

THE ONLINE INFORMATION BULLETIN OF THE GLOBAL FOREST SCIENCE NETWORK

Ecosystem Goods and Services from Planted Forests

By Juergen Bauhus und Joachim Schmerbeck, Institute of Silviculture, Freiburg University, Germany

What ecosystem services do plantations deliver?

At present forest plantations cover less than 5% of the global forest area, but they provide approximately 40% of the forest products. In many parts of the world the area of plantations is increasing very fast, and so is their importance to provide and maintain ecosystem services. Among these services, the maintenance and conservation of biodiversity, the storage and sequestration of carbon, and the regulation of water flow may be considered as most important. However, there is still a large discrepancy between the market value of most ecosystem goods and services (EGS) and their potential value.

What can plantations do for biodiversity?

Plantations can provide habitats. They are important for connecting and buffering native ecosystems and can reduce the pressure on native systems. However, there are studies that show that the response of certain taxonomic groups to the structures and management of plantations varies considerably. Therefore, intensive long-term multi-taxa monitoring programs will be needed to improve predictions about the effects of plantations on biodiversity.

What is the role of plantations in the carbon cycle?

In plantations, C sequestration is known to be quite high, whereas C storage is usually low. Most of the C sequestration takes place above ground. For the evaluation of the role of plantations it is therefore crucial to know what happens with the products of the plantations. It is also important to develop plantation models that can be integrated into decision support systems at landscape level to estimate the costs and benefits of C sequestration.

What are the effects on hydrological cycles?

In most situations, plantations will decrease runoff. This is not the case, however, with plantations established on degraded sites where the increase in infiltration rates is in excess of the increase in evapotranspiration. And yet, plantations can deliver substantial benefits where there is too much water in the landscape, or with regard to improving water quality. However, there is a gap between the public perception of the benefits from plantations for hydrological cycles, and the scientific evidence observed. This gap must be bridged by more research and by better communicating scientific findings to policy makers.

Can the rural population benefit from plantations?

With the decrease of natural forest areas, the role of plantations becomes ever more important for the livelihoods of rural people. However, in the tropics, for example, it is often the case that livelihood strategies of rural people



Eucalypt plantation, by courtesy of Juergen Bauhus

are not considered in the development and management of plantations. Therefore, it is not surprising that rural people may not benefit from plantations. Still, many case studies show that plantations can be very valuable where they complement other land uses, and where they replace services from native forests which have become inaccessible.

Towards a better provision of EGS from plantations

The provision of EGS from plantations may be enhanced through sound planning and management at the stand and landscape level. While silvicultural principals to manipulate the provision of EGS at different spatial scales are known in principle, they require local specifications for different plantation settings. Tools to analyze trade-offs between the provision of different EGS are required for optimizing silvicultural management. Based on the typology of different ecosystem services, there are different approaches which can be used to assign EGS to different landscape units, to rank these and to analyze their spatial provision. With regard to the policy setting of plantations, both regulatory and market mechanisms are needed for the successful establishment of payment schemes for EGS.

More at <http://www.waldbau.uni-freiburg.de/bilbao.html>

Scientific forum on "Ecosystem Goods and Services (EGS) from Planted Forests" held as a part of the IUFRO-sponsored Int'l Congress on "Planted Forests and Sustainable Development" in Bilbao, Spain, from 3 to 7 October 2006. Organized by USSE, Institute of Silviculture at Freiburg University (Germany), and IEFC as part of the EU funded project (NETFOP). An abstracts volume has been published as issue 68 of "Berichte - Freiburger Forstliche Forschung 2006".

What does it mean ?

Ecosystem services, - among the latest environmental buzzwords (Boyd and Banzhaf, 2005), - refer to indirect ecosystem functions such as water purification, flood control, carbon sequestration, climate regulation, and soil and nutrient cycling, as well as recreation or aesthetics-associated tourism. Four types of ecosystem services are of particular relevance for forest ecosystems - carbon sequestration, biodiversity protection, watershed protection or hydrological services, and aesthetics.

An important aspect is the valuation of non-market goods and services in monetary terms, the attribution of social value, including the sustainable use by indigenous people, and taking into account values for future generations.

Contact: *Renate Prüller, Coordinator [SilvaVoc](mailto:SilvaVoc@iufro.org) or Michèle Kaennel Dobbertin, Coordinator [IUFRO 6.03.02](mailto:IUFRO.6.03.02@iufro.org)*

ECOSYSTEM GOODS AND SERVICES (EGS)

FR BIENS ET SERVICES DE L'ÉCOSYSTÈME - ES BIENES Y SERVICIOS DEL ECOSISTEMA - DE ÖKOSYSTEMARE LEISTUNGEN

The range of conditions and processes of the (forest) ecosystems and their components that help sustain and fulfil human life (adapted from Daily 1997)

The outcome of ecosystem functions that benefit human beings (Nasi et al. 2002)

Let us know your views, especially with regard to the equivalent terms in French, Spanish and German. Write to Renate Prüller at [prueller\(at\)iufro.org](mailto:prueller(at)iufro.org) or Michèle Kaennel Dobbertin at [kaennel\(at\)wsl.ch](mailto:kaennel(at)wsl.ch).

Beech silviculture in Europe's Largest Beech Country

[Full report](#)

At the meeting of IUFRO Unit 1.01.07 – Ecology and Silviculture of Beech held in Poiana Brasov, Romania, from 4-8 September 2006, emphasis was placed on the regeneration and young stand treatment of beech. However, selected presentations brought the audience broader perspectives of beech ecology, silviculture and conservation including e.g.:



Photo by Judith Stoeger, IUFRO Headquarters

- processes and patterns in virgin or unmanaged beech forests
- management history of European beech forests
- challenges for future beech silviculture under changing climate such as drought
- beeches in the US and Japan

Conference proceedings will be available also as a PDF file from the unit webpage and a mini-special issue of *Forestry* (Oxford University Press) is in progress and will hopefully be released by autumn 2007.

The next meeting is scheduled for September 8-12, 2008 and will take place at the Onuma International Seminar House, Nanae-town, Hokkaido, Japan. More comprehensive information will follow at our [IUFRO webpage](#).

Palle Madsen & Kazuhiko Terazawa
Contact: [pam\(at\)life.ku.dk](mailto:pam(at)life.ku.dk)

IUFRO Open Call for Expert in Public Relations and Communication on Full Secondment

Public relations and communication is high on the agenda of IUFRO in line with the IUFRO Strategy 2006-2010. For IUFRO, communication with potential users of scientific information and the public has become increasingly important. At the same time, IUFRO recognizes the need to strengthen the links with its members and officeholders.

Therefore, IUFRO is looking for a person with an excellent command of English and an interest in science and forest related issues who can support IUFRO in this most important task for a period to be negotiated on a full-time or part-time basis. This person would be based at IUFRO Headquarters in Vienna, Austria, and should be funded exclusively by his/her organization.

Such support would be a most valuable contribution towards reaching the goals set out in the IUFRO Strategy and would considerably strengthen the networking activities of IUFRO for the benefit of forests and people around the world.

For more information, please contact:

Dr. Peter Mayer, IUFRO Executive Director
IUFRO Headquarters, Hauptstrasse 7
1140 Vienna, Austria
E-mail: [mayer\(at\)iufro.org](mailto:mayer(at)iufro.org)

Publications

Updated IUFRO Structure and Addresses Available Soon at www.iufro.org !

IUFRO has just finished the latest updated version of its Structure as a PDF document for downloading or printing. The document will be available next week under [Who is Who](#) at the IUFRO web site.

There you will find comprehensive lists of the IUFRO Board and of all IUFRO Research Groups, Working Parties, Task Forces, Special Programmes and Projects as well as the contact details of all IUFRO officeholders. The document will be updated regularly and serves as a most valuable source of information for everybody working in or interested in IUFRO.

Proceedings from "Wood Structure and Properties '06"

The 5th IUFRO Symposium on "Wood Structure and Properties" from September 3-6, 2006 in Sliac-Sielnica, Slovakia, was organized jointly by the Faculty of Wood Sciences and Technology of the Technical University in Zvolen and IUFRO Division 5 Forest Products, RG 5.01.00 Wood Quality. The Symposium was focused on recent progress in solving problems related to variability of wood properties, biological control of wood quality and influence of wood quality on final products, and on outlining trends in further development. Proceedings have now been published: Kurjatko, S., Kúdela, J. & Lagana, R. (eds.): Wood Structure and Properties '06. Arbora Publishers, Zvolen, 522 pp. ISBN 80-968869-4-3. For orders, please contact: paule(at)vsl.d.tuzvo.sk

Journal of Small-scale Forestry

From the beginning of 2007 the Journal of Small-scale Forestry (formerly Small-scale Forest Economics Management and Policy) is published jointly by IUFRO 3.08 and Springer. As part of the arrangements with Springer, a special subscription rate of 35 Euro for IUFRO 3.08 members has been negotiated. For more information, contact: John Herbohn, Coordinator, IUFRO 3.08, University of Queensland, Australia, john.herbohn(at)uqg.uq.edu.au

"La biodiversité des forêts d'Afrique - Manuel pratique de recensement des vertébrés"

French language version of the African forest vertebrate field guide, edited by Glyn Davies from ZSL, which provides conservationists with an overview of data-gathering methods needed for effective management of African forests. Published by Earthwatch, jointly produced with the Zoological Society of London with support from Rio Tinto. To request a copy of the manual, please email: epapworth(at)earthwatch.org.uk

Congratulations!

Kazuo Suzuki, former Coordinator of IUFRO Division 7, became President of the Forestry and Forest Products Research Institute, a Japanese Member Organization of IUFRO, on 1 April 2007.

http://www.ffpri.affrc.go.jp/e_version/president.html

IUFRO Meetings

NOTE: The following list of meetings is just a selection!

For a full list of IUFRO events, please visit our online [calendar](#). Find more details on the [homepages](#) of IUFRO Units involved.

Non-IUFRO meetings are also announced on the IUFRO [Noticeboard](#) on our web site.

July 31, 2007

Methods of Assessing Urban Forest Structure
Honolulu, Hawaii, USA

Organizers: [IUFRO 6.14.00](#) and ISA (International Society of Arboriculture)

Meeting held in conjunction with 83rd ISA Annual Conference (July 28 - August 1, 2007)

Contact: David Nowak, dnowak(at)fs.fed.us
<http://www.unri.org/iufro>

August 14-20, 2007

Integrative Science for Integrative Management
Saariselkä, Finland

[IUFRO Division 6](#) Symposium

Contact: James E. Johnson, jej(at)vt.edu

<http://www.metla.fi/tapahtumat/2007/iufro-d6/>

August 26-31, 2007

10th Int'l IUFRO Division-5 Wood Drying Conference
Orono, Maine, USA

[IUFRO 5.04.06](#)

Contact: Robert Rice, iufrodry(at)umit.maine.edu

<http://www.forest.umaine.edu/iufro/index.html>

August 26-31, 2007

Fourth International Meeting on Phytophthoras in Forests and Natural Ecosystems

Monterey, California, United States

[IUFRO 7.02.09](#)

Contact: Susan J. Frankel, s.frankel(at)fs.fed.us

<http://nature.berkeley.edu/IUFRO2007/phytophthora/>

September 6-7, 2007

Forests and Forestry in the Context of Rural Development
Warsaw, Poland

IUFRO European Congress

organized in conjunction with the EFI Annual Conference

Contact: Piotr Paschalis-Jakubowicz,
paschalis(at)delta.sggw.waw.pl

<http://conference2007.wl.sggw.pl/>

September 3-4, 2007

3rd Conference on Hardwood Research and Utilisation in Europe

Sopron, Hungary

[IUFRO Division 5](#)

Contact: Laszlo Bejo, University of West Hungary, Sopron, Tel/Fax: +36 99 518 386, Lbejo(at)fmk.nyme.hu

<http://hdwconf.fmk.nyme.hu/>

September 20-25, 2007

International Workshop on Biological Control of Invasive Species of Forests in the United States and P. R. China

Beijing, China

[IUFRO 7.03.08](#)

Contact: Zhong-qi Yang, yangzq(at)caf.ac.cn

September 29, 2007

Reunión Nacional de Derecho Forestal

Veracruz, México

Organized by SEMARNAT, CONAFOR, PROFEPA, IMDEFAC and [IUFRO 6.13.01](#)

Contact: Fernando Montes de Oca,

fernandomontesdeoca(at)imdefac.com.mx

October 7-11, 2007

Austro2007 "Meeting the Needs of Tomorrow's Forests: New Developments in Forest Engineering"

Vienna, Austria

Organized by BOKU University and Virginia Tec Forestry Co-sponsored by [IUFRO Division 3](#)

Contact: austro2007(at)boku.ac.at

<http://www.wabo.boku.ac.at/9140.html>

October 22-26, 2007

Eucalypts and Diversity: Balancing Productivity and Sustainability

Durban, South Africa

[IUFRO 2.08.03](#), [7.02.07](#)

Contact: Tammy Swain, Email: tammy(at)icfr.unp.ac.za

<http://www.iufrodurban.org.za/>

October 29 - November 2, 2007

All Division 5 Conference

Taipei, China-Taipei

Contact: Chris Risbrudt, <crisbrudt(at)fs.fed.us>

<http://www.iufro.org/science/divisions/division-5/50000/activities/>

September 15-19, 2008

Methodology of Forest Insect and Disease Survey in Central Europe

Strbske Pleso (High Tatras), Slovakia

[IUFRO 7.03.10](#)

Contact: Andrej Kunca - kunca(at)nlcsk.org

Summer 2009

First World Congress in Environmental History

Copenhagen, Denmark

Organized by the International Consortium of Environmental History Organizations (ICE-HO) and hosted by Roskilde University, co-sponsored by [IUFRO 6.07.00](#).

Contact: Steven Anderson, President, Forest History Society (FHS), stevena(at)duke(dot)edu

Web site: <http://www.foresthistory.org/Events/ICEHO.html>

Other Meetings

May 15-16, 2007

Future Lead Markets of the Forest-based Sector

Hanover, Germany

The conference is part of the official programme of the German Presidency of the European Union.

Contact: Andreas Kleinschmit von Lengfeld, FTP Project Secretary, andreas.kleinschmit(at)cei-bois(dot)org

<http://www.forestplatform.org>

June 10-13, 2007

Forest Products Society - 61st International Convention

Knoxville, Tennessee, USA

and

June 13-15, 2007

International Conference on Nanotechnology for the Forest Products Industry

Knoxville, Tennessee, USA

Co-sponsored by Forest Products Society and TAPPI

Contact: conferences(at)forestprod.org

<http://www.forestprod.org/confic07.html>

July 3 - 5, 2007

IBEROMADERA Congress

Puerto Madero, Buenos Aires, Argentina

As part of the FITECMA 2007 wood fair.

Contact: iberomadera2007(at)ritim.org.ar

<http://www.ritim.org.ar/iberomadera2007>

July 28, 2007

Sustainable Forestry for Water Resources Management and Flood Mitigation in Mountainous Regions

Nagoya University, Japan

Organized by JST/CREST "Field and modeling studies on the effect of forest devastation on flooding and environmental issues"

<http://www.rcms.nagoya-u.ac.jp/Intro/>

September 17-21, 2007

2nd International Symposium on Multi-Strata Agroforestry Systems

Turrialba, Costa Rica

Organized by CATIE, CIRAD, University of Wales, ICRAF

Contact: AFSymposium(at)catie.ac.cr

<http://web.catie.ac.cr/AFS/Symposium>

September 30 - October 3, 2007

Global Vision of Forestry in the 21'st Century

Toronto, Canada

Organized by the Faculty of Forestry, University of Toronto, on the occasion of its Centennial Celebrations

Contact: Shashi Kant, shashi.kant(at)utoronto.ca

<http://www.forestry.utoronto.ca/centennial/congress.htm>

October 16-18, 2007

The Future of Forests in Asia and the Pacific - Outlook for 2020

Chiang Mai, Thailand

Contact: Patrick Durst, FAO Regional Officer for Asia and the Pacific, patrick.durst(at)fao.org