

Scientific Recognition: Ecosystems Services and Management

Michael Obersteiner

Keynote presentations

- Keynote speaker at the Climate-Smart Agriculture 2015: Global Science Conference in Le Corum, Montpellier. Presentation: Climate-Smart Agriculture – adaptation or transformation. Montpellier, France. 16-18 March 2015
- Invited talk at Global Soil Week 2015 in Potsdam: The value of soil information for a more resilient global food system. Potsdam, Germany. 20-21 April 2015
- Invited talk at the Cool Earth Forum: The Relationship between Energy Systems and Ecosystems. Tokyo, Japan. 7-8 October 2015

Advisory positions

- Strategic Advisory Group, Norway's International Climate and Forest Initiative. Oslo, Norway
- Scientific Advisory Board, Bern, Switzerland
- Invited expert to the Policy and Earth Observation Innovation Cycle International Symposium on Assessing the Impact of Satellite Earth Observation on Society and Policy. Tokyo, Japan. 9 November 2015
- Coordinating Lead Author several chapters of the Assessment on Land Degradation and Restoration with the Intergovernmental Platform on Biodiversity and Ecosystem Services. Ongoing since March 2015.
- Member of the committee to establish the Knowledge Systems for Sustainability Consortium with support from the Rockefeller Foundation, five globally premier research organizations with complementary capabilities and mandates formalized mutual commitments to intensified collaborations that would lead toward a modern science knowledge infrastructure and decision-relevant science for sustainability. Ongoing since January 2015.
- Expert Panel member on the UN Environment Programme's International Resource Panel which has launched an assessment of the International Resource Panel on the resource implications of the Sustainable Development Goals. Panel member since May 2014.
- Member of the Scientific Steering Committee for the Swiss National Science Foundation 'Soil as a Resource'. Steering Committee member since January 2012.

Earth Observation Systems Group

Steffen Fritz

- Vice Chair of European Cooperation in Science and Technology Action TD1202 Mapping and the Citizen Sensor
- Editorial Board member of *Open Geography Journal*
- Guest Editor of special issue in the journal Remote Sensing on Citizen Science and Earth Observation
- Steering Committee of the Group on Earth Observation Human Planet initiative
- Invited keynote speaker at the Citizen Science Award 2015 as part of Austria's Sparkling Science initiative. 15 December 2015

Ian McCallum

- Member of the European Citizen Science Association Working Group on Data and Service Infrastructure for Citizen Science

Linda See

- Editor of *Environment and Planning B*
- Guest Editor of a special issue on Spatial Analysis for Environmental Applications for the journal *International Journal of Geographic Information*
- Guest Editor of a special issue on Validation and Inter-Comparison of Land Cover and Land Use Data for the journal *Remote Sensing*
- Co-lead of European Cooperation in Science and Technology Action TD1202 Working Group on Acquiring and Managing VGI (Volunteered Geographic Information)

Dmitry Schepaschenko

- Member of the Academic Council, Moscow State Forest University, Russia
- Member of the editorial advisory board of *Forestry Ideas* journal
- Invited lecture: A citizen science application for improving knowledge of the spatial distribution of global forests, at XIV World Forestry Congress, Durban, South Africa. 7-11 September 2015
- Invited lecture: Biomass.Geo-Wiki.org – an online platform to visualize, analyze, and improve biomass datasets, at the Regional Workshop on Forest Monitoring of the Group on Earth Observations' Global Forest Observations Initiative

Anatoly Shvidenko

- Member of the editorial and advisory boards of international journals: Mitigation and Adaptation Strategies for Global Change and *Eurasian Journal of Forest Research*; Russian Journals Forest Science, *Siberian Journal of Forest Science*, *Journal of Siberian Federal University*, and the *Scientific Bulletin of Siberian State Airspace University*
- Participation and organization of the side event: No South with North, no North without South at XIV World Forestry Congress, Durban South Africa. 7-11 September 2015
- Two invited lectures for PhD students, researchers, and students of Korea University, Seoul, Korea (System methodology of Terrestrial Ecosystems Full Verified Carbon Account and Adaptation and Mitigation Strategies in Northern Eurasian Forests)
- Keynote lecture at the 4th International Workshop on Uncertainty in Atmospheric Emissions, Cracow, Poland: Full Verified Carbon Account of Forest Ecosystems as a Fuzzy System: An attempt to Assess Uncertainty. 7-9 October 2015
- Elected member of Eurasian Academy of Sciences

Membership of policy-relevant committees

- Member of Advisory Committee of International Boreal Forest Research Association
- Member of Siberian Committee of International Geosphere-Biosphere Program
- Member of Global Forest Carbon Working Group

Environmental Resources and Development*Petr Havlik***Keynote presentations**

- Climate Change and Poverty Conference Presentation: Climate change and mitigation in agriculture and forestry: An integrated assessment of impacts on poverty, Washington, D.C., USA. 9-10 February 2015
- Workshop on negative emissions Organized by Global Carbon Project Tsukuba International Office. Presentation: Trade-offs between biomass supply, land use related mitigation options and other societal goals: Insights from a global, bottom-up land use model (GLOBIOM), Sapporo, Japan
- 24th World Outlook Conference. Presentation: Agricultural/land use part of the new 'IPCC' scenarios around SSPs, Washington, D.C., USA. 8-9 June 2015

*Stefan Frank***Keynote presentations**

- GHG mitigation in European agriculture: cost-effectiveness, trade-offs and emission leakage. Invited guest researcher at Joint Research Centre Institute for Prospective Technological Studies. April – June 2015
- GLOBIOM workshop, Seville, 22 June 2015
- Expert workshop on components of EEA Ecosystem Capital Account - Focus on biomass carbon and biodiversity data. Invited presentation at EEA. Copenhagen. 24 March 2015

*Hugo Valin***Keynote presentations**

- 2015 CRC Life Cycle Analysis of Transportation Fuels Workshop. Presentation: Assessing Land Use Change Impacts of Conventional and Advanced Biofuels Consumed in the EU, Argonne National Laboratory, USA. 26-28 October 2015
- The future of global livestock systems and the environment at the Conference on Agricultural Productivity and the Environment' [in collaboration with Petr Havlik], US Department of Agriculture Economic Research Service, Washington D.C., USA. 11-12 March 2015

*Oskar Franklin***Keynote presentations**

- American Geophysical Union Fall Meeting Modeling Dynamic Height and Crown Growth in Trees at. San Francisco, 14-18 December 2015
- Modeling ectomycorrhizal forest: A plant-microbe system perspective
- 2nd Annual Meeting European Cooperation in Science and Technology action. Presentation: Biolink -Linking belowground biodiversity and ecosystem function in European forests, Krakow, 17-19 March 2015

Nicklas Forsell

Keynote presentations

- Invited expert panelist for: From INDCs to 2 degrees, bridging the gaps in mitigation & implementation, event lead by Directorate General Clima. EU Pavilion, Conference of the Parties 21 - 2015, Paris, France. 3 December 2015
- Invited expert panelist for the BioSustain stakeholder consultation workshop organized by Directorate General Energy. Brussels, Belgium. 7 December 2015

Methods for Economic Decision-making under Uncertainty

Andrey Krasovskii

- Member of the Technical Committee 2.4 on Optimal Control of the International Federation of Automatic Control
- IPC Member of the 16th IFAC workshop on Control Applications of Optimization CAO'2016
- Invited public lecture at the Ural State Agrarian University, Ekaterinburg, Russia, 24 April 2015

Policy and Science Interface

Florian Kraxner

Keynote presentations

- Future trend of bioenergy and its standardization in Asia and Europe. Invited keynote held at 3rd Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy Bioenergy Workshop Future Development of ACMECS Bioenergy: Regional Plan and Standardization Ubon Ratchathani, Thailand. 8-11 December 2015
- From Classic BECCS to Modern Negative Emissions. Invited talk provided at the European Carbon Negative Conference, Brussels, Belgium. 9 November 2015
- The Global View – Aspects of an Integrated Approach. Invited presentation held at the IIASA side event: No North without South - No South without North. IIASA side event 10 September 2015, at the XIV World Forest Congress, Forests and People: Investing in a Sustainable Future, Durban, South Africa. 7-11 September 2015
- How will Megatrends Influence Forests? Invited talk provided at the Future Forest Side Event, 8 September 2015 at the XIV World Forest Congress, Forests and People: Investing in a Sustainable Future, Durban, South Africa. 7-11 September 2015
- From Global Biomass Issues to the Japanese situation. Invited talk at the Global Carbon Project Workshop on Negative Emissions: Bridging Societal and Mitigation Needs, Sapporo, Hokkaido, Japan. 2 - 5 September 2015
- Reconciliation of top-down versus bottom-up modeling in the renewable energy sector. Invited keynote held at the 2nd Asian Energy Modeling Workshop on Climate Change and Sustainability, Energy Studies Institute, National University of Singapore, Singapore. 23-24 July 2015
- What's the scenario? Towards renewable and sustainable energy production in the Alps: spatially explicit modelling of production and protection. Keynote held at the recharge.green side event at the Greenweek 2015, Representation of the European Region Tyrol-South Tyrol-Trentino, Brussels, Belgium. 5 June 2015
- Optimizing renewable energy systems in the Alpine space – balancing production and protection. Invited talk at the International Final Conference of the recharge.green Project, Sonthofen, Germany. 20-21 May 2015
- The Future Use of Nordic Forests - A Global Perspective. Invited book launch at the 17th International Boreal Forest Research Association Conference 2015, Rovaniemi, Finland. 25-29 May 2015
- Resilience Thinking in a Changing World. Invited lecture at 1st Ojeong Eco-Resilience Institute Symposium, hosted by Ojeong Eco-Resilience Institute, Seoul, Korea. 7-8 May 2015
- Policy Support Modeling - National consistent global land use modeling at IIASA-ESM. Invited talk at the European Cooperation in Science and Technology Workshop - forestry modeling for integrated policy, Cascais, Portugal. 9-11 March 2015
- Balancing renewable energies and ecosystem services at different scales in the European Alps – possible lessons to learned for Japan. Invited lecture at the Global Carbon Project Tsukuba Office Workshop: Bridging between Urban and Regional Ecosystems while considering Negative Emissions, at the Toyota High-level Symposium on Sustainable Cities, Toyota City, Aichi, Japan. 15-16 January 2015

Steering/advisory boards, delegations, memberships, editorials

- Intergovernmental Platform on Biodiversity and Ecosystem Services nominee, Deliverable 4c, Expert Group to develop a guide on and a catalogue of Policy support tools and methodologies
- Member of the Steering Committee of the International Boreal Forest Research Association
- Editorial board member of the *Journal of Carbon Balance and Management*
- Member of the Steering Board of the Managing Global Negative Emissions Technologies Initiative by the Global Carbon Project
- Member of the Editorial Board of the Global Carbon Atlas, a new non-profit initiative promoted by the Global Carbon Project and supported by the BNP Paribas Foundation

- Member of Eco-Leader Education Committee of Korea University BK21+ ELEC
- Austrian Delegate to the UN Economic Commission for Europe/Food and Agriculture Organization (UNECE/FAO) Team of Specialists on Forest Communication/Communicators Network, Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management. <http://timber.unece.org/>
- Austrian Delegate to the UNECE/FAO Team of Specialists on Forest Products, Markets and Marketing, Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management
- Austrian Delegate to the UNECE/FAO Team of Specialists on Forest Sector Outlook, Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management
- Austrian Delegate to the UNECE/FAO Team of Specialists on Wood Energy, Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management
- IIASA Coordinator of Foresight – UK-based Science-Policy Maker Interface Activity, Government Office for Science, London, UK
- IIASA Representative to the Scientific Committee on Problems of the Environment; established by the International Council for Science, Paris, France

Book editorials

- Westholm E., Beland Lindahl K. and F. Kraxner (Eds.) 2015: The Future Use of Nordic Forests – A Global Perspective. Springer International Publishing Switzerland 2015, XXI, 169 p., ISBN 978-3-319-14217-3, DOI 10.1007/978-3-319-14218-0
- Kraxner F. and S. Leduc (Eds). 2015. Modeling and visualization of optimal locations for renewable energy production in the Alpine Space with a special focus on selected pilot areas. WP5 Report, International Institute for Applied Systems Analysis. recharge.green Alpine Space Project. ISBN 978-3-7045-0150-9. Available at: <http://www.recharge.green-eu>
- Kraxner F. and S. Leduc (Eds). 2015. Recommendations and lessons learned for a renewable energy strategy in the Alps. WP5 Report, International Institute for Applied Systems Analysis. recharge.green Alpine Space Project. ISBN 978-3-7045-0151-6. Available at: <http://www.recharge.green-eu>

Sylvain Leduc

Keynote presentations

- A Scenario of Renewable Energy in the Alps. recharge.green project, Transnational Implementation Workshop, Cuneo, Italy. 21 April 2015
- Decision Support System (DSS) Renewable Energy Modeling on the Alpine Space. Recharge.green final conference, Sonthofen, Germany. 21 May 2015
- Towards renewable and sustainable energy production in the Alps: spatially explicit modelling of production and protection. Workshop on Renewable Energy & Nature Conservation, Vienna, Austria. 24 June 2015

Book editorials

- Kraxner F. and S. Leduc (Eds). 2015. Modeling and visualization of optimal locations for renewable energy production in the Alpine Space with a special focus on selected pilot areas. WP5 Report, International Institute for Applied Systems Analysis. recharge.green Alpine Space Project. ISBN 978-3-7045-0150-9. Available at: <http://www.recharge.green-eu>
- Kraxner F. and S. Leduc (Eds). 2015. Recommendations and lessons learned for a renewable energy strategy in the Alps. WP5 Report, International Institute for Applied Systems Analysis. recharge.green Alpine Space Project. ISBN 978-3-7045-0151-6. Available at: <http://www.recharge.green-eu>

Ping Yowargana

Keynote presentations

- Geo-Wiki: Introduction of crowdsourcing tools for global biomass observation. Invited lecture at the SilvaCarbon Technical Workshop: Evaluating Methods for Biomass Estimation and Forest Carbon Mapping, Hanoi, Vietnam. 24 July 2015
- Techno-economic modelling for Energy Decision Support System. Invited lecture at the workshop: Scientific Collaboration and Capacity Building: Decision Support Systems to Deliver Long Term Energy Vision, Bandung, Indonesia. 16 September 2015

8 Ecosystem services. Quite the same Wikipedia. Just better. 7 Management and policy. 7.1 Ecosystem-based adaptation (EbA). 8 Estuarine and coastal ecosystem services. 8.1 Regulating services. 8.1.1 Climate regulation. In following years, variations of the term were used, but eventually 'ecosystem services' became the standard in scientific literature.[11]. The ecosystem services concept has continued to expand and includes socio-economic and conservation objectives, which are discussed below. A history of the concepts and terminology of ecosystem services as of 1997, can be found in Daily's book "Nature's Services: Societal Dependence on Natural Ecosystems".[3]. Management and the Ecosystem Service Concept. GAIA 16/3(2007): 215-221. Abstract. Ecosystem management emphasises ecosystem service concepts. in order to improve land management and to justify nature conservation. This approach rests on the assumption that conserving ecosystem services may place constraints on future management options. Recognition of trade-offs and opportunity costs or of other forms of valuation may risk undermining conservation efforts, as well as the credibility of conservationists, if economic outcomes turn out to be less favourable than expected. Recognition of how ecosystems could provide more complex services to mankind date back to at least Plato (c. 400 BC) who understood that deforestation could lead to soil erosion and the drying of springs [3]. However, modern ideas of ecosystem services probably began with Marsh in 1864 [4] when he challenged the idea that Earth's natural resources are not infinite by pointing to the scientific discovery of the finite nature of resources. To understand the relationships between humans and natural ecosystems through the services derived from them, consider the following cases: Management objectives for the protection of ecosystem services. Environmental Science & Policy 3: 333-339. Balvanera, P., G.C. Daily, P.R. Ehrlich, T.H. Ricketts, S. Bailey, S. Kark, C. Kremen and H. Pereira. Ecosystem services, the outputs, conditions, or processes of natural systems that benefit humans or enhance social welfare. The concept of 'ecosystem services' emerged during the 1970s and gained increasing recognition in the following decades. However, the idea that natural systems support human welfare is much older. Relationships between deforestation and water supply were documented by Plato as early as 400 bce. The Ecosystem Services and Management Program (ESM) has built integrated knowledge and data systems to provide a trusted science base for land management policy processes in many global regions. These aim to improve human wellbeing and sustainable management of the Earth's natural resources. Guiding production and consumption choices that are consistent across scales and compatible with the maintenance of equitable access to multiple ecosystem services, is a scientific challenge that ESM is uniquely positioned to address based on its cluster of citizen science and modularly linked land resources.