



IMCG Bulletin: February 2014

Word from the Chair



www.imcg.net

Dear mire friends

Globally contracting parties of the Ramsar convention celebrated World Wetlands Day. The theme of this year (Wetlands and Agriculture – partners together for a better future) certainly caused some controversy. The purists amongst us would certainly not support agriculture in pristine mires; whilst many would argue (thinking about Europe) that agriculture in peatlands has certainly contributed to biodiversity. It is also generally accepted that peatlands (as with other wetlands types) are a key component in subsistence and small scale farming in many impoverished regions of the world.

How then do we contribute to the conservation of mires in regions where they are often one of the few accessible natural resources? This is currently one of the concerns that we grapple with in South Africa. As an example: some of our most impoverished communities on the Indian Ocean sea-board are impacting heavily on one of the rarest mire types in the country– tropical peat swamp forest. These swamp forests are cleared and drained to cultivate various food products. Needless to say that traditional conservation practices (such as fencing people out) often result in conflict with local communities and is often more damaging to the peatlands with the negative perceptions towards conservation that last longer than the fence itself. Are education, capacity building and the application of wise-use principles more effective? Realities on the ground are often of complex socio-economic nature that far outweighs our ability to come up with simple solutions.

Agriculture undoubtedly impacted on mires and peatlands in the past and is likely to do so in future. We are very interested to hear how colleagues have dealt with this in other parts of the world. Please share your advice and experiences with us in the next IMCG Bulletin.

Please send your contribution to the IMCG Bulletin: Piet-Louis Grundling - peatland@mweb.co.za

IMCG 2014 Field Symposium, Congress and General Assembly, Belarus, July 13-27, 2014.

The IMCG 2014 Field Symposium, Congress and General Assembly will be held in Belarus from 13 to 27 July 2014. We will make a round-tour through the entire country and visit the most important mire and peatlands, with many new developments and interesting discussions.

Theme: New concepts of peatland management, restoration and financing

Registration: The *Field Symposium* will for logistical reasons be limited to 50 persons, so register (with the registration form) as soon as possible. **Deadline** for registration is 30 April 2014!

The costs for the total trip will be **€ 850 for IMCG members**. Early registration is necessary to secure the very limited cheap but decent accommodation. To limit costs, participants will be lodged in 2-3 bed guestrooms. Visit our website (www.imcg.net) to download registration forms.



Mires and Peat:

New articles in *Mires and Peat* (February)

Special Volume (13): Reed as a Renewable Resource and Other Aspects of Paludiculture

- Thermal transmittance of reed-insulated walls in a purpose-built test house (M. Miljan *et al.*)
- Sphagnum farming in Germany – a review of progress (G. Gaudig *et al.*)

Find these and more at <http://www.mires-and-peat.net/>

2014/15 Special Volume: *Mountain Peatlands*

We have 15 expressions of interest with 4 papers already submitted! If you work in the mountains, and especially if your continent or country is not yet on the list, please do consider whether you could offer a manuscript. The current target date for new submissions is 31 May 2014, but later submissions can be accommodated. To add your planned article to the list, email your provisional title and projected submission date to Olivia Bragg (o.m.bragg@dundee.ac.uk) or Piet-Louis Grundling (peatland@mweb.co.za).

News received from IMCG Regions

Canada

Burns Bog under threat – by Dara Peat (communications@burnsbog.org)

Delta, B.C., Canada: Burns Bog, the largest raised peat bog in Western North America, is in danger. MK Delta Lands Group wants to develop 89 acres on the lagg of Burns Bog. The development of 1100 condos plus a shopping centre and offices may invade the peat bog in the near future.

Burns Bog is a globally unique ecosystem that covers around 3000 ha (7400 acres) of land near the Fraser River in the municipality of Delta, British Columbia, Canada. It is the largest undeveloped urban wilderness in North America and was designated a RAMSAR site in 2012. Five thousand acres of Burns Bog were purchased by four levels of Canadian Government in 2004. The land that MK Delta wants to develop is part of a 525 acre parcel that the landowner refused to sell. MK Delta's site is sandwiched between three parts of the ecological area of Burns Bog and it is a critical part of the Burns Bog "lagg zone". Lagg zones are drier than the centre of a bog and unique plants and animals live within them. Lagg zones keep water tables high in bogs. They act as buffers, or transition zones, between pristine low-nutrient bogs and high-nutrient, or in this case human disturbed, areas. Every bog needs a lagg zone. When lagg zones are destroyed bogs are destroyed. Peat bogs need a high water table to survive and they need that buffer between urban and bog areas. The peat in the 89 acre lagg area is over 70 feet deep. This is deeper than in some areas of the Ecological Area of Burns Bog.

According to MK Delta's own bio-inventory, submitted in January 2013, the land that MK Delta plans to develop is valuable habitat. The land is likely the home of four endangered species: the Pacific Water Shrew, the Southern Red-backed Vole, the Trowbridge's Shrew, and the Northern Red-legged Frog (the area is moderately to highly suitable habitat for these species). The area is also moderately suitable habitat for breeding songbirds, tree roosting bats, the Western Screech Owl and the Barn Owl. Sandhill Cranes, which are regionally endangered, have been seen 1km from MK Delta's land and the cranes may even feed on the site itself. Twelve sensitive ecosystems that are "of special concern" or "threatened or endangered," according to B.C.'s provincial Government, may be destroyed if MK Delta develops their land.



Despite everything MK Delta Lands Groups continues their push to develop their land. They sent their proposal to Metro Vancouver, the reigning authority on development proposals in the Lower Mainland of B.C. in July 2013. Metro Vancouver sent the proposal back asking that the Corporation of Delta hold public hearings on the proposal. Delta has not done so yet. Numerous letters have been sent to the Corporation of Delta opposing MK Delta's development and over 6000 people have signed an online petition and a print petition opposing MK Delta's development proposal. The people of Delta and the Burns Bog Conservation Society are waiting. The future of Burns Bog lies in the balance. The online petition is on the Burns Bog Conservation Society's website, www.burnsbog.org

2nd renewal Industrial Research Chair in Peatland Management

By Hans Joosten (joosten@uni-greifswald.de)

On February 18th, 2014, the NSERC Industrial Research Chair in Peatland Management at Université Laval, held Line Rochefort, director of the Peatland Ecology Research Group, was renewed. This is a third term for this chair, whose mission is to "Develop knowledge on methods of ecological restoration and rehabilitation of peatlands as well as the culture of Sphagnum as restoration tools. And to pursue researches on the best approaches of environmental management of peatlands in partnership with the Canadian peat industry".

It is rare for the 'Natural Sciences and Engineering Research Council of Canada' NSERC to provide a third term chair to the same owner, and more, with the industrial partners of origin. The synergy between these actors was highlighted during the event, during the speech of the dean of the Faculty Jean-Claude Dufour, the president of the Canadian Sphagnum Peat Moss Association Paul Short and the chair holder Line Rochefort.

UK-Ireland

By Olivia Bragg (o.m.bragg@dundee.ac.uk)

British Ecological Society Peatland Research Special Interest Group

Hot off the press! 2014 PRSIG Field Meeting, Glenfeshie Great Moss, June 2014

The Glenfeshie Great Moss (Mòine Mhór), located at 900–950 m a.s.l. in the Cairngorms National Park (Scotland), is probably the highest bog in Britain. It is currently in poor condition but, following a drastic reduction of red deer numbers in 2006, there are hopes that the peatland ecosystem can now recover its full functionality. In this context, we are invited to spend the week commencing 09 June 2014 (arrive Monday, leave Friday) undertaking a focused investigation of its condition, ecological processes and restoration potential to inform future land management. The invitation presents a rare opportunity to visit and study the Mòine Mhór with logistical support including off-road transport. The information collected will augment results from long-term hydrometric measurements in the upper Feshie (river) catchment and a recently started project on water-borne carbon losses from the Mòine Mhór itself (based at Dundee University), and form the basis of a report and possible peer reviewed publication. Cost t.b.a. but will be modest - based on hostel accommodation and subsidised (although participants will need to bring themselves to the Highlands, which is possible by rail to Kingussie/Aviemore as well as by road). However, the logistics of working at this remote site mean that we can offer only a limited number of places. We would now like to hear from:

- a) anybody who would be interested in leading a mini research project within this meeting, on any aspect of peatland science (e.g. vegetation, soils, slope stability, soil piping, peat erosion, carbon dynamics, grazing, stratigraphy, palaeoecology, geochemistry, snow-lie, water quality, *etc. etc.*); and
- b) others who could benefit by attending and assisting (e.g. students wishing to broaden their experience of peatlands and peatland research).

Please email questions, expressions of interest and/or your research proposal to Olivia Bragg as soon as possible, and in any case by **18th April 2014** (o.m.bragg@dundee.ac.uk).



International PRSIG Conference 'In the Bog' in Sheffield, UK, September 2014

Professor Ian D. Rotherham and colleagues are organising a 3-day conference **In the Bog – The ecology, landscape, archaeology and heritage of peatlands** which will take place on **3rd to 5th September 2014**. It will examine the past, present and future of peatland landscapes across the world, bringing together speakers and presentations from a range of disciplines, backgrounds and countries. The conference themes are:

- The history of human activity associated with peatland landscapes – heaths, moors, bogs, fens and commons;
- The ecology and archaeology of peatlands;
- The landscapes of peatlands and their neglected heritage;
- The conservation management of peatlands - problems and issues; and
- The future challenges with climate change and carbon sequestration.

Papers relating to specific small case study areas, species or suites of species as well as those that address the issues at landscape or cultural levels will be presented. Speakers confirmed include: Jack Rieley, Jaanus Paal, Clifton Bain, Benjamin Gearey, Richard Oram, Roxane Andersen, Alper Colak, Andreas Heinemeyer, Simon Caporn, John Coll, Nicki Whitehouse, Jillian Labadz, Rob Rose, Jim McAdam and Ian Rotherham. A field visit will form part of the first day's events. There will be plenary and parallel sessions on both Thursday and Friday and a poster presentation session will be held on Thursday afternoon. Offers of posters and displays are still welcome, closing date 31st March 2014.

The event is sponsored and supported by: BES, IPS, IUCN, IUFRO, ESEH, Sheffield Hallam University, Landscape Conservation Forum, Thorne & Hatfield Moors Conservation Forum and JBA Consulting.

Places are limited and pre-booking is essential. More information and a booking form can be found at <http://www.ukeconet.org/event/in-the-bog-conference/> or email info@hallamec.plus.com or telephone 0114 2724227. Book before 31st March to take advantage of the early-booking discount.

For more PRSIG activities

see <http://www.britishecologicalsociety.org/getting-involved/special-interest-groups/peatland-research/>

New Zealand

By Bev Clarkson (clarksonb@landcareresearch.co.nz)

World Wetlands Day

The theme for World Wetlands Day 2014 was 'Wetlands and Agriculture' with the slogan being: 'Wetlands and Agriculture: Partners for Growth' to link to the International Year of Family Farming. The National Wetland Trust and the Department of Conservation went on a quest to find and reward a national Rural Wetland Champion - our most wetland-friendly farmer or farming family. Regional Councils were invited to nominate their regional hero, and a selection panel chose a winner who received a complimentary registration to the National Wetland Restoration Symposium (see below) and \$500 of native plants. The winner was the Donald Family of South Featherstone, southern North Island, whose farm and wetland complexes protected biodiversity and water quality, while still maintaining sustainable beef and dairy farming operations.

The judges also awarded a Highly Commended to the Gilder Family in Otago, and were impressed with all of the nominees.

Other World Wetland Day events were held throughout New Zealand, including kayak trips, boat trips, coach trips, plantings, and guided walking tours <http://www.wetlandtrust.org.nz/events.html>



National Wetland Restoration Symposium 2014

The 6th National Wetland Restoration Symposium was held in Auckland on 12-14 February 2014. The theme this year was Water and Wetlands: from Droughts to Storms. Over 180 delegates attended, enjoying a range of topics, including the links between wetlands and climate, coping with weather extremes when restoring wetlands, and a special focus on urban wetlands and the role of constructed wetlands (stormwater and treatment) wetlands. The keynote speakers were New Zealander of the Year 2013, Dame Anne Salmond, and Dr Dave Campbell (Waikato University).

Copies of many of the presentations are available on the National Wetland Trust website at: <http://www.wetlandtrust.org.nz/symposia.html>

The next wetland restoration symposium in 2016 will be held in the South Island, with possible contenders being West Coast and Sinclair Wetlands, Otago.



National Wetland Trust trustees at the Wetland Symposium dinner at Auckland Zoo.

Yangon/Kuala Lumpur

A joint Myanmar-international team of peatland specialists announced the discovery of rare peatland ecosystems near Inle Lake in North-east Myanmar.

Surveys were undertaken between 15-27 February 2014 and involved detailed surveys of the area in and around Inle Lake in Shan State with sampling and peat depth assessments in more than 70 locations.

A total of 9021ha of peatland was identified comprising three separate types:

- a) Lake margin peatlands up to 3m thick along the shores of Inle lake
- b) Floating peatlands between 50cm to 1.5m thick floating on the surface of the lake. These are subdivided into two – natural floating peatlands and modified floating peatlands used as floating gardens for cultivation of tomatoes and other vegetables.
- c) Calcareous spring mound peatland found in Tuang Bo Gyi Village in the northwest corner of Inle wetland. This peatland has been formed over thousands of years around an active spring fed by calcium rich



groundwater. It has formed a mound of peat about 6.5 m thick and covering about 3ha. Spring mound peatlands are very rare and this is one of the first to be described in Asia.

The peatlands of Inle lake play a key role in stabilizing water levels and improving water quality in the lake. The floating peatlands are also integral to the culture and economy of the local Intha Community who have cultivated the peat in floating gardens for hundreds of years.

Although the floating vegetation around Inle Lake has been known for years, it was not recognized that these were part of a much larger peatland system along the margins of the lake. The 9021 ha of peatlands represents the largest single area identified during 18 months of surveys in different parts of Myanmar. In addition, 1599 ha of peatlands were found in the nearby Heho basin where peatlands are all cultivated and covered with soil eroded from nearby hills.

“The identification of the peatlands of Inle Lake are an important component of a national inventory of peatlands under the Ministry of Environment Conservation and Forestry (MOECF) led by the Forest Resource Environment Development and Conservation Association (FREDA) with support from the Global Environment Centre (GEC)” stated U Sann Lwin, Secretary (Finance) of FREDA.

“We have documented more peatlands around Inle Lake than remain in the whole of Vietnam” said Dr Le Phat Quoi – a Vietnamese peatland expert who played a key role in the surveys.

Inle Lake is internationally known for its beautiful environment, clear waters and unique customs of the Intha people who row their fishing boats with their legs and balance on one foot as they catch fish with nets and special traps. Inle Lake has been designated as an ASEAN Heritage Park and joins U Minh Thuong National Park in Viet Nam and Tasek Merimbun National Park in Brunei Darussalam as ASEAN Heritage Sites with significant peatlands.

The peatlands at Inle are home to a range of rare and threatened species including the Eastern Sarus Crane, Ferruginous Duck and a number of endemic fish species. During the survey, freshwater crabs were observed breeding in burrows on the Calcareous Spring Mound at Tuang Bo Gyi.

“Calcareous Spring Mound Peatlands are very rare and the discovery at Inle Lake may be the first system to be documented in East or South East Asia” stated Faizal Parish Director of the Global Environment Centre. “The spring mound in Tuang Bo Gyi Village has been protected by the local community who do not allow any cultivation on it – to maintain its function to provide drinking water supply to part of the village and nearby monastery” he added.

“Peatlands in the Inle Lake basin are facing a number of threats including conversion for agriculture, clearance and burning of the vegetation and pollution by domestic waste and agrochemicals” – said U Sann Lwin. “We hope to work closely with the local communities and government agencies in the future to enhance the protection of key sites.”

For more information contact:

U Sann Lwin

Email : fredamyanmar@gmail.com

Website: <http://fredamyanmar.com>

Noor Azura Ahmad

Email : Azura@gec.org.my

Website: www.gec.org.my



News from all over

Surreal seascape revealed by the storms: Ancient oaks and pines from 5 000-year-old forest rise as Welsh beach is washed away at Borth, Ceredigion, Mid Wales (Article by David Wilkes)

An ancient forest was covered in peat before eventually being swallowed by the sea. According to local legends the trees and nearby township were flooded after a priestess neglected a magical well. The stumps preserved within the peat were uncovered by the latest set of storms which washed away the peat layer.

<http://www.dailymail.co.uk/news/article-2564285/5-000-year-old-forest-unearthed-storms-Beach-washed-away-reveal-ancient-oaks-pines.html>

Important letter to new Government of Quebec

In 2009, more than 500 scientists and conservation professionals called on the Quebec provincial government to fulfill its commitment to protect half of the territory north of the 49th parallel, Boreal forest lands that make up one of the richest ecosystems left in the world and represent critical carbon stores. [View 2009 letter \[PDF\]](#). That letter was instrumental in turning that commitment into formal provincial policy under Quebec's "Plan Nord". In 2012, IUCN affirmed that, "the aspirational goal of maintaining 50% of the northern territory of Quebec free from industrial development, if operationalized correctly, has the ability to be a guiding light to the globe as we combat the enormous global challenges of biodiversity loss and climate change," and congratulated the Government of Quebec "for its vision and commitments to conservation and aboriginal rights." [See full text of the IUCN Resolution \[PDF\]](#)

Under the renamed, "Nord pour Tous", the new Government has now removed the deadline of protecting half of the north by 2035, and replacing the interim goal of protecting 20% of the north by 2020 with a commitment of 12% by 2015. There is additional concern that the government will propose to change the wording of their commitment so that industrial logging would be allowed in areas currently expected to be protected from all industrial activity.

Please click here to [sign onto this important letter](#) asking the new Government of Quebec to not to roll back these existing policies and to maintain the commitment to protecting at least half of the Northern Boreal from Industrial Development by 2035.

Peatland experts to evaluate Asia Pulp and Paper's conservation policy

The Rainforest Alliance will evaluate the progress of Asia Pulp and Paper's (APP) forest conservation policy and commitments. APP announced in February 2013 it would stop clearing natural forests across its supply chains in Indonesia, accelerating a pledge to use only trees from plantations by 2015. Greenpeace applauded APP's new commitment as a breakthrough in efforts to save Indonesian rainforests.

A team of peatland experts led by Wageningen University and Research Center will spend three months analyzing current peat management issues and opportunities in APP supplier concessions. The team will propose a plan for a second phase of work that will identify an approach for moving towards responsible peat management.

Under the policy, brokered by The Forest Trust, a non-profit organization, APP agreed to change the way it supplies its mills with fiber, ending its role in deforesting Indonesia's remaining rainforests. Under the supervision of the Forest Trust, APP and its suppliers will only develop non-forested areas identified through independent High Conservation Value Forests (HCVF) and High Carbon Stock (HCS) forests assessments. APP also pledged to protect forested peatland and use best practice management to reduce and avoid greenhouse gas emissions within the peatland landscape.



APP's pledge followed a campaign by Greenpeace, which has pressured the pulp and paper producer — as well as the companies that uses its products — to end the practice of clearing natural forests.

Following this successful APP campaign, Greenpeace has turned its attention to leading competitor Asia Pacific Resources International. Last January, APRIL revealed plans for a sustainable forest management policy just weeks after the Indonesian pulp and paper giant was threatened with expulsion from the World Business Council for Sustainable Development.

<https://www.environmentalleader.com/2014/02/10/rainforest-alliance-peatland-experts-to-evaluate-app-progress/>

Restoring Scotland's peatlands

As lead advisor to the Scottish Government on peatland restoration, Scottish Natural Heritage (SNH) has been allocated a further £5 million from the Green Stimulus Package to be spend in 2014/15. This is in addition to the £1.7 million received in 2012. SNH has made excellent progress in delivery of the project - recently re-named 'Peatland Action' - which aims to:

- restore and manage peatlands to maintain carbon stores and encourage carbon sequestration (with 2500 ha peatland restoration by March 2015);
- restore peatland ecosystem functions;
- enhance ecosystem resilience to climate change; and
- build peatland restoration capacity and understanding amongst land managers, contractors, advisors and the public.

Scottish Natural Heritage is administering the Peatland Action project funding with the aim of storing and sequestering carbon through the restoration of peatland. The project contributes to the objectives of Scotland's National Peatland Plan, currently under development by Scottish Natural Heritage, Scottish Government, its Agencies and a wide group of stakeholders.

Given the extent of Scotland's peatlands (~2m ha) and the relatively poor condition of much of the resource, it is important that this funding is targeted at areas where it can make a significant difference in the timescales and budgets involved. <http://www.snh.gov.uk/climate-change/what-snh-is-doing/peatland-action/>

Nordic seminar on peatland drainage and environment

The presentations of this seminar (Kuopio, Finland, November 4-6, 2013) on future strategies for mitigation of GHG emissions and diffuse pollution to watercourses from arable land management are available under: <http://www.oulu.fi/pyovesen/node/23707>. Presentations include:

- [Arne Grönlund, Abandoned peat soils: status and future perspectives](#)
- [Jyrki Hytönen, Energy wood production and carbon sequestration on cut-away peatlands](#)
- [Kerstin Berglund, Peatland uses for cultivation - current policies and historical background](#)
- [Hlynur Oskarsson, The value of peatland rewetting for reducing GHG emission](#)
- [Jan Eksvärd, What do we need to put the knowledge into practice?](#)
- [Marja Maljanen, Atmospheric impact of abandoned boreal organic agricultural soils depended on hydrology of peat](#)
- [Marja Maljanen, N2O and CH4 emissions from boreal cultivated peat soils and forested croplands](#)



- [Merja Myllys, Leaching of nutrients from cultivated peat soils - results from field and lysimeter experiments](#)
- [Örjan Berglund, Continuous measurements of CO2 emission from cultivated peat soil - effect of tillage intensity](#)
- [Pertti Martikainen, Greenhouse gas dynamics of northern peatlands related to climate variability and land use](#)
- [Kristiina Regina, Impact of water table level on greenhouse gas emissions from a cultivated peat soil](#)
- [Narasinha Shurpali, Perennial bioenergy agriculture on a drained organic soil in eastern Finland](#)
- [Narasinha Shurpali, Perspective on modelling biogeochemistry of agriculture on drained peat soils](#)
- [Björn Klöve, Peatland drainage impacts on hydrology](#)
- [Björn Klöve, Leaching of nutrients from peatland drainage](#)

MoorLIFE seminar on Sphagnum reintroduction

Moors for the Future Partnership UK has announced a 'Save the date' for their MoorLIFE seminar 'Sphagnum reintroduction in practice' in Manchester, Wednesday 11th June 2014. This one day event will bring together practitioners, policy makers, researchers and students to share knowledge and best practice of the reintroduction of Sphagnum to upland peat bogs. Outcomes of the seminar will feed into a best practice guide. The seminar will include an update on the latest scientific research from Manchester Metropolitan University and the Moors for the Future Partnership as well as a poster session. The Moors for the Future Partnership has pioneered the landscape-scale reintroduction of Sphagnum in the Peak District and South Pennines - the key aim of the MoorLIFE project is to protect active blanket bog in these areas, which will include the reintroduction of Sphagnum over an area of 650ha.

More details, including registration arrangements, will be available soon at www.moorsforthefuture.org.uk/moorlife-seminar

Stakeholders in Jakarta map out long-term solutions to haze crisis

Peatland fires in eastern Sumatra, Indonesia, in recent weeks are again creating thick haze in the region, [closing schools, canceling flights, and leading to the arrests of farmers](#) accused of lighting the fires. Last year's crisis produced international headlines and quick responses from governments and led to a transboundary haze monitoring system. Earlier this year, [Singapore drafted a bill](#) that allows to fine companies for fires that take place on Sumatran plantations. The return of fires this month, however, has illustrated the need for long-term, holistic solutions to the haze issue.

A workshop held in January in Jakarta was the first major step toward a research program to better understand the drivers of the fires, to spur greater collaboration among Indonesian and regional stakeholders at all levels, and to untie the knot of policies and regulations that govern land use and fire protection in Indonesia. The workshop, hosted by CIFOR, drew more than 50 people — including researchers, government officials, and leaders from communities, civil society and the private sector, among others. CIFOR has extensively studied fires in Indonesia's tropical forests, in particular the [1997 crisis](#) and the [2013 fires](#). Set deliberately to clear peatlands and deforested areas for agriculture, the fires "were caused by people," affirmed Daniel Murdiyarso, a CIFOR principal scientist. The workshop laid bare a wide divergence of perceptions among the participants about who was responsible for starting the fires and who was responsible for putting them out; about which agency had jurisdiction over the fires, and which laws applied; about why the fires caused so much haze; and even about who suffered the greatest impacts. From numerous presentations and breakout discussions, though, a consensus started to coalesce around the need for stronger governance, better monitoring and more



research. Several presentations hammered on two key themes: overlapping claims over land ownership, and contradictory land and fire regulations. Land use, land tenure and firefighting in Sumatra are governed by a tangle of national, provincial and customary laws. This situation, participants explained, is exacerbated by an influx of land-seeking migrants; investments in agricultural expansion by companies; and tensions among small-scale agriculturists, mid-level planters and investors, and plantation companies. A lack of coordination among different levels of government; inadequate monitoring; and insufficient capacity in law enforcement and firefighting render governance woefully ineffective.

CIFOR scientist David Gaveau showed that more than half of the area that burned in June 2013 lay within concession areas allocated for industrial oil palm or acacia plantations — but that 60 percent of this land was occupied by smallholders. Smallholders say that the land they occupy in the concessions belongs to them. Field investigations confirm the occurrence of fires used in conflicts among small agriculturalists and companies.

[A broad research program on the haze issue](#), Louis Verchot, director of forests and environment at CIFOR, told the workshop, would seek to contribute to a reduction in fires, carbon emissions and haze through a better understanding of the socioeconomic drivers of fires; of the fires' impacts on climate and human health; and of the challenges of and opportunities for improving governance. The next step in a proposed haze research program will be discussed at the [Forests Asia Summit](#), 5-6 May — just as Sumatra's dry season begins.

For more information contact David Gaveau at d.gaveau@cgiar.org

http://blog.cifor.org/21463/stakeholders-in-jakarta-map-out-long-term-solutions-to-haze-crisis?utm_source=February+2014&utm_campaign=NEWS+UPDATE+English&utm_medium=email#.Uw8HRIWiWPO

IPCC peatland rewetting guidance now online!

The 'IPCC Wetlands Supplement' has now formally been published on the IPCC TFI website: <http://www.ipcc-nggip.iges.or.jp/public/wetlands/>

The report presents the new worldwide values for emissions from drained and rewetted wetlands, specifically for drained and rewetted peatlands. Also the 'KP Supplement' which provides detailed guidelines on greenhouse gas reporting and accounting under the new Kyoto Protocol rules is now online:

<http://www.ipcc-nggip.iges.or.jp/public/kpsg/>

Upcoming events (see also <http://www.imcg.net/pages/events.php>)

Understanding Wetlands: A Key Issue in the Transition to a Sustainable Economy, Palma (Mallorca), Spain

The UNESCO/SA NOSTRA Chair in Business and Environmental Management, hosted by the University of the Balearic Islands, is pleased to announce the first edition of the International Symposium on Natural Resource Management on "Understanding Wetlands: A Key Issue in the Transition to a Sustainable Economy". The Symposium will take place from June 19th to June 21st, 2014 at the Centre de Cultura "SA NOSTRA", in Palma (Mallorca), Spain.

2014 is the FAO International Year of Family Farming. Given wetlands are intimately linked to agriculture — which has led the Ramsar Convention to choose Wetlands and Agriculture: Partners for Growth as the World Wetlands Day theme for 2014—, the UNESCO/SA NOSTRA Chair organizes a symposium on wetlands aimed at disseminating knowledge about the value of these ecosystems, rich in biodiversity but especially vulnerable to anthropogenic impacts, in an attempt to contribute to their preservation. For this reason, the symposium



wants to be a meeting point between researchers from different fields focusing on the study of wetlands –from postgraduate and PhD students to renowned scientists– and wetlands’ managers, thus bridging the gap between academic researchers and managers.

Further information about the Symposium’s activities as well as the keynote speakers can be obtained from catedraunesco@uib.es. The closing date for registration is April 30th, 2014.

Recent scientific publications: peatland conservation

Every month a wealth of scientific papers are published, many of which have relevance for peatland management and mire conservation. In this column we present the title and the URL of a selection of these papers. The selection does not aim at completeness and will inevitably be biased by the (wide...) interest of the compiler (Hans Joosten). If you want to share papers that you fear otherwise would be missed, please send title and URL to joosten@uni-greifswald.de

Evapotranspiration and crop coefficient of common reed at the surroundings of Lake Balaton, Hungary:

<http://www.sciencedirect.com/science/article/pii/S0304377014000278>

Mechanisms and reversibility of effects of hybrid cattail on a Great Lakes marsh:

<http://www.sciencedirect.com/science/article/pii/S0304377014000151>

Germination of 14 freshwater wetland plants as affected by oxygen and light:

<http://www.sciencedirect.com/science/article/pii/S0304377013001733>

Vegetation dynamics in the southern Brazilian highlands during the last millennia and the role of bogs in Araucaria forest formation: <http://www.sciencedirect.com/science/article/pii/S1040618214000196>

Characterizing microclimate and plant community variation in wetlands:

http://link.springer.com/article/10.1007/s13157-013-0481-2?wt_mc=alerts.TOCjournals

Recent trends in satellite vegetation index observations indicate decreasing vegetation biomass in the southeastern saline Everglades wetlands: http://link.springer.com/article/10.1007/s13157-013-0483-0?wt_mc=alerts.TOCjournals

Survival and growth of suppressed Baldcypress reproduction in response to canopy gap creation in a North Carolina, USA swamp: http://link.springer.com/article/10.1007/s13157-013-0484-z?wt_mc=alerts.TOCjournals

Spatial autocorrelation of denitrification in a restored and a natural floodplain:

http://link.springer.com/article/10.1007/s13157-013-0488-8?wt_mc=alerts.TOCjournals

Relative significance of microtopography and vegetation as controls on surface water flow on a low-gradient floodplain: http://link.springer.com/article/10.1007/s13157-013-0489-7?wt_mc=alerts.TOCjournals

Effects of water level via controlling water chemistry on revegetation patterns after peat mining:

http://link.springer.com/article/10.1007/s13157-013-0490-1?wt_mc=alerts.TOCjournals

Nitrogen, phosphorus, carbon, and suspended solids loads from forest clear-cutting and site preparation: Long-term paired catchment studies from Eastern Finland: http://link.springer.com/article/10.1007/s13280-013-0439-x?wt_mc=alerts.TOCjournals

Suomen soiden ikä ja kehitys/Age and dynamics of peatlands in Finland:

http://weppi.gtk.fi/aineistot/Turvekartta/turveroot/turveraportit/Suomen_soiden_ika_443.pdf

A 3300-year atmospheric metal contamination record from Raeburn Flow raised bog, south west Scotland:

<http://www.sciencedirect.com/science/article/pii/S0305440314000193>

Carbon pools and fluxes in *Bruguiera parviflora* dominated naturally growing mangrove forest of Peninsular Malaysia: http://link.springer.com/article/10.1007/s11273-013-9318-2?wt_mc=alerts.TOCjournals



Long-term water table manipulations alter peatland gaseous carbon fluxes in Northern Michigan:

http://link.springer.com/article/10.1007/s11273-013-9320-8?wt_mc=alerts.TOCjournals

Is rewetting enough to recover *Sphagnum* and associated peat-accumulating species in traditionally exploited bogs?: http://link.springer.com/article/10.1007/s11273-013-9322-6?wt_mc=alerts.TOCjournals

The legacy of mid-Holocene fire on a Tasmanian montane landscape:

<http://onlinelibrary.wiley.com/doi/10.1111/jbi.12229/abstract>

Integrated conceptual ecological model and habitat indices for the southwest Florida coastal wetlands:

<http://www.sciencedirect.com/science/article/pii/S1470160X14000090>

Carbon release from boreal peatland open water pools: implication for the contemporary C exchange:

<http://onlinelibrary.wiley.com/doi/10.1002/2013JG002423/abstract>

A deglacial and Holocene record of climate variability in south-central Alaska from stable oxygen isotopes and plant macrofossils in peat: <http://www.sciencedirect.com/science/article/pii/S0277379113005064>

Cryostratigraphy and permafrost evolution in the lacustrine lowlands of West-Central Alaska:

<http://onlinelibrary.wiley.com/doi/10.1002/ppp.1800/abstract>

Controls on methane released through ebullition in peatlands affected by permafrost degradation:

<http://onlinelibrary.wiley.com/doi/10.1002/2013JG002441/abstract>

Spatial and temporal patterns of global burned area in response to anthropogenic and environmental factors:

Reconstructing global fire history for the 20th and early 21st centuries:

<http://onlinelibrary.wiley.com/doi/10.1002/2013JG002532/abstract>

Organic carbon transformations in high-Arctic peat soils: key functions and microorganisms:

<http://www.nature.com/ismej/journal/v7/n2/full/ismej201299a.html>

Geochemical records of palaeoenvironmental controls on peat forming processes in the Mfabeni peatland, Kwazulu Natal, South Africa since the Late Pleistocene:

<http://www.sciencedirect.com/science/article/pii/S0031018213005567>

The cascade of C:N:P stoichiometry in an ombrotrophic peatland: from plants to peat:

<http://iopscience.iop.org/1748-9326/9/2/024003>

Can treatment wetlands be constructed on drained peatlands for efficient purification of peat extraction runoff?: <http://www.sciencedirect.com/science/article/pii/S0016706113004369>

Water table regime regulates litter decomposition in Restiad peatlands, New Zealand:

http://link.springer.com/article/10.1007/s10021-013-9726-4?wt_mc=alerts.TOCjournals

How mangrove forests adjust to rising sea level:

<http://onlinelibrary.wiley.com/doi/10.1111/nph.12605/abstract>

Simultaneous estimation of actual litter enzymatic catalysis and respiration rates with a simple model of C dynamics in *Sphagnum*-dominated peatlands: http://link.springer.com/article/10.1007/s10021-013-9724-6?wt_mc=alerts.TOCjournals

Animating the Carbon cycle: http://link.springer.com/article/10.1007/s10021-013-9715-7?wt_mc=alerts.TOCjournals

The establishment patterns of tree seedlings are determined immediately after wildfire in a black spruce (*Picea mariana*) forest: http://link.springer.com/article/10.1007/s11258-014-0303-5?wt_mc=alerts.TOCjournals

Palm oil wastewater methane emissions and bioenergy potential: http://www.nature.com/nclimate/journal/v4/n3/full/nclimate2154.html?WT.ec_id=NCLIMATE-201403

Does climate control the northern range limit of eastern white cedar (*Thuja occidentalis* L.)?: http://link.springer.com/article/10.1007/s11258-013-0288-5?wt_mc=alerts.TOCjournals

Sensitivity of black alder (*Alnus glutinosa* [L.] Gaertn.) growth to hydrological changes in wetland forests at the rear edge of the species distribution: http://link.springer.com/article/10.1007/s11258-013-0292-9?wt_mc=alerts.TOCjournals

Does climate control the northern range limit of eastern white cedar (*Thuja occidentalis* L.)?: http://link.springer.com/article/10.1007/s11258-013-0288-5?wt_mc=alerts.TOCjournals

Sensitivity of black alder (*Alnus glutinosa* [L.] Gaertn.) growth to hydrological changes in wetland forests at the rear edge of the species distribution: http://link.springer.com/article/10.1007/s11258-013-0292-9?wt_mc=alerts.TOCjournals

Does climate control the northern range limit of eastern white cedar (*Thuja occidentalis* L.)?: http://link.springer.com/article/10.1007/s11258-013-0288-5?wt_mc=alerts.TOCjournals

Sensitivity of black alder (*Alnus glutinosa* [L.] Gaertn.) growth to hydrological changes in wetland forests at the rear edge of the species distribution: http://link.springer.com/article/10.1007/s11258-013-0292-9?wt_mc=alerts.TOCjournals

Sensitivity of black alder (*Alnus glutinosa* [L.] Gaertn.) growth to hydrological changes in wetland forests at the rear edge of the species distribution: http://link.springer.com/article/10.1007/s11258-013-0292-9?wt_mc=alerts.TOCjournals

Sensitivity of black alder (*Alnus glutinosa* [L.] Gaertn.) growth to hydrological changes in wetland forests at the rear edge of the species distribution: http://link.springer.com/article/10.1007/s11258-013-0292-9?wt_mc=alerts.TOCjournals

Sensitivity of black alder (*Alnus glutinosa* [L.] Gaertn.) growth to hydrological changes in wetland forests at the rear edge of the species distribution: http://link.springer.com/article/10.1007/s11258-013-0292-9?wt_mc=alerts.TOCjournals



Local and regional holocene vegetation dynamics at two sites in eastern Latvia:

<http://www.borenv.net/BER/pdfs/preprints/Stivrins.pdf>

Please send your contribution to the **IMCG Bulletin by the 20th of each month:**

peatland@mweb.co.za