



IUFRO Division VI Symposium:

Jarmo  
Saarikko  
Metta  
Finland

Integrative Science for Integrative Management

August 14.–20.2007, Saariselkä, Finland

**ABSTRACTS**

## **Integrative Science for Integrative Management**

IUFRO Division VI Symposium

14.–20.8.2007, Saariselkä, Finland

Editors:

Tuija Sievänen, Sirkka Tapaninen and Eija Virtanen





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## **Abstracts**

Editors:

Tuija Sievänen, Sirkka Tapaninen and Eija Virtanen

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## Preface

Welcome to the IUFRO Division 6 Conference taking place in Saariselkä, in Finnish Lapland. This is a region in Europe where forestry and reindeer husbandry are traditional sources of income for local people, but where nature-based tourism has recently become an important source of income, and where vast wilderness areas are largely protected and are an attraction for tourism. Lapland is a place where integrative management of natural resources is a major concern and necessity today. Sustainability in this region concerns both the ecological state of natural areas as well as the social and economic sustainability of life in local communities. The aim of this IUFRO Conference is to exchange information, experiences, and ideas among forest researchers with administrators, managers, and practitioners who are responsible for the sustainable use of natural resources. This IUFRO Conference gathers together scientists from all over the world to discuss the political, economic, educational, and information science approaches to integrative management of forest resources.

The conference program includes research presentations which hopefully will lead to constructive discussions about management policies, problems, practices, and solutions regarding issues related to integrative land uses and forest resources, and to discuss how scientists can provide useful information to policy makers and managers.

The conference topics largely reflect research work which has international interest, but is nationally grounded in specific countries. The conference program covers topics such as bioenergy and climate change which are widely in international discussion. Other topics are more reflective of the basic work of IUFRO Research Groups and Working Parties. The conference program is strongly represented by forest policy, recreation and tourism, urban forestry, urban development, information, and forest education interests. As the local host for this IUFRO Conference in Finland, it is a pleasure to have a session on forestry issues in our neighbouring country of Russia. A new IUFRO Task Force, "Forests and Health" will have its initial meeting as part of the Conference. This task force could foster a new opening for forest research aiming to integrate social issues more closely with traditional forest research programs.

The organizers hope that the Conference will fulfil all of the expectations that participants have in choosing to attend this conference.

Tuija Sievänen

Finnish Forest Research Institute (Metla)



# Contents

Wednesday 15.8.2007

## **Sessio: Forest Bioenergy – The Outlook and Challenges**

- Is Forest Bioenergy Development Good or Bad to Sustainable Forest Management?  
*Jianbang Gan* 10
- How big is a forest biofuel resource? Politicians' questions and researchers' answers  
*Jan-Erik Nylund* 10
- Markets and Policy for Forest Biorefining: Current Status and Outlook  
*Lauri Hetemäki* 11

## **Sessio: Trends, Innovations, and Development for Forest Recreation and Nature Tourism**

- Recreation monitoring in European countries: results of COST Action E33  
*Jeffrey Dehez, Arne Arnberger, Tuija Sievanen, Franck S. Jensen and Hans Skov-Petersen* 12
- Prognosis and scenarios of outdoor recreation  
*Eija Pouta, Marjo Neuvonen and Tuija Sievänen* 12
- An empirical and simulation study of recreational route choices  
*Hans Skov-Petersen and Frank S. Jensen* 13
- Evaluating forest conversion scenarios using new modeling possibilities; Forest Stand Simulator (BWINPRO-S)  
*Rasoul Yousefpour and Marc Hanewinkel* 14

## **Sessio: Emerging Forms of Environmental Governance**

- National Forest Programme as a Continuous Process. The Norwegian Governance Process put on the rack. Does the process-orientated approach, as chosen in Norway, provide impetus for furthering nfp's?  
*Johan Barstad* 15

## **Sessio: Sustainability in the Forest Sector**

- Sustainability in the forest sector  
*J. Barstad, A.R. Ek, M.A. Kilgore, S. Laaksonen-Craig, A. Toppinen and G.C. van Kooten* 16

## **Sessio: Exploring the Diverse Roles Local Communities Play in Protected Area Management**

- Inspiring Community Driven Ecosystem Restoration: A History of Community Involvement and An Assessment of the Future of Community Action in the Restoration of the Cache River Wetlands, U.S.A  
*Mae A. Davenport and Christopher A. Bridges* 17
- Examining the linkages between conservation initiatives, land-use decisions, and forest cover: A study of the Community Baboon Sanctuary, Belize  
*Miriam S. Wyman and Taylor V. Stein* 18
- Determinants of public trust in natural resource management: fire and fuels management on the Bitterroot National Forest  
*Bill Borrie, Adam Liljebld and Alan Watson* 18
- Natural Resource Managers' Perceptions of Trust in New England (USA)  
*Jessica Leahy and Katelyn Hartford* 19
- Governance Vs Accountability: A case of Protected Area Management with People's Participation in Nepal  
*Bishnu Chandra Poudel* 20

## **Sessio: Integrative Information Management for Integrative Science**

“Integrative Information Management for Integrative Science” – A workshop organized by 6.03.00 *Information Services and Knowledge Organization*

*Roger A. Mills*

21

Institutional Repository – the New Library *A presentation within the workshop “Integrative Information Management for Integrative Science”*

*Carla G. Heister*

21

Collaborating in a wiki-way: a knowledge sharing solution for research networks

*Teppo Hujala, Jarmo Saarikko and Pekka Leskinen*

22

## **Sessio: Human Health and Forests – New Positions and Increased Income in Integrative Forestry**

What can help older people enjoy the outdoors more? Choice-based scenarios comparing natural and non-natural physical features

*Susana Alves, Takemi Sugiyama, Catharine Ward Thompson and Peter Aspinall*

23

## **Sessio: Development of the Forest Sector in Russia: National and Global Perspectives**

Transfer of best practices from the transition period of the forest sector in new EU member countries to the Russian forest sector reform

*Ján Ilavský*

24

Towards collaborative forest governance in the Russian Far East

*Hiroaki Kakizawa*

24

Does the new forest management regime of the Russia promote sustainable management of forests? – Institutional analysis

*Tatu Tornainen*

25

Forest management reforms in three ex-Soviet Republics

*Mats Nordberg*

25

Development of alternative cost accounting methods of wood harvesting in Russia

*Olga Tyukina*

26

Income and employment effects of transnational wood resource use – industrial use of roundwood in the Republic of Karelia (Russia) and Eastern Finland

*Vladimir Bungov, Ilkka Pirhonen, Pekka Ollonqvist, Mikko Toropainen and Jari Viitanen*

26

Competitive positioning of Northwest Russian wood industry SMEs

*Anne Toppinen, Ritva Toivonen, Erno Järvinen and Riitta Hänninen*

27

## **Sessio: Integrating Knowledge Discovery and Knowledge Application**

A Multilingual Internet-based Approach to Transfer Forest Knowledge in the Alpine Space

*Reinhard Lässig, Martin Moritzi, Marcus Schaub and Roderich von Detten*

28

Forest Certification: Case Study of a Combined Research and Outreach Effort in the Southeastern United States

*H. Glenn Hughes, Richard P. Vlosky, Michael Dunn and Priyan Perera*

29

Development of an Organizational System of Support for the Private Forest Sector in Serbia

*Dragan Nonic, Jurij Begus, Vojislav Milijic and Aleksandar Radosavljevic*

30

Successful Strategies in Forestry Extension: A World View

*Janean H. Creighton, James E. Johnson and Eric R. Norland*

30

Transferring Knowledge into Best Practices

*A. Scott Reed and Viviane Simon-Brown*

31

Surveying Expectations and Evaluations of Stakeholders in the Forest Sector of the Alpine Space

*Reinhard Lässig, Tobias Buser and Luuk Dorren*

31

Hurricane Katrina: Impacts on Forestland, Extension Responses, and Lessons Learned from One of America's Worst Natural Disasters <i>H. Glenn Hughes, Butch Bailey and Gwen Smith</i>	32
Interdisciplinary Approach in Extension for Efficient Use of Fuel-wood <i>Jurij Begus</i>	33
<b>Sessio: Protection of Forests in Europe</b>	
The guidelines on preserving and enhancing the cultural dimension of sustainable forest management in Europe (MCPFE) <i>Mauro Agnoletti</i>	34
 Thursday 16.8.2007	
<b>Sessio: IUFRO Plenary Panel –Science-Policy-Management: Who Integrates What, When, Why and How?</b>	
Science-Policy-Management: Who Integrates What, When, Why and How? <i>Gerard Buttoud</i>	35
<b>Sessio: Integrating Ecology, Society, and Economy for Sustainable Forest Management</b>	
Factors affecting investment in forestry in South Korea <i>Yeo-Chang Youn, Nam Kyun Kim, Hyun-Deok Seok and Beom-Seok Youn</i>	36
The world market for carbon trade <i>Zuomin Wen</i>	36
Place as an integrative concept for sustainable forest management <i>Daniel R. Williams</i>	37
Place-based planning: A participatory, collaborative process for integrating social, economic, ecological issues <i>Linda E. Kruger</i>	37
<b>Sessio: Recreation Research and Landscape Management Challenges in Changing Society</b>	
Recreation Planning and Management in European Forests Selected results of COST Action E 33, WG 3 <i>Simon Bell, Birgit Elands, Ulrike Pröbstl and Veronika Wirth</i>	38
Climate change and its consequences for nature based tourism, recreation and landscape perception in winter <i>Ulrike Pröbstl</i>	38
Modelling recreation and tourism for comparing landuse alternatives on Crown Land in British Columbia / Canada <i>Wolfgang Haider</i>	39
National park tourists and their integration to the surrounding rural community <i>Tuija Sievänen, Marjo Neuvonen, Eija Pouta and Asta Sarkki</i>	40
Analysing practices related to forest road landscapes <i>Antti Rehunen</i>	40
Anticipation of changes in rural operating environments: Readings of Finnish rural programmes and tourism strategies <i>Seija Tuulentie and Maria Hakkarainen</i>	41
<b>Sessio: Gender and Forestry – Time for Action</b>	
The Forestry and Gender Situation in Africa – Is There a Need for Time for Action? <i>Elizabeth Ardayfio-Schandorf</i>	42
Does masculine forestry culture prevent us hearing women's voices? <i>Tiina Suopajarvi</i>	42



## Poster Session:

Developing integrated information services for bio- and environmental sciences: experiences at Oxford <i>Roger A. Mills</i>	44
Listening to Neglected Voices: Hmong and Public Lands in Minnesota and Wisconsin, USA <i>David N. Bengston, Michele Schermann, MaiKia Moua and Tou Thai Lee</i>	44
Managing natural resources, managing ourselves: A values approach to natural resource decision-making <i>Viviane Simon-Brown</i>	45
Differing strategies of forest management <i>Mervi Kasanen</i>	45
The Future of Outdoor Recreation Research and Education in the United States: Preliminary Outcomes of a National Strategic Planning Process <i>Steve Selin, Fen Hunt and Perry Brown</i>	46
www.ricercaforestale.it the Italian web portal of the forest sector <i>Claudio Fior, Giuseppe Notarangelo and Massimo Bianchi</i>	47
IUFRO's Special Project on World Forests, Society and Environment <i>Heidi Vanhanen and Gerardo Mery</i>	48
GIS database on outdoor recreation opportunities in Finland <i>Petri J. Shemeikka and Leena Kopperoinen</i>	48

## Friday 17.8.2007

### **Sessio: Nursing a Tree of Morality? The Scope and Role of Forest Ethics in Integrative and Multidimensional Forest Management**

Making the most of forest ethics: Concepts and cases <i>Christian Gamborg and Peter Sandøe</i>	49
The Northern Lapland forest conflict: Ethical aspects of local livelihoods, culture, legality, sustainability and global markets <i>David Gritten, Ville Hallikainen, Timo Helle, Mikko Hyppönen, Olli Saastamoinen, Seppo Sajama and Jarno Valkonen</i>	50
Forest ethics as a scientific and practical challenge <i>Olli Saastamoinen and Seppo Sajama</i>	51

### **Sessio: Integrative Use of Policies and Planning Methods**

Examining Differences among Off-Highway Vehicle Riders: An Application of GIS in Visitor Experience Planning <i>Rachel Albritton and Taylor Stein</i>	52
Managing Natural Resources, Managing Ourselves: A values approach to natural resource decision-making <i>Viviane Simon-Brown</i>	52
Closing forest areas for recreational use – acceptable or not for the visitors? <i>Frank S. Jensen and Hans Skov-Petersen</i>	53
Organizational and personal factors influencing forestry planners' biodiversity conservation practices <i>Eeva Primmer</i>	54
Tools and approaches for combining forest-based tourism and forestry in Finland <i>Liisa Tyrväinen</i>	54
The Future of Outdoor Recreation Research and Education in the United States: Preliminary Outcomes of a National Strategic Planning Process <i>Steve Selin, Fen Hunt and Perry Brown</i>	55

## **Sessio: Quality Assurance in Higher Forestry Education**

Assessing Quality in Professional Forestry Education: A Survey of U.S. Forestry Undergraduate Programs <i>Donald G. Hodges and Keith L. Belli</i>	56
Stimulating change through quality assurance <i>Faye Benedict</i>	56
Activation of Students by Immediate-Feedback Assessment <i>David Wagner</i>	57
Students' Perspectives of Successful Graduate-level Studies: the example of the MSc European Forestry <i>Bishnu Chandra Poudel</i>	58
The role of multidisciplinary, international studies and extra curricular activities for a student's forestry education - a personal report <i>Susan Edda Seehusen</i>	58
Quality assurance in higher education in Europe : Challenges and opportunities <i>Andrew H. Cobb</i>	59

## **Sessio: Social and Economic Goals of Integrative Management of Ecosystem Services**

Using markets to preserve forests and the services they provide <i>Stefano Pagiola</i>	60
Integrating social and economic objectives in forest management research: Canada's Sustainable Forest Management Network <i>Bruce Macnab</i>	60
The institutional resilience of managed biophysical systems. The example of biodiversity governance in joint forest management institutions in Flanders <i>Tom Dedeurwaerdere</i>	61
Economic impacts on the forest sector of increasing forest biodiversity conservation in Finland <i>Riitta Hänninen and Maarit Kallio</i>	61

## **Sessio: Making Forests in the Developing World Work for People and NatureThe Global**

Network of IUFRO-WFSE for Sustainable Development and Well-being of People <i>Gerardo Mery and Heidi Vanhanen</i>	62
Forests in the Global Balance – Changing Paradigms, Results of IUFRO-WFSE Phase I (2002-2006) <i>Heidi Vanhanen</i>	62

## **Sessio: Seeing Climate Policy Through the Trees**

Challenges in Communicating Scientific Information About Global Climate Change, Forests, and Predictions for the Future to Nonscientific Audiences <i>Cynthia Miner and Michael Furniss</i>	64
Knowledge Transfer and State-level Renewable Energy Policy: Insights from the Front line <i>Dennis Hazel, Mark Megalos and Chris Hopkins</i>	64
Disaster management: New ideas for new times <i>Viviane Simon-Brown</i>	65
The Role of the Expert in Transferring Complex Science to Forest Mangers: implications for workforce development <i>Cynthia West and Becky Gravenmier</i>	65

## **Sessio: Valuing Forest Externalities**

Creating markets for ecosystem services <i>Arto Naskali</i>	67
--	----

Valuing forest recreation in a multidimensional environment: the contribution of the Multi-Program Valuation Method <i>Bénédicte Rulleau, Jeffrey Dehez and Patrick Point</i>	68
European forest externalities: Introduction of COST Action E45 EUROFOREX <i>Pere Riera</i>	69
<b>Sessio: Integrating Social and Cultural Information in Urban Forest Planning and Management</b>	
What can forestry do for the people of Scotland? <i>Simon Bell</i>	70
Social information – benefit of burden in urban forest planning? <i>Maija Sipilä and Liisa Tyrväinen</i>	70
Integrative Science for Integrative Management in Massua Forest in central Israel <i>Iris Bernstein</i>	71
Local identities, memories and experiences as inspirers of urban silviculture <i>Kirsi Mäkinen</i>	71
<b>Sessio: The Science - Policy Interface</b>	
Seeking Integrated Science for Integrated Knowledge: Top 10 Challenges for the next decade <i>Margaret A. Shannon</i>	73
Author index	74



# Forest Bioenergy – The Outlook and Challenges

Wednesday 15.8.2007, 11.00–13.00, Auditorio

Moderator: Lauri Hetemäki

## Is Forest Bioenergy Development Good or Bad to Sustainable Forest Management?

*Jianbang Gan*

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Forest biomass has long been used as an energy source by humans though fossil fuels have played a major role in primary energy supply in the recent history of industrialized societies. Increasing concerns about sustainable energy supply and environmental protection have prompted many countries, particularly developed countries, to once again look into the potential for expanding forest bioenergy production and consumption. This paper discusses the opportunities and challenges for sustainable forest management as a result of forest bioenergy development in the United States. The sources, qualities, and cost-competitiveness of forest biomass for energy are assessed; the implications of forest bioenergy development for forest management are discussed. Forest biomass/bioenergy production should be integrated into forest ecosystem management. In some cases, biomass/bioenergy production could complement sustainable forest management. Yet, not all forests should be tapped for bioenergy production; and many questions regarding the impacts of forest biomass/bioenergy production on the sustainability of forest ecosystems remain to be answered.

## How big is a forest biofuel resource? Politicians' questions and researchers' answers

*Jan-Erik Nylund*

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Based on national forest inventory data, SLU researchers estimated the available amount of forest fuel to be 73,5 TWh per year, after standardised reductions. With this report as a starting point, the Swedish Forest Industries Federation made an enquiry to all its member companies selling forest fuel, asking them to extrapolate from today's harvest data to cover all sites considered accessible to harvesting within ten years, and reached the figure 33,5 TWh per year. A number of previous and later studies land at estimates either between these two "ceiling" and "floor" values, or somewhat higher. The discrepancy highlights the importance of defining and communicating the criteria employed in the data analysis. Such criteria are discussed in the presentation.

However, my main point here is the importance of considering the "end use" of the information. The Swedish Prime Minister appointed a special commission in late 2005 to examine ways of reducing the country's dependence on oil and coal, and SLU was requested to contribute with biofuel information. While the commission had access to our full data, we chose to put forward the low estimate, as the prime interest was to find out how much biomass could be available for conversion to petrol and diesel substitutes after satisfying existing, ongoing and projected power plant requirements. The high estimate, on the other hand, is of interest to modellers of carbon sequestration scenarios or for considering long-term expansion possibilities. However, the most concrete issue today is whether the power sector is able to overpay the pulping industry because of various tax breaks and emissions trade. For that kind analysis, only market balance studies are appropriate, while the absolute size of the biomass resource is quite irrelevant.

# Markets and Policy for Forest Biorefining: Current Status and Outlook

*Lauri Hetemäki*

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Increasing demand for energy, rising energy prices, environmental concerns over the use of fossil fuels, national security concerns over the dependence on foreign oil, and growing public preferences for a cleaner environment are stimulating the demand for forest-based bioenergy. One potentially important concept for achieving these objectives is the so called integrated forest biorefinery (FB), i.e. a production unit integrated to existing pulp and paper plant producing pulp, paper and biofuels (e.g. biodiesel, ethanol, mixed alcohols) and power. The concept has received increasing attention particularly in Finland, Canada, Sweden and USA. Pilot plants have already been constructed, and commercial scale plants are hoped to be ready some time after 2010.

Issues related to FB are complex and depend on particular circumstances and production processes, and on a number of uncertain developments (energy and carbon credit prices, policies supporting bioenergy, etc.). Also, the concept of FB is of a recent nature, and the research on FB is typically still very much scattered under different disciplines, specialized on particular issues, and somewhat different across countries. Currently, there is a lack on research giving an overview and syntheses of the knowledge across the disciplines and countries. The purpose of this paper is to provide a synthesis of the current knowledge of FB, particularly as related to Canada, Finland, Sweden and USA. It summarizes the results from various studies, points out the essential implications, and discusses the open questions. The paper concludes by discussing how the energy and forest products markets, and national and international policies may affect the outlook for FBs.

# **Trends, Innovations, and Development for Forest Recreation and Nature Tourism**

*Wednesday 15.8.2007, 11.00–13.00, Eurooppa  
Moderator: Ulrike Pröbstl*

## **Recreation monitoring in European countries: results of COST Action E33**

*Jeoffrey Dehez<sup>1</sup>, Arne Arnberger<sup>2</sup>, Tuija Sievanen<sup>3</sup>, Franck S. Jensen<sup>4</sup> and Hans Skov-Petersen<sup>5</sup>*

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COST E33 Forrec (Forest for nature based tourism and recreation) is a European Concerted Research Action dedicated at recreation in forest. It's composed by 3 working groups of whom number 2 (WG2) aims at recreation monitoring. It has started September 2004 and plan to end in early 2008. 26 countries have signed the Memorandum of Understanding giving insofar a very large scope of recreation trends all across Europe. This paper proposes a description of the various tasks engaged in WG2 after almost 3 years of research.

Based on experts' answers and bibliographies, country reports have been made on several topics such as national household demand surveys, on-site demand studies, supply inventories and monitoring legislations. On this ground, some pan European analysis have been realised using various approaches. Even though recreation monitoring is not always a national priority, our results show that useful materials exists all over Europe. In the same time, strong national particularities (covering definitions and objectives or methodologies) also hinder comparisons. Thus, we try to point out the existing useful information, as well as the missing one, towards what could become a European monitoring system of forest recreation. In addition, such a system may very helpful in designing indicators of sustainable forest management.

## **Prognosis and scenarios of outdoor recreation**

*Eija Pouta<sup>1</sup>, Marjo Neuvonen<sup>2</sup> and Tuija Sievänen<sup>3</sup>*

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In many parts of the world outdoor recreation trends have shown remarkable changes in participation rates and occasions for almost all outdoor activities during the last decades. Changes in society and way of living relate to changes in the ways people use natural environment as a place to recreate. At a beginning of 21st century more than 80% of Finns live in towns or cities. Compared to previous decades population is aging rapidly but the income level, status of education, amount of leisure time are increasing. This study uses four methods for predicting future recreation participation. Methods are extrapolation of past trends, regression techniques based on cross-sectional recreation inventory data, skills-based estimation, and scenario methods. Use of different methods provides an opportunity for comparison. Extrapolation of past trends is based on participation measurements on 1979, 1992 and 1998-2000. Using cross-sectional data of 1998-2000 participation and frequency prognosis based regression models and socioeconomic forecasts are calculated for fifteen activities in near term (2006-2010 and 2011-2020),



mid-term (2021-2030) and long-term (2031-2040). The general impression of the prognosis is that the forecasted changes in participation are minor. The skills based estimation accomplishes the prognosis by including the cohort effect. Finally the qualitative scenario methods provides basis to discuss the pros and cons of quantitative methods. As all methods have uncertainties, the regular-based monitoring of outdoor recreation is necessary. However, the picture of future described by information from prognosis, trends and scenarios help us, indeed, to identify expected changes, which may be critical for the provision of recreation opportunities and the wellbeing of population.

## **An empirical and simulation study of recreational route choices**

*Hans Skov-Petersen<sup>1</sup> and Frank S. Jensen<sup>2</sup>*

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Knowledge about recreational route choices is necessarily in management of visitor flows in the nature. It is important to know the motivation for different visitor groups to apply different route choice strategies: Some groups are more likely to follow fixed routes, where as others make their spatial choices in a more freely, browsing manner, making choices during the visit. Further, it is important to know to which extend and for what reasons visitors leave the path network. This is especially important when assessing the visitors' 'foot print' on biodiversity.

By means of an interview survey in three Danish nature areas visitor's behavior in terms of route choices were assessed. The survey was conducted in the summer of 2005 and 2006, and will be continued in 2007. Issues investigated included the over all strategy of route choice; i.e. if a fixed, known route was followed, if the visit was aimed at visiting given locations, or if the visitor simply was 'browsing', making spatial decisions along the way. Further also if, and to what extent, of-track activities took place. In the analysis applied the route choices are related to respondent's knowledge of the location and type of activity performed.

Besides gaining basic knowledge about recreational route choice strategies, the objective of the study is to estimate parameters for an agent-based simulation model of recreational behavior; including visitors' impact on the nature, in front country environments. In a simulation model context it is important to be able to distinguish every day visitors (e.g. those who are walking their dog) from visitors not knowing the location and who might have more adventurous objectives. Whereas the first type will be likely to follow a fixed route the latter will tend to change direction as reaction to e.g. perceived opportunities or to avoid crowding.

## **Evaluating forest conversion scenarios using new modeling possibilities; Forest Stand Simulator (BWINPRO-S)**

*Rasoul Yousefpour and Marc Hanewinkel*

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Today, there is an interest in multi-species uneven-aged forests as these forests eminently suited to the multiple purposes of modern forests, as fonts of biodiversity, as aesthetic environment, for soil conservation, and, not least for economic timber production. To achieve this goal in Europe, models ought to be made to convert man-made even-aged stands to uneven-aged stands.

Forest conversion modeling consists of developing methods to predict growth of existing and goal stands, simulate the effect of decided alternative silvicultural regimes for the practices of conversion process, and seek the best practice for the given set of objectives. This research is to give tools to the practice of foresters to plan for the conversion of the existing spruce forests into mixed beech-spruce forests. The projected procedure consists of the preparation of stand data (stand prescription), goal simulation of stands and tries to detect the best possible scenario for forest conversion planning.

To do this, a virtual forest enterprise using inventory data of the north Black Forest of Germany have been developed. Then, using the distance-dependent/independent forest stand simulator Bwinpro-S, some silvicultural interventions have been modeled. To analyze different possible forest conversion scenarios, different aspects of forest stands characteristics have to be considered to get tools to compare them from ecological and socio-economical points of view. Finally the scenarios have been evaluated considering criteria and indicators of MCPF. Then, output of simulation of developed silvicultural scenarios has been used to help making decisions on the silvicultural practices; time and place (stand) of essential operations during rotation period (60 years) of forest conversion processes.

We finally have come to conclusion that new modeling methods (forest simulators) and their outstanding advantages can improve considerably our decisions on forest conversion planning although some disadvantages and limitations. At last we foresee some future perspectives in this field.

## **Emerging Forms of Environmental Governance**

*Wednesday 15.8.2007, 11.00–13.00, Kalotti*

*Moderator: Margaret Shannon*

### **National Forest Programme as a Continuous Process. The Norwegian Governance Process put on the rack. Does the process-orientated approach, as chosen in Norway, provide impetus for furthering nfp's?**

*Johan Barstad*

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The National Forest Programme in Norway is not supposed to result in a single, formal document but rather to be a process structured around the sum of policy relevant activities, including (the most significant) a white paper on forestry (endorsed by parliament in 1999), the Forest Act (2005) County Forest Strategies, The Living Forest Process (1995 – ongoing) and the Norwegian International Obligations regarding forestry.

This being described as a process rather than a project, one of the main issues will be if and how the different elements interact and contribute to the continuous development of the Norwegian Forest Programme.

The GoFOR project is a FP6-funded research project that has a special focus on National Forest programmes and a major aim is to evaluate new modes of governance as a basis for policy relevant conclusions. A series of country-based case-studies have now been carried out in the 10 European partner countries. The Norwegian case has been the ongoing Living Forest process (one of the core elements of the Norwegian NFP-process), and the study shows some interesting effects regarding participation, intersectoral coordination, expertise etc.

In this paper the main objective is to describe, analyse and discuss if and how the Living Forest process (LFp) has contributed to the overall goal of further developing the Norwegian nfp. Have tangible effects from the LFp caused effects, changes or discussion in the other core elements? Have the LFp been influenced from the other processes like international obligations.

For the Norwegian nfp to be functional, there has to be this kind of interplay between the various elements. If it can be proved that this interplay is taking part, that is an important indication that the high degree of process-orientation in the nfp is working, and would as such be important knowledge to transfer to other countries and situations.

# Sustainability in the Forest Sector

Wednesday 15.8.2007, 14.00–16.00, Auditorio

Moderator: Johan Barstad & Anne Toppinen

## Sustainability in the forest sector

*J. Barstad<sup>1</sup>, A.R. Ek<sup>2</sup>, M.A. Kilgore<sup>2</sup>, S. Laaksonen-Craig<sup>3</sup>, A. Toppinen<sup>4</sup> and G.C. van Kooten<sup>5</sup>*

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Through a paradigm shift in the past decades our notion of sustainability has become multi-dimensional and the sustainable forest management includes ecological, economic and social sustainability. Our session will examine the different aspects of sustainability and how they are demonstrated in different parts of the forest sector. As the forests are increasingly affected by corporations and institutions along the supply-chain, we discuss the economic sustainability in terms of the potential impact of the recent consolidation and globalization in forest industry, as well as the profitability of forest industry companies on global forest resources. Highlighting the role of environmental sustainability, we will examine the role environmental analysis plays in forest-based economic development, and how that analysis may focus research and forest resource modeling. The environmental analyses prepared for forest-based capital investments and associated projects increasingly require attention to a wide range of forest characteristics. They typically examine forest dynamics over long time horizons and the linkages of proposed developments to important forest resources, notably wildlife. Such analyses are very demanding in terms of integrating data and information from various sources and model synthesis, scenario development, impact assessment, public comment, and the time frame for reporting findings. Social sustainability is discussed through rural development issues and challenges such as rural out-migration to urban areas, a change in occupation/industries into service-based economies (post-industrial economies) and cultural changes (urbanization of the rural lifestyle). Forestry has had a focus on rural development issues for a long time, but we still see few examples where forestry has managed to play a role and instead the traditional forestry generally has been steadily marginalizing. Therefore, discussion on issues like potential need for increasing cooperation with other rural actors, and the role of forestry in the post-industrial societies is vital.

### Session outline:

Introduction to economic, environmental and social sustainability

Impact of the consolidation and profitability of forest industry on forests – Laaksonen-Craig

Role of environmental analysis in forest-based economic development – Ek & Kilgore

Role of forestry in rural development – Barstad

### Roundtable discussion – Moderator/Participants below:

Johan Barstad – Researcher, Møre Research Volda, Norway

Alan Ek – Professor, Department of Forest Resources, University of Minnesota, USA

Eeva Hellström – Director, Forest Academy for Decision-Makers

Michael Kilgore, Associate Professor, Department of Forest Resources, University of Minnesota, USA

Susanna Laaksonen-Craig – Assistant Professor, Faculty of Forestry, University of Toronto, Canada

Antti Otsamo – Director, Forest Issues, Sustainable Forestry and Resources, Finnish Forest Industries Federation

Birger Solberg, Professor, University for Life Sciences, Norway

# Exploring the Diverse Roles Local Communities Play in Protected Area Management

Wednesday 15.8.2007, 14.00–16.00, Eurooppa

Moderator: Mae A. Davenport

## Inspiring Community Driven Ecosystem Restoration: A History of Community Involvement and An Assessment of the Future of Community Action in the Restoration of the Cache River Wetlands, U.S.A

Mae A. Davenport<sup>1</sup> and Christopher A. Bridges<sup>2</sup>

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The Cache River Wetlands (CRW) complex in southern Illinois, U.S.A. was first protected through the grassroots efforts of local residents concerned about the loss of wildlife habitat to timber and agricultural production interests. In 1979 a local advocacy group called Citizens to Save the Cache River was organized, and by way of intense lobbying and national media attention, a State Natural Area, National Wildlife Refuge and two National Natural Landmarks were established. Cooperation between federal and state agencies and private organizations was formalized in the Joint Venture Partnership (JVP) established between the U.S. Fish and Wildlife Service, Illinois Department of Natural Resources, The Nature Conservancy, and Ducks Unlimited. With an ambitious mission of restoring nearly 60,000 acres, the JVP quickly recognized the need to reenergize community-based conservation partnerships and inspire a community-driven approach to restoration. However, the community benefits of restoration are questioned locally and past attempts to provide citizens a voice in restoration have been criticized.

This paper traces historical community involvement in restoration and presents findings from a community partnership assessment in the CRW. One component of the assessment included in-depth interviews with 25 local stakeholder representatives about the meanings they ascribe to the CRW, their attitudes toward restoration, and perspectives on barriers to community-based conservation partnerships. Qualitative data analysis revealed a stakeholder typology comprised of three distinct groups, those who are: 1) actively involved and supportive of restoration, 2) minimally involved but generally supportive of restoration, and 3) actively opposed to restoration and critical of the JVP. Significant qualitative differences exist between the meanings and benefits/costs these groups associate with CRW and its restoration. Several barriers to community-based partnerships were identified including a lack of awareness of restoration programs and regional economic depression. Recommendations for outreach and education programs tailored to these groups will be provided.

## **Examining the linkages between conservation initiatives, land-use decisions, and forest cover: A study of the Community Baboon Sanctuary, Belize**

*Miriam S. Wyman<sup>1</sup> and Taylor V. Stein<sup>2</sup>*

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Established in 1985, the 4,800 hectare Community Baboon Sanctuary (CBS) protects one of the few black howler monkey populations (*Alouatta pigra*) in Belize. With support of a local non-governmental organization, the lands for this *sanctuary* were set aside by private landowners from 7 Creole *communities* situated along 33 kilometers of the Belize River. For 20 years the CBS communities have been participating in two conservation initiatives: nature-based tourism and a voluntary, written pledge for private landowners to leave riparian forests intact and forested corridors that provide habitat connectivity for howler monkey populations, the tourism attraction. Little is known, however, about residents' perceived benefits of riparian forests (the conservation focus of the initiatives) and the function of place attachment as an incentive to conserving forests, in addition to the role these initiatives play in managing community benefits.

This paper presents place-based meanings of riparian forests and examines perceptions of community benefits attributed to these landscapes. Results show a relationship between initiative involvement (pledging or tourism) and higher perceived benefits (importance) and place attachment (meanings) toward riparian forests and conservation. Residents, however, regardless of initiative involvement agree that riparian forests are not providing economic benefits. Further examination showing higher perceived benefits and place-based meanings attributed to riparian forest landscapes and conservation among residents involved with either initiative indicate that it may be these *intangible* benefits and place-based meanings that are actually promoting conservation. The study findings, which expand on current conceptualizations of sense of place and place attachment, will aid future planning to improve program integration into community development and environmental conservation strategies.

## **Determinants of public trust in natural resource management: fire and fuels management on the Bitterroot National Forest**

*Bill Borrie<sup>1</sup>, Adam Liljeblad<sup>2</sup> and Alan Watson<sup>3</sup>*

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Management of natural resources occurs today with high levels of public scrutiny and controversy. To succeed, managers seek the support, involvement, and endorsement of the public. When trust is present, parties are linked by social bonds, shared commitments and are able to interact openly and honestly. When trust is deficient, parties lack the bonds that permit open, honest communication, and generally resort to defensive, confrontational or insular behavior. This study examines the public's trust as a measure of managerial success, and attempts to identify and measure the components that most influence it. A review of trust literature yielded 14 attributes that were hypothesized to contribute to trust, grouped into the three dimensions of Shared Norms and Values, Perceived Efficacy, and Willingness to Endorse. Operationalizing these attributes and dimensions, a telephone survey was developed and administered to a sample of Montana, USA residents living adjacent to the Bitterroot National Forest (N=1152). Structural



equation modeling was used to examine the hypothesized relationship among trust contributors and all 14 attributes were found to be influential contributors to levels of trust. Results suggest that if managers are to maintain or increase levels of public trust, they need to consider trust's attributes as they make social, ecological, and economic resource decisions.

## **Natural Resource Managers' Perceptions of Trust in New England (USA)**

*Jessica Leahy<sup>1</sup> and Katelyn Hartford<sup>2</sup>*

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This research project investigates a combination of conflict resolution and trust issues from the perspective of natural resource managers in the New England region of the United States. It is widely recognized that public land managers face a difficult job balancing ecological, social and economic considerations. Newspapers reports and anecdotal evidence in New England suggests that some managers and agencies are better at managing those multiple considerations than others. Relationships between public land management agencies and local rural communities in the New England region vary from highly dysfunctional to extremely positive. While most public land management agencies integrate public opinion into decision making, the success of these public involvement strategies are largely unknown. To better understand conflict resolution and trust between agencies and local rural communities, our presentation will focus on public land managers in the New England region who have undoubtedly had successes and failures in developing agency-community relationships. Our research questions included: Where do strong and weak relationships exist in the New England region, from the perspective of managers? According to managers, what defines a trusting relationship? What has worked or has not worked in terms of relationship building activities? Are there differences between the opinions of front-line staff and administrators? Natural resource agencies invited to participate included the USDA Forest Service, Maine Forest Service, Maine Bureau of Parks and Lands, New Hampshire Division of Forests and Lands, Vermont Division of Forestry, Parks, and Recreation, New York Division of Lands and Forests, Baxter State Park Authority, and Adirondack Park Agency. Questionnaire data were collected using an internet-based survey. After presenting the results of the research, recommendations will be presented that suggest ways of improving public involvement strategies, increasing trust from local rural communities, resolving conflicts, and improving natural resource manager morale regarding public interactions.



# **Governance Vs Accountability: A case of Protected Area Management with People's Participation in Nepal**

*Bishnu Chandra Poudel*

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This paper discusses the changes in society after forest management with peoples' participation in Nepal. Ten years of success in community forestry has led to a shift in practices in the buffer zones of protected areas as well. Forest policy has had only one option to reduce the conflicts in resource utilization from the forest nearby, that is to introduce bottom-up planning in place of top-to-bottom driven practices. Changes are evident in the resource condition and in different community benefits not only in social transformation but in ecological services as well. The reason behind the success is the introduction of community governance practices that enabled natural resources benefits to be distributed wisely among the users. Many community forests are independent to make decisions for the resource management and utilization. Income from the tourism and selling non-timber forest product is benefiting communities and supporting the livelihoods of people. However, a lack of accountability among community members has impeded wise use of resources, thereby affecting sustainable forest management.

The paper argues that the accountability of community leadership does not address equity or organized benefit sharing in community forestry practices. Communities could have achieved greater income deriving through the ecotourism and non timber forest products marketing. Although the contribution from the forest is satisfactory, the state of governance in resource utilization of the community forests is questionable. This suggests that policy makers should be aware that resource utilization practices are exemplary, but they should seek long term support to achieve contributions and governance together. Extended autonomous power to access, collection and marketing of goods and services to the user groups may ultimately help to access the national markets and increase income to strengthen governance.

Keywords: forest management, participation, governance, accountability,

# **Integrative Information Management for Integrative Science**

*Wednesday 15.8.2007, 14.00–16.00, Kalotti*

*Moderator: Roger A. Mills*

## **“Integrative Information Management for Integrative Science”**

### **– A workshop organized by 6.03.00 *Information Services and Knowledge Organization***

*Roger A. Mills*

Bio- and Environmental Sciences Librarian and Oxford Forest Information Service Manager, Oxford University Library Services, Oxford, UK, [roger.mills@ouls.ox.ac.uk](mailto:roger.mills@ouls.ox.ac.uk)

The tendency to manage information in ever-larger units by merging related (and sometimes unrelated) subjects is prevalent in scientific research institutions, in the library world, and in publishing, and although this often brings problems and runs the risk of the loss of subject-specific expertise, it can also bring advantages in the cross-fertilization of ideas and management techniques that allow for better use of the resources we have and the opportunity to develop services on a larger and more cost-effective scale. This workshop will explore, in a mix of presentations and discussion by members of Unit 6.03.00, the benefits of an holistic approach to information management in areas including:

electronic resources – discovering and distributing data and information in multiple formats, supporting the Global Forest Information Service

capturing ephemeral information

Indigenous knowledge and evidence based science

ontologies – linking ideas by context, vocabulary and classification

print collections – creating/searching institutional repositories and linking traditional libraries across related subject areas

information skills – developing user awareness and expertise in exploiting multiple resources  
integrating information management activities within organizations – e.g. within IUFRO.

## **Institutional Repository – the New Library**

### ***A presentation within the workshop “Integrative Information Management for Integrative Science”***

*Carla G. Heister*

Librarian, Yale University Library, Forestry and Environmental Studies Library, New Haven, CT USA, [carla.heister@yale.edu](mailto:carla.heister@yale.edu)

Historical forestry technical reports, student research reports, miscellaneous research center reports, NGO reports, international agency reports, and state, provincial, and federal/national governmental reports have been produced since the historical beginnings of each institution. They have never been systematically given to nor acquired by institutional libraries. It has been asserted that institutional memory is essential for the best use of resources within each institution, yet people tend to bypass the library as a useful partner in archiving past, present, and future institutional memory (documents produced by the institution). A strong case needs to be made to show the currency of library personnel and library procedures and protocols for any institutional repository of institutional intellectual materials. Librarians can become active, useful partners in the development and implementation of these institutional repositories. In my presentation I will present a case for librarians to be active partners in the development and organization of repositories of information, a new term for what librarians have been doing for centuries – build usable library collections.

## Collaborating in a wiki-way: a knowledge sharing solution for research networks

*Teppo Hujala<sup>1</sup>, Jarmo Saarikko<sup>2</sup> and Pekka Leskinen<sup>3</sup>*

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Modern research networks are interdisciplinary with diverse variety of applications, and they require openness and transparency as working principles. In addition, the research networks are starting to recognise the potential of social web applications for collaborative knowledge creation purposes. Social media enables new means of interaction, which could enhance flexible dialogue and knowledge building, encourage giving feedback of initiatives, attract new, previously unknown project collaborators, and accelerate the extension of research findings. If managed wisely, this would result as “science 2.0”. However, the social web requires a totally new working culture and new information management skills among established researchers. The collaborators have to overcome their reservation towards open participation and concerns about losing ideas and looking unprofessional. Paradoxically the greatest challenge in supporting the wiki-way of working is a chronic shortage of time, although online collaboration could be of help with that in particular. In the present contribution we will introduce a generic wiki solution for research networks. The solution is applicable for all networks that share the interest towards social web in research and development processes. We will utilise the research network “Methods and processes of decision making in forestry”, initiated and led by Finnish Forest Research Institute Metla, as an example. Recently the exemplary network has perceived a many-sided challenge of Internet-mediated knowledge management. Through facilitation of the information management services in Metla, an evaluation of possibilities and challenges of a wiki-based collaboration scheme has been conducted. The presentation will cover database and platform selection, considerations on author- and reader-friendliness and ontologies, the integration of the solution into the present practices as well as motivation, training and facilitation aspects.

# Human Health and Forests – New Positions and Increased Income in Integrative Forestry

Wednesday 15.8.2007, 16.30–18.30, Auditorio

Moderator: Merete Ann Furuberg

## What can help older people enjoy the outdoors more? Choice-based scenarios comparing natural and non-natural physical features

*Susana Alves<sup>1</sup>, Takemi Sugiyama<sup>2</sup>, Catharine Ward Thompson<sup>3</sup> and Peter Aspinall<sup>4</sup>*

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Our research on outdoor spaces for older people has indicated that people are more satisfied with life when having pleasant, safe and well-furnished outdoor spaces. Abundance of trees and plants not only contributes to the pleasantness of such places but, when coupled with high-quality pathways, has a significant impact on walking behaviour. The knowledge of key features in outdoor spaces lead us to question how best to target them in environmental interventions. This study, using choice-based conjoint analysis, examined: 1) the relative importance of natural features in older people's preference for local open spaces; and 2) potential trade-offs between natural and non-natural attributes, based on real-life scenarios. A choice-based conjoint questionnaire was constructed with 15 attributes of outdoor open space, each taking up to 4 levels. A sample of 237 older people in the UK evaluated 14 paired comparisons of these environmental attributes. When considering the natural elements: trees along paths, trees/plants in the park, and water features, the results showed that "trees and plants in the park" is the most preferred attribute. People also prefer to have dense trees and plants in their local park, rather than many trees/plants, some trees/plants, or no trees/few plants. When considering the trade-offs between natural versus non-natural features, the results indicated that participants would be willing to trade lack of facilities in order to have tree-lined paths and dense trees/plants. Participants would also trade a poorly maintained open space for an aesthetically pleasing one. However, participants would rather have an open space with light traffic, no trees along paths and some trees/plants in the park than one with heavy traffic, dense trees/plants and trees along pathways. Choice-based preferences thus provide significant information to understand the trade off between competing environmental attributes and help those involved in the design of outdoor environments to prioritise interventions.

# **Development of the Forest Sector in Russia: National and Global Perspectives**

*Wednesday 15.8.2007, 16.30–18.30, Eurooppa  
Moderator: Timo Karjalainen*

## **Transfer of best practices from the transition period of the forest sector in new EU member countries to the Russian forest sector reform**

*Ján Ilavský*

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The transition process from the planned economy in the forest sector involves a number of political and macroeconomic reforms, which have a much larger impact on the progress towards a market economy than changes in any other sector. The major goals at the beginning of the transition process were more or less the same in most countries. Nevertheless, countries started the process at different level of economical development, in different internal political situation, different cultures and national habits and at the different level of the forest sector development. All of these pre-existing conditions led to the present situation, wherein countries are at different stages of the transition process. Ten countries of Central and Eastern Europe have successfully accomplished the first phase of the transition from planned to market economy that has lead also to their EU membership. They have accumulated lot of experiences and lessons learned which could be used to support the forest sector reform in Russia.

The best practices and benchmarks of the new EU member countries, from the point of view of their use in the Russian forest sector reform, were analyzed in four areas:

- Forest policies and their instruments supporting sustainable forest management
- State forest administration and institutional framework
- Management of state owned forests – state forest services
- Financing sustainable forest management

The most common aspects of the transition are: that it is a long term process which took up to 10 years in all countries and it has not been considered finished yet and that the most crucial issue for the success of the process is capacity building, education and training of personnel.

## **Towards collaborative forest governance in the Russian Far East**

*Hiroaki Kakizawa*

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Looking at the development of forest policy in Khabarovsk, the author has found that this policy has been greatly affected by policy changes and transfers of power in the Federal government, and that local government have not been sufficiently successful in developing policies of their own. From a global point of view, the importance participatory forest management has been pointed out. It is necessary for Russia to consider such an approach, toward solving problems of poverty and helping local residents to keep watch on forests by themselves. Additionally, forestry-related businesses that own timber rights engage in forestry management in Russia. In light of this, social pressure needs to be exerted on

these businesses, so that appropriate forest management will be ensured. In this presentation, the author surveyed the residents of Khabarovsk by questionnaire to clarify their attitude regarding participatory forest management. The author also discusses participation by ethnic minority groups in forest management and the establishment of small-scale businesses by the residents. Regarding pressures on the forest products industry, the author reports on the reform of the government procurement system in Japan and how the reformed system has affected the forest products businesses in Khabarovsk. The revised *Forest Code of Russian Federation* loosens regulations on the forest products industry. A point at issue is whether social pressure on the industry can compensate for such regulatory loosening. The author believes that forest policies in Russia should be developed and implemented in cooperation with local residents and the forest products industry. This report discusses the possibility of establishing collaborative forest governance in the Russian Far East. Sustainable forest management in Russia will also entail international cooperation.

## **Does the new forest management regime of the Russia promote sustainable management of forests? – Institutional analysis**

*Tatu Tornainen*

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The legal basis of the new forest management regime has been laid by the adoption of the new Forest Law of the Russian Federation on Jan 1<sup>st</sup>, 2007. The main features of the new regime include the devolution of power from the federal level to regional governments and the transfer of forestry operations to private leaseholders. This paper analyses the new institutional arrangements of the emerging regime. Special emphasis is put on the analysis of the organisation of property rights with respect to forestry and the use of forests. Property rights are understood as streams of benefits and access rights. Results indicate that the new forest management regime to sustainable forest management have both positive and negative effects on the sustainability of the forest management. The new roles of the key actors are defined. The modernised system of forest leasing improves the economic efficiency of forest use. On the other hand, the presented system of public financing of forestry largely lacks the economic incentives necessary to sustainable management. The new operational environment established by the adoption of the new law may have profound impacts on the structure and development of logging industries.

## **Forest management reforms in three ex-Soviet Republics**

*Mats Nordberg*

Given the radical changes that East European countries have recently gone through, it is of general interest to study what institutional and organisational set-ups for forest management were selected in the individual countries and why. The purpose of the presentation is to present results from a study of reforms in State forest management of Ukraine, the Russian Federation and Latvia in 1990-2000, focusing on underlying reasons. A number of models were formulated, mostly based on Public Choice theory and theories on institutional development. In Russia, some key reforms in the forest sector were initiated as part of the Government's general agenda. The main such set of reforms generated from decisions to privatise forest industry but keep forest State-owned. Most other reforms of the period were consequences of this general decision but other models of the study provided additional understanding.



In Ukraine, one can argue that the Ukraine State Forest Committee as an organisation was an example of Rentier-Capitalism, given that it continued to control the majority of Ukraine's forests, enjoyed a close-to monopoly on final fellings and came to control a large part of Ukraine's forest industry. The processes that led to this situation were strongly influenced by Interest Group Struggles and Path Dependency.

Concerning Latvia, most striking is the breach with the Soviet-era institutional set-up and thus also with Path Dependency. Latvia created in only 10 years a new institutional and organisational set-up, quite similar to the Scandinavian countries. The models that best explain Latvian forest sector reform are Political Necessity and Historic Experience. By the end of the studied period, the main forest institutions and organisations demonstrated practically no resemblance to what had existed prior to 1990. In this respect, Latvia differed very clearly from Russia and Ukraine.

## **Development of alternative cost accounting methods of wood harvesting in Russia**

*Olga Tyukina*

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An improvement in cost accounting (CA) is one of the most important elements of the development of modern logging industry in Russia. CA of wood harvesting is important for management and decision making; it provides necessary information for choosing the optimal method of wood harvesting and for increasing profitability of business. The domestic method of CA has a long history of development during the whole period of planning economy in Russia. Now domestic method of CA has been used only for taxation purposes.

Nowadays the Nordic machines for wood harvesting play the important role in the Russian wood harvesting development. Cost per machine hour is the important factor for future development of CA in Russia. Nowadays, the Nordic CA method of wood harvesting is an alternative for traditional method. The Nordic approach has been promoted also by making textbooks and leaflets of the CA in forest work with international cooperation.

In this presentation the general points of domestic CA method and Nordic CA method of wood harvesting cost calculation are compared. Both in the domestic and Nordic methods wood harvesting costs are divided into fixed and variable costs. The most difference between these two methods is that exchange value of the new machinery is taken into account in the Nordic method, but not in the domestic method.

## **Income and employment effects of transnational wood resource use – industrial use of roundwood in the Republic of Karelia (Russia) and Eastern Finland**

*Vladimir Bungov, Ilkka Pirhonen<sup>1</sup>, Pekka Ollonqvist<sup>1</sup>, Mikko Toropainen<sup>1</sup> and Jari Viitanen<sup>1</sup>*

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Since the collapse of Soviet Union, both harvesting and production capacity using roundwood in North-west Russia has recovered. However, there is still a discrepancy between the domestic demand and supply of industrial roundwood concerning both soft- and hardwood pulpwood and logs. The oversupply has been solved through roundwood exports mainly to Finland. Recently, however, this market equi-



librium is challenged by the recent statement of the Russian Federal Government to gradually increase custom tariffs for roundwood export from the mid 2007 on to promote domestic production and to create more value added. The same disequilibrium challenge shall be faced with in hardwood pulpwood markets. The latter is due to the high proportion of small diameter softwood in the clear cuts of mixed stands. There is no current domestic capacity to demand this pulpwood supply.

The income and employment effects of the alternative solutions concerning the use of roundwood species harvested in NW Russia are calculated and discussed. The basic alternatives focus on the impacts from the primary industrial use and exports of roundwood. In addition, the evaluation of the potentials related to the expansion in the secondary industrial use of sawn timber and wood plates are also evaluated.

There is a contributive target to be able to identify the multiplier coefficient differences between The Republic of Karelia in NW Russia and Eastern Finland, respectively.

**Key words:** Eastern Finland, Northwest Russia, income and employment multipliers, roundwood market, roundwood export, primary and secondary wood product industries

## Competitive positioning of Northwest Russian wood industry SMEs

*Anne Toppinen<sup>1\*</sup>, Ritva Toivonen<sup>2</sup>, Erno Järvinen<sup>2</sup> and Riitta Hänninen<sup>3</sup>*

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Exports of sawnwood from Russian Federation have tripled and plywood exports have doubled since the mid 1990s, which points out for the clear improvement in international competitiveness of Russian wood industry. Competitive positioning forms a dynamic link between company resources and capabilities, strategies and performance, and provides means for benchmarking of the company against its rivals. This paper examines the issue in a case study of 18 small and medium-sized wood industry companies in Leningrad and Vologda regions of Northwest Russia using thematic semi-structured interviews. Companies' internal strengths and weaknesses and external opportunities and threats are also identified using SWOT-analysis. Generally, the wood industry companies' competitive position attributes were condensed into three main dimensions: 1) company and personnel factors, 2) product and production technology factors, and 3) operating environment. Results indicate that the company and personnel dimension was perceived the most critical: overall reliability of the company, good image and reputation of the company, and qualified and skilled personnel were considered as the three most important attributes regarding competitive positioning. From managerial point of view, these factors are related to the use of intangible resources in companies instead of physical resources such as raw material or the location of the company. Regarding environmental performance, companies did not perceive themselves being superior compared to their rivals. In the future, the interviewed Russian SMEs' aim to shifting their production from commodity products towards more specialized products and focus on increasing their exports to the markets of European Union. If our case study based results are generalizable, competition in the European markets for wood products will intensify in the future.

**Key words:** SMEs, Leningrad and Vologda regions, competitive positioning, SWOT-analysis

## **Integrating Knowledge Discovery and Knowledge Application**

*Wednesday 15.8.2007, 16.30–18.30, Kalotti*

*Moderator: Jurij Begus*

### **A Multilingual Internet-based Approach to Transfer Forest Knowledge in the Alpine Space**

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The precious natural heritage of forests and forestry in the alpine region is becoming increasingly imperiled. A trans-national cooperation of exchanging professional knowledge and know-how is necessary to keep the natural heritage attractive, to maintain its management as economically profitable, and to guarantee its protection. A broad participation of all stakeholders is required in order to supply strictly user-oriented information. In this context, the development of a multilingual, internet-based information platform enables central cohesion and a supply of existing knowledge and know-how. [www.forestknowledge.net](http://www.forestknowledge.net) went online as the first trans-national website in Europe which aims to supply practical knowledge on forests in a user-oriented way. Based on the initiative of four research institutes in southern Germany, Switzerland and Austria, this offer of information is being developed in a close relationship of research and practice. [www.forestknowledge.net](http://www.forestknowledge.net) works as a central hub for practitioners who are looking for specialized knowledge or advice, or who want to get in contact with experts. The website is easy to access and use and is issue-oriented. The user is directly guided to topics such as forest management, forest protection, silviculture, nature and landscape protection, and natural risk management. The website also serves as a communication platform which enables an exchange of experience between practitioners and researchers. Research results, handbooks, guidelines, and other documents that previously had only been available regionally or nationally, are now placed at the disposal of practitioners. Rating, evaluating and commenting of documents is not only possible but often be used. [www.forestknowledge.net](http://www.forestknowledge.net) was launched in its German version in February 2005. The Italian, French, Slovene and English versions started in the same year and have been enlarged. WWW.FORESTKNOWLEDGE.NET ([www.inforesta.net](http://www.inforesta.net), [www.infoforet.net](http://www.infoforet.net)) was originally developed in its German version, so called WWW.WALDWISSEN.NET. In this article the English name is used in order to understand the development and structure of the Internet portal more easily.

# Forest Certification: Case Study of a Combined Research and Outreach Effort in the Southeastern United States

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Forest certification continues to generate promise, discussion, and debate. The major certification systems focus on large ownerships, whether industry, government, or non-governmental organizations. In the U.S., these systems include the Sustainable Forestry Initiative, Forest Stewardship Council, and International Organization for Standardization. To be successful, certification systems must be acceptable to private, non-industrial forest (PNIF) landowners in the southern U.S., as these landowners hold 71% of the forestland. Certification systems designed for PNIF landowners include the Tree Farm and the Green Tag programs. We present the results of a combined research and extension effort on forest certification. The research component focused on two mail surveys. The first surveyed 1,000 randomly selected PNIF landowners each in Louisiana and Mississippi. The second surveyed the top 500 home center retailers in the U.S. The extension component consisted of forest certification workshops conducted in Mississippi and Louisiana. Seventy-seven percent of landowners surveyed would not pay to become certified, and an additional 13 percent would spend \$0.50 to \$1 per acre. Most landowners felt that certification would improve the forestry profession. Private landowner organizations and approved professional foresters are the most trusted parties by PNIF landowners to administer forest certification. NGOs were the least trusted. Of the 123 home center retailers responding to the survey, 33% sell certified wood products. Of the 67% respondents who do not sell certified products, 19% plan to do so in the future. For those selling certified products, FSC and SFI are the certification programs accepted and preferred by most retailers. Of those selling certified wood products, 69% feel that the sale of certified in the next 5 years will increase either somewhat or drastically.

Evaluations from the forest certification workshops are reviewed, with an emphasis on landowner perceptions of certification, and the certification system deemed most preferable to landowners.

## **Development of an Organizational System of Support for the Private Forest Sector in Serbia**

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Serbia's private forests, a renewable natural resource, are very important to the economy as well as their contributions to the public functions of forests. In addition to that, these forests are very valuable resources of biodiversity, eco-tourism and secondary forest products, and in the long-term they are potentially valuable sources of products for the domestic wood industry. One of the most important priorities of forestry in Serbia is the need to reorganise the private forest sector, with the aim of accomplishing, through participation and co-operation, the concept of modern forestry with the sustainable management of private forests. The need to change the existing system of support to the private forest sector is evident, because of its inefficiency and the significant changes both in the public administration, and in the environment. This paper is primarily directed to the research of the organisation of private forest sector, institutional frameworks and professional capacities, frameworks of forest policy, as well as financial instruments and the means of implementation of the major objectives. Using system analysis, the organisational issues and their causes have been identified, and the basic shortcomings of the organisation of the current system and the derived problems have been defined in relation to the current legislation and stakeholders.

## **Successful Strategies in Forestry Extension: A World View**

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Extension education is becoming increasingly important in our changing world, through the provision of opportunities that empower local people to take a stronger role in managing their natural resources for economic development and environmental protection. Throughout the world there are many different models for organizing extension programs, many of them are tailored to meet local needs and are highly effective. In October of 2003 the IUFRO Extension Working Party hosted a conference in Troutdale, Oregon, with a focus on successful extension strategies from throughout the world. At this conference 35 papers were delivered, and a collection of 119 "best practices" were distilled from these papers. These were further condensed into three groupings as follows: practices associated with learners (16), practices associated with extensionists (7), and practices associated with the educational approach (22). Following this process, the 500 members of the IUFRO Extension Working Party, representing 70 countries, were surveyed to determine the degree of adoption of these practices, which we came to call "suc-

successful strategies”, as in each of the originating papers these strategies in some way led to the success of the program. Extensionists were asked to indicate the use and appropriateness of each strategy to their programs. In this paper the results will be summarized and discussed on a world basis, using the 110 responses received. Some of the strategies were widely adopted throughout the world. For example, for the strategy *deliver practical up-to-date information*, 97 percent they use often or sometimes (85 percent often and 12 percent sometimes); however for the strategy *hire learners to work on projects to build trust and spend funds locally*, only 32 percent indicated they use the strategy often or sometimes (12 percent often and 20 percent sometimes). Additionally, barriers to adoption were provided via open-ended questions in the survey. Common barriers included lack of funding, time, and human resources.

## **Transferring Knowledge into Best Practices**

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What constitutes “best practices” in knowledge transfer programs? This paper acknowledges the contributions of practitioners to the body of knowledge transfer theoretical concepts; and synthesizes their ideas into three fundamental attributes: learner-centric, credible research-based information, and rigorous evaluation. Essential steps in developing learner-centric education programming are conducting ongoing needs identification, creating positive learner environments, incorporating various teaching modalities to accommodate different learning styles, adapting to the independent self-directing nature of adult learners, adopting a “less is more” philosophy, and documenting personal and group achievements. Credible research-based programs are not prescriptive. Rather, they offer audiences a continuum of alternatives with their consequences, and the diagnostic tools to distinguish the plus/minus values of the choices, and to make wise decisions. Rigorous evaluation helps to make programs more effective, refine activities and delivery methods to achieve better results, to assess the extent of usage by the audience, and to answer the question: Is my program making a difference? Adding a fair-open-honest teaching philosophy changes a typical knowledge transfer situation into a transformative knowledge exchange.

## **Surveying Expectations and Evaluations of Stakeholders in the Forest Sector of the Alpine Space**

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Within the project “KnowForAlp - Knowledge Network Forestry in the Alpine Space” 19 partner institutions from 7 countries form a network unique in terms of size, diversity and transnational orientation. KnowForAlp aims to facilitate and improve the knowledge transfer between research, practice and politics in order to enhance the dialogue among the interest groups. To reach this goal it is crucial to

know the needs of the stakeholders and their information behaviour. A survey was carried out covering the entire alpine region. Its main target groups were decision makers on the operational and the strategic level, including public forest services, environmental departments, the private forestry sector, research institutes, and NGOs. These actors were addressed by a questionnaire distributed both electronically and as a hard copy.

The central issues of this questionnaire were the user demands regarding their topics of interest and their use and evaluation of different communication channels such as personal contacts, professional journals, internet or newspapers and if there are obstacles in getting or exchanging information on forestry related topics. Additionally, the participants in the survey had the opportunity to express their willingness to provide information about their own knowledge and experiences. Almost 1200 filled completed questionnaires were returned. The results are a powerful expression of interest of different stakeholder groups. Concerning the user demands, the results clearly show the wide range of topics requested. Interests differ considerably, for example, between different sectors of work, job positions and forest ownership. Regarding the use and evaluation of communication channels clear favourites appear with only small differences between the different groups. The overall results reveal that there is great potential for more participative approaches to knowledge production, knowledge transfer and active involvement of the stakeholders.

## **Hurricane Katrina: Impacts on Forestland, Extension Responses, and Lessons Learned from One of America's Worst Natural Disasters**

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Hurricane Katrina roared through Mississippi on August 29, 2005, quickly becoming one of the worst natural disasters in U.S. history. In her path, some 1.2 million acres of forestland were damaged in Mississippi alone, destroying an estimated \$888 million in timber, or about two years worth of annual harvest, in one day. Hardwood bottomlands, pine sawtimber, and recently thinned pine stands were most severely damaged. Eighty percent of the state's population was without power, and restoration efforts in the most heavily affected areas will take years.

Extension Forestry personnel responded quickly to this event. Within three weeks, the first of 36 workshops was conducted focusing on timber salvage and forest taxation. These workshops were attended by 2,225 landowners owning 217,396 acres of forestland, and participants estimated the economic benefit at \$6.6 million. In the summer of 2006 Extension Forestry shifted focus to restoration after the salvage, and 6 workshops were conducted in some of the most impacted counties. Extension Forestry personnel also examined mixed species forest stands to assess hurricane impact differences among loblolly, slash, and longleaf pines. Loblolly was least tolerant of hurricane-force winds, and longleaf was most tolerant.

The urban forestry response focused primarily on removing hazardous trees. However, problems arose in coastal counties affected by the storm surge where thousands of trees apparently survived the initial flooding, but began dying months later. Federal regulations prohibited reimbursement of contractors for the removal of standing dead trees unless they were leaning more than 30 degrees. Extension's role in conducting an urban tree inventory, and ultimately enabling standing dead trees to be removed, is reviewed.

Lessons learned by private landowners and Extension Forestry personnel are reviewed. These include issues related to timber taxation, diversification, an increased focus on risk, and protection and restoration of our urban forest.



## **Interdisciplinary Approach in Extension for Efficient Use of Fuel-wood**

*Jurij Begus*

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Forests in Slovenia represent a very rich renewable energy potential and are of great interest to many stakeholders from different sectors, including forestry, energy, and rural development. However, in spite of its importance in the context of sustainable biomass production, forestry has so far played a marginal role in the renewable energy sector, dealing mainly with the efficient use of wood for energy.

A change has occurred in the past few years and the cooperation among forestry and other stakeholders has improved by working on various projects to address the greater needs for wood fuel. One of the most important results of such cooperation is extension programs for efficient use of fuel-wood. Targeted to different groups (forest owners, potential investors, and decision-makers, for example), this work was carried out by all of the significant and important actors in the renewable energy sector. Different extension approaches were used, including demonstrations, thematic itineraries, lectures, presentations and published training and extension materials. The interdisciplinary approach is accomplished by using an “energy advisers network” with the main goal to connect different services and projects, and to ensure knowledge transfer from different sectors. This approach is therefore a strong guarantee that the information provided is complete and accurate.



## Protection of Forests in Europe

Wednesday 15.8.2007, 18.30–20.00, Kalotti

Moderator: Mauro Agnoletti

### **The guidelines on preserving and enhancing the cultural dimension of sustainable forest management in Europe (MCPFE)**

*Mauro Agnoletti*

University of Florence, Department of Environmental Forestry Science and Technology

The definition of forest management objectives and forest management practices that meet diverse criteria for sustainability requires collaboration among relevant stakeholders. The need for decision-makers and forest managers to consider all relevant knowledge about forest ecosystems and the impacts of forest management options in the development of forest policies and operational practices is being increasingly recognized. While there is a significant, and growing, body of knowledge and scientific literature in the biophysical sciences and economics that is relevant to the development and application of ecological and economic criteria and indicators of sustainable forest management (SFM), relatively little attention has been paid by the forest science community to the cultural dimensions of SFM.

Although, timber production is regulated and the ecological functions and natural values protected by a number of EU directives, cultural values are not preserved by specific European initiatives at management level nor included in certification standards. Certification was introduced as a market-based effort to foster sustainable management of forests, including aspects such as human rights of indigenous populations, poverty alleviation, and respect for conservation legislation. The initial interest, however, was driven mainly by concerns over the exploitation of tropical forests and reported losses of some species from these forests. It is apparent that none of the existing certification protocols have made specific efforts to articulate the importance of culture and history as a guide for land management decisions, nor even as a major component of management plans. These protocols also do not fully identify landscape histories or culturally important landscapes as central considerations for future management decisions. Failure to coherently address culture and history may very well be a growing weakness that will have to be reconciled if the public is to have any confidence in the protocols designed to recognize well-managed forests and, ultimately, sustainable management.

The role of cultural heritage was the focus of two international meetings organized in Sunne (Sweden) in 2005, and Florence (Italy) 2006. The meeting in Florence was organized by the IUFRO's Task Force on Traditional Forest Knowledge and Research Group 6.07 "Forest and Woodland History", and supported by the University of Florence, the U.S. Forest Service and the Liaison Unit of the Ministerial Conference on the Protection of Forests in Europe (MCPFE), in cooperation with the Italian Ministry of Agriculture, Food and Forest Policies, the Regional Government of Tuscany, UNESCO, and the European Society for Environmental History. The two conferences were a step towards the implementation of the Vienna declaration n.3 of the MCPFE concerning "Preserving and enhancing the cultural dimension of sustainable forest management in Europe", which aims to develop specific indicators concerning cultural values to improve the existing set of criteria for Sustainable Forest Management enhanced by the MCPFE. The conference held in Florence was attended by representatives from a variety of international organizations and forest policy bodies, including representatives from the UNFF, FAO, UNCCD, UNESCO, the Council of Europe's European Landscape Convention, and the MCPFE Liaison Unit.

One of the most important results of the conference was the establishment for international expert group to produce guidelines for the implementation of Vienna declaration 3, in order to achieve a full recognition and inclusion of cultural values in SFM by all the 40 member states. The draft document produced by the group proposes also additional pan European indicators for SFM on social and cultural aspects. The inclusion of cultural and landscape values in national forest programmes and rural development programmes is addressed by the guidelines, as well as their identification, monitoring and assessment.

# **Science-Policy-Management: Who Integrates What, When, Why and How?**

*Thursday 16.8.2007, 9.00–10.30, Auditorio*

*Moderator: Gerard Buttoud*

## **Science-Policy-Management: Who Integrates What, When, Why and How?**

*Prof. Dr. Gerard Buttoud*

ENGREF, France

Integration, like sustainability, elicits a ‘yes, I’m for it’ response from nearly everyone. But what is meant by this response? And, why is there broad agreement that integration is good? Why are our primary institutions for science, policy and management not integrated if it is good? Though lively questions and debate, this panel will critically discuss the underlying meanings and assumptions of integration. Does it matter who calls for or is doing the integration? Is integration always to be preferred? Why is integration a hot topic? What is expected from it by those calling for more of it? If integration is a goal, what are the means for achieving it? There will be no presentations by panel members, just probing questions from the moderator and a chance for panelists to respond to each other. The audience will also be asked for questions for the panel. This plenary session promises to be engaging, provocative, and raise critical questions for our continuing exploration.

### Panel Members:

- Dr. Per Angelstrom (Sweden)
- Dr. Marine Elbakidze (Ukraine)
- Dr. Irina Kouplevatskaya (France/Kyrgyzstan)
- Dr. Margaret A. Shannon (USA/Freiburg, Germany)
- Dr. Peter Mayer (IUFRO – Austria)
- Dr. Olli Saastamoinen (Finland)
- Dr. Perry Brown (USA)
- Mr. Janis Birgelis (Latvia)

# **Integrating Ecology, Society, and Economy for Sustainable Forest Management**

*Thursday 16.8.2007, 11.00–13.00, Auditorio  
Moderator: David N. Bengston*

## **Factors affecting investment in forestry in South Korea**

*Yeo-Chang Youn<sup>1</sup>, Nam Kyun Kim<sup>2</sup>, Hyun-Deok Seok<sup>3</sup> and Beom-Seok Youn<sup>4</sup>*

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The majority of forest land in South Korea is owned by the private sector, especially individuals. Seventy percent of private forest land is owned by individuals and industry. The sustainability of forestry is constrained by inactive participation in forest management by individuals. Without active participation by the private sector in forest management, the public sector has played a major role in Korean forestry recently. This paper addresses the following question: What hinders Korean private forest owners from investing in forestry business? Two surveys were conducted to find out the factors determining forest owners' investment in forestry. The first survey was carried out in 1992 and the other in 2007. The factors identified to be influencing forestry investment include age and income of forest owners and their expectation of future business conditions such as stumpage prices and wages. The most influential factor was their experience regarding revenue generated from forestry in the past.

## **The world market for carbon trade**

*Zuomin Wen*

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In the last 20 years, global climate change due to greenhouse gas emissions produced by human activities has become a significant issue in the international community. In order to reduce global warming, many governments have been active to implement the target of the Kyoto Protocol. This has caused the emergence of carbon markets. With this background, this paper introduces the creation of the international carbon market and its dynamic state in 2005-2006, as well as the future outlook for the relation between supply and demand in the carbon market. The emerging carbon market encompasses both project-based emission reduction transactions, which play a significant role, and the trading of greenhouse gas emission allowances as an important supplement. Many diverse approaches were designed as a response to control the density of greenhouse gases in the atmosphere, and keep the climate system from jeopardy because of human disturbance. Although this newly emerging market is very active, the long-term world carbon market will be a high business risk because of the indetermination of international climate policy, the complicated relationship between the natural environment and the energy market, and various speculative influences in the carbon market.

## **Place as an integrative concept for sustainable forest management**

*Daniel R. Williams*

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Integrated and sustainable forestry involves balancing a long-standing tension in Western scientific thought between universalist and particularist views of knowledge. Underlying most conceptions of integrated science is the assumption that the world can be understood as a collection of puzzle-pieces and that science just needs to focus on how to fit them together. But instead of seeking this elusive trans-disciplinary science, this paper argues that integrated forest management requires finding ways of acting in the face of inevitable pluralism and non-commensurability of knowledge and values. The rich and varied concept of place developed in the social sciences provides one route to such action by helping to focus and synthesize disparate knowledge around actual, real places rather than hypothetical/abstract social-ecological realities. The management focus of sustainable forestry should highlight the pluralism of knowledge and values (against value monism), the pluralism of epistemology (perspective) and seek a pragmatic (adaptive and discursive) approach to policy and decision-making. Specifically this paper proposes that integration of knowledge for sustainable forest management requires a *re-placing* of forest knowledge and practice in three ways: seeking a more inclusive and explicitly spatial consideration of place meanings; embracing critical pluralism in the conduct of science; and pursuing a placed and pragmatic approach to the ordering of values in natural resource decision making. That is to say sense of place is as much about the plural “perspectives” taken on the world (how we see, know and organize the world) and not just a thing or value in the world or a property or value associated with some point or polygon in a GIS information system as it is often conceived (even among those who talk about sense of place).

## **Place-based planning: A participatory, collaborative process for integrating social, economic, ecological issues**

*Linda E. Kruger*

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Issues of scale, multiple ownerships, jurisdictions, land tenure, and shifting populations with changing expectations can result in controversy and challenges for managers attempting to implement sustainable forest management. From a social perspective, landscapes encompass more than ecological, economic and aesthetic values. This paper explores the importance of conceiving of landscapes as places with which people develop relations and to which people ascribe meaning and significance beyond meanings associated with ecological, aesthetic, or economic values. Because landscapes are the product of multiple perspectives, a variety of stakeholders must be involved in determining what to sustain and how and what indicators will adequately measure success. This paper reviews innovative approaches to forest planning in the western United States.

Engaging the public in collaborative planning, stewardship activities and other participatory processes are strategies that promote shared learning and informed action. They also serve to bring people together to deliberate options and explore potential outcomes. Such collaborative processes work to link local knowledge of places with scientific knowledge, help provide better information for decision makers, and enhance understanding, and support for, decisions and actions.

Shared meanings can evolve through collaborative planning and other participatory processes that incorporate whole systems thinking. An understanding of how users define a place, how these meanings are shared with others, what norms develop, and how this affects personal behavior and expectations for the behavior of others (including management) may shed light on controversies over land management and community change. Developing this understanding has become increasingly important as residents migrate to new areas and bring with them meanings and values that may be different from those held by long-term residents.

# Recreation Research and Landscape Management Challenges in Changing Society

Thursday 16.8.2007, 11.00–13.00, Auditorio

Moderator: Tuija Sievänen

## Recreation Planning and Management in European Forests Selected results of COST Action E 33, WG 3

*Simon Bell<sup>1</sup>, Birgit Elands<sup>2</sup>, Ulrike Pröbstl<sup>3</sup> and Veronika Wirth<sup>4</sup>*

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<sup>4</sup> University of Natural Resources and Applied Life Sciences, Austria

Some of the main findings of working group 3 ‘recreation planning and management’ within the framework of the COST Action E33 “Forest Recreation and Nature Tourism” (FORREC) are presented. The aim of the presentation is to give an overview on the state of the art, traditions, differences and similarities in European forests. Furthermore the focus is on new tasks, goals and strategies as well as future trends regarding forest recreation and nature based tourism.

New directions and the need for reform – these two catch phrases dominate the political discussions around forests, forestry, and forest research in many European countries. In the past the forest functions shifted. Social functions are becoming increasingly recognised as being very important and include not only recreation but also health and well being and wider quality of life. In some countries recreational activities such as seasonal collections of berries and mushrooms have always been an integral part of rural life. Visits by urban-based people to forests for walking and picnicking also have a long tradition. Tourists visiting other countries frequently visit forests and may camp or stay in cottages or other accommodation in the forest. However, the demands for forest recreation have been increasing in volume and have become more diverse.

Due to its increased importance and complexity, as well as the potential conflicts with other functions, the social function of forests has to be dealt with much more explicitly than in the past. This increased attention and awareness is required at different levels, from policy-making, spatial planning, and designing to the management of a specific area.

Recreational aspects of forests have been studied mostly on a national level. Therefore the literature is fragmented and dispersed. This presentation therefore provides a first Europe-wide overview on research, education and management in the field of forest and recreation.

## Climate change and its consequences for nature based tourism, recreation and landscape perception in winter

*Ulrike Pröbstl*

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Recreation and tourism are important for the economy in many mountainous areas in Europe. Especially in winter the mountains offer attractive opportunities for winter sport activities. In the last 20 years, many destinations focused their tourism business mainly on the winter season. For these destinations climate change has negative effects on snow security and snow cover. To investigate the possible con-

sequences for mountainous areas, two web-based surveys – one on down-hill skiing and one on cross-country-skiing - were conducted. In each study, about 400 respondents have been involved.

It can be shown that the main motives for both groups are the physical activity and the experience of snow in winter. The cross-country skiers are more attracted by nature and show a significant reaction on crowded slopes.

With the help of a two step choice experiment it turned out that the majority of ski-enthusiasts would choose a more snow secure destination in higher altitudes in the future. However, by increasing the attractiveness of the destination with several extra offers, like spa-facilities and childcare, a significant proportion of respondents (up to 40 %, depending on circumstances) would remain in the lower destinations.

Against this background, adaptation strategies for winter sport destinations and possible consequences for the regional development will be discussed. These findings are important for forestry, because in many mountainous areas, impacts in tourism will have consequences on agriculture and forestry: small scaled farming is often in close relationship with tourism, and an enlargement of forests in mountainous areas is expected.

## **Modelling recreation and tourism for comparing landuse alternatives on Crown Land in British Columbia / Canada**

*Wolfgang Haider*

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Over the last few years, the British Columbia Ministry of Agriculture and Lands has developed a Socio-Economic and Environmental Assessment (SEEA) tool for the purpose of evaluating and comparing different land use and forest management options. While SEEA captures a number of landuses in a satisfactory manner, first applications have shown that the consideration of tourism and recreation concerns is currently occurring on too coarse a scale. This presentation will explain how the SEEA tool can be expanded to consider select nature based tourism and outdoor recreation uses. The main activities under consideration are heli-skiing and cat-skiing, snowmobiling, backcountry skiing, hiking, mountain biking, fishing and river rafting / kayaking. The process starts with considering the ideal resource conditions for any particular activity, such as staging areas, logging roads or lack thereof, intact viewsheds, etc.).

A conceptual framework documents the positive, negative and neutral relationships between various landuses and any one of these select recreation (enjoyed by individuals travelling independently) and tourism (clients of commercial outfitters/guides) activities. Spatial overlays identify potential areas of conflict between various landuses and activities, as well as between the respective activities. The model also considers social carrying capacity issues within one activity as well as the conflicts between private and commercial users. While all this information is collected and assessed on a rather fine spatial scale, it is then aggregated to the management unit level in order to compare the recreation / tourism value other landuses. Currently the conceptual framework I under development, but the goal is to operationalize the model on a net present value basis.



## **National park tourists and their integration to the surrounding rural community**

*Tuija Sievänen, Marjo Neuvonen, Eija Pouta and Asta Sarkki*

National parks are often national icons and destinations for nature tourists. Park tourism is seen as a substantial cultural, social and economic phenomenon, which is going to be even more important with decreasing space and expanding human populations. Structural changes, such as decreasing primary production, in the economic base of rural communities, have forced communities to seek alternatives in order to maintain their economic viability. Park tourism is identified as an opportunity to strengthen the rural economy in regions that can provide natural amenity values and recreation services. The case study from two national parks, Seitsemien National Park and Linnansaari National Park, analyses how park visitors relate to the surrounding rural communities. The purpose of the study was to examine the association between attitudes toward rural areas, place attachment, the use of and satisfaction with the services in rural communities and the intention for future visits. Data was gathered by a mail questionnaire for park visitors. The study identifies different types of visitors in terms of their attachment to the region, satisfaction to services and their interest to become a frequent visitor. The preliminary results show that about 10% of the visitors feel attached to the surrounding country-side of a national park. The attachment is positively correlated with the attitude towards the rural area around the park. Both the measure of attachment and the positive rural attitude were positively associated with the satisfaction related to the services provided by the area. The majority, 65–70 % of visitors plan to visit the region in next five years. In the model for future visitation the positive rural attitude and the place attachment increased the visitation willingness significantly. The service satisfaction had also a positive but smaller effect.

## **Analysing practices related to forest road landscapes**

*Antti Rehunen*

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The construction of forest roads has been a significant phenomenon in the Finnish forest environment and from the standpoint of the people who move in the forests. Today most forest areas are located within only a short distance from the nearest road. Forest roads have been built mainly for forestry, but people use them for various purposes, most often in connection with recreation activities. In the doctoral dissertation that I am preparing, my purpose is to examine forest road landscapes and people's engagements with them on a local level. The theoretical background of the study is based on landscape research and cultural geography. Questions of materiality, practices, nature-culture hybrids, embodiment and discourses are particularly highlighted.

I argue that integrative planning of forest roads and forest areas requires a good understanding of various practices related to them. It is important to link together physical environments, human and nonhuman actors, people's activities, experiences and aims as well as social relations, public discussion, institutional contexts and power and justice issues. Practices that connect people with forest roads are diverse. Activities, such as forestry work, berry-picking, hunting, fishing, walking, hiking, travelling to a summer cottage or just passing through an area, often involve different environments and different ways of moving, acting and experiencing. Practices are attached to specific places, they function at different spatial and temporal scales and they are also initiated and sustained in various ways.

My case study is set in the municipality of Nurmes in North Karelia, Finland. I examine changing landscapes and expanding road network with the help of fieldwork, maps and geographic datasets. I use thematic interviews and people's writings to study different uses of forest roads, related activities and landscape experiences. Through newspaper writings and planning documents I focus on public debate and planning processes.

## **Anticipation of changes in rural operating environments: Readings of Finnish rural programmes and tourism strategies**

*Seija Tuulentie<sup>1</sup> and Maria Hakkarainen<sup>2</sup>*

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Rural communities in sparsely populated areas are facing different kinds of changes from the coming of new industries and new modes of work to such big environmental issues as climate change. Anticipation and adaptation as well as active participation are important for local communities. Strategic development work is done in the planning system in many geographical levels. This presentation examines how the changes in operating environments, in land-use patterns and in nature-based industries of local rural communities are taken into account in the “development speech” of rural programmes and tourism strategies. Tourism here represents new kind of industry that is becoming more and more important for the survival of deep countryside and that also carries new attitudes and expectations for land use.

Empirically the presentation is based on the readings of recent national level rural programmes and tourism strategies of Finland and the corresponding regional level documents of one of the most important Finnish tourist region, Lapland. Programmes and strategies that are dealt with are firstly, two national rural policy programmes and national tourism strategy and secondly, rural policy programme and tourism strategy for the province of Lapland. The aim of the reading is to examine how the “development speech” expresses and takes into account possible drastic or slower changes of operating environments in rural communities. Also, it is discussed how the programme and strategy texts enhance active citizenship of local inhabitants of rural communities and use local knowledge in their visions. Readings of the texts are carried out by using the qualitative method of rhetoric analysis.

## **Gender and Forestry - Time for Action**

*Thursday 16.8.2007, 11.00–13.00, Kalotti*

*Moderator: Ann Merete Furuberg*

### **The Forestry and Gender Situation in Africa – Is There a Need for Time for Action?**

*Elizabeth Ardayfio-Schandorf*

University of Ghana, Legon, Ghana, ardayfel@ug.edu.gh

Africa is endowed as one of the largest tropical forests worldwide with the potential of meeting the socio-cultural and economic needs of its people. Yet these forests are being continuously threatened by human pressure, whilst the majority of its people live in abject poverty. With the advent of the global philosophy of sustainable development, the challenge seems to be mounting. The challenge is how to design a sound forest management system, which in itself is sustainable enough to preserve and sustain natural resources for future use. At the same time, the need for improving the lives of the African population and alleviating poverty have become a driving force among policy makers, researchers and development agents at all levels. One of the key challenges in the forestry development sector is the issue of gender mainstreaming.

Forestry in Africa, as in many nation states, has a male face. Since colonial inception in Africa, the formal forestry sector has been male dominated, whilst forestry policy itself is more technical than human oriented. African women are acknowledged as critical actors in forestry and natural resources utilization and management, yet there is no systematic knowledge and comprehensive database on forestry research data disaggregated by sex. Past and current forestry policies in Africa have been developed on gender neutral basis without taking into consideration gender interests relating to participation, decision making and benefit sharing of forest resource and its management. For sustainable management of forest resources and biodiversity, some of the critical resources needed are ownership and control of the means of production, which have been the bane of women. To engender the forestry sector and empower women, the paper attempts to create the need for action by examining the changing situation of women in forestry, through gender analysis of forestry structures in the formal and informal forestry sectors, forest ownership and rights in forestry communities and related issues.

### **Does masculine forestry culture prevent us hearing women's voices?**

*Tiina Suopajarvi*

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Forestry in Finland has always been described as a men's world; the masculinity and manliness are the words defining the whole branch. Nevertheless, women have been able to educate themselves first as foresters in the university from 1918 on and then as forestry engineers and technicians from 1965 on. In my dissertation I'm studying the gendered experiences of both female and male forestry engineers after the legislation change of forestry schools in 1965. The change was gender-specific since it meant that the military service was no longer on the list of requirements to get into a forestry school. The effects of forestry's opening up for women are of my interests, which I'm considering in the research material consisting of forestry engineers' interviews collected in an oral history project 1999–2001. The interviews

are biographical concentrating on how individuals have experienced the changes in forestry. I'm viewing the questions from the theoretical perspective of sex/gender-system; a theory of a gender as a social concept, which is constantly constructed and renewed in social interactions. The basics of the theory are gender dichotomisation, like segregation in working life, and hierarchisation, where man is a norm, and woman is an exception of this norm. Prevailing sex/gender-system in forestry reinforces the masculine constructions of the forestry culture, so that women either have to adapt to it or try to resist it and negotiate new gender-agreements. These are one of the main questions of my presentation: are the masculine constructions of the forestry so strong and static that women's knowledge and voices stay unheard and unseen? Have the sex/gender-system changed during the last 30 years and is it still changing?

## Poster Session

Thursday 16.8.2007, 14.00–15.00, Eurooppa

### **Developing integrated information services for bio- and environmental sciences: experiences at Oxford**

*Roger A. Mills*

Bio- and Environmental Sciences Librarian and Oxford Forest Information Service Manager, Oxford University Library Services, Oxford, UK, roger.mills@ouls.ox.ac.uk

Over the past decade, Oxford University has begun the process of integrating dozens of separately-managed libraries and information units into a single structure. This involves extensive changes to existing buildings, collections and staff structures, while maintaining a full service to university students and researchers and to external users, who form some 60% of the demand. Within this integrated structure, specialist information services are being developed to continue long-established services in forestry, taxonomy and ornithology, under the title of Information Services in Bio- and Environmental Sciences. Existing and new links with other organisations are being developed to provide a national and international focus for the services, avoid unnecessary duplication and ensure easy web-based access to Oxford's collections.

This poster illustrates the stages in building the new services, including the historical context, current projects, external links and challenges for the future, highlighting:

*Building projects:* New 8-million volume book depository; re-purposed central science library for reference and lending; new special collections library; greatly extended electronic journal collections.

*Collaborative partnerships with:* CABI, Intute, GFIS, British Ornithological Union.

Activities in the information profession: European Botanical and Horticultural Libraries, IUFRO, IAALD, Aslib, ALLCU.

*Conference participation:* IUFRO, World Forestry Congress, International Botanical Congress, European Association of Environmental Historians, Special Libraries Association, IAALD-USAIN

*Consultancy and training:* British Council, UK Department for International Development, World Bank.

### **Listening to Neglected Voices: Hmong and Public Lands in Minnesota and Wisconsin, USA**

*David N. Bengston<sup>1</sup>, Michele Schermann<sup>2</sup>, MaiKia Moua<sup>2</sup> and Tou Thai Lee<sup>2</sup>*

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<sup>2</sup> University of Minnesota, St. Paul, MN, USA

Natural resource managers need to understand the cultures and concerns of ethnic communities in order to serve them effectively. The Hmong are an Asian ethnic group that is heavily involved in natural resource-related activities but has been largely overlooked by social scientists. We conducted a series of five focus groups with Hmong Americans in Minnesota and Wisconsin, USA, exploring their experiences and perspectives on public lands, including: activities, positive and negative experiences, needs and concerns, special needs of new refugees, and suggestions for improvement. Our participants revealed deep cultural and personal connections with the natural world and the importance of public

lands to many Hmong. But we also heard about profound problems and concerns. Perceptions of racism, discrimination, and harassment from public land managers and other agency personnel, recreationists, and private landowners are common. Participants had many suggestions for improvement and insights regarding the special needs of new refugees who arrived in the United States in recent years.

## **Managing natural resources, managing ourselves: A values approach to natural resource decision-making**

*Viviane Simon-Brown*

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In a 1995 national telephone survey in the USA by the Merck Family Fund, 67 % of the respondents acknowledged that “Americans cause many of the world’s environmental problems because we consume more resources and produce more waste than anyone else in the world.” And 88 % of Americans agreed “protecting the environment will require most of us to make major changes in the way we live. But the same survey showed that Americans really don’t know what the specific ecological implications of their lifestyles are, and don’t know precisely what to change.

At Oregon State University and other land-grant institutions, we focus our educational efforts on teaching students to professionally manage natural resources. However, as population, economic and consumption pressures increase, helping consumers take a thoughtful approach to understanding their cultural, economic and environmental ethics and addressing their responsibilities as consumers of natural resources, become viable educational tools.

Managing ourselves means making intelligent consumer decisions about natural resources. This requires understanding the personal values, ethics and beliefs that underlie decision-making. Other integral components are considering the barriers to living sustainably, examining national trends, and determining personal priorities.

Since 1998, we have been offering intelligent consumption decision-making workshops for typical American adults and older youth. Over 7,500 people have participated in workshops, and over a half million browsers have visited the website <http://www.cof.orst.edu/cof/extended/sustain/>. In 2004, we expanded this programming by creating a national network of 45 Extension professionals at 24 land-grant universities.

## **Differing strategies of forest management**

*Mervi Kasanen*

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The study focuses on decision making concerning different forest management strategies, especially even-aged management and traditional selective logging methods – continuous cover forestry. According to my interviews in Northern Ostrobothnia, Finland, similar goals, e.g. economic efficiency and biodiversity, were found from different forest management strategies, but the premises were different and the reasoning lead to different management outcome. The proponents of different management strategies were not conscious of each others premises. Thus, there are knowledge differences especially between experts and non-professionals in forestry, which leads to a poor communication between expert and local levels. In addition, the power differences sustain mutual distrust, and conflicts and debates tend to go on unresolved. The missing agent seems to be the interpreter between knowledge systems.



The study aims at improving the flexibility and applicability of expert management systems and increasing the forest owners' commitment to the efforts of forestry management. By analysing the knowledge differences, and the way these differences affect the rules of forest management, the study will support collaborative planning and socioculturally sustainable forest management. Effective resource management becomes possible by making the reasoning transparent. This will be done by participating on-site silvicultural practices, which will help to understand the context bound, real world decision making. The theoretical background utilises the approach of political ecology, which means considering the local adaptation as an interplay between sub- and supra-local influences. The methodology consists of further interviews and participatory action research (PAR). Interviewees will represent different forest management strategies and different private and community forest owner groups according to age, gender and professional status from Northern Ostrobothnia. In addition, other relevant land uses, e.g. tourism or reindeer herding will be studied. Finally, local reasoning will be compared to the reasoning of foresters (official forestry paradigms) in an effort to enhance mutual understanding.

## **The Future of Outdoor Recreation Research and Education in the United States: Preliminary Outcomes of a National Strategic Planning Process**

*Steve Selin<sup>1</sup>, Fen Hunt<sup>2</sup> and Perry Brown<sup>3</sup>*

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<sup>3</sup> Professor and Dean, University of Montana, College of Forestry and Conservation, Missoula, MT, USA, [perry.brown@umontana.edu](mailto:perry.brown@umontana.edu)

The purpose of this presentation is to describe and report on preliminary outcomes of a national strategic planning process currently underway in the United States to chart a course for outdoor recreation and tourism research and education for the 21st Century.

This strategic planning process is supported by the following assumptions:

Rapid ecological and social changes challenge resource managers to provide sustainable outdoor recreation services to the American public.

Managers need science-based knowledge to address a variety of outdoor recreation management challenges.

We must work together to craft a bold vision for outdoor recreation research and education that addresses significant societal needs (health and wellness; economic competitiveness; community revitalization, ecological impact and change).

We must strengthen the sources of funding needed to support these investments for enhancing scientific and educational capacity.

Initiated by the USDA Cooperative State Research, Education, and Extension Service, this national strategic planning process is following a participatory path to engage a broad spectrum of professional outdoor recreation and tourism stakeholders in crafting a five year strategic plan. In February 2007, a national steering committee of 27 diverse individuals was convened to coordinate this planning process. This steering committee will meet for a two day workshop in May 2007 to develop a framework for an emerging strategic plan. In addition, two professional societies will be engaged with scheduled roundtables at the April 2007 Northeastern Recreation Research Conference and the June 2007 International Social Science and Resource Management Symposium to gather input from diverse stakeholders.

This presentation will report on preliminary outcomes of this national strategic planning process for outdoor recreation research and education as well as look for opportunities to integrate this national-level planning in United States with other global efforts to strategically plan for the future of outdoor recreation research and education.

## **www.ricercaforestale.it the Italian web portal of the forest sector**

*Claudio Fior<sup>1</sup>, Giuseppe Notarangelo<sup>2</sup> and Massimo Bianchi<sup>3</sup>*

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The Italian portal on research and practice in forestry, was built to establish a permanent scientific network for the entire Italian scientific and non-scientific community. The portal is part of a project which:

- cover all scientific and technical topics of the sector;
- promote and increase communication between researchers, technical personnel, stakeholders and amateurs;
- re-organise acquired knowledge within each discipline and make it exploitable through easily accessible and continuously upgraded databases;
- provide experts a new working tool;
- bridging the gap between science and public.

In the web portal [www.ricercaforestale.it](http://www.ricercaforestale.it) provide a directory of experts and practitioners, the who's who and whereabouts on a given topic and an interdisciplinary library with 'grey literature' documents. Moreover a research projects database, a commented collection of rules, the state-of-the-art and the update on the progress in each discipline were implemented.

Also a system to facilitate knowledge transfer and data exchange in the forest management sector and towards the public opinion was developed. The system, which has a user-friendly interface, produces web pages containing cartography, alphanumerical data and some queries on the forest management data of the Trentino Region (North-eastern Italy).

We used free software so as to produce a cheap and flexible tool that could be easily used by any forest administration. Data are encoded in XML files so they could be available in output formats such as web page, text document and electronic spreadsheet. The XML standard also provide high compliance with different systems and machines.

In the future this could be the first step for a possible standard for data exchange in Italian Forestry and it may useful at European scale too.

## IUFRO's Special Project on World Forests, Society and Environment

*Heidi Vanhanen<sup>1</sup> and Gerardo Mery<sup>2</sup>*

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WFSE is an open network collating, critically analyzing and disseminating the existing scientific research knowledge related to crucial issues on the interrelations between forests, society and environment. The mission of the global WFSE network is to amend the existing gap between policy-makers and scientists in the formulation and application of policies in forest-related issues, in support of well-being of people and making development more sustainable.

The guiding principles in our open, active network:

To boost the innovative and critical approach

To incorporate the multidisciplinary and cross-sectoral approach

To maintain the global view, with regional analysis

To emphasize the view to the future

To guarantee quality scientific research

To act in a non-governmental, objective way on all forums.

The backbone of the network consists of 10 internationally reputed research institutes, both in the North and the South, with the Finnish Forest Research Institute (Metla) of Finland acting as the Coordinator.

## GIS database on outdoor recreation opportunities in Finland

*Petri J. Shemeikka<sup>1</sup> and Leena Kopperoinen<sup>2</sup>*

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The Finnish Environment Institute (SYKE) will publish a nationwide GIS database on outdoor recreation opportunities in Finland in 2007. The database has been compiled in cooperation with Metsähallitus and the University of Jyväskylä during the last three years. Metsähallitus has produced data on recreation opportunities on state land while information on municipal recreation opportunities has been gathered through the data system on sports venues at the University of Jyväskylä.

The outdoor recreation opportunities database consists of three datasets: areas (polygons), trails (linear data), and recreation services (point data). Each of these datasets have several categories according to type of use and other characteristics. The scope of the data content is not yet all extensive but it will improve continuously. The new data policy of environmental administration will open up all databases to all users through Internet for free. Therefore, also this database can be exploited widely in planning, research, and commercial services.

When trying to assess recreation opportunities in Finland, one must take into consideration the concept of everyman's rights. In addition to recreation areas run by the state or the municipalities, outdoor activities can be practiced on private land with no official recreational status. This can be estimated using indirect indicators such as physical environment or activities. It is also possible to evaluate an area's suitability and pressure to various activities using GIS and even at first seemingly unrelated GIS-data (soil, vegetation, land use, trails, cadastre, population etc).

SYKE has in its use a large selection of GIS databases and register data to analyze with the outdoor recreation opportunities database. Our poster presents an example in Jyväskylä area in central Finland on how to use GIS-methods with these data to assess an area's recreational value and its potential use.

# **Nursing a Tree of Morality? The Scope and Role of Forest Ethics in Integrative and Multidimensional Forest Management**

*Friday 17.8.2007, 8.30–10.30, Auditorio*

*Moderator: Olli Saastamoinen*

## **Making the most of forest ethics: Concepts and cases**

*Christian Gamborg<sup>1</sup> and Peter Sandøe<sup>2</sup>*

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Over the last twenty-five years especially, forest management in Europe and North America has been rethinking its foundation. At the same time, environmental philosophy has also been engaged in a process of expanding and revising its basis. The principal focus for both environmental philosophy and forestry is value of forest. This can be understood in more than one way – for example, as what different stakeholders consider important regarding forests; as the various functions a forest may fulfil; or an understanding of what is worth protecting or promoting in relation to forests.

The aim of this paper is to point to ways in which ethical reflections relating to value issues can be timely and productive in relation to forest management. By way of experience, we suggest looking at forest ethics as an integrated and interdisciplinary part of forest management. It is widely believed that ethical issues arise after scientific research/management has been conducted. In fact, they need to be addressed prior to, or in conjunction with, such research/management.

'Ethics', as the term is here understood, has as its main function to reflect and clarify. Reflection may for example concern the complex trade-offs between conservation and the consumption of renewable resources. The output may be a better understanding of various ways of looking at such trade-offs and thereby making room for dialogue about the goal of forest management. In general, ethical reflection may help to formulate and discuss the relative importance of potentially conflicting concerns and values.

In the paper we develop this idea by means of two examples representing current trends in forest management: a technological and an ecological or 'back to nature' trend. One example concerns gene technology which has been met with initial distrust in many parts of the world. Another example is about "close-to-nature" silviculture and the issue of striking a balance between natural regeneration and hunting.

## **The Northern Lapland forest conflict: Ethical aspects of local livelihoods, culture, legality, sustainability and global markets**

*David Gritten<sup>1</sup>, Ville Hallikainen<sup>2</sup>, Timo Helle<sup>2</sup>, Mikko Hyppönen<sup>2</sup>, Olli Saastamoinen<sup>3</sup>, Seppo Sajama<sup>4</sup> and Jarno Valkonen<sup>5</sup>*

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Reindeer husbandry and forestry production have a long history of co-existence and conflicts in Finnish Lapland, where unlike many other parts of the northern hemisphere most reindeer are managed in the forest zone that is also traditionally used for commercial forestry. In spite of decades of mutual cooperation and modification of forestry practices, during the past 10 – 15 years conflicts have arisen that have concentrated around the state forests of Northern Lapland, where they cover nearly 90% of forests in the region. The reasons for this development are manifold. An increasing share of state forests used for nature conservation and restrictions caused by wilderness and recreational demands have significantly reduced the allowable cut from the northernmost state forests, weakening the economy of state forestry and wood supply for local saw-milling and regional pulp and paper industries. While the reduced cut has eased the situation for reindeer husbandry in general, there still remain local cutting pressures on some reindeer management units. In particular some native Sami reindeer herders have strongly opposed the old-growth cut in their own areas and brought the legality of logging into consideration of United Nations Human Rights Commission. They claim that logging activities endanger the continuity of reindeer management, traditionally forming the economic base of the Sami minority culture. Furthermore, the general decrease in profitability of reindeer management has worsened the conflict, which also is characterized by the low productivity of range land due to overgrazing and forestry impacts, both debated by the parties and have been difficult to be objectively and unanimously quantify by still intensively ongoing research activities.

The conflict has taken international dimensions also as a result of the activities of national and international environmental groups gaining extensive coverage in the media. This has caused concerns among forest industries operating in international markets. A recent major research project on the sustainable use of the forests of Northern Lapland by the Finnish Forest Research Institute attempts to gain a holistic knowledge about the possibilities to reach a compromise on the conflicting demands, including, besides forestry and reindeer husbandry, tourism, nature conservation, wood-based industries and their local spin-offs, for maximising the welfare of the people of Northern Lapland. This paper attempts to identify and structure – but not to solve – some of the ethical and moral standpoints and issues of major stakeholders and argumentation involved – including the roles of the scientific community.

## **Forest ethics as a scientific and practical challenge**

*Olli Saastamoinen<sup>1</sup> and Seppo Sajama<sup>2</sup>*

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Sustainability is a traditional moral principle in forestry, but integrating the all dimensions of sustainable forest management – economic, ecological, social and cultural – has brought complicated tasks for forest professions and sciences. The related moral problems as such are not entirely new, but considered both in the past and at present day in various ways by different forest sciences and professional traditions. The practice of forest ethics has thus existed well before its emergence as a specific subject into professional discourse and forest sciences.

The purpose of the paper is to discuss the scope, contents and specific topics of forest ethics in regard to forests sciences, general applied ethics and environmental ethics. Also consideration will be given to the role of forest ethics in regard to the topical issues in world forestry and its potential to contribute – together with other forest sciences- to the problems foresters, other professionals, forest owners and forest industries meet in their businesses and professional practices.



## **Integrative Use of Policies and Planning Methods**

*Friday 17.8.2007, 8.30–10.30, continues 11.00–12.00, Eurooppa*

*Moderator: Wolfgang Haider*

### **Examining Differences among Off-Highway Vehicle Riders: An Application of GIS in Visitor Experience Planning**

*Rachel Albritton<sup>1</sup> and Taylor Stein<sup>2</sup>*

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Throughout the world many natural resource managers lack basic knowledge about what factors contribute to quality visitor experiences for motorized recreation, what may threaten a quality visitor experience, and whether or not all riders should be managed in similar ways. To help address this problem, this project uses the benefits-based management framework and Jacob and Schreyer's theory of goal interference to examine perceived differences among OHV rider population segments as it relates to motorized user conflict as well as what resource preferences are desired by riders. According to Jacob and Schreyer, in cases where tolerance between groups is extremely low, an unwillingness to share resources may become a source of contention. Therefore, if tolerance is low among motorized recreation user groups, but these groups are managed along the same spectrum of resource and social settings, then the potential for a degraded visitor experience greatly increases and the conservation of resources might be hampered. In order to help spatially reference where preferred resource settings exist within the study area, a modified version of Kliskey's (2002) recreation terrain suitability index was formulated and mapped within GIS software. In addition, information regarding tolerance between riding groups was inferred into a spatial suitability model in order to pin point areas where conflict would most likely occur, as well as sensitive ecological areas that needed to be managed for conservation. Results of the study indicate that not all riders perceive themselves the same, and some riders showed low tolerance towards different rider segments. The use of GIS in identifying areas where conflict was most likely to occur in conjunction with what areas needed to be managed for conservation proved to be a useful tool in developing management strategies that meet both of the Travel Management plan's objectives.

### **Managing Natural Resources, Managing Ourselves: A values approach to natural resource decision-making**

*Viviane Simon-Brown*

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*"The long and short of the matter is that forest conservation depends in part on intelligent consumption, as well as intelligent production of lumber."*

*~ Aldo Leopold, 1928, "The Home Builder Conserves"*

In a 1995 national telephone survey by the Merck Family Fund, 67 % of the respondents acknowledged that "Americans cause many of the world's environmental problems because we consume more resources and produce more waste than anyone else in the world." And 88% of Americans agreed "protecting

the environment will require most of us to make major changes in the way we live. But the same survey showed that Americans really don't know what the specific ecological implications of their lifestyles are, and don't know precisely what to change.

At Oregon State University and other land-grant institutions, we focus our educational efforts on teaching students to professionally manage natural resources. However, as population, economic and consumption pressures increase, helping consumers take a thoughtful approach to understanding their cultural, economic and environmental ethics and addressing their responsibilities as consumers of natural resources, become viable educational tools.

Managing ourselves means making intelligent consumer decisions about natural resources. This requires understanding the personal values, ethics and beliefs that underlie decision-making. Other integral components are considering the barriers to living sustainably, examining national trends, and determining personal priorities.

Since 1998, we have been offering intelligent consumption decision-making workshops for typical American adults and older youth. Over 7,500 people have participated in workshops, and over a half million browsers have visited the website <http://www.cof.orst.edu/cof/extended/sustain/>. In 2004, we expanded this programming by creating a national network of 45 Extension professionals at 17 land-grant universities.

## **Closing forest areas for recreational use – acceptable or not for the visitors?**

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Among the arguments for a more dynamic/flexible nature and outdoor recreation management practice in Denmark – like temporary access limitations – is that the wildlife seems to be more abundant – especially breeding birds of prey – in privately owned forests compared to state forests, because of a more peaceful environment. A fact supporting this hypothesis is that the state forests are open for access by foot day and night, all year round, and it is allowed to move outside the roads and paths - in contrary to the privately owned forests where the access is more restricted (6 am to sunset - and only on the roads and paths).

A research program funded by Danish Outdoor Council has been set up, aiming at getting knowledge on e.g.: 1) the influence on the wildlife by restricting the access to specific forest sites; and 2) the visitors' attitudes to such restrictions.

Visitors to the state forest 'Hestehaven' were interviewed seven weekends during May-September 2006 (n=192). As part of the survey the central part of the forest was closed for visitors from 1. May to 1. October, by a simple physical barrier across the roads, leading into the closed area. In addition, three different texts on signs informing about the access restrictions were used (changed every month).

The majority of the visitors stated that they were either not aware of the closure (42%) or that it did not make any difference (49%), while 9% indicated that the pleasure decreased. The visitors generally support ('eventually') restricting the access (to 'smaller areas' of the forest), and preferably by the means of fencing compared to signs/information.

When the wildlife data (collected by the National Environmental Research Institute, Univ. of Aarhus) is analyzed in connection with the present visitor data, future decisions in relation to nature and outdoor recreation management can be taken on a higher knowledge base. - An example of 'Integrative Science for Integrative Management'.

## **Organizational and personal factors influencing forestry planners' biodiversity conservation practices**

*Eeva Primmer*

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The recent movement towards more diverse objectives in forest policy and management raises needs for understanding the constraints and incentives shaping professional foresters' planning practice. An example of a rather recent, already institutionalized, policy objective is that of forest biodiversity conservation. To operationalize this, the Finnish forest sector has developed methods for integrating biodiversity conservation in commercial forestry. One such operationalization is habitat conservation in connection with forestry operations. This presentation is based on empirical analysis of survey data of a cross-section of forestry planners in public, private and associational (collective) forestry organizations in Finland. The analysis addresses the decision to delineate valuable habitats outside forestry operations as well as those organizational and personal factors which shape this decision. While organizations provide the planners with resources, the individuals also apply their own contacts and knowledge base as well as personal values when making decisions. An important additional influencing factor is that of search for legitimacy, i.e. willingness to conform to expectations of various stakeholders. As forestry planners in forestry organizations make a great share of operational decisions and, consequently, also biodiversity conservation decisions, knowing their practices is essential for informed policy development. Even more so, policy design should rely on understanding about what lies between objectives and implementation.

## **Tools and approaches for combining forest-based tourism and forestry in Finland**

*Liisa Tyrväinen*

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Producing timber or landscapes for tourists – do forestry and tourism have joint interests?

Today, in many rural regions in Finland the key development areas are forestry and tourism. In North-Finland substantial amount of tourism activities are located on state owned conservation and hiking areas around tourism centres. However, increasing amount of tourism activities including motorized use of nature has expanded tourism also into timber production forests. The quality of landscape and environment is one of the elements defining the quality of a nature tourism service. In Finland, forestry as a large industry has significant impact on the quality of landscapes. Therefore, synergies and conflicts between forestry and tourism need to be more comprehensively studied.

Tourists mainly evaluate the environment in terms of landscape, where attractive scenery becomes one of the most important reasons for the choice of destination. Tourists' and recreationists' attitudes are particularly negative towards intensive management practises clearcuttings, which is a widely used method in commercial forests. Therefore, new forest management methods to find a balance between traditional economic and less tangible amenity benefits of forests has to be developed.

This paper outlines the main problems related to expansion of tourism in Finland in timber production forests and suggests some approaches for intergrative approach. The key questions are how forestry and tourism development should be combined, what are the environmental expectations of different segments of clientele, and what type of adaptations in forest management practises are economically

viable as a whole in rural areas. Moreover, new types of agreements and markets are needed between entrepreneurs and private landowners to achieve mutual benefits in tourism development at local level. These approaches include development of a compensation system for a voluntary based recreation and scenic value trade targeted to increasing production of amenity benefits of forests in tourism areas in private ownership.

Keywords: Forest planning and management, landscape preferences, forest externalities, nature-based tourism, private landowners, nature tourism entrepreneurs

## **The Future of Outdoor Recreation Research and Education in the United States: Preliminary Outcomes of a National Strategic Planning Process**

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The purpose of this presentation is to describe and report on preliminary outcomes of a national strategic planning process currently underway in the United States to chart a course for outdoor recreation and tourism research and education for the 21<sup>st</sup> Century.

This strategic planning process is supported by the following assumptions:

Rapid ecological and social changes challenge resource managers to provide sustainable outdoor recreation services to the American public.

Managers need science-based knowledge to address a variety of outdoor recreation management challenges.

We must work together to craft a bold vision for outdoor recreation research and education that addresses significant societal needs (health and wellness; economic competitiveness; community revitalization, ecological impact and change).

We must strengthen the sources of funding needed to support these investments for enhancing scientific and educational capacity.

Initiated by the USDA Cooperative State Research, Education, and Extension Service, this national strategic planning process is following a participatory path to engage a broad spectrum of professional outdoor recreation and tourism stakeholders in crafting a five year strategic plan. In February 2007, a national steering committee of 27 diverse individuals was convened to coordinate this planning process. This steering committee will meet for a two day workshop in May 2007 to develop a framework for an emerging strategic plan. In addition, two professional societies will be engaged with scheduled roundtables at the April 2007 Northeastern Recreation Research Conference and the June 2007 International Social Science and Resource Management Symposium to gather input from diverse stakeholders.

This presentation will report on preliminary outcomes of this national strategic planning process for outdoor recreation research and education as well as look for opportunities to integrate this national-level planning in United States with other global efforts to strategically plan for the future of outdoor recreation research and education.

## Quality Assurance in Higher Forestry Education

Friday 17.8.2007, 8.30–10.30, Kalotti

Moderator: Siegfried Lewark

### Assessing Quality in Professional Forestry Education: A Survey of U.S. Forestry Undergraduate Programs

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Faculty and administrators of U.S. forestry programs have developed a renewed interest in assessing the quality of their education programs, particularly undergraduate education. This can be attributed to several factors. First, changes in natural resource management have expanded the definition of forestry, resulting in new programs such as urban forestry, which require different skill sets and educational approaches. Moreover, the Society of American Foresters, the accreditation body for forestry programs nationally, significantly altered their standards in 2000 to emphasize core competencies and educational outcomes. As a result, educators are seeking alternative approaches for evaluating program effectiveness in forestry. To date, however, little information has been collected concerning how institutions have changed their definition of educational success or developed new metrics to measure it. This paper reports on a survey of the accredited forestry programs in the U.S. in an attempt to define the desired outcomes of forestry education, identify how outcomes are assessed nationally, and describe the range of outcomes by specialty areas. Recommendations will be offered to identify key components of successful evaluation efforts in forestry.

### Stimulating change through quality assurance

Faye Benedict

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Many scientists scorn quality assurance routines as time-stealing bureaucratic mandates that serve no useful purpose and even hinder the “real work” of teaching and research. I will discuss how quality assurance can stimulate quality improvement in higher education based on examples from the Norwegian University of Life Sciences (UMB).

UMB has developed routines for quality assurance of its educational offerings in compliance with national requirements. Two key procedures at UMB are student evaluation of courses in all subjects (since 2002) and periodic external evaluation of all study programmes by international panels of experts (since 2003).

Student course evaluations are generally very positive. Teachers and departments follow up negative course evaluations by revising course content and teaching methods, managing personnel and building competence. Student evaluations have improved over time.

UMB's five bachelor and master programmes in environmental management and forestry were evaluated by an international panel in 2006. After the evaluation, the Department of Environment and Natural Resource Management mobilized its staff in 5 development projects: 1) programme offerings, the

educational vision and competence profile of graduates, 2) structure of programmes and course offerings, 3) interdisciplinary problem-based learning and analysis, 4) integrating research into educational programmes and 5) external networking, information, niche analysis and job market for graduates. The follow-up work is expected to lead to deep revision of programme- and course offerings.

Course- and programme evaluation are effective tools for stimulating improvement and change. Attitudes toward quality assurance have become more positive. The staff is involved in evaluation dialog and follow-up activities. They recognize the value of input from students and external experts when identifying areas for improvement and opportunities for excellence. Effective quality assurance routines create arenas for participation in quality issues and quality work. In so doing they develop the organisation's "quality culture."

## **Activation of Students by Immediate-Feedback Assessment**

*David Wagner*

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Students understand and retain information most effectively when they acquire it actively and when they receive immediate feedback to (1) validate knowledge they understand accurately and (2) correct misconceptions. Consequently, the educational community has developed tools to provide students with immediate feedback regarding their learning. This presentation will demonstrate a system that integrates several such tools, including a "Personal Response System," scratch-off quiz forms, and a Jeopardy-style game. The system is used at the University of Kentucky in introductory forestry and agriculture courses, as well as in a population genetics course for advanced undergraduates. Classroom time that was formerly spent on lecture presentation of basic facts is freed by the system to help students develop more complex cognitive skills, such as analysis, synthesis, and evaluation. For example, the introductory forestry course now provides classroom time for semester-long, in-depth, guided discussions, including:

"What is veneer? How and why is veneer used? How is veneer made? What silvicultural prescriptions enhance the production of trees suitable for high-quality veneer?"

"Should U.S. National Forest land parcels be sold to provide funds for rural communities? What information is needed to make this decision? Who should make this decision?"

"What questions do you have about forestry? Where would you find the answers? What are the answers?"

Despite spending more time now on higher-level intellectual skills, all material that was taught for many years by lectures in these forestry, agriculture and population genetics courses is still learned by students. This demonstrates that it is possible to help students develop complex cognitive skills, without sacrificing essential factual knowledge.



# **Students' Perspectives of Successful Graduate-level Studies: the example of the MSc European Forestry**

*Bishnu Chandra Poudel*

MSc EF, University of Joensuu, Finland

Integrating learning within international communities is always challenging. Involvement of several teaching institutions from different countries in a learning programme is becoming a good option in international education system. The MSc European Forestry (MSc EF) is a unique masters' degree programme that gives an additional dimension to the markets in forestry and nature management in Europe. This programme is coordinated by six partner Universities (University of Joensuu, University of Freiburg, SLU Sweden, BOKU Austria, Wageningen, The Netherlands and Lleida Spain) from Europe as well as three Universities (University of KwaZulu Natal (South Africa), Federal University of Parana (Brazil) or NorthWest Agricultural and Forestry University (China)). It aims to provide a multidimensional learning environment to address the demands of global forestry from a European perspective. It focuses on management, trade and policy issues supported by an understanding of the variety of managerial and ecological condition and their dynamics in European forests.

This paper aims to explore the achievements and drawbacks of the MSc EF programme from the students' perspective. Furthermore it explains the strengths of international graduate-level learning and provides solutions for weaknesses revealed from student's perspective. The course modules, curriculum, Masters' theses and electives courses and student's views on the programme have been evaluated and will be interpreted looking from different perspectives. Simple descriptive analysis is expected to provide a picture of different perceptions of the programme. The results found are believed to be crucial for the success of the programme in future.

The results of this study are expected to show the real ground of learning by students and their perspectives. It is believed that the results can be crucial to fostering innovations and vital insights for the programme planners in future. It will describe the different scenarios of methods of learning, designed courses; choices and potential to the expertise development that would be decisive for the management level. Ultimately the University consortium will know the students' perception and help to design the courses from the student's perspective. Finally this paper recommends some needed changes on the programme from the students' perspectives that would make students more enthusiastic and help to develop expertise.

Keywords: Course modules, curricula, advanced-learning,

## **The role of multidisciplinary, international studies and extra curricular activities for a student's forestry education - a personal report**

*Susan Edda Seehusen*

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In an increasingly globalized world, students are challenged to meet the requirements they face in the professional marketplace and in society. Not only are they expected to possess a firm grasp on the theoretical knowledge which forms the basis of their field, which is traditionally provided by Universities, but they are also expected to be able to give presentations and display strong communication, negotiation and leadership skills. Additionally, graduates are expected to possess an understanding of other fields of studies, speak foreign languages and be able to adapt to and respect other cultures.

To achieve the requisite skills, a complement to traditional university studies is necessary. Based on my experiences as a Brazilian graduate student in Economics, and as I continue to pursue a Master of Sciences in Sustainable Forestry and Land Use Management at the Faculty of Forestry and Environmental Sciences in Freiburg, Germany, and as president of the International Forestry Students Association (IFSA), I will highlight in this text, first, how multidisciplinary studies provide a broader understanding about related fields such as economy and forestry and the disadvantage of multidisciplinary studies, such as avoiding the deepening of specialized knowledge in the fields. Secondly, I will explain the academic systems in Brazil and in Germany. Specifically I will discuss how the Brazilian state academic system's focus on written exam performances does not prepare students to present, speak and converse as adequately as the German system does, and the consequences of these differences. Finally, I will explain how extra curricular activities may enhance students' formal education by providing some of the so-called "soft-skills", such as communication, negotiation and leadership.

Keywords: multi-disciplinarity, extra curricular activities, soft-skills, IFSA

## **Quality assurance in higher education in Europe : Challenges and opportunities**

*Andrew H. Cobb*

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With the proposed European Higher Education Area due for 2010, there are many quality assurance challenges and opportunities facing colleagues in different institutions and countries in adapting to the Bologna Agenda. Indeed, there is still much baggage to be shed and good practice to be adopted.

Particular concerns to be overcome will be addressed in the paper, including the adoption of Learning Outcomes, the acceptance of a quality enhancement agenda, the importance of the "student voice" and the binary divide between so-called "academic" and "professional" universities.

It is also essential for our European universities to modernise and embrace new modes of learning and teaching, to address the "life long learning" agenda. Examples include the use of information technology for distance learning and to consider the needs of those in employment, enabling them to enhance their professional skills.

Equally, European universities cannot afford to be complacent. A modern Higher Education system in which all or most universities deliver courses in English may not be far away. This will mean an increased competition for a more mobile European student population who will enjoy more choice of university and vote with their feet. Furthermore, this is not solely a European agenda, as modernisation has the potential to increase the attractiveness of European higher education in a global market.

As the Chinese curse reminds us, "May you live in interesting times". Academic colleagues in Europe are increasingly aware of the quality assurance challenges and opportunities in higher education and hopefully can face these interesting times with a degree of confidence.

# **Social and Economic Goals of Integrative Management of Ecosystem Services**

*Friday 17.8.2007, 11.00–13.00, Eurooppa  
Moderator: Paula Horne*

## **Using markets to preserve forests and the services they provide**

*Stefano Pagiola*

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Forests provide a wide range of ecosystem services, some of which generate local benefits, others that generate national benefits, and yet others that generate global benefits. Forest management decisions will only maximize social welfare if they take into consideration the full range of benefits that forest ecosystems can provide. Yet management decisions are often made based on only a few of these benefits -- typically timber or other local benefits, thus resulting in significant losses of benefits -- losses which can be particularly significant for the poor. Policy distortions further exacerbate problems. Recent years have seen numerous efforts to develop new market-based mechanisms to address these problems sustainably. Certification and eco-commerce approaches seek to increase the benefits to sustainable production, while direct payments for conservation through programs of Payments for Environmental Services seek to ensure that the indirect services provided by forests (such as regulation of hydrological flows, biodiversity conservation, and carbon sequestration) are also taken into consideration.

## **Integrating social and economic objectives in forest management research: Canada's Sustainable Forest Management Network**

*Bruce Macnab*

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Established in 1995, the Sustainable Forest Management (SFM) Network provides a forum for large-scale, integrated research projects targeted at current and emerging issues at the heart of the sustainable management of Canada's forests. The program was, in part, an attempt to ensure that forest harvesting could co-exist with biodiversity and other ecosystem services. From the outset of the program, one of the major challenges for the SFM Network has been the integration of social and economic objectives in research attempting to provide management alternatives for the sustainable management of forests and the ecosystem services they provide. A further challenge has been the need to incorporate the rights, values and interests of Aboriginal people in research. This paper will provide a synthesis of some of the SFM Network's success stories in terms of the integration of social and economic objectives in research. An overview of some of the key features of projects that have been successful in getting researchers from a range of disciplines to collaboratively assess common research questions will provide an overview of success stories in terms of constructing successful, integrated projects. The key research results from inter-disciplinary projects will provide an overview of some of the key outcomes from this research and speak to the products of integrated projects.

# **The institutional resilience of managed biophysical systems. The example of biodiversity governance in joint forest management institutions in Flanders**

*Tom Dedeurwaerdere*

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This paper addresses the challenge of building resilience in coupled social-ecological systems through the lens of institutional analysis. We argue that anticipation and reflexivity are important factors in the building of resilience in managed biophysical systems, in particular through their contribution to the proliferation of a broad variety of beliefs and forms of cooperation around the concept of sustainable management. For our analysis, we focus on a specific case study which is the recent experiment with joint forest management institutions in Flanders. We have chosen this case because of its double focus: (1) on forest ecosystems services – and hence on the interdependence of the social and ecological system – and (2) on the design of governance mechanisms for building reflexivity into the learning process on the management rules. We analyze the contribution of joint forest management to building learning capacity and cooperative competences by addressing the following questions : What are the new beliefs and forms of cooperation that are anticipated in the dynamics of institutional change ? How does experimentation enhances the variability in the belief systems and the cooperative networks ? What are the governance mechanisms that determine the adaptive capacity of the institutional beliefs and the networks of cooperation ?

Keywords: resilience, reflexive governance, joint forest management, biodiversity conservation

## **Economic impacts on the forest sector of increasing forest biodiversity conservation in Finland**

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In the next coming years, political decisions will be made upon future actions to safeguard forest biodiversity in Southern Finland. We address the economic consequences on the Finnish forest sector of conserving additional 0.5% to 5% of the old growth forest land in Southern Finland. The impacts on supply, demand and prices of wood and forest industry production are analysed employing a partial equilibrium model of the Finnish forest sector.

An increase in conservation raises wood prices and thus the production costs of the forest industry. This makes sawnwood production fall, but does not affect paper and paperboard production. The forest owners' aggregated wood sales income is unaffected or slightly increased, because an increase in stumpage prices offsets the decrease in the harvests. If conservation increases wood imports, negative effects on forest industry become smaller whereas aggregated forest owners income may decline depending on the magnitude of import substitution.

# Making Forests in the Developing World Work for People and Nature

Friday 17.8.2007, 12.00–13.00, Eurooppa  
Moderator: Heidi Vanhanen

## The Global Network of IUFRO-WFSE for Sustainable Development and Well-being of People

*Gerardo Mery<sup>1</sup> and Heidi Vanhanen<sup>2</sup>*

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The mission of IUFRO's Special Project on World Forests, Society and Environment (WFSE) is to amend the existing gap between policy-makers and scientists in the formulation and application of policies in forest-related issues in support of sustainable development and well-being of people. The primary objectives are to provide a platform for cross-sectoral discussions between policy-makers and scientists, and – most importantly – to feed that discussion with innovative, critical scientific analysis of the existing research results on the complex interrelations between forests, society and the environment.

The backbone of the network consists of 10 internationally reputed research institutes, both in the North and the South, each contributing to the planning, implementation and dissemination of the project's activities and products. The WFSE process of both horizontal and vertical collaboration supports the innovative and critical approach in the extensive non-bureaucratic working teams.

In Phase I (2002-2006) WFSE focused on how changing paradigms have been resonating in global and regional arenas, specifically in the new concepts of forest governance, in environmental services of forested ecosystems, in contribution of forests to livelihoods and poverty alleviation, and in the changing views to planted forests. A review article on paradigm changes on each continent was produced by local forestry experts. In addition, other cross-cutting issues were analyzed, like forest assessments, agroforestry research, capacity development and the role of traditional knowledge.

The results were presented and debated in several major international processes and congresses. Summarized presentations were produced – for disseminating and training purposes - on each thematic issue and also on the continental reports.

The major driving theme for Phase II (2007–2010) will be determined later in 2007. With increased emphasis on regional issues, efforts will be further strengthened to incorporate more Southern scientists to the network.

## Forests in the Global Balance – Changing Paradigms, Results of IUFRO-WFSE Phase I (2002-2006)

*Heidi Vanhanen*

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In the forests-society-environment interrelations, the critical points covered by the WFSE network of 150 researchers were governance; environmental services; contribution to livelihoods; and planted forests.

The bulk of industrial timber production is moving from the North to the South and from west to east. Global policies and changing societal values – first in the North – are increasingly emphasizing other forest functions than timber production. Diverse interests of actors are displayed by strengthened global

trading relationships and simultaneously by political mobilization of civil society for environmental services and more equitable socioeconomic development. With the emergence of participatory democracy and increasing local control over forests various, less formal networks are emerging and providing a policy narrative that evolves over time. The institutional challenges are most demanding in the developing world. As policies affecting the use of natural resources become more complex, the limitations of old governance have become apparent. Yet, there is no blueprint for good governance, but rather a series of arguments supporting general openness to policy learning and change.

Re-evaluation of governance, decision making and forest ownership underlines the need to reconcile conservation and development. Payments for environmental services (PES) shift the focus from the control of forest management activities to the value of the environmental services to people. Ecosystem use must be subject to local societal choice, and supply of these services a part of local livelihood strategies. In the current global focus on eradicating hunger and poverty all aspects of livelihood capabilities need to be considered: not only consumption and income from forests and other sources, but also food security, health, education, and empowerment. Thus eliminating poverty will require bold approaches beyond the potential from forests to the complexity of livelihood sustainability. To meet the multiple demands, forests need to be seen as part of the managed rural landscape of diversified land uses, including habitation, agriculture, and planted trees on plantations or on farms.



## Seeing Climate Policy Through the Trees

Friday 17.8.2007, 11.00–13.00, Kalotti

### Challenges in Communicating Scientific Information About Global Climate Change, Forests, and Predictions for the Future to Nonscientific Audiences

*Cynthia Miner<sup>1</sup> and Michael Furniss<sup>2</sup>*

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Climate change has rapidly become an issue of primary interest to policy makers, land managers, and the public worldwide. Since the early 1990s, information related to forest and climate change has been increasingly generated. Much of this information was and continues to be about effects on forest vegetation and carbon storage and release by trees. Emerging issues are climate effects on fire, water, and land use changes. Scientists are moving from the modeling and prediction of climate change to studies of adaptation and mitigation. As the content of their information is shifting, scientists also find that demand is increasing for their communication to nonscientific audiences. This demand often outstrips the ability of scientists to communicate with the policymakers, land managers, and news reporters who want their most scientific insights and information. This presentation describes these and other challenges in assuring that scientific information related to climate change is communicated to non-scientific audiences through briefings, non-technical publications, the news media, and multimedia products. It also provides methods for addressing these challenges including use of language, visuals, and new techniques in electronic communications. Examples of these methods are presented.

### Knowledge Transfer and State-level Renewable Energy Policy: Insights from the Front line

*Dennis Hazel<sup>1</sup>, Mark Megalos<sup>2</sup> and Chris Hopkins<sup>3</sup>*

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Absence of comprehensive national and global climate change policy in the U.S., has left individual states to develop policies to address climate, greenhouse gas (GHG) emissions, energy efficiency, and carbon sequestration on their own. The authors describe their education, research and policy roles during a multi-partner promulgation of incentive-based solutions to impending climate change.

In 2006, North Carolina began policy development to address renewable energy and climate change through a two legislative commissions: 1) Global Change (LCGC) and a Climate Action Plan Advisory Group (CAPAG). The LCGC's charge was to develop targets for the state to achieve reduced GHG emissions and increase carbon sequestration. Specific policy recommendations will be made to the N.C. General Assembly for consideration as legislation, and regulation. The CAPAG is charged with developing global warming strategies by North Carolina's Department of Environment and Natural Resources. Involvement in a structured an 18-month facilitated process has enabled the authors to impart their 55 years of collective forestry and natural resource experiences to bear on these complex policy deliberations.

Involvement in forest-related climate change policy options is anticipated to result in well-designed extension and technology transfer programs to educate landowners, professionals, and policy makers and to recruit markets and entrepreneurs. The authors note that having technical skills (silviculture, soils, physiology, and carbon sequestration) did not prepare them for their "trial by fire" education in the policy deliberations. They share their observations for other professionals who are preparing to demonstrate that management of existing forests, establishment of additional forests, and management of urban trees represent cost-effective solutions to global change.

## **Disaster management: New ideas for new times**

*Viviane Simon-Brown*

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Climate change. Within 20 years, temperate forests will be hit hard by rising temperatures. What are the implications for Extension foresters and our clientele?

Population growth. The Pacific Northwest's growth rate since 1990 has been twice the North American rate, faster than India's, and almost equal to Egypt's. If the birth and in-migration rates continue, population in Oregon, Washington, Idaho and southern British Columbia will double to 32 million in 2040. Residents consume, on average, their body weight in natural resources each day, and increasing population is wiping out the efficiency gains created by industry and research labs. What likely impacts will this population increase have on forest resources? What can we do to prepare for it?

Peak oil. Worldwide oil production has peaked. While petroleum products will continue to be available at least until 2050, they will become increasingly scarce and expensive. How will this scarcity affect Extension foresters and our clientele? What can we do to prepare for it? What alternatives are there?

Invasive species. They're here – and they're staying. Blackberry, gorse and cheatgrass. Cereal weevils, knotweeds, knapweeds, and zebra mussels. How can we turn these liabilities into assets? What products might be made out of them?

The majority of Extension work involves responding to the needs of our clientele. Often, the demands are immediate and the need obvious. However, our clientele are not focusing on the above-mentioned potential disasters in progress, perhaps because the concepts are too overwhelming or daunting. Therefore, extensionists should take the lead in understanding their scope and implications, and then guide our clientele in making giant leaps in new directions, as well as incremental baby steps to mitigate the consequences.

## **The Role of the Expert in Transferring Complex Science to Forest Mangers: implications for workforce development**

*Cynthia West<sup>1</sup> and Becky Gravenmier<sup>2</sup>*

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It is well documented that new ideas are more readily adopted if they are simple to understand. However, much of the science developed to support natural resource planning and decisions is very complex and difficult to understand. This is especially true if results of different studies seem to contradict. Complex biological systems rarely follow simple pathways and most often can follow multiple paths to an outcome. Understanding the science and the uncertainty surrounding these projections can be difficult.

It has been found that organizations possessing expertise to understand new ideas or innovations more readily evaluate and adopt innovations.

Public forest managers are being called upon to use the “best available” science to plan management actions and monitor the outcome of decisions. The science community is challenged to communicate complex science findings so the management community can evaluate and incorporate science in decisions and documenting the correct interpretation of science. In order to transfer new knowledge and knowledge tools from the science community to the user community effectively, we have found that the expertise of the user community is critical in understanding and using new knowledge.

A systematic approach has been designed and evaluated to transfer science into the forest management community of the U.S. Forest Service in the Pacific Northwest and Alaska Regions. This approach and the role of experts in successful knowledge transfer and adoption will be presented using case studies from these organizations.

## **Valuing Forest Externalities**

*Friday 17.8.2007, 14.00–16.00, Auditorio*

*Moderator: Paula Horne*

### **Creating markets for ecosystem services**

*Arto Naskali*

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During the past two decades, scientific and political interest in ecosystem functions and services has increased dramatically. This is partly due to improving scientific understanding of the role of well-functioning ecosystems in human life support and well-being. Also, economists are increasingly recognizing that ecosystem services, and especially regulation services, protect economic activity and thus are of economic value. The so called “ecosystem approach” stresses that there cannot be a supply of renewable resources without functioning ecosystems to produce them. A visible consequence of this systemic thinking has been that in many countries new policy instruments for safeguarding ecosystem functions have been developed and implemented. Instruments used have been termed “(direct) payments for ecosystem (or environmental) services (PES)”, “markets for ecosystem services”, “market-based instruments (MBI)”, “market creation for ecosystem services”, “nature conservation agreements”, “natural and recreational values trading”, etc. These instruments have one common feature - they make use of market mechanisms to obtain socially desirable goals. Markets for ecosystem services have recognized to be a good way of rewarding and encouraging landowners to protect ecosystem functions and to produce ecosystem services. Markets for forest ecosystem services are thought to improve the economic performance of sustainable forest management (SFM).

Ecosystem services are supplied at various spatial (and temporal) scales. The production of these services concentrates on dynamic cross-boundary processes and this is why practising command-and-control policy to produce them is very difficult. In this paper, the main attention focuses on the point that some kind of co-operation between landowners is clearly needed. Many environmental resources are common-pool resources. The basic question to be answered is how different resource regimes might influence the stakeholders’ will and capacity to cooperate in solving common-pool resource problems. Common-pool resources have two defining physical characteristics: rival consumption and the difficulty of exclusion. Interdependence causes conflicts and a pressure to resolve them by establishing and modifying institutions. Innovative institutions are necessary for the market for ecosystem services to function. Market mechanisms require and promote co-operation. New formal and informal institutions besides the effective legal framework for organizing collective action are needed.

## **Valuing forest recreation in a multidimensional environment: the contribution of the Multi-Program Valuation Method**

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Traditional recreation valuation methods like Travel Cost and Contingent Valuation do not take into account the multidimensional nature of some areas. Choice Experiment can be an alternative, but the number of attributes chosen must be restricted. We therefore propose to apply, previously, the Multi-Program Valuation Method (MPMV).

Based on Lancaster (1966) and Hoehn (1991), the MPMV is dedicated to the study of the relations between attributes of an environmental policy (Santos, 1998). Each survey scenario consists in a zero-price status quo and a definite-price environmental policy affecting a combination of attributes. Respondents choose their preferred scheme and thus reveal their trade-offs between the price of the policy and its attributes. The MPMV then allows apprehending the complementarity/substitution relations between these characteristics. A method centred solely on forest recreation may afterwards be applied.

We propose an application of the MPMV to stated-owned French South-West coastal forests. Ocean, sand and forest constitute one unique spot and we study their relations in consumers' demand. A survey was carried out in Summer 2006 and 385 usable responses were acquired. This paper first sets out MPMV's theoretical basis and methodological and practical issues. In a second part, the two regressions (on attributes or schemes) are compared, on a random coefficient basis. While they do not deal with interactions the same way, both show that the assets are substitutes in valuation. Visitors' willingness-to-pay for an asset ranges from 1.46 to 3.53€/visit/person and those who specifically attach importance to one asset are willing to pay an important extra premium (up to 11.21€/visit/person for forest). Visitors' willingness-to-pay for a policy ranges from 4.22 to 8.11€/visit/person. Forest alone is in that case not significant. The numerous forest substitutes present in this district (the most wooded French one) undoubtedly play a role.

## **European forest externalities: Introduction of COST Action E45 EUROFOREX**

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Forests produce several non-timber products, like mushrooms, berries, medicinal herbs, and alike. They also provide other services to society, like recreation, attractive landscapes, CO<sub>2</sub> sequestration, erosion prevention, hydrological regulation, biodiversity preservation, etc. called externalities. The research undertaken in Europe on forest externalities is considerable, but - generally not coordinated, focusing on one or a few local externalities - of very uneven quality and rarely with a regional or European vision. The situation will improve by the development of protocols, as there are in other fields and regions. A COST Action covering the main methods for non-market forest products and externalities seems the most adequate to establish, due to the common grounds needed in the field, since the task does not involve new empirical research, but needs much cooperation and agreements that will be obtained in a series of thematic meetings. The economic dimension of the activities carried out under the Action has been estimated, on the basis of the 16 countries participating in the planning of the Action, at EUR 17 million at 2005 prices.



# **Integrating Social and Cultural Information in Urban Forest Planning and Management**

*Friday 17.8.2007, 14.00–16.00, Eurooppa  
Moderator: Cecil Konijnendijk*

## **What can forestry do for the people of Scotland?**

*Simon Bell*

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In 2005 the Forestry Commission Scotland undertook a review of the Scottish Forestry Strategy. This included consultation with a wide number of groups. However, following this consultation it became obvious that a number of social groups in Scotland were not represented in the results of this consultation. Therefore the Forestry Commission Scotland asked the OPENSspace Research Centre at Edinburgh College of Art to undertake some research to find out what forestry could do for such groups. The target groups included adults living in remote economically disadvantaged rural area, young adults from urban economically deprived areas, disabled people – in this case visually impaired, physical disability and those with mental health problems and finally members of ethnic minorities. Apart from the remote rural areas all the other people sampled came from urban areas. The research method was solely qualitative, with five focus groups being held in Dumfries and Galloway (a remote part of southwest Scotland and in Edinburgh and Glasgow. The focus groups discussions were focussed around a standard set of questions that the Forestry Commission Scotland wanted answered but the discussions ranged more widely and uncovered many interesting aspects of the relationship between people, forests and the Forestry Commission, aspects which were often surprising but extremely valuable. The results were then fed into the next revision of the Scottish Forestry Strategy which, as a result, reflects more closely in its aims and programme, the widest possible set of perceptions.

## **Social information – benefit of burden in urban forest planning?**

*Maija Sipilä<sup>1</sup> and Liisa Tyrväinen<sup>2</sup>*

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In the Helsinki Metropolitan Area, collaborative practices are commonly used in order to integrate residents' needs and values in urban forest planning. This social information is collected on different levels of planning, including city-level strategies as well as local nature management plans, with the idea that it improves the quality of planning decisions. It is, however, unclear how the social information can and should be integrated into planning on these different levels. What, in fact, is the role of social information in planning processes? How is social information linked with other information types, such as ecological information? In all, what kind of collaborative processes are successful in integrating social information in planning?

In a sub-study of the research project 'GREENDECISION - Integrating ecological and social information in urban planning' (Academy of Finland 2006-2008), we are studying these questions in two case areas in the Helsinki Metropolitan Area. By combining e.g., planning document analysis, interviews and focus groups with different stakeholders, planners and decision-makers, we aim to produce theoretical understanding and practical interpretations of the efficiency and quality of the urban forest planning system from the perspective of social information. In the study, we also develop methods for evaluating the use of social information in planning. Primary results will be presented on grounds of semi-structured interviews carried out with approximately 30 planners, decision makers, residents and landowners in spring 2007.

# **Integrative Science for Integrative Management in Massua Forest in central Israel**

*Iris Bernstein*

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The development of Massua Forest (Britania Park) is part of the continuing struggle to preserve open spaces in the centre of Israel, an area given to constant development and construction pressures. The forest is already well on its way to becoming a “green reserve” surrounded on all sides by the national highway network, the expanding city of Beith Shemesh and few little rural communities. Both a planning concept as well as a work protocol were developed jointly by universities and foresters designed to guide the often complex process of integrating a host of different organizations and disciplines. This approach is aimed at providing the operational branch of the forest with information about ecological, cultural and economical components. Activities comprise research and evaluation of the ecological values and their impact on the forest as a whole, as well applying the scientific understanding of the forest ecosystem and of relations with its rural and urban surroundings. Obtaining scientific information for ecological management was an important purpose of this research. Yet, the interest of the community and the opportunities for environmental educational were seen as equally important. The city of Beith Shemesh and the communities bordering the forest are considered to be of low status and have a poor self image.

The project, which has enjoyed Israeli media coverage and brought numerous outsiders to the area, created a feeling of hope and pride among residents. They felt they were no longer living in a place that had failed. Now they understand that their area is an ecological melting pot, and therefore the demand to protect the high quality of Massua forest will grow. Astounding to KKL (the institution responsible for forest management) is the response of public and community members and the turnout of people wishing to participate in the field research through the KKL’s community activities.

## **Local identities, memories and experiences as inspirers of urban silviculture**

*Kirsi Mäkinen*

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Urban areas in Finland have relative abundant woodlands inside the city structure. Many suburbs are called forest suburbs (*metsälähiö*) or forest towns (*metsäkaupunki*). One of them, Tapiola, is a national landscape. Their history is bound to urban development and the housing programmes after 1940’s. In the city plans, the remaining nature was to provide environmental qualities and well-being to the residents. After decades, woodland contacts have been part of urban life through outdoor activities and green housing areas. Urban forests are still part of the city image and local culture, but not arousing in new urban visions or discourses. Do the forested suburbs and neighbouring woodlands last in urban development and do new generations appreciate forests as previous ones? What people think of fragmented and changing forest landscapes around them? In the professional field (forest data, plans), the local knowledge (social, cultural) of forests is not well-documented or described.

This case study examines the everyday meanings and uses of urban forests from the viewpoint of the residents and the dwelling. The case study includes resident-driven field interviews, photograph and document analyses. The two study areas are situated in Helsinki. Eastern suburbs, Kurkimäki and Kivikko are built after 1980’s and Western ones, Southern and Northern Haaga, after 1950’s. In addition, one forest suburb in Tampere, is studied.

The aim of the study is to import social and cultural information to the urban forestry and silviculture. As the silvicultural knowledge and practices follow ten years cycles, the local knowledge has an everyday point of departure. The situational variety of local knowledge could be understood more in managing urban forest resources and could be used as an inspiration of new management cultures. This presentation shows the first results of the field interviews and the analysis methods of the landscape changes of forested suburbs.

## **The Science - Policy Interface**

*Friday 17.8.2007, 14.00–16.00, Kalotti*

*Moderator: Margaret Shannon*

### **Seeking Integrated Science for Integrated Knowledge: Top 10 Challenges for the next decade**

*Margaret A. Shannon*

Research Professor, SUNY Buffalo Law School, USA and Faculty of Environmental Science and Forestry, Freiburg, Germany. *Beginning August 1, 2007*: Associate Dean, Rubenstein School of Environment and Natural Resources, University of Vermont

Finding Questions is the number one challenge for integration of science, policy, and knowledge. The problem of integration is why it is needed at all! Why has scientific inquiry shattered the coherence of natural and social entities and processes in search of knowledge? Why do the fragmented domains of knowledge persist in strong institutions even when the need for integration is recognized? Meeting the challenges of seeking greater integration in knowledge through integrated science is a social, institutional, and organizational process that will entail revolutionary and transformative change. This paper outlines and discusses the 9 other top challenges to be overcome in seeking integrated science, knowledge, and management for nature and society.

# Author index

## A

Agnoletti 34  
Albritton 52  
Alves 23  
Ardayfio-Schandorf 42  
Arnberger 12  
Aspinall 23

## B

Bailey 32  
Barstad 15, 16  
Begus 30, 33  
Bell 38, 56, 70  
Benedict 56  
Bengston 44  
Bernstein 71  
Bianchi 47  
Borrie 18  
Bridges 17  
Brown 31, 46, 55  
Bungov 26  
Buser 31  
Buttoud 35

## C

Cobb 59  
Creighton 30

## D

Davenport 17  
Dedeurwaerdere 61  
Dehez 12, 68  
Dorren 31  
Dunn 29

## E

Ek 16  
Elands 38

## F

Fior 47  
Furniss 64

## G

Gamborg 49  
Gan 10  
Gravenmier 65  
Gritten 50

## H

Haider 39  
Hakkarainen 41  
Hallikainen 50  
Hanewinkel 14  
Hänninen 27, 61  
Hartford 19  
Hazel 64  
Heister 21  
Helle 50  
Hetemäki 11  
Hodges 56  
Hopkins 64  
Hughes 29, 32  
Hujala 22  
Hunt 46, 55  
Hyppönen 50

## I

Ilavský 24

## J

Järvinen 27  
Jensen 13, 53  
Johnson 30

## K

Kakizawa 24  
Kallio 61  
Kasanen 45  
Kilgore 16  
Kim 36  
Kopperoinen 48  
Kruger 37

## L

Laaksonen-Craig 16  
Lässig 28, 31  
Leahy 19  
Lee 44  
Leskinen 22  
Liljeblad 18

## M

Macnab 60  
Mäkinen 71  
Megalos 64  
Mery 48, 62  
Milijic 30  
Mills 21, 44  
Miner 64  
Moritzi 28  
Moua 44

## N

Naskali 67  
Neuvonen 12, 40  
Nonic 30  
Nordberg 25  
Norland 30  
Notarangelo 47  
Nylund 10

## O

Ollonqvist 26

## P

Pagiola 60  
Perera 29  
Pirhonen 26  
Point 68  
Poudel 20, 58  
Pouta 12, 40  
Primmer 54  
Pröbstl 38

## R

Radosavljevic 30  
Reed 31  
Rehunen 40  
Riera 69  
Rulleau 68

## S

Saarikko 22  
Saastamoinen 50, 51  
Sajama 50, 51  
Sandøe 49  
Sarkki 40  
Schaub 28  
Schermann 44  
Seehusen 58  
Selin 46, 55  
Seok 36  
Shannon 73  
Shemeikka 48  
Sievänen 12, 40  
Simon-Brown 45, 52, 65  
Sipilä 70  
Skov-Petersen 12, 13, 53  
Smith 32  
Sondergaard 12  
Stein 18, 52  
Sugiyama 23  
Suopajarvi 42

## T

Thompson 23  
Toivonen 27  
Toppinen 16, 27  
Torniainen 25  
Toropainen 26  
Tuulentie 41  
Tyrväinen 54, 70  
Tyukina 26

## V

Valkonen 50  
Vanhanen 48, 62  
van Kooten 16  
Viitanen 26  
Vlosky 29  
von Detten 28

## W

Wagner 57  
Watson 18  
Wen 36  
West 65  
Williams 37  
Wirth 38  
Wyman 18

## Y

Youn  
    Beom-Seok 36  
    Yeo-Chang 36  
Yousefpour 14







