INTERNATIONAL MIRE CONSERVATION GROUP

NEWSLETTER

issue 2009/1, March 2009

The International Mire Conservation Group (IMCG) is an international network of specialists having a particular interest in mire and peatland conservation. The network encompasses a wide spectrum of expertise and interests, from research scientists to consultants, government agency specialists to peatland site managers. It operates largely through e-mail and newsletters, and holds regular workshops and symposia. For more information: consult the IMCG Website: http://www.imcg.net

IMCG has a Main Board of currently 15 people from various parts of the world that has to take decisions between congresses. Of these 15 an elected 5 constitute the IMCG Executive Committee that handles day-to-day affairs. The Executive Committee consists of a Chairman (Jennie Whinam), a Secretary General (Hans Joosten), a Treasurer (Philippe Julve), and 2 additional members (Tatiana Minaeva, Piet-Louis Grundling).

Seppo Eurola, Richard Lindsay, Viktor Masing (†), Rauno Ruuhijärvi, Hugo Sjörs, Michael Steiner and Tatiana Yurkovskaya have been awarded honorary membership of IMCG.

Editorial

We know it: you had to wait too long for this Newsletter. It is the paradoxal situation that when too much is happening, there is no time to sit back, to contemplate and to report about it. It started with the state of war in Georgia that forced us to postpone the IMCG Field Symposium, Congress and General Assembly. The Ramsar Convention meeting in South-Korea, the discussions about the EU Biofuel Directive, and the Climate Convention in Poland succeeded in overfilling the remainder of 2008. Also the further climate negotiations this year brought small but substantial progress with respect to the peatland case. Read all about these events in this Newsletter.

Important in this Newsletter is the invitation for the postponed Field Symposium in Armenia and Georgia, 1-17 September 2009. Many of you have already seen the announcement on the website. Take the opportunity to see these marvellous countries and peatlands with your own eyes. The local peatland conservationists need the strong support of the international IMCG community! So apply for participation in the Field Symposium. Because of logistic reasons, places will be limited, so first come, first serve. IMCG Main Board members: try to be in Tbilisi already early on September 1, so that we can have a MB meeting before the start of the excursion!

We will try and mend our way better in the near future and produce the next Newsletter at the end of July. It will contain the latest information on Georgia and all things that are happening in the world of mires. So please send your contributions before July 25. Furthermore keep an eye on that continuously refreshed and refreshing IMCG web-site: www.imcg.net. An as always: for information, address changes, contributions and questions, contact us at the IMCG Secretariat.

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A note from the Chair

The last few months have been extremely busy for IMCG – and it has been frustrating in many ways. IMCG has expended energy, time and resources on several issues relating to mires and climate change. We, along with other international groups such as Wetlands International, have been campaigning to have peatlands included in the carbon budget, which would give much more impetus to global peatlands conservation. Unfortunately, although subject to strong lobbying at the recent UNFCCC COP14 meeting in Poznan, Poland, peatlands were not included, due to administrative issues (see report in this newsletter).

Another major focus for the past year has been trying to counter the arguments by IPS, especially the Finnish and Swedish advocates, to exploit a loophole in the EU legislation to have peatlands included as a renewable biofuel. Several members of the Main Board, as well as other members of IMCG, participated in the IPS Congress in Ireland in June. At both formal and informal meetings associated with the Congress, the IMCG continued to press for IPS to engage in active debate about how they were calculating the 'renewability' of peat. While there was goodwill on both sides to progress discussion and to work collaboratively where possible (although noting that there will always be some issues where IMCG cannot agree with the IPS approach), there has been no real progress. Disappointingly, after several years of IMCG trying to engage with IPS over this issue, there has been no real attempt by IPS to address the criticisms of IMCG of their position and nor has there been adherence to the agreed position of advising us of IPS actions related to this (and other) international issues. Consequently, IMCG is currently reviewing its position on continuing collaborative projects with IPS. This will be one of the issues for discussion in our 'electronic' General Assembly.

As you are all aware, Russia and Georgia engaged in war in August. This led to concern for our mire colleagues in Georgia, the mires themselves (many of which were burnt due to rocket attacks) and the postponement of the planned field symposium and general assembly. It is currently planned to hold the next IMCG field symposium in Georgia in August-September 2009 and to run the general assembly electronically (see details in this newsletter).

Many IMCG members were saddened to hear of the death in August of our friend and colleague Hans Esselink. His unorthodox but infectious style will be missed on future IMCG field symposia, by his mire colleagues and by the birds that his work helped to conserve.

In Australian local peatland news, Alpine Sphagnum bogs and associated fens have been listed as a nationally endangered ecological community under the Environment Protection and Biodiversity Conservation Act. This gives national protection to this community that has been subject to grazing in the past and several recent major fire events. For further information see: http://tinyurl.com/c4ewk4

On behalf of the IMCG Executive, I invite you to participate in the general assembly and to consider registering for the field symposium.

Jennie Whinam

REGISTER

Please fill out the IMCG membership registration form.

Surf to http://www.imcg.net or contact the secretariat.

The IMCG Meetings in Georgia and Armenia: 1-16 September 2009

After the sudden postponement of our trip last year because of the war, we are glad to announce that the delayed Biennial IMCG meetings will be held in Georgia and Armenia from 1 – 16 September 2009.
The IMCG Field Symposium will be held from 1 - 14 September 2009. The theme will be 'Mires and peatlands of Kolkheti lowland and highlands in Georgia and peatlands in Armenia'. A (preliminary) programme can be found in this Newsletter and under: www.imcg.net/09/georgia.htm
The IMCG Scientific Congress will be held from 15-16 September 2009 with scientific presentations on peatland biodiversity, conservation and wise use, and climate change. Venue: Kobuleti, Ajara, Georgia.

Travel information

Arrival and departure
We will start the field symposium with a meeting in Tbilisi (Georgia) on the evening of September 1 (Main Board members are expected to have a MB meeting in Tbilisi on the 1st) and end all meetings in Kobuleti (near Batumi, Georgia) in the afternoon of September 16. Entrance to Georgia is possible by land, air and sea. There are international airports in Tbilisi and Batumi. Another convenient airport is Trabzon in Turkey with easy bus transport to and from Batumi (from where trains to Tbilisi can be taken).
An option is also to join us in Armenia in the early beginning of our trip September) by flying to Yerevan.
If you have questions, don't hesitate to ask!
Please inform us about your arrival time and place, so that we can arrange you transportation to the venue.

Visa
Citizens of the following countries (with IMCG members) do NOT need a visa for **Georgia**: All countries of the European Union, Armenia, Belarus, Canada, Israel, Japan, Moldova, Norway, Switzerland, Turkey, Ukraine, and the United States of America.

Citizens of all other countries can obtain visas at Georgian embassies (consulates) or at every frontier-post, airport, and sea terminal. The costs (appr. 10-20 USD) depend on the duration of the stay.
For further information on visa matters please visit the website of the Ministry of Foreign Affairs of Georgia: http://www.mfa.gov.ge/?sec_id=467
Participants, who need an invitation, have to contact the Ministry of Environment and Natural Resources. The contact person is Gia Kolbini (e-mail: gmep@access.sanet.ge) and cc to Izolda Matchutadze (email: tchaobi@yahoo.com)

ATTENTION

Take care, the validity of your passport should exceed the term of validity of the visa at least three months!

You need a two-entry visa for Georgia and a single entry one for Armenia.

Citizens of following countries (with IMCG Members) do NOT need a visa for **Armenia**: Belarus, Georgia, Moldova, Russian Federation, and Ukraine. Generally for most nations it is not difficult to obtain visa just on the border. Anyway, it is better to have visa in your passport already before, as this will save considerable time while crossing the border. Single entry visa costs 15,000 Armenian Drams or around 36 USD. For people arriving at Yerevan Airport also electronic visa application is possible: www.armeniaforeignministry.am/eVisa/
For further information on visa matters please visit www.armeniaforeignministry.com
That site also hosts a list of Armenian embassies and consulates abroad.

Currency
There are numerous banks and exchange offices in the region. In cities also bank automats functioning with common bank cards are available (maestro, Master, Visa), in bigger cities like Tbilisi and Yerevan also EC and American Express.

The IMCG 2008 Field Symposium in Georgia and Armenia

1 – 16 September 2009

The preliminary schedule of the IMCG 2009 Field Symposium is as follows:
Tuesday, 1 September: Arrival of participants in Tbilisi (Georgia), registration, main board meeting, welcome
Wednesday, 2 September: Departure, border crossing Georgia-Armenia, travel to Sevan (Armenia)
Thursday, 3 September: Museum of Sevan National Park, Hairivanq Monastery, Lichq-Argichi Reserve Zone, Lake Gilli former peat excavation and restoration
Friday, 4 September: Yerevan: Meeting in the Ministry of Nature Protection; Museum of Art, History and Nature
Saturday, 5 September: Ardenis sedge peatland, Lake Arpi Ramsar site, border crossing Armenia/Georgia, Samtshke-Javakheti Protected Area, Lake Kanchali, Varzia cave city
Sunday, 6 September: Bakuriani, high mountain vegetation zonation, grazing, pipeline, Ktsia-Tabatsku Managed Nature Reserve
Monday, 7 September: Travel to Kolkheti, Bagrati UNESCO World Heritage Site, Vani Archeological Museum
Tuesday, 8 September: Kolkheti: Anaklia mire Ramsar Site and Tsia River relict forest, Churia mire Ramsar Site, Kulevi Terminal
Wednesday, 9 September: Kolkheti National Park Office, Paliastomi Lake – Ramsar Site, Pichora River, Kolkheti relict forest (by boat), Grigoleti mire
Thursday, 10 September: Maltakva mire, Boat tour through Tkhorina canal to Imnati, Imnati mire Ramsar site
Friday, 11 September: Travel up to Minor Caucasus Arsiani Hill, vegetation zonation and endemics
Saturday, 12 September: Chirukhi high mountain mire landscape and subalpine vegetation
Sunday, 13 September: Travel down, Batumi Botanical Garden
Monday 14 September: Ispani I and II mires, Fichvnari and Namchediri archaelogical settlements.

Field conditions are generally good. Access roads are available to most of the sites to be visited. Rubber boots are needed for the excursions in the (sometimes very wet) peatlands. As the Kolkheti area has high precipitation, rain clothes are recommended. We will spend considerable time near the Black Sea coast. If you want to swim local custom demands you bring swimming clothes.
Sleeping bags and mats are necessary for the Chirukhi lodges in the Minor Caucasus high mountains.

Peat and Peace Forever!

by Izolda Matchutadze & Mamuka Gvilava

Marvellous and unique living peatlands of Kolkheti are waiting for you to come! We hope that this time nothing will interfere with our plans to host the IMCG Field Symposium and Scientific Congress in Kolkheti. Now in early spring 2009 we do not much desire to think about the ravages of war and to remember what we all went through in 2008. We just want to firmly believe that this shall never ever happen again!
During the excursion you will be able to witness the harm that militaries and hostilities can bring: burnt out forest near the Borjomi park area, scrambled land surface in Kolkheti due to bombardments, fortification trenches, as well as the damage inflicted to the Kolkheti national park facilities.
Georgia is a small country and it is not unusual that small nations are at the mercy of big powers. But we firmly believe that Mother God is our protector and intercessor and that Georgia will always come out in peace and prosperity. We want to believe that our country will never again be threatened by bombers and military jets raging death and destruction. And we are convinced that the sites of the Field Symposium will remain as safe and tranquil as they are right now.
Georgia, the ancient Kolkheti, the country of legends and myths, and last but not least, the homeland of the first ombrogenous percolation peatbogs, is awaiting you, with ever more love and responsibility and with a desire to express its hospitality in the best way possible. Today we need your help and support as never before and what we need the most is the gathering of the best minds and skills available in the World for the benefit of the protection, conservation and wise use of Georgia's peatlands and nature!
We will manage to gather in Kolkheti, but some things are unfortunately irreversible. Hans Esselink will never be able to visit Georgia, the event he so much dreamed off ever since the first idea emerged in South Africa in 2005. Hans: may God take care of your pure soul. We will miss you so much in our efforts for nature conservation. The Symposium will now have to be held without you...
Georgia and the Georgians are earnestly waiting for all of you to come!

The Anaklia mire Ramsar site; more pictures are available on the IMCG website .

Call for participation: Preparation of a Mires and Water Background Paper

Mires and water are two strongly coupled terms. Water level and water quality determine the vegetation type and consequently peat type growing in mires. Landscape position and stratigraphy of mires influence their importance for water purification services and flood reduction strategies. High evapotranspiration rates from mires cool down the local and regional climate. These are just a few examples how mires provide regulating and supporting services which are linked to their hydrology.

However, these services are often neglected by water managers and conservationists as well as in international conventions. In the current IMCG Action plan the following tasks with respect to water were identified:

- The increase of knowledge on the role of peatlands in catchment water balance.
- The identification and protection of peatlands (and peatland types) that are critical for water storage, water control and water supply.
- The stimulation of including the role of peatlands in watershed management, river basin planning and flood control schemes and in integrated water resources management.
- The stimulation of recognizing the role of peatlands in protecting water and land resources in areas vulnerable to desertification and land degradation.
- The identification of hot-spots for immediate action to prevent or stop desertification through peatland overexploitation.
- The integration of peatlands into the work of the UN Convention to Combat Desertification (UNCCD).

A first step is to assess and review the role of peatlands and water for ecosystem services. To start with this assessment we ask all IMCG to express their interest in the preparation of such a background document. If you are interested contact Andrey Sirin (sirin@proc.ru) or Michael Trepel (trepel@gmx.net) for further details.

It is planned to finish the paper by the end of 2010 and to submit it to the next Ramsar conference in Romania.

IPS/IMCG Terminology Group Recommendations

Unmistakable and clear definitions of terms facilitate communication and decisions. In our world of peat and peatlands this is as true as in any other section of science, business or daily life. Overbeck (1975) reminds us that "every international approach in peatland science and policy is complicated by the multitude of terms, the inconsistencies in their definition, and the different concepts behind similar terms in different languages". Quoting Hofstetter (2000), who wrote that "communication problems arise out of confusion about or disagreement on connections between terms and concepts", mirrors the complexity that discussions on terms may have. Following the IPS/IMCG meeting in Sweden in 2007 a group was appointed to develop definitions of peat and peatland related terms or concepts with policy implications that have caused misunderstandings. The group – together with other warmly welcomed attendees – met in Tullamore for the first time to discuss the best way forward. The Group would like to ask all peat experts to consider the outcome of this first meeting

In general it should be noted that it is not necessary to have a single term for every possible concept. At times it is best to use descriptive phrases instead. Particularly when the use of a single term leads to misunderstanding or conflict over definitions, it is better to avoid the term altogether and revert to stating what you mean in a simple descriptive phrase.

Rules

1. terms and definitions should follow common use of words outside our own specialised world as found in general English dictionaries;
2. terms and definitions should follow etymological logic;
3. terms and definitions should be consistent when used in composites;
4. as far as possible follow the term definition of expert groups or learned societies (e.g. restoration from SERi; wetlands from RAMSAR, sustainable from UN).

Targets

With these rules we should arrive at:

1. terms with their preferred definitions – these sets of terms/definitions will be binding for both IMCG and IPS; these terms may ONLY be used with this meaning;
2. terms with objectionable definitions – these terms should not be used to denote these definitions; these terms may NOT be used with this meaning;
3. objectionable terms – terms that are aberrant, illogical or inconsistent; these terms may NOT be used at all;
4. maybe to produce a Primer;
5. apply the agreed terminology to the edition of Mires & Peat and Peatlands International to promote their proper use;
6. if the two societies do not agree on some terms – then the two definitions should be explained and diffused.

Groups of terms

During the meeting, the working group agreed to first work on the following 7 groups of terms:

1. Mire, peatland and peat.
2. Identify the preferred adjectives: pristine, virgin, natural or intact to use in front of the word peatland.
3. Sustainable peatland management / sustainable use of peat / sustainable use of peatland.
4. Peat extraction, peat harvesting, peat mining, peat production and peat winning.
5. Peat biomass, *Sphagnum* biomass, biofuel, fossil.
6. Restoration of peatlands / reclamation of peatlands / regeneration of peatlands / rehabilitation of peatlands / renewability of peat / rewetting of peatlands.
7. Define the following adjectives: abandoned, exploited, mined, residual, cutaway, cutover, extracted, and harvested placed in front of the word peatland.

VISIT THE IMCG HOMEPAGE AT

http://www.imcg.net

Mires Mires and Peat Peat

by Olivia Bragg

Seeing double? Well, at least, our peer-reviewed web journal *Mires and Peat* doubled in size and circulation last year. There was only one volume in 2007 and in 2008 we opened two. Nine papers were published in 2007 and eighteen in 2008. And the website was being visited at a rate approaching 1,500 times per month in 2007 and 3,000 times per month in 2008.

Volume 3 (2008) caters for a wide range of interests, introduces some new topics and geographical locations, and re-visits some that we have published on before. In our first-ever paper on tropical peatlands, Rodney Chimner and Jennifer Karberg calculate long-term *carbon accumulation* rates for two highland fens on the flanks of the Cotopaxi and Cayambre volcanoes in Ecuador (Article 3.04). Also on the Pacific seaboard of the Americas, Payne & Blackford search for climatic signals in the *humification* records of five peatlands in south-east Alaska (Article 3.09); whilst from Latvia, Maris Klavins and colleagues report on their detailed studies of the peat humification process itself (Article 3.07). For peatland hydrologists, the ingenious 'sensor rods' technique for evaluating seasonal *peat subsidence* effects described in Article 2.09 is applied at a new field location - a pond-peatland complex in Canada's Western Boreal Plain - with strikingly different results (Petrone *et al*., Article 3.05). The geomorphological-ecological approach to peatland research introduced in Article 2.04 is further developed by Sarah Crowe and colleagues in Article 3.01, applied this time to the investigation of natural re-vegetation processes in blanket mire erosion gullies to inform restoration initiatives in the English Pennines. The latest focus of Line Rochefort's *peatland restoration* group at Université Laval (Québec) is to add afforestation with native trees to their armoury of techniques for cutover sites in eastern Canada (Articles 3.10 and 3.11); and a group at the Finnish Forest Research Institute describe the use of their MOTTI tree growth simulation model in a novel exploration of the economics of *peatland forest management* (Ahtikoski *et al*., Article 3.03). Last, but not least, there are three papers on horticultural themes arising from the *Peat and Peatlands 2007* symposium hosted in Lamoura (France) by Pôle-relais Tourbières: Gerald Schmilewski explains why horticulture needs peat (Article 3.02); Oliver Grunert provides an example of peat use to alleviate waste problems created by the industry (Article 3.06); and in the current most-popular paper of the year (read more than 3 times per day since publication), Paul Alexander and colleagues review the events of almost 20 years during which peat has gradually been replaced in *horticultural growing media* for the UK (Article 3.08).

The IMCG symposium *Wind Farms on Peatland* (Spain, April 2008), provided the highly topical theme for our first Special Volume (Volume 4), which opened just one month after the end of the meeting. The seven papers published so far offer just the beginning of a scientific foundation for understanding the much-debated impacts on peatlands of the wind farms which are now 'mushrooming' in western Europe. The area of focus is the Atlantic edge of the continent, where the preferred development areas intersect with those whose climate favours blanket mire; but it addresses globally relevant issues because wind farms are planned for many other parts of the world. The topics explored so far are the impacts on peatland birds, vegetation, carbon storage and the quality of runoff water; and more papers are in the pipeline.

Volume 5 (2009) opened on 14 January with a technical note describing the manufacture and testing of Lars Franzén's new Byelorussian (Russian) peat borer. Now his equipment doesn't contaminate his peat samples, and it no longer bankrupts him when he jets off in search of cosmic signals in the far-flung corners of the earth, because he has reduced the weight to *ca*. 5 kg by making it mostly from carbon fibre composite (CFC). Perhaps he also has a unique carbon footprint?

And so, with our 34th (irritatingly not yet the 44th) article, we embark on the fifth year of the IMCG-IPS collaborative project to publish a free and open-access international web journal about mires, peatlands and peat. The question at the outset was, of course, "can we do it?" The answer now has to be "yes, we can".

At the end of December 2008, three years from going online, we had published 33 of the 57 manuscripts submitted, in four volumes, and there had been 56,833 visits to the *Mires and Peat* website during which 99,513 pages had been viewed. Every paper had been downloaded at least once for every day since it appeared and the first one - the ever-popular "Extent of Peatland in Europe" by Luca Montanarella and colleagues - 3,190 times, or 2.9 times per day. During 2008, *Mires and Peat* was reviewed and adopted by three academic publications databases, namely EBSCO Environment Complete, CSA Proquest Family and CABI Abstracts; and has just been submitted for a first evaluation by Thomson's *Web of Science*. This is progress towards a principal objective that was set in the terms of reference for the IMCG-IPS collaboration - "to achieve a scientific classification in the ISI Thomson Master Journal List". That's an Impact Factor or IF, which would be

calculated now as the average frequency with which each of the 15 papers we published in 2006 and 2007 was cited during 2008, in the 2,000+ journals scanned by Thomson.

So yes, we have the skills and the technology, we can generate material at a level of quality that has satisfied three major academic databases, and people are interested in reading it. Maybe we shall eventually achieve an IF, and maybe we shan't; we are trying to.

But *Mires and Peat* has another important objective, which is "to encourage the submission of material by authors and from countries whose work would otherwise be inaccessible to the international community". This means that the journal is not entirely about citation indices and the career progress of individuals. It's also about helping each other to communicate, promoting all of our aspirations for peatlands, and especially building up a real global understanding of them. Most of the 'encouragement' is invisible. In some cases it involves simply suggesting other outlets for unsuitable manuscripts, or pointing out in detail what else is needed to make a magazine article or a student project into a scientific paper. In other cases, it needs persistent work with authors who submit something that gives a feeling that, buried deep inside, there are good data clamouring to be presented clearly if only we can find them. But still we're not doing so well in terms of global coverage. So far, we have published nothing from eastern (especially south-east) Asia, and nothing from anywhere more than a single degree of latitude into the southern hemisphere. Where are the papers from Africa, South America, Australia and New Zealand? We have already made potential authors in these regions aware that we exist through publicity at scientific meetings, so what else can we do to persuade them to actually send us their manuscripts?

Apart from extending our geographical coverage, the next challenge is to make the journal sustainable for the future. That is mostly about people - and those people are us. *Mires and Peat* differs from most academic journals is that we don't have salaried staff. This is fundamental to our principle of 'free and open-access' publishing. Nobody's time is paid for by *Mires and Peat*, so nobody has to pay to read it or to publish in it. But it relies on 'us' being able to invest some of our spare time. 'Us' is centred on an Editorial Board drawn from five continents. It comprises 24 research-eminent Associate Editors who contribute to policy and take care of peer reviewing; the Web Administrator (Michael Trepel) who maintains the website and produces our publicity flyers and posters; and the Editor and Deputy Editor, who (officially) manage the journal and (unofficially) do everything else that's required. Then there are the 85 other experts we have approached for reviews and our 102 authors so far. That's more than 200 people, and still only a fraction of the global peatland community. So of course we can make sufficient spare time between us, and the more of us who contribute, the less each person's time commitment will be. There are some new jobs on offer now, and I'm looking for volunteers. For example, is there anybody out there who would be interested in really getting to grips with the 'impact factor' system and working out our strategy for qualifying? Anyone who could take a special interest in finding innovative ways to stimulate the submission of manuscripts, especially from the half of the world we haven't penetrated yet? Any bookworms who would like to develop our 'selected book reviews' section? Any word-processor or desktop publishing geeks who could set up proofs? And especially, I would like to hear from anyone with the special set of skills needed to make acceptable papers into good ones - that is, peatland and paper-writing expertise plus fluent or native English, and a willingness to take the time to understand and help other authors internationally. The good news is that, for academics, taking on journal-related responsibilities can earn extra 'esteem' points in research assessment exercises, on top of those available for publications.

So come on IMCG (and IPS if you're reading this), let's make it fly.

To see the journal, surf to http://www.mires-and-peat.net/. Send your comments, your offers to get involved, and your manuscripts to o.m.bragg@dundee.ac.uk

IMCG Home Page

In February 2009, the IMCG home page saw its 50.000th visitor; a good reason to dress up. The look of the webpage was refreshed and several pages were updated with recent information and broken links repaired.

Visitors of the IMCG web page come from all corners of the world. The site is most often visited from Europe (75 %) followed by North America (13%) and Asia (6%). This statistical information reflects the hot spots of mire conservation activities. Visitors from Africa (2%), Australia (1.5%) and Central and South America (1.5%) are still a minority. However, mires in these regions are threatened by several reasons and they need our attention.

The IMCG website and the IMCG newsletter report about mire conservation across the world. On the website you find

- an complete archive of the IMCG newsletter since 1997, (only the first newsletters from before 1997 are missing),
- an archive of IMCG resolutions and statements from Norway in 1994 to Finland in 2006,
- a list of publications and teaching material authored by IMCG or IMCG members,
- a global peatland database with information about mire and peatland distribution and quality per nation,
- links to other mire and peatland related websites,
- an up-to-date calendar of mire conservation events worldwide,
- a list of threatened mires and peatlands,
- IMCG membership and contact information,
- IMCG mission and action plan.

To make the IMCG home page a livelier site for mire conservation, we need your input. Send your contribution (e.g. case studies about mires, links to mires, pictures, etc.) to the IMCG secretariat at info@imcg.net. Please inform us also, when you find outdated information or broken links.

Michael Trepel

Ramsar CoP 10 and peatlands

by Tatjana Minaeva & Hans Joosten

The 10th Meeting of the Conference of the Parties (COP) to the Convention on Wetlands (Ramsar, Iran, 1971) took place in Changwon, Republic of Korea, 28 October-4 November 2008 under the motto "Healthy wetlands, healthy people". The meeting was attended by a large group of IMCG members and sympathizers, largely 'disguised' as official country representatives.

Global Action for Peatlands

The joint history of Ramsar and peatlands is longer than hitherto recognized: the city of Ramsar is actually situated in the midst of extensive peatland, as was discovered in 2008 (see picture below). This has, however, not prevented the Ramsar Convention from initially largely overlooking peatlands.

Becoming aware of that omission, COP 6 in 1996 adopted Recommendation VI.1, encouraging further cooperation on wise use, sustainable development, and conservation of global peatlands. COP 7 (1999) subsequently adopted Recommendation VII.1, on the "wise use of peatlands" with an annexed "draft global action plan for the wise use and management of peatlands". COP 8 (2002) adopted a whole series of resolutions relevant to peatlands, including

- Resolution VIII.3 "Climate Change and Wetlands: Impacts, Adaptation and Mitigation", calling for managing wetlands adaptively in response to the impacts of global climate change, and recognizing the special role of peatlands in mitigating these impacts;
- Resolution VIII.11 "Additional guidance for identifying and designating under-represented wetland types as Wetlands of International Importance", addressing peatlands as underrepresented wetland type in the Ramsar system;
- Resolution VIII.17 "Guidelines for global action on peatlands (GAP)", with a large programme of actions and calling for the establishment of a coordinating committee for its implementation (CC GAP).

Recent research has revealed that the city of Ramsar is situated amidst of peatlands. Our Iranian IMCG member Elias Ramezani showing Ramsar peat in the park in front of the hotel where the Ramsar Convention was signed in 1971.

Tools

To meet the demands of the Contracting parties (the countries), several Ramsar tools and instruments were developed including:

- New Guidelines for management planning for Ramsar sites and other wetlands (adopted 2002) with special reference to peatlands;
- Criteria for Identifying Wetlands of International Importance (adopted in 2005), mentioning peatlands as underrepresented wetlands type;
- the Ramsar Strategic plan 2002-2008, covering mechanisms to deliver the General Objectives 1-3 with respect to peatland wise use and conservation;
- the National Report format triennium 2002-2005, including with respect to peatlands a special division on GAP implementation (point 3.2)
- the National Report format triennium 2005-2008 with the indicator question: ”Has national action been taken to implement the Guidelines to Global Action on Peatlands (Res. VIII.17)?”

To inform Ramsar countries and global implementing agencies, CC GAP and its involved organisations (incl. IMCG) developed various helpful documents:

- the book *Wise use of mires and peatlands* (2002), providing background information on peatlands and a framework for decision makers;
- the *Peatlands Wise Use Statement* (2002), presenting a short overview of wise use principles related to peatlands in all convention languages and additionally in Finnish and Russian;
- the brochure *Peatlands – Do You Care* (2005), explaining peatlands functions and values and refreshing emerging issues on peatlands;
- the *IPCC Guidelines for National Green House Gas Inventories 2006*, with in Chapter 7 “Wetlands” a focus on peatlands under extraction;
- the report “*Global Assessment on Peatlands, Biodiversity and Climate Change*” (2008), reviewing the latest scientific information, as a background for decision making, endorsed by the Convention for Biological Diversity in May 2008.

National reports

In preparation of COP 10 in Korea, the countries’ National Reports were analyzed and some remarkable progress related to peatlands was observed: In their National Reports for CoP 9 (Kampala, Uganda, 2005) still 32 countries had reported that “peatlands” were not applicable to them. These included 5 countries in Europe (incl. Greenland), 10 in Africa (incl. Botswana), 7 countries in the Americas (incl. USA, the country with the third largest peatland area and

peat carbon stock in the World!), and 4 in Asia (incl. Iran…).
In 2008 only 20 countries had remained who declared this: 3 in Europe, 10 in Africa (incl. major peatland countries like Madagascar, Nigeria, and Zambia), 5 in the Americas, and 2 in Asia (incl. Sri Lanka) (see table 1).

Table 1: Number of countries per continent reporting in their National Report 2008 on implementation of the Global Action Plan for Peatlands.

	yes	no	partly	planned	not applicable
Europe	12	3	0	0	0
Americas	1	9	5	5	5
Africa	1	22	1	5	10
Asia	6	15	4	2	2
Oceania	1	2	1	0	1

COP10 peatland events
One of the tasks of CC GAP is to identify emerging issues related to peatlands. In 2005 (COP 9) attention was asked to the emerging issues of climate change, biodiversity, water management, poverty and wise use. In 2008 (COP 10) the following issues were added: land degradation, global energy strategies, and development projects.
In a special CC GAP peatland side event, Faizal Parish addressed the role of peatlands for biodiversity, carbon and water, on the basis of the 2008 global Assessment on Peatlands, Biodiversity and Climate Change. Hans Joosten ("global emerging issues") pointed out that whereas in earlier times most peat-land interests was in *peat* (for energy) and *land* (for agriculture and forestry), recently *peatland* regulation (carbon storage, water regulation, coastal protection…) and informational functions (incl. both species and ecosystem biodiversity) got more attention. The latest developments, however, show a renewed orientation on energy and land. Increased focus on *peat* for energy in Finland, Sweden, Russia, Canada, etc…, peat-*land* everywhere in the world increasingly used for oil/gas infrastructure, wind energy, hydro-electricity, cultivation of "biofuels", and resources for an ever growing world population. Safeguarding pristine peatlands will therefore increasingly imply restoring degraded peatland, e.g. by rewetting degraded peatland for biomass production.
Jaakko Silpola (IPS) presented an overview of current mechanisms and incentives for peatland wise use implementation in general and the IPS initiative for a Peatland Management Strategy (see elsewhere in this Newsletter) in particular.
Finally Chen Kelin (WI China) presented best practices in peatland restoration with recent initiatives in Tibet as examples and a Wetlands International film about Kalimantan peatland restoration was shown.

In the Supporting Event "Biofuels, Agriculture and Wetlands" of Ramsar's International Organization Partners the dialectics between Peatlands and Biofuels were discussed with the following conclusions.

1. Peat is no biofuel: it is worse than coal. Although produced by plants, peat is no biomass fuel because peat combustion consumes fossil peat carbon. Because of its lower energy content, burning peat is worse than burning coal.
2. Biofuels from drained peatlands are much worse than coal. Because they mobilize the stored peat carbon, biofuels from drained peatlands produce 3 – 9 times more CO_2 per energy unit than burning coal. This not only a tropical problem (oilpalm), but also concerns maize, sugar cane, and miscanthus cultivated on peatland.
3. Biofuels from rewetted degraded peatlands create a win-win-win-win situation. 800,000 km^2 of peatlands are drained and emitting carbon, and large areas are degraded and abandoned. Rewetting these for biofuel cultivation stops CO_2 emissions from peat and provides carbon neutral fuels. "Paludiculture" (agriculture/forestry on rewetted peatlands) is good for climate, biodiversity, water, and employment

A last side event "Integrated Management of Mountain Wetlands in China" focused on the practical management and restoration of mountain peatlands. Chen Kelin presented an overview of the ECBP project of that name, Alatai Abzar (Altai Forestry Bureau) complemented that story with information on the assessment and conservation of mountain wetlands in the Chinese Altai Mountains, Hans Joosten discussed characteristics, degradation and restoration options for mountain peatlands, and Faizal Parish elucidated the special position of mountain peatlands in climate change.

COP 10 resolutions
Whereas all Ramsar resolutions have relevance for peatlands (constituting half of the wetlands of the world), three resolutions explicitly addressed peatlands.
In the discussion on Resolution X.24 "Climate change and wetlands" (www.ramsar.org/res/key_res_x_24_e.doc), various positive references to peatlands were made, including Thailand calling peatswamps the "Ramsar flagship", China stressing the important role of peatlands in climate change, and Canada and Russia pointing out the necessity of collaborative action and GAP support. On the other hand Brazil played for time by stressing that Ramsar should not be more Catholic than the pope by addressing issues that have not yet been decided on by the UNFCCC…
In the end the following peatland relevant statements were adopted in the resolution:

9. RECOGNIZING the significant progress made since Ramsar COP8 (2002) with respect to peatland inventory and awareness of the carbon storage function of wetlands such as peatlands;
10. NOTING that the global *Assessment on Peatlands, Biodiversity and Climate Change* (prepared under the coordination of Wetlands International and the Global Environment Centre with support from UNEP-GEF, Canada, Netherlands and others) analysed much information on the importance of peatlands for biodiversity and mitigation of, and adaptation to, climate change and confirmed that peatlands are the most important carbon store in the terrestrial biosphere, storing twice as much carbon as the forest biomass of the world, and that degradation of peatlands has been contributing annual emissions equivalent to 10% of global fossil fuel emissions; and that CBD COP 9 encouraged Parties and other governments to strengthen collaboration with the Ramsar Convention on Wetlands and promote the participation of interested organizations in the implementation of the *Guidelines for Global Action on Peatlands* and other actions, such as the ones listed in the global *Assessment of Peatlands, Biodiversity and Climate Change*, that could contribute to the conservation and sustainable use of peatlands and encouraged the implementation of the actions included in the Assessment; …

THE CONFERENCE OF THE CONTRACTING PARTIES …

31. URGES Contracting Parties and other governments, where appropriate, to include in national climate change strategies the protection of mountain wetlands, to reduce the impacts of extremes in precipitation, attenuate the impacts of melting and disappearing glaciers and the reduction of water storage in mountain areas, and the restoration and management of degraded lowland and coastal wetlands, resulting in the attenuation of large storms and sea-level rise;
32. ALSO URGES relevant Contracting Parties to take urgent action, as far as possible and within national capacity, to reduce the degradation, promote restoration, improve management practices of peatlands and other wetland types that are significant GHG sinks, and to encourage expansion of demonstration sites on peatland restoration and wise use management in relation to climate change mitigation and adaptation activities;
33. INSTRUCTS the Ramsar Secretariat, the STRP, and the Coordinating Committee for Global Action on Peatlands (CCGAP) to strengthen synergies between the Ramsar Convention, CBD, UNFCCC and UNCCD with respect to peatland and other wetland conservation and wise use, including for reducing vulnerability and increasing resilience to climate change, whilst recognizing the distinct mandates and independent legal status of each convention and the need to avoid duplication and promote cost savings;
34. INVITES the Global Environment Centre, Wetlands International, and other interested partners to translate into other languages, further disseminate, and undertake follow-up activities to the global *Assessment on Peatlands, Biodiversity and Climate Change;*
35. CALLS ON Ramsar Administrative Authorities to provide expert guidance and support where appropriate to their respective UNFCCC focal point, within the context of UNFCC Decision 1/CP.13, on the joint policies and measures that are aimed to reduce anthropogenic greenhouse gas emissions from wetlands such as peatlands, where practical; …
38. ENCOURAGES Contracting Parties to utilize peatlands to showcase the Communication, Education, Participation and Awareness activities for implementation of the Convention in the context of efforts to reduce greenhouse gas emissions and mitigate and adapt to the impacts of climate change; …
42. ENCOURAGES Contracting Parties and other organizations to undertake, where possible, studies of the role of wetlands in carbon storage and sequestration, in adaptation to climate change, including for flood mitigation and water supply, and in mitigating the impacts of sea level rise, and to make their findings available to the Convention, the UNFCCC and other relevant processes;

Biofuels

The results with respect to peatlands were much less evident in Resolution X.25 "Wetlands and "biofuels" (www.ramsar.org/res/key_res_x_25_e.doc). Whereas peatlands are increasingly used for the cultivation of biofuels (with catastrophical results both for the peatlands and the global climate...) some countries, including Brazil, Malaysia and USA, managed to keep out all reference to peatlands from the texts. A proposal of Costa Rica to avoid biofuels that require drainage of peatlands was not supported. Malaysia even managed to get the reference to "the conversion of peatswamp forests to palm oil production in southeast Asia" as a cause of major releases of greenhouse gases skipped…

The final result was often vague and the word "peatland" was only used in relation to "paludiculture".

8. RECOGNIZING that biofuel crops vary with regard to their water demands, and that some can be grown on degraded lands and can in some cases assist in the rehabilitation of wetlands, with associated benefits for human populations; …
12. ALSO EXPRESSING CONCERN that conversion of wetlands risks releasing high levels of GHGs from the carbon they store, as recognized by Resolution X.24 on *Climate change and wetlands*, and that this is already causing major releases of greenhouse gases from some wetlands; and
13. FURTHER CONCERNED that decisions concerning further conversion of wetlands driven by biofuel production may not necessarily take

into account the full range of ecosystem services provided by wetlands, such as carbon storage, flood protection, production of food and fibres, and groundwater recharge;

THE CONFERENCE OF THE CONTRACTING PARTIES…

17. ENCOURAGES Contracting Parties to consider the cultivation of biomass on rewetted peatlands (paludiculture) and to promote sustainable forest and agricultural practices that will mitigate any adverse impacts of biofuel production;

Extractive industries

A last resolution to address peatlands was Resolution X.26 "Wetlands and Extractive Industries" (www.ramsar.org/res/key_res_x_26_e.doc).

2. RECOGNIZING the increasing global demand for resources, including *inter alia* non-renewable resources such as oil and gas, precious and base minerals, coal, sand and gravel, industrial minerals and peat, …
4. RECALLING Resolution VIII.3 (2002), which noted that peatlands may undergo significant and irreversible damage due to climate change, and Resolution VIII.17, which further noted that widespread loss and damage of peatlands is continuing in many parts of the world; …

THE CONFERENCE OF THE CONTRACTING PARTIES…

21. URGES Contracting Parties, in considering the environmental impacts of extractive industries on peatlands, to take appropriate measures/actions, including *inter alia* directing extractive activities to already drained peatlands, in order to reduce the environmental impacts of extractive activities on pristine peatlands, in recognition of the role of peatland conservation in reducing greenhouse gas emissions and maintaining ecosystem services, including water provision; …

Ramsar small grants fund

Each year the Ramsar Small Grants Fund (SGF) provides support of up to 40,000 Swiss francs (US$ 35,000) for a number of small projects for the conservation and wise use of wetlands and circulates a fundraising portfolio of evaluated proposals for which we ourselves have insufficient funding to support. Parties from eligible developing countries are encouraged to submit proposals for the 2009 period, and NGOs and others may also apply as long as their proposals have the endorsement of the Ramsar Administrative Authorities (i.e., national focal points) in their countries.

Forms in English, French, and Spanish and the current OECD eligibility list can be found at http://www.ramsar.org/sgf/key_sgf_index.htm.

The deadline for submission of proposals is 30 June 2009, but the deadline for sending draft proposals to receive advice from the Convention's Senior Regional Advisors is 30 April 2009.

The portfolio of 2008 project proposals that is presently being circulated amongst donor organizations seeking their direct support can be seen at http://www.ramsar.org/sgf/sgf_portfolio_2008.pdf.

Peatlands at the UNFCCC in Bonn on their way to Copenhagen

by Hans Joosten

"The enormous CO_2 emissions from degraded peatlands have finally become an integral part of the UNFCCC agenda." That was the conclusion Wetlands International drew from the latest round of the UN Climate Change Talks in Bonn, Germany April 2009. This meeting incorporated the 5th session of the Ad hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA 5) and the 7th session of the Ad hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP 7). In the first WG reducing emissions from deforestation in developing countries (cf. peat swamp drainage in Southeast Asia) was one important point on the agenda. In the second WG, the emissions from peatland drainage in developed countries (Annex I) was a prominent issue. These emissions amount to about 900 Mton CO_2 in Annex 1 countries and globally to over 2 Gt/CO_2 annually.

More and more countries see the importance of addressing these emissions and become aware of the huge and cost-effective potential of restoring drained peatlands. The efforts of peatland interest groups, including IMCG, in the convention meetings in Nairobi (2009), Bali (2007) and Poznan (2008) start to be registered. Inclusion of peatland emissions in the accounting rules will create a huge momentum for peatland restoration and conservation.

A clear indication of the increasing attention were the submissions to the Bonn meeting of various countries demanding wetland restoration and emissions from wetland loss as an additional activity for accounting under a new Kyoto Protocol.

Submissions

Here follow some texts of the country submissions:

Australia: "There is broad interest internationally to better explore the role that soil carbon might play in a post-2012 outcome on LULUCF. The current rules provide for accounting for changes in soil organic carbon for all lands subject to Article 3.3 activities and elected Article 3.4 activities."

Belarus: "In particular, the Republic of Belarus admits that peatland restoration and conservation activities can and should be considered in para 4 Article 3 and suggests amend decision 16/CMP.1 regarding inclusion of special definitions concerning restoration and conservation of degraded peatlands (identical to determination of "revegetation"). The Republic of Belarus turns attention of the Parties to necessity of elaboration of definitions and methodologies concerning restoration and conservation of peatlands for inclusion of these activities in second commitment period. …

"Global degradation of peatlands leads to carbon dioxide emission equivalent to 10 per cent of global CO_2 emitted during fossil fuel burning. At the same time, restoration activities in long-term perspective lead to considerable absorption of carbon and its accumulation. Greenhouse gas emissions from degraded peatlands in many countries are not considered in national emission inventory systems pursuant to para 4 Article 3 of the Kyoto Protocol.

"The Republic of Belarus considers it to be necessary to include assessment of emission and absorption of GHG at the degraded peatlands and natural wetland ecosystems in National inventories particularly in countries in which large territories of such lands exist. In the later decade, the scientific and methodological ground for evaluation of the rate of emission and absorption by wetland ecosystems, including degraded ones, has been improved substantially. The Belarusian, German and English scientists and specialists have jointly conducted a range of studies and projects in this field. During the side events at the two subsequent sessions of AWG-KP, the Republic of Belarus will present all needed information concerning the applicability of existing and actively developed scientific and methodological framework, as well as the results of the practical experience on implementation of the rewetting of degraded peatlands in its territory."

Iceland proposed to include the activity of wetland restoration and provided first definitions of both 'wetland degradation' and 'wetland restoration' (see below).

Japan: "Japan fully recognizes the important role of wetland management, including wetland restoration and degradation, to mitigate climate change. However, it is difficult for many countries to measure, report and verify removals and emissions through wetland management accurate enough to be used for the achievement of national commitments in light of current scientific knowledge, including ours, and the IPCC's Good Practice Guidance for LULUCF (LULUCF-GPG).

"However, provided that the choice of wetland management is voluntary, it is possible to establish a rule where a country, equipped with enough data and information enabling the accurate accounting, could account for removals and emissions through wetland management to achieve its national commitment. In such a case, it is necessary to establish the definition of wetland distinct from other activities such as forest-related ones in order to avoid arbitral classification of land."

New Zealand: "It is clear that there are many issues associated with Article 3.4 activities that make accounting for these activities as part of meeting national obligations very difficult. These issues vary according to the characteristics and accounting approach of each specific activity but include: data limitations and uncertainty, the high cost of measurement and monitoring, factoring out non-anthropogenic effects of climate change such as drought and inter-annual variability and managing the

effects of historic management practices (legacy effects). Clearly, accounting for Article 3.4 activities is not appropriate in every Party's circumstances. This is evidenced by the small number of Parties electing 3.4 Activities in the first commitment period of the Kyoto Protocol."
…However: "New Zealand is open to the inclusion of wetlands as a new voluntary activity for post-2012. We recognise the importance of emissions from degraded wetlands – principally on organic/peat soils. "We need to ensure that there is no double accounting (e.g. wetlands on grazing land where grazing land has already been elected).
"We need to develop appropriate definitions of wetlands and there should also be symmetrical treatment of this new activity, i.e. accounting for wetland restoration should be balanced by accounting for wetland degradation."

Switzerland: "For the 2nd CP [commitment period, i.e. after 2012, ed.] Switzerland wishes an extension of paragraph 1 of the Annex to 16/CMP.1 and 11 CP.7 by adding a further paragraph
(i) "wetland management" is the system of practices on wetlands aimed at manipulating the amount and type of vegetation and soil carbon.
"Hereby the same wetland definitions should be applied as already used in the existing GHG reporting under the Convention."

Wetland restoration
After the discussions in the relevant meeting, Belarus and Iceland – after consultation of peatland and UNFCCC experts – jointly submitted the following revised text:
"Section A, Definitions, Article 1, paragraph (i)
"Wetland restoration" is a direct human-induced activity to reduce emissions of greenhouse gases and thus limiting carbon stock degradation by restoring degraded wetlands. If elected the activity includes accounting for human-induced drainage of wetlands resulting in increased emissions of greenhouse gases and reduction of carbon stocks.
"Section C, Article 3, paragraph 4, Article 6. A Party included in Annex I may choose to account for anthropogenic greenhouse gas emissions by sources and removals by sinks resulting from any or all of the following human-induced activities, other than afforestation, reforestation and deforestation, under Article 3, paragraph 4, in the first commitment period: revegetation, forest management, cropland management, grazing land management and wetland restoration."
The term "wetland" was chosen because it was considered too risky too try and introduce a new land use category (wetland is a standard category), which would go to the fundamentals of the Climate Convention. Furthermore, with "peatland" a discussion would be initiated on what a peatland actually *is*. Countries generally prefer to refrain from action in stead of adopting something of which the consequences cannot be overlooked.
The term "restoration" was chosen in favour of "management" because the latter term keeps open the option of draining peatlands 'for climate'. In major parts of the world, e.g. the boreal zone (the biome on Earth with the largest concentration of peatlands), peatland drainage for forestry may lead to an increase in carbon stock, at least for a considerable period of time. Peatland drainage for forestry leads to:
1. a steady decrease of the *peat* (soil) carbon stock,
2. a rapid initial increase of the *biomass* stock (trees, dwarf shrubs), the harvesting of which leads to a typical saw tooth curve of the carbon biomass stock, and
3. a slow initial increase of the *litter* stock which eventually, after some centuries, reaches an equilibrium.

The total *peatland* carbon stock, being the combination of these three stocks, varies therefore in time and space. In Boreal and Oceanic peatlands, the increase in biomass and litter stocks may strongly exceed the losses from the peat carbon stock in the first period (decennia up to some centuries) after drainage. As the biomass and litter stocks tend towards equilibrium but the peat carbon losses continue, the cumulative carbon losses from peat oxidation eventually prevail.
Only in exceptional cases, under very shallow drainage, peat accumulation may actually increase because of the strongly enhanced production of lignine rich below-ground biomass.
In Subtropical and Tropical peatlands forestry leads to rapid carbon losses through drainage. In these areas even the mere harvesting of wood without drainage may lead to peat carbon losses as it decreases organic matter input and increases radiation and consequent peat decomposition.
Using the term "wetland management" would allow drainage of pristine peatlands where this would lead to an increase in peatland carbon stock. This would, however, conflict with the aims of the Biodiversity Convention and the Ramsar Convention, and also with the general philosophy of the UNFCCC.
Using the term "wetland restoration" only allows a rewetting of previously drained peatlands and prevents the conflicts (short-term vs. long-term, climate vs. biodiversity) mentioned above.

To be continued
Countries and NGOs could now provide input to the next texts by 24 April 2009. The next round of negotiations will be held 1 - 12 June 2009, again in Bonn, when the first drafts of negotiating texts will be on the table.
We will be there and try to achieve that peatlands get the attention in the climate discussions they deserve.

Burning peat or burning fingers? Peatland in the new EU Renewable Energy Directive

by Hans Joosten

Introduction

The new European Union "Directive on the promotion of the use of energy from renewable sources" (December 2008, http://tinyurl.com/d3k6bp) has raised contradictory reactions regarding peat. "For the peat industry … it is important to have the role of peat recognized in ensuring local energy supply and therewith contributing to energy security in Europe," said Matti Hilli, Chairman of the European Peat and Growing Media Association (EPAGMA). EPAGMA welcomes the Directive, because it "allows the use of peat and other biomass obtained from already-drained peatlands as a raw material for the production of renewable energy" (www.epagma.com).

In contrast John Hontelez, Secretary-General of the European Environmental Bureau (EEB), noted in its letter to the EU (5 February 2009): "Peatlands are correctly excluded from the production of raw materials for biofuels unless it can be proven that the cultivation and harvesting of that raw material does not involve the draining of previously undrained soil". The latter condition, so the EEB, "constitutes a clear legal principle that would effectively prevent the use of peatlands".

Reading these reactions, one wonders whether this indeed concerns the same directive. What makes the Directive so unclear that peat extractors conclude that "peat" is recognized as a biofuel, whereas environmentalists read that even biomass from drained peatland is excluded? A glance in the text of the Directive with some background information on the origin of confusion, *and* the revelation how the peat burning lobby through its short-sightedness this time burnt its own fingers.

Starting points

The Directive starts with making statements regarding aims, terms, and origin of the directive (the "whereas"-part). The most important with respect to peatlands are the following:

> (1) The control of European energy consumption and the increased use of energy from renewable sources, together with energy savings and increased energy efficiency, constitute important parts of the package of measures needed to reduce greenhouse gas emissions and comply with the Kyoto Protocol to the United Nations Framework Convention on Climate Change, and with further European and international greenhouse gas emission reduction commitments beyond 2012. …

Here it is stated that the use of energy from renewable sources is necessary to reduce greenhouse gas emissions, the main aim of the directive.

Both combustion of peat and combustion of most biofuels from drained peatlands lead to larger GHG emissions than burning coal (Joosten 2007a, Couwenberg 2007) and thus do not achieve the fundamental aim of the directive.

There are, indeed, Swedish and Finnish allegations that peat is more favourable than coal, but the associated 'life-cycle analyses' are 1) wrong and scientifically untenable and 2) based on 'mixing' of peat with 'real' biofuels where the lower emissions compared to full fossil fuels are not attributable to the peat but to the real biofuels (Joosten 2007b, 2008).

> (3) Directive 2001/77/EC… and Directive 2003/30/EC …established definitions for different types of renewable energy. … In the interests of stability and clarity it is appropriate to use the same definitions in this Directive.

This might indeed be in the interest of clarity and stability, but it is *not* fully appropriate in the light of the objectives of the Biofuel directive. After all, Directive 2003/30/EC states:

"2. At least the products listed below shall be considered biofuels: (a) 'bioethanol' …; (b) 'biodiesel'…; (c) 'biogas'…; (j) 'pure vegetable oil': oil produced from oil plants through pressing, extraction or comparable procedures ….".

The latter implies that e.g. palmoil is always a biofuel, whatever its climate impact may be. This shows the archaism of this definition that was formulated before consciousness arose of soil carbon losses.

> (30) …Electricity produced in pumped storage units from water that has previously been pumped uphill should not be considered to be electricity produced from renewable energy sources.

This is an interesting paragraph, because it takes a life-cycle approach. It correctly states that in judging the effects of a fuel not only the "output" but also the "input" must be considered. A consequent approach should also forbid peat and most biomass from drained peatland because the peat carbon stock losses cannot be compensated by the greenhouse gas savings (if any) of the produced fuels (see also 68 and 71).

> (68) If land with high stocks of carbon in its soil or vegetation is converted for the cultivation of raw materials for biofuels and other bioliquids, some of the stored carbon will generally be released into the atmosphere, leading to the formation of carbon dioxide. The negative greenhouse gas impact of this can offset the positive greenhouse gas impact of the biofuels or bioliquid, in some cases by a wide margin. The full carbon effects of such conversion should therefore be accounted for in calculating the greenhouse gas savings of particular biofuels and other

bioliquids. This is necessary to ensure that the greenhouse gas saving calculation takes into account the totality of the carbon effects of the use of biofuels and other bioliquids.

Similar to (30) this paragraph takes a life-cycle approach. In case of "*land with high stocks of carbon in its soil*" such as peatland, the "*full carbon effects of such conversion*" not only take place at the moment of conversion (e.g. at the moment that drainage ditches are being dug), but as long as the drainage infrastructure is existent. If applied seriously, this paragraph should prevent peat and most biomass from drained peatlands being used as and for biofuels/bioliquids under this directive.

(71) … those types of land whose carbon stock loss upon conversion could not, within a reasonable period taking into account the urgency of tackling climate change, be compensated by the greenhouse gas savings of producing biofuels and other bioliquids, should not be converted for the production of biofuels and other bioliquids. Inventories of worldwide carbon stocks lead to the conclusion that wetlands and continuously forested areas with canopy cover of more than 30% should be included in this category. … The reference to wetlands should take into account the definition contained in the Ramsar Convention.

This is a nice example of the "forest-bias" in the general climate discussion and of the complete incomprehension of the character of peatlands in this Directive. The expression "upon conversion" means "immediately or very soon after conversion". Indeed most carbon stock losses from forests occur "upon conversion" of forest to unforested land. But the vast majority (over 99%) of the carbon stock losses from converting a pristine peatland to a drained peatland takes place (much) later. Even hundreds of years after conversion, the carbon stock of a drained peatland keeps decreasing. This is painfully shown in the Netherlands where 1000 years after initial peatland drainage a major part of the country has subsided to deep below sea level and continues to sink deeper (Verhagen et al. 2009).
The definition contained in the Ramsar Convention is: "wetlands are areas of marsh, fen, **peatland** or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres." The definition thus explicitly includes "peatland", independent of whether it is drained or not. Implicitly this paragraph thus excludes all peatland from the production of biofuels/bioliquids.
This would also be highly consistent, because peatland is the wetland type with the highest concentration of carbon and the highest possible carbon dioxide losses per ha under exploitation (cf. Ramsar Resolution X.24, see elsewhere in this Newsletter).

(79) … the net increase in demand for crops caused by the promotion of biofuels could lead to a net increase in the cropped area. This could be into high carbon stock land, in which case there would be damaging carbon stock losses.

Here again the Directive points at the potentially negative climate effects of using e.g. peatland for cultivation of biomass fuels.

(84) In order to avoid encouraging the cultivation of raw materials for biofuels and other bioliquids in places where this would lead to high greenhouse gas emissions, the use of default values [for greenhouse gas savings – ed.] for cultivation should be limited to regions where such an effect can reliably be ruled out. …

This should imply that 'non-peat' default values for greenhouse gas savings can not be used for biofuels based on peat and products from drained peatlands. Emission factors of these products clearly lie above the minimum level set by the directive (see below) and producers of peat(land)-based biofuels thus always have to prove that actual emissions from their total production process (including the losses from the peat soil carbon stock) are lower than the default values.

After these introductory remarks the real decisions are taken:

Article 2 ***Definitions***: For the purposes of this Directive, the definitions in Directive 2003/54/EC shall apply. The following definitions shall also apply: ….
(a) "energy from renewable sources" means energy from renewable non-fossil sources: wind, solar, geothermal, aerothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;

The discussion whether peat is "fossil" or "biomass" is resolved in the Global Assessment on Peatlands, Biodiversity and Climate Change (Parish et al. 2008, p. 103-104), endorsed by the Convention on Biological Diversity (Bonn May 2008) and the Ramsar Convention (Changwon November 2008, see elsewhere in this Newsletter):
"*From a climatic point of view peat is clearly a 'fossil fuel', not a 'biofuel'. Combustion of peat releases carbon from a long-term store. Without exploitation the peat carbon would remain in this store more or less indefinitely. Here lies the fundamental difference between 'biomass' fuels and 'fossil' fuels (like peat and coal). By burning biomass fuels (like wood and straw), organic material is oxidized that anyhow would have been oxidized by decay after the plant's death. In the case of biomass combustion, humans*

consume the energy, whereas in the case of natural decay, microbes consume the energy provided by oxidation. In both cases the same amount of CO_2 ends up in the atmosphere, only the pathways are different.
Fossil fuels, on the contrary, would – without exploitation – remain in the long-term store and not end up in the atmosphere as CO_2. By burning peat, organic material that otherwise would have remained stored for thousands and thousands of years is oxidized. This applies whether the peat is 10 or 1,000 or 100,000 years old. It is not age that determines whether something is 'fossil' or 'biomass', but the natural destiny of the material. Similar to coal, lignite or oil, the natural destiny of peat carbon is to remain stored."

(e) "biomass" means the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste;

The only way to include "peat" under this definition of "biomass" would be to regard "opencast peat mining" as an industry related to agriculture or forestry. *Per definitionem* you can include everything, but this would make no sense in the light of the objective of the directive and would contradict many of the statements adopted above.

Article 5 **Calculation of the share of energy from renewable sources**
… Subject to the last subparagraph of Article 17(1), biofuels and other bioliquids that do not fulfil the sustainability criteria set out in Article 17(2) to (6) shall not be taken into account …
…
Article 17 **Sustainability criteria for biofuels and other bioliquids**
…
Art. 17 (2): The greenhouse gas emission saving from the use of biofuels and other bioliquids taken into account for the purposes referred to in paragraph 1 of this Article shall be 35%.
With effect from 2017, the greenhouse gas emission saving from the use of biofuels and other bioliquids taken into account for the purposes referred to in paragraph 1 of this Article shall be 50%. After 2017 it shall be 60 % for biofuels and bioliquids produced in installations whose production has started from 2017 onwards.

This implies that the use of "peatroleum" (http://tinyurl.com/dxeps6) and other products made directly from peat is not permissible. The emission factor of peat is higher than that of coal. Any processing to make biodiesel or other fuels out of peat will increase this factor.

Art. 17 (2) [ctd]: … The greenhouse gas emission saving from the use of biofuels and other bioliquids shall be calculated as provided for in Article 19(1).

Article 19(1) then states that when emissions from carbon stock changes caused by land use change are larger than zero, emissions must be calculated using a formula provided in Annex V part C.
One could object that this reasoning is not applicable to drained peatland as the relevant Annex V part C only considers "emissions from carbon stock changes caused by land use *change*", not from "land *use*" per se. This reasoning is, however, wrong because statement (68) prescribes to account "the *full* carbon *effects* of … conversion". Furthermore, the formula in Annex V part C explicitly includes 'soil carbon accumulation via improved agricultural management', i.e. a land use option with the opposite carbon effect as peatland drainage and tillage. Only counting the gains and neglecting the losses would be a very bitter way of reaching the aims of the Directive…
This inevitably means that the use of biofuels made from biomass grown on drained peatland will generally not satisfy the 35% criterion, certainly not in case of oilpalm, maize, miscanthus, and sugar cane, of which the emission factors because of peat oxidation from the necessarily drained sites by far exceed that of coal (Couwenberg 2007). Even a large part of the Scandinavian wood from peatland does not apply to this criterion as it does not reach the required emission reduction of 35% compared to fossil fuels. Wood production on afforested organic cropland in Finland even destroys more peat carbon than is sequestered in the upgrowing wood (Sarkkola 2007) and is from a climate point of view even worse than coal. Such wood should thus be treated as fossil fuel of the worst kind!

Art. 17 (4): Biofuels and other bioliquids taken into account for the purposes referred to in paragraph 1 shall not be made from raw material obtained from land with high carbon stock, that is to say land that had one of the following statuses in January 2008 and no longer has this status:
(a) wetlands, that is to say land that is covered with or saturated by water permanently or for a significant part of the year;

This "that is to say" is not fully compatible with point (71) above that states: "The reference to wetlands should take into account the definition contained in the Ramsar Convention." The definition of the Wetland Convention makes no reference to minimum water level, only to maximum water level and considers all peatland as wetland. Still, if we follow the specifications under article 17(4a), much peatland drained and used for agriculture, forestry and peat extraction or abandoned is indeed "saturated by water …for a significant part of the year" and may thus not be drained more deeply to enable biomass production

(as is currently happening both with maize in Europe and with oil palm in Indonesia).

(b) continuously forested areas, that is to say land spanning more than 1 hectare with trees higher than 5 metres and a canopy cover of more than 30%, or trees able to reach these thresholds in situ;

This applies to tropical and other peat swamps. In the recent past the former have been drained massively for palmoil cultivation and further drainage is envisaged (see elsewhere in this Newsletter).

The provisions in this paragraph shall not apply if at the time the raw material was obtained, the land had the same status as it had in January 2008.

This is a strange and superfluous addendum. The paragraph actually relates to "*land that had one of the following statuses in January 2008 and no longer has this status*". It is thus logically impossible that such land has the same status as in 2008. If applicable, the addendum must thus relate to other statuses than specified in the paragraph, but these are not further specified. Is a change of a forested dryland in a non-forested dryland a change in status? And a change of a forested wetland to a non-forested wetland? Or a change of a grassland to an arable field? Or a change of a maize field for animal fodder to a maize field for biogas production? This is no academic discussion as many of the regulations of the Directive apply to land use *change*, not to land use as such. But strangely no further guidance is given on that subject.

It might look logical to fix a baseline in time (i.c. 1 January 2008) and to allow e.g. biomass cultivation on a site that formerly was a tropical rain forest but that had been cut-down before 2008. After all, most greenhouse gas emissions associated with the conversion already have taken place before 2008 and thus can not be attributed to any future biomass production. The case of peatlands is, however, completely different. The vast majority (over 99%!) of the carbon dioxide emissions from peatlands takes place over many years *after* the conversion. The emissions from drained peatland continue as long as the drained status (necessary for virtually all current biomass production) is actively maintained.

All over Europe, large tracts of peatland have over the last years been abandoned and partly (deliberately – for climate purposes – or spontaneously) rewetted, with very positive effects for the climate. Allowing already drained peatlands to be used for biofuel production would (a) lead to continued and deeper drainage and tillage of such peatlands and consequent larger greenhouse gas emissions and (b) by preventing rewetting, frustrate the implementation of "a significant unrealized opportunity for cost-effective measures in mitigating and adapting to climate change" (Achim Steiner in Parish et al. 2008).

Deep ploughing of peat soil for subsequent 'biofuel' maize cultivation in the Esterweger Dose (Germany)

Article 17(4) basically refers to "land with high carbon stock" which implies that biomass from peatland (being land with the highest carbon stocks of all types of land, Joosten & Couwenberg 2008) is not allowed. The absence of explicit reference to peatlands is, however, striking…

Interestingly, if production of biomass on drained peatland would be allowed (quod non, see further) this would lead to a change of status compared to 2008, because inevitably all peat and therewith the status "land with high carbon stock" will be lost. This paragraph would thus – if applicable to peatland – encourage the process (change of status) it seeks to prevent…

If no status change is allowed, this would further frustrate the cultivation of biomass on cutover peatland (where no peat is left, but that in 2008 still had peat) and the further implementation of "paludiculture", the cultivation of biomass on rewetted degraded peatland, which is extremely positive from a climate point of view (Wichtmann & Joosten 2007). This would be in full conflict with point (79) of the directive where the "*use of restored degraded land*" for biofuel production is promoted.

Whereas the former paragraphs and sections have systematically avoided mentioning peatlands and their special properties (in art. 17/4.a the reference to pristine peatlands in earlier drafts of the Directive was even deliberately skipped…), the following section is solely devoted to peatlands:

Art 17 (ctd)

(5) Biofuels and other bioliquids taken into account for the purposes referred to in paragraph 1 shall not be made from raw material obtained from land that was peatland in January 2008, unless it is proven that the cultivation and harvesting of this raw material does not involve drainage of previously undrained soil.

An earlier version of this paragraph reads: "Biofuels and other bioliquids taken into account for the purposes referred to in paragraph 1 shall not be made from raw material obtained from land that was peatland in January 2008, unless it is proven that the cultivation and harvesting of this raw material does not involve drainage of the soil."
In the final stage of negotiations Finland, backed by Sweden, claimed that only undrained peatlands should be protected from biofuel development and proposed that the two words 'previously undrained' were inserted in the text just before the word 'soil'. In this way these countries wanted to open the door for boosting the use of local peat and drained peatland, at the expense of further increasing exploitation of drained peatlands elsewhere. Especially in SE Asia (palmoil), but also in Europe (maize, miscanthus, reed canary grass) and US (sugar cane) already drained peatlands are increasingly occupied and deeper drained for the cultivation of biofuels, even when the loss of carbon from the drained peat soils exceeds the carbon gain of biomass production substantially (see above). Even market leader Unilever has recognized the lunacy of this and has set the target to procure 100 per cent of its palm oil from certified sustainable sources by 2015. The Roundtable on Sustainable Palm Oil, led by Unilever, requires in its "Principles and Criteria for Sustainable Palm Oil Production" (Criterion 7.4) that "extensive planting on ... fragile soils is avoided" (see elsewhere in this Newsletter).
This disastrous scenario for the global climate, that – if applicable – would frustrate a considerable part of the aims of the Directive, was taken for granted by the purblind self-interest of the proposers and blindly adopted by the majority of the European Parliament and the Council of Europe.
Luckily this limited responsibility for global climate was accompanied by a similarly limited editorial ability. Actually the peat lobby had meant to include a phrase like "unless it is proven that the cultivation and harvesting of this raw material does not involve drainage of soil that in January 2008 was still undrained". But by inserting the words "*previously undrained*", the Directive now states exactly the opposite from what the villains aimed for!
Let me explain:
As peat accumulation requires water saturation, the presence of peat in an area implies that the area was 'previously undrained': every peatland is so-to-say 'previously undrained'. The paragraph does not clarify *when* the area had had to be 'undrained' (i.e. it is not limitative, in contrast to the many allusions to January 2008 in the same text), only that it had to be undrained 'previously'. That is the case with all peatland, whether it is currently drained or not!
You can of course defend that the section means "previously to 2008" but that does not change the case. Objecting that the formulation of the sentence is apparently completely wrong, but its intention is clear, will also not bring the peat lobby further. After all, allowing biofuel production on/from drained peatlands is so clearly at variance with the main aim of the Directive and contrary to many other statements and articles in the Directive, that this cannot be seriously maintained.
And if you start with changing text that "apparently" not reflects the intent, we can come up with a whole laundry-list of such formulations in the Directive…
According to the "letter" of the adopted directive, biofuel from drained peatland is thus impossible. The directive, however, does allow cultivation of biomass on rewetted peatlands ('paludiculture'), which is a promising alternative to drainage based biomass production (see Ramsar Resolution X.25 on Wetlands and Biofuels discussed elsewhere in this Newsletter).
In case you want to follow the 'spirit' instead of the 'letter' of the directive, the case is also clear: the aim of the directive is: reducing CO_2 emissions. In that case some biofuel from drained peatland might still be possible (e.g. in places where the annual growth of wood greatly exceeds the annual carbon loss from peat oxidation, as in some boreal and atlantic areas), but the really bad things, like oilpalm, sugar cane, maize etc. from drained peatland will not be possible under the directive.

Article 19 **Calculation of the greenhouse gas impact of biofuels and other bioliquids**

(6) The Commission shall, by 31 December 2010, submit a report to the European Parliament and to the Council reviewing the impact of indirect land use change on greenhouse gas emissions and addressing ways to minimise this impact. This report shall where appropriate be accompanied, in particular by a proposal, based on the best available scientific evidence, containing a concrete methodology for emissions from carbon stock changes caused by indirect land use changes, ensuring compliance with this Directive, in particular Article 17(2).

That is then a nice occasion to once-and-for all clear up the unclarities and inconsistencies in the Directive. Specifically the issues of carbon stock changes by *land use*, not only by land use *changes*, will have to be clarified, because the lack of consideration of that aspect is the root cause of much dangerous confusion in the Directive.

Article 23 ***Monitoring and reporting by the Commission*** …

2. The Commission shall maintain a dialogue and exchange information with third countries and biofuel producer, consumer organisations and civil society concerning the general implementation of the measures in this Directive relating to biofuels and other bioliquids. …

This paper may be considered as a contribution to that dialogue…

Conclusions

The completion and adoption of the EU Renewable Energy Directive has again shown how the peat lobby, including some important peatland countries, is prepared to sacrifice global climate for their own narrow self-interest. Furthermore, the procedure has disclosed a painful and hazardous lack of factual knowledge on the relation between peat and climate in the responsible European administration. It is not sufficiently recognized that peatlands (similar to forest) not only lead to carbon dioxide emissions upon *conversion*, but that (in contrast to forest) the vast majority of these emissions takes place long after conversion and continue as long as the peatland is kept in a drained state.

Therefore, peat and most biomass from drained peatland can not contribute to reaching the aims of the Directive.

Whereas its content is not always clear and sometimes inconsistent where peatlands are concerned, both the wording and the philosophy of the Directive forbid the use of peat and biomass from drained peatland thus obstructing a catastrophic misuse of the Directive by the peat lobby. The latter is, however, not attributable to well-informed, enlightened policy, but to limited editorial capacity...

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The Finnish minister of labour and industry Mauri Pekkarinen is yelling at professor Ilkka Savolainen from VTT(State Technical Research Centre): If you scientists at VTT cannot reach our goals, we will find more competent partners! And on the right Atte Korhola of Helsinki University is raising a rabbit from the hat who says: "Peat is a renewable biofuel", while his wife and Member of European Parliament Eija-Riitta Korhola goes "Ta-daa!"

Cartoon by Seppo Leinonen

Towards a Global Strategy for Peatland Management?

by Hans Joosten

Building forward on the IMCG/IPS Wise Use initiative, the International Peat Society has taken the initiative to develop a Global Peatland Strategy with the aim "to give strategic guidelines for peatland management from social, environmental and economical points of view". The idea of a Strategy was born within the discussion on peatland certification that was launched at the International Peat Congress in Tullamore in 2008. As not all groups within IPS were enthusiastic about such certification scheme, it was decided to first try and develop a more general global strategy. "The objective is that individual interest groups on the use of mires and peatlands recognise the future strategy and promote its implementation in their own activities."
The IPS organizes and facilitates the workshops and records the proposals and decisions made.

The first session to prepare the Strategy was held in Amsterdam on 13 - 15 February 2009 and was attended by some 30 participants from eight countries and different organizations, including IMCG. The meeting discussed:
1) The current trends in peatland management;
2) A draft vision for peatland management;
3) The selection of strategic themes, i.e. areas where change is needed; and
4) Objectives for each strategic theme.

On the basis of the results of that meeting a draft Strategy was formulated and made available for public consultation from 9 March to 12 April 2009. The second draft (Draft 2) that will incorporate the comments was planned to be sent to all interested parties by April 21, 2009, but has not yet materialized.
The next meeting session is planned to be on 27 - 28 April 2009 in Belfast (N.-Ireland), where the results of the Amsterdam meeting as well as the comments received on the draft will be analyzed and approved. Based on the Objectives agreed on, several working groups will formulate a set of Actions. After the Belfast meeting, Draft 3 will be sent out for comments from May 25 to June 18, 2009. The Final Draft Strategy Document (Draft 4) will be sent to interest groups and organizations for approval on June 26, 2009. The aim is that each interest group and organization willing to commit to the strategy would do so by signing it by October, 31 2009 when the final signed strategy will be published.

This time planning is probably much too ambitious. It fails to recognize that reaching consensus between stakeholders with strongly divergent interests is a process that needs much time. Two important examples from the cooperation between IPS and IMCG, the main global peatland stakeholder organisations, illustrate that. The Wise Use project that resulted in an important and substantial consensus document (the Wise Use book) took five years of intensive analysis and discussion to be finalized. Such a long time was necessary to sort out the factual background of issues to be addressed, to differentiate between facts and choices, and to clean our thinking of the preferences and subjective interests we all have. All this is also necessary to arrive at a global peatland management strategy that can be supported by a wide range of stakeholders.
Since the Wise Use process, the willingness of IPS to take a sincere global perspective has substantially diminished. This is painfully illustrated by the IPS-IMCG discussion on the climatic effects of the use of fuel peat, not a minor issue, taking into account the planned increased use of fuel peat in Sweden, Finland and other countries. This discussion, originally also aimed at producing a consensus document, has not seen any progress over the last two, three years, because IPS, in the wake of its major stakeholder group and financer – the fuel peat industry, does not even attempt to discuss the central issues in a factual way and keeps on repeating out-of-date mantras.
If IPS does not want to discuss such central themes, how can it expect to reach consensus and wide support for a global strategy over the next half year?

Similar to the IPS DVD on Wise Use (Joosten 2004), the current draft of the Strategy is biased in favour of peat extraction, especially for energy. Under "Peatland Management for Economic Purposes", agriculture and forestry are completely missing. Indeed the draft refers to the peatland disasters in Southeast Asia, but it is too obvious that this largely aims at distracting from similarly bad practises in the western world. In a "global strategy" I would expect more balance.
The climate objective "All management activities on peatlands shall avoid an increase of atmospheric greenhouse gas concentrations by utilizing peatlands" is very meagre taking into account that all sectors should aim at *reducing* GHG emissions…

In general, I think that the draft document is weak and not very clear and consistent, especially in the first part. It is strongly biased by peat fuel extraction and not balanced with respect to all types of peatlands management, certainly not on a global scale. I hope these things can be corrected in the meeting in Belfast.

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Report from the IMCG South Africa Chapter

by Piet-Louis Grundling

The 2nd IMCG newsletter of 2006 spelled out the draft 2007 – 2010 action plan of the IMCG. Various tasks and targets were set for Africa and southern Africa in particular. We can report today that we have achieved mixed success in trying to achieve these goals. Especially in South Africa (SA) we have made very good progress in raising awareness and expanding the IMCG network. The efforts of Jan Sliva and Rehana Dada should be mentioned here: Jan in driving the establishment of the IMPESA initiative in southern Africa and championing research funds to projects in the region and Rehana for creating mire and peatland awareness on national television, radio and the writing media, including the electronic media.

Unfortunately the IMCG network in southern Africa depends, as in many other parts of the world on the many sacrifices of individuals and as such, the decision of Jan to focus on conservation in Europe has left a huge gap in our midst. However, the formation of an IMCG Chapter in South Africa (as reported in the 2006-2 newsletter) has strengthened the IMCG network in this country, which we hope will serve to advance mire conservation in all southern Africa.

An indication of the current interest in mires and peatlands lies in 30% of the presentations at the recent annual 2008 National Wetland Indaba (meeting) held in Kruger National Park, from 28 – 31 October 2008, focused on mires and peatlands. Topics ranged from peatland pollution, mining, cultivation, surveying and hydrology. Eric Munzhedzi of the Working for Wetlands programme (of the South African National Biodiversity Institute) indicated during the IMCG-SA meeting (held during the National Wetland Indaba) that between 40 - 60% of the projects in the programme focus on mires or will benefit catchments containing mires in South Africa. Nearly 30 IMCG members and interested individuals attended the IMCG-SA meeting.

During the IMCG-SA committee meeting the following members were appointed:

1. Fred Ellery – patron of IMCG-SA
2. Japie Buckle – chair
3. Eric Munzhedzi – coordinator of the expansion of the IMCG into SADEC (Southern African Development and Economic Community) and east Africa and elected IMCG Main Board nominee
4. Anton Linstrom – aide to Eric
5. Rehana Dada – awareness and newsletter articles
6. David Kleyn – mining and legal matters
7. Corrie Swanepoel – website
8. Retief Grobler – research
9. Piet-Louis Grundling – secretary and specialist for Braamhoek wetland

The following areas of specific interests were identified:

- The status of peatlands in South Africa
- Mining and utilization (including cultivation)
- Conservation and restoration
- The Ingula/Braamhoek mire pump storage scheme
- Peatland research in South Africa
- Expanding of the IMCG network into southern Africa
- General – communication, awareness and publications

IMCG-SA will focus on the abovementioned interests in striving to achieve the goals of the 2007 – 2010 action plan of the IMCG for South Africa and the larger region. Various concrete tasks and targets were set for Africa and southern Africa in particular. Attention will especially be given to compiling a book “Mires and peatlands of Southern Africa” and the expansion of the network in into the sub continent. Identification of the main threats and of mechanisms to avoid them should be done in collaboration with research institutions in the region, in particular the potential of socio-economic side effects of climatic change.

Food security, wetland cultivation in the Kosi bay area

by Althea Grundling, Pieter Botha and Jonathan Price

The Maputaland peatland eco-region in northern KwaZulu-Natal Province hosts a large variety of peatlands and other wetlands. However, a large portion of the population in this area still depends on subsistence agriculture as a primary livelihood (Figure 1). The Department of Agriculture (DoA) in South Africa regard food security with the utmost importance. Food security is not only important for a household’s financial viability but also as a food guarantee provided that both are gained legally. Nationally crop estimates are done for a variety of commercial crops each year to predict surpluses or shortages. These figures are essential for the planning of crop exports or imports.

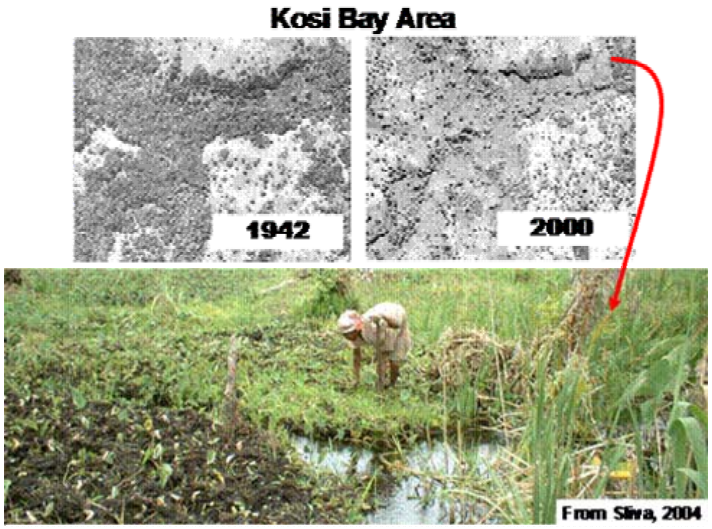

Figure 1: the cultivation impacts on peat swamp forest over time (1942 – 2000) in the Kosi bay area. The Kosi Bay estuary and lakes are a declared Ramsar site.

Crop estimates for the subsistence agriculture sector in South Africa will also help with planning strategies and ensure regional food security. Wetland cultivation is common practice in subsistence agriculture activities, especially in the Kosi Bay area (Umkhanyakude District in Maputaland, KwaZulu-Natal). The high organic content in wetland soil and specifically peatlands are highly sought after for cultivation in the midst of unfertile sandy soils on the coastal plain (Figure 2). As a result wetlands are crucial to the survival of the inhabitants of the Kosi Bay area in terms of fish and vegetation harvesting and cultivation.

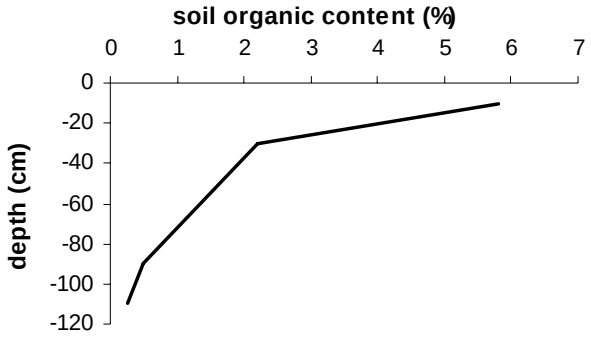

Figure 2: The low organic content of the sandy soils in Maputaland are clearly evident in this graph.

Swamp forests in the catchment of Kosi Bay are a wetland type that is characterized by peat and permanently wet conditions within natural drainage lines that facilitate artificial drainage. Swamp forests are prepared for cultivation by slash and burn practices that have resulted in the degradation of the coastal peat swamp forests in the communal areas and currently pose a threat to swamp forests inside the iSimangaliso Wetland Park. The DoA has in terms of the Conservation of Agricultures Resources Act (CARA), a mandate to facilitate the protection and conservation of natural resources that include wetland areas as well as ensuring the sustainable production of food. Previous initiatives involved in poverty reduction and wetland management include the agriculture in swamp forest projects by the IMCG and the iSimangaliso Wetland Park Authority.

Data were collected at wetland sites in the Kosi bay area, including swamp forests, and specifically cultivated fields in the swamp forest. Resource Auditors from the DoA surveyed the sites with questioners to gather homestead and household information, as well as on agricultural activities that include banana and "madumbe" (*Colocasia esculenta*) cultivation in peat swamp forests in order to determine the economic value of these crops in the area (Figure 3). Additional data include: photographs for each site, soil organic content, depth to groundwater table and wetland vegetation.

The quantitative and qualitative cost-benefit analysis of banana and madumbe cultivation in peat swamp forests will inform policy dialogue on linking poverty reduction and sustainable wetland management. The question that now needs answering is whether cultivation of crops in subtropical peat swamp forest can be sustainable or whether communities ultimately have to face degraded natural resources.

Figure 3: Products cultivated in peatlands are even sold at commercial markets. Many commercial cultivation seems to occur in especially peat swamp forests. Note: R10 = $1.

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Excursion of IMCG experts to the most famous peatlands in Korea: "Jangdo Peatland" and "Oegok Wetland"

by Tatjana Minayeva

In early November 2008 Ramsar Convention COP10 took place in Korea (see elsewhere in this Newsletter). Using this opportunity several IMCG experts visited two sites that had been presented as the most valuable peatlands in Korea.

Jangdo Peatland

The first time we heard about Jangdo Peatland was during the Asian Regional Ramsar COP 9 preparatory meeting held in 2005 in Beijing in a presentation by Dr Eui-Joon Park from the Ministry of Environment, Republic of Korea. The mire was reported under the name "Jangdo Island High moor". First of all the presentation brought to our attention that the total water supply of a entire small settlement originates from this mire. In the pictures Dr. Park presented, we saw a beautiful sedge fen as well as a very active waterfall at the edge of the mire. As far as some contradictive information had been presented by Dr. Park, we decided to take a look ourselves: better to see once than to hear 10 times. The preliminary information gave hope that the mire is something worth to look at and to tell others about.

The "Jangdo Island High Moor" is located N 34°41'16", E 125° 12' 25", i.e. on an island 104 km from the Korean Peninsula, in Huksan-myun, Shinan-county, South Cholla Province, ROK on an elevation of 230~267 meter asl. Its total area is 180,414.4 m2 (18 ha).

To reach the island we contacted local authorities and experts via Namue a very nice girl from the GEF Korean Wetland project and devoted to nature conservation. When we reached the city of Mokpo on the southwestern tip of the Korean Peninsula, we were met by Dr. Lee and Dr. Go from the Shinan County Administration. They provided us with a traditional Korean dinner, additional information, and made necessary arrangements. Next morning they sent us out by ferry to the island. They kindly agreed with the ferry captain that we – 4 crazy foreigners – could travel on the top desk…. Thanks to that we avoided sea sickness and had beautiful views on the archipelago.

Eventually, after a short adventure (we missed our stop and had to come back from the Korean-Chinese border), we reached Heuksando Island where we were warmly received by Dr. Park and further taken by small boat to Jangdo Island.

Jangdo Island is part of the folded mountains of the Pacific Ridge forming the South Korean Archipelago in the Yellow Sea. The small village of Jangdo on the island is totally dependent on the freshwater coming from the peatland. The settlement occupies the north-western slope of the mountain, along which a road leads to the summit. The peatland is situated in a small saddle between two small peaks, which one must cross to get to the mire. The mire originated from slope spring fens that joined together in the saddle and provided the water for paludification of the brook valley. The brook valley until recently had been a sedge fen as we had seen in the presentation in 2005. Nowadays it is rapidly overgrown by willows as a consequence of lower water levels. We found the water level to be 40 cm below the surface, with a pH of 6.5 and a conductivity of 180 µS. We saw no mosses between the sedges, except in the brook channel where we found *Thuidium pristocalyx* (syn. *T. glaucinum*) (determined by Dr. Elena Ignatova). The brook was practically dry. Several small pools had water with a pH of 6.9 and a conductivity of 170 µS.

The spring fens still look promising. The herb layer is practically formed by a monoculture of *Rhynchospora capillacea*, so dense that a moss layer does not exist any more, while mosses of the genera *Campylium* and *Drepanocladus* are present in the peat. The water level is still high, approximately 5 cm below the surface with a pH of 6.0 and a high conductivity (310 µS).

Unfortunately we did not find an active waterfall at the mouth of the brook.

The location of Jangdo Island Peatland

We also looked at the water supply system on which the local people are so proud. A large tank has been placed into the peat in the middle of the peatland. The water from the spring fens is collected in the tank and via a system of pipelines transported to the village, some kilometres away along the sea sore. A pumping station has been constructed to pump water out when the water level is too low to form enough pressure along the pipeline. The natural water discharge has proven too small to supply the growing needs of the settlement. The pumping station looks a critical factor, which in combination with climate change (less precipitation especially in winter and higher temperatures), leads to drying out of the peatland and

expansion of the shrubs. It looks like the beginning of the end of Jangdo Peatland…

Jangdo Island Peatland

Spring area in Jangdo Island Peatland with Rhynchospora capillacea

Rhynchospora capillacea

Oegok Wetland

Oegok Wetland is situated in the Jirisan National Park, 250 km south-east from Incheon and not far from Dawosan Temple on the elevation around 1500 m a.s.l. It is a typical small mountain reed-sedge fen with an area of about 50 ha at the source of a small brook, the valley of which is also paludified and covered by reed dominated vegetation with very few mosses like *Drepanocladus polygamus* (formerly *Campylium polygamum*) and *Bryum pseudotriquetrum* (det. by Elena Ignatova). We do not know what the peat depth is, but local specialists have been debating figures from 1.5 to 15 meters.

We visited during dry season when the water level was more than 50 cm below the surface. The pH of the peat is 7.8, while the conductivity of 40 µS demonstrates poor conditions.

The peatland is well studied with respect to its animal inhabitants (invertebrates, vertebrates) but, except for water level dynamic, not much attention has been paid to its functioning as a peatland ecosystem. The area is strictly protected from trampling, mowing or other use.

The mountain peatlands in this region are threatened by climate change as the main water sources are springs and melt waters. A comprehensive inventory of peatlands seems to be lacking in Korea, as most peatlands in the mountains are currently agricultural use and ploughed. We expect that there are more natural peatlands in mountains that are in need of urgent protection.

Oegok Wetland with botanizing Tanja.

Regional News

News from the EU: Dimas warns on use of peat

On behalf of the European Commission Stavros Dimas, commissioner for the environment answered the written question posed by Jim Higgins, Irish member of European Parliament. The question aimed at a possible loosening of the habitat directive to allow the use of peat for energy under current problems in energy supply. Text of the question follows:

Could the Commission indicate if it is prepared to re-examine the Habitats Directive (92/43/EEC(1)), particularly with regard to the prohibition of the cutting of turf on certain stretches of bog land in Ireland, in view of the fact that there currently exists a major and growing crisis in relation to energy supply and cost. Furthermore, can the Commission confirm that there are less CO2 emissions from harvesting turf/peat as opposed to other uses for bog land such as afforestation? Could the Commission further confirm that bog lands in Finland are classified as biomass and that the peat continues to be harvested and processed?

In response the Commission states: By way of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, Member States are legally committed to protect habitat types of Community interest, including raised and blanket bogs for which the active forms are of priority interest under the Directive. This is principally to be achieved by the establishment, protection and management of Special Areas of Conservation. Ireland has particular responsibility within the EU for the protection of these habitat types.

The latest conservation status assessment published by the Irish authorities is particularly alarming, especially for active raised bogs. Intact raised bog in Ireland is now extremely rare and has decreased in area by over 35% in the last 10 years (see tinyurl.com/cy8gru). The ongoing deterioration of the hydrological conditions of the habitat at current rates caused by peat cutting, forestry and burning is deemed to threaten severely the viability of the habitat at most locations. There is an urgent need to put in place effective management and protection measures for Ireland's Natura 2000 peatlands, including the prohibition of turf cutting where this is not compatible with the conservation of the sites. Such prohibitions should also apply to other land use changes such as afforestation where they represent a threat to the integrity of Natura 2000 peatlands. It is the responsibility of the relevant authorities in Ireland to put in place the necessary protection safeguards. Natura 2000 covers only a proportion of Ireland's peatlands. Ireland also protects some peatlands as Natural Heritage Areas under national legislation. There are still large areas of peatland outside of these areas where peat extraction is unaffected by the protection safeguards applying to these sites.

The Commission appreciates the difficulties being experienced by people throughout the Community in relation to the current energy crisis and addressing these with the Member States is a priority of energy and climate policy. However, as peatlands take thousands of years to form they do not represent a renewable resource or biomass, as confirmed by the guidelines of the International Panel on Climate Change. Using peat as an energy source will therefore result in CO_2 emissions, while the preservation of this vital ecosystem will keep CO_2 sequestered in the soil. The Commission cannot confirm that harvesting peat releases less CO_2 than afforestation and other activities, nor is this a reasonable basis to allow for the destruction of Natura 2000 peatlands.

The Commission is also unaware that Finland has classified boglands as biomass. Finland has protected bog and mire habitat types in Natura 2000 according to the requirements of the Habitats Directive. The same protection safeguards apply to these Finnish peatlands under the Habitats Directive including in relation to harvesting of peat. Whereas peat extraction is still a significant activity in Finland, the Commission is not aware that it is taking place within Natura 2000 sites. Again, it is for the national authorities to ensure that the conditions of the Habitats Directive are met in cases where peat harvesting may have significant effects on bog habitat types within Natura 2000 sites.

http://tinyurl.com/al8bxc

News from Ireland: Phasing out turf cutting

This summer will see the beginning of the cessation of turf cutting on all designated raised bogs of heritage importance. Turbury rights holders on 32 raised bog Special Areas of Conservation (SACs) have reached the end of a ten year notice period, or derogation, to cease cutting turf. The derogation will continue until 2012 for the remaining 21 raised bog SACs and to 2014 for 75 raised bog Natural Heritage Areas (NHAs). Turbury rights holders must cease turf cutting at the end of these derogation periods in a bid to protect the country's peatland heritage.

To implement the cessation of turf cutting on these protected sites successfully the Department of the Environment plans to set up a working group consisting of several government departments including the Department of the Environment and the Department of Agriculture. This working group is waiting for the go-ahead from the Minister of the Environment before it can start the process of implementing the Cessation of Turf Cutting Scheme. This delay in taking action is strange considering the government has had ten years to prepare.

The National Parks and Wildlife Service has shown that over a third of active raised bog (1,000ha) has been lost as a direct result of turf cutting taking place within protected peatlands. Raised bogs are not being protected, despite their conservation designation as Special Areas of Conservation (SACs) and Natural

Heritage Areas (NHAs) because "small scale" turf cutting for personal use is still being allowed to continue.

peat slides at windfarm sites

On 23 August 2008, approximately 8 ha of blanket bog with a depth of up to 5 meters was involved in a bog burst within the Stacks Mountains at Lyreacrompane, near Castleisland, Co. Kerry. Work on a windfarm began at Ballincollig Hill in the Maghanknockane area of Lyreacrompane just a number of weeks earlier with the construction of roadways into the windfarm site. Locals say that while rainfall may well be a contributory factor, they feel that there may also be a link between the massive landslide and works at the windfarm site. The company behind the windfarm – Tralee-based Trá Investments – has confirmed that it is to carry out an independent investigation into the cause of the landslide.

As well as severely eroding the blanket bog habitat at Lyreacrompane the bog burst has also resulted in the pollution of the rivers Smearlagh and Feale.

In September, the Stacks Mountains event was followed by a further landslide in County Leitrim. Also here, the slide occurred while roads were being built for the construction of wind farms. The September slide took place on the Owengar River, a tributary of Lough Allen, an area rich in biodiversity. Local environmental group CLEAN claims the landslide is far more damaging than reported. It has resulted in widespread ecological destruction and is potentially devastating for Lough Allen's spawning beds of trout and Pollan.

The Regional Fisheries Board has confirmed that both bogslides have led to extensive juvenile fish kills and destruction of the aquatic environment.

Ireland was prosecuted by the European Courts earlier in 2008 over its handling of road construction for wind farms on bogs. The courts found that Ireland consistently failed to conduct Environmental Assessments correctly, leading to consequences such as the Derrybrien bogslide in County Galway.

Irish environmental groups have written to the Minister for the Environment seeking a moratorium on further windfarm developments on peat bogs until the Minister can be satisfied that more devastating incidents will not occur again.

IPCC buys another bog

The Irish Peatland Conservation Council (IPCC) are buying a new bog; 3.5 hectares of the Bog of Allen, known as Lodge Bog Southwest. The bog is being bought primarily for nature conservation and the protection of an endangered habitat. The bog that the IPCC is buying adjoins the Lodge Bog Reserve. Although the area was drained for turf cutting in the past, much of the vegetation remains intact.

The Lodge Bog South West Purchase and Restoration Project budget is €49,625 in 2009. This includes buying 3.5 hectares of land, blocking 1,975m of drains and sowing bog mosses on 0.5 hectare of bare peat. Restoration work has already begun and will continue on into the summer. It will involve a range of activities from profiling and blocking of drains, to removal of invasive species.

www.ipcc.ie.

News from Germany: Schleswig-Holstein develops bog action plan

The parliament of the German federal state of Schleswig-Holstein has approved on 13 November 2008 a proposal to enhance the existing peatland action plan. Peat soils cover approximately 10 % of the land surface of Schleswig-Holstein. They are highly important for maintaining the regional biodiversity, as carbon store and for water purification. Peat accumulating mires are a sink for carbon dioxide and thus are important elements in local and regional action plans to reduce green house gas emissions originating from land use.

The current peatland action plan, which is in force since 2002, aims on restoring the water purification function especially of minerogenous peatlands. Ombrogenous peatlands are at the moment not included in the action plan. These systems are valuable for maintaining the regional biodiversity and as a carbon store, however. Their restoration will improve these functions and additionally increase their CO_2 sink potential. Therefore the parliament decided to expand the existing peatland action plan with a bog action plan. This plan will be developed in the coming years in two stages:

In the first stage the status of important ombrogenous peatlands will be assessed. In the second stage, based on these inventory results a restoration strategy will be developed. This strategy will set priority areas for restoration of ombrogenous peatlands for climate change mitigation and develop long-term funding and management options.

http://tinyurl.com/d4vq6m (in German)

Michael Trepel (trepel@gmx.net)

News from Poland: Via Baltica through Rospuda Valley canceled

In September 2008, the Highest Administrative Court (NSA) in Poland ruled that the section of "Via Baltica" expressroad (the bypass of Augustow city) planned to cut pristine wetlands in Rospuda river Valley within a protected Natura 2000 site is illegal.

The judgment of the court is the result of an appeal by the Polish Society for the Protection of Birds (OTOP, the BirdLife partner in Poland), other Polish ecological NGOs, the Polish Ombudsman and the regional prosecutor against the environmental consent for Augustow Bypass. The bypass was planned through unique mires in the Rospuda River Valley in

"Augustow Primeval Forest" Natura 2000 site, without proper environmental assessment and consideration of alternative routes as is required by the European Habitats Directive. After a lower level court cancelled the environmental consent in December 2007, the Polish Road Agency appealed to NSA. Today the NSA confirmed the lower courts decision and cancelled the consent.

In December 2008, the building permit for this road section was then cancelled by the court and the Road Agency had to start the planning procedure again and comply with the requirements of art. 6 of the Habitats Directive. This provision sets out the rules which apply when projects are planned in Natura 2000 sites and is what the NGOs have been highlighting since Poland joined the EU.

A new environmental assessment for the road examining three different routes – two around rather than through the Rospuda Valley – was already started in mid 2008 as a result of the new Polish Minister of Environment's initiative – the 'Round Table' meetings to seek a compromise solution for Augustow Bypass. The Polish NGOs, representatives of ministries, the Road Agency and local authorities all participated in these meetings. The results of the new assessment are expected at the end of November 2008.

In March 2009, the Polish government announced a new route for the expressway that will relieve the north-east Polish town of Augustow of heavy transit traffic. The bypass, part of the Via Baltica road transport corridor that is due to stretch down the right hand side of Poland, will now be constructed near the nearby village of Raczki. Whereas this officially saves Rospuda Valley, NGOs cautioned about alarming construction and planning activities currently ongoing elsewhere along the Via Baltica corridor.

The Via Baltica case was also investigated by the European Commission. When the Commission was unable to resolve the case through informal contact with Polish government in December 2006 it opened legal proceedings against Poland on 8 road projects. Then when Poland started to construct Augustow Bypass and one of the other projects the Commission referred the case to the European Court of Justice. The Bern Convention and the European Parliament have both also expressed the opinion that nature protection legislation has to be properly followed during planning of the Via Baltica Pan-European Transport Corridor.

www.otop.org.pl/kat_41_378_379_717/english.html
http://www.viabalticainfo.org/-en-

The full Environmental Impact Assessment for the road through the Rospuda mire (in Polish) is now available (in polish) under http://tinyurl.com/dj9frb.

News from Belarus: Rewetting projects

In the framework of the UNDP-GEF project "Restoration and Sustainable Management of Peatlands in Belarus to Combat Land Degradation, Ensure Conservation of Globally Valuable Biodiversity and Mitigate Climate Change" works on rewetting of several sites are being carried out. Rewetting of peatlands will stabilise and improve habitat for a big group of rare animals and plants, diminish the risk of peat fires and reduce emissions from peat oxidation. Moreover, it is hoped hunting and fishing grounds can be established that support eco-tourism.

Rewetting of the 4519 ha Osvejskoye peatland in the Verkhnedvinsk District (Vitebsk Region) started in January 2009. The plan is to build 11 cascading dams, creating a system of shallow-water ponds with regulated water levels. The Osvejskoye peatland is the seventh in succession and the first mire on the territory of the Vitebsk Region, which will be rewetted in the project.

The first ameliorative works at the site started at the beginning of 20th century and from 1971 to 2001 peat extraction took place. In 2005 the depleted peat area was given to the Verkhnedvinsk forest enterprise. Water level lowering in the site and the neighbouring Osvejskoye lake resulted in repeated peat fires, the biggest of which occurred in 1998.

Constructions at the Morochno raised bog site in Belarussian Polesie were completed in the beginning of March. An area of 5721 ha is rewetted by 17 cascading dams in five canals. To diminish negative impact from an adjacent peat extraction area, a one kilometre long dyke was build with a protective screen of polyethylene film aimed to prevent water outflow from the restored area to the canal surrounding the extraction site.

Drainage and use of lands adjacent to the project area started in the early 20th century and have had significant negative impacts. The peatland has degraded to a low pine and birch forests with consequent loss of typical species and habitats. Also here fires have been frequent. It is expected that rewetting will to rehabilitate the productivity of the "Kolodnyansko-Terebezhovsky" local cranberry reserve. Seasonal harvesting of this wholesome mire berry is a key source of additional income for local communities.

For more information: http://peatlands.by

News from Ukraine: Pripyat river bed deepening

A meeting of the steering group on the Pripyat river bed deepening was held 27 October in Liubeshiv, Ukraine. The group consists of representatives of the ministry of environment, local legislative and executive authorities, Volyn regional department of water management (interested in river deepening), national park and scientists. A dominant argument for many parties interested in the deepening is the US$ 1500000 investment involved. It was decided a final decision on the issue would be taken during a meeting 11 November 2008 in Lutsk, Ukraine, but this second

meeting was postponed indefinitely. Meanwhile the Ukrainian Society for the Protection of Birds (USPB), BirdLife partner in Ukraine, prepared a list of suggestions, which involve development of a zone-structure of the National Park, creation of a group of experts and evaluation of the deepening works that have already been carried out regarding floodplain biodiversity. A list of suggestions was sent to the chairmen of the steering group.

News from Iraq: Mesopotamia marshes to be World Heritage?

The United Nations is moving to list the Marshlands of Mesopotamia in Iraq as a World Heritage site. At the same time, the government of Iraq wishes to designate this wetland area as a national park. Believed to be the location of the Biblical Garden of Eden, these once vast wetlands were 90 percent destroyed by the Saddam Hussein regime. In recent years UN and local efforts have restored 60 percent of the Marshlands.

According to UNESCO, which manages the World Heritage treaty, the earliest that Iraq could make a submission to the World Heritage Committee might be 2010. If approved, the Marshlands of Mesopotamia could be listed as a World Heritage in 2011.

The UNEP marshland management project, which began in 2004 with funding from the UN Iraq Trust Fund, the government of Japan, and the government of Italy, has been working with the Iraqi environment ministry and local communities to accelerate improvements. These include environmentally friendly methods of providing safe drinking water for up to 22,000 people, the planting of reed banks and beds as natural pollution and sewage filters and the introduction of renewable energies such as solar.

News from South Africa: Renewed research interests

Most of South Africa's peatlands, between, 50 and 60%, are located within the Maputaland peatland eco-region. This area hosts a variety of wetlands ranging from South Africa's largest freshwater lake (Lake Sibaya), Africa's largest estuary (St Lucia Estuary), probably one of the world's oldest active mires (the Mfabeni peatland), 5 Ramsar sites and South Africa's 1st world heritages site. The area was a favourite (one of many....) amongst the delegates in the 2004 IMCG southern African field symposium.

Various peatland reseach projects were initiated by the Council for Geosciensce and the Department of Environmental Affairs and Tourism in the 1980s and 1990s. The IMCG was instrumental in leveraging funding from Wetlands International in the 1st part of this decade to characterise tropical peat swamp forests (one of the rarest wetland types in South Africa) in Maputaland. The Universities of Zululand, Pretoria, and especially KwaZulu-Natal became quite involved in the area in the middle part of the 2000s. Lately the focus has shifted to understanding the regional processes (e.g. geomorphology, hydrology and climate) driving the distribution of different wetlands types on a landscape scale to understanding hydrological drivers and the water balance of individual systems. The University of Waterloo (Canada), Institute for Soil Climate and Water (Agricultural Research Council) and the CSIR (Council for Scientific and Industrial research) are leading the research with financial support of the water Research Commission, the University of Groningen and the Department of Agriculture with administrative and logistical support from the isiManagaliso Wetland Authority, KZN Wildlife Services, Universities of Rhodes, KwaZulu-Natal and Zululand. For more information on these projects contact Piet-Louis Grundling: peatland@mweb.co.za

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News from Malaysia: eco-certified palm oil

United Plantations, a Malaysia-based palm oil producer, has become the first oil palm plantation firm to be certified for adopting the standards of sustainability for palm oil production.

After inspections across its estates, mills and conservation areas and interviews with managers and employees by the Roundtable on Sustainable Palm Oils (RSPO), an industry-driven sustainability initiative, the firm was awarded the "Certificate of Conformance to RSPO Principles and Criteria". United Plantations has implemented "zero-burn policies" as well as measures to reduce pollution and the use of fertilizers and pesticides. The firm has also set aside areas of high conservation value, according to RSPO.

The news comes as the palm oil industry moves to improve its environmental performance in response to harsh criticism that oil palm expansion is driving deforestation and putting endangered species at risk. A recent study showed that more than half of oil palm expansion in Malaysia and Indonesia between 1990 and 2005 occurred at the expense of forests, while other research has found that oil palm plantations contain up to 80 percent less biodiversity than logged forests and are a significant source of greenhouse gas emissions when established on peatlands and in tropical rainforests.

These emissions are not taken into account in the certification scheme and its merit deserves scrutiny when part of the certified palm oil actually stems from plantations on peat soil. By conservative estimate, about 8% of all Malaysian and up to 25% of Indonesian palm oil plantations are now on peat soil. Over 50% of new plantations in Indonesia are planned on peatlands despite a Presidential decree in place banning such practices.

Now that RSPO-certification has become a reality, some expect producers to seek a pricing premium for "greener" palm oil. Consumer giant Unilever – one of the world's largest consumers of palm oil – has already committed to buying only certified palm oil by 2015. How much peatswamp and primary forest is left by then is – of course – another question…

Sources: news.mongabay.com; wetlands.org

News from Indonesia: Ban lifted for palm oil on peat

While in the EU and the RSPO policies are being developed to exclude palmoil from carbon rich soils like peatlands and to prevent the loss of their precious forests, the Indonesian Ministry of Agriculture issued a decree to open up peatswamp areas for the development of palmoil plantations.

In February 2009, the Indonesian government acknowledged it had quietly lifted a year-long freeze on the use of peat land for palm oil plantations.

Environmental groups had pressed the government to maintain the ban but Indonesia's agriculture ministry said tighter controls for issuing new permits for growing palm oil on peat land had been set after a study during the past year.

Indonesia has withheld permits since December 2007, but will start issuing them immediately under the new tighter restrictions. Indonesia's agriculture ministry estimated only 2million out of the country's 25million hectares of peat land would now be eligible for palm oil plantation.

The previous regulations had limited the clearance of peat lands to areas in which the peat extended less than three metres below the surface. The new rules would take into consideration not only depth, but also the peat land's maturity and its fertility.

Indonesia is the world's leading palm oil producer and has planted palm estates of 7.1million hectares, with smallholders accounting for about 35 percent. Palm oil generated exports revenue of ~8 billion euros in 2008.

Indonesia has applied to join a World Bank programme that supports developing nations' efforts to fight deforestation and help them earn cash through the sale of tradeable carbon credits.

World Bank money for REDD activities?

One month after lifting the ban on oil palm plantations on peat soil, Indonesia cynically applied for funds from the World Bank's $350 million Forest Carbon Partnership Facility. This facility aims to support developing states design and create projects under a UN-backed scheme that could eventually earn poorer nations billions of dollars a year by protecting their forests.

The Bank backs the United Nations' forest carbon scheme called Reduced Emissions from Deforestation and Degradation, or REDD, which the U.N. hopes to formally bring into a broader climate pact to replace the Kyoto Protocol from 2013.

Indonesia is developing separate REDD regulations and is expected to issue them by mid-year. About 20 REDD schemes are at various stages of development in Indonesia, the Bank has said, and has become a leader in developing rules governing the scheme.

Slash-and-burn farming and clearing for oil palm and other plantations have triggered vast fires in Indonesia, particularly on peat land, accelerating the amount of carbon dioxide in the atmosphere, scientists say.

The Indonesian submission to the World Bank explores the cost competitiveness of REDD versus palm oil and timber plantations. It says the opportunity cost for deforestation for palm oil on degraded forest land on mineral soil was $3,963 a hectare, while clearing that land would release 184 tonnes of carbon-dioxide equivalent per hectare. Carbon credits would have to be priced at $21.54 a tonne to be competitive to deter such plantations.

By comparison, the costs for development on carbon-rich peatland would be $4,265 per ha, while credits would only be $4.19 a tonne because emissions from peatland would release 1,018 tonnes of CO_2-equivalent per hectare if cleared.

Source: www.guardian.co.uk; Reuters

Saving Sumatra

In October the Indonesian government and World Wildlife Fund (WWF) announced a commitment to protect the remaining forests and critical ecosystems of Sumatra. The agreement represents the first-ever island-wide commitment to protect Sumatra's biodiversity.

The commitment has been endorsed by governors of all provinces across Sumatra, and by four Ministers. The agreement thus commits all the Governors of Sumatra's 10 provinces, along with the Indonesian Ministries of Forestry, Environment, Interior and Public Works, to restore critical ecosystems in Sumatra and protect areas with high conservation values.

The island has lost 48 percent of its natural forest cover since 1985. More than 13 percent of Sumatra's remaining forests are peat forests.

News from Australia: Officially endangered peatlands

The 'Alpine *Sphagnum* Bogs and Associated Fens' ological community has been formally registered on the Australian Government's list of endangered ecological communities. This ecological community is now listed as endangered under the Environment Protection and Biodiversity Conservation Act 1999 (Cwlth) (EPBC Act) because its geographic distribution is restricted and the nature of its distribution makes it likely that multiple demonstrable threats could cause it to be lost in the near future. In addition, the reduction in community integrity and functionally important species is severe.

The ecological community is found in small pockets across alpine, subalpine and some montane areas of Tasmania, Victoria, New South Wales (NSW) and the Australian Capital Territory (ACT). This ecological community occurs within the ACT, Murray, Murrumbidgee, Southern Rivers, North East Victoria, East Gippsland, West Gippsland, Northwest Tasmania, North Tasmania and South Tasmania Natural Resource Management Regions.

The main identified threats to the ecological community include fire, exotic weed invasions, grazing and trampling by non-native animals, tourism and increased human infrastructure. Sphagnum harvesting is also an issue in Tasmania. These threats all severely impact on the structural and functional integrity of the ecological community, as well as its already limited geographic extent.

The other significant threat is climate change. Australia's alpine and subalpine regions face growing pressure as a result of warmer temperatures. Even a small increase in mean ambient temperature is likely to result in the loss of more bogs and fens due to changes in snowfall and snowmelt regimes.

See http://tinyurl.com/c4ewk4

News from Canada: Certification

Certification of "sustainably managed peatlands" has been identified as one of three key initiatives (certification, life cycle assessment, sustainability benchmarking) needed to advance the sustainability profile of the North American horticulture peat industry. Market pressure for certification emerged in North American markets in response to increasing concerns particularly by large growers and retail outlets. European challenges for certification have also been increasing and proposals were identified through the IPS. The Board of the Canadian Sphagnum Peat Moss Association CSPMA has considered alternative approaches to the development of a certification system. While endorsing further discussions on an internationally accepted Strategy for peatland management by the IPS, it has decided to explore the opportunity to create a scheme through the Institut de Technologic Agrolimentaire, Campus de La Pocatiere, Biopterre program.

Source: Canadian Peat News

Ispani 2 mire near Batumi (Georgia) has been accumulating over the past 1000 years with a rate of 4 mm per year(!), Molinia litoralis *manages to follow…*

New and recent Journals/Newsletters/Books/Reports/Websites

Proceedings of the 13th International Peat Congress (After Wise Use - the Future of Peatlands) held in Tullamore in June 2008
Now available (free of charge) as PDF: www.peatsociety.org/index.php?id=82.

Proceedings of the International Symposium on Tropical Peatland held in Yogyakarta, Indonesia, August 2007
Now available from the Carbopeat website: www.geog.le.ac.uk/carbopeat/yogyaproc.html.

Carbopeat leaflet on Tropical Peatlands & Biodiversity in Southeast Asia
Available from http://tinyurl.com/dn5too

Survey: peatland restoration monitoring
As part of the Peatscapes Project, the SWIMMER group at the University of Liverpool is carrying out a survey into monitoring of peatland restoration activities. You are invited to participate here: http://tinyurl.com/d2glhh

New webpage: Biofool called peat
Peat mining may not be a major threat for biodiversity in the European context, but in Finland it is threatening globally important mire ecosystems. A new web page was created by the Finnish Association for Nature Conservation to inform what kind of mires peat mining is threatening in Finland.

One of the mires where Vapo wants to start mining in its recent, natural state. Kuohuneva mire, municipality of Pyhäntä. Photo: Mauri Huhtala.

The Finnish peat industry often claims that they do not exploit mires that have not been ditched. To prove this kind of claims false examples on the webpage clarify the following problems of the Finnish peat mining:

a) Peat mining industry is regularly exploiting mires that are unditched and/or biologically valuable, and is planning to do so also in the future
b) Although each peat mining area requires an environmental permit from regional Environmental Permit Authority, the biodiversity of these areas in general is not taken into account in this permit process according the decision of the Supreme Administrative Court (KHO:2005:27). Only an occurrence of a limited group of the rarest species can stop or change significantly the permit process.
c) Unditched mires are regularly reserved for peat mining in provincial land-use planning.
d) Peat miners are regularly purchasing areas of unditched mires for their mining purposes.
e) Peat miners are also regularly complaining about the negative decisions for peat mining.

The examples of threatened mires are divided into four groups and cover altogether some 6600 hectares of unditched mires:

A. Examples of mires where peat mining will start (15 examples)
B. Examples of mires which are planned to be exploited by peat mining industry (21 examples)
C. Examples of mires which peat miners have purchased for peat mining in the future (9 examples)
D. Examples of juridical disputes (8 examples)

Links for electronic maps of each area are also provided.

http://tinyurl.com/c5hlt2

New webpage: restoration network Ireland
The Restoration Network Ireland Websites is a non-governmental initiative that has been developed to provide an interface whereby those working on restoration projects in Ireland can share information and discuss relevant issues.
The main practical aims are establishment of a database of restoration projects carried out within Ireland that can be readily accessed via internet, promotion of networking among land managers, practitioners, students, researchers and others and to provide support to people (through use of a forum) who are planning restoration projects and assist them in developing realistic aims and objectives, with appropriate budgets and timeframes. The project database will include information on projects that are focussed on specific habitat types, ecosystems and/or habitat complexes and target species.

www.restorationnetworkireland.com

New webpage: Groupe d'Etude des Tourbières
The GET aims to promote knowledge exchange on peatlands and their protection. Mainly for francophones, the site also offers many nice pictures of the 2005 IMCG Tierra del Fuego excursion, here: http://tinyurl.com/cfjcgc

http://www.get.pole-tourbieres.org

Tourbières Infos

The francophone peatland community may regularly find more in this bulletin of the French Mire Research Centre – with plenty of information on new and recent literature in French.
www.pole-tourbieres.org/documentation.htm#doc2

Ise T, Dunn AL, Wofsy SC, et al. (2008). High sensitivity of peat composition to climate change through water-table feedback. Nature Geoscience. DOI: 10.1038/ngeo331

This study models the effects of climate change on peatlands in the coming centuries, suggesting the bulk of carbon in deep stores could be lost following a temperature rise of just 4°C. This is the same temperature rise that the Intergovernmental Panel on Climate Change (IPCC) last year predicted was 'likely' by 2100, if actions to curb climate change are not taken.

The researchers developed a computer model to calculate the effects of climate change on two areas of Canadian peatland. They checked its accuracy by reproducing current soil depth and temperature trends in these areas. Using the model, they projected soil carbon losses and peat depth changes over a 4000 year period, with a temperature rise of 4°C at the halfway point. They concluded that 86 percent of carbon in deep peat stores would be lost within 1000 years of this change in temperature. In addition, 40 percent of carbon in shallow stores would be lost in just over 500 years.

The sensitivity of these environments to climate change is explained by a feedback mechanism that usually drives peat accumulation. Build-up of organic matter in peatlands increases the soil's water-holding capacity and reduces oxygen levels. This in turn reduces rates of decay and causes organic matter to accumulate faster. Despite this positive feedback mechanism, peat depth increases very slowly, usually at the rate of less than one millimetre each year. If the process is altered by a change in conditions, the impact is magnified by the feedback loop. Thus, if global temperatures continue to rise and peatlands begin to dry out, rates of decay will increase dramatically. This will result in the release of carbon into the atmosphere that has remained locked in soil for thousands of years.

Only by halting climate change can these sinks be saved, say the researchers. Should temperatures continue to rise, GHGs released by the peatlands will simply add to the problem.

http://tinyurl.com/dgxvag

Spracklen D, Yaron G, Singh T, Righelato R & Sweetman T (2008) The Root of the Matter - Carbon Sequestration in Forests and Peatlands. Policy Exchange, London. 34pp.

In this report the UK think tank Policy Exchange presents the costs of the most important climate change mitigation measures and concludes that reducing emissions from tropical peatlands is by far the cheapest way of reducing greenhouse gas emissions and that using biofuels is by far the most expensive measure.

The study shows the magnitude of emissions due to peatland and forest loss. Costs for reducing these emissions range from 0,1 euro per tonne carbon dioxide for peatlands to maximum 30 euro for forests. The costs for nuclear energy, the use of hydrogen and especially biofuels are much higher, up to around 600 euro per tonne.

PDF available from:
http://www.policyexchange.org.uk/assets/root.pdf

Sarkola S (2008) Greenhouse Impacts of the Use of Peat and Peatlands in Finland Research Programme Final Report. Ministry of Agriculture and Forestry, 68pp.

This report synthesises the findings as already published in issue 12/2 of Boreal Environmental Research (available as PDF free of charge here: http://www.borenv.net). Emission values of the greenhouse gases CO_2, CH_4 and N_2O, derived from thorough, long year research, are presented for various types of land use.

Sadly, the final chapter on "utilization chains" contains the same 300-year "life-cycle analyses" that we have dispelled already in IMCG Newsletter 2008/2 (see "Open letter to Donal Clarke").

Report available from: http://tinyurl.com/cslmh2

Korhonen R, Korpela L & Sarkkola S (eds.) (2008) Finland – Fenland: Research and sustainable utilisation of mires and peat. Finnish Peatland Society and Maahenki Ltd, Helsinki. 228 pp.

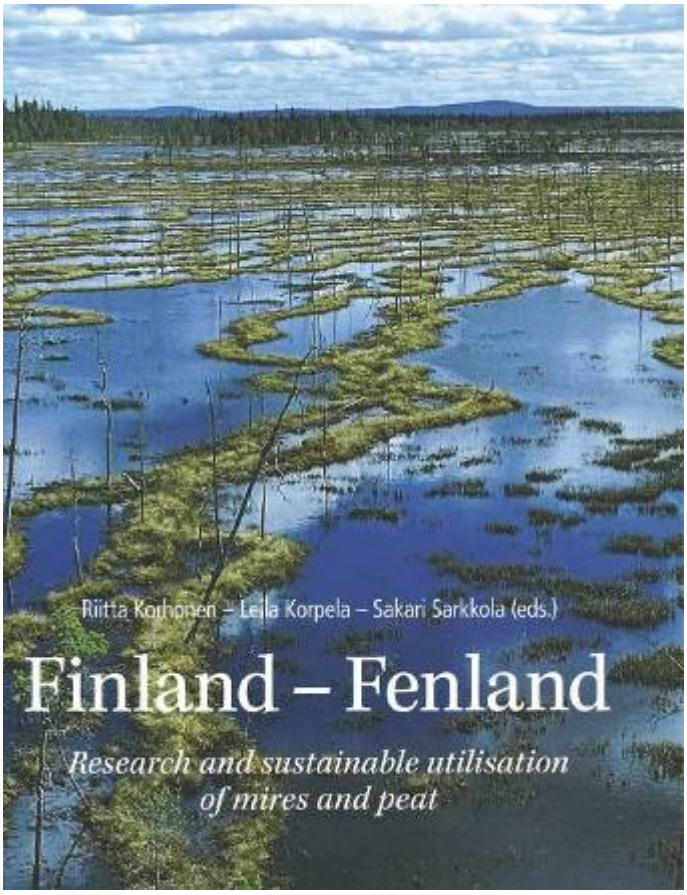
"Finland has more mires and peatlands regarding its land area than any country in the world; one third of its total land area is covered by them. Mires have always played an important role in Finns´ lives and they have meticulously studied over a hundred years. Finland – Fenland, with articles by 42 experts, introduces readers to the latest research into, and the myriad uses of, mires and peat today"

The above is an introduction to the book co-published by the Finnish Peatland Society – a national committee of the International Peat Society (IPS) – and Maahenki Ltd. Written in Finnish and swiftly translated into English, the book is a continuation of a series of similar books on mires by the Finnish Peatland Society. The primary purpose of the earlier books, and this one too, has been to demonstrate at congresses organised by IPS Finnish knowledge and, in particular, use of mires and peatlands. This is why an English translation was published aimed at the 13th International Peat Congress held in Tullamore, Ireland between 8 and 13 June 2008.

The book begins with the origin of mires as well as peat and peatland resources, proceeding through geological surveys of mires to the diversity of mires, including disturbed peatlands, and ending up with studies in global change. Various destructive uses of

mires are presented as "sustainable", which, according to the book, includes mire conservation as well as peat extraction. Mires are seen as good berry picking areas and reindeer pastures. Agriculture is practised on peatlands cleared for this purpose, and peatland forests grown on drained peatlands play an important role in forestry. The use of peat for energy, horticultural and environmental purposes is said to be significant for the national economy. Once all peat has been mined, there is a range of possibilities for the after-use of cut-away areas, which are presented in the book. Special uses of mires and peat include tourism and sports on mires, textiles made of peat and various methods of peat therapy. Some of these help to conserve mires, while others are partly destructive. All these types of peatland use are defined as sustainable. This leaves the reader to wonder what unsustainable use of mires would be like.

Mires also figure prominently in the landscape of the Finnish soul, arts and folklore. This is also discussed in the book. The last chapter is aimed directly at the agenda of the congress in Ireland and is entitled *The Future of Finnish Mires.* A detailed look at the contents follows.



Coverphoto: Kuppiaapa mire by Jorma Luhta. The book does not provide detailed information about this species-rich flark aapa mire located in Finnish Lapland, in the mire area of Joutsenaapa–Kaita-aapa. The area is included in Finland's Natura 2000 network, and it is currently being turned into a conservation area. The mire has been photographed in early summer when it is wet.

I Finland – Fenland

Kimmo Virtanen: The origin and development of mires since the last Ice age.

The book begins with an article by Senior Scientist Kimmo Virtanen of the Geological Survey of Finland (GTK). It provides good basic information on the general history of the development of Finnish mires. A critical reader is, however, left thinking about an argument made by Virtanen – and suggested by many others elsewhere – that aapa mires form the oldest mire complex in Finland and that almost all raised bogs have been aapa mires at the initial stage of their development. The fact that there is a thick layer of sedge peat at the bottom of raised bogs does not in itself imply precursor aapa mires as not every sedge fen is an aapa mire. Another dubious claim is that global warming is expected to lead to raised bogs occurring further north and that this has already happened. This may be true, but a more likely reason is that in Mid-Finland, many mires have long been in the process of developing, or "maturing", into raised bogs. This process has also been strengthened by runoff ratios altered through drainage of peatlands and forests. Consequently, the change would have taken place even without global warming.

Kimmo Virtanen: Geological study of mires

Virtanen's second article deals with the inventory of peat resources, which is one of the tasks of GTK. The text is an excellent overview of the work carried out at GTK over the decades. At the same time, it highlights new surveying methods from the use of ground-penetrating radar based on electromagnetic pulses to aerial gamma-ray surveys. It is good to note, though, that traditional field work using a Russian peat corer is still needed. The article ends with a short introduction to the dating methods of mires.

Kimmo Virtanen: Peat resources in Finland

The third article by Virtanen provides information on peat resources in Finland based on GTK's peat surveys of 1.8 million of the total of 9.4 million ha of mires studied with only basins with a thick layer of peat covering more than 20 hectares included. Consequently, the results only give an idea of the resources and characteristics of part of the mires. The author notes this but does not elaborate on its significance.

Eero Kaakinen, Kaisu Aapala & Aira Kokko: The diversity and current condition of Finnish mires

The article contains a description of the structure of mires, but not of their dynamics. The text is a patchwork of ideas written in a hurry, which is seen, for example, in how flood is described to wash humic acids from aapa mires, while elsewhere it is noted that downslope parts of a mire do not receive additional nutrients. Diversity refers here to the diversity of plants, particularly vascular plants, and biotopes. A more fitting title would have been "the diversity of flora and vegetation in Finnish mires".

Also, despite the national emphasis, the article should have incorporated the ecoregion perspective. If the intention were to discuss the diversity of mires as a whole, several articles would have been required for this part of the book.

Sanna Saarnio, Kari Minkkinen, Marja Maljanen & Jukka Laine: The carbon balance and greenhouse gas exchange in Peatlands
The article presents research results on the carbon balance of various peatlands drained for forestry and agriculture. Carbon balances can be tricky: trees are grown for harvest, for example, not to form permanent carbon stores comparable to peat.
The article furthermore raises the question what will happen to Finnish mires as the climate changes. Carbon release from drained peatlands depends on water supply and temperature just like carbon storage in pristine mires. A changing climate may also affect the climate forcing effect in terms of methane released from pristine, wet sites, however. The authors note, quite correctly, "*These carbon fluxes are part of the natural carbon cycling and they are not responsible for the current strengthening of the greenhouse effect."*

Jukka Turunen: Changes in Finnish Peatland area and carbon storage
Change in peatland area is difficult to study, and so is change in carbon storage. The subject is approached using statistics, which leaves room for all kinds of speculations. In any case, the article has the ambitious goal of defining numeric values for various matters. Balance studies are always susceptible to errors due to inadequate background data and it is noted that the role of Finnish peatlands drained for forestry as carbon sinks has been overestimated.

Markku Mäkilä: The carbon pool of surface layers in Finnish mires
Mosses and vascular plants grow on the surface of mires and are the only real producers of peat. Surface peat, or more correctly raw humus litter, plays a vital role in the ecology of mires and the accumulation of carbon, as the changing climate affects the surface, not the deeper peat layers. It is therefore good that studies of the mire surface are now recognised within the field of geological peat studies. As the author notes, "*Due to the intensive decomposition that occurs within the surface layers of all mires, carbon accumulation rates in these uppermost layers cannot be used for estimating long term carbon sequestration."* This, too, underlines that the development of mires must be seen as a dynamic process, with living vegetation gradually, over time, turning into fossil peat.

II Sustainable use of mires
The title of this section is peculiar. It actually encompasses all uses of mires and peat in Finland, which means that the editors regard all these uses as sustainable. There is no reflection on the concept of sustainability.
The Ministry of the Environment states that Finland holds the world record in the drainage of mires. The original mire area was roughly 10.4 million hectares, of which no more than 40 per cent is in pristine condition or undrained. Most of this area is located in Northern Finland. The commercial use of peatlands has destroyed a significant proportion of the original peatland wildlife, and many mire site types and species are threatened. The exploitation of mires has changed the landscape and increased the load on water bodies. It has been noted that the commercial use of mires has been unsustainable ecologically and in terms of water management and that it has resulted in major losses and problems.
This point of view is not included in the book.

Eino Lappalainen: Historical aspects of the use of peatlands
This article starts out with the red ochre paintings of the Stone Age, proceeding to red ochre and bog ores, and ending up with the history of the early stages of peat use. This nostalgic piece of writing mentions that in 1907, 500 bales of "pharmacy peat" were produced for bandaging and sterilising wounds.

Merja Myllys & Sylvi Soini: Cultivation of mires in Finland
Another article, or actually a stub of an article, exploring history and discussing agriculture on peatlands. There would have been more information available on the subject. This is only scratching the surface of history plus a bit of statistical information, nothing more.

Juhani Päivänen: Implementation of Peatland Forestry
The pompous title introduces us to a subject that is also, in many ways, historical. The article explains how draining was implemented and controlled through laws and regulations. The environmental, or even economical, sustainability of the actions is not addressed at all. The approach is entirely technical.

Veijo Klemetti: Peat production and research on Aitoneva Peatland
The operations of a company called Suo Oy ("Peatland Ltd") on the Aitoneva peatland are a small detail in the use of peatlands during World War II, and part of the history of rural industry. At the same time, it is an example of how Finland tried to ensure the supply of energy in wartime. An interesting story, but in no way linked to sustainability.

Lea-Elina Nikkilä: Hydropeat – an old harvesting method
Another case of rural industry from the shortage-ridden wartime years was the attempt of Puukemia Oy ("Wood Chemistry Ltd") to extract "hydro-peat" at Kivisuo, where the Finnish Forest Research Institute has later had experimental fields. This

harvesting method is unusual, and so is conducting forest research on a substrate that has been used in a hydro-peat experiment. It is difficult to generalise these results, and this has nothing to do with sustainability either.

Eero Kaakinen & Pekka Salminen: Mire conservation in Finland
Two veterans of mire conservation look back on the progress of conservation in Finland. The article emphasises how complex and difficult a process mire conservation has been in this country. The focus is on the progress made in public administration. People working in administration believe that administrative control of the use of mires will ensure their sustainable use in the future. The outcome of mire conservation, i.e. the conserved mires themselves, are not introduced in this article, or in the entire book, for that matter. Neither does the article reveal whether mire conservation has been successful, except on a very general level. It is, nevertheless, good that the subject is mentioned. Needed are concrete examples or statistics – if these are available – on successes and failures. Perhaps this would even have warranted an article of its own.

Kauko Salo: Health benefits of mire berries
Mires have always been important berry-picking areas for Finns. Moreover, berry picking is one of the greatest manifestations of democracy in Finland. Land ownership, which is nearly sacrosanct in Finland, does not prevent free berry picking. Thanks to the so-called everyman's right, people are allowed to pick berries almost anywhere in Finland, even in nature reserves (strict nature reserves excluded). This enables poor people to gain additional income, and the wealthy may enjoy it as a valuable opportunity for retreat or recreation. The article does not go into the social dimension of berry picking; instead, it focuses on introducing the most important berries thriving on mires. Cloudberries and cranberries receive the most attention, but the article does not ignore bog bilberries or crowberries either. The article ends with national yield data. Land use on peatlands has been extensive in Finland, but its impact on berries, their occurrence and crops are not explored here.

Mauri Niemien: Mires as reindeer pastures
Exotic on a European scale, reindeer herds feeding on open mires in the summer are commonplace in the north of Finland and part of the landscape. This is another peculiar use of mires that overrides land ownership. Reindeer are the property of reindeer herders, but they are allowed to graze anywhere in the wild. The article does not address this side of the issue, but focuses more on the nutritional behaviour of reindeer and how they use mire plants for nutrition, as well as on the role of different mire habitats. The impact of reindeer on mires is not discussed either. The effects of treading, paths made by reindeer, grazing and droppings could have been dealt with in this or another article.

Merja Myllys: The current use of peatland for cultivation
In Finland, the use of peatlands for cultivation has not been the principal use, but it has, nevertheless, been significant for agriculture and also for the landscape. The clearing of mires for cultivation has perhaps been the key reason for the disappearance of rich fens. As the article notes, "*nearly all such* (rich) *fens have over time been cleared for farming*". Consequently, the cultivation of peatlands has had a significant impact on diversity. It is good that the article has a dedicated paragraph on the environmental impact of agriculture on peatlands, i.c. release of CO_2 and N_2O and loss of nutrients through outflow. It is not possible to examine all aspects of this subject in a short article, but it would have been a good idea to provide information on the spatial distribution and condition of peatland fields.

Harri Vasander & Jukka Laine: Site type classification on drained peatlands
The draining of mires for forestry is the most extensive action carried out in Finnish peatlands. Its impacts on diversity have been drastic. However, if diversity is defined to include all existing habitats, post-drainage succession has certainly created new habitats. In accordance with the Finnish classification tradition, the aim has been to classify these by type as well. The article is a short presentation of site type classification of peatlands formed after drainage, accompanied by pictures and tables. The impacts on diversity are not discussed.

Raija Laiho: From a mire ecosystem to a drained peatland forest ecosystem
When a mire is drained for forestry, major changes occur in the ecosystem. The article pays a good amount of attention to the impacts of the changes on diversity. Plants growing on open bogs are replaced by forest vegetation. Great changes also take place in the surface peat. The biggest challenges concern the nutrient regimes of different peatland forests. The initial situation is reflected in the peat. Peatland forests can be considered as unstable systems whose condition is dependent on the supply of nutrients, and there are a number of situations in which peat by itself is not sufficient for balanced growth and fertilizers are needed to keep the forest growing. When this can already be seen in the first post-drainage tree stands, it is worth considering what the future will bring.

Leila Korpela: Diversity of peatland forests
Diversity can, of course, be examined on the basis of post-drainage conditions. This is, in any case, the prevailing state of affairs in Finland in large areas. This is the theme of the present article. When the outcome is expressed in such a sophisticated manner as here, it says it all: *"For vegetation communities,*

the successional development to the drained peatland forests means a decrease in diversity due to the shortening of ecological gradients, a decrease in regional diversity as forest-like vegetation increases, and a decrease in "diversity value".

Juhani Päivänen & Sakari Sarkkola: Forest management on drained peatlands
This article is, in a way, a short version of Juhani Päivänen's massive textbook on peatland forestry, *Suot ja suometsät – järkevän käytön perusteet* ("Peatlands and peatland forests – principles of sensible use"). The fanatic days of the first wave of forestry drainage are gone, and a degree of realism has crept into forest management on peatlands. The article describes the best case scenario and for a number of reasons, reality is not that simple. The article discusses forest management on peatlands from a largely academic standpoint. It would also have been desirable to present the new norms of forest management on peatlands used in practical forestry. Has a gap emerged between theory and practice? It is mentioned that regulations favour conservation and that forest professionals are knowledgeable about biodiversity issues. This is true in a way, but things do not always go like that. Small forest holdings can be considered either a problem or, from the perspective of biodiversity, an opportunity. They are not commercially important for their owners and are thus left to grow unmanaged and unutilised.

III. Versatile uses of peat

Varpu Savolainen & Jaakko Silpola: Energy from peat
This is the view of peat 'producers', as those involved in peat extraction euphemistically call themselves. The article is mostly an introduction to the Finnish peat industry, but it is also a text written by peat lobbyists to justify the environmental role of the industry. There has been much debate about this subject, and it must be regarded as untenable that the climate impact of peat may be reduced by including 300 years of after-use of peatlands – which has a diluting effect. First of all, this is only a calculation: No one can predict the future. Second, different types of land use should not be included in the same calculations. This is all politics and a way of confusing decision-makers, who are not informed enough on the real issues at hand. Peat mining is about carbon that has been outside the carbon cycle for thousands of years and about releasing that carbon into the atmosphere. Another puzzling thing about the article is the complete indifference shown towards the destruction of peatland wildlife. This does not seem to worry the authors at all.

Olli Reinikainen & Päivi Picken: Horticultural and environmental use of peat
Peat is mined not only for energy, but also for use in horticulture, soil improvement, landscaping and animal husbandry, as well as for a range of environmental uses. The article describes how peat has been and is currently used for these purposes. In a way, the article is a product presentation, but the origin of the various types of peat is not explained.

Riitta Korhonen: Peat therapy
Another product presentation, this is about the use of peat in peat therapy and, in particular, the Finnish method of going to a sauna after applying peat to the skin. This phenomenon is somewhere between a unique experience and cosmetics. There is no actual medical proof of the benefits – at least not in this article. The statement, *"The utilization of peat in health care and beauty therapies is perfectly compatible with the principles of sustainable development"* is so far the only use of peatlands in the book regarded as sustainable. Well, at least it is true that it does not require large areas, and it can be accepted so long as applying peat on your face will make you happy and will not cause skin irritation.

Methods of the After-use for peatlands
The after-use of peatlands is quite a horrible term as it conveys directly what peat extraction is all about. A peatland has been cut away, and after-use is being planned for the empty site.

Päivi Picken: Geological surveys and after-use planning of cut-away peatlands
When all peat has been extracted, all that remains is a cut-away peat desert. There are differences between these areas, and after-use depends on the possibilities offered by each area. This is where geological surveys of cut-away peatlands come in. This is the message of the article. Some of the sites, especially in Ostrobothnia where the land is rising, are problematic as there is sulphide in the so-called *Litorina* zone. Other problems include too dense or too porous subsoils and too rocky subsoils. This post-extraction state better should have been examined before peat mining activities even started.

Lasse Aro: Cut-away peatlands in forestry
One of the uses of cut-away peatlands is the growing of trees. Not all areas are suitable for this purpose, but many are. Nutrient-wise, the areas may still be challenging and require fertilisation. These are new environments for which we do not even have a habitat classification. The article only describes the development of forest stands. Nothing is said about how water management has been arranged in these sites. There are undoubtedly specific problems in this area.

Jyrki Hytönen: Afforestation of peatland field
An example of Finnish inconsistent land use is the need to afforest peatlands originally cleared for cultivation.

Cultivation of cut-away peatlands

In the end, all peat mining areas are exhausted. What to do with the cut-away peatlands is a good question. There are all sorts of projects under way.

Olli Reinikainen, Mia Suominen & Katri Pahkala: Reed canary grass on cut-away peatlands

Although cut-away peatlands are not optimal growing environments for reed canary grass, its cultivation has become increasingly widespread. Most of the varieties are intended as fodder, but reed canary grass has also been given a key role in environmental politics as a biomass fuel. The overall carbon balance of a peatland is strongly negative once all peat has been extracted and 300 years of biomass fuel cultivation may offset some of it. Judging from the following passage, there is not much reason to celebrate anyway: "*In addition, the cultivation of reed canary grass may also have a positive effect on the landscape of cut-away peatlands*". A peatland used for the cultivation of reed canary grass is a veritable monoculture by any measure, according to the latest birdlife surveys, for example.

Bertalan Galambosi & Marjatta Uosukainen: Cultivation of herbs on peatlands

The aim of trial cultivation of herbs on peatlands seems to be finding new uses for cut-away areas. If not for this purpose, there would be little reason for these kinds of tests. You would think that there would be enough fields for herbs in Finland.

Niko Silvan: Sphagnum biomass production in cut-away peatlands as an after-use alternative

A short article on growing bog mosses – a subject that is also studied elsewhere in the world. As such, it is necessary to know how plants begin to grow on cut-away peatlands and how this can be advanced. This information is also essential for those restoring peatlands. A more appropriate place for this article might have been in connection with the restoration of cut-away peatland.

Tarja Väyrynen: From peat production area to waterfowl sanctuary.

The article describes the transformation of a peat extraction area into a waterfowl sanctuary. It discusses the practical work involved in building a wetland for birds. The subject is approached from a very general perspective. No detailed information is given on the birdlife in the area, nor on any other species of wildlife. It also remains unclear how succession will advance in the wetland. Be that as it may, in some cases it may be justified to favour wetland development and active construction.

Niko Silvan & Mika Yli-Petäys: Restoration of cut-away peatland

Most cut-away peatlands are converted to agriculture and forestry lands, and only a minor proportion is restored to peatland. The latter may well become more common, however, and it is therefore good that the subject is touched upon. The focus has been and still is on gas exchange, as this article shows.

Kaisu Aapala, Tuomas Haapalehto & Tapani Sallantaus: Ecological restoration of drained peatlands

The article describes a joint initiative of the Natural Heritage Services of Metsähallitus and the Finnish Environment Institute for the restoration of nature reserves, focusing on peatlands formerly drained for forestry. There are few results, and the text is more of a description of the system for the implementation of restoration measures. The fact is, after all, that the results of restoration will only be seen after several years. Information is also provided on how nutrients once applied as fertilizers have been washed into water bodies as a result of restoration. An example of this is found in the Seitseminen National Park.

Ecotourism on mires

Lea-Elina Nikkilä & Riitta Korhonen: Tourism and sports on mires in Finland

This article shows where the book really fails. It discusses tourism in general, then focuses on swamp soccer. The potential of our mires for enjoying nature is merely touched upon, although mires located in natural reserves offer great opportunities for experiencing peatland wildlife. Finland as fenland is left aside. The promise of Jorma Luhta's stunning photo on the cover, depicting a flark aapa mire in eastern Lapland, is not matched by the content of the book! The fact that the following article showcases an aapa mire does not make up for this major deficiency. Readers of the book are never told what kind of natural treasure Metsähallitus has under its supervision.

Eino Lappalainen: Aapa mires – new experiences of ecotourism

Teuravuoma is a magnificent and vast mire area in the middle of western Lapland, a region of aapa mires. Lappalainen has worked hard to develop tourism in the area's mires. This is a story of that, and natural conditions are also discussed briefly. However, this does not make the book worthy of its name either.

Mires in Finnish folklore, arts and peat products

Pekka Laaksonen: Peatlands in Finnish folklore

Peatlands are surely deeply embedded in Finnish folklore. This article throws in a bit of this and that about peatland-related themes in folklore. At least there is no common thread running through this story about iron and frogs. The author has not had a chance to really dig into the subject, and the outcome is incoherent and rather unrewarding.

Kirsi Laurén: Mires in Finnish art

What was said above also applies to this article. The representation of mires in art is discussed in a forced

way. This could be an interesting subject, but this article is anything but. And what are the photos taken at the conference of Mire Aesthetics in 1996 doing here?

Papu Marjatta Pirtola: Use of peat in textiles, artwork and buildings
Peat textiles are a product favoured by peat lovers. The article is a personal story told by Pirtola. As a curiosity, it is even somewhat interesting.

III Future

Eero Kaakinen, Riitta Korhonen, Leila Korpela, Sakari Sarkkola & Harri Vasander: The future of Finnish mires
At the end of the book, the editors polish their crystal ball and try to gaze into the future. What it holds, only time will tell. It is, however, likely that a Pandora's box will be opened with the drawing up the national peatland strategy in the form proposed by the Council of Oulu Region and the North Ostrobothnia Regional Environment Centre. Well-meaning intentions may give way to more cynical goals.
In conclusion, reading the book, I discovered various forms of despair related to the use of mires, a plethora of details and curiosities. Peatland wildlife was almost absent from the pages. There is so much discussion in the book that is internal to the field that I am not sure how well an uninitiated reader will understand it. Compiling a book like this is always difficult in its own way. The broad scope of the subjects also means that the authors set about the task in different ways, and when a book is intended for a certain occasion, as is the case here, there is no time to hone the text. This makes the book uneven.
I have not read through the English edition as meticulously as the Finnish original since it is a translation. The quality of the translation seems quite decent most of the time, especially given the difficulty of mire-related terminology. However, when you think about how many of these articles were planned and written in Finnish for Finnish people working in the field, I doubt whether the translated edition will be understood – if it will even be read.
The way in which references are used in the book is somewhat odd. Jukka Turunen's article is the only one to apply a number-based referencing system, which works very well. I am sure it will not bother anyone who shuns the practice of referencing. In the other articles, however, the references at the end are either connected to the text or not. This makes it impossible to assess the claims made in the articles and is therefore unacceptable.
In final conclusion: The title of the pair of books is peculiarly close to that of a book published in 2006, *Finland – land of mires* (The Finnish environment 23/2006. ISBN 952-11-2295-1), a collection of articles edited by Tapio Lindholm and Raimo Heikkilä on Finnish mire ecology, mire conservation and the need for conservation. The name translated to Finnish would be *Suomi – suomaa*, i.e same as the evaluated book in Finnish. *Finland – land of mires* was compiled to be used as background information during the visit of the International Mire Conservation Group to Finland, but also to distribute Finnish knowledge on the subject. I wonder whether the book written for the needs of IPS has been thought to complement the one designed for the needs of IMCG, or whether this is a coincidence? In any case, there is the danger of a mix-up.

Tapio Lindholm

Isokääntä U (2007) Enchanted by nature – getting acquainted with the border area nature. Kainuu Regional Environment Centre, Kuhmo. 122pp.
The nature in the peatland rich border area has been studied in Finnish Russian cooperation between universities for over 30 years and since 1990 in environment administration. In an EU funded project new research data was compiled about the border area nature in popular form. Information was collected in Kainuu and North Karelia counties on the Finnish side, and Kostamus, Kalevala, Suojärvi and Mujejärvi districts in the Karelian Republic.
The book covers information on bedrock, Quaternary deposits, natural history, watercourses, forests and mires, plants, animals, and the relations of man and nature in the borderland, giving a comprehensive view on the nature.
Finnish, English, German and Russian language version of the book are available as PDF through this link: http://tinyurl.com/c3y5by

The Terrestrial Carbon Group (2008) How to include terrestrial carbon in developing nations in the overall climate change solution
Whereas it may provide 25% of the climate change solution, terrestrial carbon is not coherently part of the international response to climate change. Importantly, reducing the business-as-usual-emissions of terrestrial carbon in developing nations is excluded from the Kyoto Protocol. The world agreed in Montreal in 2005 (and again in Bali in 2007) to explore including the reduction of greenhouse gas emissions from deforestation and forest degradation (REDD) in developing nations in the post-2012 international climate framework.
A successful response to climate change must eventually include all forests and all other terrestrial carbon, however. Over the coming decades, vegetated land in developing nations will be increasingly threatened with conversion to agricultural and plantation use, and to human settlements and infrastructure. The exception will be land that is protected by law, protected by

biophysical conditions, or protected by economic constraints. This increasing threat will be driven by the dynamic links between (a) population, (b) demand for food, fibre, fuel, carbon, and land, (c) prices for those commodities, and (d) land use decisions. The business as usual scenario is that most if not all existing terrestrial carbon on unprotected land will be emitted. As land is taken out of production to be "protected" for carbon sequestration, land for other uses will become scarcer, more valuable, and under even more pressure for conversion. To harness the potential of terrestrial carbon in the climate change solution, a response is needed that values terrestrial carbon so that it can compete in this dynamic global context.

Both market and non-market approaches to terrestrial carbon and climate change are necessary. Within that context, the report proposes a system to credibly include terrestrial carbon in developing nations in the international response to climate change using carbon markets. The system is as simple as possible and has two purposes: (i) to allow the international trading (whether bilateral, multilateral, or global) of carbon credits based on the maintenance and creation of terrestrial carbon, and (ii) to guarantee that action under the system contributes to long-term climate change mitigation.

The system places a nation's total terrestrial carbon into two categories: terrestrial carbon that is effectively protected from being emitted (by law or by being inaccessible because of biophysical or economic constraints), and all other terrestrial carbon. Protected terrestrial carbon must be retained. All other terrestrial carbon can be emitted over a fixed period. The system provides short-term and long-term incentives to change that outcome, recognising that land management decisions are made within nations. Put simply, nations may emit an agreed volume of the original unprotected terrestrial carbon (an annual terrestrial carbon budget) each year with no penalty. If the nation emits less than its annual terrestrial carbon budget in a year, it can sell the difference as terrestrial carbon credits (and must add that volume of terrestrial carbon to its protected category, safeguarding the permanence of the avoided emissions). If the nation emits more than its annual terrestrial carbon budget in a year, it cannot participate in the system until it reverses the excess emissions. The fixed period could be set on a nation-by-nation basis to best reflect national business as usual scenarios. A nation can generate credits for any new terrestrial carbon it creates.

Categorising terrestrial carbon in this way addresses additionality and intra-national leakage completely. International leakage is effectively limited (especially as more nations join the system). The short-term and long-term incentives safeguard permanence.

PDF available from: http://tinyurl.com/dz3o7p

Laitinen J (2008) Vegetational and landscape level responses to water level fluctuations in Finnish mid-boreal aapa mire – aro wetland environments. PhD thesis University of Oulu. 70pp.

"Aro" is a term used in local dialects of Finnish to describe small seasonal wetlands mostly characterised by a very thin peat layer, seasonal flood, seasonal drought and at least partly fen-like vegetation. This summary paper accompanying 6 original papers a) describes the vegetational variation of aro wetlands and closely related fens into a vegetational classification, b) arranges various aspects of the water level gradient and interwoven and parallel vegetation-ecological gradients of the water level fluctuation of boreal aapa mire-aro wetland environments in an orderly manner and c) presents a functional, qualitative (non-mathematical) model for local mire-aro wetland systems and a general model for the subtypes of diplotelmic mires and their relationships to percolation mires and seasonal wetlands.

PDF available from: http://tinyurl.com/ddt68y

Stine JK (2008) America's Forested Wetlands: From Wasteland to Valued Resource. Forest History Society, Durham. 96 pp.

This book chronicles the history of American attitudes and actions toward the ambiguous transitional areas between dry land and open water. It addresses one of the most persistent and contentious issues in natural resources management and offers an essential primer for landowners, teachers, students, journalists, and government decision makers and advisors.

Thieme M, Shapiro A, Colom A, Schliewen U, Sindorf N, Kamdem Toham A (2008) Wetlands inventory Democratic Republic of Congo (DRC). 60pp.

This inventory offers a macroscopic view of the country by highlighting large areas that contain wetlands of national biological significance; identifying priorities for more detailed social and biological research; and beginning to identify relationships between biodiversity priority areas and the lands and resource use activities of indigenous and local communities. Available as PDF free of charge from: http://tinyurl.com/dc9sg8

Semeniuk C (2007) The Becher Wetlands - A Ramsar site: Evolution of wetland habitats and vegetation associations on a Holocene coastal plain, South-Western Australia. Springer, Berlin. 680 pp.

Book about a typical wetland system, analysed in its geomorphologic setting, sedimentology, hydrology, hydrochemistry, vegetation and 4500 years of development, and then brings it all together in a synthesis, which serves as a synthesis for management choices and ideas.

Kaat A, Joosten H (2008) Fact book for UN-FCCC policies on peat carbon emissions. Wetlands International. 26pp.
This publication is meant to provide insight in the global greenhouse gas emissions from peatlands and formulates some UN-FCCC policy approaches to addressing these issues, as input to COP14 in Poznan. Available as PDF here: http://tinyurl.com/ddtwd7

Altmann M (2008) Socio-economic impact of the peat and growing media industry on horticulture in the EU. Co Concept, Luxembourg. 119pp+app.
This study was commissioned by EPAGMA, the European Peat and Growing Media Association and shows how the peat and growing media industry plays a major role in modern horticulture in Europe, accounting for a turnover of 1.3 billion Euros and 11,000 jobs. The horticulture industry is estimated to have a turnover of approx. 60 billion Euros and provides for over 750,000 jobs. Among growing media constituents, peat represents 69% (hobby market) and 86% (professional market) of all constituents.

Gallagher F (2008) Legislation and permit policies regulating the use of horticultural and energy peat resources and peatbased products in the EU. EPAGMA, 26pp.
This companion study to the work cited above contains up-to-date information on the legal situation of peat extraction in main peat and growing media producing EU member states.
Both studies can be downloaded at www.epagma.org.

Impacts of wind farms on upland habitats – the environmental cost of Scotland's renewable revolution. The John Muir Trust, Edinburgh. 21pp
The John Muir Trust has released a report Impacts of Wind Farms on Upland Habitats that reveals the unseen threat that wind developments pose to Britain's precious upland areas. The report details the impacts of these large scale civil engineering projects on upland habitats and calls on the Scottish Government to develop a National Renewable Strategy to ensure they are adequately protected.
The report reveals that a large 53 turbine wind farm, including access roads, borrow pits and cabling trenches, damages and destroys 441,600m² the equivalent of 68 international sized football fields. The report finds that habitats for rare species are at risk of being damaged and destroyed by poorly planned and inadequately operated wind farms. Concern is raised regarding evidence that habitat restoration, which the windfarm industry poses as a solution, is frequently ineffective. The resulting exposure of soil and peat, together with the alteration of drainage systems, appears to provoke erosion and siltation problems to climate change.
Available as PDF here: http://tinyurl.com/cn8fhb

Peatland Ecology Research Group. 2009. Production of Berries in Peatlands. Guide produced under the supervision of Line Rochefort and Line Lapointe. Université Laval, Quebec. 134 pp.
A new report on the Production of Berries in Peatlands has been published by the Peatland Ecology Research Group of Université Laval, Quebec, Canada. The 134-page coloured guide was produced under the supervision of Line Rochefort and Line Lapointe and contains information on different berries, their growing requirements, yields and other information. The report can be downloaded in English and French at http://tinyurl.com/c687o5

Fronzek S, Johansson M, Christensen TR, Carter TR, Friborg T & Luoto M (eds.) (2009) Climate change impacts on sub-arctic palsa mires and greenhouse gas feedbacks. Proceedings of the PALSALARM symposium, Abisko, Sweden, 28-30 October 2008. Reports of the Finnish Environment Institute 3/2009, 74 p.
This report contains extented abstracts of presentations from the symposium "Climate change impacts on sub-arctic palsa mires and greenhouse gas feedbacks", held in Abisko, Sweden, 28-30 October 2008. Palsa mires are subarctic mire complexes with permanently frozen peat hummocks. They are a characteristic and unique feature of high latitude environments in parts of Fennoscandia, Russia, Canada and Alaska. In recent decades, palsas have been degrading throughout their distribution range in the northern hemisphere. These marginal permafrost features appear to be highly sensitive to climatic conditions, and the recent decline of palsas in Europe has been linked to regional climatic warming. Changes in the extent of palsas are expected to have a significant influence on the biodiversity of sub-arctic mires and affect the regional carbon budget.
The report covers three themes:
- Spatial distributions of palsa mires and permafrost and its current status
- Greenhouse gas feedbacks of palsa mires
- Palsa mire ecosystem and paleoecological studies

PDF available via: http://tinyurl.com/dgshpr

IMCG Main Board

UPCOMING EVENTS

See for additional and up-to-date information: http://www.imcg.net/imcgdia.htm

HydroEco2009: 2nd International Multidisciplinary Conference on Hydrology and Ecology: Ecosystems Interfacing with Groundwater and Surface Water
20 - 23 April 2009, Vienna, Austria
http://www.natur.cuni.cz/hydroeco2009/index.php

Peatland Restoration in the British Isles and Southeast Asia
24 - 25 April 2009, Belfast, Northern Ireland, UK
http://peatsociety.org/index.php?id=241

SWS Europe chapter meeting
20 - 24 May 2009, Berlin - Erkner, Germany
http://sws-europe-2009.igb-berlin.de/index.html

Celebrating 50 years of Ecosystem Research: Peatland Biogeochemistry and Watershed Hydrology at the Marcell Experimental Forest
23 - 25 June 2009, Grand Rapids, Minnesota, USA
Call for papers: www.imcg.net/docum/marcell_09.pdf

International Conference: Problems of studying and use of Siberian peat resources
24 - 27 August 2009, Tomsk, Russia
http://tinyurl.com/cvzpog

IMCG Field Symposium and Congres
1 - 14 September 2009, Georgia & Armenia
The theme will be 'Mires and peatlands of Kolkheti lowland and highlands in Georgia and peatlands in Armenia', more information in this Newsletter and on the IMCG homepage www.imcg.net

WETPOL 2009: 3rd Wetland Pollutant Dynamics and Control
20 - 24 September 2009, Barcelona, Spain
http://gestion.pacifico-meetings.com/www/wet-pol2009/index.html

Peatlands in the Global Carbon Cycle
25 - 30 September 2009, Prague, Czech Republic
http://www.peatnet.siu.edu/CC09MainPage.html

Sphagnum regeneration in Ispani I mire (Georgia). Inset: Spiranthes amoena (top), Rhynchospora caucasica *(bottom)*

REGISTRATION

IMCG BIENNIAL MEETING GEORGIA/ARMENIA
1 - 16 September 2009

Please copy this sheet, fill in and return by e-mail until 31 May 2009.
Please note that this is how you will be indicated on your badge and the list of participants.
A Word document of this form can be found on the IMCG webpage

Participants information: (please use block letters or type)

Prof. Dr. other:..... Mr. Ms. Mrs

Surname:.....

First name:.....

Organisation:.....

Address:.....

Postal code:..... City:.....

Country:.....

Telephone:.....

Fax:..... E-mail:.....

Registration fees (accommodation and meals included):

□ Total Package (1 – 16 Sept): € 800 (IMCG members), € 900 (non-members)
□ Pre-congress Field trip only (1 – 14 Sept): € 700 (IMCG members), € 800 (non-members)
□ Scientific congress only (15 – 16 September): € 200 (IMCG members), € 250 (non-members)

Payments should be made in advance by bank transfer to:
Volksbank Raiffeisenbank, Steinbeckerstrasse 26, Greifswald, Germany
BIC: GENODEF1ANK (take care: the 1 is a “one”, not an “el”)
IBAN: DE65 1506 1638 0101 0627 78
Johannes Joosten, Dorfstrasse 4, Mesekenhagen.

I wish to present a paper/poster entitled

.....

I would like to present the paper in the form of:
□ oral presentation □ poster presentation

Please include an abstract in English of about 300 words. Deadline is 31 May 2009.

Note: Participants, who need an **invitation for Georgia** please contact the Ministry of Environment and Natural Resources.
Contact person: Gia Kolbini, e-mail: gmep@access.sanet.ge with cc to: tchaobi@yahoo.com

Note: Participants, who need an **invitation for Armenia** please contact the Ministry of Nature Protection
Contact person: Karen Jenderedjian: e-mail: karen_jender@yahoo.com with cc to: tchaobi@yahoo.com

Special dietary
□ vegan □ vegetarian □ other:

Contact Persons:

Hans Joosten	**Izolda Matchutadze**	**Karen Jenderejian**
joosten@uni-greifswald.de	tchaobi@yahoo.com	karen_jender@yahoo.com