



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

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

Viktor Masing (†), Hugo Sjörs, and Richard Lindsay have been awarded honorary membership of IMCG.

Editorial

Again the international mire community suffers a severe loss: Jean-Marc Hervio died on January 28th 2003. A major loss for France, where he had been driving forward mire conservation in the last years, and for all mire friends who had the opportunity to enjoy his company during the IMCG Symposium in France in July 2002, of which he was one of the main organizer. Jean-Marc was the director of the "Pole Tourbière", the French national mire information centre, which was officially opened during the Symposium. Jean-Marc was a devoted conservationist, who loved the way he lived and worked.

Our editing of the present Newsletter has been as rigorous as always and we take full responsibility for any mistakes we may have made. We plan to publish the next Newsletter around the 16th of June 2003, i.e. before the meeting of the IMCG Executive Committee on 22-23 June. Please send all your contributions, news, publications, etc. to us before June 9th, and with your help we promise to prepare again an interesting newsletter.

For information or other things, contact us at the IMCG Secretariat. Address updates should be send to Jan Sliva (sliva@wzw.tum.de). In the meantime, keep an eye on the IMCG web-site: <http://www.imcg.net>

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Word from our chairman

It's typical. When, after my election as chairman, Hans (Joosten) asked me to write a "Word of the Chairman" for the next Newsletter, I of course said yes. In the meantime already two IMCG Newsletters were issued and the promised "Word" had yet to be written. And now again it is the night before the deadline as I write these lines. And to make the deadline this time, I am writing in German, hoping that John will find the time to translate and format the text and at the last minute put it in the Newsletter.

I must admit, however, that, faced on a daily basis with the dilemma whether to solve immediate work related problems or whether to write this column for the Newsletter, I have always decided against the latter – more so because my work is almost entirely related to peatland conservation or wise use. So much for the apology at the start.

Although I have already worked in peatland research for over two decades, my IMCG career has been rather short. It all started for me at a meeting in Surwold in 1997, where IPS and IMCG were still divided by clear lines. I had no idea of the turbulent and eventful times ahead. Times in which IMCG became more and more important on the international floor of environmental politics, in which operating without status, stamp, and legal Board was slowly becoming critical; Times in which IMCG constituted itself officially in the year 2000 and has intensively and successfully learned to effectively deal with this status; Times in which the importance and reach of IMCG is increasingly growing also outside of Europe after it was recognised that similar or even larger peatland related problems exist there (just to mention the large peatland forest fires in SE Asia for example); Times in which it was understood that cooperation with the International Peat Society gives us more strength to more effectively reach our Peatland Wise Use goals (e.g. the successful incorporation of the GGAP in Ramsar and the birth of the GPI).

I was able to follow it all during these times and where my capacities and knowledge allowed I was even able to actively participate. Most of all this meant (and still means) a lot of work, but in hindsight I can now see how I was able to grow with that – and more importantly – I can see that very often our efforts have had the intended result. And this satisfaction is a worth a whole lot.

Looking back on the recent years some remarks are in place.

As any open and broadly oriented organisation IMCG members have many different backgrounds and opinions. So naturally some of these members do not completely agree with the current working policy, with where the emphasis is put, or with the official status of the organisation. Some may have different visions and may want to change a few things. Those

members I can only urge to get actively involved in the shaping of IMCG. The IMCG Newsletter and the General Assembly provide a platform for such an open discussion. I would like to remind you all of the discussion on the IMCG Constitution, that has been opened by Hans Joosten in IMCG Newsletter 2002/3. Please bring your desires and demands forward in time for the next IMCG Congress.

In the last four years the focus of my wetland and mire research has taken me further south step by step: from Bavaria all the way to Southern Africa. This re-orientation was made possible partly due to the Global Peatland Initiative and the time I spent working in Africa has enabled me to truly appreciate the importance of GPI to *globally* reach the goals set out in the "Wise Use of Peatlands." It is impressive to see the almost untouched landscapes, wetlands, and mires south of the equator in breathtaking dimensions and conditions and with their tropical typicality so unusual for the man from the North. Still, also these ecosystems are threatened; threatened by international tourism and other branches of industry or by the pressure from the local population. And then again it is very impressive to see the extent of the degradation and destruction occurring at these sites after they have been discovered by "civilisation." Fires, drainage, and large scale conversion of peatland landscapes, forest monocultures reaching as far as the eye can see, eutrophication and contamination of vital waters.

My work in developing countries has significantly broadened my horizon. Coming back to Germany many a professional problem, theme, and effort of prospering Europe seem insignificant and hardly worth mentioning. Particularly when I think of the relationship between the money spent and the result that can be expected. How much more you can get done for the same amount of money elsewhere in this world.

With this background I wish to engage myself and IMCG to guarantee that the southern hemisphere gains importance where global conservation and wise use of mires and peatlands are concerned. Water is already a critical factor in social and economic developments in these countries and the state and use of wetlands play a key role in this respect. IMCG can certainly accomplish a whole lot here.

The late Ton Damman gave his column the title "A view from the prairie." I could call mine "A view from the *Papyrus* swamps." In four weeks I'll be down there again to start a new GPI funded project on the conservation of the remains of the peat swamp forests of Maputaland. Time will overtake me again and I will hardly have time to write the column for the next Newsletter, but I hope I will manage to meet you here. Until then I wish you all the best.

Jan Sliva

IMCG Corporate Strategy and Action Plan (2002 - 2006)

The IMCG Corporate Strategy and Action Plan (2002 - 2006) as adopted at the IMCG General Assembly in Besançon (France, July 21th, 2002) has been put on the IMCG Website (www.imcg.net/imcgmiss.htm). The Action Plan is updated up to 31 December 2002 and can as such be considered as the annual report 2002 of the IMCG.

The Action Plan is a dynamic document. On several places concrete tasks and champions (people responsible for the delivery of a specific action or output) have not yet been filled in. Please take a look at the action plan and contact the IMCG secretariat (Joosten@uni-greifswald.de) if you want to participate in and support specific activities .

IMCG Congress 2004 – South African mires and peatlands

12 – 26 September 2004 (Second Circular)

Invitation:

You are invited to participate in the 2004 International Mire Conservation Group's (IMCG) Congress in South Africa from 12 – 26 September 2004.

The congress programme:

1. Pre-congress Field trip: 12–22 Sept.
Theme: Southern African Mires and peatlands
Venue: South Africa and Lesotho
2. Symposium (scientific presentations): 23–25 Sept.
Theme: Management challenges for Wetlands, Mires and Peatlands in the 21st Century.
Venue: Cape Town
3. IMCG General Assembly: 25 – 26 September 2004
Venue: Cape Town

Cost:

A special rate applies for participants from African countries who wish to present papers or posters at the congress or want to attend certain legs of the field trip. Please contact the South African organisers for more details. Participants from other developing countries can contact the IMCG secretariat for assistance – contact details below. Please note that transport to and from South Africa are not included:
Costs of the Total Package: Euro 950

Costs of single parts:

Pre-congress Field trip: Euro 850. African country delegates should contact the South African organisers for discount packages.

Symposium (scientific presentations): Registration cost: Euro 200. African country rate: R250 per day.

IMCG General Assembly: No cost, but you must arrange own accommodation and transport

Background to South African mires:

Mires in South Africa occur in a diversity of habitats in a variety of climatic zones and landscapes. These include amongst other:

- karst fens in the semi arid grassy savannah
- cool temperate reed/sedge fens,
- sub-tropical swamp forests,
- alpine alluvial fans

Impacts on these mires vary from water starvation, erosion, peat mining, cultivation and forestry. But many are still in a pristine conditions such as the mires of the Greater St. Lucia Wetland and uKhalamba-Drakensberg World Heritage Sites and various Ramsar sites.

In South Africa some 16 000 – 20 000 ha of mires and peatlands have already been identified. These vary in size from small seep line to valley bottom fens in the Highveld and escarpment regions (e.g. the Klipriver Peatland south of Johannesburg) and enormous mires such as the 8 800ha Mkuze Delta.

Peat is important to three sectors of the South African society: the commercial nursery and mushroom industry, the rural subsistence horticulture, and peatlands as part of wetland conservation. Peat mining, providing peat as substrate for mushroom growers and commercial nurseries, forms the main peatland use activity on the Highveld. In all the high rainfall regions also afforestation has large impact not on only peatlands, but on wetlands in general. The most intensive peat mining operations and degradation of wetlands by draining, infrastructure, and pollution (e.g. heavy metal leaching from mine dumps and sewerage) occur on the Highveld.

Peatlands are primarily used as a water resource and a horticultural substrate in some of South Africa's rural areas and play a crucial role in the coastal areas as a means of survival in the daily lives of the local

inhabitants. Peatlands in general have a high conservation value and they support unique biota and ecological processes. Therefore, they not only provide a refuge for rare species but they also have a high value for tourism. The Highveld peatlands play an important role in the regional hydrologic system, which must be weighed up against its domestic and commercial applications and the cost of pollution of these wetland environments.

Preliminary excursion schedule:

- Meet at Johannesburg International Airport on 12 September South Africa at 14h.
- Highveld: Karst fens and peat mining (50 km radius west and east of Johannesburg) - 1 day; Peatland rehabilitation - (Pretoria) - 1 day; Meet with relevant governmental officials (2/11 days)
- Eastern Escarpment Plateau: Reed/segde fens in Grassveld biome: Pristine and Commercial agricultural and trout farming impacts (Dullstroom - 250 km north east of Johannesburg - 2 days (4/11 days)
- Eastern Seaboard: Subtropical papyrus/reed/swampforest interdune fens – pristine to subsistence farming and dramatic afforestation impacts: 45 000 year old active Mfabeni peatland and 8 800 ha Mkuze delta peatland (In some ways similar to Okavango) Large portion is part of Greater St Lucia Wetland Park World Heritage Site (and includes coral reefs, estuaries, lakes and mires, lots of wetlands and the BIG 5: Lion/leopard, Elephant, Buffalo, Rhino and Hippo!! - 3 days (7/11 days)
- Lesotho via Waterval Vley: Unique (We think!) Interbedded gravel/peat alluvial fan mires at 3000 m a.m.s.l. Some pristine some impacted on as a

result of Lesotho Highland Development Water Transfer Scheme to South Africa. 2 days (9/11 days)

- Southern Seaboard via the Karoo: The palmiet (*Pronium Serratum*) fens and “*Sphagnum* dominated floating moor” on the south Cape Coast in the smallest and richest floral kingdom in the world. The Garden route and the Cape Fold Mountains, etc – 2 days (11/11 days)

IMCG Symposium and General Assembly:

Cape Town – 4 days

Field conditions:

Normal wetland field conditions and normal footwear (boots) for mire/wetlands.

NOTE: Dangerous animals (Elephant, Buffalo, Hippo, Crocodile etc) might be present in mires and wetlands. Anti-malaria precautions are required.

Special conditions:

Some areas are popular holiday destinations: Reservations must be booked well in advance.

Please come and join as in South Africa. Accompanying persons are welcome. Contact Piet-Louis and Althea or the IMCG Secretariat for more details:

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REGISTER

Please fill out the IMCG registration form.

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

Global Peatland Initiative in Southern Africa (1) – IMPESA Project

by Jan Sliva and P-L Grundling



The GPI, the Global Peatland Initiative, has been mentioned several times already in the IMCG Newsletter (last time in IMCG Newsletter 2002/4). With Southern Africa being designated as a

focal area for IMCG action between 2002 and 2004 (i.e. until the IMCG Congress in 2004 in South Africa), the GPI was used to realise the first peatland-related projects also in this region.

The necessity, feasibility, and the extent of potential peatland related project topics in southern Africa were discussed among numerous IMCG members, and several preliminary ideas were developed. Depending on their importance with respect to the GPI aims and goals, as well as on the amount of the funds available, only one project proposal called “*IMPESA I. – Identification and Mapping of Peatlands in Southern Africa, Phase 1: Framework Development, Resource Evaluation and Training*”) was submitted for the first period of the GPI (2001/2002) and successfully approved. The applicant was a consortium of three universities – University of Pretoria in South Africa, H.Oppenheimer Okavango Research Center of the University of Botswana, and the Technische Universitaet Muenchen, Germany.

Based on the results achieved in the IMPESA I work, the critical issues (“hot spots”) with current regional threats were discussed and most likely “the hottest one,” the dramatic destruction of the last remnants of the peat swamp forests in Maputaland (east coast of southern Africa) was chosen for the next GPI-funded action in this region for the GPI period 2003. The project proposal “*Maputaland – Wise Use of Peat Swamp Forests in Maputaland, South Africa, Mozambique*” was developed as the first project in Africa carried by the IMCG. After two runs of improvement and rectification, the project was finally approved in February 2003. Beside the Maputaland project, the continuation of the IMPESA initiative was also endorsed and the “*IMPESA, Phase 2 – Peatland Mapping*” may start as well this year.

This article focuses on the IMPESA initiative. The problems with respect to peat forests in Maputaland will be dealt in one of the next issues of the IMCG Newsletter.

The reason for and the aim of the IMPESA initiative is simple: whereas the knowledge on peatland occurrence, distribution, and quality is relatively high in Europe (as it generally applies for the northern hemisphere), the knowledge on the diversity and distribution, functions and values of mires and peatlands in Africa is rather miserable.

The Ramsar COP7 document “Regional overview of implementation of the Convention and its Strategic Plan 1997-2002 in Africa” (DOC.8) as well as the results of the Wetlands International inventory activities (Finlayson/Spiers, WI: Global Review of Wetland Resources and Priorities for Wetland Inventory) emphasise the enormous current needs for the completion of knowledge of the inventory and status of peatlands in southern Africa. Hence also the Ramsar Guidelines for Global Action on Peatlands (GGAP) point to the necessity of the endeavour to fill the information gap as a prerequisite for the development of complete national management and strategic plans in countries of this region.

The IMPESA initiative follows these strategic directions and should deliver at least an important part of the information required. This shall be reached by

- a general peatland inventory followed by the identification of key peatland areas (e.g. peatlands of international importance) in southern Africa
- developing and promoting of a network of local, national, and international initiatives for peatland conservation and peatland wise use (held by governmental representatives, environmental NGOs, science, and peatland related industry).

In the first phase (October 2001 until June 2002, the first grant period of GPI), the platform for the implementation of the project in southern Africa was developed. Only seven southern African countries (Botswana, Mozambique, Namibia, Lesotho, South Africa, Swaziland, and Zimbabwe) were involved in this phase not only because of limited funds, but also to be able to guarantee an efficient project performance.

The short first project phase concentrated on building the strong and effective Southern African Peatland Group (SafPG), as well as on an efficient structure of the whole project, which is planned to run for ca. five years. Altogether there were five objectives to be achieved during this first period:

- A) Development of Southern African Peatland Group (SAfPG)
- B) Disseminating documents “Wise use of Peatlands”
- C) Gaining an overview of the current status quo of peatland inventory within SAfPG
- D) Developing a peatland inventory assessment sheet and peatland inventory database
- E) Training of the SAfPG on peatland inventory and evaluation issues (workshop)

(A) The SafPG is made up of representatives of the three applicants and local contributors who are responsible for the on-site work in their own respective countries.

Until the IMPESA Workshop in March 2002 the group consisted of seven members, including

representatives of three applicant universities (G Bredenkamp, South Africa; S Ringrose, Botswana; J Sliva, Germany), two co-ordinators (PL Grundling, South Africa; M Heintl, Germany) and four local contributors: B Tacheba (Botswana, responsible for Botswana and Namibia), F Momade (Mozambique), L Guminega (Zimbabwe) and PL Grundling (South Africa, responsible for South Africa, Lesotho and Swaziland). In March 2002, Prof. F Becker (University of Namibia) joined the Group.

In the meantime, also numerous representatives of governmental authorities, non-governmental organisations and academic institutes have joined the SAfPG, several of which attended the St. Lucia Workshop in March 2002.

(B) An IMPESA leaflet and a poster were created (by M Heintl at TUM Munich), with information on the ideas and goals of the IMPESA initiative as well as on the characteristics of peatlands in southern Africa. It served to raise awareness of the ecological importance of peatlands and the necessity of a wise use for their maintenance.

This leaflet was distributed (among others):

- as an attachment to the IMCG Newsletter 2002/1 – to all African IMCG Members and NGO offices which are registered in the IMCG distribution list,
- to the delegates of the 6th meeting of the Conference of Parties to the Convention on Biological Diversity (COP-6) in April 2002 in The Hague, The Netherlands,
- to the participants of the IMCG Conference in July 2002 in Besançon, France and
- to the delegates of the RAMSAR COP8 in November 2002 in Valencia, Spain.

The effect was apparent when the number of southern African IMCG members increased from two to 22 in July 2002!

(C) The first project phase focused on literature research to gain an overview of what information is available and where work needs to be done in the second phase. Searches were conducted in readily available sources, like published books and scientific papers obtainable from libraries both in Africa as well as in Germany.

Additional searches were done in “grey” sources, i.e. local and regional publications, internal reports, expertise etc. These sources in particular provided important data on ‘unproven’ peatlands and shall be evaluated carefully by the local managers.

The data found in the various available sources may only hint at all possible peatland occurrences and must therefore be evaluated carefully. All areas will be checked for peatland occurrence in the second phase.

Topics targeted in the literature search concentrated on:

- Peat, peatland, mire, fen, bog
- Wetland, organic soils
- Southern Africa, Botswana, Lesotho, Mozambique, South Africa, Swaziland, Zimbabwe.

These topics were later expanded to include pollen studies and C-14 dating, including the names of recognised researchers in this field in South Africa.

(D) The development of the peatland inventory assessment sheet was already discussed intensively at the first IMPESA meeting in Pretoria in January 2002. After the Pretoria-brainstorming on the evaluation parameters, the first draft of the Peatland inventory assessment sheet was finalised by J Sliva and M Heintl at TUM in Munich and sent to all national contributors. During the IMPESA Workshop in March 2002 in St. Lucia, the draft was intensively discussed and the final version elaborated. This final version was then used for the further work of regional contributors as well as for the development of the MS Access database.

The data derived from the evaluation sheets are stored in the IMPESA Peatland Inventory Database. This database was developed and is maintained at the TUM in Freising, Germany. A CD-ROM of the latest version (July 2002) of the MS Access database (14 MB) is freely available upon request (send e-mail to: peatland@impesa.net).

(E) A workshop for the members of the SAfPG and numerous invited guests was held on 25th - 28th March 2002 in St. Lucia Town, South Africa.

The aim of the workshop was first of all to get to know one another, to introduce the SAGC-representatives especially to the local managers, and to clarify responsibilities within the group. Furthermore the Global Peatland Initiative (GPI) and the IMPESA project rationale were presented and discussed. All members held a short presentation on their activities and results after which the data were evaluated and discussed collectively.

An important task of the workshop was the training of the SAfPG on peatland ecology, values and functions, inventory, and evaluation issues. During a half-day excursion different types of peatlands were visited at St. Lucia Wetland Park.

Results of the data search: using the standardised evaluation sheet, altogether 170 references on peat occurrence were evaluated for 7 southern African countries.

References for Botswana:	40
References for Lesotho:	18
References for Mozambique:	7
References for Namibia:	5
References for South Africa:	71
References for Swaziland:	0 (!)
References for Zimbabwe:	29

The results are available as download [pdf-file, 1.8MB] from the IMPESA website: <http://www.impesa.net>. We appreciate any comments and improvements, in particular any information on new references from Southern African countries.

Based on the results of the first phase of the IMPESA, the proposal for the second phase was

submitted to the GPI Steering Committee in the fall of last year. Within this second phase, the full inventory and mapping (1:50.000 scale) of peatlands in South Africa, Lesotho, and Swaziland is planned (due to limited funds the number of countries also had to be limited), as well as the generation of preliminary Peatland Eco-Region Maps for Botswana, Namibia, Mozambique, and Zimbabwe. Since the expected project budget was cut by 20% during the approval process, also the on the ground mapping in Swaziland can no longer be guaranteed. On the ground mapping will be carried out in areas with potential, but yet un-inventoried peatland occurrences. These areas will be selected based on the results of the IMPESA phase I, as well as on the Peatland Eco-Region maps and evaluation of satellite imagery and areal photographs. Similar to the development of the "Standardized Evaluation Sheet of Peatland Resources" for IMPESA phase I, the peatland inventory and mapping will be implemented

using methods derived from, and fully compatible with, recent RAMSAR wetland inventories.

Peatland Eco-Region Maps for Swaziland, Botswana, Mozambique, Namibia, and Zimbabwe will be developed applying the same methods already successfully used for South Africa, i.e. by using available regional data on geology, soil, topography, vegetation, and hydrology and remote sensing techniques in co-operation with the local contributors.

Within the scope of the ongoing second phase, also three new southern African countries Malawi, Tanzania, and Zambia will be contacted and adopted into the IMPESA initiative.

The IMPESA Group is very interested in any comments, hints and suggestions that can improve our efforts in Africa. Please contact us using email: peatland@impesa.net.

Nature conservation in Russia and the Ramsar Process

by Tatiana Minayeva

Due to the total state ownership on land and the indifferent attitude to human rights reflected in legislation, the former Soviet Union and particularly the Russian Federation had developed a very good system of protected natural areas. A significant part of them include mires and wetlands. At the same time the fulfilment of the obligations towards the Ramsar Convention is not formally provided in current Russian legislation. The Ramsar sites are not mentioned in any legal document besides the statement of the Government of the Russian Federation (dated 1994) on the designation of 35 Ramsar sites by Russia as a successor of the Soviet Union. "Wetlands of international importance" are mentioned once in the Water Code, without any specification. Wetlands International Russia Programme is looking for possibilities to integrate the Ramsar approach of wetland conservation into the existing system of nature conservation and environmental legislation. We base our attempts on the following analysis of the current situation.

The protected areas system in Russia

In Russia the concept "protected nature area" includes a wide range of land-use regimes aimed at long-term conservation of the natural environment of different species and their communities. The

difference between Protected Nature Areas (PNAs) and Specially Protected Nature Areas (SPNAs) is based on the land status.

Protected Nature Areas (or Protected Areas) are lands with limited use. Some economic activity may be allowed as long as damage to the environment is minimal and the renewal of natural resources is secured. Examples of such protected areas are:

- *Group I forests* where the felling of trees is limited, successfully supporting the natural forest regeneration cycle. Such forests mainly prevent soil degradation, protect endangered species and their habitats, and provide for the natural regeneration of biological resources.

- *Lands along river banks* (water protected zones) where ploughing, building constructions, and cutting trees are forbidden but that can be used for hay making and forestry. In this status they can still provide for biodiversity conservation and protection against erosion.

- *Protective forest strips in rural landscapes* to provide conditions for species migration, maintenance of soil quality, and prevention of the spread of pollution.

The area covered by such areas is difficult to estimate, but it may be up to 50 % of all lands. Even in the most densely populated regions of Russia protected areas are situated everywhere.

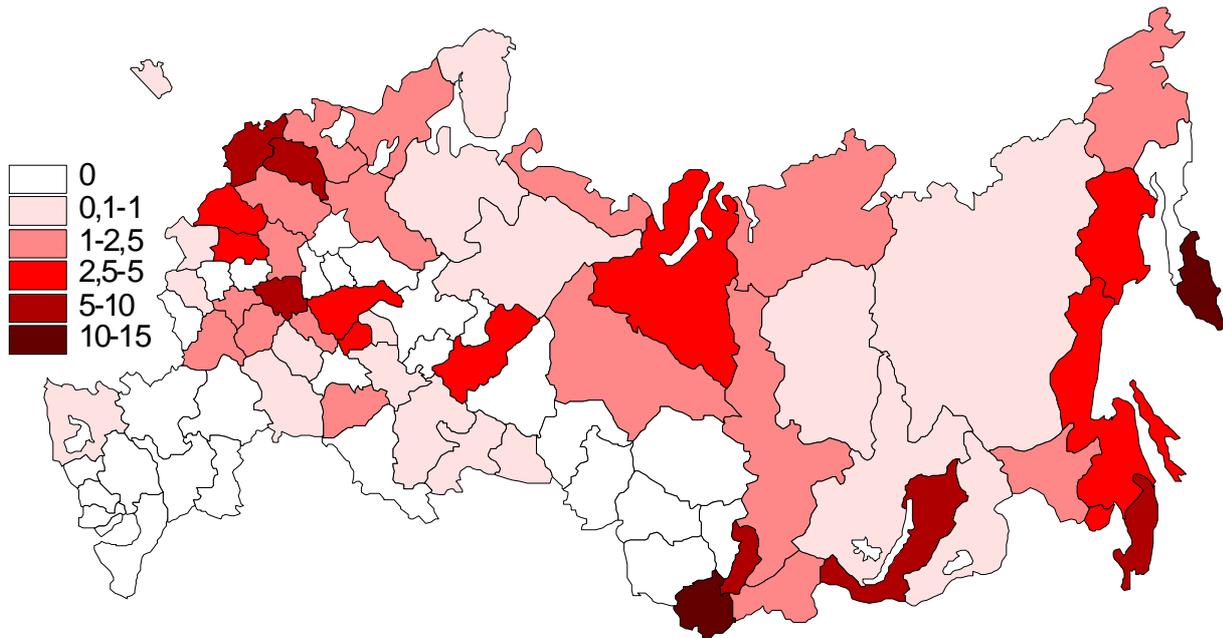


Fig.1 The percentage of mires area included in the federal and regional SPNAs (According Land Survey of Russian Federation, 01.01.2000).

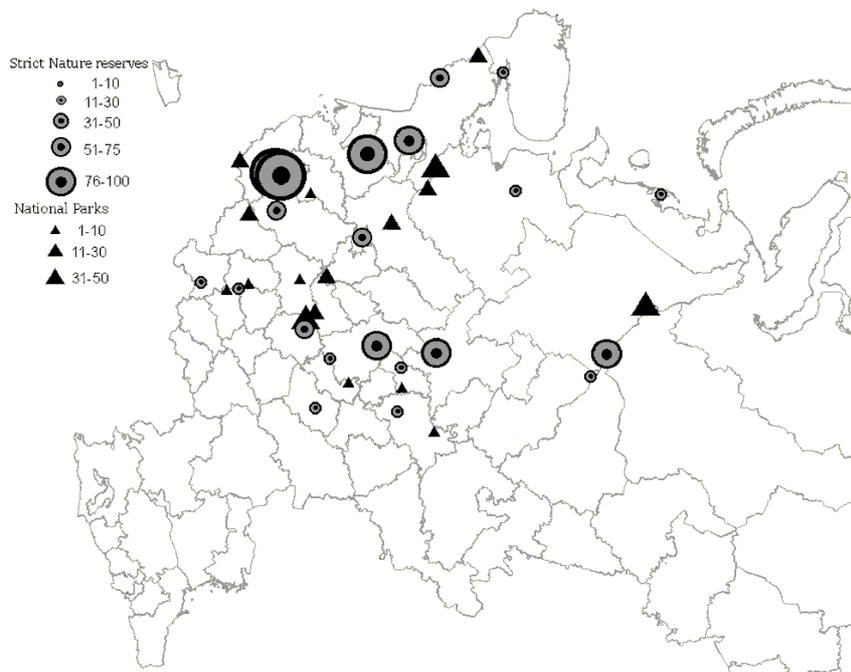


Fig. 2 The percentage of area of Strict Nature Reserves and National Parks occupied by mires within the European part of Russia (According All-Russian geological fund 01.01.2001, proceeded by O.Starodubtseva)

In Specially Protected Nature Areas (SPNAs) the environment is strictly protected against human activities. In 1995 the Federal Law on SPNAs endorsed the following categories of SPNAs: state nature reserves (including biosphere reserves), national parks, nature parks, state nature refuges, nature monuments, dendrological parks and botanical gardens, and health resort areas. The law designates SPNAs both at the federal and regional level and regulates land-use regimes within all SPNA categories. As a rule, economic activity is forbidden or very strictly limited. The Federal level SPNA system today includes 100 Strict Nature Reserves (any interference with natural processes, including visiting is forbidden), 35 National Parks (includes

tourist zones, zones of restricted economic activity, and strictly protected zones), and 69 Federal refuges (aimed at the reproduction of natural resources by restricted use and special management). The authorities of the subjects of the Federation¹ where Federal SPNAs are situated have only a consultative voice in management decisions concerning the SPNAs. The territories are supported by the Federal budget (in the last 12 years the financial support was

¹ The Russian Federation is administratively divided into 89 so-called "subjects of the Federation", including 21 republics, 6 krais and 49 oblasts, 2 Federal cities (Moscow and St.-Petersburg), 1 autonomous oblast, and 10 autonomous okrugs.

severely restricted, but in principle it still exist). According to the Federal Law new specific types of SPNAs within the subjects of the Russian Federation can still be developed in order to help solve specific regional problems.

The areas of the international importance, designated by international bodies or within international statutory frameworks, have no certain status in Russian legislation. For example World Heritage Sites are mentioned only once in the Federal Law on

Environment Protection (without any specific regulations), but not in the Federal Law on SPNAs. The UNESCO Biosphere Nature Reserves are mentioned in the Federal Law on SPNAs, but only as a type of Strict Nature Reserves, what is not compatible with the UNESCO concept, according to which a Biosphere Reserve should include zones of economical activity. Ramsar sites are also do not mentioned in legislation as was mentioned above.

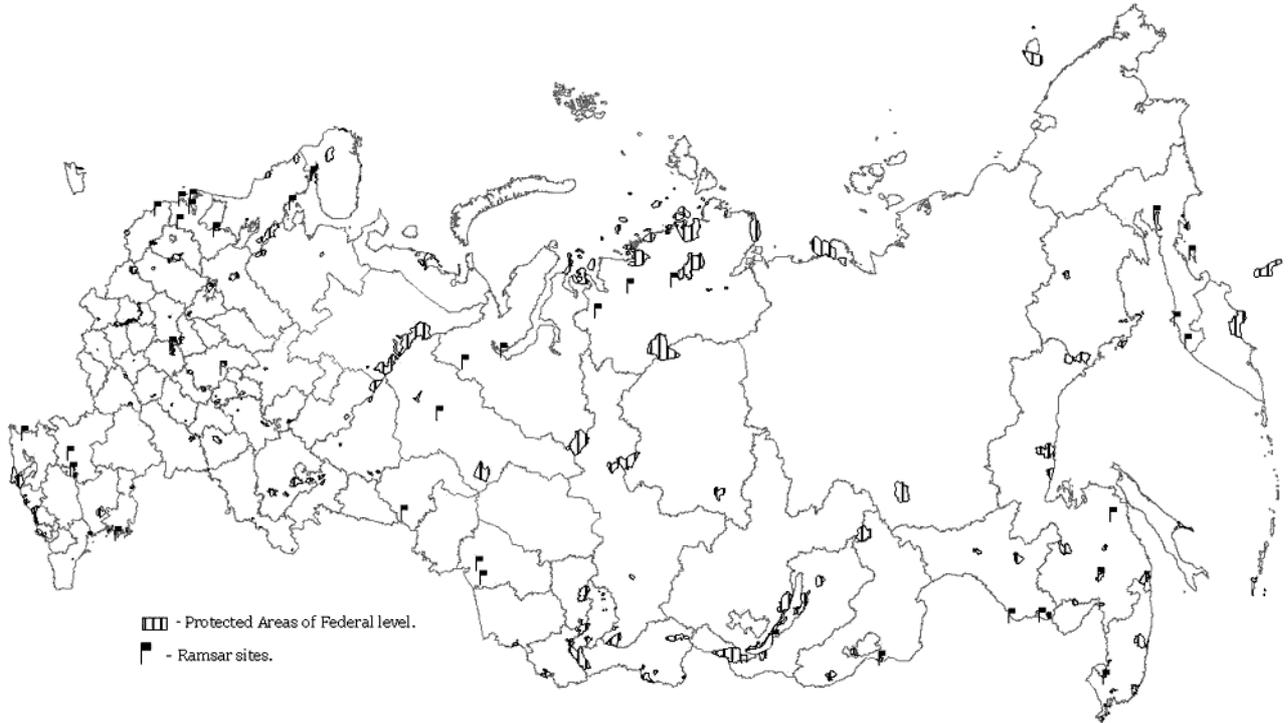


Fig. 3. The designated Ramsar sites and Federal SPNAs in Russian Federation

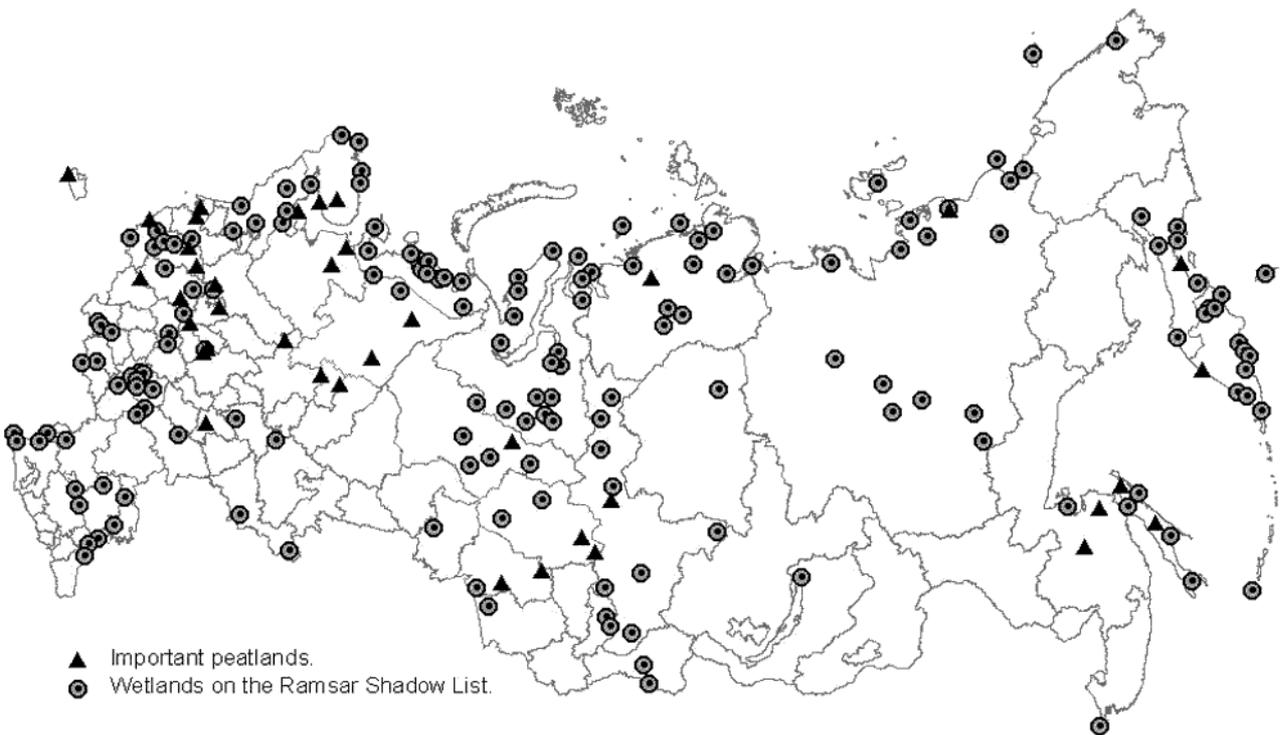


Fig. 4 The "Shadow list" Ramsar sites and most valuable peatlands in Russian Federation

The protected areas system and wetlands conservation

As far as the wetlands cover a significant part of the territory of the Russian Federation it is obvious that they are proportionally represented within the SPNA system. The data presented in figures 1 and 2 only deal with mires, which according to the latest inventory cover up to 20 % of the area of the country. From these figures it is obvious that the percentage of mires under protection within the SPNAs is very high, with exception of the southern regions of Russia. So we could state that the diversity of wetlands landscapes, ecosystems, and habitats is more or less protected by the national SPNA system.

But what about the other criteria of Ramsar sites? A glance on the map of the Federal SPNAs and the designated 35 Ramsar sites (fig. 3) shows that there is very little overlap between them. There are two reasons for that:

1) the areas which fit to Ramsar criteria, especially as waterfowl habitats and regulating landscapes, are too large and include lands with traditional land use; consequently they can't be excluded from economical activities and designated as national categories of SPNAs;

2) very often when local groups failed to develop a SPNA of national level because of contradictions

Fig. 2. The percentage of area of Strict Nature Reserves and National Parks occupied by mires within the European part of Russia (According to the All-Russian Geological Fund 01.01.2001, proceeded by O. Starodubtseva) with local and/or regional authorities or land users (such as oil companies, peat or forest enterprises), they tried to use international mechanisms for the protection of the valuable wetlands, e.g. the Ramsar Convention. Sometimes this facilitated the process of SPNA development. A recent example is Vasjuganie mire: for 20 years initiative groups failed to organize a protected area here. In 1999 the site was included in the national Ramsar Shadow list. That fact raised awareness among specialists and administration, put more arguments in negotiations with land users, and the territory (> 1 mln ha) was agreed last year as protected area.

The most peculiar thing is, that according to current national legislation, designated and internationally protected Ramsar sites are not protected if they are no SPNAs. Of the 35 existing Ramsar sites one fourth

has no official status as a national SPNA. It means that in case of conflict between land users and environmental inspection the latter can only appeal to the International Court, because there is no national legal background to restrict land use within these areas. At the same time, however, if something happens within a Strict Nature Reserve or even along a river bank water protection stripe, all possible laws can be applied to serve the needs of nature conservation. We are far from the idea to introduce the "Ramsar site" as a new category of SPNA. The "Ramsar site" is conceptually closely related to the Biosphere Reserves: conservation both by protection and by wise use. That should be reflected in Russian legislation adequately.

Perspectives

The National Shadow Ramsar list currently contains more than 150 sites (fig.4). Besides that, 50 valuable peatlands were defined. These sites present a wide range of biotopes and habitat types and meet different Ramsar criteria. Anyway, being aware of the current budget of the environment sector, it is difficult to imagine that all of these sites will soon be officially nominated as Wetlands of International Importance. It would be worthwhile to develop a multilevel system for wetlands conservation in such a big country defining different levels of wetlands importance: local, regional, national, and international. Even if there is chance to prepare all documentation and to obtain the designation for some of sites, this still won't guarantee the appropriate level of protection for the wetlands. The facts mentioned above define the highest priorities for the Ramsar process in Russia:

- 1) improvement of the legislation, and particularly development of special regulations for Ramsar sites
- 2) using more effectively the existing system of SNPAs
- 3) development of a multilevel wetlands conservation system for Russia
- 4) evaluation and monitoring of the conservational effect of Ramsar sites protection and management
- 5) inventory and evaluation of designated and shadow list Ramsar sites.

We thank Irina Onufrenya, Wetlands International Russia Programme data base manager, and experts Andrej Sirin and Olga Starodubtseva for providing data and producing maps.

The Constituent Meeting of the Peat Society of the Russian Federation

by *Tatiana Minaeva*

On 11 February 2003 in Kostroma (a regional center 400 km east of Moscow) the constituting meeting of the non-commercial partnership "Peat Society of the Russian Federation" was held. The initiators of the partnership were representatives of Rostoprom Ltd. (Russian fuel company) and a number of enterprises directly connected to Rostoprom. During the meeting a Coordination Council of the partnership was installed. The representation structure of the Council is as follows: a representative of Lower Chamber of the Parliament (Duma); the head of the natural resources committee (formerly involved in the peat extraction industry); a representative of the Ministry of Energy of the Russian Federation; a representative of the Ministry of Agriculture (not present); a representative of the Kostroma regional administration; 8 heads of regional peat enterprises; a representative of Rostoprom Ltd.; 2 representatives of Peat Research Institutes (St-Petersburg and Tver); a representative of an international NGO. The regulations of the organization were presented by Rostoprom and accepted by the meeting; the regulations are still open for possible amendments.

At this point we want to underline that unfortunately the forestry and agriculture sectors, peatland specialists, and ecologists were not really involved in the process of partnership development. The charter presented during the meeting is a mixture of translated fragments of IPS regulations (in its declaration part) and of the development plan of the peat energy sector in the Russian Federation. The discussions with the Head of Rostoprom Mr. Belozorov that followed demonstrated that the partnership may in future develop into an organization which could be considered as IPS National Committee in the Russian Federation, but at this moment it is too narrowly focused on the industrial peat fuel development. We wish the new organization all the best and hope that it will contribute to the wise use of peatlands in Russia!

On the 12-13th February a follow up event was held in Kostroma: a scientific and practical conference "Wise use of peat and other resources of peatlands." The presentations mainly demonstrated that very little peat resources are used and the discussion concentrated on possibilities how to stimulate the peat industry. A significant part of the reporters discussed the need to replace oil and gas by peat for local needs. That priority was stated in the Federal Energetic Program and the Kostroma region had expressed its willingness to become an experimental region for change all heating systems to peat fuel. The proceedings of the conference are published in Russian:

Wise use of peat and other resources of peatlands. Proceedings of the scientific practical conference, Kostroma, 12-13 February, 2003. St-Petersburg, 2003. 180 pp. (in Russian).

As a member of Coordination Council of the newborn organization I would like to say that it could be important, even very important, but at the moment it is not. I am absolutely sure that IPS and IMCG could find a rational balance between influence via international mechanisms and interference with sovereign issues of the Russian Federation to avoid the mistakes made in the historical use of Western European peatlands: at first destroy, then calculate, then invest in restoration. It can be realized the other way around: first calculate, then plan, then use wisely and than there is no need for large investments for restoration. The peatlands of Russia are part of the global heritage. The decisions of the Russian government (to use peat instead of oil for the local population, attempts to keep Asian former Soviet Republics dependent on Siberian freshwater) have a significant impact on the global environment. The decisions are pressed through all sectors of society: via NGOs, Parliament, legislation, the scientific society, and have good PR and support. The Russian environmental NGOs can't stand that pressure on their own. A wise use approach should be developed for the special case of this country with practically undestroyed peatlands: the sweet piece for rapid money. The IPS National Committee of the Russian Federation should be a partner in the development of that new approach.

As the last presentation in the proceedings an article of Linda M. Davice, President of Mentor Fund, Virginia, USA is published. Ms. President gives "high quality advises" how to organize and manage the process of conversion of heating systems in Russia from oil and gas to peat. A clear and easy outline of the whole process is presented. Oil and gas are considered as "remote sources of energy" which could be replaced by local sources. The nearest branch of oil pipeline is 20 km from Kostroma, the nearest oil refinery factory 80 km, the nearest active oil deposit not further than 1000 km away. Maybe Virginia also will use peat from Potomac valley, instead of searching for oil in Iraq? I suppose that such consultancy process should also be under thorough monitoring of the international NGOs. I suppose that Mentor Fund expects good income from the investments. And what income is expected from freshwater ecosystems, global biodiversity, and climate?

Peatland news from Tasmania

by Jennie Whinam

A “Peatland Extravaganza” was run in Tasmania on 13-14 February to coincide with the visit of Prof Michael Succow & Dr Lebrecht Jeschke. The peatland extravaganza was run by the Ecological Society of Australia, the University of Tasmania and Nature Conservation Branch. The one-day symposium & one-day fieldtrip to the buttongrass moorlands of southwestern Tasmania were a great success, with a total of about 50 attendees (which is excellent for Tasmania!).

Michael and Lebrecht gave the opening presentation on the hydrogenetic and ecological mire types of central Europe. The other keynote speaker was Prof Geoff Hope from the Research School of Pacific Studies at the Australian National University who spoke on the tropical peatlands of the Pacific and SE Asia as well as the mountain and coastal mires of mainland Australia. The focus of the bulk of the symposium was on aspects of the ecology of buttongrass moorlands (their peats, peat-vegetation interactions, the role of burrowing crayfish, the impacts of fire and their long-term prognosis given the current impacts of climate change. I managed to slot in a session on our cute Sphagnum peatlands (even though they make up <0.0015% of the Tasmanian landscape!), and there was a session on the peatlands of sub-Antarctic Macquarie Island.

The fieldtrip provided the opportunity for much debate on the role of landscape in peat formation, whether buttongrass moorlands were actually

‘peatlands’ (as many of the sites do not qualify under international definitions of peat depth and/or organic content), the history of these peatlands and the role of fire. Michael & Lebrecht were quite surprised to discover that a temperate buttongrass moorland with >1500 mm of rain per annum, rarely has more than 1.5 metres of peat.

The symposium was at the end of a week of field visits across Tasmania for Michael & Lebrecht with local peatland experts and meant that they had at least a brief overview of the different peatland types in Tasmania. After the fieldtrip they agreed that they would write a ‘classification’ of the peatlands they have seen, with some emphasis on how they view buttongrass moorlands.

The symposium and visit of two European peatland experts received good media attention, with 2 radio segments, one Tasmanian newspaper article and a 4-minute spot on television with the Australian Broadcasting Corporation. The visit by Michael & Lebrecht came at a fortuitous time, as it seems that the research on peatlands in Tasmania has reached a stage where collaboration of thoughts, projects and findings are fermenting into new ideas on buttongrass moorland evolution and their ecologic role.

Jennie Whinam, Nature Conservation Branch,
Department of Primary Industries, Water and
Environment



INTERNATIONAL MIRE
CONSERVATION GROUP

Wetlands and peatlands of Iraq

Hans Joosten

In the framework of a GPI funded project, IMCG is currently preparing a worldwide overview of the status of the mires and peatlands of the World. For every country a description is given of the natural conditions (as far as relevant for peatland occurrences), the mires and peatlands present, their condition, and the expected trends. Most of the work is done by compiling literature. In this Newsletter we want to present an example of such country description in preparation. For topical reasons we have selected Iraq.

Iraq is a republic in the Middle East, bordered on the north by Turkey, on the east by Iran, on the south by Saudi Arabia, Kuwait, and the Persian Gulf, and on the west by Jordan and Syria. Iraq has a total area of 437,072 km². The country's greatest axis, running from the Turkish border to the shores of the Gulf, is almost 1,000 km.

Two great rivers, the Tigris and the Euphrates, both of which rise in the eastern mountains of Turkey and enter Iraq along its northwestern borders, traverse Iraq. After flowing for some 1,200 km through Iraq, these two rivers converge at Karmat Al, just north of Basrah, to form the tidal Shatt Al Arab waterway, which flows some 110 km to enter the Gulf. The Euphrates does not receive any tributaries within Iraq, while the Tigris receives four main tributaries, the Khabour, Great Zab, Little Zab and Diyala, which rise in the mountains of eastern Turkey and northwestern Iran.

There are four major areas within Iraq:

- The mountain region with the high Zagros Mountains in the extreme northeast. Elevations range from 900 to 3,607 m at Jabal Ibrahim, the highest point in Iraq.
- The upper plains and foothills region, a steppe sub-montane belt that forms a transitional area between the highland areas and the desert plains.
- The great alluvial plains of the Tigris and Euphrates Rivers in central and southern Iraq, the ancient Mesopotamia, that comprise about 25% of Iraq's surface area. The whole area is extremely flat and for a large part regularly inundated. The triangle Basrah-Amara-Nasiriya in the southeast was in former times during the flood season one expanse of continuous marshland, while in the dry season there remained numerous large permanent lakes and extensive reed beds inter-connected by an intricate network of channels. In recent years, seasonal flooding has decreased substantially because of intensive water regulation by dams upstream on the Tigris and Euphrates and especially on the Euphrates in Turkey and Syria.
- The desert plateau region largely to the west of the Euphrates, that covers more than half of the country: on the southern border with Saudi Arabia

is the Shamiya Desert; on the west, part of the Syrian Desert. Conditions grade from semi-desert (the upper Jazirah, especially the area between the Tigris and Euphrates in the north) to a more typical sandy desert in the far south and west.

Most of Iraq has a continental climate: the summers are long, hot, and dry and the winters short, and relatively cool and wet. Daily temperatures range between 20 and 40° C in summer, and between 5 and 15° C in winter. The average annual rainfall ranges from about 100 mm in the south to 300 mm on the upper plains and 1,000 mm in the mountains. The mountainous northeastern area has cool summers and cold, often snowy, winters. The Syrian Desert receives little or no precipitation (Scott 1995, Microsoft Encarta Encyclopedia 2002).

The wetlands in the middle and lower basin of the Tigris and Euphrates Rivers in Iraq were, until recently, the most extensive wetlands in the Middle East. The Mesopotamian Marshes in their lower courses comprised a complex of inter-connected shallow freshwater lakes, marshes, and seasonally inundated floodplains of 15,000 km². The largest wetlands within this complex are:

- the Haur Al Hammar and its associated marshes (350,000 ha) south of the Euphrates;
- the Central Marshes (300,000 ha), a vast complex of permanent lakes and marshes north of the Euphrates and west of the Tigris; and
- Haur Al Hawizeh and its associated marshes (220,000 ha) extending east from the Tigris into neighbouring Iran. These wetlands eventually drain southeastwards into the Gulf via the Shatt Al Arab waterway.

In central and northern Iraq, most of the natural freshwater lakes and marshes have long since been drained for agricultural purposes, although significant remnants still survive in the Haweija (Huweija) Marshes in the Little Zab Valley and around Baquba in the Diyala Valley.

The valleys of the Tigris and Euphrates themselves have been extensively modified for agricultural purposes. Other important natural wetlands in central Iraq include two large brackish to saline lakes, Shari Lake to the east of the Tigris north of Samarra, and Haur Al Shubaicha on the plains to the east of the Tigris southeast of Baghdad. A smaller saline lake, Sawa Lake, in the desert about 25 km west of Samawa, is fed by underground seepage from as far north as Razazah, and has no surface outlet.

All other large wetlands in central and northern Iraq are either man-made water storage reservoirs or wetlands, which have been extensively modified by man for flood relief or agricultural purposes.

Throughout Iraq, the level of exploitation of wetlands is high. The economy of many of the peoples living in the region has been intimately involved with

wetlands for at least 6,000 years. Civilization was well established in Mesopotamia by the 4th millennium BC, and a sophisticated irrigation system developed at that time. In the vast reed-beds of Mesopotamia, marsh-dwelling communities are almost totally dependent on reeds for their construction needs. Large numbers of domestic livestock, particularly water buffalo, graze on wetland vegetation, and aquatic plants are harvested to provide fodder during the winter months. Waterfowl hunting occurs commonly at wetlands throughout Iraq, and in Mesopotamia, large numbers of waterfowl are harvested on a commercial basis, providing a livelihood for hundreds of people (Alnoori, 1976; vant Leven, 1968).

The most serious threat to wetlands in Iraq has been the drainage of wetlands and diversion of water supplies for agricultural purposes and for military reasons. Dam-building on the Euphrates in Turkey and Syria and the increasing utilization of the waters of the Tigris and Euphrates for irrigation in upper and middle Iraq have greatly reduced the extent of seasonal flooding in the wetlands of lower Iraq, and facilitated drainage of large areas for cultivation and the exploitation of oil resources. Within the last decennium, major hydrological engineering activities in and around the wetlands of Lower Mesopotamia have resulted in the drying out of vast areas of wetland in the Central Marshes and Haur Al Hammar. According to the Iraqi Government these hydrological engineering works aim at increasing agricultural production. Several international analyses have, however, argued that the primary purpose is to control dissidents taking refuge in the marshes. The Marsh Arabs, or Ma'dan, who have existed in the marshes for at least 5,000 years, have been particularly affected by these actions.

No measures have been taken by the Iraqi government to conserve the wetland ecosystems or their fauna and flora, and, in general, the government gives low priority to nature conservation. There is no national conservation strategy in Iraq, and no legal protection has been given to any part of the wetlands. The few conservation laws issued by the government (e.g. restrictions on hunting and fishing) exist on paper only and have never been implemented or enforced. At international level, Iraq is a contracting party to the World Heritage Convention, but has not designated any natural World Heritage Sites. There is a National Committee of the UNESCO Man and the Biosphere Programme, but no Biosphere Reserves have been established. Iraq is not a contracting party to the Ramsar, Bonn or Biodiversity Conventions.

There are many "National Parks" in Iraq, but these are mainly state-owned areas for public recreation, with no specific management for wildlife.

The great bulk of the information available on the fauna, flora, and ecology of the wetlands of Iraq was obtained prior to the onset of the Iran/Iraq war in 1980, when large areas of wetland, especially in Mesopotamia, remained more or less intact. A recent environmental and ecological study of the marshlands

of Mesopotamia has summarized available information on the faunal, floral, ecological, economic, and cultural values of the wetlands, and has examined the changes which have taken place and are likely to take place in the wetlands as a result of engineering and other developments in the Tigris/Euphrates basin. The study attempts to assess the environmental impact of past, ongoing and proposed developments on the system, and makes a number of recommendations for the conservation of remaining wetland habitats and restoration of degraded areas (Maltby, 1994).

The destruction of the wetlands of Lower Mesopotamia continues at an accelerating pace, and their continued survival as one of the finest and most extensive natural wetland ecosystems in western Eurasia is now in grave doubt (Scott 1995). Water diversion through dykes and a drainage canal has decreased the area of marshes by 90% since 1972 (http://news.bbc.co.uk/hi/english/sci/tech/newsid_1332000/1332128.stm). Their survival as one of the finest and most extensive natural wetland ecosystems in western Eurasia is now in grave doubt. (Spiers 1999). For this reason, Scott (1995) describes his inventory "more as an historical account of the wetlands of Iraq than as a review of the current status of the wetlands." According to the AMAR report "The Iraqi Marshlands: A Human and Environmental Study," (2002), based on satellite photos spanning over two decades, the marshes have been reduced to 15 percent of what they once were (<http://usinfo.state.gov/regional/nea/iraq/text/0424mrsh.htm>).

The only direct reference to peatlands in Iraq is Markov et al. (1988), who report the presence of "peatlands" along rivers like the Tigris and the Euphrates. On the basis of data presented by Scott (1995) the following areas may partly consist of peatlands:

The **Haweija Marshes** (35° 15' N, 43° 55' E), a complex of marshes and lakes in the valley of the Little Zab River, about 50 km west-southwest of Kirkuk, Al Ta'mim Governorate. No recent information is available. It is likely, however, that much of the wetland has now been drained for agriculture.

The **Baquba Wetlands** (33° 55' N, 44° 50' E, c.2,000 ha), the remnants of a once extensive complex of freshwater lakes and marshes in the Diyala Valley about 10-20 km north-northeast of Baquba and 70 km north-northeast of Baghdad, Diyala Governorate. The wetlands in the Baquba area formerly comprised a complex of shallow, freshwater lakes with extensive marshes and some dense reed-beds. The lakes were still in excellent condition until the late 1960s, but by the end of 1972, only one of them, Abu Abbas (500-1,000 ha), remained more or less intact. The others have been largely or completely drained for agriculture (Koning & Dijkse, 1973). The current status of the wetlands is unknown.

The **Wetlands of Lower Mesopotamia** (29° 55'-32° 45' N, 45° 25'-48°30' E; 1,500,000 - 2,000,000 ha)

along the lower courses of the Tigris and Euphrates Rivers, from the region of Kut and Samawa in the west to the region of Basrah in the southeast. In Al Basrah, Al Muthanna, Dhi Qar, Maysan and Wasit Governorates.

In their lower courses, the Tigris and Euphrates rivers create a complex of interconnected, shallow, freshwater lakes, marshes and seasonally inundated floodplains extending from within 150 km of Baghdad in the northwest to the region of Basrah in the southeast.

Potential peatlands in the area include:

- Permanent freshwater lakes with a rich submergent growth of aquatic vegetation, and typically with a marginal zone of floating aquatic vegetation.
- Permanent freshwater marshes dominated by tall stands of *Phragmites*, *Typha* and *Cyperus*.

An account of the vegetation of the marshes of southern Iraq has been published in Arabic by the University of Basrah (Akbar 1985). Throughout the wetlands, the emergent vegetation is dominated by *Phragmites australis*, *Typha angustifolia*, *Cyperus papyrus* and occasionally *Arundo donax*. *Scirpus brachyceras* dominates in temporarily flooded areas (Thesiger 1954). The deeper, permanent lakes support a rich submerged aquatic vegetation with *Ceratophyllum demersum*, *Vallisneria spiralis*, *Potamogeton lucens* and *P. pectinatus*, *Myriophyllum* sp., *Chara* sp., *Najas marina* and *N. armata*, and *Salvinia* sp. *Nymphoides peltata*, *N. indica*, *Nymphaea caerulea*, *Nuphar* sp., *Pistia stratiotes*, and *Lemna gibba* cover the surface of the smaller lakes and quieter backwaters.

BirdLife International has identified the Mesopotamian marshes of Iraq as an "Endemic Bird Area," i.e. an important concentration of bird biodiversity where habitat destruction would cause disproportionately large numbers of species extinctions (ICBP, 1992). The marshes qualify as one of only 221 Endemic Bird Areas in the world, and one of only 11 which are wholly or largely non-marine wetlands, because they support almost the entire world population of two species, the Basrah Reed Warbler (*Acrocephalus griseldis*) and Iraq Babbler (*Turdoides altirostris*).

Within the marshes, the principal activities are buffalo rearing, fishing, hunting, rice cultivation, and mat-weaving. Fishing occurs throughout the wetlands, and accounts for over 60% of the inland fish catch in Iraq. Waterfowl hunting is also very important in the local economy, with enormous numbers of waterfowl being harvested on a commercial basis each year, and providing a livelihood for hundreds of people (Alnoori, 1976; Salim, 1962; Al-Robaee, in press). Reeds are used in the construction of floating islands for villages and, when woven, provide pliable coverings used in housing, fencing and packaging. Reeds are also harvested commercially to provide pulp for a paper factory near Basrah.

The increasing utilization of the waters of the Tigris and Euphrates for irrigation in Turkey, Syria and

northern and central Iraq has caused a considerable loss of wetland habitat in lower Mesopotamia during the 20th century. Wetland drainage has been taking place on a large scale since the 1950s and, by the end of the 1980s, had already resulted in the conversion of vast areas of former wetland habitat into agricultural land. As early as 1954, Wilfred Thesiger expressed concern at the future of the marshes and the welfare of their human inhabitants. In an article in the *Journal of the Royal Geographical Society*, he remarked that "in the next few years the marshes will be drained and the marshmen as I have known them will disappear" (Thesiger, 1954).

In the last 20 years, the wetlands of lower Mesopotamia and neighbouring Iran have come under considerable pressure from regional conflicts. Much of the fighting during the prolonged Iran-Iraq War (1980-88) took place in and around the wetlands, and caused considerable damage to the marsh ecosystems. Several of the greatest battles of the war took place in these marshes, and involved extensive burning, heavy bombing and shelling, and widespread use of chemical weapons. Large areas of reed-beds were deliberately destroyed by Iraqi troops during searches for deserters; heavily armoured boats were used to crash through reed-beds, special reed-cutting machines were used, and large areas were simply set on fire. Similar methods were used after the 1991 Gulf War to search for anti-government rebels. In other respects, however, the Gulf War seems to have had relatively little impact on the Mesopotamian marshes. Wetland vegetation in the Khuzestan lowlands of neighbouring southwestern Iran was damaged by acidic "black rain" from the burning oil well-fields in Kuwait, and it seems likely that similar damage occurred in the wetlands around Basrah, only a short distance to the west. The type and magnitude of the damage is not known, but is likely to have been temporary and reversible.

In the summer of 1991, the Iraqi Government embarked upon a massive programme of hydrological control and wetland drainage in Lower Mesopotamia, in an area that is roughly delineated by the triangle of Amara, Nasiriya, and Basrah. Officially, the engineering schemes are designed to reduce salinisation problems, to reclaim new land for food production, and to increase the amount of water available for irrigation. As a result of engineering works, a large part of the Central Marshes has been drained, and it is now uncertain if any water from the Tigris is allowed to enter the marshes. A Landsat satellite image showed that more than one third of the Central Marshes had dried out by August 1992, while later reports indicated that about two-thirds of the marshes were dry by mid-1993. Many commentators now argue that the immediate aim of many of these engineering works has been to drain the marshes for military and political purposes. In any event, there can be no doubt that the greater part of the Central Marshes and much of the Haur Al Hammar marshes have now been drained, with disastrous ecological, social and human consequences for the region.



(source: www.uwmc.uwc.edu/geography/110/marsh_arabs.htm)

Scott and Evans (1993) concluded that drainage of the wetlands of Lower Mesopotamia on this scale would almost certainly result in the global extinction of *Lutra perspicillata maxwelli* and *Erythronoskia bunnii*, the extinction in the Middle East of *Anhinga rufa* and *Threskiornis aethiopicus*, and the extinction in Iraq of *Phalacrocorax pygmaeus* and *Ardea goliath*. Loss of these wetland habitats would also cause catastrophic declines in the world populations of *Turdoides altirostris* and *Acrocephalus griseldis* and in the regional population of *Pelecanus crispus*, possibly threatening them with extinction, and would cause perhaps as much as a 50% reduction in the world populations of *Gerbillus mesopotamiae*, *Tachybaptus ruficollis iraquensis* and *Marmaronetta angustirostris*. Drainage of these wetlands would also have an adverse effect on the populations of about 40 species of birds which occur in the marshes in internationally significant numbers, and would cause major declines in the regional populations of *Pelecanus onocrotalus* (30-60%), *Ardea purpurea* (>10%), *Ixobrychus minutus* (>10%), *Plegadis falcinellus* (>10%), *Aythya fuligula* (>20%), *Circus aeruginosus* (>10%), *Porphyrio porphyrio* (>50%) and *Fulica atra* (10-20%). Migratory populations of waterfowl would be affected over a very wide area from the West Siberian tundra to southern Africa, as one of the major staging and wintering areas in the West Siberian/Caspian/Nile flyway is lost. Clearly, as far as wildlife is concerned, the ongoing drainage of the wetlands of Lower Mesopotamia constitutes an ecological catastrophe of unprecedented proportions in Western Eurasia.

Lower Mesopotamia is the legendary site of the Garden of Eden, and possesses a number of ruined cities of great antiquity such as Ur and Babylon. Civilization was well established in this region by the 4th millennium BC, and a sophisticated irrigation system developed at that time. The Mesopotamian marshes have provided a home for the Ma'dan or Marsh Arabs for at least five thousand years. Their

reed houses are built on artificial islands made from layers of mats, reeds and mud, and, until recently, virtually all of their needs were obtained from the surrounding lakes and marshes. The lifestyle of the Ma'dan has been described in some detail by Thesiger (1954 & 1964), Maxwell (1957), Salim (1962), Young and Wheeler (1976), Spencer (1982) and Young (1989).

The wetlands of Mesopotamia are sufficiently large and have been isolated from other comparable wetland areas for a sufficient length of time to allow for the evolution of several forms of animals which are unique to these wetlands. These include two species of mammals (*Erythronoskia bunnii* and *Gerbillus mesopotamiae*), one subspecies of mammal (*Lutra perspicillata maxwelli*), two species of birds (*Turdoides altirostris* and *Acrocephalus griseldis*), two subspecies of birds (*Tachybaptus ruficollis iraquensis* and *Anhinga rufa chantrei*), and several species and subspecies of fish, notably *Barbus sharpeyi*, *Leuciscus cephalus orientalis*, *Caecocypris basimi* and *Typhlogarra widdowsoni*.

Lions (*Panthera leo*) survived in riverine thickets of the marshlands into the 20th century, but were finally exterminated when the Marsh Arabs acquired modern rifles during the First World War. The Leopard (*Panthera pardus*) is likewise extinct in lower Mesopotamia; there is only one record from the marshlands - an individual shot in 1945 just above Kut by the River Tigris.

Large mammals which are still regularly encountered in the marshes include the Asiatic Jackal (*Canis aureus*), Red Fox (*Vulpes vulpes*) and Small Indian Mongoose (*Herpestes auropunctatus*). Various other mammals, notably Grey Wolf (*Canis lupus*), Honey Badger (*Mellivora capensis*), Striped Hyena (*Hyaena hyaena*), Jungle Cat (*Felis chaus*), Goitred Gazelle (*Gazella subgutturosa*) and Indian Crested Porcupine (*Hystrix indica*), have been recorded in and around the marshes in the past, but all had become rare by the 1980s, and it is thought likely that most are now extinct in the area.

Small mammals recorded in and around the marshes include a recently (1980) described and probably endemic species of bandicoot rat *Erythronoskia bunnii* and an endemic species of gerbil *Gerbillus mesopotamicus*. *G. mesopotamiae* is known only from the vicinity of wetlands in lower Mesopotamia and adjacent Khuzestan in southwestern Iran.

Of the 278 species of birds which have been recorded in lower Mesopotamia, 134 are species which are to some extent dependent on the wetland habitats and occur in Mesopotamia in significant numbers. Two of these species, the Iraq Babbler *Turdoides altirostris* and Basrah Reed Warbler *Acrocephalus griseldis*, are known to breed only in this area.

The populations of two species of waterfowl, almost confined to the wetlands of Lower Mesopotamia, have been described as distinct subspecies: the Little Grebe *Tachybaptus ruficollis iraquensis*, a common and widespread breeding bird in the wetlands of southern Iraq, and African Darter *Anhinga rufa*

chantrei, now confined to the marshes of Lower Mesopotamia and is probably close to extinction, if not already extinct.

Eleven species of birds listed in the 1994 IUCN Red List of Threatened Animals (Groombridge, 1993) have occurred in the marshes of lower Mesopotamia, including *Pelecanus crispus*, *Phalacrocorax pygmaeus*, *Anser erythropus*, *Marmaronetta angustirostris*, *Oxyura leucocephala*, *Haliaeetus leucoryphus*, *H. albicilla*, *Aquila heliaca*, *Vanellus gregarius*, and *Numenius tenuirostris*. The lakes and marshes of lower Mesopotamia are one of the most important wintering areas for migratory waterfowl in western Eurasia. No accurate estimate will ever be available for the number of waterfowl which once wintered in the Mesopotamian marshlands. It seems likely, however, that the waterfowl populations must have numbered in the many millions. In a recent analysis, Scott and Evans (1993) concluded that in the 1970s, and perhaps even more recently, the marshlands of lower Mesopotamia were of international significance for at least 68 species of waterfowl.

Haur Umm Al Baram (32° 32' N, 46° 07' E, 5,000 ha) and **Haur Al Abjiya** (32° 25' N, 46° 03' E, 5,000 ha), two shallow freshwater lakes with extensive marshes on the plains to the south of the Tigris River and east of Shatt Al Gharraf, 20-25 km east and southeast of Kut town, Wasit Governorate.

Haur Al Hachcham and **Haur Maraiba** (32° 05' N, 46° 12' E, 8,000 ha), small haurs largely overgrown with *Phragmites* reeds on the plains to the east of the Shatt Al Gharaf, about 10 km southeast of Hai, Wasit Governorate.

Haur Uwainah (31° 22' N, 46° 25' E; 32,500 ha), a complex of large haurs and associated marshes with extensive reed-beds on the plains to the east of the Shatt Al Gharraf, about 20 km east and southeast of Shatra, Dhi Qar Governorate. Large parts have been drained since 1972.

Haur Sarut (32° 07'-32° 31' N, 46° 46' E), a long narrow haur, largely overgrown with reeds, on the east bank of the Tigris River, east and southeast of the town of Ali Gharbi, Maysan Governorate.

Haur Chubaisah Complex (31° 53' N, 47° 18' E; c.27,500 ha); a group of large haurs with extensive marshes on the plains on the east bank of the Tigris River between Amara and Al Halfaya, about 20 km northeast of Amara, Maysan Governorate.

Haur Al Rayan and **Haur Umm Osbah** (31° 35' N, 47° 02' E; .25,000 ha), a complex of shallow lagoons and vast reed-beds with areas of sedge marsh, between the villages of Maymund and Salam, about 20 km south-southwest of Amara, Maysan Governorate.

Central Marshes (30° 50'-31° 30' N, 46° 45'-47° 25' E; 300,000 ha) a vast complex of mostly permanent freshwater marshes with scattered areas of open water to the west of the Tigris River and north of the Euphrates River, in a triangle with Qalit Salih at the northern apex, Fuhud in the southwest and Qurna in the southeast. In Maysan, Dhi Qar and Al Basrah

Governorates. Almost the entire area is covered in tall reed-beds of *Phragmites* and *Typha*. Almost the entire area has been drained since the mid-1980s as a result of intensive hydrological engineering activity.

Haur Al Hammar (30° 35'-31° 00' N, 46° 25'-47° 45' E; at least 350,000 ha), a vast expanse of shallow open water with reed-beds and reed islands, south of the main channel of the Euphrates River from about 20 km east of Nasiriya in the west to the region of Basrah in the east. In Dhi Qar and Al Basrah Governorates.

By January 1975, a large part in the southeast had been cut off from the main wetland by an embankment 10 km long and was being drained (Carp, 1975a & 1975b). By January 1979, much of this area was criss-crossed by a network of embankments constructed by the State Petroleum Company for oil exploration (Scott & Carp, 1982). Over 80,000 ha of marsh at the northeastern end of Haur Al Hammar had been drained by 1985 to facilitate exploitation of the West Qurna oilfield (Evans, 1994). Satellite images reveal that between 1984 and 1991/92 large areas of wetland along the southern shore of Haur Al Hammar and at its extreme eastern end near its outflow into the Shatt Al Arab were drained. The total loss of wetland habitat in the Haur Al Hammar system during this period has been estimated at over 60,000 ha (Maltby, 1994). Intensive hydrological engineering activity throughout Lower Mesopotamia since 1991 has caused further major changes to the system, and it seems likely that very little of the original wetland habitat still remains intact (see general account of wetlands of Lower Mesopotamia).

Suweid Marshes (31° 45' N, 47° 25' E; c.15,000 ha), a large wetland of extensive *Typha* reed-beds with many areas of open water on the Al Kahala (Chahala) River to the east of the Tigris River, 30 km southeast of Amara, Maysan Governorate. Much of this area has been drained and converted into agricultural land (Evans, 1994).

Haur Al Hawizeh (31° 00'-31° 45' N, 47° 25'-47° 50' E; c.220,000 ha), a wetland with extensive *Phragmites* reed-beds alternating with open sheets of water to the east of the Tigris River between Amara and Qurna, extending east to the Iranian border. In Maysan and Al Basrah Governorates. The Haur Al Hawizeh marshes were badly damaged during the Iran/Iraq war (1980-88). Several of the largest battles occurred in and around these marshes, and involved heavy bombing and shelling, extensive burning and the use of chemical weapons. Large areas of reed-bed were cut or burned in the search for rebels after the 1980-88 war and also after the 1990-91 Gulf War. A satellite image taken in August 1992 reveals that large areas of the northwestern, western and southern shores have been drained, using river control and dyke-building, apparently for security reasons. It has been estimated that the total wetland area was reduced by about 33% during the period 1984/85 to 1991/92 (Maltby, 1994). However, the haur does not appear to have been drastically affected by the recent

massive river diversion projects and drainage schemes which have devastated the Central Marshes and Haur Al Hammar, since it receives much of its water from the Karkheh and other rivers rising in Iran. Haur Al Hawizeh was, and probably still is, one of the most important wetlands in Iraq for breeding and wintering waterfowl.

Shatt Al Arab Marshes (31° 00' N, 47° 25' E to 29° 55' N, 48° 30' E); from the confluence of the Tigris and Euphrates at Qurna to the head of the Gulf at Fao, Al Basrah Governorate.

The Shatt Al Arab flows for some 165 km from the confluence of the main branches of the Tigris and

Euphrates Rivers at Qurna to the head of the Gulf. Along the lower 80 km of its length, the waterway forms the international border between Iraq and the Islamic Republic of Iran. There are some significant marshes on the banks of the waterway, mainly between Qurna and Basrah.

Most of this information is derived from: Scott, D.A. (ed.) 1995. *A Directory of Wetlands in the Middle East*. IUCN, Gland, Switzerland and IWRB, Slimbridge, U.K. xvii + 560pp, 13 maps (available under <http://www.wetlands.org/inventory&/MiddleEastDir/Title1.htm>) where also the references can be found.

Energy peat in Sweden

by Magnus Brandel

Following is a paper written by Magnus Brandel of IPS. It explains the views of the Swedish Peat Producers Association on the sustainability of peat as an energy resource. Many of the views and even some facts expressed herein are still debated between various NGOs and with government institutions. We include this paper as an honest attempt at a wise use approach by the Swedish peat industry. Dialogue remains very important in obtaining an ideal approach; therefore IMCG will prepare a reaction to this paper and the report it is based on for the next Newsletter. If you have any comments please contact the secretariat.

The Swedish Peat Commission was appointed by the Government in December 2001 and put forward its report in November 2002 – Sustainable use of peat. The commission found that around a quarter of the land area in Sweden is covered with peat. Peat represents both a major energy resource and, at times, indispensable environmental values.

Peat can play a role in a sustainable energy system through the proactive selection of peatlands for harvesting, and an applied holistic view on the process, from extraction to combustion. Conflicts between energy benefits and environmental effects can thus be reduced.

Advantages of peat are its technical combustion properties, for example, when burned in combination with wood-based fuels, where the alternative may be coal or oil. Disadvantages of peat are that extracting it has a strong impact on natural and cultural environments. This impact must be reduced by selecting production sites that exclude areas of great natural value in terms of biodiversity, valuable biotopes, or ecosystems. Peatlands represent widely diverse conditions when it comes to greenhouse gas emissions. Opportunities to curtail methane gas emissions should be considered when selecting extractable peatlands.

Further research is required into such things as variations in growth, carbon emission, and losses

from different kinds of peatlands, as well as various kinds of restoration and their effects. The proposal by the peat industry for a fund to finance long-term management in conjunction with restoration should be taken into consideration and further developed in connection with such research.

Peat is a sustainable domestic energy resource. Thus, provided that the knowledge, infrastructure, and economic conditions for its use are available within the country, it forms a part of our security in the field of energy supply.

Peat can essentially be regarded as a slowly renewable biomass that does not conform to current (international) classification systems without increasing the distance between the models and reality. Therefore, domestic fuel peat should not be ranked according to any classification model.

SGU [Geological Survey of Sweden] should be given the task of identifying and pointing out special *peat supply areas* according to precise criteria within which extractable and worthwhile peat deposits are considered to exist. By excepting areas of well-proven high natural value, gaining the support of peat producers and environmental organisations, and consultation within the administrative sphere, conflicts can be reduced and the decision-making process made easier.

The role played by peat in a sustainable energy system must be defended by protecting economic competition in relation to the alternatives, which are often the fossil fuels. Should changes to the energy tax be announced, the economic conditions for exploiting fuel peat burned together with wood-based fuels must be protected.

Therefore, the Commission states that peat, for the same reasons as wood-based fuels, should be entitled to *electrical certification* when used in CPH (combined power and heating) plants burning biofuels. A clear, long-term, stable development is crucial to all competing operations and thus also to an open energy market. In the case of a change in energy

taxes, especially phased changes, signal effects have significance through their direction. Therefore, it is important that the establishment of a system of electrical certification does not send a signal to the market that is inconsistent with the long-term intentions concerning the role of peat in a sustainable energy system.

Magnus Brandel
Managing director
Swedish Peat Producers Association

The commissions summary, recommendation etc. are available as MSWord files, to be requested by e mail: magnus.brandel@torvproducenterna.se

The Swedish peat producers present its opinion about ecological sustainability in the Cloudberry book. This booklet can be ordered from the Swedish Peat Producers organisation (address above) or can be read online or downloaded (3.3 MB PDF) from: www.torvproducenterna.se/hjortronboken-EN/book.pdf

Cultural Aspects of Peat and Peatlands: the 8th Commission of the IPS

by Anne Jelle Schilstra

The International Peat Society used to have seven Commissions that dealt with its mission “which is to promote wise use of mires, peatlands and peat by advancing scientific, technical, economic and social knowledge and understanding”. The subjects comprise a wide range (Peatland Geology, Medical, Horticultural, Agricultural and Energy use of Peat, Ecology, and After Use Management of Peatlands, see www.peatsociety.fi). Many people have peat related interests that may concern art, literature, biology, history, sociology, music, and anthropology. These interests are not naturally covered by the seven existing Commissions.

For example, pre-historic findings and the history of peat utilisation attract much attention, as many museums, exhibitions, and conferences testify. The international symposium in Hanover on 17 – 21 September of last year under the title ‘Peatlands – Archaeological sites, Archives of Nature, Nature Conservation, Wise Use,’ jointly organised by the Lower Saxonian State Service for Cultural Heritage, the German Peat Society, the Lower Saxonian State Museum Hanover, and the IPS, also illustrates the wide interest in these matters. During a three-day symposium and a post-symposium two-day excursion, 33 invited scholars gave lectures and more than 100 scientists from 11 countries participated in the conference.

December last year the Executive Board of the IPS has given the green light to start with an 8th Commission to cover the cultural aspects of peat and peatlands. Dr. A.J. Schilstra has formed a Steering Group that he chairs. How the Commission will proceed is formulated in the letter from a “proto-steering group” to the Executive Board:

“We recognise, of course, that groups and individuals, within and outside the IPS, are active in the cultural aspects of peat. It is not our intention to side-step these activities. On the contrary, by contacting these groups and individuals we might together stimulate and strengthen interest and activities by creating a common IPS-platform. This platform may on the one hand point interested parties to these activities, and on the other hand provide a much larger audience. As a communications channel it may perhaps contribute to a mutual understanding in a way similar to the growing mutual understanding between the IMCG and the IPS.”

How the Steering Group will organise its activities nationally and internationally will develop in the coming year. The monthly Peat News of the IPS will keep readers informed (Peat News can be found on the IPS-web pages). The first Commission VIII related activity will be the opening of PeatPolis on the 5th or 6th June (see www.peatpolis.nl) in the Netherlands. Commission VIII plans to be very visible in the program of the 12th International Peat Congress, 6-11 June 2004, in Tampere, Finland (the congress theme is “Wise Use of Peatlands”).

Commission VIII explicitly also wants to contact interested persons from outside the IPS. If you are interested to know more, please contact one of the Steering Group members: Andreas Bauerochse (Germany), Tom Egan (Ireland), Eino Lappalainen (Finland), Reidar Pettersson (Sweden), Anne Jelle Schilstra (the Netherlands, chairman) and Wim Tonnis (the Netherlands, temporary member). Their e-mail addresses can be found on www.IPS-NL.nl.

From forgotten bookshelves

Sold to a distant plantation, he became noted for his desperate, unsubduable disposition. He joined in none of the social recreations and amusements of the slaves, laboured with proud and silent assiduity, but, on the slightest rebuke or threat, flashed up with a savage fierceness, which, supported by his immense bodily strength, made him an object of dread among overseers. He was one of those of whom they gladly rid themselves; and, like a fractious horse, was sold from master to master. Finally, an overseer, hardier than the rest, determined on the task of subduing him. In the scuffle that ensued Dred struck him to the earth, a dead man, made his escape to the swamps, and was never afterwards heard of in civilized life.

The reader who consults the maps will discover that the whole eastern shore of the southern states, with slight interruptions, is belted by an immense chain of swamps, regions of hopeless disorder, where the abundant growth and vegetation of nature, sucking up its forces from the humid soil, seems to rejoice in a savage exuberance, and bid defiance to all human efforts either to penetrate or subdue. These wild regions are the home of the alligator, the mocassin, and the rattle-snake. Evergreen trees, mingling freely with the deciduous children of the forest, form here dense jungles, verdant all the year round, and which afford shelter to numberless birds, with whose warbling the leafy desolation perpetually resounds.

Climbing vines, and parasitic plants, of untold splendour and boundless exuberance of growth, twine and interlace and hang, from the heights of the highest trees, pennons of gold and purple – triumphant banners which attest the solitary majesty of nature. A species of parasitic moss wreaths its abundant draperies from tree to tree, and hangs in pearly festoons, through which shine the scarlet berry and green leaves of American holly. What the mountains of Switzerland are for the persecuted Vaudois, this swampy belt has been for the American slave. The constant effort to recover from thence fugitives has led to the adoption, in these states, of a separate profession, unknown at this time in any other Christian land – hunters, who train and keep dogs for the hunting of men, women, and children. And yet, with all the convenience of this profession, the reclaiming of the fugitives from these fastnesses of nature has been a work of such expense and difficulty, that the near proximity of the swamps has always been a considerable check on the otherwise absolute power of the overseer.

Dred carried with him to the swamp but one solitary companion – the Bible of his father.

Harriet Beecher Stowe, 1856. *Dred; A Tale of the Great Dismal Swamp*. Sampson Low, Son & Co., London, 524 p., pp. 189 – 190.

19th century francophone mire wisdom

by Hans Joosten

In presentations in Paris and Besançon during the IMCG events 2002, I quoted some topical parts from the classic work of Leo Lesquereux (1844) “*Quelques recherches sur les marais tourbeux en général*” (Wolfarth, Neuchatel, 308 p.). On special request, not only from our francophone members, we present them here.

One of the major reasons that IMCG visited France in 2002 is the enormous progress that has been made in mire conservation and restoration in France in recent years. Mire restoration was already a topical issue in francophone peatland literature in the 19th century, when the first signs of exhaustion of peat resources started to become manifest in several parts of Europe. In his chapter VI Leo Lesquereux discusses the possibilities and perspectives of peatland regeneration, of which he was very convinced: “Où, la tourbe se reproduit. Les lois de la nature ne sont pas soumises aux caprices des hommes. Que les causes subsistent, et les effets auront leur cours.” (p. 92 ; Yes, peat reproduces itself. The laws of nature

are not subject to the whims of mankind. Let the causes continue and the effects will have their course.)”

The preconditions for regeneration were also clear to him: “comme l’eau a été la condition nécessaire d’une première formation, elle le sera aussi d’une seconde. Il n’y aura donc jamais régénération de la tourbe dans les lieux d’où l’humidité aura disparu, et où la pente de terrain et des écoulements continus maintiendront la sécheresse.” (p. 92; in the same way as water has been the precondition for its original formation, it will be for a second. There will therefore never be regeneration in places where humidity has disappeared or where the slope of the terrain and continuing drainage maintain dryness.)

But he notices that other *mire* scientists of that time, in particular Johannes H.C. Dau who had written his classical books in 1823 and 1829, seemed to have another opinion about the preconditions of regeneration: “Dau semble prétendre le contraire, en affirmant que la tourbe ne se reproduit que là où il n’y a pas d’eau, ou de moins là où il y en très-peu.

Parce que, dit il, les végétaux ne se sèment et ne croissent pas dans les fosses pleines d'eau." (p. 92; Dau seems to pretend the opposite, when he states that peat only reproduces itself where there is no water or at least where there is little water. This is, he says, because the plants don't seed and don't grow in ditches filled with water.)

According to Lesquereux, Dau does not know what he is talking about: "Cette assertion est une preuve manifeste des faibles connaissances botaniques qu'avait cet auteur, car il est plusieurs espèces de phanérogames et de mousses aquatiques qui s'établissent de préférence dans les fosses profondes; et une espèce de sphaigne entre autre paraît surtout destinée par la nature à combler les enfoncements que l'eau recouvre et à préparer ainsi le sol à la végétation aérienne." (p. 92-93; This assertion is a clear proof of the weak botanical knowledge of that author, because there are several species of phanerogams and aquatic mosses that establish themselves preferably in deep ditches; and among others one species of *Sphagnum* seems particularly destined by nature to fill up the depths that the water regains and in that way to prepare the soil for aerial vegetation.)

These are the types of conflicting opinions that can be solved during IMCG Field Symposia. During IMCG Field Symposia we can discuss about concepts and terms in the field, we can show each other in practice what we mean. But most of all: it widens our horizons, enabling us to take a different look at things.

In fact both Lesquereux and Dau were right, but the conditions they were talking about were completely different. As we know now, Dau was right in his judgement that the regeneration of peat forming vegetation in the prevailing dystrophic waters in the cut-over bogs of Denmark and Northern Germany is a difficult process. Because of its limited CO₂ content dystrophic bog water is normally difficult to be recolonised by plant species including *Sphagnum*. Bogs in very wet climates, e.g. in mountainous areas, regenerate much easier, especially when there is an additional source of CO₂ as by exfiltrating groundwater or exposed fen deposits. The latter is probably the situation Lesquereux was referring to.

In recent years the international community has been addressing the peatland issue from "new" paradigms, such as "wise use," "sustainability," and "renewability." In this respect Lesquereux's considerations and pleas for a sustainable use of peat as a renewable resource were way ahead of his time:

"Qu'elles soient rejetées par un grand nombre de propriétaires dont l'unique vouloir est le profit du moment, je le comprends. Mais il se trouvera peut-être quelque homme de cœur, ami de son pays, qui emploiera une parcelle de sa fortune à des expériences que le riche seul peut faire." (p. 107; that these (ideas) are rejected by a large number of (peatland) proprietors whose only wish is short-term profit, I can understand. But maybe some man of honour, a friend of his

country, can be found, who will devote a parcel of his fortune to experiments, as only the rich can do.)

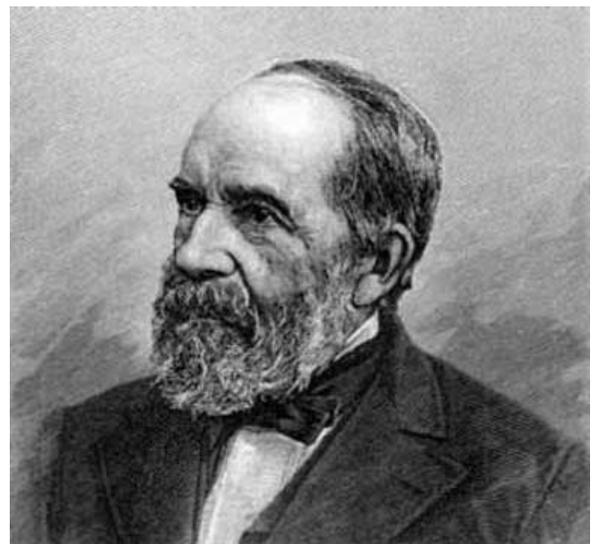
"Puisse les résultats obtenus emmener enfin mes concitoyens à cette conviction, qui se fortifie toujours plus en moi, c'est que les marais tourbeux sont, non point un bien mort, mais une fortune active, non point une chose profitable pour le présent seul, mais nécessaire à l'avenir, non point enfin un sol inutile et qu'il faut se hâter de détruire, mais un de ces bienfaits de la sage nature que l'homme doit reconnaître et étudier; un de ces trésors dont il peut profiter pour lui-même, mais dont il doit compte à ses descendants."

(p. 107: May the results obtained bring my fellow-citizens to the conviction, that increasingly becomes stronger in me: that the peat mires are not dead goods but an active fortune, not profitable only for the present, but necessary for the future, finally not a useless soil that we must rapidly destroy, but one of the benefits of the wise nature that man has to acknowledge and study; one of these treasures of which he may benefit for himself, but for which he has to render account to his descendants.)

Leo Lesquereux

Leo Lesquereux (1806-1889) was born in Fleurier, Switzerland. As a boy, he fell from a mountaintop during an excursion to gather wildflowers. "Rolling and dropping from cliff to cliff, a descent of several hundred feet," reported a lifetime later by J. Peter Lesley to the American Philosophical Society, "he was found by his family hanging in the branches of a tree, mangled in every part of his body, and apparently dead; but after lying insensible for several weeks, he recovered health and strength..." He was partially deafened by this near-fatal accident and this was followed by a progressive loss of hearing.

The peat bog near his home were young



Lesquereux's favorite places, and, according to Lesley, he "devised...an auger...with an adjustable handle; and with this tool he investigated the character and structure of the bog."

Lesquereux went to Neuchâtel for his education, and there he presented his theories about peat formation.

At first they were rejected, but once permitted to demonstrate his ideas on the bog itself, his theories gained acceptance.

In 1830, Lesquereux married the Baroness Sophia of Eisenach, daughter of one of Goethe's close friends. He had begun teaching science when an illness caused him to become completely deaf. He resumed his livelihood as an engraver of watches.

From 1844-1848 he worked as a researcher on peatlands for the Swiss government.

In 1848 he moved to America where he worked as a paleobotanical assistant of Louis Agassiz at the Museum of Comparative Zoology of Harvard University. Agassiz had promised him scientific employment, but was unable to carry into effect his friendly intentions. Lesquereux's subsequent work led to a reputation as the nation's earliest authority on fossil plants. He was second only to William Sullivant in the field of bryology.

Lesquereux was the first elected member of the National Academy of Sciences and published many reports on his extensive analyses of fossil plants in

the states of Pennsylvania, Minnesota, Arkansas, Kentucky, and others.

Lesquereux remained poor, and poorly paid for his work. He was humble in dealing with others. Frequently he asked for those talking to him to repeat themselves, especially if they didn't realize that he must lip-read them, or if the speaker wore a beard.

Today, Lesquereux is remembered not only as a paleobotanist, but also as an exemplary deaf scientist. Lang (1994) includes an often quoted remark made by Lesquereux during an interview:

"My associations have been almost entirely of a scientific nature. My deafness cut me off from everything that lay outside of science. I have lived with Nature, the rocks, the trees, the flowers. They know me, I know them. All outside are dead to me."

Harry G. Lang, 1994. *Silence of the Spheres: The Deaf Experience of the History of Science*. Bergin & Garvey, Westport, Connecticut.

Lesley, J. P. 1895. *Memoir of Leo Lesquereux. Biographical Memoirs of the National Academy of Sciences* 3: 187-212.

Photo CDs of the Northern Landscape

The company ComPics International Inc. (in which Stephen Zoltai was a partner) has compiled a collection of Photo CDs that shows the variations in the natural environment and the processes that shape the northern landscape. This series offers a medium to share Stephen Zoltai's vast collection of slides taken throughout his illustrious career working in Wetlands, Permafrost Peatlands, and Canada's North. It is oriented towards those who have more than a passing interest in the north, giving a firm base in understanding the complex relationships between the land and the biota under the harsh northern climate. Each Photo CD consists of 100 digital images in five different resolutions depicting a variety of lands, landforms and vegetation types. A brief narrative accompanies each CD defining the specific features on each image and giving its exact location. These Photo CDs show how to recognize the unique northern features and identify the processes that create them.

Each Photo CD is part of the collection entitled "It's Our Environment Series".

The Photo CDs can be accessed using Macintosh or IBM compatible platforms with CD-ROM drives. The whole image or a part of the image can be enlarged and manipulated on the computer. The manipulated image can then be cut and pasted into a word document or used with presentation packages such as Corel or Microsoft PowerPoint.

These Photo CDs are a unique collection of scientific images and information. Each Photo CD is priced at US\$38 plus shipping and handling. Members of the International Mire Conservation Group get a special discount on the Boreal Forest and Subarctic woodlands CDs. Costs will be US\$25 for these CDs.

For more information and to see samples of each CD visit www.compics.com or sent an e-mail to compics@compics.com.

Regional News

News from Iraq Iraq's Wetlands May Be Restored

As the Pentagon pushes ahead with plans for war in the Middle East, a group of international scientists, including a University of Florida ecologist, are gearing up for an unorthodox environmental project: restoration of Iraq's "Garden of Eden."

Bordered by the Tigris and Euphrates rivers, the Mesopotamian Marshlands once covered 3,500 square miles in southern Iraq and Iran - interconnected marshes, wetlands, and lakes that supported endangered birds, abundant fish stocks and an ancient wetlands-dependent indigenous population known as the "Ma'dan."

Regarded by biblical scholars as a possible site of the ancient "Eden," the marshland's historical roots run deep. The Sumerian civilization, authors of the first alphabet and early epics, are thought to have inhabited the marshes around 3,500 BC, and in recent years, nearly 400,000 Ma'dan, or marsh Arabs, called the area home.

But following the end of the Gulf War in 1991, Saddam Hussein ordered the widespread drainage and diversion of water entering the wetlands from the north, leading to a near 90 percent reduction in total acreage, according to a 2001 United Nations Environment Programme report.

Today, less than 500 acres remain, environmental experts estimate, supporting fewer than 40,000 Ma'dan.

Now, a multi-billion dollar effort, funded in part by the U.S. State Department and overseen by the Iraq Foundation, a U.S.-based Iraqi opposition group, aims to reverse Hussein's damage.

Since August 2001, international members of the "Eden Again" task force, as the project is known, have worked to develop a restoration framework, outlining strategies and identifying challenges in returning the wetlands to their pristine state.

Earlier this month, members of the advisory committee, including Crisman, met in Los Angeles to discuss the restoration hurdles, such as how to meet the needs of the area's indigenous people and methods to reduce threats from high salinity.

Once launched, the international team will seek to consult with local stakeholders, scientists and support staff, facilitating efforts to return the wetland's ecosystem to a point of ecologic functionality.

Projects organisers said the status of the restoration is not dependent on U.S. war efforts, and would continue regardless of a U.S.-led invasion.

Final costs estimates are not available, and the level of State Department participation is classified. But based on square-mileage estimates alone, returning the area to its historical state is expected to be pricey.

News from Indonesia: Illegal logging

Indonesia's forests are disappearing at an alarming rate. Even in protected areas, such as national parks, enormous areas of unique tropical habitat are being destroyed by illegal logging. Too a large extent also forested peatland are involved.

According to the Environmental Investigation Agency (EIA), government efforts to tackle the problem are being undermined by widespread corruption.

In its report, the EIA said officials from the police and judiciary are being bribed or intimidated by powerful timber barons who are continuing to exploit Indonesia's natural resources with impunity.

The EIA is calling for greater international pressure to force the Indonesian Government to confront the issue. It wants to see an independent forest crimes unit established, with the power to arrest and prosecute anyone found to be involved in illegal logging operations.

Within the current discussions on sustainable management of Indonesia's forests, the message from environmentalists is that without a genuine commitment to root out corruption, all promises of help are doomed to failure.

[source: BBC News]

News from Russia

On March 11-12 2003, a regional workshop "Peatlands restoration in Russia for regions" was held in Nizhny Novgorod, Russia. The workshop was organized by the ecological center "Dront" (Nizhnij Novgorod) and Wetlands International Russia Programme. The workshop was a part of the joint project of the University of Dundee (Olivia Bragg), Scottish Wildlife Trust (Stuart Brooks) and Ecocenter "Dront". This project is supported by the British Council and is devoted to building local partnerships for restoration of peatlands. An experimental site for restoration was chosen within one of 35 Russian Ramsar sites, the Kamsko-Bakaldinskaja mire system, which includes lands under current peat extraction. Wetlands International Russia Programme had suggested the partners within the project to use the Workshop to discuss the peatlands restoration problems more widely and to discuss how these problems can be solved on a regional level. The goal of the Workshop was to exchange experience in peatland restoration, to assess different approaches, and to discuss the legal, socioeconomic, scientific, and technical problems associated with the implementation of such projects. The 40 participants were from 9 regions of the Russian Federation representing NGOs, scientific and planning

organizations, representatives of regional branches of the Ministry of Nature Resources (foresters, geologists, water managers), administrations, and representatives of peat enterprises. The presentations were interesting for all participants, the round table provided the possibility to have an open discussion on urgent problems. The reports are planned to be published as proceedings of the workshop in the next month. We hope that the workshop was a good step on the way to peatland restoration in Russia.

News from The Netherlands: Website for Peat Polis Project Launched

Wim Tonnis, Chairman of the IPS Dutch National Committee, announced the launch of a new website for the Peat Polis art project. At www.peatpolis.nl you find all background information and photos of the objects exhibited in the area. Peat Polis will be set up on a large peatland area at the border of Het Veenpark (Peat Park), near the town of Emmen. About 15 artists from different countries are being asked to create objects in, on or with peat, starting from 19 May 2003. The official opening is scheduled for 5 June; closing date will be 1 December. The entry is free. Additionally, presentations and cultural events are planned.

The exhibition is the first prestigious project of IPS Commission VIII.

News from Ireland: No Dump for Girley Bog NHA

The Meath County Council decided to refuse planning permission for a dump at Girley Bog NHA, Co. Meath. The proposed 8.9 hectare dump was for the purpose of disposing large quantities of inorganic waste, such as building rubble and topsoil.

The decision of the council to refuse permission for the dump was based on its proximity to Girley Bog, an area earmarked for protection in Meath's County Development Plan. The development would have been in contravention of this plan and it also had the potential to impact negatively on the bog itself.

Girley Bog (NHA 1580) is one of the most easterly raised bogs in the country that remains intact. It was recently formally designed as a NHA by Minister Martin Cullen, meaning that it is now one of the few NHAs in the country that have the statutory protection of the Wildlife Act 2000.

News from Scotland: Pre-industrial peat burning left cancerous chemicals

A new study recently published in Nature shows that pre-industrial Scottish peat-burning fires were responsible for poisonous dioxins entering the atmosphere. Modern industry is largely to blame for the chlorine-rich chemicals that persist in the ground for years. But the toxins are also present in Scottish soil samples from the nineteenth century, decades before the 1950s proliferation of dirty chemical factories.

According to Andy Meharg and Kenneth Killham of the University of Aberdeen, UK, who published the article in Nature, cooking fires burnt on peat are responsible for the old residues. The peat from coastal regions incorporates chlorine from salt water, and releases a fraction of it as dioxins when burned on a smoky bonfire.

The researchers collected peat ash from long-abandoned dwellings on Hirta, a remote island off the west coast of Scotland. The tiny population left the island in 1930. Peat was the main source for fuel in treeless areas of Scotland and Ireland for many centuries. The researchers estimate that the average pre-industrial Scottish Highland family dug up and burnt some 20 tonnes each year.

Altogether the Scottish highlands and islands would have generated a whole kilogram of dioxin each year, despite their sparse population. Britain's entire annual output from modern waste incinerators is around 11 kg. Modern sources remain the biggest polluters on a global scale. Today's largest dioxin producers are waste incinerators and manufacturers of chlorine-based chemicals such as pesticides.

The World Health Organization has classified dioxins as "known human carcinogens". The chemicals accumulate in the food chain so that most human exposure occurs through eating contaminated animal fat.

For the full text of the article:

http://www.nature.com/cgi-taf/dynapage.taf?file=/nature/journal/v421/n6926/abs/421909a_fs.html

News from Europe: The Important Plant Areas (IPA) Programme

Plantlife International is leading the Important Plant Areas programme in Europe

Important Plant Areas are natural or semi-natural sites exhibiting exceptional botanical richness and/or supporting an outstanding assemblage of rare, threatened and/or endemic plant species and/or vegetation of high botanical value.

Identifying IPAs makes it possible to provide the necessary information about the locations of the best sites for wild plants. The IPA Programme aims to identify, protect and manage a network of sites that are important for the long-term viability of naturally

occurring plant populations across the geographical range.

IPA identification covers both higher and lower plants. The programme is based on the highly successful Important Bird Area project, which has identified, to date, over 3000 sites across Europe, and has provided much needed information and action on threat status and site protection.

IPA identification helps implement Convention on Biological Diversity (CBD). Furthermore, IPA identification is a global priority of the IUCN Species Survival Commission's Global Plant Conservation Programme and also an objective of article 4.3.5 of IUCN Parks for Life, on the identification and conservation of higher plant sites, and conforms to article 4.3.6 on the identification of important sites for lower plants.

IPA Identification is one of the major targets of the European Plant Conservation Strategy. This strategy targets to produce the first European IPA inventory by 2007. The first phase of this is to identify IPAs in seven Central and East European countries by the end of 2004. Furthermore, the strategy aims to assess the effectiveness of IPAs in protecting Europe's wealth of wild plants and habitats and to ensure that the IPA programme contributes fully to the other major conservation programmes currently running in Europe:

- IPAs will inform the process of Special Area of Conservation (SAC) site selection proposed in the EU Habitats and Species Directive and carried out through the Natura 2000 network
- IPAs will inform the process of Area of Special Conservation Interest (ASCI) site selection as proposed in the Emerald Network of the Bern Convention.
- IPAs will contribute to the implementation of the Pan-European Biological and Landscapes Diversity Strategy (PEBLDS) by taking part in the Pan-European Ecological Network (PEEN)
- IPAs will contribute to capacity building for conservation organisations and initiatives through the Planta Europa network.

Surf to the PlantLife internetpage for more information on the IPA project. Here also the recently published IPA Criteria and Guidelines are available for download.

www.plantlife.org.uk/html/important_plant_areas.htm

**News from the EU:
Concerns raised over Natura 2000**
by Sandra Jen

The difficulties and delays that 'plagued' implementation of the EU's Natura 2000 nature conservation network in the current EU states should be avoided in the accession countries, a report released by environmental group WWF says. Additional funding is needed, together with stronger efforts to identify sites for protection, it warns.

Produced with five partner organisations, the document provides "a clear and concise snapshot" of the progress made to date by 11 accession countries in implementing the network. A progress update is already planned for 2003/4.

All of the countries assessed reported threats to potential Natura 2000 sites, WWF says, including planned major infrastructure projects receiving EU funding. Effective co-ordination will be needed to ensure that EU environmental impact assessment rules are respected, the group warns.

Lithuania, the Czech Republic, Slovakia and Malta are praised for their preparatory work in selecting sites. But in other countries "there is a common tendency to limit or at least focus identification of potential sites to areas that already have protected status."

Additional EU cash is needed to develop the Natura 2000 network in the accession countries, the report says. While it has clearly identified the financial needs of the current EU countries, the European Commission working group on financing Natura 2000 "has not addressed the situation and specific needs of the future EU member states."

Follow-up: WWF Europe <http://www.panda.org/epo>, tel: 32 2 743 88 00, WWF Accession Initiative www.panda.org/accession
SJen@wwfepo.org

**News from Ramsar:
new Ramsar sites**

The Government of Cuba has designated five wetlands for the List of Wetlands of International Importance, bringing that country's total surface area under the Ramsar umbrella to 1.188.411 hectares. One of the sites Isla de la Juventud (126,200 ha. 21°36'N, 082°48'W) is notable for its occurrence of peatland. The site occupies the southern part of the Isla de la Juventud, the second largest island of the Cuban archipelago, and includes diverse biotopes, among them semi-deciduous forests, reef lagoons, marine grasslands, mangroves and peatlands. Within the Caribbean, the site is a truly unique mosaic of ecosystems - amongst them a karstic plain connected to the island's southern coast. This subterranean drainage system yields clear waters that favour the formation of coral reefs. A number of threatened species are present in the site, including green turtles (*Chelonia mydas*), loggerheads (*Caretta caretta*), and American crocodiles (*Crocodylus acutus*). The region possesses a high number of endemic plant species, and constitutes an important nesting site for various chelonian, amphibian, crustacean, and fish species. The main threats to the site include forest fires, the future increase of tourism activities in the area, and the possible effects of climate change.

The Netherlands government designated 14 new sites and extended one existing site. Among the new sites is an area called "De Wieden" (9,400 ha. 52°42'N

006°03'E). This site comprises shallow small and bigger freshwater lakes and numerous canals established by peat extraction activities mainly in 18th and 19th centuries, reedbeds, fens, wooded peatlands and non-wooded ones, and wet meadows. It is adjacent to the Ramsar site Weerribben. The site has been chosen for Ramsar status for being a particularly representative example of a partially forested lowland peatland with lakes and canals resulted from peat extraction - the most extensive lowland peatland in northwestern Europe. It is also a habitat for several rare and endangered species and communities - 15 plant communities, 7 plant species, 14 mosses species, 6 species of mushrooms, 8 species of freshwater snails and the same number of insects, as well as 7 species of breeding birds. The site is also a refuge for more than 1% of the biogeographic populations of five waterbird species. It acts as a water storage reservoir from drains of the surrounding polders and provides water for irrigation. Among the main human uses are tourism (with a visitors' centre), angling, boating, commercial fisheries, farming, and reed harvest. The site is seriously threatened by drainage due to groundwater abstraction and intensive farming in the surrounding polders, as well as by non-industrial pollution.

Other additions to the Ramsar list were made by Bulgaria (5 new sites, 3 existing sites extended), Argentina (1 new site), Honduras (1 new site), Australia (6 new sites, 1 existing site extended), and Spain (10 new sites, 1 existing site extended). Furthermore Djibouti joined the Conference as a new member.

Request for Input on Latin American and Caribbean Wetlands

Dr. Lucas Fernandez, coordinator of the XVII CYTED Wetlands Network has announced that the Iberoamerican Network is preparing a monograph on Latin American and Caribbean wetlands. Specialists are invited to submit research results from regional wetlands studies, conference presentations from professors having participated in the Network's recent training course, and presentations from course students. Please contact Mr. Fernandez in La Habana, Cuba for more details: fernandez@geprop.cu

VISIT THE IMCG HOMEPAGE AT

<http://www.imcg.net>

New and recent Journals/Newsletters/Books/Reports

New publications:

International Peat Journal No 11/2001 (published 2003) with articles about using peat for extraction of contaminated water, soil water dynamics in degraded fen soils, the influence of temperature on CO₂ production in virgin and forested blanket peat, CO₂ and CH₄ fluxes in pristine and agricultural peatlands in Central Kalimantan, the impact of logging on land use change in Central Kalimantan, land and water management options for peatland development in Sarawak, peat soil properties and decomposition under different land use in Kalimantan, poverty alleviation and wise use of peatlands in Indonesia, physical properties of peat substrates in relation to irrigation and aeration needs, and volume measurement of horticultural substrates. Obtainable from ips@peatsociety.fi for EUR 9,00 plus mailing costs (IPS members) or EUR 19,00 plus mailing costs (all others).

Telma 32 (2002) with papers about the palaeobotany of two mires in Vorarlberg (Austria), Sphagnum bogs in southern Patagonia and in the western part of Tierra del Fuego (Chile), the the deepest sites (all peatlands) in Germany, Western Europe, and the USA, mires in the Hunsrück Mountains (Germany), raised bog succession in North Germany, the development of *Leptophlebia vespertina* (Ephemeroptera) in regenerating bogs, ecological bog assessment using zoological taxa, effects of management on three fen dragonfly (Odonata) species, ground-living spiders as efficiency indicators in bog restoration, compromises between agriculture, environmental protection, and peat mining in the Esterweger Dose, changing fen soil properties under land-use in Brandenburg, the influence of mulch and shading on microclimate and Sphagnum-growth, peat mosses as a renewable resource: optimising growth conditions, critical values for agriculture and forestry on histosols, the past and future use of central European peatland, history, status, and restoration of mires in the Erzgebirge, sustainable development of bogs areas as cultural landscapes, the use of peat-fibres in hypnotherapy, and various communications on symposia and other meetings. Valuable as ever are the reviews of peat(land) books and the listing of almost 250 German papers on peat and peatlands published in 2001.

Euro 43 (25 for DGMT-members). Obtainable from alexanderharter@aol.com or Deutsche Gesellschaft für Moor- und Torfkunde (DGMT), Alfred-Benz-Haus Stilleweg 2, D-30655 Hannover, Germany.

NWF 2003 Conservation Directory

Now available, this resource gives you access to nearly 4,000 governmental agencies, non-

governmental organizations, and colleges and universities, as well as more than 18,000 officials concerned with environmental conservation, education, and natural resource use and management. The 2003 Conservation Directory can be ordered at: <http://www.islandpress.org/nwf/nwfem03.html> or can be accessed on line at no charge: <http://www.nwf.org/conservationdirectory/>

Tobolski, K. 2000. Przewodnik do oznaczania torfów i osadów jeziornych. Wydawnictwo Naukowe PWN, Warszawa (in Polish). ISBN: 83-01-13215-9, 508 p. Złoty 48,00. Info: pwn@pwn.com.pl, www.pwn.com.pl

Impressively extensive and detailed handbook on the palaeoecological analysis of peats and lake sediments. Includes chapters on the distribution of peatlands in Poland and Central Europe, accumulation of peats and sediments, terminology and classification of peatlands, peats, and sediments, palaeoecological research methods and techniques, and many determination keys for the identification of peat and sediment types and for many types of macrofossils, e.g. for *Sphagnum* and brownmosses, epidermis and peridermis types, radicles, wood, Characeae oospores, and Cyperaceae glumes and seeds and . For many other types of macrofossil descriptions are given. Provides an excellent state-of-the-art overview of Central-European knowledge and practise. Has only one drawback: the language is polish:...

Sargeant, H.J. 2001. Oil palm agriculture in the wetlands of Sumatra: destruction or development? FFPCP Reports, 50+viii p. <http://www.mdp.co.id/ffpcp/report14.pdf>

Following is the summary of the report, to be found online at <http://www.mdp.co.id/ffpcp/Report14.htm>
Ten leading conglomerates, one Malaysian owned, drive the expansion of the palm oil industry within Indonesia. They are encouraged by a Government aware of the need to alleviate poverty and to provide food and employment on an economically sound and sustainable basis to an already large and rapidly increasing population. Current plantings throughout Indonesia are estimated to total 2.8 million hectares. However the oil palm (*Elaeis guineensis*) estates face mounting criticism, particularly because of their use of fire to clear further new land. Much of this reproof is directed towards companies operating in Sumatra where, together with smallholders, they occupy 2.1 million hectares. Many of the new estates lie within the 11.5 million hectares of wetlands of the island, often on peat soils. The initial fire set to clear the residual wood debris enters the peat, which continues to smoulder and emit dense smoke haze long after the

surface fire has died. The pollution drifts from Sumatra to Peninsular Malaysia and Singapore on three or four occasions each year.

Indonesian law expressly forbids the use of fire to clear land. The courts, however, for a variety of reasons, remain reluctant to convict companies that burn. Satellite-derived data and imagery show fire locations in near real-time and with locational precision. Burn scars remain visible for at least three years. Despite - up to now - largely escaping successful prosecution, the oil palm companies must accept the reality; the fires they set are known and this information is freely available worldwide on the Internet.

There is no compelling reason to use fire to clear land for new plantations. The cost of establishing an estate from the first step of government approval through to full production is identical whether the land is cleared by purely mechanical means with no burning, or is first cleared mechanically and the debris then burnt. Leading companies already recognise this and enforce zero-burn land clearance. Regrettably, in other companies the senior executives may have a "no-burn policy" but this does not translate into a "no-burn practice." Middle-level managers continue to prefer the 'clean look' of burnt land and set fire to the debris. Head Office turns a blind eye. Zero-burn land clearing must become a standard 'best practice' with no compromise.

As the laws that govern the use of fire to clear land have proved to be toothless, international and national environmental pressure groups are now exerting their demands on the companies from a different direction. These organisations make full use of the fire location / time of burning data to persuade financial institutions to curb lending to the companies. The same pressure groups also seek to raise the environmental consciousness of downstream palm oil consumers. There is a growing probability that money to finance the expansion of the estates within Indonesia will dry-up, and that the Indonesian oil palm industry will face a Western boycott of its products. The many who would prefer the plantations to keep away from the ecologically valuable and fragile wetlands have pinned their hopes on the belief that oil palm will not thrive on peat soils. This, however, appears not to be the case; with careful water management and the application of trace elements, fruit yields are, to date, excellent. Establishment costs are higher as the peats require compaction prior to planting and drainage / irrigation canals must be dug, but profit margins remain adequate.

The case for second and subsequent replantings within the peatlands of Sumatra has, however, until now not been made. If 'drainability' cannot be sustained in the long-term (i.e. for over 25 and up to 100 years) the estates will fail.

The world demand for palm oil is forecast to increase from its present 20.2 million tonnes a year to 40 million tonnes in 2020. If this demand is to be met, 300 000 ha of new estates will need to be planted in

each of the next 20 years. We predict that by far the largest slice of this new land will come from within Indonesia where labour and land remain plentiful. And we expect that Sumatra, with its relatively well-developed infrastructure and nucleus of skilled labour, will absorb 1.6 million hectares of this expansion. It is inevitable that most new oil palm will be in the wetlands, as the more 'desirable' drylands of the island are now occupied. We expect that of the new areas, half will be developed by estates and half by smallholders.

The positive part played by the palm oil sector in the nation's development process is often ignored in the controversy over the conversion of the wetlands to agriculture and the resultant smoke haze. The crop in itself is environmentally friendly. Some 400 000 rural workers are permanently employed by the estates and enjoy free or heavily subsidised housing, schools, health care and other amenities. A further 500 000 farmers derive a significant income from estate-linked smallholder schemes. With down-stream processing and service industries added, the total number of people (workers and immediate families) that rely on the success of the oil palm estates within Indonesia is at least 4.5 million. Palm oil sales currently contribute \$1.7 billion to the Indonesian economy (Sumatra \$1.4 billion.). These figures are expected to rise sharply as prices recover from a 15-year low.

If the Indonesian oil palm industry wishes to publicise these substantial contributions it makes to the development of the nation, it needs to come together in a single trade association and speak with a unified voice.

A prime task for such an association must be to regulate the activities of its members, and exert moral and trade pressure on companies who continue to use fire to clear land. The same fire location data used by its opponents are also freely available to the industry when it needs to refute unfair accusations.

The recent setting-up of a Haze Prevention Group financed by two leading conglomerates in the oil palm and the pulp sectors is a welcome step to improve the reality and image of the estates. The initiative must be followed-through with vigour and the Group must not be subverted into becoming an apologist for the industry. An early and sincere dialogue must be started with conservation groups. Neither 'zero economic development' nor the extinction of the Sumatran orang-utan, rhinoceros, and tiger are sensible choices.

A hardcopy of this and other reports is available in English and some in Bahasa Indonesia, and can be obtained from:

The Project Leader, FFPCP, PO Box 1229, Palembang 30000, Indonesia. Fax number: +62 711 417 137 or from:

The Counsellor (Development), Representation of the European Commission, PO. Box 6465 JKPDS, Jakarta 10220, Indonesia. Fax number: +62 21 570 6075

Surf to <http://www.mdp.co.id/ffpcp/publications.htm> for a complete listing and PDF file downloads of FFPCP reports.

Murugadas TL (compiler). 2002. Developing a proposed framework for a Wetland Inventory, Assessment and Monitoring System (WIAMS) in Malaysia. Sundari R, Davies J and Humphrey C (eds), Kuala Lumpur, Malaysia, 18-19 April 2002, Wetlands International - Malaysia Programme, Petaling Jaya.

Wetlands International-- Malaysia Programme has proceedings on line from its April 18th & 19th workshop in Kuala Lumpur. The workshop participants worked toward developing a proposed framework for a Wetland Inventory, Assessment and Monitoring System in Malaysia. The proceedings (1.2 MB pdf) can be found at:

www.wetlands.org/awi/Proceedings_WIAM.pdf

For further information please contact:

mu@wip.nasionet.net

Radday, M & D. Oettli, 2002. Oil palm plantations and deforestation in Indonesia. What role do Europe and Germany play? WWF Schweiz 56 p. http://www.wwf.ch/images/progneut/upload/oilpalminonesia_2002.pdf

This report is an update of an earlier study made in 1998, "Lipsticks from the Rainforest," which analysed, for the first time, the role the rapidly expanding oil palm sector in Indonesia's devastating forest fires of 1997-98. Because of the international dimensions of this sector – its dependence on international capital flows and the global market for palm oil products – trade and capital relations with consumer countries were examined, with particular emphasis on Germany. In the light of all the changes in Indonesia's political, economic, and social situation in recent years, it was decided that an update on the issue would be timely.

The report is available for download at http://www.wwf.ch/images/progneut/upload/oilpalminonesia_2002.pdf

For more online publications on Oil Palm, surf to the WWF Switzerland internet site: www.wwf.ch/default.cfm?contentstring=4111

World Rainforest Movement: Mangroves: Local livelihoods vs. corporate profits.

This book – also available in French, and Spanish – gathers a selection of articles published in the monthly electronic bulletin of the World Rainforest Movement (WRM), addressing the issue of the processes leading to the destruction of mangrove forests and the struggles developed at the local and

global levels to protect and use these forests in a socially equitable and environmentally adequate manner.

Non Governmental Organizations and Indigenous Peoples Organizations can ask for a free hardcopy of the book. To do so, please contact WRM International Secretariat at: teresap@wrm.org.uy and send your postal address. For other organizations or institutions its cost is US\$ 10 (shipment included). (South America)

The book is also available online (3 languages): www.wrm.org.uy/deforestation/mangroves/book.html It can be read in html or can be downloaded as MS Word document free of charge.

Tacconi, L. 2003. Fires in Indonesia: Causes, Costs and Policy Implications. Center for International Forestry Research. 32 p.

According to this report, funded by the European Commission, the main cause of Indonesia's annual forest fires that blanket the archipelago and its neighbours in haze is poor peat land management.

If degraded peat lands are not rehabilitated and appropriate measures are not enforced to protect intact ones, there is little chance the region's smoke haze problem will cease anytime soon.

Peatlands, which are common in Indonesia's giant islands of Sumatra and Kalimantan – the two main hotspots for annual forest fires – store carbon that is released into the atmosphere when the peat burns.

According to the CIFOR report, more than 2 million hectares of lowland forest burnt during 1998 in East Kalimantan alone. It also shows that 11.7 million hectares of Indonesia's forest and land were destroyed by fire in 1997-98, when the haze problem first attracted world attention and regional condemnation.

One recommendation of the report is that "Given the contribution of peat fires to carbon emissions, there is a need to consider whether conservation of peatlands should be included in the second commitment period of the Kyoto protocol."

The report can be downloaded free of charge from the CIFOR homepage (<http://www.cifor.cgiar.org/>): http://www.cifor.cgiar.org/publications/pdf_files/OccPapers/OP-038.pdf (PDF file, 1 MB).

Conservation and Need for International Cooperation in Northeast Asia. Proceedings of an International workshop on Wetland Cooperation 24-25 May 2002 Pusan National University in Busan, Korea. 120 p.

The proceedings have appeared of the international workshop on Wetland Conservation and Need for International Cooperation in Northeast Asia, held on 24-25 May 2002 at Pusan National University in Busan, Korea. The symposium, organized by Ramsar Center Japan, Pusan National University, Seoul National University, and the Korean Environmental Sciences Society, and sponsored by the Korea

Research Foundation, began with addresses by Reiko Nakamura, Secretary General of Ramsar Center Japan, and Yoshihiko Miyabayashi of Wetlands International Japan, and included nine scientific and case study papers by a number of speakers, including Chen Kelin of Wetlands International China. Nine scientific and case study papers are included. For more information contact: [gjoo@pusan.ac.kr](mailto:gjjoo@pusan.ac.kr)

Limpens, J. 2003. Prospects for *Sphagnum* bogs subject to high nitrogen deposition. Thesis Wageningen University, the Netherlands, 143 p.

This theses bundles 6 original articles aiming to resolve questions concerning the effect of N deposition on *Sphagnum* dominated peatlands and exploring whether the influence of high N deposition could render initially successful restoration efforts futile.

Field and greenhouse experiments were carried out aimed at delineating the effects of N and P on the interactions between *Sphagnum* and vascular plants, epiphytic algae, fungi, and other *Sphagnum* species. In addition the physiological effects of a high N supply on *Sphagnum* and the impact of an elevated N supply on litter quality and decomposition rate were studied.

Results show that an increase in N deposition depressed *Sphagnum* growth. Two types of negative N effects can be distinguished: a direct toxic effect linked to the metabolism of *Sphagnum* and an indirect effect through intensified interactions with other organisms. Furthermore it is shown that *Sphagnum* from sites with higher N deposition decompose faster than *Sphagnum* from sites with intermediate deposition.

A considerable part of these effects depends on the amount of deposited N that *Sphagnum* can

incorporate and on the resulting tissue N concentration. As such, the impact of a high N supply is not so much determined by the level of N deposition per se than by the balance between the negative effects of N on the one hand and the supply of potentially growth limiting factors such as water, P, CO₂, light, and temperature on the other hand. Thus, the thesis concludes, it seems possible to circumvent an important part of the negative N effects by optimising the overall growing conditions of *Sphagnum*.

For more information: juul.limpens@staf.ton.wau.nl

Wise use of peat and other resources of peatlands. Proceedings of the scientific practical conference, Kostroma, 12-13 February, 2003. St-Petersburg, 2003. 180 pp. (in Russian).

The book contains the texts of 24 reports, partly presented during the scientific practical conference with the same name held in Kostroma, 12-13 February 2003.

Five presentations are discussing the history and perspectives of peat industry development in Russia, five publications are about different aspects of peatlands use planning, sometimes – wise use; one publication is about the legislation problems in peatlands wise use, five publications present the scientific aspects and five publications – technological aspects of peat industry development, two articles report on the ecological issues, one article – on environment and wise use. Some of the articles present interesting figures.

The book was published with very small circulation and we are currently discussing possibility to make the materials accessible via our web site www.peatlands.ru.



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UPCOMING EVENTS

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

American Wetlands Campaign Biennial Conference

1-4 May 2003 2003, Minneapolis, Minnesota

Theme of the conference: Bogs, Playas, Pools: Protect America's Unique Wetlands! The conference is designed for volunteer and professional wetland stewards interested in learning more about wetlands and how to conserve them. The conference offers three tracks: education and outreach, wetland science, and wetland conservation policy. For more information <www.iwla.org/sos/awm/conference/>

2003 Mangrove 2003: Connecting research and participative management of estuaries and mangroves

20-24 May, Salvador de Bahia, Brazil

For further information surf to:

<<http://www.mangrove2003.ufba.br>>

Annual Meeting of the Society of Wetland Scientists

8-13 June 2003 24th, New Orleans, USA

The SWS meeting will focus on the need to understand the interdisciplinary scientific needs and innovative approaches for the stewardship of wetland ecosystems. What approaches are needed to meet the challenges of management across diverse and changing geographical landscapes, socio-political boundaries, scientific disciplines, and varying time scales? The conference will encourage symposia that present interdisciplinary, integrated approaches and technologies for wetland science, assessment, conservation, rehabilitation, and management to sustain wetlands in diverse environments across different continental regions of the world. For further information contact <<http://www.sws.org/>>

IAVS Symposium Water Resources and Vegetation

8-14 June 2003, Napoli, Italy

For further information contact <www.iavs.org/>

Ecohydrological Processes in northern Wetlands

30 June - 4 July 2003, Tallin, Estonia

This International Conference and Educational Workshop will be held at the Institute of Ecology, Tallinn Pedagogical University, Estonia.

For more information contact Elve Lode: ICEWetland@eco.edu.ee or visit: <www.shef.ac.uk/geography/research/wetlands/ICE2003.html>

International Conference on Soft Soil Engineering and Technology

2-4 July 2003, Sibul, Sarawak Malaysia

Particular emphasis is given to engineering issues related to peat and organic soils; especially characteristics, testing and fundamental behaviour, engineering analysis and design methods for peat and organic soils, construction procedures and technology, land use and environmental issues, land use recognition using remote sensing, potential commercial exploitation of peatland, and engineering aspects of other problematic soils. Further information on the conference can be obtained from <<http://eng.upm.edu.my/asset2/>>

International workshop on peatland management and wise use

7-9 July 2003, Lanzhou, China

The proposed objectives of this workshop are:

- To promote the conservation of key peatlands
- To explore options for community involvement in peatlands management and conservation
- To enhance exchange of information on peatland values and threats
- To identify strategies for restoration of degraded peatlands

For more information contact Ms. Zhang Xiaohong at <wetgef@public.bta.net.cn>

Ecoflood: Towards Natural Flood Reduction Strategies

6-13 September 2003, Warsaw, Poland

This conference is part of an international project within the 6th EU Framework Programme. The aim of the project is to analyse and promote the use of floodplains in flood mitigation, in combination with the ecological restoration of European riparian ecosystems.

For more information contact Wiktor Kotowski: Department of Nature Protection in Rural Areas, IMUZ Falenty, 05-090 Raszyn, Poland. Tel: +48.22.7200531ex.233, Fax: +48.22.6283763 e-mail: W.Kotowski@imuz.edu.pl, W.Kotowski@biol.rug.nl or surf to: <<http://levis.sggw.waw.pl/ecoflood/>>

BES Winter meeting, Applying the long-term perspective to contemporary problems

9 - 11 September 2003, Manchester, UK

For more information see the previous IMCG Newsletter or contact Deborah Pearce: dpearce@brooks.ac.uk.

International Conference on Eco-Restoration

23-30 September 2003, New Delhi, India

For more information see previous IMCG Newsletter or surf to: <www.nieindia.org/conferences.htm>