is to **ensure continuity in high-quality terminology work and to make the results of the cooperation with IUFRO Units available to the international forestry community** in traditional media of communication as well as by modern electronic technology and on the Internet.

The financial assistance of the ODA Japan allowed the effective and energetic pursuance of activities under IUFRO's SilvaVoc forest terminology project, in particular the finalization of the first in a series of books on Terminology of Forest Management Planning, the holding of an International Workshop on Multilingualism and Expert Cooperation in Forest Terminology (MEXFT'98) and the implementation of a test version of the terminological database SilvaTerm on the Internet.

### ***Terminology of Forest Management Planning (TFM)***

Thanks to the excellent cooperation of the members of 4.04.07 SilvaPlan in finalizing the part of equivalents to the German version during the summer months, the first book in the IUFRO World Series, World Series Vol. 9-de 'Terminologie der Forsteinrichtung' (Terminology of Forest Management Planning), was available in December 1998. It contains the German language version with definitions and equivalents in all other working languages: English, French, Spanish, Italian, Portuguese, Hungarian, and Japanese. The index lists 765 terms, 354 synonyms and another 84 cross-references to other terms which are not defined but mentioned or explained in the text.

The Terminology was presented in a paper at the First Latin American Congress in Valdivia in November 1998. It was encouraging to notice the great interest in Terminology; first book orders were received on site.

The subsequent English, Spanish and French World Series publications are in preparation - the books will have the same structure: terms in English, Spanish and French, respectively, with definitions and equivalents in the other working languages.

The next step will be to make all language versions, including Italian, Portuguese, Hungarian and of course Japanese with definitions and notes available on a CD-ROM, which should be ready for presentation at the IUFRO World Congress 2000.

### ***Workshop on Multilingualism and Expert Cooperation in Forest Terminology (MEXFT'98)***

As the SilvaVoc project aims at providing services as well as a forum for exchange of knowledge and experiences in forest terminology, a Workshop was organized together with IUFRO Unit 6.03.02, Trends in Forest Terminology, in Kappel am Albis near Zurich, Switzerland.

The Workshop brought together experts in forest research, terminology science and practice, and information services from ten different countries, including Japan, Finland, China and Tanzania. Attendance was restricted to 25 participants, so as to achieve focused and lively discussions.

The abstracts of all papers were delivered before the Workshop and can be found at the MEXFT'98 Web site at: <http://www.wsl.ch/wsldb/iufro/mexft.index.html> together with the programme, information on the contributors and a collection of useful hyperlinks in forest terminology.

The MEXFT'98 Workshop will have a **follow-up at the IUFRO World Congress in Malaysia 2000**. Again in cooperation with 6.03.02, we are in the process of preparing a group session with the title 'Forest Terminology: Living Expert Knowledge. How to Get Society to Understand Forest Terminology'.

### ***Terminological database and networking***

Thanks to a cooperation agreement with representatives from the International Society of Environmental Protection (ISEP) and to strong input from Niels Bruun de Neergaard, it was possible to set up a terminological database on Access/Visual Basic which corresponds to the state-of-the-art and provides a solution on the meta structure level which is also implemented in the framework of the European Environment Agency and in a project with the United Nations Office in Vienna.

At present, the data in the pilot database on the Internet include terms from a trilingual forestry vocabulary produced by T.B.Yerke under an USFS project (12.000 entries), and some sample definitions of the Terminology of Forest Management Planning.

The intention is to use the database in its present state with partly incomplete entries (terms and equivalents but still only few definitions, and additional information) to invite the IUFRO Unit Coordinators to contribute



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terminological data. Input from the IUFRO Units will ensure the quality of the terminological database and its parallel Japanese version.

In parallel to these on-going activities, towards the end of the year SilvaVoc was concentrating on a collaboration with FAO on a **small glossary in forest genetic resources** taking stock of existing definitions and their usage by different organisations and institutions. A paper requested by UNEP on the definition of "low forest cover" was prepared by G. Lund.

## **Concluding Remarks**

It is certainly a rewarding moment for a project when some activities come to finalization. With the implementation of the terminological database, the excellent cooperation with IUFRO-Japan and further development of contacts encouraged at the MEXFT'98 Workshop, we will be in a good position to respond to terminological questions and problems. During the past year SilvaVoc gained in reputation and is now considered an international forum and partner for high-quality forest terminology work.

*Renate Prüller  
SilvaVoc*

## **FINANCES**

*For the financial year 1998, a general statement in Swiss Francs was prepared for IUFRO in the same way as in 1997. This overall statement is entitled IUFRO/UNION and includes the individual statements for IUFRO Secretariat/Finance Office, SPDC and Terminology.*

### **Table 1: IUFRO UNION Profit and Loss Account Details**

With an income of CHF 1 145 180 and an expenditure of CHF 1 372 506, the profit and loss account for 1998 shows an **excess of expenditure over income of CHF 227 325**. This deficit is mainly due to an excess of expenditure on the SPDC account. See the accounts of the three sub-units for further details.

### **Table 2: IUFRO/SPDC Profit and Loss Account**

For 1998, **receipts** were USD 280 475 (CHF 392 665). **Expenditures** were USD 492 479 (CHF 753 698). The Government of Japan was again the primary source of income with their generous eighth grant for the series of BIO-REFOR workshops and core support to the SPDC. IUFRO-SPDC also gratefully acknowledges the continuing financial support of Danida, the Canadian Forest Service (CFS), the USDA Foreign Agricultural Service, and the USDA Forest Service. Furthermore IUFRO-SPDC welcomes AusAID among its donors. **The assistance of these donors is essential to the continuation of many SPDC projects.** There was a decrease in income, which can be explained by an exceptionally high income in 1997 and the decline of certain currencies.

In comparison to 1997, the **printing costs** were reduced markedly owing to the termination of the publication of the *Information Bulletin* in mid-1997. The costs for the production of the SPDC insert in IUFRO News, published in its place, amounted to only a fraction of the costs in 1997, with the same holding true for the **mailing expenses**. Major disbursements occurred for the 7<sup>th</sup> Annual **International Conference of the BIOTEchnology assisted REFORestation** project held in Manila, Philippines, in early November, and for providing **assistance to participants** in a wide range of IUFRO meetings. In 1998, a **loss on exchange** of the amount of CHF 64 224 occurred, which was directly entered into the account "Provision for Currency Risk". The closing of three fixed term deposits resulted in a realized exchange loss of CHF 28 975. The remainder of the recorded loss of the amount of CHF 35 249 is a pure book value, which can change again in 1998 depending on the exchange rates. The loss on exchange was due to the decline of the USD from 1.461 (USD/CHF) in 1997 to 1.381 (USD/CHF).

### **Table 3: IUFRO/Secretariat and Finance Office Profit and Loss Account Details**

*INCOME  
Secretariat in Vienna*

The **subsidy from the Austrian Government** that IUFRO received again in 1998 is made up of CHF 59 301 for **wages and salaries** and CHF 27 193 for **rental costs**. Other revenues include subsidies for printing an Occasional Paper published in 1997 and for work of the Task Force on Management and Conservation of Forest Gene Resources.

#### Finance Office in Zurich

In 1998, the net income from membership dues was higher than in the previous year by CHF 54 835. Following a **circular to delinquent members** reminding them of the outstanding payment, some CHF 14 000 could be collected additionally.

	1998	1997	1996
Membership dues	340 085	312 070	324 665
Membership dues written off	<u>13 944</u>	<u>40 746</u>	<u>14 861</u>
<b>TOTAL</b>	<b>326 141</b>	<b>271 306</b>	<b>309 804</b>

The **increase in sales of publications**, in particular the high interest in IUFRO World Series Volume 8, is quite a positive development. The overall income from sales increased to CHF 11 630.

In 1998, the contribution by the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) for the **book-keeping and collecting** that has been done for many years now appears in the account for the first time.

#### EXPENSES

##### Secretariat in Vienna

As compared to the previous year, in 1998 the expenses for **wages and salaries** remained almost unchanged. **Other personnel costs** such as those for preparing publications and for computer system administration increased by CHF 4 500 because of extra services hired for the Internet.

The higher **postage costs** compared to 1997 are, on the one hand, due to an increase in postage charges both in Hungary and Austria, from where mailing is primarily done, and, on the other hand, to stronger advertising activities and an extension of services for the members.

The increase of CHF 2 648 for **new equipment** was mainly due to modernization measures for the computer system and the LIBERO literature database. With CHF 3000, **other costs** were at an all time low in 1998.

#### Finance Office in Zurich

In 1998 there were no expenses for the **President's Office**. For the first time, the costs for **personnel and infrastructure** paid by the WSL (Swiss Federal Institute for Forest, Snow and Landscape Research - see INCOME above) for doing the book-keeping for IUFRO appear as "**Salaries**" (CHF 60 000) and "**Other costs**" (CHF 18 000).

Losses on exchange of assets and foreign currency (mainly USD) amounted to CHF 56 231 and were directly entered as "**Decrease of provision for currency risks**". However, this is a mere book value that can change in 1999 depending on the development of the exchange rate.

The positive development of the deutsche mark resulted in a profit of CHF 9 065 entered as "**Increase of provision for currency risks**".

In 1998, another payment of CHF 15 000 was made to the **Congress Organizing Committee** at the Forest Research Institute in Malaysia for preparing the IUFRO World Congress in Kuala Lumpur in 2000.

#### Annex to the Annual Account

##### 1) Membership

Members as per December 31, 1998:

Ordinary Members:	500 (nachtrgl. korr.)
Sub- and sub-sub members	<u>171</u>
Total/members institutions:	671
Associated members:	74

For admissions and withdrawals that became effective in 1998, please see pages 38 to 44.

##### 2) Secretariat

As compared to the budgeted expenses of CHF 424 000, the overall actual expenses of CHF 361 695 are a positive result. The Secretariat accounts were audited by the Büro für Datenverarbeitung and the KPMG Alpentreuhand Gesellschaft in Vienna and were found to be correct in March 1999.

##### 3) SPDC "Developing Countries" Account

The SPDC accounts kept by the Secretariat in Vienna were audited by Alpentreuhand, Vienna, and found to be correct in March 1999. The total surplus of expenses of CHF 361 033 is mainly due to a reduction in income from grants and agreements. The budgeted expenses were basically adhered to.

#### Table 4: IUFRO/Terminology Profit and Loss Account Details

##### INCOME

In the year under review, Terminology received contributions of CHF 221 269 (USD 158 069). Like in the previous year, the SilvaVoc Project received a subsidy of CHF 210 000 (USD 150 000) from ODA Japan. Other contributions were received from FAO (USD 3 800) and UNEP (USD 4 000). Income was 14% lower than budgeted.

##### EXPENSES

The excess of income over expenses after taking into account losses on exchange of CHF 11 075 amounted to CHF 28 731 or USD 28 433, respectively. Expenses were 11.7% lower than budgeted.

**Exchange rate as per Dec 31, 1997 - 1 CHF : 0.68 USD**  
**Exchange rate as per Dec 31, 1998 - 1 CHF : 0.72 USD**

**Table 1 IUFRO/UNION: Profit and Loss Account as of December 31, 1998, in Swiss Francs**

<i>Expenses</i>			<i>Income</i>		
	1998 CHF	1997 CHF		1998 CHF	1997 CHF
<b>IUFRO</b>			<b>IUFRO</b>		
Personnel Costs	214 090	140 303	Income	583 808	489 530
Operating Costs	<u>264 741</u>	<u>260 560</u>			
	478 831	400 863			
<b>Profit</b>	<b>104 977</b>	<b>88 667</b>			
	<b>583 808</b>	<b>489 530</b>		<b>583 808</b>	<b>489 530</b>
<b>TERMINOLOGY</b>			<b>TERMINOLOGY</b>		
Personnel Costs	82 682	112 432	Income	232 932	225 314
Operating Costs	<u>121 519</u>	<u>28 085</u>			
	204 201	140 517			
<b>Profit</b>	<b>28 730</b>	<b>84 797</b>			
	<b>232 932</b>	<b>225 314</b>		<b>232 932</b>	<b>225 314</b>
<b>SPDC</b>			<b>SPDC</b>		
Personnel Costs	104 026	106 223	Income	328 441	667 749
Operating Costs	<u>585 448</u>	<u>484 277</u>			
	689 474	590 500			
<b>Profit</b>		<b>77 249</b>	<b>Surplus of Expenses</b>	361 033	
	<b>689 474</b>	<b>667 749</b>		<b>689 474</b>	<b>667 749</b>
<b>TOTAL: IUFRO/UNION</b>			<b>TOTAL: IUFRO/UNION</b>		
Personnel Costs	400 797	358 958	Income	1 145 180	1 382 593
Operating Costs	<u>971 708</u>	<u>772 923</u>			
	1 372 506	1 131 880			
<b>Profit</b>		<b>250 713</b>	Surplus of Expenses	227 325	
	<b>1 372 506</b>	<b>1 382 593</b>		<b>1 372 506</b>	<b>1 382 593</b>

**Table 2 IUFRO/SPDC: Profit and Loss Account as of December 31, 1998, in Swiss Francs**

<i>Expenses</i>			<i>Income</i>		
	1998 CHF	1997 CHF		1998 CHF	1997 CHF
Salaries	41 882	40 122	Sale/Research Management	1 652	996
Other Personnel Costs	<u>62 144</u>	<u>66 101</u>	Interest Earnings	49 777	57 641
<b>Total Personnel Costs</b>	<b>104 026</b>	<b>106 223</b>	Other Revenues	7 195	4 863
			Grants/Agreements	<u>334 041</u>	<u>604 249</u>
Travel	39 667	47 993			
Printing	838	16 317	<b>TOTAL INCOME</b>	<b>392 665</b>	<b>667 749</b>
Postage	3 792	8 972			
Telecom	8 772	5 537	<b>Surplus of Expenses</b>	<b>361 033</b>	
Bank Charges	6 268	6 313			
Loss on Exchange	64 224				
Office Supplies	2 180	2 569			
Rent & Utilities	3 487	3 095			
New Eqmnt/Leas./Write-offs	11 360	16 778			
Legal Expenses/Auditing	3 255	2 851			
Other Expenses	823	61 869			
Sponsorship/Awards	<u>505 007</u>	<u>311 984</u>			
<b>Total Operating Costs</b>	<b>649 672</b>	<b>484 277</b>			
<b>TOTAL EXPENSES</b>	<b>753 698</b>	<b>590 500</b>			
<b>Surplus of income</b>		<b>77 249</b>			
	<b>753 698</b>	<b>667 749</b>		<b>753 698</b>	<b>667 749</b>

**Table 3 IUFRO Secretariat/Treasurer's Office, Profit and Loss Account as of Dec. 31, 1998, in CHF**

<i>Expenses</i>			<i>Income</i>		
	<i>Ann.Acc.1998</i>	<i>Ann.Acc.1997</i>		<i>Ann.Acc.1998</i>	<i>Ann.Acc.1997</i>
	<b>CHF</b>	<b>CHF</b>	<b>Secretariat Vienna</b>	<b>CHF</b>	<b>CHF</b>
<b>Secretariat Vienna</b>			Contributions by the Austrian Government:		
Salaries	140 318	131 125	- Salaries	59 301	60 961
Other Personnel Costs	13 772	9 178	- Rent	27 193	25 436
<b>Total Personnel Costs</b>	<b>154 090</b>	<b>140 303</b>	Other Revenues	<u>7 489</u>	<u>12 325</u>
Travel	35 048	37 512			
Printing	33 862	45 503			
Postage	49 872	44 307			
Telecom	13 209	12 072			
Bank Charges	2 151	2 537			
Office Supplies	4 900	4 140			
Rent	33 668	31 634			
New Equipment/Write-offs	20 283	17 635			
Legal Expenses + Auditing	5 002	4 385			
Other Expenses	3 003	9 626			
Sponsorship/Awards	<u>6 609</u>	<u>2 075</u>			
<b>Total Operat. Costs Vienna</b>	<b>207 606</b>	<b>211 425</b>			
<b>TOTAL EXP. VIENNA</b>	<b>361 695</b>	<b>351 728</b>	<b>TOTAL INCOME VIENNA</b>	<b>93 982</b>	<b>98 722</b>
<b>Finance Office Zurich</b>			<b>Finance Office Zurich</b>		
Salaries	<u>60 000</u>		Membership Dues	340 085	312 070
Total Personnel Costs	<b>60 000</b>		Sale of Publications	11 630	3 403
President's Office	0	1 893	Interests	60 111	69 146
Postage	655		Profit on Exchange	9 095	5 729
Write-offs	13 944	20 764	Other Income		460
Loss on Exchange	56 231	0	Contribution WSL (CH):		
Bank Charges	7 087	6 965	- Salary	60 000	
Legal Expenses + Auditing	2 450	1 598	- Infrastructure	18 000	
Other Costs	18 000		Increase of provision for currency risks	- 9 095	
Congress Costs	15 000	17 914			
Decrease/provision currency risks	<u>-56 231</u>				
<b>Total Operat. Costs Zurich</b>	<b>57 135</b>	<b>49 135</b>	<b>TOTAL INCOME ZURICH</b>	<b>489 826</b>	<b>390 808</b>
<b>TOTAL EXPENSES ZURICH</b>	<b>117 135</b>	<b>49 135</b>	<b>TOTAL INCOME</b>	<b>583 808</b>	<b>489 530</b>
<b>Total Operat. Costs Vie+Zur</b>	<b>264 741</b>	<b>260 560</b>			
<b>TOTAL EXPENSES</b>	<b>478 831</b>	<b>400 863</b>			
<b>Surplus of income</b>	<b>104 977</b>	<b>88 667</b>			
	<b>583 808</b>	<b>489 530</b>			

**Table 4 IUFRO Terminology, Profit and Loss Account as of Dec. 31, 1998, in Swiss Francs**

<i>Expenses</i>	<i>1998 CHF</i>	<i>1997 CHF</i>	<i>Income</i>	<i>1998 CHF</i>	<i>1997 USD</i>
Salaries	79 017	112 432	Grants and Agreements	221 296	209 059
Other Personnel Costs	3 665		Profit on Exchange		16 255
<b>Total Personnel Costs</b>	<b>82 682.09</b>	<b>112 432</b>	Interest earnings	<u>11 636</u>	
Travel	7 526	8 071	<b>TOTAL INCOME</b>	<b>232 932</b>	<b>225 314</b>
Printing	12 136	3 129			
Postage	710	2 216			
Telecom	2 786	2 836			
Bank Charges	1 639	169			
Loss on Exchange	11 075	994			
Office Supplies	1 087	1 253			
New Equipment/Write-offs	208	73			
Other Expenses	1 616	2 738			
Sponsorship/Awards	9 236	6 607			
Contributions for projects	<u>73 500</u>				
<b>Total Operating Costs</b>	<b>121 519.13</b>	<b>28 086</b>			
<b>TOTAL EXPENSES</b>	<b>204 201.22</b>	<b>140 518</b>			
<b>Surplus of Income</b>	<b>28 731</b>	<b>84 796</b>			
	<b>232 932</b>	<b>225 314</b>		<b>232 932</b>	<b>225 314</b>

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Forest Ecosystem Assessment & Planning Resource  
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**Malawi****092.00.00**

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 105 T.P.Cooper Bldg.  
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 Northeastern Forest Experiment Station  
 5 Godfrey Dr.  
 Orono, Maine 04473

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C	Lamb David	Australia	1.17.03	D	Ericsson Tore	Sweden	2.04.02
D	Geldenhuis Coert	South Africa	1.17.03	C	Strauss Steven	United States	2.04.06
D	Nair K.K.N.	India	1.17.03	D	Jouanin Lise	France	2.04.06
D	Montagnini Florencia	Costa Rica	1.17.03	D	Campbell Malcolm	United Kingdom	2.04.06
C	Atzmon Nir	Israel	1.17.04	C	Borzan Zelimir	Croatia	2.04.08
D	Castillo Victor M.	Spain	1.17.04	D	Guttenberger Helmut	Austria	2.04.08
D	Puri Sunil	India	1.17.04	D	Toda Yoshihiro	Japan	2.04.08

## **Division 2**

C	Teissier du Cros Eric	France	2.00.00	C	Dyer Colin	South Africa	2.08.01
D	Luxmoore Robert J.	United States	2.00.00	D	Balocchi Claudio	Chile	2.08.01
D	Paule Ladislav	Slovakia	2.00.00	D	Dieters Mark J.	Australia	2.08.01
C	Cannell Melvin G.R.	United Kingdom	2.01.00	D	Hardiyanto Eko	Indonesia	2.08.01
D	Chalupka Wladyslaw	Poland	2.01.00	D	Lal Piare	India	2.08.01
D	Pereira Joao S.	Portugal	2.01.00	D	Hodge Gary	United States	2.08.01
C	Horsley Stephen B.	United States	2.01.08	D	Stanger Terry	South Africa	2.08.01
C	Sudachkova Nina E.	Russian Federation	2.01.10	D	Boshier David	United Kingdom	2.08.01
D	Aloni Roni	Israel	2.01.10	C	Pinyopusarek Khongsak	Australia	2.08.02
D	Tyree Melvin T.	United States	2.01.10	D	Werner Dietrich	Germany	2.08.02
C	Hallgren Stephen	United States	2.01.11	C	Borralho Nuno M.G.	Portugal	2.08.03
D	Wang Ya-Nan	China – Taipei	2.01.11	D	Ipinza Roberto H.	Chile	2.08.03
C	Whitehead David	New Zealand	2.01.12	D	Bouillet Jean-Pierre	Congo	2.08.03
D	Ryan Michael G.	United States	2.01.12	C	Villar Marc	France	2.08.04
D	Kramer Koen	Netherlands	2.01.12	D	Gullberg Urban	Sweden	2.08.04
D	Stenberg Pauline	Finland	2.01.12	D	Stanton Brian	United States	2.08.04
C	Topa Mary A.	United States	2.01.13	C	Steiner Kim C.	United States	2.08.05
D	Malajczuk Nicholas	Australia	2.01.13	D	Savill Peter S.	United Kingdom	2.08.05
C	Doulis Andreas	Greece	2.01.14	C	Edwards David George W.	Canada	2.09.00
D	Hanninen Heikki	Finland	2.01.14	D	Musoke R.	Uganda	2.09.00
C	Kaufmann Merrill R.	United States	2.01.15	D	Vozzo John	United States	2.09.00
D	Cermak Jan	Czech Republic	2.01.15	C	Muhs Hans-Jakob	Germany	2.10.00
D	McMurtie Ross	Australia	2.01.15				
D	Paliwal Kailash	India	2.01.15				
C	Chalupka Wladyslaw	Poland	2.01.16				
D	Cecich Robert A.	United States	2.01.16				
C	Roulund	HansDenmark	2.01.17				



C	Zawila-Niedzwiecki T.	Poland	4.02.05	D	Green David W.	United States	5.02.00
D	Folving Sten	Italy	4.02.05	C	Beall Frank C.	United States	5.02.01
D	Kamaruzaman Jusoff	Malaysia	4.02.05	D	Kucera Ladislav J.	Switzerland	5.02.01
D	Evans David	United States	4.02.05	C	Le Van Susan	United States	5.03.00
C	Shvidenko Anatoly Z.	Austria	4.02.06	D	Preston Alan F.	United States	5.03.00
D	LaBau Vernon J.	United States	4.02.06	D	Vihavainen Tuija	Finland	5.03.00
D	Magnussen Steen	Canada	4.02.06	C	Ishihara Shigehisa	Japan	5.03.04
C	Nuutinen Tuula	Finland	4.02.07	D	Osvald Anton	Slovakia	5.03.04
D	Hoganson Howard	United States	4.02.07	D	Sheau-Horng Lin	China – Taipei	5.03.04
D	Manley Bruce	New Zealand	4.02.07	C	Gnanaharan Rajamoney	India	5.03.09
C	Sekot Walter	Austria	4.04.00	D	Wong Andrew	Malaysia	5.03.09
D	Gal Janos	Hungary	4.04.00	D	Fernandez Ana Maria	Chile	5.03.09
D	Valsta Lauri	Finland	4.04.00	C	Rosen Howard N.	United States	5.04.00
C	Eckmuellner Otto	Austria	4.04.01	D	Hattori Nobuaki	Japan	5.04.00
D	Aguirre Calderon Oscar	Mexico	4.04.01	D	Vanek Manfred	Austria	5.04.00
C	Merlo Maurizio	Italy	4.04.02	C	Fortin Yves	Canada	5.04.06
D	Klocek Andrzej	Poland	4.04.02	D	Kanagawa Yasushi	Japan	5.04.06
C	Deltuvas Romualdas	Lithuania	4.04.03	D	Perré Patrick	France	5.04.06
C	Klemperer W. David	United States	4.04.04	C	Pizzi Antonio	France	5.04.07
D	Amano Masahiro	Japan	4.04.04	D	Hse Chung-Yun	United States	5.04.07
D	Centeno Julio	Venezuela	4.04.04	C	Szymani Ryszard	United States	5.04.08
C	García Oscar	Spain	4.04.06	D	Groenlund Anders	Sweden	5.04.08
D	Blandon Peter	United Kingdom	4.04.06	C	Birkeland Rolf	Norway	5.04.10
C	Griess Othmar	Austria	4.04.07	D	Massey Joseph G.	United States	5.04.10
D	Schram Pierre	Luxembourg	4.04.07	C	Sell Jürgen	Switzerland	5.04.12
D	Nieuwenhuis Maarten	Ireland	4.04.07	D	Roux Marie-Lise	France	5.04.12
C	Buerger-Arndt Renate	Germany	4.04.08	C	Maness Thomas	Canada	5.04.13
D	Van Hensbergen Hubertus	South Africa	4.04.08	D	Sachers Markus	Germany	5.04.13
C	Köhl Michael	Germany	4.11.00	C	Plackett David	Denmark	5.05.00
D	Kleinn Christoph	Costa Rica	4.11.00	D	Rowell Roger	United States	5.05.00
C	Gertner George	United States	4.11.01	D	Ye Kelin	China	5.05.00
D	Guan Biing	China – Taipei	4.11.01	C	Kawai Suishi	Japan	5.05.01
C	Rennolls Keith	United Kingdom	4.11.02	D	Ballerini Aldo	Chile	5.05.01
D	Benitez Celia Gaillard	Argentina	4.11.02	C	Hse Chung-Yun	United States	5.05.02
C	Schmoldt Daniel L.	United States	4.11.03	D	Barbu Marius	Austria	5.05.02
D	Thomson Alan J.	United States	4.11.03	D	Xuhe Chen	China	5.05.02
D	Muetzelfeldt Robert I.	United Kingdom	4.11.03	C	Gatenholm Paul	Sweden	5.05.03
C	Koch Barbara	Germany	4.12.00	D	Sanadi Anand	United States	5.05.03
D	Hussin Yousif	Netherlands	4.12.00	C	Militz Holger	Netherlands	5.05.04
D	Schardt Matthias	Austria	4.12.00	D	Harun Jalaluddin	Malaysia	5.05.04
C	Zerda Hugo Raul	Argentina	4.12.01	D	Takats Peter	Hungary	5.05.04
C	Jöbstl Hans	Austria	4.13.00	C	Hong L.T.	Malaysia	5.06.00
D	Merlo Maurizio	Italy	4.13.00	D	Foudjet Amos	Cameroon	5.06.00
				D	Bhat K. Mahabala	India	5.06.00
				D	El Kortbi Mohamed	Morocco	5.06.01
				D	Thibaut Bernard	France	5.06.01
				C	Bhat K. Mahabala	India	5.06.02
				D	Thibaut Bernard	France	5.06.02
				D	Okuyama Takashi	Japan	5.06.02
				C	Waugh Gary	Australia	5.06.03
				D	Bailleres Henri	France	5.06.03
				D	Garcia Jose N.	Brazil	5.06.03
				D	Turner Philip	South Africa	5.06.03
				C	Fung Paul Y.H.	Australia	5.07.00
				D	Rosen Howard N.	United States	5.07.00
				C	Connor Mike	Australia	5.07.01
				D	Hoi Why Kong	Malaysia	5.07.01
				C	Abdul Latif Mohmod	Malaysia	5.08.00
				D	Bhat K. Mahabala	India	5.08.00
				D	Tang Jung-Lei	China – Taipei	5.08.00
				D	Kigomo Benard	Kenya	5.08.00
				D	Chaves Ana Cecilia	Costa Rica	5.08.00
				D	Maoyi Fu	China	5.08.00
				C	Janssen Jules J.A.	Netherlands	5.08.01
				D	Gnanaharan Rajamoney	India	5.08.01
				C	Wimmer Rupert	Austria	5.09.00
				D	Vetter Roland E.	Brazil	5.09.00
				C	Juslin Heikki	Finland	5.10.00
				D	Becker Michel	Germany	5.10.00
				D	Bush Robert J.	United States	5.10.00
				D	Ishii Yutaka	Japan	5.10.00

## **Division 5**

C	Youngquist John A.	United States	5.00.00				
D	Sales Christian G.	France	5.00.00				
D	Wang Cathy H.H.	Canada	5.00.00				
D	Winkler András	Hungary	5.00.00				
C	Phelps John E.	United States	5.01.00				
D	Baas Pieter	Netherlands	5.01.00				
D	Saranpää Pekka	Finland	5.01.00				
C	Aloni Roni	Israel	5.01.01				
D	Takabe Keiji	Japan	5.01.01				
D	Barnett John	United Kingdom	5.01.01				
C	Zhang S.Y.	Canada	5.01.02				
D	Fujita Minoru	Japan	5.01.02				
D	Peszlen Ilona	Hungary	5.01.02				
C	Nepveu Gérard	France	5.01.04				
D	Malan François	South Africa	5.01.04				
D	Thörnqvist Thomas	Sweden	5.01.04				
C	Cown Dave	New Zealand	5.01.05				
D	Nakai Takashi	Japan	5.01.05				
D	Johansson Germund	Sweden	5.01.05				
D	Leban Jean-Michel	France	5.01.05				
D	Barbour Jamie	United States	5.01.05				
D	Araman Philip	United States	5.01.05				
C	Rouger Frederic	France	5.02.00				
D	Glos Peter	Germany	5.02.00				

D	Jelvez Arnaldo	Chile	5.10.00
D	Cohen David H.	Canada	5.10.00
C	Raychaudhuri Syama P.	India	5.11.00
D	Shortle Walter C.	United States	5.11.00
D	Shiva M.P.	India	5.11.00
C	Raychaudhuri Syama P.	India	5.11.02
D	Rembold H.	Germany	5.11.02
C	Quiment Roch	Canada	5.11.03
D	Subansenee Wanide	Thailand	5.11.03
C	Salo Kauko	Finland	5.11.04
D	Lee Su See	Malaysia	5.11.04
C	Barbour Jamie	United States	5.12.00
D	Wong Andrew	Malaysia	5.12.00

## Division 6

C	Koch Niels Elers	Denmark	6.00.00
D	Krott Max	Germany	6.00.00
D	Brown Perry J.	United States	6.00.00
C	Sievänen Tuija	Finland	6.01.00
D	McLaughlin Bill	United States	6.01.00
D	Chen Chaw-Ming	China – Taipei	6.01.00
C	Ammer Ulrich	Germany	6.01.02
D	Axelsson-Lindgren Chr.	Sweden	6.01.02
C	Jensen Frank S.	Denmark	6.01.04
D	Kim Seong-Il	Korea (Rep)	6.01.04
C	Reunala Aarne	Finland	6.01.05
D	Chaudary G.C.	India	6.01.05
C	Proebstl Ulrike	Germany	6.01.06
D	Ito Taichi	Japan	6.01.06
C	Kempf Alois	Switzerland	6.03.00
D	Sommer Deborah	United States	6.03.00
C	Brown Virginia	United States	6.03.01
D	Karjalainen Annikki	Finland	6.03.01
C	Kaennel-Dobbertin Michèle	Switzerland	6.03.02
D	Haddon Brian	Canada	6.03.02
C	Rütze Matthias	Germany	6.03.03
D	Koler Cvetka-Teja	Slovenia	6.03.03
C	Motta T. Maria Teresa	Colombia	6.03.04
D	Ugalde Luis	Costa Rica	6.03.04
D	Schaitza Erich Gomes	Brazil	6.03.04
C	Burns Denver	United States	6.06.00
D	Schlaepfer Rodolphe	Switzerland	6.06.00
D	Fryk Jan	Sweden	6.06.00
C	Miner Cynthia	United States	6.06.02
D	Sharma O.P.	India	6.06.02
C	Johnson James E.	United States	6.06.03
D	Beck Roland	Germany	6.06.03
C	Schmidt Pieter	Cameroon	6.06.04
C	Johann Elisabeth	Austria	6.07.00
D	Gundermann Egon	Germany	6.07.00
D	Arnould Paul	France	6.07.00
C	Rawat Ajay S.	India	6.07.01
D	Grove Richard	Australia	6.07.01
C	Agnoletti Mauro	Italy	6.07.02
C	Zanzi Sulli Alessandra	Italy	6.07.04
C	Schwenk Sigrid	Germany	6.07.05
C	Kaiser Harold F.	United States	6.11.00
D	Simula Markku	Finland	6.11.00
C	Bertrand Alain	France	6.11.01
D	Mgeni A.	Tanzania	6.11.01
D	Hansra B.S.	India	6.11.01
C	Smyth Jack H.	Canada	6.11.02
D	Ota Ikho	Japan	6.11.02
D	Spinelli Rafaelle	Italy	6.11.02
C	Langner Linda	United States	6.11.04
D	Penttinen Markku	Finland	6.11.04
C	Petrov Anatoly	Russian Federation	6.11.06
D	Le Master Dennis	United States	6.11.06
C	Hoover Anne P.	United States	6.11.07

D	Broadhurst Richard	United Kingdom	6.11.07
C	Tikkanen Ilpo	Finland	6.12.00
D	Glück Peter	Austria	6.12.00
D	Risbrudt Christopher	United States	6.12.00
C	Solberg Birger	Norway	6.12.01
D	Zimmermann Willi	Switzerland	6.12.01
C	Cortner Hanna	United States	6.12.02
D	Ellefson Paul V.	United States	6.12.02
C	Essmann Hans F.K.	Germany	6.12.03
D	Harou Patrice A.	United States	6.12.03
C	Schmithüsen Franz	Switzerland	6.13.00
D	Siegel William C.	United States	6.13.00
D	Herbst Peter	Austria	6.13.00
C	Nilsson Kjell	Denmark	6.14.00
D	Dwyer Jr. John F.	United States	6.14.00
D	Jim C.Y.	Hong Kong	6.14.00
C	Lewark Siegfried	Germany	6.15.00
D	Cubbage Fred	United States	6.15.00
D	Miller Hugh G.	United Kingdom	6.15.00
D	Khurana D.K.	India	6.15.00
C	Haynes Richard W.	United States	6.16.00
D	Yukutake Kiyoshi	Japan	6.16.00
D	Baudin Anders	Sweden	6.16.00
C	Nilsson Per Olov	Sweden	6.17.00
D	Bengston David	United States	6.17.00

## Division 7

C	Karnosky David F.	United States	7.00.00
D	Långström Bo E.	Sweden	7.00.00
D	Tesche Manfred	Germany	7.00.00
D	Suzuki Kazuo	Japan	7.00.00
C	Mattson William	United States	7.01.00
D	Niemela Pekka	Finland	7.01.00
C	Wingfield Michael	South Africa	7.01.01
D	Yamaoka Yichi	Japan	7.01.01
D	Harrington Thomas C.	United States	7.01.01
C	Lieutier Francois	France	7.01.02
D	Wagner Mike	United States	7.01.02
C	Rousi Matti	Finland	7.01.03
D	Hirokawa Hirofumi	Japan	7.01.03
C	Yanchuk Alvin	Canada	7.01.04
D	Bastien Catherine	France	7.01.04
D	King John	Canada	7.01.04
C	Wargo Phillip W.	United States	7.01.05
D	Vannini Andrea	Italy	7.01.05
C	Tomiczek Christian	Austria	7.02.00
D	Rykowski Kazimierz	Poland	7.02.00
D	Sutherland Jack R.	Canada	7.02.00
C	Delatour Claude	France	7.02.01
D	Laflamme Gaston	Canada	7.02.01
C	Laflamme Gaston	Canada	7.02.02
D	Ostry Michael E.	United States	7.02.02
D	Uotila Antti	Finland	7.02.02
C	Przybyl Krystyna	Poland	7.02.03
D	Mohanan C.	India	7.02.03
C	Hamacher Joachim	Germany	7.02.04
D	Maramorosch Karl	United States	7.02.04
D	Siwecki Ryszard	Poland	7.02.04
C	Hiratsuka Yasuyuki	Canada	7.02.05
D	Kaneko Shigeru	Japan	7.02.05
D	Jalkanen Risto	Finland	7.02.05
C	Cech Thomas	Austria	7.02.06
D	Hartmann Günther	Germany	7.02.06
D	Jurc Dusan	Slovenia	7.02.06
C	Sharma Jyoti	India	7.02.07
D	Ofong A.U.	Nigeria	7.02.07
D	Lee Su See	Malaysia	7.02.07
C	Skilling Darroll	United States	7.02.08

D	Batzer Harold O.	United States	7.02.08	D	Koop Henk	Netherlands	8.01.01
C	Hansen Evert M.	United States	7.02.09	C	Moravcik Pavel	Czech Republic	8.01.02
D	Brasier Clive M.	United Kingdom	7.02.09	D	Brzeziecki B.	Poland	8.01.02
D	Old Kenneth	Australia	7.02.09	C	Crow Thomas	United States	8.01.03
C	Linit Marc J.	United States	7.02.10	D	Godt Jochen	Germany	8.01.03
D	Futai Kazuyoshi	Japan	7.02.10	D	Anko Bostjan	Slovenia	8.01.03
D	Magnusson Christer	Norway	7.02.10	C	Brown Nick	United Kingdom	8.01.04
C	Alfaro R.I.	Canada	7.03.00	D	Singhakumara B.M.P.	Sri Lanka	8.01.04
D	Baranchikov Yuri N.	Russian Federation	7.03.00	C	Fineschi Silvia	Italy	8.01.06
D	Nair K.S.S.	India	7.03.00	C	Führer Erwin	Austria	8.01.07
C	DeBarr Gary L.	United States	7.03.01	D	Andersson Folke	Sweden	8.01.07
D	Skrzypczynska Malgorzata	Poland	7.03.01	C	Nambiar E.K.S.	Australia	8.02.00
D	Yue Shu-kui	China	7.03.01	D	Franc Alain	France	8.02.00
D	Turgeon Jean	Canada	7.03.01	C	Schlatter Juan	Chile	8.02.01
C	Roininen Heikki	Finland	7.03.02	D	Hunter Ian	Finland	8.02.01
D	Csoka Gyorgy	Hungary	7.03.02	C	Smith Tattersall	New Zealand	8.02.02
D	Sharma S.K.	India	7.03.02	D	Moffat Andrew	United Kingdom	8.02.02
C	Day Keith	United Kingdom	7.03.03	D	Henry Charles	United States	8.02.02
D	Salom Scott M.	United States	7.03.03	C	Klinka Karel	Canada	8.02.03
C	James Robert L.	United States	7.03.04	D	Campos Arce J.	Costa Rica	8.02.03
D	Perrin Robert	France	7.03.04	D	Sims Richard A.	Canada	8.02.03
D	Salerno Maria I.	Argentina	7.03.04	C	Hunter Ian	Finland	8.02.04
C	Gregoire Jean-Claude	Belgium	7.03.05	D	Haibara Kikuo	Japan	8.02.04
D	Stephen Fred M.	United States	7.03.05	D	Khanna P.K.	Australia	8.02.04
C	McManus Michael	United States	7.03.06	C	Toro Jorge	Chile	8.02.05
D	Kamata Naoto	Japan	7.03.06	D	Boardman Robert	Australia	8.02.05
D	Novotny Julius	Slovakia	7.03.06	D	Calquin R.	Chile	8.02.05
C	Liebold Andrew	United States	7.03.07	C	Gardiner Barry	United Kingdom	8.03.00
D	Evans Hugh F.	United Kingdom	7.03.07	D	Grip Harald B.	Sweden	8.03.00
C	Furuta Kimito	Japan	7.03.08	D	Xu Deying	China	8.03.00
D	Lee Ming-Jen	China – Taipei	7.03.08	C	Hager Herbert	Austria	8.03.01
D	Yi Chang Keun	Korea (Rep)	7.03.08	D	Ji-Zheng Sun	China	8.03.01
D	Chen Chang-Jie	China	7.03.08	C	Fahey Barry	New Zealand	8.03.02
C	Cobbinah Joseph R.	Ghana	7.03.09	D	KowalikPiotr	Poland	8.03.02
D	Arguedas-Gamboa M.	Costa Rica	7.03.09	D	Hattori Shigeaki	Japan	8.03.02
D	Sudheendrakumar V.V.	India	7.03.09	C	Quine C.P.	United Kingdom	8.03.04
D	Macias-Samano Jorge E.	Mexico	7.03.09	D	Matuzaki Takeshi	Japan	8.03.04
C	Knizek Milos	Czech Republic	7.03.10	C	Göttle Albert	Germany	8.04.00
D	Forster Beat	Switzerland	7.03.10	D	Michaelsen Tage	United States	8.04.00
D	Grodzki Wojciech	Poland	7.03.10	D	Omura Hiroshi	Japan	8.04.00
C	Percy Kevin	Canada	7.04.00	D	Ziemer Robert R.	United States	8.04.00
D	Scholz Florian	Germany	7.04.00	C	Fiebiger Gernot	Austria	8.04.01
D	Morikawa Yashushi	Japan	7.04.00	D	Ohta Takehiko	Japan	8.04.01
C	Skelly John M.	United States	7.04.01	C	Frey Werner	Switzerland	8.04.02
D	Linzon Samuel	Canada	7.04.01	D	Schaffhauser Horst	Austria	8.04.02
D	Ferretti Marco	Italy	7.04.01	D	Fujisawa Kazunori	Japan	8.04.02
C	Bucher Jürg B.	Switzerland	7.04.02	C	Marui Hideaki	Japan	8.04.03
D	Luangjame Jesada	Thailand	7.04.02	D	Marden Michael	New Zealand	8.04.03
D	Olbrich Kim	South Africa	7.04.02	D	Fukuoka Hiroshi	Japan	8.04.03
D	Paoletti Elena	Italy	7.04.02	C	Ziemer Robert R.	United States	8.04.04
C	Dambrine Etienne	France	7.04.03	D	Marinov Ivan T.	Bulgaria	8.04.04
D	Persson Tryggve	Sweden	7.04.03	C	Omura Hiroshi	Japan	8.04.05
D	Rosengren-Brinck Ulrika	Sweden	7.04.03	D	Li Tianchi	Nepal	8.04.05
C	Müller-Starck Gerhard	Germany	7.04.04	D	Scheuringer Erich	Austria	8.04.05
D	Mejnartowicz Leon	Poland	7.04.04	C	Stocks Brian	Canada	8.05.00
C	Weetman Gordon	Canada	7.04.05	D	GoldammerJohann Georg	Germany	8.05.00
D	Augustaitis Algirdas	Lithuania	7.04.05	D	George Charles W.	United States	8.05.00
D	Korotaev Alexej	Russian Federation	7.04.05	C	DeGraaf Richard	United States	8.06.00
C	Cufar Katharina	Slovenia	7.04.06	D	Larsson Tor-Bjorn	Norway	8.06.00
D	Kurjatko Stanislav	Slovakia	7.04.06	C	DeGraaf Richard	United States	8.06.02
				D	Gray Paul	Canada	8.06.02
				D	Maruyama Naoki	Japan	8.06.02
				D	Petterson Borje	Sweden	8.06.02
				D	Askins R.	United States	8.06.02
				C	Schwenk Sigrid	Germany	8.06.03
				D	Daigle J.	United States	8.06.03
				D	Wanden S.	Sweden	8.06.03
				C	Szaro Robert	Austria	8.07.00
				D	Manokaran N.	Malaysia	8.07.00
				D	Hermey M.	Belgium	8.07.00
				D	Ouedraogo A.S.	Italy	8.07.00
				D	Dallmeier Francisco	United States	8.07.00

## **Division 8**

C	Sassa Kyoji	Japan	8.00.00
D	Boyle Timothy	United States	8.00.00
D	Franc Alain	France	8.00.00
D	Awang Kamis	Malaysia	8.00.00
C	Klimo Emil	Czech Republic	8.01.00
D	Päivänen Juhani	Finland	8.01.00
C	Spies Th.	United States	8.01.01



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*In 1998, Certificates of Appreciation for a significant contribution to the organization or activities of IUFRO were presented to:*

Menachem Sachs, PPC Israel

David Nahmias, PPC Israel

Hong Jusheng, Div. 2, Beijing, China

Csaba Matyas, Div. 2, Beijing, China

K D Singh, 4.02.00

Rubén Guevara, EB Costa Rica

Anahí Contreras Denton, EB Costa Rica

David Flinn, SFM Conference, Melbourne, Australia

Alain Franc, SFM Conference Melbourne, Australia

Yoshinao Murashima, Sustainable Management of Small-Scale Forestry

Hans Rudolf Heinemann, Div. 3 Mid-Term Meeting, Switzerland

Margit Heinemann-Haselbach, Div 3 Mid-Term Meeting, Switzerland

Theo Weber, Div 3 Mid-Term Meeting, Switzerland

Werner Inderbitzin, Div 3 Mid-Term Meeting, Switzerland

Oberallmeindkorporation, Div 3 Mid-Term Meeting, Switzerland

Fredy Lienhard, Div. 3 Mid-Term Meeting, Switzerland

Erica Zimmermann, Div 3 Mid-Term Meeting, Switzerland

Brigitte Burger, ICRIS Meeting, Gmunden, Austria

Don Koo Lee, IUFRO Conference, Seoul, Korea

Kyoji Sassa, Conference Div. 8, Kyoto, Japan

Kazuo Suzuki, Symposium on Sustainability, Tokyo, Japan

Santiago Barros A. , Latin American IUFRO Congress, Valdivia, Chile

José Antonio Prado D., Latin American IUFRO Congress, Valdivia, Chile

Corporación Nacional Forestal, Latin American IUFRO Congress, Valdivia, Chile

Marcela Roldán, 1<sup>st</sup> Latin American IUFRO Congress

Edit Espinoza, 1<sup>st</sup> Latin American IUFRO Congress

Celso Carniletto, 1<sup>st</sup> Latin American IUFRO Congress

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Instituto Forestal, 1<sup>st</sup> Latin American IUFRO Congress

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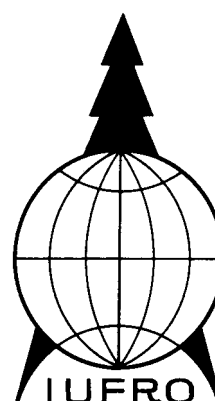
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