INTERNATIONAL MIRE CONSERVATION GROUP

NEWSLETTER

issue 2001/4, December 2001

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

Editorial

This is the last Newsletter of the enervating year 2001, in which major steps were taken in the organisation of IMCG and mire conservation in general. IMCG is now a registered organisation with many official members (incl. you?) and even a bank account. We have started the organisation of our 2002 meetings in France (cf. the programme, the call for resolutions and Main Board membership candidates, and the IMCG chairmanship discussion). The Global Action Plan for Peatlands was guided into safe Ramsar waters, the Wise Use project is getting in its final phase, and the Global Peatland Initiative is already paying off. You can read about all this in this Newsletter.

This Newsletter also contains major papers on peatland occurrences in Amazonia, one of the large white spots on the global peatland map, on the sustainability of peat as fuel, and on the current conflict about peat fuelled electricity plants in Ireland. The latter invited article is a "view from the other side" in order to stimulate discussion and wise use thinking. The Irish Peatland Conservation Council did not manage to react before the deadline of this Newsletter; their view will follow in the next Newsletter.

Many news items are included from all over the world. We thank all contributors for the interesting read produced by all together. Our editing has been as rigorous as always and any mistakes are entirely our responsibility. Please keep sending in material on anything happening regarding mires. Also for information or other things, contact us at the IMCG Secretariat. Address updates should be send to Jan Sliva (sliva@weihenstephan.de). In the meantime, keep an eye on the IMCG web-site: http://www.imcg.net

We wish all of you a very nice Christmas and all the best for 2002: a new year with new challenges for international mire conservation.

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Contents:

IMCG Executive Committee Meeting

Wageningen, Netherlands, 30 November – 2 December2001

The full IMCG-EC used the opportunity of the Wetlands International Congress in Wageningen to meet and discuss current issues internally and with various other IMCG members. Here follows a summary of the most important points of discussion and decisions.

With respect to the evaluation, position and future of the Global peatland Initiative, see elsewhere in this Newsletter.

As the *constitution* is only one year in force, the general feeling was that we should not change too much now. One item, however, has raised discussion already in the first meeting of the Main Board in Quebec, i.e. the question: Should the chairman be elected by the Main Board (as is according to the current Constitution) or by the whole membership? Richard Lindsay has – on our request - prepared a short paper for this Newsletter on the advantages and disadvantages of both approaches.

The elections of the Main Board should already be prepared in March 2002. The EC has decided (following the constitution) that half of the present MB members will step down, but are eligible for immediate re-appointment. By "refreshing" only half of the MB membership, we hope to realize more continuity in IMCG management.

Nominations for election to the Main Board are requested, and nominees should indicate whether they want to fulfil a specific task (chairman, secretary, treasurer, "ordinary" EC member).

As only a small part of the membership will be present on the Congress in France, we will organize the voting by way of mail. If the full newly elected MB is present in France, the new MB can elect the EC and Chairman immediately. If not, the EC will be elected later by electronic voting. The old EC continues its work until the new EC is appointed.

As not everybody is aware of the official decision making procedures within IMCG the Secretariat will prepare a leaflet on these procedures and send them for confirmation to the MB.

The secretariat will also work out the criteria for IMCG *benefactorship* and circulate it for approval to the MB.

A lot of "old IMCG members" have not yet registered as official member, probably because they have overlooked the registration procedure. Jan Sliva will approach them personally. Furthermore he will organize an inventory of members' skills.

The following Newsletters are planned:

- Issue 2001/4 December 2001: with first announcements for the Congress July 2002.
- Issue 2002/1 March 2002: with all preparations for the Congress, with the GPI strategy, and with the call for submitting new GPI proposals.
- Issue 2002/2:June 2002: with the latest issues for the Congress (including voting forms?)

On the basis of the discussions on the basis o preliminary notes, a new full draft of the IMCG strategy will be written and brought for discussion to the Main Board and published in the IMCG Newsletter 2002/1.

The EC discussed with Clayton Rubec intensively on cooperation with the *Society of Wetland Scientists* of America (SWS). A Memorandum of Understanding will be prepared in which the various forms of cooperation will be agreed. The IMCG EC will try to participate in the SWS Annual Conference June 2 – June 7 2002 in Lake-Placid.

We decide to wait with pursuing the Wetlands International Expert Group status until WI has sorted out its current problems. We can also consider becoming an official member of WI.

Our participation in the European Habitat Forum is considered important, also with respect to having direct contacts with the other organizations. A new IMCG representative is sought.

We will contact the new Chairman of the IUCN Commission on Ecosystem Management (CEM) for further cooperation on peatland issues, also in relation to our South-Africa meeting in 2004.

The Wise Use Background Paper is almost ready. Much work is the preparation of an up-to-date overview on the former and presence occurrences of mires and peatlands in all countries of the world. It is expected that the new draft will be posted on the www.mirewiseuse.com website for comments in January 2002. The IMCG/IPS Wise Use Statement has recently been optimized and can be send to the MB for "blessing of".

The schedule for the IMCG meetings in France 2002 has been improved. Both the Conference and the Congress will take place in the Jura at the end of the excursion. Over 50 people have already registered preliminary. The Excursion will be restricted to one full bus (50 – 60 people). For the people who cannot attend the full excursion, some additional excursions can be organized in the Jura in connection to the Conference and Congress.

The Congress Agenda will include:

- The biannual report
- Reports on projects
- Resolutions
- The annual membership fee
- The adoption of the IMCG Strategy
- The Election of new MB members

All decisions to be taken have to be made available to the members in time (e.g. by way of the Newsletter) to enable "distant voting" (by email or snail mail). The planning of the Newsletter will enable that.

Also the preparations on the IMCG Meetings in South Africa 2004 are running smoothly. Jan reports on his preparations with George Bredenkamp and Piet-Louis Grundling. The idea to combine the planning with the meeting of the International Association for Vegetation Science is welcomed.

With respect to Classification and Terminology important contributions from Ron Hofstetter (terminology) and Jan Sliva (classification) are expected for the European Mires Book. Terminology could also be a special topic on the meeting in France 2002.
Because of Henk Zingstra leaving Wetlands International, Mette Risager has been asked to finish the final report of the Central European Peatlands Project. We thank Mette for her involvement.
The Greifswald crew is working vigorously on editing the submitted manuscripts of the European Mires Book. The majority of the European countries have provided a first, or even a second (revised) draft. Other countries have promised to provide their drafts in the next weeks. No firm appointments could until now be made with FYRO Macedonia and Azerbaijan. Some "classic" IMCG countries, however, have up till now not produced the promised first draft.
In the first months of 2002 the revised drafts will be made available for proof and comments to an "editorial board" of IMCG experts.
The database on ecological information of mire plant species is being expanded to include species from over the whole world. The red list data on the web will not be updated, because IUCN has recently changed its criteria to such an extent that it is impossible to keep things compatible. The Prodromus of European mire plant communities under development can also be put as a "living" continuously evolving system on the internet, similar to a Biological flora of mire plant species that some members are considering to start.

IMCG Congress France 2002

Call for Resolutions
It has become a tradition at the biennial IMCG Congress to adopt a series of resolutions that address current topics in mire conservation world wide. These resolutions are addressed to relevant authorities, e.g. governments and international organisations. Many resolutions have had an important effect on mire conservation in various countries.
On previous congresses, the resolutions have been drawn up by IMCG members present at the Congress in a rather hectic process. In order to improve the making of resolutions to be adopted at the IMCG Congress in France 2002, we should - as far as possible - prepare them in advance to give ample opportunity for discussion and editing. If you want to submit a resolution for your country or region on the congress, you are, therefore, invited to prepare an article for one of the next two Newsletters to explain, illustrate, and discuss your proposed resolution. You may also choose to prepare a complete draft resolution. For format consult resolutions on the web (http://www.imcg.net/docum/norway/trondheim.htm) or in the previous IMCG Newsletter. Contact your IMCG secretariat for support.

Call for candidates for the Main Board
On our Congress in France we have to elect a new Main Board. Members (including current MB members) who want to candidate for Main Board membership are requested to nominate themselves by sending a short letter or email to the secretariat. This should include
- a statement of willingness to stand for election for Main Board Membership
- an indication which specific task the candidate is prepared to fulfill (chairman, secretary, treasurer, "ordinary" Executive Committee member, "ordinary" Main Board member)
- some information about the candidate, his/her mire-associated background, and especially information about how he/she sees the future tasks and priorities of IMCG.

This information will be published in the next Newsletters (March/June 2002) to give the membership an overview of the available candidates.
For more information on the tasks of the Main Board and the Executive Committee, consult the IMCG Constitution: www.imcg.net/docum/constitution.htm or contact the secretariat joosten@uni-greifswald.de

INTERNATIONAL MIRE CONSERVATION GROUP

IMCG Symposium France 2002

10-22 July 2002

Global Symposium Programme (13 days):
The excursion consists of a transect from Central Massif of France towards Jura throughout the geographical zones Limousin, Auvergne, Loire, Rhône valley, and Jura.
These zones show mire sites from an oceanic to a continental climate and from plain to mountainous belts (elevation from 200m to 1600m). We will see soligenous mires, limnogenous mires, topogenous mires, mostly with geotrophic and ombrotrophic parts. In each zones interesting natural sites and sites with management programmes will be visited.

Tuesday 9/7/2002: arrival in Paris, transfer from airport Charles de Gaulle (CdG); night tour in Paris (bus).
Wednesday 10/7/2002: Morning: opening meeting in the Ministry of Environment (MATE); afternoon transport to Limousin (Bugeat)
Thursday 11/7/2002: visit sites in Limousin
Friday 12/7/2002: visit sites in Limousin; end of afternoon: transport to Auvergne (by bus)
Saturday 13/7/2002 : visit sites in Auvergne (La Barthe, Plaine Jacquot, La Godivelle, Bourdouze
Sunday 14/7/2002: visit sites in Auvergne (Limagne, Montbar); end of afternoon: transport to Loire (by bus); evening : national day celebration "14 juillet" (Noirétable)
Monday 15/7/2002: visit sites in Loire (Sagne bourrue, La Pigne)
Tuesday 16/7/2002: visit sites in Loire (Vérines); transport to the Rhône valley (Parmilieu)
Wednesday 17/7/2002: visit sites in the Rhône valley (Grand Lemps, Grand Serre, Marterin)
Thursday 18/7/2002: visit sites in the Rhône valley (Lavours, Cerin); transport towards Jura (Besançon)
Friday 19/7/2002: visit sites in Jura
Saturday 20/7/2002: morning: official opening ceremony of the "Pole-relais Tourbières" (national center of documentation about mires); afternoon: visit sites in Jura
Sunday 21/7/2002: morning (9h-12h30): IMCG Congress; afternoon: IMCG conference and posters
Monday 22/7/2002: IMCG conference and posters.
23/7/2002: morning: return towards Paris (high speed train TGV); afternoon: transfer to CdG airport, return-home for congress participants.
Costs of total symposium, including transports, meals and all accommodations: estimated at present 800 euros per person (720 US dollars; (funds will be raised for a limited number of participants of countries with currency problems).

PRE REGISTRATION FORM

to be returned before 31st December 2001, to philippe.julve@wanadoo.fr,
or Ph. Julve, 159 rue Sadi Carnot, 59280 ARMENTIERES (France),
(next information circular and request for definitive registration will be sent at the beginning of 2002, only to people having pre registered)

your status and title (Mr., Mrs, Ms ; Dr)
your name :
your E-mail address :
your postal address :
your phone :
your fax :

Name of your organisation:

Do you want to make a presentation or present a poster during colloquium?
(in this case please give title and short summary (half page) describing content).

Special requirements (food, accommodations, subsidies needs or others…):

The IMCG Chair and the Constitution

by Richard Lindsay

With the untimely death of Ton Damman so soon after my retirement from the post of IMCG Chairman, the IMCG found itself in somewhat murky waters as far as its Constitution was concerned. When drawing up the Constitution we had tried to anticipate all likely eventualities, but not the sudden death of the Chairman while in post. As a result, the IMCG has been somewhat rudderless in some ways during the last year, although it has continued to be busy on many fronts. What it has lacked is a clear figurehead – someone who can represent the organisation as a recognisable presence at a number of high-profile events that have occurred during the year. Some might argue – with good reason – that the IMCG doesn't need a figurehead, that we don't need to appear at such events almost simply for show. I would argue, however, that a recognised presence at such events does a great deal to achieve IMCG's objectives, which is to raise awareness about mire conservation. Being visibly present at important events is rather like being the nagging voice of conscience, reminding everyone there that if they don't remember to consider peatlands and mire conservation in their deliberations, then IMCG will be badgering them later.

The other major benefit of having someone elected as Chair is that it provides the necessary checks and balances within the IMCG Executive. It is well known that the position of Secretary in any organisation is one that confers great power on the holder – just look at almost any political or business organisation. The post of Chair provides an opportunity for someone with vision to give an overall impetus and focus to the organisation, but is also provides a balance to the Secretary's powers. Equally, the Secretary is in a position to ensure that the vision and focus are translated into concrete actions, while at the same time providing a balance to the power of the Chair. The third leg of the stable tripod of the Executive comes from the Treasurer and the two associated Board Members.

In practice, much of the day-to-day work of the Executive is likely to fall to the Chair and the Secretary, no matter how well delegated the system becomes. Under these circumstances, there is therefore a strong argument for ensuring that one or other of these two most active players should be elected through the IMCG Board, but that the other should be elected directly by the whole IMCG Membership. More particularly, the Chair should be someone who already has sufficient respect and recognition from the IMCG Membership to allow the Members to feel confident that they will be well represented by this person at important events. Logically, therefore, the Chair should be the position that is directly elected by the IMCG Membership.

I would therefore propose that the Constitution be amended such that Article 9 allows for the Chair to be directly elected by the Membership at the General Assembly. Thus Articles 9.1 and 9.2 in particular would need to be amended. I suggest that Article 9.1 should say that:

"The IMCG Main Board shall consist of at least eleven and no more than fifteen Ordinary or Honorary Members. The members of the Main Board and the Chairman of the Board shall be appointed from among the Members of the Society. Nominations for election to the Main Board, and nominations for Chairman, must be made by Ordinary Members of the Society in writing and must be in the hands of the secretary of the Executive Committee (see Article 9.2) at least 14 days before the biennial General Assembly meeting. Each nomination must be proposed and seconded by two fully-paid up Ordinary Members and accompanied by a signed statement of willingness to stand for election by the nominated person. Should nominations exceed vacancies, election shall be by ballot of all Members. In these Articles and in any regulations adopted or decisions made pursuant to these Articles, the terms 'ballot', 'vote' and 'voting' shall refer to anonymous voting by secret ballot. It is the responsibility of the recipient Secretariat to remove evidence of the sender's identity from postal and electronic votes before passing these votes to the electoral officials. The duly elected Chairman would be a voting member of the Main Board."

Article 9.2 would then say:

"The general secretary and treasurer shall be elected from the Main Board by ballot of the Main Board Members. In addition, two further Board Members (other than the Chairman) selected by ballot of all the Board Members shall, together with the duly-elected chairman, secretary and treasurer, comprise the IMCG Executive Committee. The Executive Committee is responsible for day-to-day management of the organisation."

Richard Lindsay is Honorary Member and has been Chairman of IMCG.

The IMCG Chair: Membership or Main Board elected?

by Hans Joosten

Because we do not have really much opportunity to discuss this issue in the next two Newsletters, here some rapid thoughts.

I fully agree with Richard that IMCG needs a chairman, to represent the organisation in "official business", to balance the Secretary's powers, and to give an overall impetus and focus to the organisation. I also consent that the Chair should have sufficient respect and recognition from the full IMCG Membership to represent them at important events. This is independent from how a chairman is elected.

The fact that "much of the day-to-day work of the Executive is likely to fall to the Chair and the Secretary" is also no argument for or against how the Chair (nor the Secretary) should be elected. If work has to be done, you have to find people who can do the work, and the question is how to do that in the best way.

Letting the chairman be voted by the Main Board members has the following advantages:

- It allows an optimal selection of the chairman from a large group of elected (and respected) members that represent a wide range of overview/ideas/factions within IMCG. In this way the merits of candidates can be more effectively discussed (there are a lot of things you can say in a Main Board meeting, that you would not say in public). But even more importantly: a chairman can be "identified" that represents a consensus view in the organisation instead of just having the votes of the majority of the members of the organisation.
- It allows an optimal composition of the Executive Committee, because the Main Board members allocate all tasks jointly to the full EC (incl. the chairman). Just because the rest of the Executive Board has to work very closely with the Chairman, the chairman should be part of the "package" of the full EC instead of being "imposed" to the other people who have to do the work. Next to a matter of discussion on optimal task allocation, this is also a matter of compatibility of "personal chemistries". As long as IMCG is not a professional organisation, our IMCG work is a matter of personal dedication and sacrifice, and chemistries play an important role in that. The current EC (and associated supporters) work so effectively (I think…) because we know that we can rely on each other and everybody moves earth and heaven to deliver what he/she has promised.

These aspects are also important because our present constitution and the amendment that Richard proposes only provides for voting between candidates (i.e. selection) when there is an "excess" of candidates. As candidates for chairmanship are generally not abundant, this may imply that the membership either may not vote at all who will become chairman (in case there is only one candidate) or must choose from a limited number of candidates. I prefer a situation where there are 15 potential candidates (i.e. the full MB membership) that has to decide jointly who has to/may do the job. All persons who want to become chairman can always candidate for Main Board membership. If they get "respect and recognition" of sufficient IMCG members, they will be elected in the Main Board. And then the chairmanship is not very far away anymore.

Progress of the Global Peatland Initiative

The Global Peatland Initiative (GPI) had its start and the good news is: we have obtained the chance to get a more or less sustainable financial mechanism for peatlands conservation programs. The "bad" news is that IMCG has to take its responsibility to use that chance properly – and that means hard and consequent work.

At this moment the inception phase of the GPI project is completed. IMCG was involved from the beginning, we used all possibilities to participate in the process but the participation was not always optimal.

The results of the inception phase were discussed in the meetings of the IMCG Executive Committee and the GPI Steering Group in Wageningen at the end of November 2001.

The achievements of the inception phase include:

- The GPI is a real result of long term and consequent work of IMCG and IPS to raise peatland awareness among policy makers, NGOs, scientists, producers and other stakeholders. It is easy to remember times when everybody was just wondering why anyone would finance things related to "peatlands".
- The GPI is the first large international program purely aimed on various aspects of peatlands– and that is a precedent that could be replicated.
- This is the first financial project with the partnership of so different organizations as IMCG, IPS, Wetlands International, IUCN, Alterra.
- It is an example of how several NGOs can act coherently, fast and effectively.
- Approximately 75 % of the projects, approved for financing in this first phase, are adequate from the point of view of the priorities with respect to threats to peatlands. In the large majority of these projects IMCG as an organization or individual IMCG members are involved.

The necessary hurry of the first phase also left procedural things to be improved including
- The strategic planning.
- The development of a clear, adequate and approved system of criteria for project evaluation.
- The organization of the evaluation procedure.
- The feedback mechanism with the organizations represented in the Steering Group.

The GPI SG meeting has set concrete tasks regarding these aspects for the next months. More news on that will follow in the next IMCG Newsletter 2002/1 (March 2002).

Already, 41 project proposals have been submitted to the GPI (see table below). From these, 26 have been selected for support under the current GPI seed funding. For the other projects actions are being undertaken to raise the necessary funds. Programme development is continuing and new proposals are therefore welcome! These will be included in and supported by the GPI's continuing fundraising and promotion programme.

Country	Proponent	Project discription	GPI funding
0b.	WI	Steering Committee, programme development, outreach (e.g. website) and fundraising	75000
1. Global	IMCG ISRIC WDC	Global peatland mapping and terminology	15000
2b.	IPS/IMCG	Workshop IPS/IMCG, April 2001, including the development of Guidelines on Wise Use of Peatlands	30000
2c. Global	WI-ICU	Preparation for proposal for Ramsar Designation Guidelines	11350
2d. Global	WI-ICU	Ramsar Handbook WUG	1500
4. Europe	IMCG	IMCG European mires handbook	20000
5. Malaysia	Alterra Sarawak-FD	Dev. & Mgt Maludam NP	0
6. Malaysia	Alterra/ MARDI	STRAPEAT	0
8. China	WI, GEC	Peatlands and Climate change,	39500
9a. Poland	Univ Poznan	Restoration Carbon Sequestration capacity & biodiversity	35000
9c. Belarus	Min NREP	Belarussian National peatland strategy	5700
9d. Baltics (3 countries)	RHP, local partners	Baltics/ Netherlands Peatland project: sustainable resource use planning	in prep.
10. Indonesia	WI-IP	Sembilang-Berbak Mgt/GEF Block B; Co-financing,	45000
11. Russia	WI-Russia	Russian Peatlands Program	60000
14. Thailand	WI-Thailand	Wise use of peatlands at Phru Khuan Khreng	42500
15. Global	IUFRO/ Alterra	Sustainable forestry on peatland	0
20 Ecuador, S-America	IUCN-NC + Ecosciencia	Paramos: dev. of a tool for decisionmakers	89500
21. Global	IUCN-NC WI & Alterra	CBD Side event on GPI	15000
22. Indonesia Brunei & Malaysia	Dept Forest Ecology, Finland	Carbon emmissions tropical peat deposits	20000
23. Indonesia	GEC/WI-Indonesia	Sustainable Management of Indonesian peatlands (with CIDA co-funding)	15000
26. Asia	IPS-Indonesia	Tropical Peatland Symposium Jakarta	10000
29. Global	IMCG/IPS	IPS/IMCG statement in wise use of mires and peatlands	6000
32. S Africa	Freising Inst & South-African Inst.	South-African project IMPESA	35900
33. Russia	IMCG	Development of peatlands protected areas, Tomsk region	25000
34. Poland	Dept. Env. Sc. & WUR	Workshop on grazing as mgt tool for peatlands in Poland	10000
35. Belarus	Birdlife Belarus	Restoration Yelnia peatland area	22500

VISIT THE NEW HOMEPAGE OF THE GLOBAL PEATLAND INITIATIVE

http://www.wetlands.org/projects/gpi/default.htm

On Amazonian peatlands

Kalle Ruokolainen, Leif Schulman & Hanna Tuomisto

Introduction

The authors of several scientific papers and consultancy reports have pointed out that our knowledge of tropical peatlands is still far from complete. The situation is barely acceptable for Southeast Asian mires, but bad for Africa—and even much worse for tropical South America. Peatland information in this area lags behind that of Europe by at least a century. Hardly any classification on peatland types and mire vegetation exists, let alone information on peat quality, deposit volumes, or accumulation rates.

Some estimates on the global distribution of peatlands give no numbers for the Amazon basin and in fact imply that this region actually does not harbour such environments (e.g., Maltby & Immirzi 1993, Zoltai & Martikainen 1996). In other publications, some estimates are given, while it is admitted that they are based on very scarce data. In one of these (Lappalainen 1996), a mire area of 15,000 km^2 is implied for the Amazon Basin, all placed in Brazil. In another (Andriesse 1988), all Amazonian countries except Peru are said to have areas of "organic soils", the total estimated area being 39,287 km^2. It is not clear what proportion of this area is thought to lie within the Amazon Basin. Nevertheless, we shall argue here that the numbers hitherto held for Amazonian peatland distribution are, in any case, gross underestimates.

We write this article in order to distribute, among people interested in mires, some knowledge on Amazonian peatlands that we have accumulated as a by-product of our rather extensive field work in the western parts of the region (Peru, Ecuador, and Colombia) since 1990. We would like to emphasise, that we have not actively studied Amazonian peatlands, nor made any systematic observations of mires during that work. Hence, the information we provide here on peatland types and their occurrence is rather sporadic. However, we have carried out quantitative inventories of the ground flora, which has forced us to observe the ground quite carefully, and take notes concerning the environment. We have carried out the inventories almost exclusively along line transects that between us sum up to roughly 260 km. In addition to this, we have simply walked at least an equal distance in the forests in order to reach the inventory sites, or for other reasons.

The estimates we provide here on areas covered by peatland in Amazonia are little more than educated guesses. However, in addition to our field experience, we have relied on some literature that seems to have gone unnoticed by previous authors estimating global peatland extent, and on Landsat TM satellite images and local land-cover maps. Therefore we believe that the estimates are better justified than any numbers published for Amazonia so far (we have published the numbers of peatland extent in Amazonia presented here [Schulman et al. 1999], but without most of the notes explaining how we reached these particular figures).

Widespread mire types

A number of publications exist on Amazonian wetlands. A common feature of these treatments is the failure to deal with peat formation. They tend to include descriptions on vegetation physiognomy, floristic composition, and geomorphology, but the underlying soils are not described in detail. Therefore, it is generally held that although there are considerable *wetland* areas in Amazonia, there are no large-scale *peatlands*. One even occasionally encounters a general notion that "because of rapid decomposition, driven by constant high temperatures, peat does not accumulate in the tropics". Of course, neither generalisation is true.

The most commonly noted types of Amazonian wetlands are herbaceous swamps (or "inundated savannah") and swamps dominated by the palm *Mauritia flexuosa* (called aguajal or buritizal in local terminology). The herbaceous swamps are associated with river channels (present or past ones), and mostly referable to as early successional vegetation (Kalliola et al 1991). *Mauritia* swamps occur in various places in the Amazon basin, but are most widespread in the western parts of the region. They may be regularly affected by riverine floods, but they occur also further from current river channels, the water-logged condition then being maintained by a combination of high precipitation and poor drainage. Other types of mire-like wetlands distinguished have been forest swamp and shrub swamp (Kalliola et al 1991, and references therein). All of these types are potentially peat accumulating, but studies on this subject have apparently never been published. However, we know from personal observations that at least the *Mauritia* swamps frequently accumulate peat of some kind.

In Peru, *Mauritia* swamps have been estimated to cover 47,140 km^2, and "hydromorphic" terrain in total 150,000 km^2 (ONERN 1986). On the other hand, Kalliola et al. (1991) estimated Amazonian Peru to harbour a total of 24,900 km^2 of swamp vegetation, which they defined as vegetation on supposedly waterlogged soil that is physiognomically distinct from other forests (they specifically stated that occurrence of peat formation in these swamps is not known).

In the following we describe some of our field observations from western Amazonia of mires that cannot be included in the above described categories.

Observations of previously unknown mires

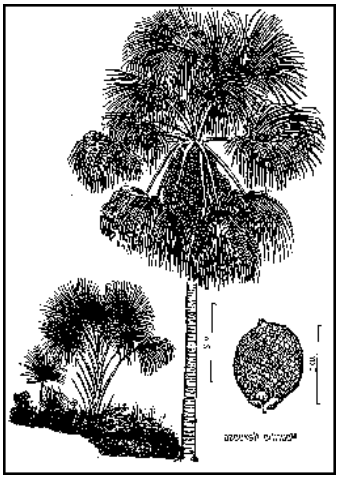
Practically anywhere in the non-flooded dissected terrain, one encounters small more or less water-logged depressions that have accumulated organic material, which usually is rather well decomposed. Typically, such formations are in the order of 0.1–1 ha in size, but in total they cover at least 1 % of the

surface area in these forests. The deepest layer of organic material that we have encountered in a mire of this kind was ca. 180 cm. It was found close to Jenaro Herrera (4°54'S; 73°35'W) in northern Peruvian Amazonia. The vegetation in such places may sometimes be almost void of a tree layer, and dominated by herbaceous plants (Ruokolainen & Tuomisto 1993). These swamps apparently are relatively nutrient-rich, since surface run-off water easily reaches all parts of the swamps. Furthermore, the layer of organic material is usually thin enough for the roots of the plants to have direct contact with the underlying mineral soil.

In southern Peru, Manú National Park, Madre de Dios, we have met two somewhat similar, presumably nutrient-rich mires in topographically flat river terraces (11°54'S; 71°17'W and 11°48'S; 71°28'W), but these were more open and extensive (between 1 and 10 ha). The northern one of these mires was dominated by a *Heliconia* sp., and the other one by a low grass species. The latter had a layer about 40 cm thick of rather well decomposed organic material. It is possible that these mires are inundated during heavy rains.

We have also encountered mires that we suppose are nutrient-poor. In eastern Ecuador we found a mire dominated by the palm *Mauritiella armata* in a part of a former flood plain of the river Dicaro (1°00'S; 76°11'W). The river has changed its course, and left behind a poorly drained plateau in the location of the old flood plain. According to a satellite image interpretation, the mire occupied an area of ca. 1 km^2. We cored this mire rather close to its centre and could not encounter mineral soil with our auger of 2 m. The accumulated organic material was clearly much less decomposed than in the swamps described above. We believe that this mire receives practically all its nutrients from rain water, since the closest hills were several hundreds of meters away, and the floods of the Dicaro probably do not reach high enough to extend up to this area. The thickness of the organic material most probably prevents connection of plant roots with mineral soil. An additional reason to believe that the mire was poor in nutrients was that we found there two plant species that were first records for Ecuador (*Clidemia epibaterium*, *Trichomanes martiusii*) and which we know from Peru and Colombia from habitats with very poor and often imperfectly drained soils.

We have seen somewhat similar, supposedly nutrient-poor mires also in Colombia. These mires were found within the flood plain of the river Caquetá, but next to the bordering upland areas (1°07'S;71°32'W). We believe that these mires (one roughly round of ca. 1 km^2, and several much smaller, elongated in form and therefore possibly following old flood channels of the river) are so far from the course of the river that the river waters do not provide any sediment or other nutrient input to the peatlands. We cored the biggest mire at three points, and it had 50, 80 and 115 cm of organic material, which was relatively poorly decomposed. All of these mires had low tree layers (ca. 5 m) composed of a dense thicket of treelets and dominated by *Graffenrieda limbata* (Melastomataceae), which we have otherwise observed only in forests on nutrient poor white sand soils. Mr. Richer Ríos, a Peruvian forester, has reported to us that he has seen a very similar kind of mire in the northern limit of the flood plain of the Amazon close to the Colombian border (Río Atacuari, ca. 3°50'S;70°45'W). Additionally, we have observed some border cases with which we have difficulties to decide if they should be described as peatlands or something else. In Colombia (south of the river Caquetá, ca.1°10'S; 71°33'W) and in northern Peru (headwaters of the river Itaya, ca. 4°20'S; 73°40'W) we have encountered, typically on hill-tops, forests with a thick layer (around 30 cm) of poorly decomposed organic material. On the basis of extrapolations from satellite image patterns and reports of local Peruvian biologists (Pekka Soini and José Alvarez), these forests may cover >1,000 km^2 in Colombia and >10,000 km^2 in northern Peru. Sometimes white sand soils can also be covered by a similar, roughly 30 cm thick humus layer.



Mauritia flexuosa

Conclusions

On the basis of reported coverage of mires (mostly *Mauritia* swamps), the above described field experiences, satellite image interpretations, and local land-cover maps, we have estimated that in all of Amazonia peatlands cover ca. 150,000 km^2 (Schulman et al. 1999; Table 1). We believe that this estimate is an under- rather than overestimate, but obviously a lot more very basic surveying work is needed in order to refine the number. However, at this point, even more important than to speculate over the possible surface area of peatlands in Amazonia, is to note that Amazonia very clearly harbours a good variety of peat-accumulating ecosystems. The previously described *Mauritia* swamps, open wetlands in the flood plains of major rivers, and small swamps in creek valleys are not the only peatland formations. Additionally there are at least ombrogenous mires both in uplands and in river floodplains, and apparently nutrient-rich open peatlands in flat upland areas. Finally, and perhaps most strikingly, there is the report of the Peruvian forester Juan Ruiz that an open area of ca. 5 km^2 in northern Pacaya-Samiria conservation area (4°50'S;

74°00'W) in Peruvian Amazonia, easily observable in aerial photographs and satellite images, is a *Sphagnum* peat bog with a peat layer up to 7 m thick! It should go without saying that any generalisations concerning the properties of Amazonian peatlands, made on the basis of what we know about, e.g., Southeast Asian tropical mires, are ill-founded.

Table 1: Some preliminary estimates of mire coverage in lowland Amazonia (below 500 m asl). The numbers are rough, conservative estimates based on (1) publications given below in "literature cited", (2) field observations made in connection with floristic studies, (3) land cover maps, and (4) satellite imagery. The numbers include all wetland types described in the text that we know, from personal observations, to accumulate peat (hill-top forests with a thick humus layer are not included; see text).

Country	Amazonian area[1)] (1000 km^2)	Mire area (1000 km^2)	Mire /Amaz. area (%)
Brazil	4,600	55.0	1.2
Peru	600	50.0	8.3
Colombia	200	10.0	5.0
Ecuador	50	5.0	10.0
Bolivia	200	?	?
Venezuela	200	10.0[2)]	2.5
Guyana	200	8.1[2)]	?
Surinam	160	1.1[2)]	0.7
French Guiana	90	1.6[2)]	1.8
TOTAL:	6,300	150.0	2.4

[1)] rough consensus of various published numbers
[2)] figure given by Andriesse (1988)

This presentation can do little more than show how pitifully incomplete existing descriptions of Amazonian peatlands are. Hopefully the realisation of this situation functions as a source of inspiration to survey Amazonian mires. Even very basic observations of thickness of peat, its state of decomposition, and drainage conditions of just a few peatlands would greatly enhance our understanding as, at least to our knowledge, such descriptions do not exist even for a single Amazonian mire. More sophisticated studies on, e.g., floristic composition, carbon exchange, or mapping using remote sensing techniques would then start a completely new era in understanding Amazonian peatlands. We would be happy to assist with basic information, should anyone reading this article like to take up the challenge.

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Coming January a new draft Wise Use Document

"Wise Use of Mires and Peatlands – Backgrounds and Principles"

will be posted on the web for its final consultation round.

Included will be the latest overview of former and present mire and peatland distribution in all countries of the world. Please keep an eye on the IMCG Website and on

WWW.MIREWISEUSE.COM

Please participate and send in your comments.

Sources, Sinks and Sustainability: is Peat a Sustainable Source of Energy?

by Anne-Jelle Schilstra

Living peatlands have played an important role in atmospheric carbon metabolism. The global annual net fixation of carbon by peatlands is small when compared to the annual turnover of CO_2 between the atmosphere and ecosystems (0.096 Gt carbon (Gorham, 1991) versus 100 Gt carbon (Woodwell et al., 1998)). Carbon fixation by peatlands has, however, accumulated an estimated 455 Gt carbon in the boreal and temperate zone since the last ice age (Gorham, 1991), equivalent to about 60% of the carbon currently present in the atmosphere.

Since the beginning of the industrial age, the level of atmospheric CO_2 and CH_4 has steadily increased, mainly due to anthropogenic activities. This increase is held responsible for the current and anticipated rise of the mean global temperature, the Global Warming Effect. Expected additional effects are an elevated sea level and stronger vehemence of the weather. Both can be expected to have a negative effect on coastal wetlands.

In 1993 in Kyoto the world community has recognized the urgent need to counter attack the causes of the impending global warming, i.e. to reduce the emissions of (among others) CO_2 and CH_4 as the main culprits on the one hand, and on the other hand increase the removal of these gases from the atmosphere. Obviously carbon neutral renewable sources of energy are therefore very much in the centre of interest. A potential example of such an energy source is peat. Even though its use for commercial energy production is very small compared to the global use of fossil fuels, its local economic importance and environmental consequences can be considerable. Below I will use data from Finland; in Finland about 6% of the electricity consumption is derived from peat (Leinonen et al., 1997).

Do peatlands, that are actively accumulating atmospheric carbon, really provide a renewable and sustainable source of energy? This assertion is often presented, also in official documents (Leinonen et al., 1997, Ministry of the Environment, 1997), as an argument in the discussion about the desirability of the use of peat for energy. The question whether this argument really holds is analysed in a recent article "How sustainable is the use of peat for commercial energy production" (Schilstra, 2001). A number of points from this analysis are presented below.

Sustainability has been defined in many different ways. The definition used in the above analysis has been formulated by Daly (1990) for the sustainable use of finite resources:

1. Renewable resources should not be exploited at a higher rate than their regeneration level
2. Non-renewable resources should not be depleted at rates higher than the development rate of renewable substitutes
3. The absorption and regeneration capacity of the natural environment should not be exceeded.

Clearly these requirements will not satisfy everybody: biodiversity, landscape amenities, among others, should be regarded as well. Should we consider the Daly requirements as necessary (but not sufficient) it may be efficient to consider these points first.

"The total carbon emission from the main fuel peat using countries (i.e. Finland, Ireland and Sweden) is 4.31 Tg per annum and the total carbon accumulation in peatlands is 6.4-7.3 Tg. This means that peat use in these countries is on a sustainable basis. If we take into account the whole peatland area in Europe as a whole the situation is even better" (Leinonen et al., 1997). According to Daly's first point this is not correct. Using data from Finland, the use of peat from the 1200 km^2 of peatlands dedicated to peat extraction is about 85 times higher than the natural accumulation of peat on this area. Peat growing outside this area is not available to the industry and therefore cannot be said to be a resource (an unavailable resource is a *contradictio in terminis*). Even if all 6220 km^2 suitable for industrial use (Savolainen et al., 1994) in Finland were to be used, this would still not render peat a sustainable renewable resource, according to Daly's criteria.

How does peat score on the second Daly point. This is more difficult because developments in for example photovoltaic or wind energy can only be arbitrarily coupled to peat use. However, contrary to other fossil and non-fossil energy sources, the use of a peatland does leave as a by-product a vacant area that can be used for the harvesting of renewable energy. This allows the growing of new peat or for example trees for energy on the drained area. Minkkinen et al. (1999) report an average carbon accumulation rate of 100 g $C/m^2/a$ for managed treestands. If this were to be realised on the 1200 km^2 set aside in Finland for peat harvesting only about 5% of the current energy from peat can be sustainably obtained on a rotation basis. On the other hand, current peat use can continue for a few hundred years before the 1200 km^2 are exhausted: some time is left to develop a renewable replacement as required by Daly's second point.

The absorption and regeneration capacity of the natural environment from Daly's third point is rather generally formulated. However, if it fails on one particular issue, it cannot be true in a general sense. Here it is used to investigate the contribution of peat use to the climate change issue. Few would dispute that regarding greenhouse gasses the absorption and regeneration capacity of the atmosphere is exceeded. And, as illustrated above, Kyoto, Leinonen and many others stress the importance of an energy source to be carbon neutral in order to be sustainable. Of the current 89,200 km^2 Finnish peatlands (Lappalainen, 1996) about 53,000 km^2 has been drained for forestry (Leijting, 1999). These changes in land cover have increased the average net sequestering in undisturbed

peatlands of 21 tonnes per km^2 of carbon annually to 60 tonnes per km^2 of carbon for forestry drained peatlands (Minkkinen, 1999). This increased carbon fixation may very roughly balance the carbon emission from the energy production (Schilstra, 2001). Also, the drained peatlands have effectively stopped emitting CH_4, a strong greenhouse gas with the rather short atmospheric life time of about 12 years (Schimel et al., 1996). The combined effects of an increased fixation of atmospheric carbon and a halting of CH_4 emissions in the drained area does represent a cooling climatic effect, of which the peat industry only "compensates" a small portion (Schilstra, 2001). Unfortunately for Finland, this does not count for Kyoto; Kyoto takes the 1990 situation as a starting point to which emission reductions have to be compared.

A final and important point to raise is the avoiding of double counting. The carbon sinks of Finland's peatlands were carbon sinks long before man started to increase the atmospheric CO_2-level at the time of the industrial revolution. They are still part of the natural sink system that compensates natural sources. These natural sinks cannot now also be claimed to compensate anthropogenic carbon emissions, as Leinonen et al., the Ministry of Environment in Helsinki, and others would have it. To avoid this double counting only *additional* sinks can compensate anthropogenic *additional* sources (for example the global fertilizing effects of the elevated atmospheric CO_2 concentration and nitrogen deposition in many areas).

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Schilstra (2001) is obtainable from the author

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The New Irish Power Stations and Wise Use

by Donal Clarke, Bord na Móna

During the summer of 2001 a group of NGOs contacted the media to oppose the building of two replacement peat-fired power stations in Ireland and they demanded that the European Commission kill the project. The future shape of the company for which I work, Bord na Móna p.l.c., was involved. We reacted strongly to the campaign, and I was personally disturbed by it. This was because of my involvement in the Wise Use process and my view that the way the campaign was conducted was not consistent with that process.

I have been asked in this article to explain our reaction to and perception of the campaign. I understand that one of the NGOs involved, the Irish Peatland Conservation Council (IPCC), has in turn been invited to describe its perception.

I will first give some context to the campaign by describing why peat is used for energy in Ireland, the background to the decision to build two replacement power stations, and the 'All Saints' framework agreement within which Bord na Móna uses peatlands.

Traditional Irish Energy Policy

Ireland had in the past no native source of energy except a tiny supply of coal, and peat. By the early 20th Century the forests and woodlands had been so stripped bare that wood was only a very minor contributor to energy supply. After the Second World War the Irish Government embarked on a policy of avoiding dependency on any one imported fuel (hence we have oil, gas, peat, coal and renewables as our sources of electricity) and of maximising the use of native sources of energy. The most important of these native sources was peat. At its peak in the mid-1960s it accounted for 40% of Irish electricity. Currently, peat for electricity generation (milled peat) and peat for domestic heating in the form of briquettes are produced by Bord na Móna; peat for domestic heating in the form of sod turf is produced on small private plots.

Although there are Irish sources of natural gas it is increasingly imported, and it has remained Government policy to maintain peat as a source of energy, at least for the near future.

The new peat stations: background and decision

Bord na Móna was founded in 1934 but was reformed and expanded in 1946 after the fuel shortages of the Second World War. In its energy businesses since then it has produced both sod and milled peat for electricity generation, and sod peat and briquettes for industrial and domestic heating. It operates on some 7% of the peatlands of Ireland.

At its maximum the installed capacity in Irish milled peat-fired power stations was 420 MW. Currently some 370 MW is potentially operational. Of this 120 MW is in one new power station (Edenderry) which is owned by Fortum of Finland. The remaining 250 MW is owned by the State-owned Electricity Supply Board (E.S.B.).

In February 2000 the Government announced that there would be an orderly closure of all five existing E.S.B.-owned peat stations and that they would be replaced by two new stations. These two stations will total 250 MW capacity. Because the new stations will be considerably more efficient than the older stations their CO_2 emissions will be less per MWh than in the older stations and the emissions of other gases will be strictly limited.

The 'All Saints' Agreement

During the 1980s concern grew at the extent to which Irish peatlands had become cutaway (largely by private turfcutting). Although it only operates on 7% of Ireland's peatlands Bord na Móna is the country's largest single owner of peatlands. As such in 1990 it came to a landmark agreement with the national Heritage Service (now Dúchas) whereby 2,800 hectares of mires owned by Bord na Móna were identified for conservation and transfer from Bord na Móna to public ownership. The Irish Peatlands Conservation Council (IPCC) was a participating observer during the negotiation of the list of sites included in this agreement (the so-called "All Saints' Package"). In practice Bord na Móna has actually transferred to Dúchas all its peatland sites considered to be of conservation value. These amount to some 6,700 hectares of raised and blanket bog. It has undertaken not to operate on any peatland which was not already drained, and it carries out its operations on the basis of environmental policies clearly spelled out each year in its Annual Report.

Procedure for authorising the power stations

Once the Government had decided to authorise the building of the two new power stations to be owned by the E.S.B. the procedures to be followed (apart from commercial decisions to be made by and between the E.S.B. and Bord na Móna) were:

1. planning permission
2. Integrated Pollution Control Licence
3. Public Service Obligation (P.S.O.)

Planning permission: The E.S.B. had to seek planning permission from the two local authorities in whose areas the power stations are to be built. This was obtained but was appealed to the Planning Appeals Board which is now considering the appeals. The planning system involves both public information and public consultation. The preparation and publication of an Environmental Impact Statement is part of the process.

Integrated Pollution Control Licence: The operation of the stations is subject to the issuing of IPC Licences by the Environmental Protection Agency. The licensing system involves both public information and public consultation. Bord na Móna also requires IPC licenses for its peat extraction.

Public Service Obligation (P.S.O.): Because the cost of electricity generated by the new stations will be above the average electricity prices, it will be financed by a levy ("P.S.O.") on the connection of all power users to the electricity grid. This required authorisation from the European Commission under State aid and competition rules. The authorisation was granted in October 2001.

The implications of not building the new stations
Failure to build the stations would have serious consequences. Once the decision to close the older stations had been taken, it became irreversible, whether or not the new stations are built. The result for Bord na Móna would be the loss of €40 million in income per year, 540 permanent and 320 seasonal employees becoming redundant, and the abandonment of some 40,000 hectares of partly cutaway peatland. The cost to Bord na Móna of the redundancies would be some €39 million. There would also be a substantial number of redundancies in the E.S.B. Even with the replacement stations there will be redundancies in Bord na Móna and the E.S.B., but in that case the closures would be orderly and the redundancies voluntary.

Bord na Móna's perception
Bord na Móna's perception of the project is that (a) it is economically very important for the company; (b) it will produce an income part of which will be used to provide for the after-use of the peatlands concerned; (c) the new power stations will be adjacent to existing stations, and thus will not involve a change in zoning or land use; (d) they will get their peat from bogs which have already been developed, there will be no virgin bogs drained, and no peat from areas of conservation; (e) the planning system is open and consultative and gives everyone who wants an opportunity to put their point of view; (f) the licensing system is also open and participative; (g) from an environmental and economic point of view the new stations represent a major improvement on the existing situation; (h) the new stations will continue to provide the country with a minimum level of electricity from indigenous sources; and (i) will provide employment in areas where industrial employment remains scarce.

Wise Use
The version of the Wise Use document available at www.mirewiseuse.com has a decision tree in Chapter 4 and a series of general considerations, principles, modifiers and instruments in Chapter 5 which provide a framework for deciding on any proposed intervention. (These parts of the document have been improved and better co-ordinated in the latest version but are not fundamentally different). On the basis of the points in the decision tree – does the intervention have a positive effect, does it enable continuous provision, are the resources abundant, and so on, in my view the project would come out clearly with a "consider approval". If it is then subjected to analysis under the general considerations, principles, modifiers and instruments it would again in my opinion come out positively.

Conclusion
As we see it, therefore, we have a situation where on the positive side two well-run and highly responsible companies (E.S.B. and Bord na Móna) embark on a project in accordance with Government policies which represents an improvement in every respect on the present situation and involves only the use of already-drained peatlands;
on the negative side failure to proceed with the project will inflict grievous financial damage on one of the companies (Bord na Móna), will cause substantial redundancies in an area where the jobs cannot be replaced, and risks leaving a substantial area of cutaway peatland in a derelict condition;
in regard to process, the procedures used to get the project under way involved substantial consultative processes, enabling all concerns to be addressed by the planning and licensing authorities;
in regard to Wise Use the project would appear to fit comfortably on the positive side of the framework decision model.
In these circumstances we were seriously taken aback by the appealing by NGOs of both the planning consent and the licences, by their attempt to prevent the P.S.O., and by the some of the media interventions – without talking to us, consulting with us or even alerting us on a personal basis. Environmental issues do not exist on their own, they exist as part of a triumvirate including economic and social considerations. As I see it, when any negative effects on the environmental side do not relate to essentials but when the economic and social consequences are fundamental for those involved a full frontal assault should not be conducted at least until the full consequences for all concerned have been discussed with them. The NGOs may say that we could have handled the matter better, and if they have advice for us we will listen to it. However, as we see the matter, their reaction was disproportionate, out of keeping with the Wise Use dialogue, and inconsistent with a previous culture of communication between our organisations.
Donal Clarke, December 2001

EU decided: No ecolabel for peat!

In IMCG Newsletter 2001/1 we reported on the European Union revising the criteria for ecolabeling of soil improvers and, for the first time, growing media. The revision was led by the Italian Competent Body. Initial ideas included the proposal to give an ecolabel to growing media that – next to 30% of ecolabeled soil improver – could contain up to 70% of peat. IMCG reacted with an extensive position paper (see Newsletter 2001/1 or www.imcg.net/docum/eolabel.htm).

The new criteria aim at promoting:

- the use and/or re-use of organic matter derived from the collection and/or processing of waste material.
- the reduction of environmental damage or risks from heavy metals and other hazardous compounds in soil improvers and growing media.
- the labelling of soil improvers and growing media that have a lower environmental impact during the whole life-cycle of the product.

Major issues of the revision were the extension to growing media and the expansion towards professional use. The revised criteria contain new ecological criteria, including the prohibition of peat.

The final criteria have since then gone through the full Commission procedure. The new Commission Decision of 28 August 2001 establishing the ecological criteria for the award of the Community eco-label to soil improvers and growing media (2001/688/EC) includes the following peat related issues:

- "A product shall only be considered for the award of an eco-label if its organic matter content is derived from the processing and/or re-use of waste materials."
- "Products shall not contain peat or any products derived from peat."

The revised criteria are valid from 28 August 2001 until 27 August 2006.

The full decision is available under:
http://europa.eu.int/comm/environment/ecolabel/pdf/soil_improvers/new_decision_2001/soil_improvers_en.pdf
(pdf~170K).

Masundire voted Chair of CEM

The IUCN Council elected, by consensus, Mr. Dr. Hillary Masundire as the new Chairman of the Commission on Ecosystem Management (CEM) at its 55th Meeting in Gland, Switzerland, 28-30 October 2001. Masundire, a Zimbabwian currently based in Botswana, had been the Deputy Chairman of CEM since June 2001.

He welcomed the appointment, and pledged to work closely with the broader IUCN network to ensure that the Union maintains its leadership role in the field of ecosystem management. He noted that CEM would focus its efforts during 2001-2002 on a range of issues including ecosystem restoration; climate change impacts on ecosystems; participation in the Millennium Ecosystem Assessment; development of indices of ecosystem status; and support to IUCN's Water and Nature Initiative and the Global Peat Action Plan.

A native of Chivhu, Zimbabwe, he is Senior Lecturer in ecology and Head of the Department of Biological Sciences at the University of Botswana.

Masundire's work with IUCN began at the Regional Office for Southern Africa in 1988, where he was involved in projects dealing with wetlands ecology and management, environmental impact assessment, and dams and biodiversity issues in Southern Africa.

He played a key role in mobilizing the Government of Botswana to sign and ratify the Ramsar Convention in 1997, and subsequently to develop a National Wetlands Policy. He was part of the IUCN global network involved in the formulation of the Vision for Water and Nature, and a lead participant in the World Commission on Dams' review and analysis of the Lake Kariba case study. He later was part of the IUCN Task Force charged with drafting the IUCN statement and follow-up strategy on the WCD Report.

Masundire holds a BSc degree in Botany and Zoology, a Graduate Certificate in Education and a Ph.D in Ecology from the University of Zimbabwe.

2001

Southeast Asia Peat Network (SEA-PEAT)

SEA-PEAT is short for Southeast Asia Peat Network. It is an information network that links up individuals and groups working on peat related areas i.e. management, conservation, research and sustainable use. It utilizes e-mail and a web site on the Internet to exchange and disseminate information among network members.

SEA-PEAT is the information exchange component of the Southeast Asia Peatland Action Plan and Management Initiative. The Initiative's objective is to develop a comprehensive action plan for the conservation and sustainable use of peatlands in Southeast Asia and initiate demonstration projects at key sites. SEA-PEAT was set up with the objective of establishing a strong network for information exchange and sharing between the participants in order to achieve the objectives of the Initiative.

The Global Environment Centre acts as a coordination unit for SEA-PEAT activities. GEC moderates postings to SEA-PEAT e-list, sets up and maintain the website for SEA-PEAT.

Networking Benefits of SEA-PEAT include:

- Individual and organization information will be listed in SEA-PEAT web directory of organizations and individuals working on peat issues
- Members will receive information on peat related issues, announcements of events and meetings through electronic e-mails.
- Members can disseminate information about their activities and research on peat issues to a wide network of peat related agencies and groups in Southeast Asia and other parts of the world.
- Members can utilize the network as a forum to request for advice and information from network members.

SEA-PEAT is open to all individuals and organizations, especially those who are conducting activities, research and work related to the conservation and sustainable use of peatlands and peat resources in the Southeast Asia region.

For more information or to sign up for this network, please contact the Global Environment Centre.

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-Background Information-
Southeast Asia Peatland Action Plan and Management Initiative

Development and rising population pressure is causing severe degradation to peatland in Southeast Asia. This is likely to continue in coming years unless prompt action is taken to safeguard the 35-40 million ha of tropical peatland area in Southeast Asia, which makes up about 60% of the world's tropical peatlands and roughly one tenth of the entire extent of global peatland resource.

Since Ramsar COP7 in May 1999, the Global Environment Centre has been working, in support of the decision made at COP7 to promote the development of a Southeast Asia Peatland Action Plan and Management Initiative to promote and enhance the conservation and sustainable use of peatland in Southeast Asia. Peatlands play an important role in the global climate issue. There are numerous opportunities for synergy and cross-linking initiatives between these environment conventions. The initiative will also provide a framework for linkages with activities associated with related conventions.

The initiative aims to develop a framework that would include an action plan looking into key issues and areas of concern in an integrated manner. It has been proposed that the plan look into the following issues:

- Conservation of biological diversity and protection of key sites
- Prevention of Peat Swamp Forests Fires
- Ecological Restoration of peatland
- Better fire control system for peatland
- Role of peatland in water resource management
- Sustainable Forest Management
- Socio-economic uses of peatland
- Protection of carbon stores and ecological restoration to enhance carbon sequestration
- Link between climate change and peatland management

The development phase of the action plan is expected to take 12-18 months starting in August 2001. Information sharing, would readily lead to benefits such as more exchange of opinions and ideas to manage and conserve peatlands in the region.

The first phase involved establishment of the SEA-Peat Network, raising fund for the activities and identification of demonstration sites. Initial funding for developing the initiative has been allocated by the European Union through a grant from the ASEAN Regional Centre for Biodiversity Conservation (ARCBC) to GEC. Support for demonstration projects is expected from CIDA and GEF.

The initiative is currently in its first phase, where activities include developing partnership with appropriate institutions and establishment of a directory of agencies and their focal areas. Other activities include documentation of potential demonstration sites and existing on-giong projects and the development/experience on on-going projects. The third phase will involve implementation of the Action Plan and establishment of demonstration projects.

Ramsar Standing Committee adopts GGAP

The Guidelines on Global Action for Peatlands were adopted by Ramsar Standing Committee on 6 december 2001.

Recommendation 7.1 of the Ramsar Convention on Wetlands (San José, Costa Rica, May 1999) endorsed a Draft Global Action Plan for the Wise Use and Management of Peatlands and recommended the cooperation of Contracting Parties and other interested bodies in further refining the Draft and in establishing funding for appropriate projects and activities in support of its Implementation Strategy.

The Scientific and Technical Review Panel (STRP) established an expert Working Group on Peatlands (co-lead by Wetlands International, the International Mire Conservation Group and the International Peat Society) to progress refining the GAPP, and a revised GAPP was presented to the 24th meeting of the Standing Committee in December 1999 and endorsed in principle. Further revisions and restructuring of the GAPP were made by the expert working group and the STRP at its 9th meeting in June 2000.

At the request of the STRP, the Ramsar Bureau undertook an informal consultation on the GAPP with all Contracting Parties in late 2000, and their comments were incorporated into further substantive revisions during STRP10 (June 2001). In general, reservations were made as to the extent and nature of the tasks being identified for Contracting Parties, Bureau and others, in particular since it will be necessary to establish substantial additional resourcing if many of the actions proposed in the GAPP are to be undertaken.

In further discussion between the STRP's expert Working Group and the Bureau it was determined that the most appropriate style of presentation of the proposed actions on peatlands to Contracting Parties at COP8 (Spain 2002) would be in the form of Guidelines of Global Action on Peatlands (GGAP), which include guidance on establishing mechanisms for the implementation of the proposed actions. These Guidelines are annexed to the draft Resolution on the topic.

It is now very probable that the GGAP will be adopted by the Parties to the Convention at COP8 of Ramsar next November 2002 in Spain.

More information:
http://www.ramsar.org/key_sc26_docs_cop8_15.htm
http://www.imcg.net/docum/gapp.htm

The Ramsar Wetland Conservation Awards

The Ramsar Bureau calls for nominations to the Ramsar Award 2002, which will be awarded at the opening of Ramsar COP8, in Valencia, Spain, on 18 November 2002.The Ramsar Wetland Conservation Award was established in 1996 in order to recognise and honour the contributions of individuals, organisations, and governments around the world towards promoting the conservation and wise use of wetlands. It was awarded for the first time on the occasion of the 7th Meeting of the Conference of the Parties (San José, Costa Rica, 1999).

The Ramsar Standing Committee determined to select three winners for presentation at the 8th Conference of the Parties, to be held in Valencia, Spain, from 18-26 November 2002. The Committee gratefully accepted the offer of the Danone Group (France) to complement the Ramsar Award with the Evian Special Prize, a cash prize of US$ 10.000, which will be granted to each of the three laureates who will receive the Award at COP8.

Nominations are encouraged of persons, organisations, or government agencies that have taken initiatives which have contributed significantly to the long-term conservation and sustainable use of a wetland site or group of wetlands, especially those initiatives which might serve as inspirational or practical examples for others.

Nominations should be forwarded to the Bureau of the Convention on Wetlands, before 31 December 2001. All further information on:
http://ramsar.org/key_awards2002_index.htm

World Wetlands Day 2002

World Wetlands Day (WWD) 2002 is just around the corner. The theme for the 6th WWD on 2 February 2002 is the same as that of the 8th Conference of Parties (Spain November 2002): "wetlands: water, life and culture", emphasizing the cultural aspects of wetlands as a tool for their conservation and sustainable use.

On WWD 2002 Government agencies, non-governmental organizations, site managers and citizens are invited to explore cultural issues in their national and local contexts and seek to make their publics more aware of the cultural as well as the natural values of their wetlands. For more information about the 2002 WWD including awareness material distributed free of charge from the Ramsar Bureau you can visit the Ramsar website accessible at:
http://www.ramsar.org/wwd2002_index.htm

The Mysterious Bog People

The first-ever international exhibition tour of significant archaeological finds found in European bogs.

Through its rich artefacts, creative design, interpretive programming and interactive displays, The Mysterious Bog People will educate visitors on the religious beliefs of the people of northwestern Europe, their daily lives around the bog and the historical significance of their culture. It will also shed light on the properties of peat bogs and on conservation and reconstruction techniques.

The Mysterious Bog People is the first international touring exhibition to tell the story of life in Northern Europe from the Stone Age to the end of the sixteenth century and to reveal the importance of the discoveries in European bogs, which shed light on the everyday lives, ideas and beliefs of ancient peoples.

The artefacts selected for display will tell the story of the people who lived near the bogs and their culture. They will include bog mummies - and details on the reconstruction of individuals like the "Yde Girl" using modern forensic science - and a host of objects found in the bogs, such as flint and bronze axes, pottery, bronze swords, leather shoes, textiles, gold coins, jewellery, musical instruments and agricultural tools.

The exhibition will also feature one of the oldest artifacts from a European bog, the Pesse dugout canoe which was found in 1955 and has been carbon dated between B.C. 8040 and 7510. It is the oldest known boat in the world and was made from a Scots pine with the use of flint axes. This remarkable object will serve to explain what a bog environment is like and how it acts to preserve organic matter.

In prehistoric times, as northwestern Europe became increasingly wet, peat began to form and vast areas were covered by bogs. People lived peacefully on the high, dry land between the bogs.

Dangerous and often foggy places where one could easily get lost and drown, the bogs were shrouded in mystery. It is easy to understand why people believed they were inhabited by gods and spirits, who had control over life and death, health, crops, cattle and the fate of humans.

Good relations with these powerful beings were essential and could be maintained through offerings, which were deposited at the threshold of the dwelling place of the divine. Valuable items such as grain, antlers, pottery, wheels, weapons and jewellery were left in the bogs, turning them into immense reservoirs of gifts. Anything of value could be used as an offering. Even people were sacrificed to propitiate or thank the gods.

In early modern times, people began to exploit the bogs. As huge quantities of peat were cut for fuel, the gifts that had been buried for the gods were gradually uncovered, providing a glimpse of the life of our ancestors.

One of the themes of the exhibition is the practice of making offerings, through which prehistoric people tried to control their fate. Visitors will be astonished by the wide range of objects that were carefully laid down in the bogs. These items shed light on religious practices in northwestern Europe in prehistoric times and a number of everyday objects from different archaeological sites show the special character and value of the bog finds.

The exhibition will also reveal the special nature of bogs, which preserves objects that would decay under

normal burial conditions. The history, biology and preservation properties of bogs will be clearly demonstrated. The technique of reconstruction using modern forensic science will also be examined. The reconstruction technique of the Yde Girl will be presented in the exhibition.

The exhibition will also explore the scientific techniques and forensic analysis used to determine the age of the objects found in the bogs of northwestern Europe. The scientific component of the exhibition places it at the leading edge of international archaeological discovery about prehistoric Europe. Forensic research currently being conducted on one of the bog mummies of the Niedersächsisches Landesmuseum is revealing very interesting historical and archaeological evidence that the bogs were indeed centres of spiritual activity and significance to early Northern Europeans.

The Mysterious Bog People is a unique exhibition. Never before have so many bog mummies and offerings been brought together, providing valuable insight into the practices of our ancestors. Even the remains of the only known wooden Bronze Age temple will be on display.

Among the prehistoric persons that visitors will encounter are Red Franz, found in 1900 in Germany, and a 16-year-old girl from Yde, discovered three years earlier in the Netherlands. Although these two ancient Germans could not have met while alive, they will lie peacefully side by side in the exhibition.

Fans of Vincent Van Gogh will also have a rare opportunity to see a painting that captures the often desolate atmosphere of the bogs.

The Mysterious Bog People begins its journey across the continents in May 2002 and will be shown as follows:

May 10, 2002 to September 29, 2002	Niedersächsisches Landesmuseum Hanover, Germany
December 6, 2002 to September 1, 2003	Canadian Museum of Civilization Hull, Québec, Canada
October 18, 2003 to February 22, 2004	Glenbow Museum Calgary, Alberta, Canada
April 5, 2004 to July 6, 2004	North American venue
September 6, 2004 to January 3, 2005	Drents Museum, Assen, Netherlands

The Drents Museum, in collaboration with the partner Museums, will produce a virtual exhibition Web site for The Mysterious Bog People. It will be hosted on each partner Museum's Web site and will be available in four languages: German, English, French and Dutch.

The Web site www.bogpeople.org, launched in July 2001 is a preview of the official site. The official Web site will be launched in May 2002, to correspond with the opening of the exhibition at its first venue at the Niedersächsisches Landesmuseum in Germany. The completed Web site will be based on the content of the exhibition and will also include more in-depth information on the curatorial research.

REGISTER

Please fill out the IMCG registration form.

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

Many people receiving the Newsletter have meanwhile registered with IMCG. Many others have not yet reacted to our call. Do it now, don't forget it, because we will stop sending Newsletters to people who have not indicated that they want to receive the Newsletter.

Asian Wetlands: Restoration of Structure, Function and Values

Nanjing, China, 08-13 September 2002

Symposium Objective
The objective of this Symposium is to provide a forum for synthesizing existing knowledge about ecosystem processes as a foundation for effective wetland restoration in Asia. Historical land uses and contemporary needs have extirpated much of the wetlands in the Asian continent. This Symposium is intended to provide a forum to exchange information on approaches for effective, functional ecosystem restoration to improve and to focus future research needs. Wetland sciences, restoration ecology, and contemporary issues of global change, sustainability, conservation biology, and clean water resources are considered fundamental for effective restoration strategies.

The Symposium will consist of invited and volunteered papers, and field study tours. Those venues will consider the seven focus areas of the Symposium:

1. Hydrology,
2. Biogeochemistry,
3. Community Dynamics,
4. Inventory and Assessment,
5. Conservation Biology,
6. Global Change and
7. Socioeconomics.

The scientific sessions in Nanjing will provide both plenary and poster sessions on these topics, while the field study tours will integrate them in diverse settings within China.

Call for Papers and Presentations
Papers and presentations are being solicited which contribute to the Symposium objectives and fit within one of the seven primary focus areas. Contributed abstracts will be reviewed by the Program Committee and notices of acceptance will be provided no later than 1 April, 2002. On-line submittal will be available soon. Contributors may either wait until the on-line form is available, or send your abstract directly to Ms. Kep Lagasca (klagasca@fs.fed.us).

Symposium Format
The scientific sessions in Nanjing will utilize plenary sessions, limited use of concurrent sessions and facilitated poster sessions. The official language for the Symposium will be English. Translation services will only be provided for the key-note presentations.

Field Study Tours
The symposium will include two field study tours. The first tour will visit several wetland research sites enroute to Nanjing from Shanghai. The sites around Tai Hu Lake will feature natural resource conservation, wetland ecology, and agroforestry research.

The post-symposium field study tour will visit the World Wildlife Fund (WWF) wetland restoration program on the Yangtze River. This large-scale restoration project is exemplary for integrating ecosystem and social sciences. The tour will also feature a boat trip to Three Gorges, where the worlds largest dam is being built. Participants will have a unique opportunity to view this majestic landscape before it is permanently changed.

Publications
There will be a Symposium proceedings consisting of extended abstracts from each presentation. Authors will also have the option to submit full manuscripts to refereed journals.

Travel Logistics
Foreign travelers should plan on arriving in Shanghai on 7 September, 2002. Bus transportation to Nanjing will be provided as part of the pre-symposium tour. For persons not attending the post-symposium field study tour, transportation to Shanghai will be available on 14 September. Additional details on the transportation logistics will be available soon.

NOTE: A visa is required to visit China; for information and application forms see:
http://www.china-embassy.org/eng/index.html

Registration
The symposium will have a registration fee, expected to be $250US. The registration fee will cover the symposium expenses, participants will pay directly for transportation, meals and lodging. More details on registration will be available soon.

Organization
The symposium is sponsored by:
Society of Wetland Scientists, Chinese Academy of Sciences, State Forestry Administration; Co-Sponsors: USDA Forest Service, US Geological Survey (National Wetlands Center, EROS Data Center), Chinese National Science Foundation, International Peat Society, International Mire Conservation Group, World Wild Fund for Nature (WWF), Wetlands International, Chinese Ecological Society, Nanjing Forestry University

For further information:
Ms. Pekepnie Lagasca, Center for Forested Wetlands Research, USDA Forest Service, 2730 Savannah Hwy., Charleston, South Carolina, 29414 USA
klagasca@fs.fed.us

International courses on wetland management and restoration (Lelystad, The Netherlands)

The Wetland Advisory and Training Centre (WATC) of the Dutch Ministry of Transport, Public Works and Water Management will organise the International Course on Wetland Management and the International Course on Wetland Restoration also in 2002. Both courses are practical, skill-focused courses for persons actively involved in wetland management and restoration. The courses require at least a B.Sc. or equivalent academic degree and competence in English.
The International Course on Wetland Restoration will be held from 29 May – 26 June 2002. Closing date for application is 1 January. The full course fee is €3175, which does not include food and lodging. There are opportunities for participants to receive financial support. The International Course on Wetland Management will be held from 22 Agust – 2 October 2002. Closing date for application is 1 March. The total tuition fee is €4100, excluding food and lodging. Also here there are opportunities for participants to receive financial support.
For more information Contact:
WATC, Antwoordnummer 317, 8200 VB Lelystad, The Netherlands; Tel. +31 320 298346, Fax +31 320 298339, e-mail watc@riza.rws.minvenw.nl .

Regional News

News from the EU: Banks to increase investments in Europe's biodiversity

Representatives of the global and European banking sector and economic sectors, governments and the biodiversity community have just decided to strengthen the co-operation with the aim to increase the financial investments in biodiversity relevant projects and programmes in Europe.
This was the outcome of the European Workshop on the European Biodiversity Resourcing Initiative, organised by the Swiss Agency of Environment, Forests and Landscape and the European Centre for Nature Conservation (ECNC) at UNEP-Europe in the International Environment House in Geneva, Switzerland.
The workshop was attended by representatives of the World Bank, European Investment Bank, European Bank on Reconstruction and Development, IFC, Rabobank, the Asian Development Bank, Council of Europe Development Bank, of the economic sector, including the OECD, of governmental sectors, including Switzerland, Hungary and the Netherlands, and of international governmental organisations and NGO's, including UNEP, the European Commission, Council of Europe, UNDP, ECNC, IUCN, Globe, Ramsar Convention, Avalon and EcoForum.
It was concluded that public-private partnerships between all relevant stakeholders in Europe are the way forward to increase the investments in biodiversity, in particular through the development of integrated bankable projects with an important biodiversity component. Also it was concluded that practical measures are needed to assist the banking and biodiversity sectors in finding the best and most effective ways of co-operation, such as the establishment of pools of expertise, bio-toolkits and the development of a European project portfolio of bankable biodiversity relevant projects.
The results of the meeting will be communicated to the Intergovernmental Conference "Biodiversity in Europe" (Budapest, February 2002) and the Conference of the Parties of the Convention on Biological Diversity (The Hague, May 2002). Also it was agreed that a focused follow-up meeting would be held in 2002, which will be hosted by the European Bank for Reconstruction and Development in London, UK.
For more information, please contact:
ECNC Secretariat, Tel.: +31 13 466 32 40, Fax: +31 13 466 32 50, e-mail: g.heslop@ecnc.nl

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Natura 2000 - nature for you!" 'Green Days', 13th to 21st April 2002

From 15 to 19 April 2002, the European Commission's Directorate-General for Environment is organising a conference in Brussels called "Green Week" (www.europa.eu.int/comm/environment/greenweek/index.htm). One of the main themes this year will be the network of protected sites in the EU: Natura 2000. Linked to that, conference authorities, NGOs and other bodies are encouraged to organise parallel events in EU Member States, so-called Green Days. Green Days dedicated to Natura 2000 will be co-ordinated by EUROSITE (www.eurosite-nature.org/en-accueil/ or www.eurosite-nature.org/fr-accueil/).
The motto is "Natura 2000 - nature for you!". The objective is to promote small events in all Member States between 13th and 21st of April, which improve the understanding and acceptance of Natura 2000 at local and regional level. Now that Natura 2000

moves from vision to reality, we need to win citizen's support for the protection and sustainable use of these sites.

Your contribution could be the organisation of a small event like for example a guided walk through a Natura 2000 site, an information event, a celebration for the local people…. be imaginative! If you have planned activities in that period already - all the better, why not simply link it up to "Green Days"? EUROSITE would support you by ensuring that your event would be part of a European wide publicised network of activities. From 30th January 2002 onwards you will be able to register your event directly on the EUROSITE webpage and you will receive background material, leaflets, etc. from them. Should you have questions/ideas already now, please turn to eurositenl@eurosite-nature.org.

News from Ireland

International and Irish NGOs condemn European Commission approval of 568 million Irish pound subsidy for destruction of Irish carbon sinks. Meeting in Marrakech at the 7th Conference of the Parties to the United Nations Framework Convention on Climate Change [UNFCCC], Irish and International NGOs [non-governmental organisations] condemned the EC decision to approve an Irish government application to subsidise the burning of peat for electricity production. Two new peat-fired power plants are to be built to burn peat from Irish midland raised bogs. (see also the contribution of Donal Clarke in this Newsletter)

This subsidy is estimated to be 30 million Irish pounds per year between 2001 and 2019. It will be funded by a surcharge on all Irish electricity sales, including sales of electricity from renewable resources.

Irish NGOs had opposed this proposal on multiple grounds

- Peat is the most carbon-intensive of fossil fuels, with CO_2 emissions between 2 and 3 times those of gas
- The impacts of oxidation of peat resulting from drainage for peat extraction
- Destruction of living carbon sinks
- Legal action ongoing against Ireland for failing to designate sufficient peatlands under the Habitats Directive.

The NGOs charge that the decision contravenes Ireland's commitment to protect its sinks under Article 4 of the UN Framework Convention on Climate Change (UNFCCC) and its habitats under the Convention on Biodiversity, the European Treaty and the EU Habitats Directive. The Irish Wind Energy Association has also condemned the subsidy, which is not being made available to renewables. The proposal has also been criticised by the International Energy Agency, the Organisation for Economic Co-operation and Development and Ireland's Economic and Social Research Institute.

The Commission has permitted the subsidy on the grounds that Directive 96/92 permits these surcharges where necessary for "security of supply", stating that "the Commission is not responsible for enforcing other agreements that the Irish government may have entered into outside the EU treaty".

The NGOs are to file a formal complaint under Article 174 of the Treaty establishing the EU, which requires community policy to contribute to "prudent and rational utilisations of natural resources".

Green MEP, Patricia Mc Kenna is totally supportive of this initiative and said that she finds it, "quite extraordinary that the Commission should refer to a 'security of supply' argument to grant approval to ventures which will release extra greenhouse gases in breach of the Kyoto Protocol and will destroy environmental assets in breach of the Habitats Directive. I totally support this complaint and will lobby in the EU to have urgently considered and acted upon".

Signatories

Friends of the Earth International, Grian Greenhouse Ireland Action Network, Earthwatch, Gluaiseacht, Friends of the Irish Environment, Voice, Irish Peatlands Conservation Council, An Taisce

Irish News provided by:

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bogs@ipcc.ie http://www.ipcc.ie

Autumn Colors of Estonian Peat Bogs

Autumn is a favourite time of year for brilliant colours in temperate hardwood forests in North America and Europe. Peat bogs may also display equally impressive golden yellow, orange and red colours in late summer and early autumn. In September, 2001, James Aber, Kiira Aaviksoo, Edgar Karofeld, and Susan Aber conducted kite aerial photography (KAP) at three peat bogs (raba) in east-central and southwestern Estonia. This is the season in which different peat mosses (*Sphagnum* sp.) show strong colour differences. Other bog plants also display noticeable colours, for example, cotton grass turns golden yellow. Pine trees, which commonly grow within and around bogs maintain a silvery green colour. Dark brown, acidic water in bog pools creates a strong visual contrast with autumn vegetation colours. Meanwhile in surrounding forests, birch leaves turn yellow and begin to fall early, while deciduous hardwoods (ash, elm, maple) display orange and red colours.

The main visual difference between a forest and a peat bog is that a forest may be viewed from the side; whereas, the nearly flat surface of a bog can be seen fully only from above. KAP provided an excellent

means to capture bog colours from vantage points 50-100 m above the ground. Adequate sunlight is limited at this time of year by Estonia's relatively high latitude (58°N). At "high noon" on the autumnal equinox, the sun rises only 32° above the horizon, which makes for long shadows on the ground. For this reason, all KAP was conducted between the hours of 10 am and 3 pm. The images were acquired with various radio-controlled digital and film cameras in both colour-visible and colour-infrared formats. The colour-infrared pictures depict active vegetation in pink, red, and purple colors. Surf to:
http://www.emporia.edu/kite/estonia/color/color.htm
to view the beautiful pictures.

A "Bibliography of Estonian publications about mires" is available is available at;
http://www.botany.ut.ee/jaanus.paal/eesti.soid.kasitleva.kirjanduse.bibliograafia.pdf

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News from Lithuania: "Between conservation and use: C.A. Weber and the Augstumalmoor"

The German Peat Society (DGMT) sections I (Geosciences) and V (Nature Conservation and Land Use Planning), the International Mire Conservation Group (IMCG), scientists of Vilnius University, and the administration of the Nemuno Delta Regional Park (Lithuania) jointly organize a symposium (with excursions) in Silute (Lithauen) in the first week of October 2002 (probably October 2-5). The symposium is organized because of the 100 anniversary of the publication of C.A. Weber's book "Über die Vegetation und Entwicklung des Augstumalmoores im Memeldelta" in 1902.
Next to a new edition of this classic opus (this time in English translation!) the following contributions are planned:

- a biography of C.A. Weber, by Dr. Jürgen Schwaar, the successor of C.-A. Weber in the German Peat Research Station in Bremen
- an overview of the importance of Weber and the Augstumal study for the development of mire science by Dr. Paul Glaser (University of Minneapolis)
- an overview of the history of Augstumal/ Aukstumale since Weber, by Dr. Rimvydas Kunskas (Institute of Geography, Vilnius)

Other presentations are requested.
Similarly to a century ago, also today a tension exists between mire conservation and peatland exploitation in and around Augstumal/Aukstumale. As such the symposium will not only deal with historical issues, but will provide a valuable contribution to the current discussions in the Baltics. Presentations should therefore preferably focus on the theme "Conservation versus exploitation".
For further information and preliminary registration contact Hans Joosten: Joosten@uni-greifswald.de

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Thailand designates five new Ramsar sites

The Ramsar Bureau is pleased to announce that the Government of Thailand has designated five new Wetlands of International Importance, a diverse collection of wetland types spread across the extent of the country. Joining Thailand's previously sole Ramsar site, designated at the time of its accession to the Convention in 1998, these new sites bring a total of 131,547 additional hectares under the Ramsar umbrella, for a total of 132,041 ha in Thailand and 87,218,385 ha globally in 1101 Ramsar sites. All five new designations are effective 5 July 2001.
Next to lakes, intertidal mudflats, and mangroves, the designated areas include
Princess Sirindhorn Wildlife Sanctuary (Pru To Daeng Wildlife Sanctuary) (20,100 ha, Narathiwas Province, 06°12'N 101°57'E), the largest remaining peat swamp forest in Thailand, situated in the extreme south. The swamp supports a high diversity of flora and fauna, including 217 bird, 52 reptile, and 62 fish species, some of which are nationally vulnerable or endangered; 106 species of, as well as 60 mammal species, including 13 species of bats. The site is a popular tourist destination, and surrounding communities depend upon direct and indirect use of the forest's resources for low-intensity exploitation, such as fisheries and melaleuca harvesting for charcoal. Development in the 1980s, principally clearing for brief rice cultivation (followed in each case within two years by soil acidification) lead to the loss of two-thirds of the forest area, but was curtailed by Sanctuary status in 1991. A management plan has been approved by the Royal Forest Department, and research and visitors' facilities are in place.

New and recent Journals/Newsletters/Books/Reports

Payette, S. & Rochefort, L. (eds.), 2001. Écologie des tourbières du Québec-Labrador. Presses de l'Université Laval, Quebec. 49,95$ (+ postage) (in french)

With 21 other authors, the editors have produced - in 24 chapters and over 600 pages - a new general synthesis on peatland knowledge in North America, dealing with the structure, functioning, history, evolution, and utilisation of peatlands. Subjects covered include geology, biogeography, hydrology, biogeochemical processes, fauna, flora and vegetation, palaeoecology, exploitation (peat and forestry), conservation and restoration. In spite of its title, the book includes "only" three chapters with a regional character. Obtainable from:

Zone Université Laval (librairie)
Pavillon Maurice-Pollack
Université Laval
Sainte-Foy, Québec G1K 7P4
conseiller@zone.ul.qc.ca

The responsible Peatland Ecology Research Group (http://alpha.eru.ulaval.ca/gret-perg/) also produces a regular newsletter (in French):

ÉCHO *tourbières*
Bulletin des partenaires du projet « Vers une gestion intégrée des tourbières de l'est du Canada »

that is available under: http://alpha.eru.ulaval.ca/gret-perg/fr_echo.htm

Daigle, J.-Y. & Gautreau-Daigle, H., 2001. Canadian peat harvesting and the environment. Second edition. North American Wetlands Conservation Council Committee, Ottawa, 41 p.

After its first edition (1992) this second edition has been revised to include the collaborative efforts between the publisher, federal and provincial government agencies, and the Canadian Sphagnum Peat Moss Association (CSPA). The industry, through their association with the CSPA, has articulated a policy for the preservation of environmentally sensitive peatlands and for site restoration or reclamation of cutover sites. For that purpose she has – together with government agencies, environmental groups and universities – developed a national peatland research strategy to promote awareness of peatland restoration technology and science.

The report presents a good overview of Canadian peatlands and their values, of the Canadian peat industry and its development in the period 1994-1999, on the environmental impact of peat extraction, and on restoration, reclamation and conservation policies.

Since 1992 the area under extraction in Canada has increased by 25% and the volume of extracted peat by 45 %. Some 500 ha of worked surfaces are being restored thanks to the involvement of the CSPA, which has adopted its *Peatland Restoration Guidelines*.

The report points at the federal policy for the development of a national network of "secured wetlands of significance to Canadians" that should represent the full range of wetland functions and forms. As peatlands will be a vital component of such a network, the peat industry in Canada is a significant stakeholder in this concept. Implementation of this strategy will involve the adoption of systematic national and regional criteria for identification and management of significant wetlands and peatlands. The report ends with case studies and a short outlook on the situation in Europe.

The report contains the usual Canadian statements of "relativity":

- "The 17,000 ha under extraction are less than 0,02 % of Canada's 113 million ha of peatlands."
- "Peat is accumulating in Canada 60 times faster than the amount extracted."
- "It is very evident that Canadian peat moss harvesting is not contributing to a decline in peatland functions or values on a national or regional scale in Canada."

The relevance of the first two statements is challenged by Anne-Jelle Schilstra in his contribution to this Newsletter. And also the report implicitly acknowledges that it is not comparing like with like when it states that "only specific ranges of peatland forms have peat and/or peat moss which is suitable for use in horticultural and other current applications".

With respect to the third statement it is good to remind, what our chairman Ton Damman († December 22, 2000), wrote in his first and last presidential address (IMCG Newsletter 2000/4):

"In contrast to Europe, mires in North America have not been used so intensively and over such a long period of time. In fact peatlands cover such extensive areas in the boreal and hemiboreal zones that it can create the impression that there is no need to be concerned about draining or mining a few. Looking at the area as a whole this may be true. However, peatland exploitation has been geographically very uneven with most of it concentrated in areas that are relatively easily accessible. In North America this is to about 200 miles north of the US-Canadian border, where 90% of Canada's population lives. … So we are faced with the uncomfortable situation that, although there are still large areas of pristine peatlands in North America, all this development is concentrated in a zone a few hundred miles wide along the US-Canadian border. In this area good examples of the major peatland types can still be found, but this may not be so much longer. Why is this such an important issue? … The major problem is that the exploitation is focused mostly on

ombrogenous peatlands in a relatively limited region. Therefore, locally many of these peatlands are being disturbed. At present we still have a choice in these areas. The opportunity still exists to guide exploitation towards peatlands of lesser ecological value.

Ombrogenous peatlands show very clear geographical trends in their surface morphology and vegetation because their development is controlled primarily by climatic conditions. We should try to preserve good examples of such peatlands along climatic gradients before we lose the diversity of mires in these areas. Most of this concerns mires at low elevation in the raised bog zone, especially in the eastern USA and Canada. This is the more important because few intact mires remain in the southern raised bog zones of Europe or eastern Asia. In these areas too little is left, and here it is too late to obtain a realistic impression of how peatlands respond to these climatic gradients. We should make sure that there is at least one part of the world where the hydrology, vegetation and developmental processes of these mires can still be studied. To achieve this we need to identify representative mires and work for their preservation. This is where the IMCG and its members can provide a major service. We should get to work on this now before we lose the diversity of mires in the southern raised bog zone, as has happened elsewhere."

Copies of the highly recommended report are available from: Secretariat North American Wetlands Conservation Council Committee, Suite 200, 1750 Courtwood Crescent, Ottawa, Ontario K2C 2B5

Or from the Canadian Sphagnum Peat Moss Association: cspma@peatmoss.com

Bruijnzeel, L.A. & Hamilton, L.S. 2000. Decision time for cloud forests. IHP Humid Tropics Programme Series No. 13, Unesco, Paris, 40 p.

Cloud forests are forests in the humid tropics that are frequently covered in clouds or mist; thus receiving additional humidity, other than rainfall, through the capture and/or condensation of water droplets (horizontal precipitation). They are characterized by the abundance of epiphytes, especially mosses and Hymenophylaceae, and in most cases, the presence of tree ferns. In cloud forests in dense and persistent cloud zones, a fairly thick layer of practically undecomposed organic matter ("peat") is noted, with layers of raw humus of more than four metres in depth having been reported. The total surface of cloud forests was estimated in the early 1970s at 500,000 km^2. Losses of cloud forests, through conversion to grazing and crop land and though fuelwood cutting, are higher than for any other tropical forest biome and may amount to over 1 %. Because of these threats, the low scientific state-of-knowledge of these ecosystems, and the lack of information about their location and status, the World Conservation Union (IUCN) in 1995 called for a "Campaign for the cloud forests. This paper contains general scientific information on the characteristics and functioning of cloud forests and on their values and threats. For more information contacts Philip Bubb, Tropical Montane Cloud Forest Initiative UNEP World Conservation Monitoring Centre Cambridge: philip.bubb@unep-wcmc.org or consult www.unep-wcmc.org/forest/cloudforest/english/homepage.htm

Kratz, R. & Pfadenhauer, J. (eds.), 2001. Ökosystemmanagement für Niedermoore. Strategien und Verfahren zur Renaturierung. Ulmer, Stuttgart, 317 p. DM 99,80. (in German)

Results of a major multidisciplinary research project on „ecosystem management of fens" (1992 – 1998) in four north-German fen areas in a distinct climate gradient. The book extensively covers the "rewet-ability" of degraded fens and discusses rewetting strategies and their effects on soil characteristics, nutrient economy, trace gas emissions, water quality, and peat accumulation. A second focal point is the establishment of reeds and sedges both by spontaneous and artificial colonisation and the consequent vegetation development of species rich grasslands. Special attention is also paid to the management of faunal species, e.g. by the application of habitat suitability models. Perspectives of low intensity agriculture and the cultivation of renewable resources are discussed and evaluated, and the fen conservation programmes of two German federal states are analysed. A good book, that addresses various important, but often under-exposed issues in fen restoration

Dierssen, K. & Dierssen B., 2001. Moore. Ökosysteme Mitteleuropas aus geobotanischer Sicht. Ulmer, Stuttgart, 230 p. € 59,90. (in German)

The German peatland scientists and IMCG members have had a very fruitful year with respect to producing major peatland textbooks. After Succow & Joosten (see IMCG Newsletter 2001/2 and www.schweizerbart.de/pubs/books/landschaft-181200004-desc.html) and Kratz & Pfadenhauer (see above), also Klaus and Barbara Dierssen have succeeded in publishing a beautiful and interesting compilation of their knowledge of mires acquired during tenths of years of devoted peatland studies. After general chapters on peat formation, hydrology, palaeoecology, mire classification, and biogeochemistry, the central and major part of the book focuses on the vegetation of Central European mires and peatlands. Synthetic vegetation tables and ecological data are presented for all major syntaxa. This vegetation ecological approach is further worked out in a chapter on "peatlands as ecosystems". The final chapters deal with utilisation, threats, strategies for peatland/mire conservation and restoration ("restitution"), and long-term monitoring. The book is illustrated with 112 colour pictures, showing us again how beautiful and diverse our mires are, and

supported by illustrative graphs and tables. Klaus will hate that in fig. 49 the word Sphagnum is written wrong 5 out of 6 times (1x as Sphagnum, 2 x as Spaghnum, and 3x as Spagnum). But, this being the only annoying error, we recall the words of Johan Cruyff "every disadvantage have its advantage": our students are relieved to see that they are not the only ones making such mistakes.

Gopal, B., Junk, W.J. & Davis, J.A. (eds.), 2001. Biodiversity in Wetlands: Assessment, function and conservation. Volume 2. Backhuys, Leiden, 311 p. € 89.00.

Bundles of articles on the assessment, function, and conservation of biodiversity in wetlands all over the world, including river systems (Rhône, Danube, Pantanal), coastal plains (Australia) and tropical wetlands (Africa, South America, South Asia), but also dealing with plant diversity of fen landscapes in the Netherlands.

Vymazal, J. (ed.), 2001. Transformations of nutrients in natural and constructed wetlands. Backhuys, Leiden, 510 p. US$ 148.00.

Volume of 25 refereed contributions resulting from the workshop "Nutrient Cycling and Retention in Natural and Constructed Wetlands III" (Trebon, Czechia, 1999) covering nutrient cycling, carbon transformations, retention mechanisms and wetlands capacity, use of constructed wetlands for various types of wastewater, retention of nutrients by macrophytes, physiological response of macrophytes to nutrient loads, water cycles and budgets, wetland restoration, and ecological functional assessment of wetlands.

Junk, W.J., Ohly, J.J., Piedade, M.T.F. & Soares, M.G.M. (eds.), 2001. The Central Amazon floodplain: actual use and options for a sustainable management. Backhuys, Leiden, 590 p. US$ 148.00.

The Amazon River floodplain, locally called *várzea*, is of specific interest for regional development because of its large size, fertile soils, abundant fishery resources, and valuable timber. Traditional small-scale subsistence farmers are facing increasing pressure from large-scale cattle and buffalo ranchers. There are plans to install large-scale paddy rice and soy bean plantations in the floodplain with dramatic consequences for the local population and the ecosystem integrity. Despite a relatively high fertility, the potential of the *várzea* for agriculture and animal farming is limited by ecological constraints related to the flood pulse.

The book presents in 24 chapters an analysis of the ecological situation, the history of land occupation, the different forms of resource utilization, the socio-economic situation of the population, and the ecological threats of human activities on the Amazon floodplain. Cost-benefit analyses of different forms of land use are compared with market demands and environmental impacts. Conflicts of interest between different stake holders (e.g., smallholders and ranchers, professional and subsistence fishermen) are described. A chapter about environmental legislation and its deficiencies points to the need for additional regulations to avoid further conflicts of interest and negative impact of human activities on the ecosystem.

The book deals with sustainable management of a tropical wetland in an interdisciplinary approach. Therefore, it is not only of interest for the Amazon River floodplain, but it may serve as a conceptional basis for sustainable management in general.

Cronk; J. K. & Fennessy; M.S., 2001. Wetland Plants: Biology and Ecology CRC Press, Boca Raton, 488 p. $ 89.95

The book offers a detailed account of the biology and ecology of vascular wetland plants with reviews from biology, physiology, evolution, genetics, community and population ecology, environmental science, and engineering. Part I includes an introduction, definitions, and an overview of the "functions", hydrology and sediment conditions of wetland plant communities. Part II provides a thorough discussion of the range of wetland plants adaptations to life in water or saturated soils, high salt or high sulphur, nutrient limitations, herbivory, as well as bw light and low carbon dioxide levels following from submergence, and reproduction mechanisms. Part III explains primary productivity, and discusses succession, competition, allelopathy, and disturbance and presents case studies on major invasive plants. Part IV includes the latest research on the development of plant communities in newly restored or created wetlands and on the use of wetland plants as indicators of "ecological integrity" and of wetland boundaries.

Aalbersberg, G., 2001. Landscape and vegetation history of the Somerset Levels. PhD Thesis, 250 p. (online document)

Between 1995 and 1999 Dr. Gerard Aalbersberg did his PhD research at the Department of Geography at the University of Exeter. The research concentrated on the edges of the Somerset Levels, where the rivers coming from the hinterland flow into the low-lying peat area. This central peat area is relatively well known, since it largely consisted of raised bog peat which has been cut for fuel since the early Middle Ages. The discovery of many wooden trackways as well as several well-preserved Iron Age villages (Glastonbury Lake Village and the Meare Villages) has attracted both archaeological and palaeo-ecological interest. However, despite the quality of the palaeo-ecological work several phenomena remained unexplained, especially the cause of the so-called flooding layers, layers of Cladium mariscus-peat in the raised bog. Since the Somerset Levels form a low-lying area, it is liable to flooding from seawater and as well as river water. Evidence for marine incursions was available in the form of

several marine clay layers. However, the Bristol Channel is a very dynamic environment with a tidal difference of 9 m to 13 m.
The new evidence from the Panborough and Glastonbury areas has been combined with the data from existing literature to create a series of palaeogeographic maps of the Somerset Levels between 6000 BP and 1000 BP. Although obviously lacking in detail, the maps do present a good overall idea of the types of landscape that were present at a certain moment.
Thesis downloadable under: www.geo.vu.nl/~aalg/

Bobylev, S.N., Sidorenko, V.N. & Luzhetskaya, N.V., 2001. Economic aspects of wetland conservation. Wetlands International, 56 p. (in Russian)

The book focuses on economic mechanisms of wetland conservation. Major causes of wetland degradation are explained on the analysis of current national macro-economic and sectoral policies and their impact on wetlands. The impact being evaluated, its possible growth in the near future is pointed out. The most important cause for wetland degradation is a nature-consuming structure of national economy that is based on the development of extracting industries.
Special attention is paid to economic valuation of wetlands and current possibilities and limitations discussed. The authors give an integral approach to wetland conservation combining the economic and legal opportunities.
For more information contact the Wetlands International Russia Programme Office: oanisimova@wwf.ru

Hellegers, P.J.G.J., 2001. Groundwater Management for Agriculture and Nature: an Economic Analysis. PhD thesis, Wageningen University, 125 p.

As a result of declining groundwater levels, nature in the Netherlands is suffering from dessication. Since measures taken to raise groundwater levels in order to restore nature often lead to unintended wet damage to crops in adjacent farmland, an economic analysis to determine optimal solutions is required. The fundamental factors involved in such an analysis are presented in this thesis. The main objectives are: 1) to gain an economic insight into conflicting interests between agriculture and nature with respect to dessication of nature; 2) to develop methods and models to analyse groundwater level management; 3) to study agricultural groundwater extraction; and 4) to provide insight into the suitability of policy instruments for both groundwater level and groundwater extraction management.
The study shows that the failure of markets, institutions, and policies has resulted in the dessication of nature in the Netherlands.
The thesis can be ordered or downloaded as a pdf file from:
http://www.lei.dlo.nl/publicaties/rapporten.php3?id=248

Wetlands in Russia Volume 3: Wetlands on the Ramsar Shadow List. Wetlands International, 410 p.

This volume contains descriptions of 166 wetland sites that have qualified as internationally important against the criteria of the Ramsar Convention on Wetlands. They constitute the Ramsar shadow list of the Russian Federation.
The total area of wetlands described here is nearly 44 million hectares. It should be noted that for 48 sites only approximate estimates of area have been provided at this time. The sites are located in 52 out of 89 administrative regions of the Russian Federation.
The shadow listed wetlands include 33 different wetland types, following the Ramsar classification system. The majority of the sites are large complex habitats, with the most common types being permanent freshwater lakes and rivers. Many sites contain peatlands and various floodplains complexes.
A Russian language version of this book is also available. For more information contact the Wetlands International Russia Programme Office: oanisimova@wwf.ru

UPCOMING EVENTS

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

6th Conference of the Parties of the Convention on Biological Diversity

the Hague, The Netherlands, 8-19 April 2002
See previous Newsletter or surf to: http://www.biodiv.org/

European Geophysical Society General Meeting

Nice, France, April 21-26, 2002
With a session on eco-hydrology dealing with:
- technical aspects of hydrological measurements in wetlands;
- hydrological modelling of wetlands
- relationship with surface water and groundwater...);
- water budgets in wetlands;
- typological approach of hydrology of wetlands;
- functional analysis methods.

And with a session on Wetland management
Studies are invited on restoration or degradation of natural functioning due to human action, and on decision support systems applied to the management of large area wetlands.

2nd International Conference on the ecology and conservation of floodplains and lowland mires in the Polesie region

Minsk, Belarus, 22-26 May 2002
See previous Newsletter or contact: dimago@mail.ru

SWS 23rd Annual Conference

Lake Placid, USA, 2-7 June 2002
The theme of the Conference will be Wetland Linkages: A Watershed Approach, focusing on how wetlands are being integrated into initiatives on managing watersheds, as well as how wetlands are inextricably linked to energy, economic and ecological issues. In addition, the technical program has been established to focus on those wetland issues in the forefront of the news of today.
For more information surf to:
http://www.sws.org/lakeplacid/

IMCG Biennial Symposium, Congress & Conference

France, 10-22 July 2002
See elsewhere in this Newsletter or visit:
http://www.imcg.net/docum/france.htm

Peatland Ecology and Efficient Peat Use

Tomsk, Russian, August 21 –25, 2002
THIS EVENT HAS BEEN CANCELED

VIII INTECOL Congress: Ecology in a changing World

Seoul, Korea, 11-18 August 2002
See IMCG Newsletter 2001/2 of contact:
farina@intecol.org; http://www.intecol.org

IPS Symposium: Future Utilisation of Peatlands

Bremen, Germany, 22 – 24 August 2002
Covering the following themes:
1. Agricultural use of peatlands
2. Peatland management
3. Peatland regeneration
4. "Wise Use" of peatlands

For more information: Joachim.Blankenburg@bgr.de

3rd European Conference on Restoration Ecology

Budapest, Hungary, 25-31 August, 2002
"Challenges of the new millennium - our joint responsibility". For more information:
http://www.altagrabusiness.hu/confer3.html

The Third international Symposium on the Biology of Sphagnum

Norway and Sweden, 13-23 August 2002
See previous IMCG Newsletter or surf to:
http://www.vm.ntnu.no/sphagnum2002

Peat In Horticulture – Quality and Environmental Challenges

Pärnu, Estonia, 3-6 September 2002
A symposium of Commissions II (Industrial utilization of peat and peatlands) and V (After-use of cut-over peatlands) of the International Peat Society
Further information: raiko_g@mv.parnu.ee www.peatsociety.or www.mv.parnu.ee/-bdc

Asian Wetlands: Restoration of Structure, Function and Values

Nanjing, China, 08-13 September 2002
See elsewhere in this Newsletter or surf to:
http://www.sws.org/china

International Symposium "Between conservation and use: C.A. Weber and the Augstumalmoor"

Silute (Lithuania), October 2002
See regional news in this Newsletter; for further information and preliminary registration contact Hans Joosten: joosten@uni-greifswald.de

3rd World Water Forum

Kyoto, Japan, 16-23 March 2003,
See also previous IMCG Newsletter. For more information: office@water-forum3.com
http://www.water-forum3.com

XII International Peat Congress "Wise Use of Peatlands"

Tampere Finland 6-11 June 2004,
For more information: ips@peatsociety.fi
http://www.suoseura.com/englanniksi.html