INTERNATIONAL MIRE CONSERVATION GROUP

NEWSLETTER

issue 2010/2, June 2010

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 (Francis Müller), 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

This Newsletter comes to you from the High Tatra Mountains where the IMG Field Symposium is having one of its excursion points. The Field symposium, with a wide international participation, travels through Slovakia and Poland and will after a scientific Congress end with the IMCG General Assembly in Goniadz (Poland) on July 17th, 2010. This Newsletter contains several documents for that Assembly, including the agenda, the Biennial Report 2006 – 2009 (indeed this time covering a four year period) and a Progress Report with respect to the implementation of the IMCG Action Plan 2007 – 2010. The Field Symposium and General Assembly will also discuss the IMCG Action Plan 2010 - 2014 from which we hope to publish the outlines soon. One issue has already been concluded: the election of the Main Board. As there were exactly 15 candidates for 15 Main Board positions, no voting was necessary and all candidates are included in the new Main Board. The Main Board will now elect an Executive Committee from its midst, including a new IMCG chair.

We will try and keep you informed on the progress and achievements of the Field Symposium by putting relevant documents and pictures online when technical possibilities underway allow. So keep an eye, as always, on the IMCG website: www.imcg.net

This Newsletter furthermore brings you information on some little known peatland areas, such as the Arctic and the eastern Mediterranean region. Already well known are the peatlands of South Africa, thanks to our active SA chapter, and so you will again find a contribution on the peatland associated problems over there.

The next Newsletter will report on the outcomes of the Field symposium and General Assembly and everything else that you will send to us considering the conservation and management of peatlands all over the world. We plan to produce the next Newsletter: in September 2010, so please provide your contributions before September 10th.

For information, address changes or other things, contact us at the IMCG Secretariat.

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A note from the Chair

This will be my last note as Chairperson, as a new Chairperson will be elected following the instalment of the new IMCG Main Board. The last 6 years in this role have been rewarding and challenging. I have been fortunate to see some of the wonderful mires and peatlands in some unusual and beautiful places. It has been exciting to meet and work with people who are committed to understanding and preserving mires and peatlands, many of whom are working under difficult conditions – I think especially of our friends and colleagues in Georgia.

I am pleased that there has been an increase in membership and participation in countries outside of Europe, while we continue to enjoy the advantages of the wealth of knowledge and literature on European and Scandanavian mires.

One of the real challenges that IMCG has faced in recent years has been the pressure to support the use of peat for purposes such as fuel, where the argument has centred around whether using peat is a more sustainable approach than using other fossil fuels. This has been extremely difficult, as it does not seem possible to accurately describe a resource that accumulates over a geological time frame as a 'sustainable resource'. Peatlands and mires are likely to come under both increased direct pressure as a consequence of climate change and also indirectly, as countries look to fuel alternatives. We must be careful to ensure that actions that help offset one problem (fossil fuel depletion) do not create a plethora of new problems (for peatland conservation).

We have been engaged in debate with IPS for some time over a draft peatland management strategy that they have prepared. IMCG Main Board members have provided constructive criticism of both the IPS approach to the underlying principles, as well as to the document itself. While some of the issues raised by IMCG have been addressed, some of the fundamental issues remain and so IMCG has been unable to endorse the draft strategy. There will be debate on this issue during the upcoming IMCG field symposium and General Assembly.

Thanks for the support I have received in my role as Chairperson. I will continue on the Main Board for one more term, trying to represent the peatland interests of Australasia and the sub-Antarctic.

Best wishes,
Jennie

IMCG General Assembly Agenda

The final agenda of the IMCG General Assembly on July 17, 2010 in Goniądz (Poland) is as follows:

1. Opening and Welcome
2. Minutes of the General Assembly of 22 July 2006 in Tammela, Finland (available in IMCG Newsletter 2006/3)
3. Biennial report (2006 – 2010) on the state of affairs in the IMCG and on its policy including an evaluation of the Action Plan 2006 – 2010 (see this Newsletter).
4. Balance sheet and the statement of profit and loss
5. IMCG Action Plan 2010 – 2014 (see this Newsletter)
6. IMCG Membership fee: The Main Board proposes to continue to policy of a zero sum membership fee for the next two years
7. Election of the Main Board with associated elections of the Executive Committee members, incl. chair, by the MB (see this Newsletter)
8. Conference resolutions
9. Next venues
10. Nomination of Honorary Life Members
11. Any Other Business

REGISTER

Please fill out the IMCG membership registration form.

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

IMCG Biennial Report 2006 – 2009

This is the fifth Biennial Report of the International Mire Conservation Group. According to the IMCG constitution, adopted at the IMCG General Assembly in Quebec 2000, the IMCG Main Board shall present a biennial report on the state of affairs in the Society and on its policy to the biennual General Assembly.
According tot the IMCG constitution, the IMCG financial year is the calendar year. Therefore the Biennial Report normally covers two full calendar years. As the fourth Biennial Report 2006 – 2007 could not be discussed in the cancelled General Assembly in Georgia 2008, the present biennial report covers the four year period 2006 – 2009.
This report concentrates on IMCG internal organisational issues. A detailed progress report with respect to the Action Plan 2007 – 2010 is presented separately.

1. General Assembly
The IMCG General Assembly 2006 was held in Tammela (Finland, 27 July 2006). The draft minutes were published in IMCG Newsletter 2006-3. The three resolutions adopted during this General Assembly were sent to the relevant governments and institutions.
No General Assembly could be held in 2008 in Georgia, because of the armed conflict in that year.

2 Main Board
A Main Board (MB) consisting of Olivia Bragg, Piet-Louis Grundling, Rodolfo Iturraspe, Hans Joosten, Philippe Julve, Tapio Lindholm, Tatiana Minaeva, Asbjörn Moen, Line Rochefort, Jan Sliva, Jennie Whinam, Leslaw Wolejko, and Meng Xianmin was installed at the 2006 General Assembly. As there were only 13 candidates for 15 Main Board positions, and in accordance with article 9.1 of the constitution, no voting was necessary and all candidates were included in the new Main Board. The Main Board decided to co-opt two additional members: Japie Buckle (South Africa) and Faizal Parish (Malaysia).
A Main Board consisting of Olivia Bragg, Ab Grootjans, Piet-Louis Grundling, Rodolfo Iturraspe, Hans Joosten, Tapio Lindholm, Tatiana Minaeva, Francis Müller, Faizal Parish, Line Rochefort, Jennie Whinam and Leslaw Wolejko was installed in 2008 following the 2008 election procedure. As there were only 12 candidates for 15 Main Board positions, and in accordance with article 9.1 of the constitution, no voting was necessary and all candidates were included in the new Main Board. The Main Board decided to co-opt three additional members: Eduardo García-Rodeja (Spain), Eric Munzhedzi (South-Africa), and Shengzhong Wang (China).

The Main Board had meetings in Finland on 22 and 25 July 2006, and in Georgia on 7 and 12 September 2009, see the minutes in IMCG Newsletter 2006/3 and 2009/3, respectively. Further communication in the Main Board took place via internet.

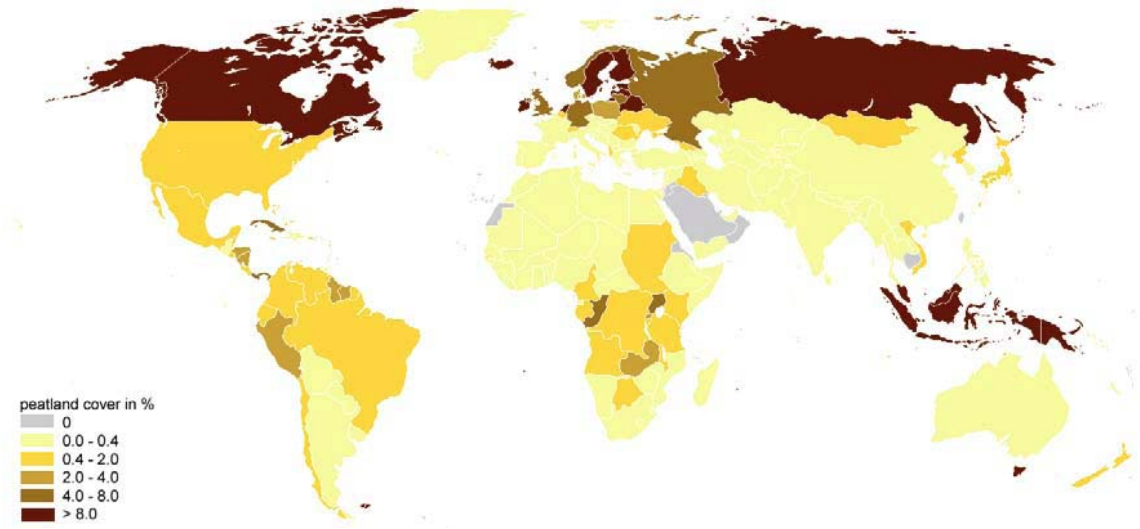
3 Executive Committee
The election of the IMCG Executive Committee (EC) by the Main Board took place after the instalment of the Main Board in 2006 and 2008 respectively. In the period 2006-2008 the Executive Committee consisted of the same people in the same functions as in the previous two years: Jennie Whinam chair, Hans Joosten secretary, Philippe Julve treasurer, and Tatiana Minaeva and Piet-Louis Grundling additional EC members.
In the period 2008-2010 the Executive Committee consisted of Jennie Whinam (chair), Hans Joosten (secretary), Francis Müller (treasurer), and Tatiana Minaeva and Piet-Louis Grundling additional EC members.
In the reporting period the EC held no separate meetings. Regular contact was maintained via internet and during IMCG symposia. Personal exchange was furthermore guaranteed via external meetings of EC members (e.g. at meetings with IPS in June 2007 and June 2008 and during the IMCG Field Symposium in 2009).

4. Secretariat
The secretariat consisted of the secretary-general Hans Joosten and his assistant John Couwenberg. The General Assembly 2006 made budget available for support of the secretariat.

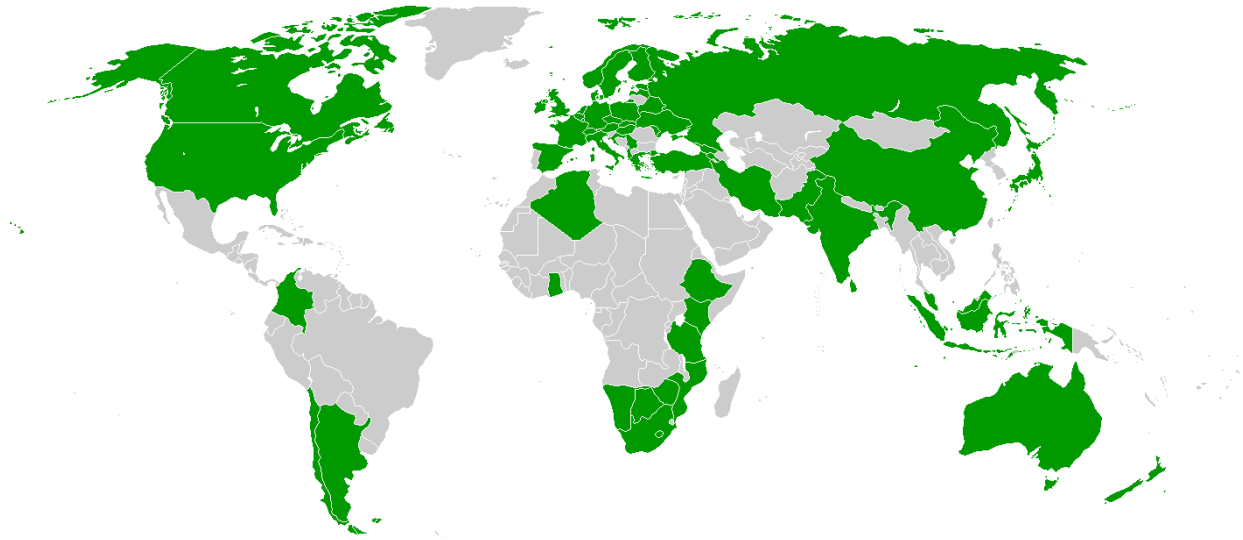
5 Membership
An overview of the development of membership in the period 2002 – 2006 is given in the IMCG Action Plan (2002 – 2006) Progress Report (IMCG Newsletter 2006-2).
On 31 December 2009 IMCG had 530 registered members, including 19 supporters, from 60 countries of the World. This represents an increase of 144 members from 7 additional countries since 31 December 2005. The membership distribution over various continents is as follows:

	31 Dec 2005	31 Dec 2009
Africa	62	76
Asia	15	22
Australia	19	22
Europe	276	378
North America	31	45
South America	4	6
Total	405	549

The data show that IMCG has succeeded to increasingly attract members from outside “Western Europe”, but a European bias is still obvious.



Map showing peatland distribution according to countries



Map showing in green countries with IMCG members 31 December 2009´

The General Assembly 2006 decided unanimously to confer honorary membership on Seppo Eurola, Tatjana Jurkovskaya, Rauno Ruuijärvi, and Michael Steiner.

IMCG Action Plan 2007-2010 Progress Report

At the 2006 General Assembly in Tammelä (Finland), IMCG adopted its Action Plan 2007 – 2010 (see its publication in IMCG Newsletter 2006-2 and the internet www.imcg.net/imcgmiss.htm). This is a report on the progress with respect to the IMCG Action Plan over the period 2006-2010.
IMCG is a network of experts with as main task the exchange of information and ideas. The Action Plan is an analysis of the recent developments and urgent priorities of mire conservation. The developments in the past four years have shown that the analyses made in the Action Plan 2006-2010 were realistic and largely complete.
IMCG as a network has limited capacity to implement projects by itself. The Action Plan should thus not be seen as a prescription, but as an invitation to IMCG members to orientate and commit themselves. We do not have to label everything as an "IMCG activity", more important is that we stimulate and support each other.
The Action Plan 2006-2010 formulated a series of aims regarding specific working fields. This progress report informs on the progress made. Where fields are overlapping, we do not mention the performed tasks every time. More details can be found in the IMCG Newsletters 2006 – 2010.

With respect to **wise use**:
Copies of the **Wise Use book** were send to all national libraries, flyers to target university libraries. The book was also made fully available online in pdf format (www.imcg.net).
Guidelines for the practical application of Wise Use were being developed by IPS. IMCG gave comments on the draft of the document on peat extraction. Draft guidelines on peatland agriculture (prepared by Tomasz Brandyk), peatland forestry (Juhani Päivänen) and tropical peatlands (Jack Rieley) were (being) prepared. It was agreed that when the full suite of draft guidelines was ready, IMCG would see if a basis exists to finalise the guidelines in a joint effort of IPS and IMCG. Since 2008 the practical guidelines have seen no progress, as IPS decided to strive for a Responsible Peatland Management Strategy (see below)

With respect to the **maintenance and expansion of effective networks and partnerships**:
Our membership of the **European Habitats Forum** (EHF) was continued. IMCG was represented in the EHF by Richard Lindsay (until 2008) and Rudy van Diggelen (since 2008).
On 26 July 2006 in Finland a special meeting on the IMCG work in the **Ramsar Convention** was held. On 29 July 2006, the Ramsar Coordination Committee for Global Action on Peatlands (**CCGAP**) held a meeting to complete its implementation plan and to set up the necessary organisational bodies. The positive outcomes of these meeting were, however, not followed-up by sufficient concrete action, the installed executive committee never met.
On the Ramsar COP10 preparatory meeting for the Asian region (14-18 January 2008, Bangkok, Thailand), IMCG represented by Faizal Parish and Tatiana Minaeva organised (with assistance of Ramsar representative Tobias Salathé) a peatland round table. Tatiana presented an analysis of national reports from the 2002-05 triennium, showing poor attention paid to peatlands. Faizal presented the progress of the Assessment on Peatlands, Biodiversity and Climate Change. The 10th Meeting of the Ramsar Conference of the Parties in Changwon (Korea, 28 October-4 November 2008) was attended by a large group of IMCG members and sympathizers, largely as official country representatives. In preparation of the COP 10, the countries' National Reports were analyzed and some remarkable progress related to peatlands was observed: Whereas in their National Reports for CoP 9 (2005) still 32 countries had reported that "peatlands" were not applicable to them, 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). In a special CC GAP peatland side event, Faizal Parish addressed the role of peatlands for biodiversity, carbon and water, Hans Joosten presented global emerging threats including the renewed orientation on peat energy and on peatland for oil/gas infrastructure, wind energy, hydro-electricity, and cultivation of "biofuels". In the Supporting Event "Biofuels, Agriculture and Wetlands" the message was spread that 1) Peat is no biofuel: it is worse than coal, 2) Biofuels from drained peatlands are much worse than coal, and 3) Biofuels from rewetted degraded peatlands ("paludiculture") create a win-win situation. A last side event focused on the practical management and restoration of mountain peatlands in China.
In the discussion on Resolution X.24 "Climate change and wetlands" 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. The results with respect to peatlands were much less evident in Resolution X.25 "Wetlands and biofuels" where Brazil, Malaysia and USA, managed to keep out all reference to peatlands. Resolution X.26 "Wetlands and Extractive Industries" urged directing extractive activities to already drained peatlands, in order to reduce the environmental impacts of extractive activities on pristine peatlands.

Representatives of **IPS** and IMCG met in Espoo, Finland on 28 July 2006 to decide on forthcoming cooperation projects and to intensify the relationships

between both organisations. The 2007 IPS-IMCG meeting took place in three sessions between 26 and 28 June 2007 during the field trip organised by TorvForsk in Sweden. A major focus was the difference in approaches regarding the use of peat for energy and the fallacious assertion by IPS that peat is a renewable bio-fuel. IMCG had invested considerable resources in the meeting, but this was not matched by the IPS attendance. In an official reaction, IPS again failed to address the factual discussion. Since the Wise Use process, the willingness of IPS to take a sincere global perspective has substantially diminished. This is illustrated by the discussion on the climatic effects of the use of fuel peat that originally also aimed at producing a consensus document. The discussion did not see progress over several years, because IPS, in the wake of its major stakeholder group and financer – the fuel peat industry, did not even attempt to discuss the central issues in a factual way and keeps on repeating out-of-date mantras.

In June 2008 brainstorming meetings between IMCG and IPS on future cooperation were held during the International Peat Congress in Tullamore (Ireland). At the International Peat Congress 2008, IPS also presented a plan for a Certification Scheme for Sustainable Management of Peatlands (SPM), later renamed in Strategy for Responsible Peatland Management. IMCG involved heavily in the discussion by participating in workshops and commenting on drafts, but a document that could be supported by IMCG was not completed during the report period.

With respect to **the identification and stimulation of synergies between international conventions** (e.g. Biodiversity-CBD, Ramsar, Climate-UNFCCC, Desertification-UNCCCD), an important contribution was made by the publication and presentation of the Assessment on Peatlands, Biodiversity and Climate Change (Parish et al. 2008).

With respect to **research, expertise, and institutional capacity**:

The **IMCG website** 'www.imcg.net' (webmaster Michael Trepel, mtrepel@ecology.uni-kiel.de) remained the main connection to and between our members. On the website you find

- the most recent MCG newsletter and an archive of all past issues,
- an up-to-date list of mire and peatland conservation events,
- information on globally threatened peatlands,
- freely available publications of IMCG and IMCG members, including the Wise use book, and
- contact information.

The website www.imcg.net was opened in January 2001. Since August 2002 the activities on the website are monitored by webstats. From 2002 to 2006 page view numbers increased constantly. From 2006 onwards, page view numbers remained just under the value of 10,000 page views per year. In February 2009, the IMCG home page saw its 50,000th visitor.

In 2009, annual page view numbers dropped down to 8,413. During the first half of 2010, page view numbers have risen slightly so that again 10,000 page views can be expected.

The reduction of the growth rate is obviously related with the information offered on the web-site. In 2008 two newsletters (and one supplement) and in 2009 three IMCG newsletters were published. Daily page view numbers always rise when a new newsletter is published.

In the last two years, the website was important for raising awareness for globally threatened peatlands. Three cases were added in 2009. Additionally, the web site was used to spread information how peatlands were treated in the climate convention talks.

Facing the stagnant page view numbers and the information needs of the IMCG members, it was decided to build up a new fresh looking IMCG web-site. The site is build with a content management system and will have a more up-to date look. The new web site will be online probably in summer 2010. The design of the new web-site is sponsored by the consultant company digsyland (www.digsyland.de).

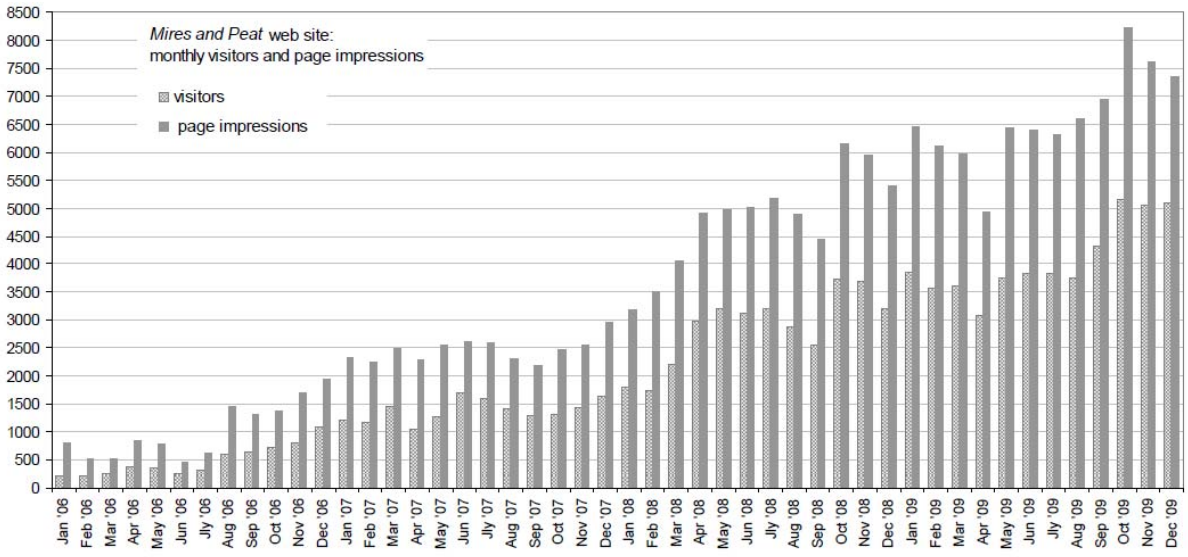
Fig. Screen shot of the new IMCG web-site which will be online during summer 2010 and will offer faster information for IMCG member and the mire conservation community

The **IMCG Newsletter** (editors John Couwenberg and Hans Joosten, joosten@uni-greifswald.de)

appeared in 2006 four times (with 28, 36, 48, and 20 pages), in 2007 four times (26, 30, 40, and 48 pages), in 2008 two times (37 and 38 pages), and in 2009 three times (45, 31, and 44 pages). The drop in number of issues and pages in the second half of 2008 was attributable to the postponement of the IMCG Field Symposium, Congress and General Assembly in Georgia and the strong involvement of the secretariat in the Ramsar and Climate Convention meetings and in the discussions about the EU Biofuel Directive.
Starting with issue 2007-2 a series of special Newsletter issues was produced covering focal subjects of international mire conservation: 'Peat fuel and climate change' (2007-2), 'Peatlands and biofuels' (2007-3), 'Peatlands and wind energy' (2007-4), and 'Peatlands and extractive industries' (2008-1). The Newsletters in 2009 and 2010 paid much attention to the developments in the UNFCCC negotiations.

A **Field Symposium** was organized in Finland 13 – 23 July 2006, an excursion guidebook ('Finland, Daughter of the Baltic') and a book about the nature in Finland ('Finland, land of mires') was prepared by the organizers Tapio Lindholm and Raimo Heikkilä with support of many Finnish mire friends.
Olivier Olgiatti integrated his pictures and videos of the IMCG Tierra del Fuego Field Symposium 2005 into an impressive multimedia production, Ab Grootjans prepared a powerpoint presentation of the (hydro-)ecological insights gained during the excursion. Both contributions are available on the imcg-website. An article on the latter was published in Mires and Peat, Volume 6 (2010), Article 01.
After being postponed in 2008, a Field Symposium was organized in Armenia and Georgia 1 - 16 September 2009 by Izolda Machutadze and Karen Jenderedjan with support of many Georgian and Armenian mire friends. An extensive excursion guidebook ('Biomes of the Caucasus') was prepared by Arnold Gegechkori and Hans Joosten with their collaborators. An IMCG Kobuleti Memorandum was adopted by the participants and distributed.
The following **scientific conferences** were (co-) organised:
- July 24-26 2006: IMCG Conference Finland. Publication of the Proceedings is planned for 2010.
- August 22- 25, 2006 Greifswald (Germany): 5th European Conference on Ecological Restoration, resulting in the 'Greifswald Statement on Ecological Restoration'
- August 26-30, 2007 Khanty-Mansiysk, Russia: West Siberian peatlands and carbon cycle: past and present (Sergei Vasiliev Memorial Conference)
- October 8-11, 2007 Lamoura, France: Peat in horticulture and the rehabilitation of mires after peat extraction
- April 27 - May 02, 2008, Santiago de Compostela, Spain: IMCG Symposium on Windfarms on peatland.

Our joint (with IPS) international peer-reviewed journal **Mires and Peat** (editor-in-chief Olivia Bragg) went online on 01 January 2006 and was officially launched in Finland in July 2006 at the joint meeting of IPS and IMCG.
Volume 1 (2006), Volume 2 (2007) and Volume 3 (2008) contain six, nine and eleven papers respectively. A concurrent Special Volume 4 (2008/9) devoted to *Wind Farms on Peatland* opened on 31 May 2008 and closed in 2010 containing ten papers. In contrast the regular Volume 5 (2009) was with seven papers modest compared with previous years. Another two special volumes (with guest editors) are in preparation.



Mires and Peat *website: monthly visits and page impressions, 2006 to 2009.*

All individual papers continue to be downloaded steadily. The frequency of visits to the journal's web site and the number of page impressions recorded has strongly increased. Whereas monthly visits averaged around 1,500 per month in the latter half of 2007, they doubled in 2008, and first exceeded 5,000 in

October 2009 when also the 100,000th visit to the website occurred. All but two of the 41 papers that have now been published have been downloaded (i.e. probably read) at least once for each day since they appeared online, six have been downloaded more than twice per day, and the most popular article three times per day. During 2009, three new Associate/Assistant Editors (Dicky Clymo, Richard Payne, Derrick Lai) were appointed, so that the manuscript management load can now be shared amongst a team of five (also including the Editor Olivia Bragg and Deputy Editor Jack Rieley). The journal was submitted for evaluation by Thomson Web of Science, but there is no news yet on the outcome.
Flyers to promote the journal to potential authors and readers were distributed at several meetings, and Michael Trepel produced two innovative posters.
Following the IMCG-IPS meeting in Sweden (July 2007) a small **terminology** working group (managers Gerald Schmilewski/IPS and Andrey Sirin/IMCG) was appointed to develop definitions of some 10-20 peat(land) related concepts or words with policy implications that have caused misunderstandings, but progress since has been slow.

With respect to **inventory and monitoring**:
The **IMCG Global Peatland Database** was regularly updated by the secretariat, the presentation of the data on the IMCG website (Africa and Asia) improved. As not all data are yet available on the internet, data were made available to several users on request. A first worldwide compilation of data in the Peatland Database was prepared for the report "The Global Peatland CO2 Picture. Peatland status and drainage associated emissions in all countries of the World" (Joosten 2009) published by Wetlands International for the UNFCCC discussions. With respect to the **stimulation of peatland inventories**, new data were collected on the presence of peatlands in Southern Africa (see IMCG newsletters), Kenya (associated with the UNFCCC meeting in Nairobi), Chinese Altai (ECBP project), Cyprus (see IMCG Newsletter), Korea (see IMCG Newsletter). Important new inventory data became also available for Kalimantan and Papua (Indonesia) in the framework of ongoing projects of Wetlands International.
Progress on the book "**Mires and peatlands of Europe**" was reported on the IMCG Congress in Finland, especially with respect to classification. Further progress has been hampered by health problems of one of the editors. Further attention is required (see Action Plan 2010 – 2014). A selection of information from the manuscripts was used to prepare "A Quick Scan of Peatlands in Central and Eastern Europe" edited by Tatyana Minayeva, Andrey Sirin and Olivia Bragg (Wetlands International, Ede, 2009).

The preparation of **books** on the mires and peatlands of Southern Africa, Russia, and Tierra del Fuego has not yet seen substantial progress. An important contribution to the development and publication of a unified and integral **overview of global mire types** and their global distribution was made by the (2005) publication of Michael Steiner's book Mires from Siberia to Tierra del Fuego incorporating a wide cross-section of the countries represented by IMCG members.
The propagation of **mire ecosystem diversity** got a big boost through the publication of the "Assessment on peatlands, biodiversity and climate change" (Parish et al. 2008), which covers an extensive chapter on peatland biodiversity, including ecosystem diversity. Ecosystem biodiversity was furthermore explicit part of presentations made during side events of the Ramsar, Biodiversity and Climate Conventions. The Biodiversity Convention meeting in May 2008 in Bonn (Germany) adopted its Decision on Biodiversity and Climate Change in which she "Recognizes the importance of the conservation and sustainable use of the biodiversity of wetlands and, in particular, peatlands in addressing climate change and noting with appreciation the findings of the global Assessment on Peatlands, Biodiversity and Climate Change".

With respect to **education and awareness**:
The IMCG **flyer** "The future of peatlands is in conservation" was produced for promotional purposes in 2006 and widely distributed. The general IMCG information flyer was produced in a new version at the end of 2007 and widely made available. The IMCG flyer "Mires and peatlands in South-Africa & Lesotho" produced by Rehana Dada on the occasion of the Ramsar Convention meeting in Uganda (November 2005) was also distributed.
Beautiful **postcards** to promote mire conservation worldwide were produced by Michael Trepel and were in great demand. The production of a new series started 2007 with a well-responded call for contributions. Since September 2008 the cards have been eagerly received on many occasions. Since early 2010 again a new series is in preparation.
The Ramsar/GAP **brochure**: "Peatlands. Do you care?" (2005) was reprinted and widely distributed

With respect to **greenhouse gases**:
During the UNFCCC COP12 2006 in Nairobi and COP13 in Bali information booths and side events focussed on peatlands and their role in climate change. Wetlands International (WI) focussed on peatlands in South East Asia and the immense emissions of CO_2 caused by drainage and fires. The Global Environment Centre (GEC) gave more general information on peatlands, biodiversity and climate and promoted the findings of the UNEP-GEF project "Integrated management of peatlands for biodiversity and climate change" in which also IMCG was involved. During the SBSTA meeting on deforestation, Faizal Parish made a statement on behalf of GEC, WI, IMCG, and Wildlife Habitat Canada, highlighting the importance of peat swamp

forests and other peatlands in relation to reducing emissions from deforestation in developing countries (REDD). New IPCC Guidelines for National Greenhouse Gas Inventories (that include emissions from peatlands under extraction) were prepared with involvement of IMCG members.
Since UNFCCC COP 14 (Poznan) where a "Fact book for UNFCCC policies on peat carbon emissions" (Kaat & Joosten 2008, Wetlands International, Ede) was distributed, attention for peatlands has strongly increased. In all major UNFCCC 2009 meetings peatlands got attention via side events and topical brochures and the inclusion of peatland was discussed both as an extra activity under the Kyoto Protocol (as "wetland management") and as an important soil carbon pool in tropical peatswamps under REDD+.

With respect to **counteracting unnecessary peatland destruction through energy politics**:
IMCG **Newsletter specials** were prepared on peat fuel, biofuels, wind energy, and oil/gas exploration/exploitation. An IMCG symposium on Peatlands and Windfarms, including impressive excursions in the Serra de Xistral, was organized in Santiago de Compostela (Spain, April 27-May 2, 2008) by Eduardo García-Rodeja and colleagues.
The IMCG urged the Scottish Executive to refuse the application for a large wind farm on the Isle of Lewis (which it eventually did).
August 2006, IMCG co-organized the European Conference on Ecological Restoration (Greifswald, Germany) with major attention to peatland restoration. A first draft Peatland **Restoration** Manual was placed on the IMCG website for consultation and April 2008 delivered to the UNEP-GEF project "Integrated management of peatlands for biodiversity and climate change". IMCG also supported a review of international polices and experience on peat extraction, management and restoration, executed for the UK Government project by our member Roger Meade. In 2008 and 2009 also much attention was paid to the EU Renewable Energy Directive where peatlands were (and are) not adequately covered.

With respect to **diminishing threats to peatlands**:
IMCG continued to plea for prevention of peat extraction in pristine mires and valuable peatlands, to combat against the perverse argument of peat being a (slowly) renewable resource, to stimulate the development and use of sustainable alternatives for peat, to prevent further reclamation and over-exploitation of remaining tropical peat swamp forests. This was done especially via its Newsletter and other interventions.
Areas of special attention were:

- Rospuda (Poland) where in 2007 the Regional Administrative Court cancelled the environmental consent for the Augustow bypass road, in July 2007 the European Commission asked the European Court of Justice to issue a ban on construction works, in September 2008 the Highest Administrative Court declared damaging the pristine peatlands in Rospuda river valley illegal, and in December 2008, the building permit for this road section was cancelled.
- The Kolkheti mires (Georgia), where continuous pressures from infrastructure development, exploitation of natural resources and privatisation of state owned land were counteracted by local IMCG members and international support (see extensive reports in the IMCG newsletters).
- South African peatlands, where our active IMCG South Africa chapter heavily involved in developments around Ingula peatland (= Braamhoek/Watervalvlei) and the peatlands of the Kosi Bay area.
- Lewis peatlands (UK), where – after intervention of a.o. IMCG – plans by Lewis Windpower for a wind farm at Barvas Moor were refused consent on the grounds of incompatibility with European law.
- Andorra valley mires (Argentina), visited during the 2005 IMCG Field Symposium and whose value was stressed in the IMCG Ushuaia statement, that our Fuegan friends succeeded to bring under the Ramsar Convention as Wetland of International Importance, including the adjacent glaciers and mountains that constitute their catchment area.

IMCG Main Board

At our General Assembly in Poland we would have had to elect a new Main Board. In order to guarantee an effective democratic election process involving all members, nominations had to be submitted to the Secretariat before May 15th 2010, so that ballots and other General Assembly Documents could have been sent out in/with this Newsletter and would reach everybody in time.

As there were exactly 15 candidates for 15 Main Board positions, and in accordance with article 9.1 of the constitution, no voting is necessary and all candidates are included in the new Main Board.

Congratulations to the new IMCG Main Board!

The new IMCG Main Board has meanwhile started the procedure to elect the Executive Committee, incl. the chair.

Nomination date	Name	Residence
100501	Hans Joosten	Germany
100511	Tatjana Minaeva	Russia
100511	Olivia Bragg	Scotland
100511	Piet-Louis Grundling	South-Africa
100511	Rodolfo Iturraspe	Argentina
100511	Leslaw Wolejko	Poland
100512	Ab Grootjans	Netherlands
100512	Francis Müller	France
100512	Jennie Whinam	Tasmania
100512	Tapio Lindholm	Finland
100512	Line Rochefort	Canada
100512	Faizal Parish	Malaysia
100512	Eduardo García-Rodeja	Spain
100512	Eric Munzhedzi	South Africa
100513	Shengzhong Wang	China

Annual Report Mires and Peat

by Olivia Bragg

The 2009 annual report of the editor of Mires and Peat – the joint scientific journal of IMCG and IPS – indicated a modest publication rate compared with previous years. Eight articles had been published – seven in Volume 5 (2009) and one in Special Volume 4 (Wind Farms on Peatland). Volume 5 included the first publishable article received from south-east Asia and thus extended the journal's geographical coverage; although the Southern Hemisphere remained unrepresented.

One book review had been published during the year.

Despite the relatively small number of articles published, readership had increased to around 5,000 visitors and 7,500 page impressions per month by the end of the year, and the 100,000th visit to the journal's website occurred in October 2009.

There had been no news on the outcome of submission of the journal for evaluation by Thomson Web of Science or the initiative to join the Digital Object Identifier (DOI) scheme; this is still the case.

The number of manuscripts submitted during 2009 was 23 (Manuscripts 58 to 80 inclusive), of which 15 – mostly collected by Lech Szajdak for a Special Volume on Physiological, Biochemical and Biological Properties of Peat – were still undergoing quality evaluation at the end of the year.

During 2009, Dicky Clymo was appointed Assistant Editor, and two new volunteers were enlisted to assist with editorial tasks. These are Richard Payne (Manchester Metropolitan University, UK) whose main role will be to evaluate, manage and edit manuscripts on stratigraphical and carbon-related topics; and Derrick Lai (McGill University, Canada), whose particular interests are in promoting the journal, assisting especially Asian authors with manuscript improvement, preparing layouts, and developing the book reviews section.

Activity during 2010

Four articles have been published so far this year. Volume 6 (2010) contains two articles, and post-review revisions of two more are currently being processed by Clymo and Bragg. The other two published articles are the 'stragglers' for Special Volume 4 (Wind Farms on Peatland), which has now been closed. Although we currently have 23 'active' (i.e. neither rejected nor published) manuscripts on the books, it is impossible to predict when some long-awaited author revisions will be received, and only one further manuscript appears to be making active progress towards publication in Volume 6 at the present time.

Eleven new manuscripts (Manuscripts 81 to 91 inclusive) have been logged since 01 January 2010. Of these, eight are destined for Special Volume 7 which has the provisional title *A Review of Protocols in Peat Palaeoenvironmental Studies* and is led by François De Vleeschouwer, Paul Hughes, Jonathan Nichols and Frank Chambers. Activity to date promises slick production of this volume, and the intention is to open it in June 2010. By contrast, progress on the Szajdak Special Volume has been

slow; although seven of the manuscripts originally submitted are still 'in the running', only one of them has so far reached readiness for full peer review. Thus, it looks as though it may prove expedient to gradually publish any resulting articles in standard volumes of the journal rather than in a dedicated Special Volume.

Richard Payne visited Israel pursuing his idea for another Special Volume on peatland-related research at the Hula Wetland Complex. Derrick Lai has commissioned two book reviews (which should be completed soon), and has started producing layouts for the Palaeoenvironmental Protocols volume.

In Memoriam: Hugo Sjörs

1 August 1915 – 28 February 2010

Our honorary member Hugo Sjörs passed away on 28 February in his home. Hugo was active to his last day and had just finished his autobiography. He was 94 years old.

Hugo Sjörs is no more.

In 1915, Hugo was born on the Sjörs farm from which he took his surname. Living far away from secondary schools he followed correspondence courses until entering Uppsala University in the late 1930s. First inclined towards zoology (not the least dinosaurs!) in his studies, he soon turned into plant ecology and entered the renowned Department of Plant Biology, where G. Einar Du Rietz had taken over the world's oldest chair in plant ecology from Rutger Sernander. This department, internationally known as 'Växtbio', was a very popular place, particularly among those academics that were more inclined towards wellingtons and mosquito repellents rather than laboratories and tail suits.

There Hugo took up mire ecology, perhaps after a summer as a field assistant for older colleagues in Muddus, an area of old-growth forest and peatlands in Swedish Lapland. His interest turned towards his home district in the central Swedish uplands. This area is phytogeographically interesting, being a border zone between the boreal zone, or taiga, and the boreo-nemoral zone further south. Extensive field studies in several remote areas, reached on bicycle, followed, interrupted by long periods of military service in the early 1940s. Hugo's finished his thesis in 1948. Although it was published in Swedish, it has become a classic in mire ecology. He stabilized the terminology of mire features and mire types and described their geographical distributions. When reading his book the reader may first think that its content is rather trivial, until realizing that this is where all these things, now found in textbooks, are described in detail for the first time. Very important are also his detailed studies on Skattlösbergs Stormosse, where he explored the small-scale relations between water quality and plant distributions. His results were further elucidated in a paper in English from 1950.

Hugo soon got a position as a lecturer (docent) at Lund University where he continued his research on mire vegetation, now also together with his own students. He was particularly interested in the relations between vegetation and chemical conditions. As a guest researcher in Canada he also made important contributions to the understanding of Canadian peatlands, particularly in the Hudson Bay lowlands.

After some years as an associate professor (laborator) at the Royal School of Forestry in Stockholm, Hugo came back to Växtbio in 1962 as the successor of G. Einar Du Rietz. The Uppsala and the Montpellier schools of phytosociology had then dominated much of the European scene in its field for some decades, but David Shimwell noted in his textbook from 1971 that Uppsala recently had "shown some lack of interest in classification". Hugo was instrumental in this lack of interest. He had never been keen on classification, particularly not hierarchical. During his time as professor we saw more interest in vegetation dynamics and phytogeography. Växtbio was an ideal base for such studies, as vegetation data had been collected already since the early 20th century. The department also made important contributions to the International Biological Program in the 1970s. The field of population ecology was adopted early, and John Harper gave lectures at the department at least twice.

During this time Hugo was very busy as an administrator, teacher and inspiring supervisor, and his ideas mainly appeared in the publications of his students. Among his own publications pleas for a better protection of nature in Sweden dominated in the form of articles in Swedish journals and as stencilled reports and petitions.
Hugo retired in 1980 and could then return to his own research. This included the mosses he collected in Muddus and which had waited in the envelopes for 60 years before becoming identified and published. With a student he also published a paper on changes in plant distribution and water quality on Skattlösbergs Stormosse, where he himself had collected the original data 50 years earlier. Another paper based on his own old data appeared in the Journal of Ecology, where he now published for the first time at the age of 87. His last paper was about the plants around the home for aged people where he lived with his wife Gunnel who passed away two years ago.

Few people in the academic world are as humble as Hugo was. He never elbowed his way forward. You had to listen carefully to catch what he said, but if you did you were rewarded.

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Gunnarsson, U., Sjörs, H. & Rydin, H. 2000. Diversity and pH changes after 50 years on the boreal mire Skattlösbergs Stormosse, Central Sweden. - J. Veg. Sc. 11: 277-286.
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Burial took place within the family. As a token of sympathy the family suggests a donation to the association ‘Skydda skogen’ (Protect the forest). Information can be found in Swedish, English and German on their website: http://protecttheforest.se/
If you donate write: "Till minne av Hugo Sjörs" (to the memory of Hugo Sjörs).

Ingvar Backéus & Håkan Rydin

Arctic peatlands – to be recognized and well managed

by Tanja Minaeva & Andrej Sirin

Introduction

Arctic peatlands are highly integrated ecosystems that depend on water and permafrost and display their own characteristic biodiversity. Peat accumulation rates are generally much slower in the Arctic than elsewhere. The cold climate not only inhibits decomposition of organic material but also the productivity of mosses (Bryophytes) that play a key role in the formation of arctic peat. External drivers, specifically ice formation and permafrost, may contribute to the configuration of peatland macro- and micro-patterns, given rise to specific morphological peatland types. The relationship between peatlands and permafrost is reciprocal. Peat accumulation is stimulated by permafrost, while peat provides thermo-insulation that helps to protect permafrost in the underlying soil and bedrock.

The presence of peatlands in the Arctic is critical for the maintenance of the current climatic conditions and related biodiversity. The mentioned insulation for permafrost helps to maintain the moist and cool climate. Permafrost is the main ecosystem factor governing the genesis, features, characteristics and functions of Arctic peatlands. The peatland / permafrost system is extremely vulnerable to climate change.

Arctic wetlands provide significant natural ecosystem services as well as goods required by people. They play a crucial role in habitat maintenance, permafrost protection, water regulation, greenhouse gas exchange, primary production and accumulation of biomass.

The Ramsar Convention recognizes peatlands as a wetland type for which a specific management approach is required, which is under-represented in conservation strategies (Ramsar Recommendation VI.6, Ramsar Resolution VIII.17). The Convention on Biological Diversity has stressed the role of peatlands in relation to biodiversity and climate change by adopting the policy recommendations of the 'Assessment on Peatlands, Biodiversity and Climate Change' (Parish et al. 2008; CBD SBSTTA July 2007 Recommendations No XII/5). The 'Assessment' includes consideration of the situation in the Arctic, where peatland ecosystems have a unique role for biodiversity and climate change, but are hardly recognized as targets for management (including conservation).

Population/ecosystem status and trends

The peatlands of the Arctic include typical permafrost systems such as polygonal mires, palsa mires and kettle-hole mires in thermokarst depressions (alases), but also other types such as valley fens and shallow peat tundra. Phase transitions of water (freeze-thaw processes) play a key role in development and maintenance of peatlands by shaping the surface of the landscape. Cracking, swelling and mound formation show a close interplay with thermokarst processes. Due to its hydrophysical properties peat conducts heat when it is wet, but acts as an insulating layer when dry. As a result, palsa mires are found well south of the modern permafrost zone in Siberia (to 55° N). Under the protective cover of peat, ice cores persisted through warm paleoclimatic periods.

Polygon and palsa mires are the most known, most widely distributed and well pronounced peatlands found of the Arctic. Polygon mires are peatland complexes characterised by depressions that are surrounded by low ridges, which in turn may have a crack in the middle. In Russia these polygons are called polygonal tundra, polygonal polar desert or polygonal mires. The Canadian Wetland Classification System distinguishes polygonal peat plateaux (bog/fen) and lowland plateau bog/fen. On CAFF (Conservation of Arctic Fauna and Flora) vegetation maps polygon mires are marked as W2 and G3, G4 in North America and W3, G3 and G2 in Eurasia. Polygon mires mainly occur in the eastern part of the Eurasian Arctic and in the north of North America. In the Russian Federation they make up 5.6 % of the total peatland area (Vompersky et al. 2005).

Palsa mires are peatland complexes of flat and very wet minerotrophic fens and frozen peat mounds with a mineral core. All these elements carry different vegetation. In Russia they are often called "bugristaya" (mounded) tundra or patched tundra, in Canada – palsa bogs and fens, on CAFF vegetation maps palse mires are mainly marked as W1, W2 and S1, S2. Palsa mires occur in areas of discontinuous permafrost in the west of Eurasia, as well as in Canada and Alaska where they are also known as "pingo". In the Russian Federation they make up 14.6 % of the total peatlands area (Vompersky et al 2005).

A wide range of ecosystem types is classified under the term 'shallow peat tundra'. In floodplains sedge fens and treed fens are found in different combinations. Peatlands in different stages of terrestrialization of thermokarst lakes (so called alases) are typical for eastern Siberia.

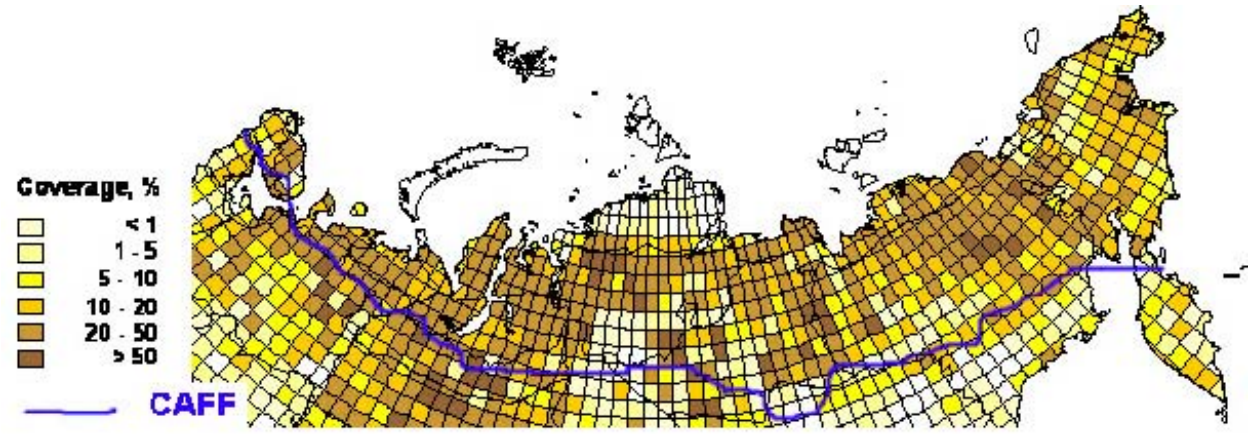

Figure 1: The proportion of peatlands within the CAFF territory (after Vompersky et al, 2005)

Figure 2: Polygon mire from above and on ground

Figure 3: Palsa mires from above and on ground

Figure 4: Peat covered landscapes with shallow peat tundra (centre) and sedge fens (right)

Arctic ecosystems are characterised by a low diversity at the species level. Yet typical Arctic species are highly specialised and intimately linked to their habitats. Habitat changes will certainly lead to losses amongst these species. The large group of boreal species, on the other hand, will readily be integrated into the new ecosystem types that are expected to establish as a consequence of changes in climate and environment (IPCC 2007).

In the Arctic (e.g. on the Yamal Peninsula) and subarctic (e.g. on Komi), the total number of species is small and the acreage of peatlands is large. Here, typical peatland species comprise 20–30% of the total flora and peatlands significantly support floristic diversity (Parish et al. 2008). The short growing season and uneven rate of metabolism (intensive within a short summer period) mean that the ecological niche capacity of Arctic peatland species is limited and annual production relatively low, so that communities have low resistance to disturbance and restricted potential for restoration.

Arctic peatlands provide habitats for many migratory species, and are often referred to as 'the source of all flyways'. Thus, the biodiversity status of the entire world is linked to Arctic habitats through bird migration routes. In just the European part of the Arctic, there are more than 60 bird species with conservation priority, 75 per cent of which are strongly associated with tundra and mire habitats. Almost all of these bird species are threatened especially by hunting (Minayeva & Sirin 2009).

Traditional use of peatlands in the Arctic, such as grazing, hunting and berry picking was sustainable for many years, and in the recent past was still largely in harmony with the natural ecosystem. New technologies have provided the means to overcome challenges presented by the harsh Arctic environment, leading to rapid and widespread industrial development. Apart from expansion of the oil and gas industry, even traditional land uses such as reindeer herding are being industrialized. The impact of transport infrastructure increases substantially and there is a danger that the pursuit of Arctic resources will result in unsustainable development ignoring environmental needs.

Indigenous communities that depend on wild peatlands are most vulnerable to peatland degradation. Peatlands include some of the last remaining wilderness and vast natural resource areas of the world, with huge undisturbed stretches in the sub-arctic and arctic zone. Development in such areas often ignores the special hydrological and ecological characteristics that are central to the productivity of these peatland areas.

Concerns for the future

Climate change is likely to affect Arctic peatlands seriously. Climate warming and associated thawing of permafrost will cause arctic peatlands to release the greenhouse gas methane and thus create a feedback for climate change and biodiversity globally (Parish et al, 2008). Their form and function are among the most important peatland biodiversity values and depend strongly on the climate regime in which they occur. Landforms associated with arctic peatlands such as polygonal patterns and palsa mounds are only possible when winter temperatures are low enough. In this way the climate exerts a fundamental control on ecosystem biodiversity in peatlands.

The extent and duration of permafrost in northern peatlands is decreasing. In northern Manitoba, a regional warming of 1.32°C has caused accelerated permafrost thawing. In Arctic Canada the southern limit of permafrost in peatlands has moved north by 39 km on average and as much as 200 km north in some places (Parish et al. 2008).

However, changes in permafrost are not exclusively linked to temperature rises. Rapid permafrost melting since the late 1950s in Quebec is a result of increased snow precipitation and insulation of the surface rather than a rise in temperature, which did not occur until the late 1990s (Parish et al. 2008). This was accompanied by an increase in peat accumulation rates, paludification of affected areas and terrestrialisation of thermocarst ponds.

The southern limit of permanently frozen ground, or permafrost, is now 130 kilometers further north than it was 50 years ago in the James Bay region, according to research by the Université Laval in Canada. In a recent issue of the scientific journal Permafrost and Periglacial Processes, Serge Payette and Simon Thibault suggest that, if the trend continues, permafrost in the region will completely disappear in the near future.

While climate change is the most probable explanation for this phenomenon, the lack of long term climatic data for the area makes it impossible for the researchers to officially confirm this. However, the average annual temperature of the northern sites he has studied for over 20 years has increased by 2 degrees Celsius.

Source: Université Laval

Small changes in precipitation, snow cover and temperature thus cause a step change in the system. Progressively milder winters may already threaten the prolonged existence of frozen palsa mounds because of the thicker snow cover caused by increased precipitation. Increasing summer temperatures in the Arctic may result in the northern tree line migrating to higher latitudes supporting tree expansion on peatlands. This could decrease the albedo (reflectivity) of the surface, further enhancing warming of the atmosphere. Tree lines have varied in the past but recent evidence suggests that northern tree lines are already experiencing northward shifts as a result of recent rises in summer temperatures (ACIA 2005). Where peat growth is currently limited by productivity as a result of low temperatures at

high latitudes and altitudes, there may be an expansion of peatlands in topographically suitable locations. The changing balance between precipitation and evapotranspiration will result in alterations to river flows and their seasonal variability. These changes will affect peatlands in floodplains and lake margins through more dynamic flood regimes from increased intensity of rainfall and droughts.

The growing interest in Arctic resources means that the effects of climate change are increasingly combined with active ecosystem transformation, landscape fragmentation and species losses due to human activities. Oil and gas infrastructure development has a particularly pronounced impact as it entails changes in hydrology and albedo in vast remote areas. The effects of climate change can be significantly exacerbated by human impacts and Arctic peatlands are hard to restore once they are damaged.

Peatland degradation due to both climate change and different land use practices results in increased loads of dissolved organic matter (DOM) in rivers. This increase will impact on riverine biodiversity and on permanent ice in Arctic seas. There is a significant gap in knowledge here.

Conclusions

Arctic peatlands are not yet recognised as specific and valuable ecosystems in need of special management approaches. The poor information background and consequent low level of understanding of peatland values, diversity, distribution and ecosystem services has led to low awareness of peatland conservation needs. Arctic peatlands should be recognised as extremely valuable, fragile and threatened ecosystems which demand a specific management approach and a much higher level of attention for biodiversity conservation than they enjoy at present. The key actions in Arctic countries and globally to protect arctic peatlands are i) awareness raising and education to help recognize peatlands and their values, ii) studies and monitoring to fill gaps in knowledge on ecosystem processes and feedbacks and iii) development and implementation of management practices.

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Peatlands in the eastern Mediterranean region: some observations on present condition and conservation.

by Richard Payne

Over the last five years I have been fortunate enough to visit several peatlands and other wetlands around the eastern Mediterranean region. It may be something of a surprise to people used to northern European or North American peatlands that there are peatlands at all in these more arid countries (it was to me!), but a little searching uncovers numerous sites, many of them rather unique and interesting. This short note outlines a few observations of peatlands in the region, their current condition and future threats which may be of interest to readers of the IMCG newsletter.

Nature of the peatlands

Peatlands are, or have been, present in most of the countries bordering the eastern Mediterranean Sea (with the possible exception of Syria). The vast majority of these sites are minerotrophic with water supplied by streams and rivers, springs, or adjacent lakes and ponds. Vegetation consists of a wide variety of reeds, rushes and sedges. More oligotrophic peatlands are present in some regions where altitude and/or impermeable bedrocks have limited seasonal desiccation. Such sites may be bryophyte-dominated and even include *Sphagnum*. Examples are to be found in the White Mountains of Crete, the Rhodope Mountains of NE Greece and the Soğanlı Dağ Mountains of Northeast Turkey. True bogs are rare indeed, but at least one *Sphagnum*-dominated ombrotrophic peatland is recorded, the Sürmene Ağaçbaşı Yaylası peatland in northeast Turkey. The peatland inventory is so poorly known that it is not impossible that other ombrotrophic sites are waiting to be discovered.

The Elatia Mires in NE Greece, one of the better-preserved and more oligotrophic peatland complexes in the region.

Importance of the peatlands

With a lot of current peatland conservation emphasis on the preservation of carbon stores there is a danger that sites like these may be overlooked. Peatlands of the eastern Mediterranean are generally so small and widely scattered that they are insignificant in terms of their carbon store but form a very important component of regional biodiversity. A single peatland may contain the only example of some wetland plant species in a country or region (e.g. Byfield and Özhatay 1997). The wetlands in these arid areas are essentially islands within a sea of drier land and there are some important examples of endemism among their species, for instance the grass Poa asiae-minoris in a Turkish mire (e.g. Scholz and Byfield 2000) and the fish Aphanius sirhani in a Jordanian wetland. It would not be a surprise to me if there are many further examples waiting to be discovered, particularly among more obscure groups of organisms.

Human impact on the peatlands

The greatest human impact on the peatlands of the region has undoubtedly been drainage for conversion to agricultural land. The majority of peatlands in the region, and almost all the peatlands in lowland areas, have been drained for agriculture (e.g. Bouzinos et al. 1994; 1997; Hambright and Zohary 1998; Papazisimou et al. 2005). For instance, it is estimated that 87% of the peatlands in Turkey have been lost (Çayci et al. 1998; Byfield and Özhatay 1997). This drainage is not all recent, Christanis (1996) mentions Bronze-Age (Mycenaean) drainage of a peatland in southern Greece. However, the majority of sites were drained in the first half of the 20th century as populations expanded and mechanisation made the task of wetland drainage easier. Agriculture on these drained peatlands has faced many of the same problems across the region: oxidation of peat, subsidence, dust, fire, and the need to apply large quantities of fertilizers.

Many minerotrophic sites with water supply from streams and lakes are affected by nutrient input into these water bodies. A case in point is the Ioannina peatland (Christanis 1996) adjacent to Lake Pamvotis in north-central Greece which has probably been affected by sewage input into the lake from the city of Ioannina. In Israel the Hula Nature Reserve (a preserved fragment of a once much larger peatland) has been heavily affected by the supply of eutrophic wastewater from fish farms (Dimentman et al. 1992).

Another potentially significant human impact is fire. The Asi Gonia peatland in Crete is believed to be frequently disturbed by fire (O. Rackham, pers. comm.) but the situation in other sites is unclear. It is certainly the case that the oxidised peats of many drained peatlands are heavily affected by fire leading

to considerable problems for agriculture. While fire is a natural process in Mediterranean ecosystems, human activities have clearly exacerbated the occurrence and impacts, as demonstrated by the devastating 2007 fires in Greece.

Agricultural landscape of the drained Aghios Phloros Fen in SW Greece.

Several sites are grazed to some extent. Many of the sites in mountainous regions have some grazing by sheep while in other sites there is also grazing by cattle or wild animals. In most locations the apparent impact of grazing is limited and peripheral with some physical disturbance of peat and perhaps minor nutrient enrichment. In at least one case impacts seem more severe. In the Asi Gonia peatland there is extensive trampling by sheep leading to considerable physical disturbance and some areas of bare peat. This site contains the most southerly *Sphagnum* in Europe and a unique palaeoecological archive; its poor condition should be a concern.

Unlike northern Europe peat-cutting is not a widespread problem in the region. As peatlands are generally rare there is little culture of peat-cutting and as the peats are mostly minerotrophic their fuel quality is often low. The most notable example of disturbance by cutting is the Sürmene Ağaçbaşı Yaylası peatland where peat has been hand-cut for at least the last 30 years (Byfield and Őzhatay 1997). Payne et al. (2007) estimated the volume of cut-peat being dried on the surface of the bog and in the surrounding area to be almost 120 m^3 in 2006. There are no large areas of deep peat without signs of cutting and the disturbance to the site is extensive. Peat has been cut to a limited extent in some other areas. There is some cutting for horticulture of the Yeniçağa fen in Turkey while there was historically some cutting of the Phillipi peatland in northern Greece for fuel (E. Kiritatzi pers. comm.). In the Hula peatland of Israel there was some experimental cutting in the early 20th Century.

Peatland conservation and value

The extent to which the peatland sites are conserved and presented to the public varies widely. The remaining fragment of the Hula wetland and a nearby restoration project are hugely popular and include visitor centres, bird hides, information boards and even 3D video presentations. The Hula restoration project is enclosed by an access road with numerous visitors viewing the wetland from golf carts! These sites receive thousands of visitors annually and have a very well developed tourist infrastructure making a significant difference to the local economy. Perhaps surprisingly, the remains of the Azraq wetland in Jordan has a network of boardwalks, bird hides and a very well-presented visitor centre detailing the natural history and recent human impact on the site. Other sites show some limited attempts at conservation and public engagement. The Elatia Mires of northern Greece and the mires of the Troodos Mountains in Cyprus have at least been deliberately enclosed, and the former is equipped with information boards (Christanis et al. 2008). By contrast, the majority of sites show no indications that they are considered valuable or interesting places by national or local authorities, or the people of the area. Many such sites are being actively destroyed.

The sad remains of part of the Azraq Oasis, Jordan, all-but destroyed by water abstraction.

The variable picture of peatland conservation and public interest in peatlands is paralleled by a variable level of scientific interest in peatlands in the region. There are some local scientists and research groups working on the sites – the group at the University of Patras in Greece for instance – but overall, peatlands in the region are under-researched. Peatland research is perhaps inevitably a low priority in countries where peatlands are rare and there are often many more pressing environmental issues. Nevertheless there is a great deal of potential for interesting research. Even much basic inventory work is still to be done, and many of the sites are interesting by virtue of their unusual vegetation, structure and biogeographical setting. I suspect that more work on these sites might challenge some of our preconceptions about peatland functioning based on northern peatlands.

Future threats

Much of the peatland (and wetland more generally) destruction to date has been with the aim of providing agricultural land. With increasing population pressure and a general increase in climatic aridity it seems likely that the main pressure on wetlands may shift towards water resources. The most dramatic example of this pressure is provided by the Azraq wetland in the eastern desert of Jordan. This extensive wetland area was an important site for bird migration and home to the endemic Azraq killifish (*Aphanius sirhani*) and several other rare taxa (e.g. the cladoceran *Daphnia triquetra:* Scates 1968). From the 1980s the water table of the site dropped drastically with water abstraction, primarily to supply the growing city of Amman. By 1993 no surface water remained. A similar example is found in the mountains east of the Dead Sea where numerous small spring-fed peatlands lie along a fault line. Several of these sites have been excavated in the recent past to access water sources (C.Rambeau, pers. comm.). Water is in short supply throughout the region and its use is frequently a highly politicised issue (nowhere more than Israel/Palestine) with nature conservation generally a low priority.

It is clear that the politics and history of the region have determined the fate of peatlands through the twentieth century. The population exchange between Greece and Turkey in the 1920s and consequent pressure on agricultural land was certainly a driver of wetland drainage. The drainage of the Hula wetlands, although conceived earlier, was not implemented until after the foundation of the state of Israel when it was viewed as a great national project of the new Jewish State (Dimentman et al. 1992). It is probable that the changing politics of the region will continue to affect the peatlands into the future.

The Hula Nature Reserve, a preserved fragment of a large peatland/wetland complex in northern Israel.

A serious concern must be the sensitivity of these peatlands to future climate change. Many of the sites are at the very extremes of where peatlands can exist, and therefore highly sensitive to climatic change. The meteorological record suggests increasing aridity in many regions over the last few decades and this can be expected to increase in severity. Palaeoecological study of two small peatlands in northeast Greece has shown changes which could be interpreted as a climate-forced lowering of water tables (Payne and Pates 2009). Climate change may lead to the drying of peatlands and oxidation of peat, with increasing anthropogenic pressure on water resources likely to compound the problem. The peatlands of the eastern Mediterranean are fascinating places, visit them while you can!

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Can South Africa afford the demise of it natural carbon and water stores for the sake of short-term economic gan?

by Lani van Vuuren

Despite local and international efforts, South Africa's peatlands continue to be threatened by an array of social and economic pressures. Peatlands are known for their ability to mitigate global climatic impacts through their ability to store carbon. They also act as huge stores of water – around 10% of the world's freshwater is contained in peatlands. Furthermore, these wetlands are hotspots for biodiversity and home to many endangered species.

Millions of people live in and depend on the world's peatlands for their livelihoods from grazing cattle and harvesting reeds to cultivation and catching fish. Unfortunately, these wetlands – like other natural systems – are subject to increased exploitation and degradation. Globally, peatlands are being destroyed at a rate of about 4 000 km^2 per year mainly as a result of agriculture, forestry and peat extraction. It is estimated that a quarter of all the peatlands on Earth have already been destroyed.

By far the majority of peatlands occur in the Northern Hemisphere and less than 1% of the world's peatlands are found in southern Africa and South America. In South Africa, peatlands are a rather rare and unique wetland type. It is estimated that only about 10% of South Africa's wetlands contain peat.

Still, despite this low global percentage South African peatlands occur in a variety of landscapes contributing to a rich diversity of peatlands and mires, varying from the interdune tropical swamp forests on the east coast to percolation mires in the interior on the southern African plateau and the palmiet peatlands in the Cape Fold Mountains.

Eleven peatland eco-regions have been described and occur mainly in the (wet) eastern, central and southern parts of South Africa. More than 460 peatlands can be found in these eco-regions, the vast majority (60%) occurring in Maputaland. The largest peatland in the country is the Mkhuze Delta which, together with the Mbazwana swamp forest, form the largest mire complex in South Africa (about 8 800 ha in extent). Also to be found in this region is South Africa oldest peatland – the Mfabeni Mire, which at 45 000 years old, is one of the oldest active peat accumulating wetlands in the world.

Benefits forgotten

Apart from the rich biodiversity they support, their water filtering and storage capabilities are perhaps the most important functions derived from peatlands in South Africa. Peatlands mitigate peak flows and act as a natural filter, highly effective in removing sediment, pollutants and pathogens.

In the Tshwane Metropolitan Area intense rehabilitation has restored the Rietvlei wetland complex which had lost much of its function due to past agriculture, water abstraction and peat mining. Research has shown that these wetlands – through their water purification function - reduce algal growth thereby reducing the city's water treatment costs.

Rural communities have long relied on peatlands to provide them with clean drinking water, and historically small wells were dug on the edge of peatlands and fenced off to prevent muddying by livestock. People also use peatlands for subsistence agriculture and grazing of livestock. In addition, the reeds and sedges that grow on peat have traditionally been harvested and used for weaving and thatching.

These activities are not unsustainable when undertaken on a small scale, but together with larger economic pressures South Africa's peatlands are being degraded at an unprecedented rate. Today, around 40% of the rehabilitation of Working for Wetlands is centred on peatlands.

Agricultural and forestry activities have traditionally been the greatest threats to South Africa's peatlands. Forestry, a stream-reducing activity, targets the exact high-rainfall areas where peatlands are normally found while in agriculture wetlands were, until recently, viewed as 'wastelands' of no value unless drained, excavated or cultivated.

The important role of peatlands as part of the natural landscape is often not realised until it is too late. The Cape Fold Mountains are home to a unique set of wetlands characterised by Palmiet and peat. These wetlands play a crucial role in flood attenuation, trapping sediment and slowing down water flow. When cultivation and urban infrastructure led to the draining and degradation of the peatlands, it severely altered their flood attenuating ability leading to severe erosion and the washing away of precious agricultural land.

Tens of thousands of tons of peat have been extracted from South Africa's karst fens outside Ventersdorp and Potchefstroom for the mushroom and horticulture industries. Historically more than 90% of peat used in the mushroom sector was mined locally. However, thanks to a decision by the South African Mushroom Farmers Association (SAMFA) in 2007 to cease the use of South African peat local demand has dropped significantly and only two peat-mining operations remain.

Since peatlands are interdependent on the surrounding landscape they are vulnerable not only to direct impacts but to indirect influences as well. Excessive groundwater abstraction has caused the Bodibe peatlands in North West to dry out. Burning for grazing by the local community caused the peatlands to start burning. While multi-million Rand rehabilitation efforts managed to cease the fire temporary, the peatlands are now burning again. Not only is the local community exposed to smoke from the fires, it is also endangering their lives as well as the lives of their livestock.

New onslaught

The country's hunger for resources and commodities is putting many previously untouched peatlands at risk, especially in the Highveld and Central Highveld peatland eco-regions. Uncontrolled exploration has already caused damage to many peatlands in these areas. Among the peatlands under threat from prospecting and mining licence applications is the Chrissiesmeer Lake District, Wakkerstroom, the Verlorenvlei Ramsar site and the Lakenvlei Wetland Complex.

One of South Africa's larger peatlands, Lakenvlei, provides an important habitat to several important species, such as the rare white wing flufftail (*Sarothrura ayresi*) which migrates from Ethiopia. The other South African peatland frequented by this shy bird, the Watervlei mire, on the Drakensberg escarpment, will be inundated by Eskom's Ingula Pumped Storage Scheme.

Short-term gain, long-term loss

On the east coast of South Africa, peatlands are steadily being destroyed through uncontrolled activities of local communities. Encroachment by local farmers increasingly threatens the survival of the country's peat swamp forests.

Swamp forests are highly threatened ecosystems in South Africa, being the second-rarest forest type in the country. It is only found in isolated patches from the Mozambique border to just south of the Msikaba River, in the Eastern Cape. Still very little is known about the vegetation composition, structure, and functioning of these swamp forests due to their remoteness and inaccessibility.

But will we ever get the chance to study them? Every day more of this unique habitat – a haven for several rare species – is being drained, burnt, and farmed. Fields of bananas, amadumbes and other crops – some up to commercial scale – are becoming a common sight, some being planted inside proclaimed conservation areas. After a few years the sites become unsuitable for cultivation, so that the damage steadily affects new areas. Aerial surveys have also revealed an increasing number of community *Eucalyptus* woodlots. The trees tap into the regional water table of the primary aquifer, resulting in the desiccation of the wetlands, and in some cases, the burning of the peat.

The peatlands are an important source of fresh water, however, and draining them inadvertently affects the water supply of the local population, especially in times of drought. Peat as a resource for clean drinking water is probably much more important than any of the other uses, especially in remote rural areas. Its value in terms of commercial exploitation must be weighed up against the value of permanent and clean water. While it is recognised that the local communities depend on this ecosystem for survival, the continued damage to swamp forests will not only destroy the ecosystem and its biodiversity, but also the subsistence base of the communities depending on them.

The illegal and uncontrolled expansion of Eucalyptus plantations poses a severe threat to wetlands in Maputaland. The trees tap into the regional water table of the primary aquifer, which results in desiccation of wetlands. Peat fires are evident in many plantation areas (even legal ones) (Photo: Piet-Louis Grundling).

The Water Research Commission (WRC) is funding projects worth several million Rand in peatlands, including the Mfabeni Mire. Among others, WRC research has shown that water from the Mfabeni Mire flows into Lake St Lucia, providing freshwater refuge for biota in times of drought. With looming climate change wetlands such as this will play an even more important role in maintaining the biodiversity of this World Heritage Site. Research is focusing on quantifying the water balance of the peatland, the contribution of freshwater to Lake St Lucia and evaluating the effects of climate change and land use on the water flux.

Political quagmire

Contributing to the lack of control over the exploitation of peatlands is South Africa's lack of a specific wetland Act. Wetlands are protected under the legislation of the departments of Agriculture, Forestry and Fisheries (DAFF), Water Affairs & Environmental Affairs.

There are many gaps and overlaps in South African wetland legislation. This, coupled with challenges regarding coordination between national departments as well as provincial departments which must implement legislation results in a situation where peatlands are at risk.

The DAFF Peat Working Group monitors peat mining in South Africa. Through the actions of this group, established in 1997, several illegal peat-mining operations have already been stopped. Peat extraction is now a listed activity under the National Environmental Management Act, which means that any intention to extract peat must be foregone by an Environmental Impact Assessment.

Another problem in the management of peatlands is the lack of skilled resources on the ground. When

culprits are caught in the act, it becomes difficult to obtain convictions. How do you convince a prosecutor of the importance of a case where a peatland is being degraded or destroyed when he is already overwhelmed with other serious non-environment related cases?. Those found guilty usually only pay a marginal fine. All this while a system, which has developed over thousands of years, ceases to function.

The management of subsistence farming on communal land is a grey area and, in many cases, a political hot potato. No one wants to see a family go hungry, even if this does mean that part of a peatland is being destroyed. This situation is now being exploited by unscrupulous developers who drain and cultivate large tracts of peatland in communal areas. While they rake in huge profits, the affected community loses the services of the ecosystem they have depended on for hundreds of years.

The relevant departments are now in the process of signing a Memorandum of Understanding with the view of improving the situation.

Peat swamp forests are one of the rarest wetland types in South Africa. Uncontrolled draining and cultivation of swamp forests has brought them to the brink of extension outside the boundaries of conservation areas. Note the lighter green areas (bananas) within the remains of the swamp forest (Photo: Piet-Louis Grundling)

A modified version of this text appeared in The Water Wheel (Vol. 9, No 4), published by the Water Research Commission.

Review of Peatland Voluntary Carbon Standard

The Voluntary Carbon Standard Association (VCSA) has opened a public consultation on the proposed inclusion of Peatland Rewetting and Conservation (PRC) under the VCS Agriculture, Forestry and Other Land Use (AFOLU) program.

Conversion and drainage of peatlands and peat fires cause significant emissions of CO_2 and other GHGs globally. To date, there has been no comprehensive global set of guidelines for the development of GHG emission reduction projects on peatlands. The proposed PRC guidelines would expand the scope of the AFOLU program to include PRC as a new AFOLU project category as well as other AFOLU project types implemented on peatlands.

The proposal has been developed by consultants convened by the VCSA, including IMCG members, has undergone peer review, and is available at http://v-c-s.org/docs/VCS-Program-PRC-Public-Consultation-Document.pdf

The public consultation is open until 19 July 2010.

Regional News

News from Senegal

The Minister of Mines, Industry and processing of agricultural products, Ousmane Ngom, has announced another peat oven plant will be built in the Niayes area in NE Senegal. The plant will supply peat ovens to households and industries. Peat is seen as an alternative to the expensive butane gas currently used in households. The Niayes area is expected to provide 52,000 tons of peat per year. The Senegal government has ordered 500 000 peat ovens from Brasil as an alternative for the less efficient wood stoves used in Senegal households.

Promotion of peat fuel is expected to lead to a reduction of forest-clearing. On the other hand, such a large scale use will have significant other environmental impacts on the natural areas and their biodiversity and on quality and amount of available water. Moreover, conflicts with agricultural land use are likely to occur as well.

News from the EU: Forest conversion for biofuels?

The EU Parliament has formulated sustainability criteria to prevent forest loss for biofuel production. Now, a leaked draft document shows how the European Commission intends to allow and support conversion of for instance rainforest areas into oil palm plantations to produce biodiesel.

NGOs have urged the European Commission to alter their broad definition of "forests" as it conflicts with the green intentions of the EU Renewable Energy Directive, violates UN-definitions and is scientifically incorrect.

At the end of 2008, the European Parliament formulated sustainability criteria in the EU Directive that is promoting the use of biofuels. One of these criteria is to exclude biofuels from any support if produced on recently converted "continuously forested areas". This would limit the rate of loss of forest and peat soils for conversion into for instance oil palm plantations for biodiesel production. Now, this criterion is undermined by the civil servants of the European Commission, under pressure of the Southeast Asian Palm oil lobby.

In a leaked European Commission document on the implementation of the EU Renewable Energy Directive, palm oil plantations are defined as "continuously forested areas". This would make the criterion to prevent forest loss a dead article: logging of a rainforest to establish an oil palm plantation for biodiesel would be just fine.

Treating oil palm plantations equal to natural forest is not in line with the United Nations Food and Agriculture Organization's (FAO) definition of forest to which the EU Directive of Renewable Energy refers. This definition excludes palm oil plantations from the definition of forests.

Oil palm plantaton on peatlands in Central Kalimantan, Indonesia (photo Alue Dohong).

Conversion of natural forest into monoculture plantations would lead to significant losses of biodiversity and of stored carbon. The amount of carbon stored, as plantations grow, never matches that lost from clearing the large carbon stores in natural forests. Not distinguishing between natural forest and plantations would give oil palm producing countries like Indonesia and Malaysia free game to continue to destroy their forests, drain their peat swamp forest and replace these by industrial tree plantations such as oil palm, while still receiving biofuel support in Europe for their harvests.

This problem is worst in Southeast Asia with the conversion of tropical peatswamp forests into palm oil plantations.

Recently, the Forestry Ministry of Indonesia has been looking into a decree to include oil palm plantations in the forest sector to comply with international standards in mitigating climate change. Malaysia, the world's second biggest palm oil producer after Indonesia, has already included oil palm plantations in its forest sector. By doing so, Malaysia can reap financial incentives from the UN Framework Convention on Climate Change (UNFCCC) of carbon trade.

Source: Wetlands International, Jakarta Post

EU biofuel policy prevents wetland loss?

After a long process since the adoption of the Renewable Energy Directive (see previous Newsletters), the European Commission has now made clear that biofuels produced or imported to the EU cannot be produced at the cost of wetlands or peatlands.

In a Communication, a document explaining how the often unclear Renewable Energy Directive needs to be implemented, the European Commission addressed peatlands as follows:

"Raw material should not be obtained from wetland […] and peatland – if the status of the land has changed compared to its status in January 2008.

"For biofuels/bioliquids produced from biomass grown on land that was peatland in January 2008, an exception is possible if evidence is provided that:
– the soil was completely drained in January 2008; or
– there has not been draining of the soil since January 2008.
"This means that for peatland that was partially drained in January 2008 a subsequent deeper drainage, affecting soil that was not already fully drained, would constitute a breach of the criterion.
"Peat itself is not considered biomass."

The question remains of course what difference it makes in terms of greenhouse gas emissions whether a peatland was drained before 2008 or not. The emissions are ongoing as long as the drained situation persists. Incentives to rewet and restore peatlands are thus weakened. The EU seems happy with biofuels from existing plantations on peat soil, even though these biofuels have worse emission characteristics than the fossil fuels they substitute. It is unclear whether and how the ongoing emissions from drainage are included into EU calculations.
In a recent report commissioned by the EU Commission's Trade Unit, the International Food Policy Research Institute (IFPRI) data and scientific assessments regarding emissions from biofuels planted on peatlands have been misinterpreted and used incorrectly, resulting in significant errors and a substantial underestimation of emissions from peat degradation. This underestimation can seriously mislead current policy developments in Europe, the RSPO and the palm oil producing countries aiming to limit impacts of palm oil production on greenhouse gas emissions.
In a recent article Pete Harrison of Reuters addresses the intransparency of the policy developments within the EU, pandering to lobbyists and the apparent disregard of the European Commission for scientific findings. You can read the lengthy but informative article online here: http://tinyurl.com/EUBFuels

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News from the UK: Storing a peatland…

A peatland is to be dug up in its entirety and put into storage for more than 30 years to protect it from destruction. The peat bog on Shetland is in the way of a gas processing facility which is to be built as an extension to the Sullom Voe oil terminal on the island.
The oil company Total has agreed, as part of the deal to be allowed to build the £500m gas facility, to store the peat so that it can be returned at the end of the plant's operational life.
It's estimated that more than 260,000 cubic metres of peat will have to be cut out and moved away to be piled up in "peat terraces" and covered with a layer of vegetation to protect it from drying out. The condition of the peat in the stores will be monitored through the life of the plant to ensure it remains in a suitable condition to be used for site restoration.
There remains uncertainty about whether the peat, which will be stored within the perimeter of the gas plant, will survive the process.

Source: independent.co.uk

News from Russia: From Russia with love…

On 7 and 8 June 2010 the all-Russian conference "The extension of peat, wood and waste use for the purposes of the energy" was held in Kirov (800 km NE from Moscow). The conference was organized by the Kirov oblast Administration, the Russian Peat Society and the Duma of the Russian Federation (lower chamber of Parliament).
The conference was attended by representatives of Federal Ministries, key energy companies, peat enterprises and small business, banks, scientists, engineers and 2 representatives of NGOs (one small business NGO and one environment NGO). The conference was presided by Arkady Dvorkovitch, Assistant to the President of the Russian Federation.
The conference was a follow up of several joint meetings of IPS Russia and the Duma Natural Resources Committee. The output of one of these meetings last year was transformation of the Russian Peat Society into a Partnership in which key peat actors were replaced by politicians in decision making positions. The background of this development is an overlap of two groups interests:
i) the Peat industry in Russia is trying to overcome the decrease in the amount of being cut peat and the severe decline in the peat business in general. They are seeking state support and fringe benefits provided by legislation.
ii) The Duma recently (November 2009) approved the Federal law #261 on the increase of energy effectiveness. Implementation of this legislation needs programs and initiatives. Peat use for fuel was designated as an initiative with a good perspective.

The workshop was very useful for understanding the problem peat poses to Russian policy, administration, resource management and business. The picture appears many faceted and complicated.
Speeches and draft documents demonstrated 1) low knowledge and understanding of the integrity of peat as a natural resource and peatlands as nature objects, 2) contradiction in current legislation and regulations on peat extraction and 3) total ignorance towards international legislation regarding peat, including Russian obligations.
The conference recommended a number of actions to be approved by the federal Government. The measures are supposed to stimulate peat extraction for fuel. Some of them are reasonable, some seem not very wise, but all of them are very contradictive. On behalf of Wetlands International (WI) comments were

submitted to IPS Russia. But since the organisation was overtaken by "strange" politicians we do not expect strong involvement in the discussion. As a first step IPS Russia now decided to cancel the possibility of individual membership in the society. Membership of scientists and NGO members is thus excluded (including WI/IMCG representative Tatiana Minaeva) – so we will loose support of our position in IPS Russia discussions.

It is necessary to mention that the position of the Ministry of Natural Resources and Ecology of the Russian Federation was entirely in line with national and international legislation and met the needs of peatlands wise use. The only problem was that this position was explained only in private as the 'guys' did not allow the representative of Ministry to talk – the level of representation seemingly was too low for the new "Peat Generals".

Unfortunately, interviews with different stakeholders demonstrated that incentives are lacking both for fuel peat extraction as well as for restoration and wise use alternatives. Developments will depend on political will and availability of resources that stimulate the need of good peatland restoration projects with a strong Federal legislative component.

Finally, a bit of additional information on Kirov oblast. The new Kirov Governor Nikita Belykh is the only Governor of the democratic opposition party. He has a strong, well-educated and knowledgeable team. The official Oblast website has English version: http://www.ako.kirov.ru/en/

Kirov Oblast has significant peat resources and large areas of extracted peatlands. The local peat enterprise "Vyatkatorf" is strongly supported by the administration, including economic incentives for the use of fuel peat. The Oblast government has submitted several energy projects under the Joint Implementation umbrella of the Kyoto Protocol mechanism. A very detailed Kirov peat resource inventory has been carried out by Nizhny Novgorod Geological Service (Dr. Salin).

We see the oblast as a good area for cooperation, where we need to develop good incentives for peatland restoration projects.

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News from Indonesia: Funds for REDD

The governments of Norway and the USA have pledged several billions dollars to help Indonesia reduce forest degradation. Norway was the first country that showed a commitment to help finance to reduce emissions in the forestry sector. Countries such as Australia and Germany currently already provide money to run pilot projects on the reducing emissions from deforestation and forest degradation (REDD) scheme.

Indonesia has pledged to cut 26 percent of emissions by 2020 with the total state budget of Rp 83 trillion (US$9 billion) of which about 14 percent would be made in the forestry sector. The country is also ready to reduce another 15 percent of greenhouse gas emissions if other countries provide the funds.

The money from the Norway government is a grant to help Indonesia cut emissions. It is not aimed as offset for Norwegian emissions.

The United States announced US$7 million in support of an Indonesian Climate Change Center that will work closely with national, regional, and local stakeholders in and out of government, linking science to policy on strategic priorities in the climate change area, and focusing initially on emissions from peatlands.

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

PAGES Newsletter, Vol. 18, 1.
The latest issue of PAGES newsletter, a special section on Peatlands: Paleoenvironments and Carbon Dynamics, is now available for download at:
http://tinyurl.com/PAGES18-1

Lindsay R (2010) Peatbogs and Carbon – a critical synthesis. RSPB, 315 p.
This study reviews the impacts of both historic and current land use and management activity including drainage, burning, afforestation, and peat extraction on peatland habitats and the underlying peat store.
Peatlands and the associated carbon store are extremely sensitive to human disturbance, leaving them vulnerable to the effects of climate change and to the way we use and manage them. A number of major peatland restoration initiatives are underway across the UK. These mainly involve reducing livestock numbers, blocking drains, removing plantation trees and re-vegetating areas of bare peat.
The report reviews the impact of restoration on the carbon balance and concludes that intact peatlands are generally climate change beneficial, whereas degraded peatlands are likely to have negative effects on climate because they release greenhouse gases into the atmosphere.
PDF file available for download here:
http://www.uel.ac.uk/erg/Onlinereports.htm

Cornelisse C. 2008. Energiemarkten en energiehandel in Holland in de late Middeleeuwen. Uitgeverij Verloren, 371 p. (in Dutch)
This study analyses the economical and commercial development of Holland in the late Middle Ages, focusing on the fuel market and fuel trade. Energy was of vital importance to this society in which industry, trade and export were expanding rapidly. The brisk commercial and industrial development of Holland between the 13th and 16th centuries coincided with demographic growth and increasing urbanisation, which reached an unprecedented level of 45% by 1500. The countryside was industrialising at this time as well, with less than half the labour force actually involved in agricultural activities; most labourers worked in industry, crafts and trade. The need for energy was amplified by a growing population, together with an increase in building activities and especially the transformation of house-building materials from wood and straw to bricks and tiles. From the 13th and 14th centuries onwards peat was the principal energy source in Holland. Towns were located around the central peat excavation area.
Originally a PhD thesis, an English summary of this study can be found here:
https://openaccess.leidenuniv.nl/handle/1887/12429

Verhagen A, van den Akker JJH, Blok C, Diemont WH, et al. 2009. Peatlands and carbon flows. Outlook and importance for the Netherlands. Report WAB 500102 027, Netherlands Environmental Assessment Agency PBL, Bilthoven, 50p.
Review of the direct and indirect use of peat and peatlands in and for the Netherlands and its climate effects. Horticulture is the main user of peat in the Netherlands. The annual emission of carbon dioxide from peat import for horticulture in the Netherlands is 0.2-0.3 Mton. This is about 0.15% of the overall national carbon dioxide (CO_2) emissions. An additional 0.1 Mton is emitted by peat extraction, transport, and packaging. More than half of the imported peat is re-exported and thus not included in the Dutch emission reports. In comparison heating glasshouses is responsible for about 4% of the total CO_2 emissions.
Effective measures to reduce peat-related carbon dioxide emissions in horticulture include:
- Reworking local agricultural materials into high quality potting soil constituents.
- Avoiding emissions by reducing transport, e.g., via local development of renewable alternatives for peat.
- Burning used peat for energy production.

Almost 10% of the Netherlands is classified as peatsoils, of these soils about 80% is in use as permanent grassland for dairy farming. The CO_2 emission caused by peat oxidation from these areas is responsible for about 2 – 3% of the national CO_2 emissions. A relatively simple way to reduce these emissions is by raising ditch water levels. This, however, has a negative affect on the dairy farming sector. The use of submerged drains combined with raising ditch water levels may reduce CO_2 emissions by 50% and allow for a viable dairy sector. This option, however, requires further study into effectiveness and sustainability. Covering peatsoils with a few decimetres of mineral soil is another (but expensive) option to diminish CO_2 emissions.
It is unlikely that under current management the problems with peatsoils in the Netherlands will decrease. The ongoing subsidence and adjustment of ditchwater levels to the lowered surface will cause increasing upward seepage of,in some areas, brackish or nutrient-rich water. “High water ditches” to keep groundwater levels of built-up and natural areas high sooner or later become less effective or even useless. Due to ongoing subsidence the polders need higher and higher dikes to keep the water out.
As the total peatland area in the Netherlands will continue to diminish, CO_2 emissions from peatlands will also decrease. In fact already a large part of shallow peatsoils have disappeared during the last decades. Areas with an organic layer less than 40 cm are not classified as peatlands but continue to emit

large amounts of CO_2 from the remaining peat for several decades.
Climate change will considerably increase most problems associated with peatsoils in the Netherlands. According to most climate change scenarios, the number of extremely dry years will increase by at least 70% in the next 100 years, leading to increasing subsidence and CO_2 emission rates.
Paludiculture, i.e. agriculture on wet peatlands, has the potential to allow for sustainable exploitation of peatland while reducing emissions or even inducing carbon sequestration in newly formed peat. So far experience with the implementation and exploitation of paludiculture, however, is limited.
Establishing a correlation between economic activities in the Netherlands and the exploitation of tropical peatland is difficult. Values chains are poorly documented and for bulk products that are mixed it is virtually impossible to determine the exact origin of product or raw material. But clearly the Netherlands does import products originating from tropical peat, of these pineapple and palm oil are the best known.
Of the products imported into the Netherlands palm oil is the most threatening to tropical peatlands. The relation between deforestation and expansion of oil palm, however, is weak. Palm oil represent a large development opportunity for countries, farmers and industries, and the socio-economic importance of palm oil in the producing countries is often ignored leading to a stalemate in the discussion.
Given the increasing demand from, e.g., India and China the main challenge is to meet this demand without clearing forests, reclaiming peatland, or exploiting other carbon stocks. A successful strategy could be to increase productivity on already established oil palm plantations. Increasing the per area output can alleviate the pressure on the land. This alone will, however, not be enough, certification and transparency throughout the values chain are needed to gain insight in the origin and impact of production systems and methods and to gain trust of consumers. Unfortunately in many cases certification schemes fail to include smallholders. This is particularly important for Indonesia with a significant percentage of the economic size and area of palm oil linked to smallholder farmers. Understanding decision-making and risk management and how certification and transparency in the values chain will affect farmers is important to avoid market exclusion of smallholders.
PDF available from:
www.pbl.nl/bibliotheek/rapporten/500102027.pdf

Manual for Inventory of Greater Himalayan Wetlands

The Manual for Inventory of Greater Himalayan Wetlands, or GHWI Manual, has been developed to assist governments, professionals, and the public to identify wetlands of national and international importance, and to serve as a basis for prioritising their conservation in conjunction with sustainable management of natural resources, in particular, water, fisheries and forestry, and national development initiatives. There is a broad and growing consensus that wetlands are critically important ecosystems that provide locally and globally significant social, economic, and environmental benefits. Wetland inventory implementation is promoted by the Ramsar Convention as a means to:

- identify the function and values of wetlands, including ecological, social and cultural values;
- establish a baseline for measuring future change in wetlands' functions and values;
- identify where wetlands are and which the priority sites for conservation are;
- provide a tool for planning and management at both practical and/or political levels; and
- allow comparisons between wetlands and management procedures at different levels of management (local, national, and international).

The Manual contains an Introduction (Chapter 1) and a description of the Aims (Chapter 2), followed by the Methods (Chapter 3), and the Information Management System developed for the Inventory (Chapter 4). The largest part of the Manual is dedicated to Chapter 5 which provides step-by-step guidelines, with examples, for data collation at each hierarchical level. The associated data collection sheets for each level are presented in Annex 2.
The manual can be downloaded here:
http://tinyurl.com/GHWI-Manual

Clarke D (2010) Brown Gold: A History of Bord na Móna and the Irish Peat Industry. Gill & Macmillan, 417 p.

This book tells the story of the Irish peat company Bord na Móna in the context of the development of the peat industry beginning in the 19th century. The company is seen not only through the eyes of its board and management but also though those of the employees, trades unions, parent departments and customers.

Ruuskanen E (2010) Suosta Voimaa ja Lämpöä, Power and Heat from Peat – 70 Years of Peat in the Finnish Energy Policy. Vapo Oy, 223 p.

This book tells the story of the Finnish peat and energy company Vapo Oy. The history of the company is strongly connected to peat and peatlands – and now on the occasion of Vapo's 70th Anniversary in 2010, Esa Ruuskanen, a professional historian, has compiled a summary of the role of peat in the Finnish energy policy from 1940 to 2010.
Similar to Ireland, the history of Vapo started with ensuring national fuel supplies during the 2nd World War, which at that time consisted in providing firewood for government facilities. The then-called Finnish State Railways Fuel Office was changed in 1945 to Finnish State Fuel Office (Vapo) taking care of liquid fuel reserves. During the 1970's global energy crisis it became the task of Vapo to develop

peat as energy source. Since then peat has played an important role in power and heat production in Finland.
Following the principle that if you repeat nonsense often enough, people will start to believe it, the book again states that peat is a "biomass energy" whose "combustion is generally considered to be greenhouse gas-neutral because it is part of the contemporary carbon cycle" (p. 34).
The book is not intended to be a history of Vapo as a company, but describes the long and colourful history of the use of peat for energy and the development of public attitude, of course seen from the perspective of Vapo. It describes the internal development of energy policies, dialogues between various interest groups, the development of environmental protection methods, and in general the internationalisation of the peat debate. A detailed picture of Finland's energy policy is drawn, influenced by security, economic and environmental considerations during many decades. The hardcover book is based on extensive archival research material and on interviews of a broad range of decision makers. It is beautifully illustrated with large pictures, graphs and tables in colour and provides overall a very good view into Finnish peat history.
A book rich in information! Regretfully it also persists in the error of the Finnish peat industry that the climate effect of peat burning only depends on definition and classification, refusing factual discussion, and repeating their short-sighted arguments.
The main language of the book is Finnish, but each chapter contains a summary in English. Contact leena.hakulinen@vapo.fi or download from: http://tinyurl.com/HistVAPO.

Klavins M (ed., 2010) Mires and Peat. University of Latvia Press, 214 p.

This book covers recent studies in the field of mires and peat and is written by peatland specialists from Latvia and Poland. The book summarizes existing research on peat and peatlands in these two countries, focussing on peat formation, humfication processes, accumulation of trace elements and humic substances. While the book mainly deals with research into the Latvian mires, it is written in English. The hardback publication can be purchased at www.gramata24.lv or downloaded as PDF file from www.tiny.cc/qzm7d

Bambalov NN (ed., 2010) Flora and vegetation of the national landscape reserve Yelnya. Minsktipproekt, 200 p. (in Russian)

Yelnya is Belarus' largest and most famous complex of bogs and transition mires, comprising numerous lakes and small islands covered by trees. It is located on the watershed of two river basins, with its central part about 7 m higher than the peripheral area and an average peat layer of 3.8 m. Three rivers flow out of the mire, with no streams or rivers entering the complex. Yelnya supports thousands of migrating birds and is an important breeding site for numerous species threatened on a national and European level. Yelnya is also an important source of sustainable livelihood for local people: About 3,000 families from over 50 nearby villages make a substantial part of their living from selling cranberries. Numerous canals and ditches, as well as the canalization of rivers, led to a lowering of the groundwater table and thus to large and almost annual severe fires. The majority of the canals have been blocked recently thanks to projects implemented by APB-BirdLife Belarus and others.
The book has colour maps and photographs; it uses original data obtained in the course of long-term field research and provides insights in hydrogeological features, climate, stratigraphy of peat deposits, flora and vegetation.
For more information contact Dmitry Grumo: zm.hrumo@gmail.com

IMCG Main Board

UPCOMING EVENTS

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

7th SER European Conference on Ecological Restoration
23 - 27 August 2010, Avignon, France
Ecological Restoration and Sustainable Development - Establishing Links across Frontiers
http://www.seravignon2010.org

Raised mire research and restoration - making the link
7 – 9 September 2010, Aberystwyth, Wales
http://tinyurl.com/ccwmire

7th All-Russian Scientific School of Young Scientists Mires and Biosphere
13 – 19 September 2010, Tomsk, Russia
http://www.tspu.edu.ru/ltorf/?ur=1048

Investing in Peatlands: the Climate Challenge
28 – 29 September 2010, Durham, UK
http://iucn-uk-peatlandprogramme.org/conference2010

Peatlands and Water
17 – 19 March, 2011 Plön, Germany
Symposium of the German Peat Society
http://www.dgmtev.de

Responsible Peatland Management and Growing Media Production
13 – 17 June 2011, Québec, Canada
http://www.peatlands2011.ulaval.ca

Joint Meeting of Society of Wetland Scientists, WETPOL and Wetlands Biogeochemistry
03 – 08 July 2011, Prague, Czech Republic
http://www.sws2011.com