



IMCG Bulletin: August 2014

Word from the Chair



www.imcg.net

Dear mire friends

It is SPRING in the southern hemisphere and the days are vibrant with new life! The IMCG Bulletin is also 1 year old this month and we are grateful to all our contributors of the past 12 months.

Peatlands and mires continue to be impacted on by various developments across the globe. Some of these impacts are due to socio economic factors such as in Zimbabwe (page 4) whilst others relate to bad planning such as in Indonesia (page 6). However, it seems that we are learning from our mistakes and recent initiatives in Europe bear testimony of that with the aims of the EU Biodiversity Strategy to halt biodiversity loss and to conserve ecosystem services (pages 7–8) and various publications on peatland values and restoration (page 8). As usual a list of recent scientific publications is available on the last pages.

IMCG members should not lose track of our contribution in conserving our planet's wetlands: let's continue with our networking and make mire conservation a reality!

Contributions for the IMCG Bulletin can be sent to Piet-Louis Grundling - peatland@mweb.co.za

Mires and Peat

Can you help the journal to grow even more?

Mires and Peat is a free, open access and globally accessible research journal that is, nonetheless, produced to the highest academic standards. To achieve this, we rely heavily on voluntary 'spare-time' inputs from numerous members of the research community. To maintain the current publication rate, we now need more editors. Article editing can be immensely rewarding. It involves taking charge of a submitted manuscript and steering it at least part of the way through the process of peer review, revision and transformation into a publishable article. Assistant Editors commit to routinely taking on this role for a few (typically up to six) articles per year. Guest Editors commit to a specific Special Volume of the journal, often suggesting the topic and overseeing the submission of material, in addition to contributing to reviewing and editing of some of the articles eventually published. Associate Editors mostly review manuscripts on topics that are close to their own fields of expertise. If you have what it takes for any of these roles and would like to be part of the continuing growth of our journal, please volunteer now by contacting the Editor(-in-Chief), o.m.bragg@dundee.ac.uk.

More specifically, if the current publication rate is to be maintained, it is time to start planning and compiling our next Special Volume (for publication in 2015/16). Do you have a topic to suggest? It could be a new 'hot topic' for peat and/or peatland research (e.g. Volumes 4, 13), perhaps based on a recent or upcoming conference (see also Volume 11); or devoted to a less-known peatland or peatland type (e.g. Volumes 9, 15); or a volume of research protocols following the hugely successful Volume 7; or something completely new for *Mires and Peat*. If so, we are eagerly waiting to hear from you via o.m.bragg@dundee.ac.uk.



IMCG Symposium and Congress Belarus

Belarus IMCG Congress program

Various people who have not been able to attend the IMCG Congress in Berezinski biosphere reserve, 25-26 July 2014, have requested us for the program. Here it follows for your information. If you are interested in a specific presentation please send an email request to info@imcg.net and we will forward it to the relevant presenter.

| | Presenter, country | Title |
|---------------------|--|--|
| 25 July 2014 | | |
| 0900-0930 | Greetings and introductory presentations | Kachanovsky I.M., Deputy Minister for the Environment of the Republic of Belarus Prokoshin A.M., Director of State nature conservation establishment "Berezinsky biosphere reserve" Joosten, H., Secretary-General International Mire Conservation Group |
| 0930-0955 | Valery Ivkovich (Belarus) | Peatlands of Berezinsky biosphere reserve: current state and priorities of conservation |
| 0955-1020 | Asbjörn Moen (Norway) | Action plans for bogs in Norway; emphasis on oceanic bogs |
| 1020-1045 | Jenny Lonnstad (Sweden) | Mires in Sweden: status, conservation and restoration. |
| 1045-1110 | Tapio Lindholm (Finland) | The development of some main mire concepts in Finland |
| 1110-1140 | Coffee break | |
| 1140-1205 | Jaanus Paal (Estonia) | Drainage impact on vegetation in transitional and raised bogs |
| 1205-1230 | Michael Trepel (Germany) | Synergies between peatland rehabilitation and the EU Water Framework Directive |
| 1230-1255 | Lesław Wołejko (Poland) | Active protection and restoration of alkaline fens in Poland |
| 1255-1320 | Alexander Kozulin, Nikolai Bambalov, Nina Tanovitskaja (Belarus) | New strategy on the use of peatlands in Belarus |
| 1320-1430 | Lunch and Press conference | |
| 1430-1455 | Francis Muller (France) | Gaps in knowledge relevant for peatland management in France |
| 1455-1520 | Olga Kaskevich, Konstantin Chikalov (Belarus) | Public campaigning in protection of peatlands in Belarus – results and perspectives |
| 1520-1555 | Wendelin Wichtmann (Germany) | Perspectives for paludicultures in Belarus |
| 1555-1620 | Tatiana Minayeva (Russia) | Peatlands restoration best practices and legislation: cases of contradiction |
| 1620-1650 | Coffee break | |
| 1650-1715 | Angéline Bedolla (Switzerland) | The Puthoo fen system (Fraser Island, Queensland, Australia) |
| 1715-1740 | Carlos Martínez Muñoz (Cuba) | Peatlands of Cuba |
| 1740- | Beverley Clarkson (New Zealand) | Mire restoration in New Zealand |



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|---------------------|--|--|
| 1805 | | |
| 1805-1830 | Coffee break | |
| 1830-2030 | Excursion to Roznianskoje mire | |
| 26 July 2014 | | |
| 0900-0925 | Hans Joosten (Germany) | Ice wedge polygon mires in the arctic: the state of our understanding |
| 0925-0950 | Bettina Holsten, Michael Trepel (Germany) | Estimating nutrient budgets of peatlands on a landscape scale |
| 0950-1015 | Christian Schröder (Germany) | Principles of biomass harvesting in peatlands |
| 1015-1040 | Annemieke Kooijman (Netherlands) | Survival and expansion of brown mosses in the Stobbenribben fen between 1988-2013 due to water quality improvement and occasional flooding |
| 1040-1110 | Coffee break | |
| 1110-1135 | Merten Minke (Belarus) | Greenhouse gas emissions of rewetted fens do not only differ among vegetation types but also within them |
| 1135-1200 | Hans Joosten, Asbjörn Moen, Franziska Tanneberger and 120 (!) other persons (IMCG) | The IMCG European mires book |
| 1200 | End of the conference | |



IMCG Field Symposium participants in Roznianskoje mire (photo: Alma Szafnagel-Wołejko)



News received from IMCG Regions

Africa

Zimbabwe

Wetlands Survival Forum, Zimbabwe (ktlannas@gmail.com)

Natural resources are increasingly under pressure in southern Africa as poverty sky rockets with continued political instability. Wetlands and peatlands even more so, are impacted by cultivation, sand and clay mining or peat extraction, especially in urban areas where people are desperate to earn some income. Peat of Borrowdale Vlei (regional word for wetland) in Harare, capital of Zimbabwe, is sold on the side of roads in plastic bags whilst the Environmental Management Agency turns a blind eye. The Wetland Survival Forum in Zimbabwe is raising awareness on these and other impacts on wetlands with the aim to start a wetland rehabilitation programme in future.



Peat mixed with top soil



A trench in the Borrowdale peatland

A 2005 Google Earth image (top) of the Borrowdale peatland. Note the encroachment into the system by 2014 (bottom image)



Australasia

New Zealand news

Bev Clarkson (Clarksonb@landcareresearch.co.nz)

Funding boost for New Zealand mire projects

A new national Community Conservation Partnerships Fund, which has \$26 million available over 4 years, has been established to support community organisations involved in natural heritage and recreation projects. The first allocation (August 2014) provided grants totalling \$8.5 million to more than 100 community-based groups to work on projects alongside the Department of Conservation. These include several important mire restoration projects:

- Project Tongariro: restoration and preservation of Te Matapuna Wetland, the largest wetland in the Lake Taupo basin, central North Island.
- National Wetland Trust: Lake Serpentine/Rotopiko (south Waikato) predator control and funding a project manager to establish a community care group.
- Tui 2000: restoration planting at Waiwhakareke Natural Heritage Park, which comprises 60 hectares of land surrounding a peat lake, within Hamilton City's boundary.

<http://www.doc.govt.nz/getting-involved/run-a-project/funding/community-conservation-partnerships-fund/successful-applications-2014/>

South East Asia

Noor Azura Ahmad (Azura@gec.org.my)

Newly discovered peatlands in mangrove area of Peam Krasop Wildlife Sanctuary, Koh Kong Province, Cambodia (Julia Lo, Programme Officer, Global Environment Centre)

In tropical areas, peat swamp forests are usually found in low lying areas behind mangrove zones. In a field assessment held from 6 to 15 August 2014, peatlands were found IN a mangrove area; which is highly unusual. This discovery has excited those working on peat cycles in the ASEAN region while shedding new light on little known peatland areas in Cambodia. The assessment was carried out by the Department of Wetland and Coastal, Ministry of Environment of Cambodia, led by peatlands expert Dr Le Phat Quoi from Ho Chi Minh University, Vietnam and assisted by staff from Global Environment Centre, Malaysia, rangers and community from Peam Krasop Wildlife Sanctuary.

Using a combination of remote sensing and ground- truthing, an early estimate had shown that there are about 3,700 hectares of peatlands in the Peam Krasop Wildlife Sanctuary mangrove area, located in Koh Kong Province, Cambodia. Thirty-two locations were assessed with a gauge auger, where the peat depth was found to be in the range of 44cm to 200cm, with an average depth of 115cm. The mangrove of Peam Krasop Wildlife Sanctuary grows on several small islands. What is most interesting about this recent finding is that mangrove species had actually grown on a layer of peat.



The outer layer, about 50m along the coast of these islands is dominated by tall *Rhizophora apiculata* and *Rhizophora mucronata*. This area is a typical mudflat area. However, as we move further in to about 100 – 150m, there is a clear change of vegetation in terms of species and tree height. In general, 4 types of vegetation were identified- 1) stunted *Rhizophora apiculata* only, 2) stunted *Ceriops tagal* only, 3) stunted *Ceriops tagal* with tall *Lumnitzera littorae* and 4) mixed species of *Hibiscus tiliaceus*, *Xylocarpus granatum* and *Melaleuca cajuputi*. In total, 14 tree species were recorded during this survey, all common mangrove species with the exception of *Melaleuca cajuputi* which is a species typical of freshwater swamps.



Stunted *Rhizophora apiculata* with tall *Lumnitzera littorae*



A peat sample from the Peam Krasop Wildlife Sanctuary



Stunted *Ceriops tagal*

ASEAN Programme for Sustainable Management of Peatland Ecosystems (2014-2020)

South East Asia has more than 60% of the world's tropical peatlands covering about 25 million hectares. These peatlands are critical in regulating global climate, conserving biodiversity and sustaining water resources and local livelihoods. However many peatlands in the region are being affected by exploitation and unsustainable management practices. Large scale peatland drainage and conversion is responsible for much of the fires and transboundary haze which is one of the most serious regional environmental problems in ASEAN.

ASEAN Member States adopted the ASEAN Peatland Management Strategy (2006-2020) - APMS and updated it in 2013 to provide guidance for collaborative action. Although good progress has been made, recent large scale transboundary haze events have indicated efforts need to be enhanced further. In September 2013, ASEAN



Ministers responsible for the environment endorsed the establishment of a long term multi-stakeholder Programme for the Sustainable Management of Peatland Ecosystems (SMPE; 2014-2020).

SMPE 2014-2020 will support collaboration between different stakeholders (including government, private sector, communities and civil society) in the ASEAN Region to achieve the goal of the ASEAN Peatland Management Strategy (APMS, 2006-2020), - namely: *To promote sustainable management of peatlands in the ASEAN region through collective actions and enhanced cooperation, to support and sustain local livelihoods, reduce risk of fire and associated haze and contribute to global environment management.*

KEY TARGETS BY 2020

The Key targets by 2020 of the Programme agreed at the ministerial level Conference of Parties of the ASEAN Agreement on Transboundary Haze (AATHP) Surabaya are:

1. All peatland areas in ASEAN identified and inventorised;
2. Zero-burning is uniformly practiced and controlled-burning only used in exceptional cases to prevent any uncontrolled wildfires on peatlands, and eliminate any widespread smoke haze;
3. Fire prone sites are rehabilitated by focusing on root causes of fire,
4. Peatlands are sustainably managed, sustainable livelihoods enhanced, and sustainable economic use mainstreamed;
5. Peatlands are conserved to contribute to significantly reduced emissions of greenhouse gases and increased peatland biodiversity in the region;
6. APMS and National Action Plans on peatlands are implemented; national and regional capacity is enhanced.

OPTIONS FOR INVOLVEMENT IN THE PROGRAMME

- I. The ASEAN Secretariat in conjunction with the ASEAN Member States (AMS), with technical support from the Global Environment Centre, is currently in the process of elaborating the Programme.
- II. Preparatory meetings were held with AMS and more than 15 potential partner organisations in December 2013, April 2014 and August 2014.
- III. Approximately US\$250 million of ongoing and planned projects and activities have been identified by Member States and partners for inclusion in the Programme framework.
- IV. Organisations that are currently implementing or planning activities in the ASEAN region related to peatlands are encouraged to link their planned activities with the Programme.
- V. Benefits of including projects and activities in the programme include:
 - Enhancing synergy and avoiding duplication of actions by different partners and countries
 - Sharing experiences and best practices
 - Linking and reporting progress to high level meetings of ASEAN Member States
 - Scaling up action through collaborative action.
 - Joint mobilisation of resources

For more info visit us : www.aseanpeat.net

News from all over

Hans Joosten (joosten@uni-greifswald.de)

Europe

Consultation on EU initiative on No Net Loss of biodiversity and ecosystem services.



In the EU, as in other parts of the world, we are continuing to lose biodiversity and with it, the ecosystem services that nature provides to human society. The EU Biodiversity Strategy to 2020 aims to halt biodiversity loss and to conserve ecosystem services. The strategy contains 6 operational targets and 20 associated actions. Action 7 is to ensure no net loss of biodiversity and ecosystem services. Under action 7, the Commission is foreseen to propose, by 2015, an initiative on No Net Loss. The purpose of the present consultation is to gather views about the future initiative that the Commission is scheduled to propose in 2015. The consultation is open to individuals as well as to NGOs until **17.10.2014**: http://ec.europa.eu/environment/consultations/nnl_en.htm

European database of Natura 2000 sites

The European database of Natura 2000 sites contains extensive descriptions of Natura 2000 sites and their ecology. The data is submitted by the Member States' national authorities and validated by the European Topic Centre on Biodiversity. The European database is updated once per year, to see the most recent version of the database, visit [the EEA website](#).

Valuing peatlands

The [Valuing Nature Network](#) project, [Valuing Peatlands](#), finished some time ago, but has now published its findings in a special section of five articles and an editorial (in press) in the journal, [Ecosystem Services](#). See also the blog on [valuing peatland ecosystem services for sustainable management](#), which summarises findings and links to each of the articles. Alternatively you can access the articles and all other project outputs on the website: <http://www.valuing-nature.net/projects/valuing-peatlands>

Restoring Peatlands in Finland – a New Handbook

A new comprehensive handbook for the restoration of drained peatlands was published in Finnish in 2013. The handbook was produced with the help of dozens of Finnish peatland experts. The abridged English-language version of the guidebook summarises the most important contents of the full Finnish version and is now available under: [Ecological restoration in drained peatlands – best practices from Finland](#). The handbook compiles the knowhow accumulated over more than 25 years of peatland habitat restoration in Finland, together with useful information on peat and the hydrology of peatlands. The handbook is intended for everyone involved in the planning and implementation of active restoration measures in peatlands that have been drained to promote forestry. Finland has an international responsibility for maintaining the diversity of different types of peatlands in the northern boreal zone. The large scale ditching for forestry purposes in the latter part of the 20th century has had an immense degrading impact on the natural values of peatlands. The aim of the handbook is to increase awareness of the ecological bases for peatland habitat restoration, and thereby promote effective peatland restoration work both inside protected areas and in areas where commercial forestry is practiced.

More information: maarit.simila@metsa.fi

Swedish Wetland Survey available in English!

The VMI (the Swedish Wetland Survey) was a huge inventory program, coordinated by the Swedish Environmental Protection Agency in cooperation with the County Administrative Boards during 1981–2005. VMI surveyed all larger wetlands sites outside the Alpine zone. In total, 35, 000 wetland sites were included in the survey, corresponding to 4.3 million hectares, or approximately 10% of the land area of Sweden. The main objectives of the survey were:

- to classify and identify valuable wetlands which should be conserved for future generations,
- to investigate the impact of human activities on the wetlands of Sweden, and
- to increase general knowledge about wetlands in Sweden.

Compiled excerpts of the National Final Report are now available in English under:

www.naturvardsverket.se/978-91-620-6618-5<<http://www.naturvardsverket.se/978-91-620-6618-5>>

South East Asia



New VCS methodology for rewetting SE Asian peatlands

To help foster projects addressing peatland drainage, WWF-Germany has developed a new Verified Carbon Standard (VCS) methodology that quantifies the emission reductions and removals achieved by rewetting drained peatlands. This methodology falls within the VCS category of Restoring Wetland Ecosystems, and is the first VCS methodology to address emission reductions and removals associated with rewetting peatlands.

The methodology applies to project activities in which drained tropical peatlands are rewetted through construction of permanent or temporary structures such as dams. These structures reverse the pattern of drainage and the damage caused by pre-existing drainage channels. Outputs from the Simulation of Groundwater (SIMGRO) model form the basis of the quantification of emission reductions. The model calculates water table depths on the basis of a range of input parameters such as terrain characteristics, peat thickness and climate variables.

The methodology is applicable to projects in the main tropical countries with peatland soils in Southeast Asia; specifically, Malaysia, Indonesia, Brunei and Papua New Guinea. Downloadable under:

<http://www.v-c-s.org/sites/v-c-s.org/files/Rewetting%20of%20drained%20tropical%20peatlands%2C%2026%20Aug%202014.pdf>

VCS staff and representatives from WWF-Germany, Remote Sensing Solutions GmbH, Alterra Wageningen UR and SCS Global Services will host a webinar providing a comprehensive introduction to this methodology on 16 September 2014 at 11:00am-12:00pm (U.S. East Coast time)

Register for the webinar under: <https://www3.gotomeeting.com/register/711519990>

Scientists identify deforested idle land as source of Indonesia 'haze' fires

A month after Singapore was shrouded in a thick haze produced by Indonesian fires in June 2013, Center for International Forestry Research (CIFOR) scientist David Gaveau went to the source of the smoke in Riau province to survey the charred aftermath. Whereas news reports had attributed the haze to slash-and-burn forest clearance to make way for oil palm plantations, Gaveau discovered that 80 per cent of the burned 163,336 hectares was “non-forest” and that 57 percent of the burned “non-forest” land was made up of what they call “forest cemeteries”. These areas had already been stripped of forest, but not yet converted for cultivation: “decapitated stumps, branches lying around, a lot of wood debris - you see the dead trees scattered about”.

The fires behind the haze were short-lived and confined to recently deforested peatlands in Riau, reflecting ongoing conversion to oil palm plantations, the researchers wrote in their paper. In their pristine state, Indonesian peatland swamps are covered in lush tropical forests and are resistant to fire because the ground is wet year-round and the canopy keeps it cool. But when the trees are removed and the ground is drained for farming, this land becomes highly flammable. Just over half the total burned area in Riau in 2013 - nearly 85,000 hectares - was on land allocated to companies for plantation development, but of that area, some 50,000 hectares was also occupied by locals or migrants. The combination of large numbers of people searching for land and extremely fire-prone peat covered in wood debris “creates this mess”, Gaveau said. The CIFOR scientists found that the haze that has angered Singaporeans is due to these smoky fires on land that has remained idle for several years rather than slash-and-burn forest clearance, as commonly thought.

Pristine forests are deemed safe from fires, as are established plantations, because companies and landowners want to protect their assets. It is areas at the in-between stage that are particularly vulnerable. Source: [Reuters AlertNet](#)



Smallholder peat swamp deforestation in Sarawak, Malaysia (Photo: Hans Joosten)

Upcoming Events

Please visit the IMCG website (www.imcg.net) for announcements on a range of upcoming events
<http://www.imcg.net/pages/events.php>

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 the title and URL to joosten@uni-greifswald.de

1. The challenge of implementing the European network of protected areas Natura 2000:
<http://onlinelibrary.wiley.com/doi/10.1111/cobi.12366/abstract?campaign=wolearlyview>
2. Analysis of coleopterans from Late Holocene natural spring deposits in south-central Sweden:
<http://www.sciencedirect.com/science/article/pii/S1040618214001724>
3. Insects, activity areas and turf buildings' interiors: An ethno-archaeoentomological case study from 19th to early 20th-century Þverá, northeast Iceland: <http://www.sciencedirect.com/science/article/pii/S1040618213007866>
4. Effect of nutrient enrichment on $\delta^{13}\text{CH}_4$ and the methane production pathway in the Florida Everglades:
<http://onlinelibrary.wiley.com/doi/10.1002/jgrg.20122/abstract?campaign=woletoc>
5. Parsing the variability in CH_4 flux at a spatially heterogeneous wetland: Integrating multiple eddy covariance towers with high-resolution flux footprint analysis:
<http://onlinelibrary.wiley.com/doi/10.1002/2014JG002642/abstract?campaign=woletoc>



6. The effect of winter drought on evaporation from a high-elevation wetland:
<http://onlinelibrary.wiley.com/doi/10.1002/2014JG002648/abstract?campaign=woletoc>
7. Phenology and its role in carbon dioxide exchange processes in northern peatlands:
<http://onlinelibrary.wiley.com/doi/10.1002/2014JG002666/abstract?campaign=woletoc>
8. Plant functional diversity drives niche-size-structure of dominant microbial consumers along a poor to extremely rich fen gradient: <http://onlinelibrary.wiley.com/doi/10.1111/1365-2745.12288/abstract?campaign=woletoc>
9. Biological Flora of the British Isles: *Epipactis palustris*: <http://onlinelibrary.wiley.com/doi/10.1111/1365-2745.12287/abstract?campaign=woletoc>
10. Ecology of testate amoebae in an Amazonian peatland and development of a transfer function for palaeohydrological reconstruction: <http://link.springer.com/article/10.1007%2Fs00248-014-0378-5#page-1>
11. N₂-fixation by methanotrophs sustains carbon and nitrogen accumulation in pristine peatlands:
<http://link.springer.com/article/10.1007%2Fs10533-014-0019-6>
12. Searching for the sister to sedges (Carex): resolving relationships in the Cariceae-Dulichieae-Scirpeae clade (Cyperaceae): <http://onlinelibrary.wiley.com/doi/10.1111/boj.12193/abstract?campaign=wolearlyview>
13. Global biogeography of *Alnus*-associated *Frankia* actinobacteria:
<http://onlinelibrary.wiley.com/doi/10.1111/nph.12962/abstract?campaign=wolearlyview>
14. A 12-year record reveals pre-growing season temperature and water table level threshold effects on the net carbon dioxide exchange in a boreal fen: <http://iopscience.iop.org/1748-9326/9/5/055006/article>
15. Surface water inundation in the boreal-Arctic: potential impacts on regional methane emissions:
<http://iopscience.iop.org/1748-9326/9/7/075001/article>
16. The Swedish Wetland Survey - Compiled Excerpts From The National Final Report:
<http://www.naturvardsverket.se/Documents/publikationer6400/978-91-620-6618-5.pdf?pid=13166>
17. Assessing and valuing peatland ecosystem services for sustainable management:
<http://www.sciencedirect.com/science/article/pii/S2212041614000357>
18. Investing in nature: Developing ecosystem service markets for peatland restoration:
<http://www.sciencedirect.com/science/article/pii/S2212041614000692>
19. Relationships between anthropogenic pressures and ecosystem functions in UK blanket bogs: Linking process understanding to ecosystem service valuation:
<http://www.sciencedirect.com/science/article/pii/S2212041614000710>
20. Valuing water quality improvements from peatland restoration: Evidence and challenges:
<http://www.sciencedirect.com/science/article/pii/S2212041614000655>
21. Improving the link between payments and the provision of ecosystem services in agri-environment schemes:
<http://www.sciencedirect.com/science/article/pii/S2212041614000667>
22. Holocene peatland carbon dynamics in the circum-Arctic region: An introduction:
<http://hol.sagepub.com/content/24/9/1021?etoc>
23. A database and synthesis of northern peatland soil properties and Holocene carbon and nitrogen accumulation:
<http://hol.sagepub.com/content/24/9/1028?etoc>
24. Holocene carbon dynamics of boreal and subarctic peatlands from Québec, Canada:
<http://hol.sagepub.com/content/24/9/1043?etoc>
25. Climatic and autogenic control on Holocene carbon sequestration in ombrotrophic peatlands of maritime Quebec, eastern Canada: <http://hol.sagepub.com/content/24/9/1054?etoc>
26. Quantifying Holocene variability in carbon uptake and release since peat initiation in the Hudson Bay Lowlands, Canada: <http://hol.sagepub.com/content/24/9/1063?etoc>
27. Peatland succession and long-term apparent carbon accumulation in central and northern Ontario, Canada:
<http://hol.sagepub.com/content/24/9/1075?etoc>
28. Continental fens in western Canada as effective carbon sinks during the Holocene:
<http://hol.sagepub.com/content/24/9/1090?etoc>
29. Relative importance of climatic and autogenic controls on Holocene carbon accumulation in a temperate bog in southern Ontario, Canada: <http://hol.sagepub.com/content/24/9/1105?etoc>
30. Carbon accumulation in peat deposits from northern Sweden to northern Germany during the last millennium:
<http://hol.sagepub.com/content/24/9/1117?etoc>



31. Recent paludification rates and effects on total ecosystem carbon storage in two boreal peatlands of Northeast European Russia: <http://hol.sagepub.com/content/24/9/1126?etoc>
32. Holocene peatland initiation, lateral expansion, and carbon dynamics in the Zoige Basin of the eastern Tibetan Plateau: <http://hol.sagepub.com/content/24/9/1137?etoc>
33. Impacts of climate and vegetation change on carbon accumulation in a south-central Alaskan peatland assessed with novel organic geochemical techniques: <http://hol.sagepub.com/content/24/9/1146?etoc>
34. Development, carbon accumulation, and radiative forcing of a subarctic fen over the Holocene: <http://hol.sagepub.com/content/24/9/1156?etoc>
35. Exploring the relationship between peatland net carbon balance and apparent carbon accumulation rate at century to millennial time scales: <http://hol.sagepub.com/content/24/9/1167?etoc>
36. Distribution and abundance of tree species in swamp forests of Amazonian Ecuador: <http://onlinelibrary.wiley.com/doi/10.1111/ecog.00774/abstract?campaign=woletoc>
37. Ever-wet tropical forests as biodiversity refuges: http://www.nature.com/nclimate/journal/v4/n9/full/nclimate2351.html?WT.ec_id=NCLIMATE-201409
38. Developing new-generation machinery for vegetation management on protected wetlands in Poland: <http://mires-and-peat.net/pages/volumes/map13/map1311.php>
39. Testing peat humification analysis in an Australian context: identifying wet shifts: <http://mires-and-peat.net/pages/volumes/map14/map1405.php>
40. Shallow inundation favours decomposition of *Phragmites australis* leaves in a near-natural temperate fen: <http://mires-and-peat.net/pages/volumes/map14/map1406.php>
41. The impacts of drainage, nutrient status and management practice on the full carbon balance of grasslands on organic soils in a maritime temperate zone: <http://www.biogeosciences.net/11/4361/2014/bg-11-4361-2014.html>
42. Bog burst in the eastern Netherlands triggered by the 2.8 kyr BP climate event: <http://hol.sagepub.com/content/early/2014/08/12/0959683614544066.abstract>

Please send your contribution to the **IMCG Bulletin** by the 20th of each month:
peatland@mweb.co.za