PROGRAMME

International Conference:

Monitoring and Indicators of Forest Biodiversity in Europe - from Ideas to Operationality
12 - 15 November 2003
Florence, Italy

Wednesday 12 November ***Venue:*** *Università degli Studi di Firenze (University of Florence), Rectorate, Aula Magna, address: Piazza S. Marco, 4*	
13.30 – 14.30	Registration, in front of the venue at the University of Florence
14.30 – 15.00	Opening Ceremonies *Prof. Augusto Marinelli, University of Florence, Italy* *Prof. Fiorenzo Mancini, Italian Academy of Forest Sciences* *Ing. Fausto Martinelli, Corpo Forestale dello Stato – Italian Ministry of Agriculture*
Session 1: Emerging User Needs and Pressures on Forest Biodiversity	
Chair: Tor-Björn Larsson, European Environment Agency (EEA) **Rapporteur**: Richard Bradshaw, Geological Survey of Denmark and Greenland (GEUS), Denmark	
15.00 – 15.20	Keynote 1: Ideas on Emerging User Needs to Assess Forest Biodiversity *Ulla Pinborg, European Environment Agency (EEA)*
15.20 – 15.40	Keynote 2: Can a Home Furnishing Retailer Contribute to Maintaining Forest Biodiversity? *Gudmund Vollbrecht, IKEA*
15.40 – 16.00	Keynote 3: Implementing Indicators to Report in the Frame of Nature and Forest Policies: Merging Bottom-Up and Top-Down Approaches *Christine Estrequil, European Commission, DG Joint Research Centre (JRC)*
16.00 – 16.20	Keynote 4: Forests, Fire and Biodiversity *Francisco Rego, Instituto Superior de Agronomia Portugal*

16.20 – 16.35	Biodiversity Trends & Threats in Europe. Can We Apply a Generic Biodiversity Indicator to Forests? *Mireille De Heer, UNEP WCMC*
16.35 – 16.50	Forest Biodiversity Indicators - A Contribution to an EEA Core Set of Biodiversity Indicators *Andreas Schuck, European Forest Institute (EFI)*
16.50 – 17.15	Discussion
17.15 – 17.45	Coffee
Session 2: Stand-Level Indicators and Relationships with Forest Management	
Chair: Allan Watt, Centre for Ecology and Hydrology, UK **Rapporteur:** Göran Ståhl, Swedish University of Agricultural Sciences, Sweden	
17.45 – 18.05	Keynote 5: Dead Wood as a Stand Level Indicator of Biodiversity in Managed Forests *Nic Kruys, Swedish University of Agricultural Sciences, Sweden*
18.05 – 18.20	Biodiversity Improvement and Integration of Conservation Criteria in Pyrenean Forests Management *Míriam Piqué-Nicolau, Forest Technology Centre of Catalonia (CTFC), Spain*
18.20 – 18.35	Approaches to Quantifying, Monitoring and Simulating Forest Structures *Arne Pommerening, School of Agricultural & Forest Sciences, University of Wales, UK*
18.35 – 18.50	Pattern of Phytodiversity in Natural and Managed Mountain Forests *Clemens Abs, Technical University Munich, Germany*
18.50 – 19.05	Vascular Plants as a Surrogate Species Group in Complementary Small-Scale Site Selection *Magne Sætersdal, Norwegian Forest Research Institute, Norway*
21.00	Conference Dinner ***Venue:*** *Villa Montalto, address: Via del Salviatino 6. Please see the map for instructions on how to reach the venue.*
Thursday 13 November ***Venue:****Università degli Studi di Firenze, Rectorate, Aula Magna, address: Piazza S. Marco, 4*	
Session 2: Stand-Level Indicators and Relationships with Forest Management, *cont.*	
Chair: Göran Ståhl, Swedish University of Agricultural Sciences, Sweden **Rapporteur:** Allan Watt, Centre for Ecology and Hydrology, UK	
9.00 – 9.20	Keynote 6: Lichens as Stand Level Biodiversity Indicators

	Christoph Scheidegger, Swiss Federal Institute for Forest, Snow and Landscape Research (WSL), Switzerland
9.20 – 9.35	Factors Controlling the Spatio-Temporal Dynamics of a Forested Landscape Affected by Fire in Central Spain *Olga Viedma, University of Castilla-La Mancha, Spain*
9.35 – 9.50	Biodiversity Indicators at Stand and Landscape Scales in Pine Plantation Forests *Hervé Jactel, INRA, France*
9.50 – 10.05	Dead Wood in European Forest Reserves – A Reference for Forest Management *Katrine Hahn, The Royal Veterinary and Agricultural University, Denmark*
10.05 – 10.20	Forest Stand Structure Assessment for Biodiversity Management *Vincent Kint, Ghent University, Belgium*
10.20 – 10.40	Discussion
10.40 – 11.10	Coffee
Session 3: Forest Indicator Development at Landscape Level	
Chair*:* Christine Estreguil, European Commission, Directorate General JRC **Rapporteur**: Piermaria Corona, University of Tuscia, Italy	
11.10 – 11.30	Keynote 7: Results from the Project BIOASSESS - Relation Between Remote Sensing and Terrestrial Derived Biodiversity Indicators *Barbara Koch, University of Freiburg, Germany*
11.30 – 11.50	Keynote 8: Targets and Tools for the Maintenance of Forest Biodiversity in Actual Landscapes *Per Angelstam, Swedish University of Agricultural Sciences, Sweden*
11.50 – 12.05	Biodiversity Indicators for UK Managed Forests: Development and Implementation at Different Spatial Scales *Jonathan Humphrey, Forestry Commission Research Agency*, UK
12.05 – 12.20	Biodiversity Indicators in Small Fragmented Forests *Marc Deconchat, INRA, France*
12.35 – 13.00	Discussion
13.00 – 14.30	Lunch
Session 4: World Experiences	
Chair: Richard Bradshaw, Geological Survey of Denmark and Greenland (GEUS), Denmark **Rapporteur**: Peter Friis Møller, Geological Survey of Denmark and Greenland (GEUS), Denmark	

14.30 – 14.40	Assessment of the Effectiveness of Old Growth Management Areas as a Means of Conserving Biodiversity in a Forested Landscape *John Innes, University of British Columbia (UBC), Canada*
14.40 – 14.50	Floristic Diversity of Central Siberian Vegetation in a Changing Climate *Elena Parfenova, Russian Academy of Sciences, Russia*
14.50 – 15.00	Simulation Modelling of Long-Term Stand Dynamics as a Tool for Evaluation of Biodiversity Dynamics at Different Scenarios of Forest Management *Sergei I. Chumachenko, Moscow State University of Forestry, Russia*
15.00 – 15.10	Extracting Forest Patch Attributes at Landscape Level Using New Remote Sensing Techniques - An Integrating Approach of High-Resolution Satellite Data, Airborne Lidar Data and GIS Data for Forest Conservation *Yasumasa Hirata, Shikoku Research Centre, Japan*
15.10 – 15.20	Conservation of Biodiversity for Sustainable Use of Tropical Rain Forest *Lies Bahunta, Perum Perhutani, Indonesia*
15.20 – 15.30	Using Forest Inventory and Analysis data to Characterize Plant Diversity at Multiple Scales Across the United States *Mark Ambrose, North Carolina State University, USA*
15.30 – 15.40	A Forest Type System Using for Biodiversity Estimation at the Forestry Unit Level in the Central European Russia *Larissa G. Khanina, Russian Academy of Sciences, Russia*
15.40 – 15.50	Discussion
15.50 – 16.20	Coffee
Session 5: Emerging User Needs and Pressures on Forest Biodiversity Short Presentations of Posters	
Chair: Marco Marchetti, Italian Academy of Forest Sciences, Italy **Rapporteur:** Richard Bradshaw, Geological Survey of Denmark and Greenland (GEUS), Denmark	
Presentations of 5 minutes incl. max. one PP slide	
16.20 – 17.00	1. Forest Monitoring of Russian Boreal Zone (Karelia) Using Bioindicators *Natalia Fedorets, Russian Academy of Sciences, Russia* 2. Genecological Database of Norway Spruce in Population Genetic Studies and Ecomodelling *Dmitri Politov, Russian Academy of Sciences, Russia* 3. Boreal Forest of Techora Basin (Russia): Defining Biodiversity *Theo van der Sluis, ALTERRA, the Netherlands* 4. The Effect of Plantations on Plant Diversity of Forest Area *Teymoor S. Rostami, Gilan University, Iran* 5. AFLP and SSR Markers Monitor Hybridisation Phenomena in Natural

	Populations of *Populus alba* and *Populus tremula* distributed along the Flood Plain Forests of the Ticino River Park in Northern Italy *Stefano Castiglione, University of Milan, Italy*
Session 6: Stand-Level Indicators and Relationships with Forest Management *Short Presentations of Posters*	
Chair: Marco Marchetti, Italian Academy of Forest Sciences, Italy **Rapporteur:** Richard Bradshaw, Geological Survey of Denmark and Greenland (GEUS), Denmark	
Presentations of 5 minutes incl. max. one PP slide	
17.00 – 17.45	6. Assessing Forest Areas Suitable for Selective Cuttings by Means of Stand Level Indices *Nils Lexerød, Agricultural University of Norway* 7. Lichens as a Tool for Biodiversity Investigation in Managed Forests: A Study Case from the Cansiglio Regional Forest (Venetian Pre-Alps - NE Italy) *Juri Nascimbene, University of Padova, Italy* 8. First Results of Standardized Epiphytic Lichen Assessments on Intensive Monitoring Plots in Switzerland *Silvia Stofer, Swiss Federal Research Institute WSL, Switzerland* 9. Lichen Biodiversity in Forests: Methods and Applications in Liguria (NW-Italy) *Paolo Giordani, University of Genova, Italy* 10. On the Interest of *Carabidae*, *Staphylinidae* and *Myriapoda* to Assess Silvicultural Impact on Forest Biodiversity *Michaël Pontégnie, Université Catholique de Louvain, Belgium* 11. Wood Inhabiting Fungi as Indicators of Natural Value in European Beech Forest *Morten Christensen, The Royal Veterinary and Agricultural University, Denmark*
Session 7: Forest Indicator Development at Landscape Level *Short Presentations of Posters*	
Chair: Marco Marchetti, Italian Academy of Forest Sciences, Italy **Rapporteur:** Richard Bradshaw, Geological Survey of Denmark and Greenland (GEUS), Denmark	
Presentations of 5 minutes incl. max. one PP slide	
17.45 – 19.10	12. Evaluation of Residual Structural Diversity of an Hardwood Forest in Central Italy *Luigi Portoghesi, University of Tuscia, Italy* 13. Monitoring Mass of Down Woody Materials in Eastern U.S. Forests *David C. Chojnacky, USDA Forest Service, USA*

	14. Monitoring Biodiversity in Alberta, Canada: A Broad-Scale, Long-Term, Multitaxa Program *James Schieck, Alberta Environmental Centre, Canada* 15. Inventory of Landscape and Biological Diversity for Forest Management (for NW-Russia) *Asiya T. Zagidullina, St. Petersburg State University, Russia* 16. Searching for Biodiversity Indicators in Portuguese Maritime Pinewoods *Onofre Nuno, National Forest Research Station, Portugal* 17. The Use of Digital Photogrammetry for Monitoring and Modelling Ecological Characteristics of Broadleaved Stands *Robert S. Nuske, University Göttingen, Germany* 18. Animal Indicators of the Functional Efficiency of Rural and Forest Ecosystems *Anna Memoli, University of Florence, Italy* 19. Integrating Indicators of Biodiversity within a Participatory Planning Tool to Visualise Landscape Change *Chris Quine, Forest Research, Northern Research Station, UK* 20. Monitoring Biodiversity at a Wide Land Scale to support Sustainable Planning and Policy: The Proposal of a Key Indicator Based on Vegetation Cover Data Deriving from Maps *Paolo Pileri, Diap - Politecnico di Milano, Italy* 21. Modelling Managed Maritime-Pine Stands Undergrowth Vegetation Composition and Diversity in Relation to Environmental, Structural and Management Variables *Jorge Capelo, National Forest Research Station, Portugal* 22. Species Richness and Regional Distribution of Myrmecophilus Beetles *Jussi Päivinen, University of Jyväskylä, Finland*
19.10 – 20.30	**Posters** and Wine Tasting
Friday 14 November ***Venue:*** *Italian Academy of Forest Sciences - Accademia Italiana di Scienze Forestali, address: Piazza Edison 11*	
Session 8: Methods for Data Collection and Evolution of Monitoring Schemes	
Chair: Göran Ståhl, Swedish University of Agricultural Sciences, Sweden **Rapporteur:** Andreas Schuck, European Forest Institute (EFI)	
9.00 – 9.20	Keynote 9: Assessing Territory and Landscape Quality for Forest Bird Species Using Multi-Source National Forest Inventory Data *Erkki Tomppo, Finnish Forest Research Institute, Finland*
9.20 – 9.40	Keynote 10: The Forest Monitoring Program of ICP Forests – A

MODELLING MANAGED MARITIME-PINE STANDS UNDERGROWTH VEGETATION COMPOSITION AND DIVERSITY IN RELATION TO ENVIRONMENTAL, STRUCTURAL AND MANAGEMENT VARIABLES

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1 Dept. of Ecology, Natural Resources Management and Environment. National Forest Research Station, Portugal
2 University of Madeira, Portugal
3 Superior School of Agrarian Sciences of Bragança, Portugal

A case-study attempting to approach the patterns of species' composition and diversity of the undergrowth vegetation of maritime-pine (*Pinus pinaster* Ait.) stands, in relation to environmental factors and forestry practices, is presented. Due to its large area in the rural landscape, forestry-intensive stands still have to be approached as ecologically meaningful. The vegetation patterns in these forests arise mostly from human disturbance related to management along with interactions with natural succession processes. Furthermore, tradeoffs of stand vegetation with the overall landscape-mosaic [neighbouring mass effects] adds further degrees-of-freedom to the problem. Describing and modelling such vegetation patterns asks for powerful multivariate statistical tools, since the main environment-vegetation interactions are expected to be complex and intricate. Multivariate ordination and classification methods are used to describe vegetation patterns. The main flow of data treatment uses *minimum variance agglomerative clustering* [Ward's method], *iterative dichotomised hierarchical ordination* [TWINSPAN], *detrended correspondence analysis* [DCA], *partial canonical correspondence analysis* [PCCA] and *canonical variate analysis* – CVA and also *generalized linear models* [GLM].

Results suggest that stages in succession and their relation to management can be efficiently modelled. Furthermore, effects of management practices in seral stage establishment, transition and composition can be effectively isolated from those arising from endogenous natural factors. Thus, biodiversity-oriented management regimes can be set from the results. At the landscape level, results also show that certain mosaic patterns favour phenomena such as *mass-effect* [sink-source] in the pinewood seed-rain and therefore a great influence in undergrowth composition. Issues in landscape planning for forestry can also be drawn from the later.

Keywords: pinewoods, vegetation, diversity, multivariate, modelling