

Peatlands

International

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IPS Annual Assembly 2023

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1st International Symposium on
Growing Media, Compost Utilization and
Substrate Analysis for Soilless Cultivation

Québec City, Canada

11-15 June 2023

www.re3-quebec.org

Editorial

We have just returned from an extraordinary journey to and through Ireland, which involved the IPS Executive Board meeting and a three-day excursion visiting raised bogs, blanket bogs and restoration sites supervised and managed by ecologists and farmers, as well as a growing media production plant.

Seeing the beautiful Irish landscape was one aspect of this successful “Peatlands Gathering”, but the most important purpose was meeting the people who do the actual work on the ground. I can only repeat myself: these actual “face-to-face and in colour” encounters are the salt in the soup of the IPS, the true reason why we exist and why many of our members have joined the Society. We were finally able to see old and new colleagues again, clap shoulders, exchange hugs and learn new things, much more than during any online meeting.

However, online meetings will continue to be a part of our daily lives in the future. With the Executive Board’s approval, we will hold short industry information exchange meetings every one or two months from now on. In addition, we will continue to host IPS webinars whenever we can identify interesting topics and motivated speakers.



The RE3 conference in Québec next June will not only attract hundreds of restoration experts, but International Society for Horticultural Science (ISHS) and IPS horticulture specialists as well. The call for papers will open on 1 November.

On the same occasion we will also celebrate the 55th birthday of the IPS, which was actually established in Québec at the 1968 Peat Congress. And we will continue to publish important information on peat and peatlands - such as the upcoming second *Peatlands and Climate Change* book, which is almost finalized.

One of the most significant endeavours this autumn is, however, the recruiting of our first Scientific Officer, a person who will support the Secretariat, the Scientific Advisory Board and Executive Board in fact-finding and communications. Eight candidates have applied

Peatlands International is the global magazine of the International Peatland Society (IPS). It provides the more than 1,500 individual, institute and corporate members of the Society with up-to-date information on peat and peatland matters, reports and photos of conferences and workshops, background reports and publication reviews. To serve all of our members, we provide always a good balance between economic, social and environmental points of view. Opinions are those of the authors. To receive Peatlands International in your email every three months, visit www.peatlands.org/join-us and sign up as a member - or easily **subscribe** for € 59/year via our online shop.

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Cover: Brown bear *Ursus arctos* and her cubs
playing in a peatland. Photo: Sergei Uriadnikov

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and I am sure we will identify a suitable individual very soon.

On the subject of the Secretariat, I was appointed Secretary General (without the acting!) two weeks ago, when our Board met in Tullamore. I am very honoured by your trust and I promise that I will continue to do my best to bring experts from different backgrounds together, for the benefit of peatlands, peat and all who live with them, although this seems to be a *missio difficilis* at times.

A special welcome is also directed to our 23 new members in Latvia who were able to join us with the establishment of a new Latvian National Committee, led by Professor Maris Klavins and Secretary Dr Ilze Ozola, after several talks in Riga and Ireland. It is good to have you with us. You are welcome to contribute to our international network whenever issues come to your mind.

I would also like to remind you that we are still looking for a host country for the International Peatland Congress 2028. Let us know if you are interested. Enjoy the autumn weather, read a good book and call your peers to catch up - I am sure they would appreciate a break from their screens.

Susann Warnecke

Secretary General
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IPS and Irish Peat Society members at Carrownagappul bog, Mountbellew. Photo: Susann Warnecke

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Rewetting Drained Southeastern USA Coastal Peatlands Could Prevent Millions of Tons of CO₂ Emission Losses Each Year

Pocosin peatlands are found along the Southeast coast from Virginia to northern Florida. They have deep peat soils and are covered by woody shrubs rather than the low-growing Sphagnum moss found in more northern peatlands (Figure 1).

Left undisturbed, stored carbon can remain locked in pocosin organic soil for millennia due to natural antimicrobial compounds called phenolics that prevent the waterlogged peat from decaying rapidly, even during times of drought. By digging thousands of kilometers of drainage ditches to lower the water table and convert the peatlands into farms, however, we've undercut their storage

capability and turned many of the sites from carbon sinks into carbon sources.

More than 750,000 ha of these coastal peatland bogs in the Southeastern USA have been drained for agriculture and forestry over the years. About 100,000 ha of them are no longer used as productive farmland and lie fallow (Figure 1).

Rewetting and restoring these abandoned tracts into functioning wetlands again could prevent 4.3 million tons of climate-warming carbon dioxide, now stored in their soils, from oxidizing and escaping back into Earth's atmosphere each year, a new Eddy covariance study by Duke University

shows (Figure 2). That amount equals 2.4% of the total annual reductions in CO₂ emissions needed for the United States to be carbon neutral by 2050.



Figure 1: A drained and natural pocosin site used to study carbon storage and losses in Hyde county North Carolina. A soil core shows the peat which is 52% carbon and subject to oxidation loss to the atmosphere if not kept rewet.

"Southern pocosin peatlands punch far above their weight in terms of their capacity for carbon storage. Hectare for hectare, they can store significantly more carbon than forests or grasslands," said Curtis J. Richardson, founding director of the Duke University Wetland Center, who led the research.

Achieving such a significant reduction in annual CO₂ emissions is a powerful incentive for making the restoration of the drained peatlands worldwide a priority, he said. Another powerful incentive is what might happen if we don't.

The new study estimates that if one quarter of the drained lands caught fire in one year and the fires were intense enough to burn down deep into their peaty soils - which can happen in drained sites, since fire is a natural part of their ecology - the amount of CO₂ released would equal about 18% of the total U.S. emissions reduction target for that year.

"That would be a disastrous setback," said Richardson, who also holds an appointment as Research Professor of resource ecology at Duke's Nicholas School of the Environment. He and his colleagues published their peer-reviewed study Sept. 2 in *Global Change Biology*.

To gauge how much of these losses could be reversed by blocking the ditches and putting in small dams to help retain rainwater in the soil, the researchers conducted field experiments at Pocosin Lakes National Wildlife refuge in eastern North Carolina, and a privately owned tract of drained peatland that Richardson and his team studied for three years to assess carbon losses and gains under drained and rewet conditions.

Importantly, they also determined that fire in these drained peatlands could result in catastrophic losses of CO₂ to the atmosphere as noted in the recent peatland fire in Hyde County NC. They found that by raising the water table



Figure 2: An eddy flux tower in a pocosin shrub bog site in Hyde county North Carolina used to measure carbon dioxide gas losses and storage in peatlands. An electric fence was erected to deter wildlife destruction or disturbance.

back up from 60 centimeters beneath the surface in drained sites to 30 centimeters beneath it, they could reduce CO₂ losses by 94%. Raising the water table to 20 centimeters beneath the surface could turn a site from being a carbon source back into a carbon sink.

"When you see numbers like this, it makes you realize how important rewetting these drained peatlands is," Richardson said.

Citation: "Annual Carbon Sequestration and Loss Rates Under Altered Hydrology and Fire Regimes in Southeastern USA Pocosin Peatlands," Curtis J. Richardson, Neal E. Flanagan, Hongjun Wang and Mengchi Ho; *Global Change Biology*, Sept. 2, 2022. DOI: <https://doi.org/10.1111/gcb.16366>

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Second Merlin Partners' Meeting

What has been achieved and why?

This meeting of the 44 partners in the EU Horizon 2020 MERLIN Project was held at the Rhön Residence, Dipperz - Friesenhausen, Germany from 13-15 September 2022. The venue is located in the Hessian Rhön Nature Park that lies east of Fulda in East Hesse on the border with Thuringia and Bavaria. It has an area of 720.7 km². Together with the Bavarian Rhön Nature Park it is part of the cross-border Rhön Biosphere Reserve.

The MERLIN Project commenced in October 2021, and this was the second meeting of all partners. It was attended by 105 participants and was an opportunity to review and assess the progress made on the Work Packages in the first year. The International Peatland Society was represented by Professor Jack Rieley, Chair of IPS Scientific

Advisory Board and Bernd Hofer, Chair of IPS Environment Commission.

The importance of freshwater wetland ecosystem functions is widely recognized, wetland restoration has long tradition, yet restoration goals on transnational scales have not been achieved (e.g., in the context of the Water Framework Directive). One of the MERLIN objectives is to showcase the most important successful wetland restoration cases in Europe, and to identify mechanisms of upscaling and transforming, by working with different sectors from economy that may benefit from restoration. Another objective is the development of a range of products, such as training materials, and marketplace/matchmaking opportunities for companies/investors and restoration projects.



Sunshine and happy faces in Germany. Photo: Jörg Strackbein, University of Duisburg-Essen

Background to Merlin

Global biodiversity decline, climate change and deteriorating ecosystem services urgently call for systemic change of our society and economy. The European Green Deal advocates extensive restoration of European ecosystems for the benefit of society, economy and the environment. Freshwater-related ecosystems (floodplains, peatlands, river catchments) are key to enhancing biodiversity and ecosystem services and show a long tradition of restoration effects, including the more recent use of Nature-based Solutions (NbS).

However, freshwater restoration falls short in halting biodiversity loss and recovering ecosystem functionality because local restoration efforts ignore catchment-scale synergies, sectoral approaches disregard multi-functional outcomes, and financing relies entirely on public funding. Systemic change requires mainstreaming restoration, which encourages private investments and upscales restoration by performing large-scale measures and connects them in a landscape context.

Given an appropriate policy and financing framework, several economic sectors can benefit from ecosystem restoration. These include insurance, agriculture, forestry, inland navigation, mining industries and water supply. Co-investments can be raised by aligning restoration objectives to the needs of these sectors, without compromising restoration goals associated to biodiversity and non-monetary values.

The activities of other sectors, in particular hydroelectric power generation and peat extraction, are widely perceived as detrimental for freshwater-related ecosystems. For these sectors it is essential to develop strategies for minimising their effects, and to restore landscape and river connectivity where a continuation of operations is no longer economically viable. Involvement of sectors is essential so that action to achieve objectives of the various EU Green Deal policy areas comply with each other.

MERLIN facilitates restoration mainstreaming by:

- Highlighting the most successful European wetland restoration case studies (in terms of



Location of Hessian Rhön. Map: Wikipedia

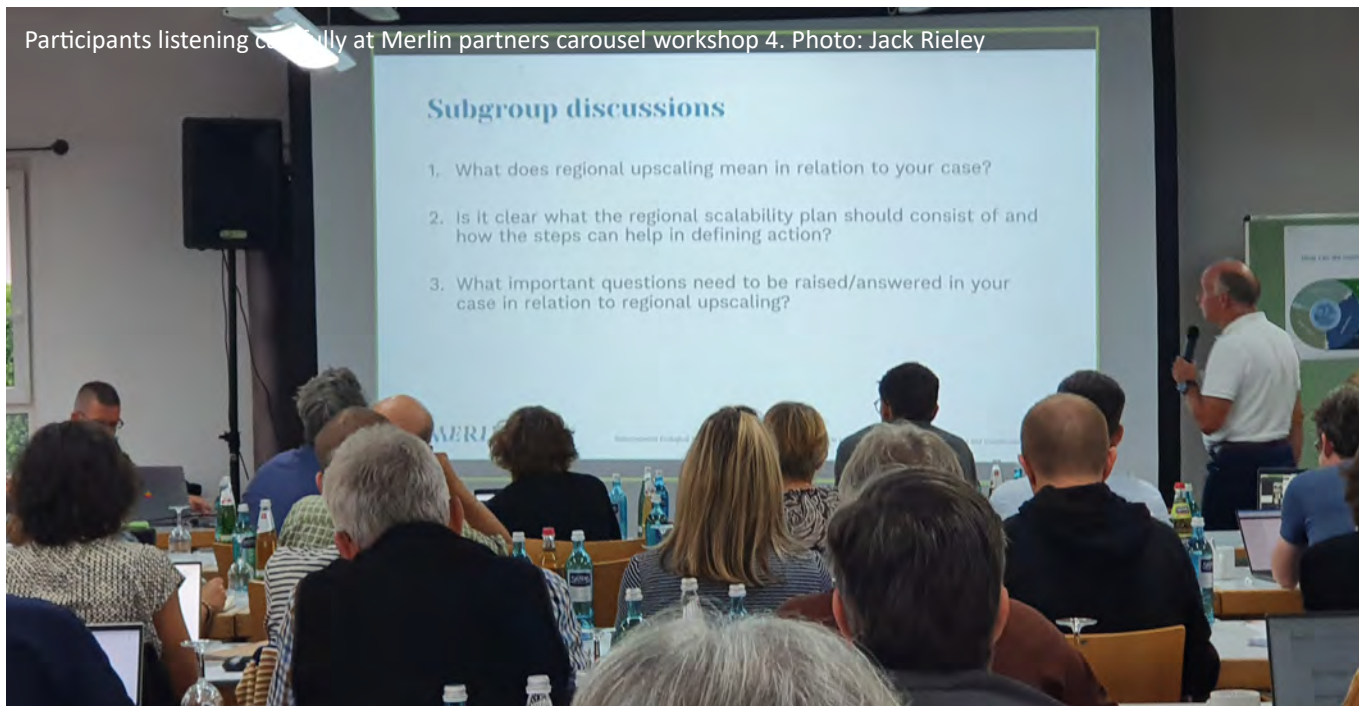
results, synergies, governance framework, financing strategies) and learning from them.

- Identifying the mechanisms (technical, political, financial, governance, awareness raising) that allow for upscaling by analysing the Europe-wide potential for restoration, modelling the effects on key ecosystem services, and spreading good practice restoration throughout Europe.
- Transforming restoration by co-developing and implementing strategies with different sectors for enhanced implementation of NbS / restoration to maximise synergies and limit trade-offs.
- Enhancing restoration efforts and effectiveness by co-developing a range of tools designed for different target audiences involved in the upscaling of restoration.

MERLIN operates at three scales:

- Core of the project are 17+ key restoration case studies, acting as best-practice demonstrators in terms of innovative restoration measure types, governance and financing frameworks. MERLIN's budget will co-finance measures for further optimisation of these case studies and leverage additional funding.
- A second ring of case studies will include many additional restoration projects (especially

Participants listening carefully at Merlin partners carousel workshop 4. Photo: Jack Rieley



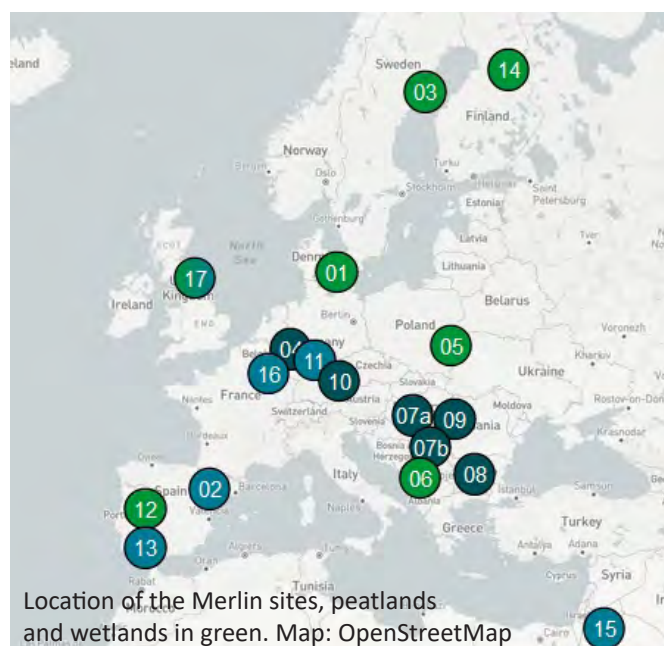
LIFE+ projects), enlarging the data source for analysing restoration effects, trade-offs and synergies.

- Europe will be examined to determine the potential for different approaches to wetland restoration and co-develop Europe-wide implementation strategies with sector representatives.

MERLIN is organised in five Work Packages plus co-ordination.

- WP1 (Demonstration) investigates 17+ best practise restoration cases studies in all parts of Europe. The collated data serve for demonstrating best practice restoration and developing, implementing and evaluating upscaling and transformation strategies.
- WP2 (Hands on improvement and implementation) assesses the potential for improving restoration practice and results, and identifies additional restoration measures for optimisation, transformation, upscaling and innovation. It implements these additional measures in selected case study projects, leveraging additional funding.
- WP3 (Upscaling) analyses the Europe-wide potential for restoration with different measures and NbS and models the effects on key ecosystem services, in particular carbon sequestration, flood retention, mitigation of droughts, sediment retention and tourism/recreation.

- WP4 (Transformation) assesses the effects of restoration on communities in transition and vulnerable regions, co-develops strategies with different economic sectors (including peat extraction), showcases how restoration contributes to implement a wide range of European policies, and specifies business cases for restoration.
- WP5 (Networking and interaction) provides training material and trains restoration practitioners, enhances the effectiveness of policy implementation, implements a peer- and consultancy-marketplace for restoration products and disseminates the benefits of restoration to the public.



Summary of Second Merlin Partners Meeting

Tuesday 13th September

The meeting kicked off with a Plenary Session of the MERLIN Steering Group, followed by parallel sessions of WP3 and WP4 to receive and discuss maps of restoration needs across Europe including a layer of peatlands/wetlands. The objective was to agree an approach on how to define/map restoration potential.

The meeting commenced formally after lunch with welcome and domestic announcements from the principal MERLIN organisers, Daniel Hering and Sebastian Birk from the University of Duisburg-Essen, Germany. This was followed by keynote talks by Piret Noukas, EU DG Business and Innovation on the EU Green Deal and associated Horizon research projects, and Joshua Royte of The Nature Conservancy who spoke of his Society's global role in ecosystem restoration.

After refreshment break the meeting divided into four parallel sessions of workshops to discuss a wide range of issues including sectoral partner input, implementing monitoring, private sector financing of restoration, marketplace, regional scalability planning, and screening of areas for restoration. Bernd and I joined the sectoral partner session.

This session involved the partners who are the link between the MERLIN Project and six economic sectors (agriculture hydropower, insurance, navigation, peat extraction and water supply).

The WP4 co-ordinator presented a vision for final route maps to achieve the WP4 objectives following which the group discussed entry points for cooperation between the sectors and MERLIN based on draft sectoral briefings already circulated.

The work plan for the coming year, October 2022 to September 2023 was discussed and edited to address the route maps and interim deliverables.

Wednesday 14th September

The business of the first half of the morning was held in plenary session starting with reporting-back from the previous day's workshops. This was followed by a plenary on transformation, including a motivational talk on restoration financing, then consideration of optimisation strategies and introduction to the carousel sessions that would take up the rest of the day.

The carousels, focussing on case study 'clusters' were held in two three- and one four-parallel sessions, embracing peatlands/wetlands, small streams, large rivers and ecosystem services. This arrangement enabled all participants to rotate round all the principal landscapes identified for restoration in the MERLIN Project.



The meeting venue. Photo: Jack Rieley



Workshop carousel 2 atmosphere. Photo: Jack Rieley

Thursday 15th September

The last day of the MERLIN partners' meeting was held in plenary and ended at lunch. The business consisted of reporting back from the Wednesday carousel workshops and summary of status quo and next steps for each Work Package. There was also presentation and discussion of the MERLIN Market Place concept and MERLIN Academy. The former will be a one-stop shop for products that facilitate restoration while the latter will provide training aids and training for restoration managers. Rob St John presented an audio-visual collage of interviews with and comments from participants as a reminder of the many things discussed and progressed the last two and half days. Afterwards the MERLIN coordinators gave a wrap-up of the meeting, wished participants farewell, and safe journey home until the next all partners meeting in twelve months' time.

Conclusion

IPS participation in the meeting was important for several reasons and had an impact on the outcomes.

The landscape of peatlands differs in many respects from wetlands and thus the participation of the IPS leads to a technical specification and substantiation of the results. This concerns general assessments of the climate relevance of the peatlands and their various uses as well as

detailed questions on e.g., financing possibilities and technical implementations in the workshops. Several constructive discussions and interviews were held during the days.

As a homework assignment, the IPS will comment on and revise a draft document (Briefing template zero draft for WP 4 Task) on short term basis.

Jack Rieley

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Bernd Hofer

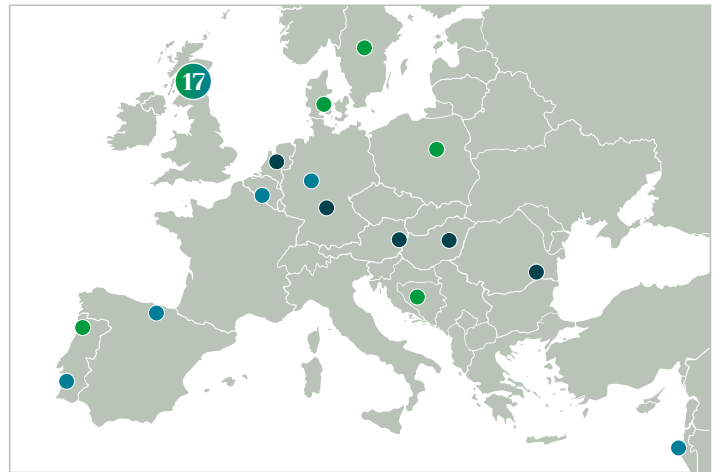
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Executive Board member
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Merlin T-shirts available!

If you want to order an M-sized Merlin t-shirt, visit www.holvi.com/shop/peatlands. Two are still in our shelves, waiting to be worn.



CS number: 17 – Forth catchment
Case study cluster: peatlands and wetlands;
 small streams and basins
Country: Scotland, UK
Scientific partner: University of Stirling,
 UK Centre for Ecology & Hydrology
Implementation partner:
 NatureScot, Forth Rivers Trust
Twining case study: Welsh peatlands
Website: www.nature.scot,
www.ceh.ac.uk/our-science/projects/merlin



Demonstration

- **Type of restoration:** restoration of channel and riparian habitats, reconnection of floodplain of the River Forth tributary (~23 km), rewetting of at least 150 ha of peatlands within a 10+ year national project (£250 million) – including forest to bog restoration
- **Size:** 800 km² catchment
- **Location(s):** Allan Water & peatlands across region
- **Value of the case:** river and floodplain restoration, flood management, climate resilience, biodiversity enhancement, carbon sequestration, social and economic recovery in economically deprived region
- **Stakeholders involved:** local government (landscape planning), public agencies and authorities, forestry, NGOs (nature conservation), research
- **Sectors involved:** tourism
- **Innovations being applied:** Demonstration sites in the catchment will partner with the University of Stirling's Forth ERA programme. This will facilitate the collection of high resolution data in freshwaters undergoing restoration, and data provision to the wider community.

Implementation plans

- **Type of restoration:** floodplain reconnection, riparian restoration including additions of large woody debris and embankment removal, channel geomorphology restoration, rewetting of peatlands, beaver translocation
- **Size:** approx. 500 ha including about 23 km of river channel
- **Scope:** regional
- **Vicinity:** rural
- **Stakeholders to involve:** water management (river trust), landowners, public agencies and authorities, nature protection (NGOs), citizens
- **Innovations to be applied:** –

Example for Merlin Fact Sheets. More at <https://project-merlin.eu/outcomes/fact-sheets.html>

CSPMA and IPS represented at Horticultural Congress in Angers

From 15 to 20 August 2022, the Canadian Sphagnum Peat Moss Association's (CSPMA) Canadian presence made an impact at the 31th International Horticultural Congress (IHC) in Angers, France.

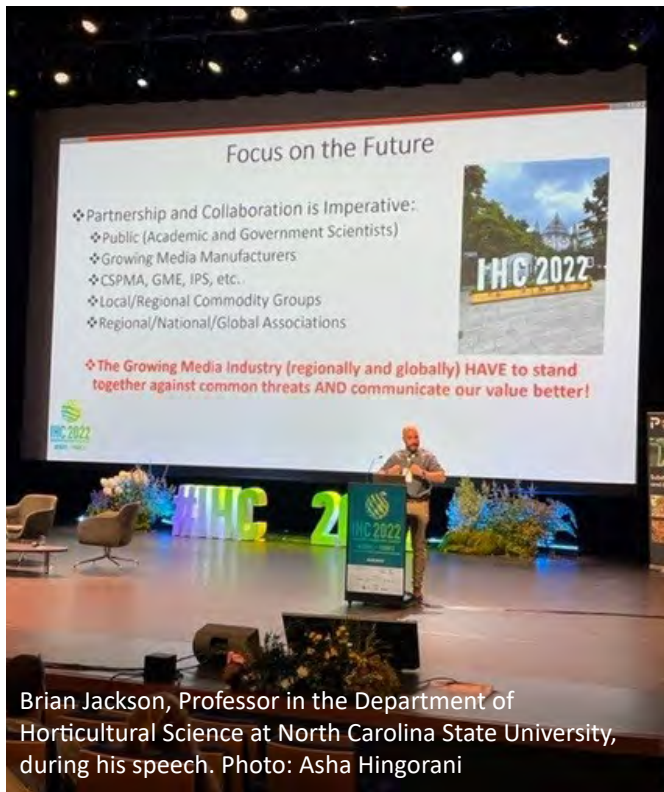
Both CSPMA's president and IPS Executive Board member, Asha Hingorani, and CSPMA's Science Coordinator, Stéphanie Boudreau, were successful in delivering on Canada's key messages of responsible peatland management, and the Canadian 30-year industry-science partnerships

that have delivered on results and success in peatland management.

CSPMA had a booth presence, which provided a direct opportunity to engage with the international science community one-on-one. While some were excited to see Canada's presence it was also clear that many have little to no knowledge of the Canadian industry, the responsible management practices or the Canadian commitments and collaborations with the science community. Many who visited associated peat with the need to



Growing Media Terms and Definitions Workshop. Photo: Asha Hingorani



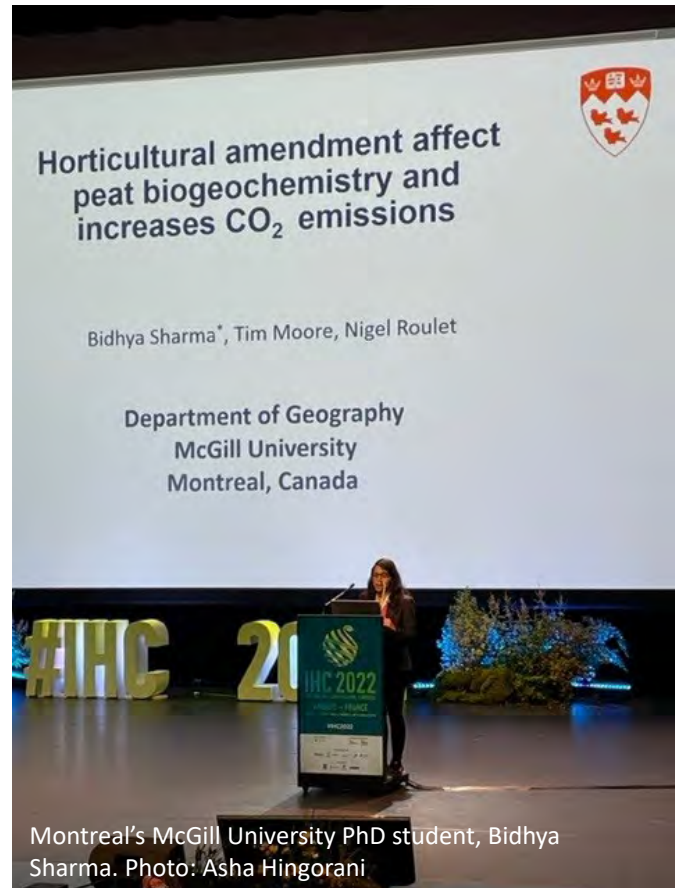
Brian Jackson, Professor in the Department of Horticultural Science at North Carolina State University, during his speech. Photo: Asha Hingorani

replace it, although the rationale behind it was not always clear. Once CSPMA had the opportunity to detail and explain the Canadian story, many were amazed and sought advice on how to communicate the benefits of the resource better, work better with governments and/or simply communicate with critics and stakeholders.

IHC also provided the opportunity to attend various educational sessions on the future of growing media and the conversation around alternatives. CSPMA attended, for instance, the Growing Media Terms and Definitions Workshop, which included moderators such as Jean Caron, Laval University. Other sessions included: Growing media on sustainable uses of resources; and Food, human health and well-being of resources.

Montreal's McGill University PhD student, Bidhya Sharma, also had the opportunity to present her research on GHG emissions of peat at the use stage. This project is part of the research program led by Nigel Roulet, McGill University, in partnership with the CSPMA and its members.

Brian Jackson, professor in the Department of Horticultural Science at North Carolina State University and Director of the Horticultural Substrates Laboratory, also spoke. During his talk, Brian highlighted the substantial work of the CSPMA, IPS and Growing Media Europe



Montreal's McGill University PhD student, Bidhya Sharma. Photo: Asha Hingorani

(GME), and the importance of collaborating on communication and research together as one voice. For some impressions from the Congress, watch <https://tinyurl.com/2s4a6kaf>.

Asha Hingorani

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Call for Abstracts RE3 2023

ISHS and IPS members are invited to submit abstracts now for the "1st International Symposium on Growing Media, Compost Utilization and Substrate Analysis for Soilless Cultivation" which will take place during the RE3 Conference in Québec City, 11 - 15 June 2023. The Call for Abstracts for the RE3 general conference will open on 1 November. For info and submission: www.re3-quebec.org/en/participate/abstract-submission

2022 Canadian Peat Harvest as of August

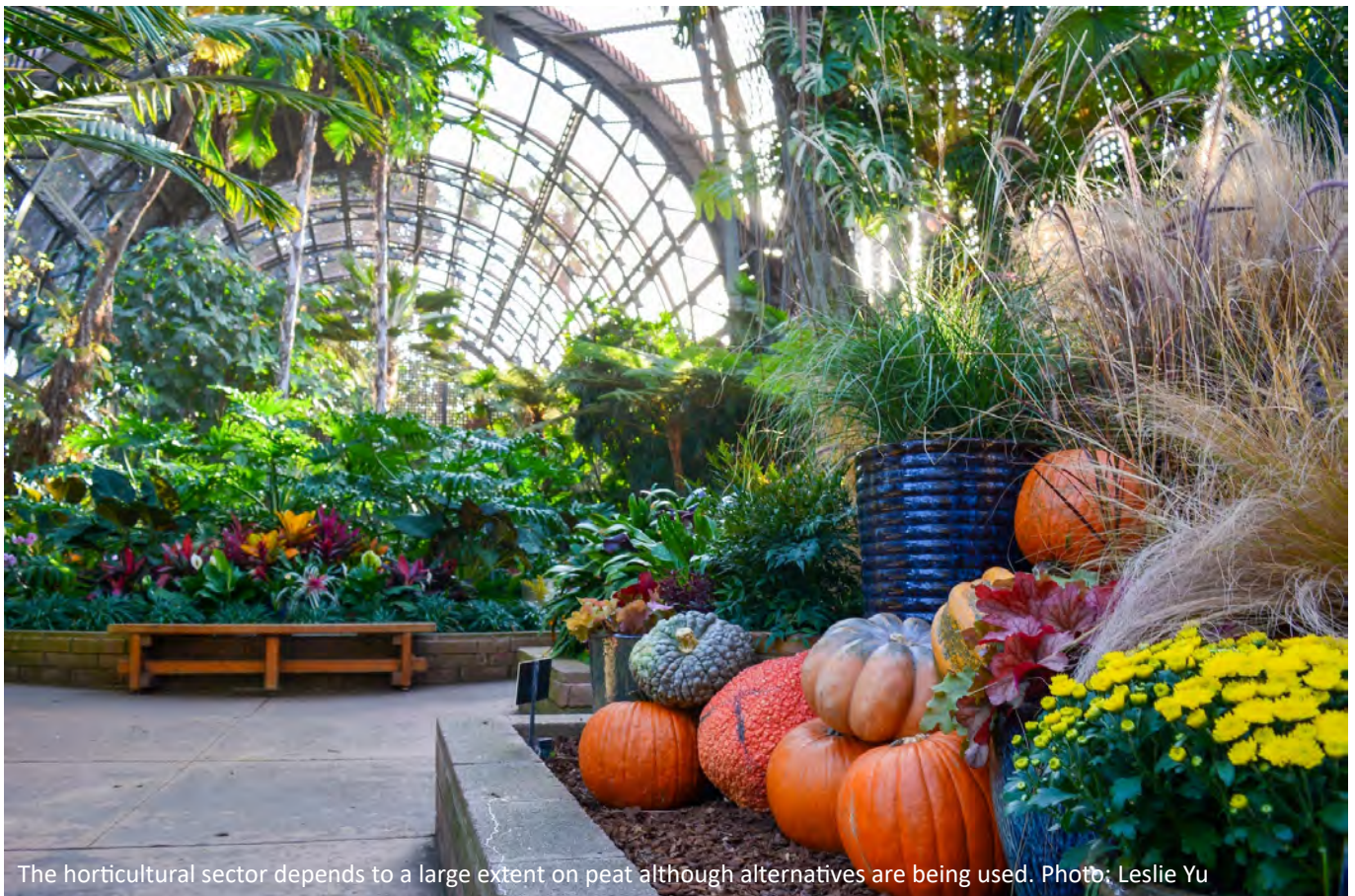
The Canadian Sphagnum Peat Moss Association (CSPMA), whose members currently represent approximately 83% of North America's horticultural peat production, is providing its annual level of harvest for the 2022 season.

A survey of members was conducted on the status of their 2022 Actual Harvest as a percentage of their 2022 Expected Harvest as of 31 August (the season may continue in some regions, weather dependant). The harvest overall varied regionally, but significantly poor weather conditions across all regions meant that harvest, unfortunately, was well below expected levels.

Regional Results

In Western Canada (Manitoba - MB, Saskatchewan - SK and Alberta - AB), all regions were below the targeted volumes with 56% in MB; 75% in SK; and 81% in AB. In some cases, record breaking rain and floods significantly delayed the harvest season, a situation that extended through much of the summer. The end of summer saw more favorable conditions, but they were insufficient to enable target volumes to be reached.

In Manitoba, weather conditions, specifically the spring 2022 flooding, limited harvest and plant



The horticultural sector depends to a large extent on peat although alternatives are being used. Photo: Leslie Yu

operations, constraining capacity. To date, some facilities are continuing to recover from the flood damage.

In New Brunswick, both North and South regions were below expected harvest volumes (65% in NB North, 70% in NB South). Varied weather patterns combined with the late start constrained harvest throughout the Maritimes. The harvest on Québec's South Shore (73%) and North Shore (61%) were also below expectations. Several summer storms, particularly on the North Shore, did not permit either region to achieve its targeted volumes. Similar weather patterns affected the Ontario (57%) harvest.

South of the border, Minnesota (34%) experienced a lower-than-expected harvest because of unique weather patterns.

As in the past, Canadian horticultural peat producers are committed to working cooperatively with their commercial business partners. CSPMA members continue to harvest and manage horticultural peat in a sustainable and responsible way that delivers social and economic benefits to many communities across North America, all while applying world-leading environmental practices.

In addition, Canadian horticultural peat producers are engaged in increasing harvesting capacity through investments in plant infrastructure, harvesting equipment, bog openings, and personnel training, while partnering with Academia to mitigate the environmental footprint. Producers, through the CSPMA, are also working with provincial governments to improve the regulatory environment to ensure the critical resource continues to deliver on the benefits of food security and well-being for generations to come.

Definitions

2022 Actual Harvest: The volume of cubic feet (CFT) of harvest that was achieved as of 31 August, plus, what can reasonably be expected to be harvested for the last few weeks of the season considering "normal"» harvesting conditions.

2022 Expected Harvest: The volume of CFT that equates to a) market needs, plus, b) anticipated buffer as at the end of the 2022 season,

Edmonton, Alberta at night. Photo: Alex Pugliese



minus, c) inventory on hand at the start of the 2022 season (what was left of the 2021 buffer).

About the CSPMA

The CSPMA is the Canadian association of horticultural peat producers. The association and its members are devoted to promoting sustainable and responsible management of Canadian peatlands and wise use of the resource. CSPMA provides support to and advocacy for its members and leadership in environmental and social stewardship, as well as economic well-being and food security related to Canadian peatland resource use.

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Finland: Peat can ease domestic energy crisis

A programme lasting until 2030 would help

The European energy crisis caused by the war in Ukraine and the interrupted import of wood from Russia require a dedicated programme for the further utilization of domestic energy sources in Finland for several years. New energy solutions that replace burning will not be available for the next few years, and the availability of energy wood is currently limited by many factors. There are also risks associated with sufficiency in the coming winters.

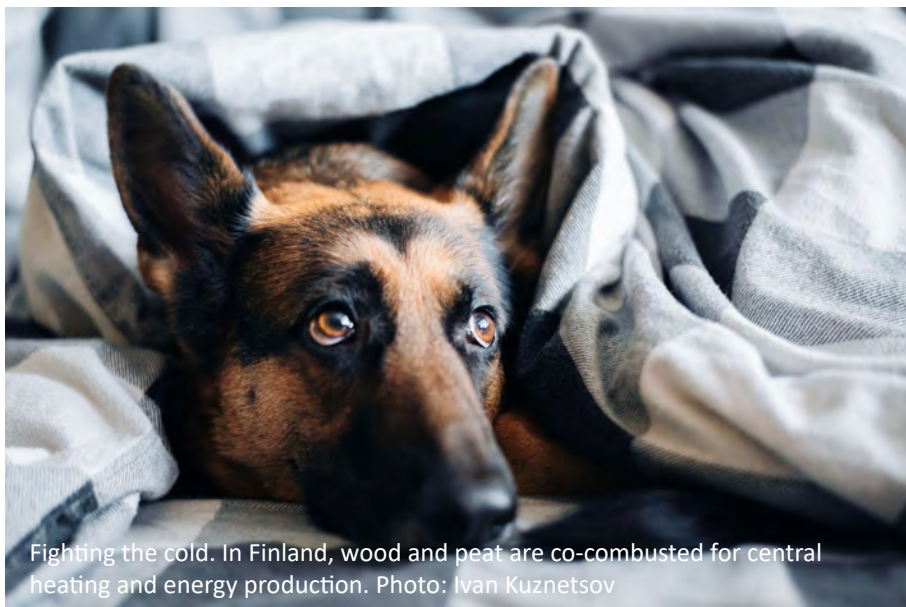
For these reasons, peat is an essential part of both our security of supply and fuel deliveries for many years to come. Using peat, it is possible to reduce the use of imported fossil fuels, contribute to the sufficiency of wood, reduce consumers' energy bills and curb inflation. In periods of low

temperatures in winter, cogeneration (combined heat and power, CHP) accounts for approximately 25% of domestic electricity production. It is worth noting that in a possible fuel shortage, the proportion of this production would be sharply cut, as urban and industrial CHP plants must prioritize heat production.

Approximately 0.8% of Finland's peatlands are used for peat extraction (GTK 2017).

As part of the security of the supply as well as stable fuel delivery, the current production capacity of the entire peat sector is needed for the coming years. This means that decisions supporting the industry are still needed during this year, to produce a credible and more positive vision of the near future for the sector. Otherwise, the decline of the industry will continue, the remaining entrepreneurs will also be discouraged, and the possibilities for the next land use of the cut-over production fields will narrow.

At the same time, we would permanently lose the only domestic security-of-supply fuel, which we cannot afford amid the current energy crisis. It is necessary to quickly draw up sustainable policies defining the production of energy peat



Fighting the cold. In Finland, wood and peat are co-combusted for central heating and energy production. Photo: Ivan Kuznetsov

for at least the next two terms of parliamentary elections, thus eight years in total.

The peat production season of 2022 seems to be disappointing for both producers and customers. Production has been limited by the decrease in demand for energy peat during the past couple of years due to the increase in emissions trading costs and taxation, as well as the gloomy outlook for the peat industry.

This can be seen in the departure of entrepreneurs and drivers from the industry and the setting aside of still productive areas. In addition, the summer weather did not favour peat production, so even the realistic goals set in the spring must be compromised.

The competitiveness of energy peat must be improved for a limited period in order to reduce the costs resulting from various policy measures, e.g., emissions trading. The reduction in the use of energy peat would thus be more manageable and would support a fair, resource-wise transition.

However, the most important goal is to create a clear, long-term vision for the peat industry. That is essential to give actors more certainty about the operating environment of the next few years, so that they dare to invest and employ people in their businesses.

These measures do not endanger Finland's ambitious goal of carbon neutrality by 2035. They would even be in line with the government programme's original target of halving the use

of peat for energy by 2030, as this goal has already been met within three instead of ten years.

Translated and shortened from the original Finnish press release at www.bioenergia.fi. For more information, please contact the author.

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GROWING MEDIA – ENABLING NATURE RESTORATION AND SAVING NATURAL RESOURCES

Hosted by **Franc Bogovič**, Member of the European Parliament

Wednesday, 9 November 2022 | 16.30 to 18.00 CET
European Parliament Brussels – Room: Spinelli 3E-2

Speakers:

Ms Angelika Rubin,

Policy Coordinator for nature conservation at DG ENV

Asha Hingorani,

President of the Canadian Sphagnum Peat Moss Association

Jarno van Veelen,

Landscaping advisor and European Tree Technician at Kekkilä-BVB

Jesse Schevel,

Glastuinbouw Nederland

The upcoming EU Nature Restoration Law marks the beginning of the EU's historical effort to restore the environment. Key highlights include the restoration of peatlands and greening our cities. Two objectives dependent on one another and at the heart of Growing Media Europe's efforts.

To make it happen, the EU must build on innovative and result-orientated restoration methods while making use of the resources needed to build thriving and climate-resilient urban environments. Let's bring back nature into citizens life!

Join us on 9 November to discuss how to champion the EU Nature Restoration Law. Our event will bring together institutional stakeholders, academia and innovation players from industry discussing existing barriers and opportunities to restore nature in the EU.



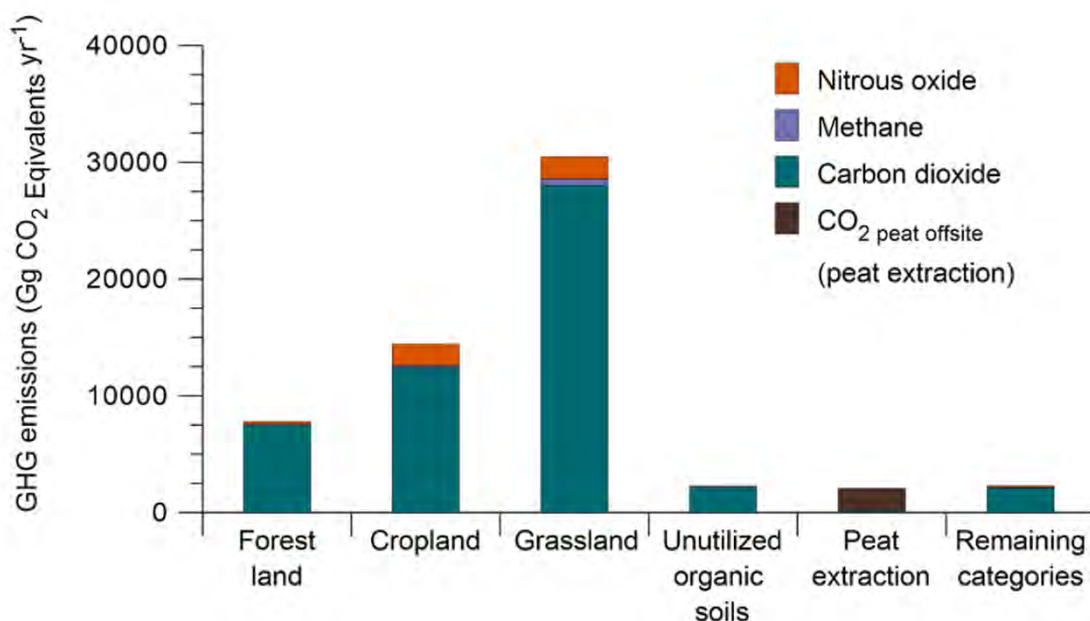
Peat; not perfect, but no pariah

I have followed the commercial peat debate for 14 years now with it ebbing and flowing in profile through the media. Over that period, I have become more and more clear in my thoughts on the subject as more research and evidence is presented. Unfortunately, the two main arguments against using peat in commercial horticulture of habitat/biodiversity loss and GHG emissions are based on a fundamentally incorrect premise; that horticultural peat is harvested from pristine peat bogs.

Pristine peat bogs are wonderful thing; they are biodiverse, act as long-term carbon stores over non-human timescales and provide other environmental benefits such as filtering and storing fresh water. Horticultural peat in the UK however, has never been harvested from pristine bogs. It is harvested from areas drained between

150 and 300 years ago by humans for agriculture and habitation. Research by B. Tiemeyer, et al demonstrates that the lowest CO₂ emitting activity carried out on German degraded lowland bogs is peat extraction. Lower than forestry, agriculture, grazing, urban development and even than leaving the land completely unutilised. Rewetting long term degraded lowland bogs is not an immediate option as the ground profile needs to be dropped. Therefore, the lowest carbon releasing use of these already degraded bogs (surface milling) actually funds and returns them to a state where they will be a well-functioning bog once again.

So the carbon emission arguments against peat are more emotive than scientific, but undeniably peat does have a GHG impact, but it is significantly lower than previously presented evidence suggests and with almost no biodiversity loss.



GHG emissions from German peatlands by land-use category and GHG including peat extracted for horticulture based on the land-use in 2014 taken from; A new methodology for organic soils in national greenhouse gas inventories: Data synthesis, derivation and application B. Tiemeyer, et al, 2020.



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Taking responsibility:

Our peat raw materials with RPP certification

“For all our ADVANCED Substrates, we only use peat raw materials from responsibly managed peatlands with RPP certification. The independent certification system “Responsibly Produced Peat” (RPP) serves us here to ensure responsible peat extraction and better protection of natural peatlands.”

Bert von Seggern, Director Production & Sustainability & Chairman of RPP

Beyond GHG's peat ticks all the other sustainability criteria; it's local, renewing (the UK & Ireland lay down far more sphagnum annually than will be used in horticulture), light to transport (30-50% of a substrate's CO₂), supports high quality local jobs (10,000 in Southern Ireland alone), will improve biodiversity over time, performs excellently, requires less use of mineral fertilisers than PF alternatives, requires less use of fresh water than PF alternatives. The use of 50-60% peat in a substrate means you can quickly, easily and economically replace the remainder with the only truly renewable low GHG option; wood. This is by using woodfibres, bark and composted bark fines. All the other options that are available at anywhere near the scale required can only be used in small percentages (5>30%) and still require a well performing dilutant such as peat.

The argument that you can't have peat in horticulture and restore UK and Irish peatlands needs to be decoupled, because it is quite clear that the most sustainable thing to do is **both!** Have a local well governed small scale peat industry while continuing to restore upland degraded bogs



Young plants often thrive in peat. Photo by Jael Rodriguez

wherever possible. If we are going to meet our net zero targets, we are going to get there through pragmatism not reactionism.

Summary of commercial alternatives available at scale (>200,000m³ annually):

Coir: Although in some instances use up to 100% is possible, we are just exporting our issues abroad. The industry creates immediate rather than historic habitat loss, uses and pollutes huge volumes of fresh water abroad and in the UK. It is energy intensive to transport, compress and decompress, pH is too high and has a large Nitrogen drawdown.

Composted Greenwaste: If carried out where the input material is controlled to eliminate contamination with herbicides, heavy metals and human pathogens, which is not happening in the UK but is successfully being carried out in Germany, it can be used up to 20%.

AD (anaerobic digestion) Waste: Extremely high EC and nutrient levels mean it can only be used up to 10%. DEFRA now state 65,000ha, 1% of all the UK's arable land is used to grow maize as feedstock for AD plants. A massive hidden footprint and completely unsustainable. Contamination with microplastics and herbicides is also common.

Loam/Clay: Excellent buffering properties however it is replacing one emitter with another. Because of the heavy processing required and high weight for transport only use up to 10% is realistic.

Woodfibre/Bark/Composted Bark: The only true circular alternative over human timescales. Large Nitrogen consumption in use, low water holding capacity, potential for hydrophobic hyphae and heavy weight of composted bark are significant drawbacks. Competition for materials from the energy and building industries is huge driving up prices. If the volume of materials were available locally it is possible to use in combinations up to 80%.

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AND ADDITIVES FOR SUBSTRATES**



We all have peat on the plate...

In only 1m³ peat substrate it is possible to produce up to 350,000 vegetable seedlings. Without peat efficient commercial horticulture is not conceivable. And our plates were nearly empty.



The AsiaFlux 2022 conference

New knowledge, as well as the joy of communicating in person again

The Sarawak Tropical Peat Research Institute (TROPI) hosted 160 scientists with different areas of expertise from various parts of the world for the AsiaFlux 2022 conference. Between 20 and 22 September, the attendees presented 58 oral and 58 poster presentations.

Twelve keynote speakers opened the conference, namely, Deputy Minister of Urban Planning, Land Administration and Environment Datuk Len Talif Saleh, as well as Dr Ryusuke Hatano, Emeritus Professor of Hokkaido University; Dr Gavin McNicol, Assistant Professor at the Department of Earth and Environmental Sciences at the University of Illinois Chicago; Dr Ülo Mander, Professor of physical geography and landscape ecology at the Institute of Ecology and Earth Sciences, University of Tartu, Estonia; Dr Paul Stoy, Associate Professor at the Department of Biological Systems

Engineering, University of Wisconsin; and Dr Takashi Hirano, a Professor from the Laboratory of Ecological and Environmental Physics at the Research Faculty of Agriculture, Hokkaido University.

In addition, the keynote speakers included Dr Maria Strack, professor at the Department of Geography and Environmental Management, University of Waterloo, and Tier II Canada Research Chair in ecosystems and climate, who is the editor of the IPS book *Peatlands and Climate Change*; Dr Fredolin Tangang, a Professor in climatology at the Department of Earth Sciences and Environment, Faculty of Science and Technology, National University of Malaysia; Dr Joon Kim, Professor and Future Earth Programme director at the Seoul National University Asia Centre (SNUAC); Dr Jin Wu, Assistant Professor at the University of Hong Kong

(HKU) School of Biological Sciences; Dr Ryuichi Hirata, Senior Researcher at the National Institute for Environmental Studies Earth System Division, Japan; and Dr Alexander Knohl, Professor of bioclimatology at the Faculty of Forest Sciences and Forest Ecology, University of Göttingen, Germany.

"As President of the IPS, it was a good opportunity for me to see the excellent work that our long-term member of the Executive Board



Lulie Melling welcoming the participants. Photo: Marko Pomerantz

Dr Lulie Melling has done and is still carrying on in researching tropical peatlands in Malaysia. It is also clear that she is a very good conference organizer," commented Marko Pomerants, who attended on behalf of the IPS.

Pomerants acknowledged the opportunity to contribute: "I must be grateful that I had the possibility to introduce the IPS's more than long term of experience during my speech: "International Peatland Society - Over 50 Years of Peatland-Related Knowledge Transfer" (next pages) and explain our willingness to improve our performance by hiring, for the first time, a Scientific Officer to serve the interested community."

The COVID-19 period has left its mark on everyday international communication, so the AsiaFlux conference provided a great deal of extra value in meeting the IPS members from Asia. "Dr Suwardi Suwardi and Professor Budi Intra Setiawan from the Indonesian National Committee of the IPS demonstrated their interest to be more active in IPS Commissions and Expert Groups again," stated Marko Pomerants.

AsiaFlux was established in 1999 as the Asian arm of FLUXNET, the worldwide flux network, to develop collaborative research and data sets concerning the cycles of carbon and water in key ecosystems in Asia, to organize workshops and training on current and related global change themes, and to train the next generation of scientists to become informed leaders with varied skills and perspectives. The first AsiaFlux workshop was held in Sapporo, Japan, in 2000. Additional information can be found at www.asiaflux2022.com.

The IPS is the leading network of peat and peatland experts, with 1,758 members from 31 countries. For more information, visit our website at www.peatlands.org.

This press release was published on 29 September 2022 at <https://tinyurl.com/ynp6sm59> and has 728 unique views by 27 October.

Speech of the President

The International Peatland Society - Over 50 Years of Peatland-Related Knowledge Transfer

The International Peatland Society (IPS) is an organization of individual, corporate and institutional members dedicated to the responsible management and wise use of peatlands and peat. The IPS was established in 1968 in Québec, Canada.

The IPS currently has 1,578 individual, corporate, student, institutional and non-governmental organization (NGO) members from 31 countries.

This includes 16 National Committees and three Commissions, in addition to numerous Expert Groups centred around different activities related to peat and peatlands, mires, bogs, fens - and tropical peat swamp forests, which can also be found in Malaysia.

Our mission is to serve all those involved in peatlands and peat through the promotion, gathering, exchange and communication of knowledge and experience. This is accomplished mainly through events and projects which address key issues relating to peatlands, such as climate change and biodiversity, as well as the need for responsible use and restoration.

In Asia, we have members in Malaysia, Indonesia, China and Japan, as well as Singapore. Your neighbouring country of Indonesia even includes



Meeting old and new friends. Feira Budiarysyah Arief and Professor Budi Intra Setiawan from Indonesia, Marko Pomerants from Estonia, Dr Lulie Melling from Malaysia and Dr Suwardi Suwardi from Indonesia (from left). Photo: IPS

the largest National Committee of the IPS, with some 430 members.

We are often asked what benefits we can offer to our members. For instance, we publish Peatlands International, a global magazine concerned with all aspects of peat and peatlands, which is included in the membership fee.

Peatlands International is sent out by email to all IPS members four times a year. The magazine consists of approximately 32-64 pages featuring articles about peat and peatlands, as well as conference reports, news items and book reviews. It also publishes research findings and business reports, in addition to internal information in relation to the IPS. New authors are very welcome. Please take the opportunity to publish in the magazine and, of course, read your copy to gain a good overview of what else is going on in peatland-related life outside of your everyday information flow.

A more frequent publication is Peatland Snippets (formerly Peat News), the monthly newsletter of the IPS. It is sent by email for free to all members. If you would like to publish your news, announcements, short reports or other information in Peatland Snippets (5-10 lines), simply contact the Secretariat.

For scientific publications, we offer Mires and Peat. This is a peer-reviewed online journal with a high impact factor for all peat- and peatland-related research.

In addition, members can benefit from significant discounts on registration fees for our conferences, symposia and congresses. You are welcome to speak or to simply listen, as you prefer. My advice is to use these possibilities to make yourself more visible within the international peatland community.

Now, to address some more complex issues.

Our diverse field of activities offers us opportunities to promote a wide variety of UN Sustainable Development Goals - SDGs. In fact, our members, as well as the IPS as an organization, contribute to all of them. I will provide some selective but important examples here.

SDG 2: Zero hunger. Peat is the most important growing medium for the cultivation of many significant food plants. Other raw materials often need to be mixed with peat to fulfil quality requirements, especially for young seedlings.

SDG 13: Climate action. In 2008, the IPS published the book Peatlands and Climate Change, edited by Maria Strack. It is a valuable guide for policy-makers and has sold several hundred copies. A new edition is due to be published by the end of this year.

As you know, the United Nations Framework Convention on Climate Change (UNFCCC) is the major climate change convention. The IPS was the only peat-related organization able to present all aspects of peat and peatlands at the networking

event "Peatland Partnerships in Climate Change Mitigation and Nature Recovery" at the 26th UN Climate Change Conference of the Parties (COP26) in Glasgow in November last year. Information on tropical peatlands is crucial in this respect, due to their size and importance for the global climate.

SDG 15: Life on land. The IPS liaises with several international conventions, the most important of which is the Ramsar Wetlands Convention, as well as biodiversity and

SUSTAINABLE DEVELOPMENT GOALS



Source: United Nations

climate change conferences. The 15th Convention on Biological Diversity Conference of the Parties (CBD COP15) has recently been moved from Kunming, China, to Canada and will be held in Montréal in December.

In another example of our work, the IPS is one of 44 partners in the European Union MERLIN project, which is a "research and innovation action" funded under the European Commission's Green Deal Horizon 2020 programme. MERLIN stands for "Mainstreaming Ecological Restoration of freshwater-related ecosystems in a Landscape context: INnovation, upscaling and transformation". This includes peatland sites in five countries. Last week, our experts met in Germany to compare and streamline their restoration efforts.

Of course, the IPS also organizes its own meetings. Next year we will hold our Annual Convention at RE3 in Québec, Canada. This conference is jointly organized by the Society for Ecological Restoration - Eastern Canada (SER-EC) and the Canadian Land Reclamation Association (CLRA) from 11 to 15 June 2023, during the third year of the UN Decade on Ecosystem Restoration (2021-2030).

The International Society for Horticultural Science (ISHS) will also be involved. You are very welcome to attend!

In 2024, we will be back in Asia in Changchun, China, to hold the 17th International Peatland Congress. I hope the Malaysian Peatland Society will be strongly represented there. The first call for papers will be issued soon.

In this respect, I am glad to inform you that the preliminary Congress theme has already been chosen: "Peatlands and human well-being in a changing world". As the IPS President, it sounds like music to my ears, because such a topic allows for concentrating on all four pillars of sustainable development that are important for the IPS: responsible extraction and environmental and climate issues, as well as social well-being, in addition

to the opportunity to talk about all the kinds of ecosystem services that peatlands offer.

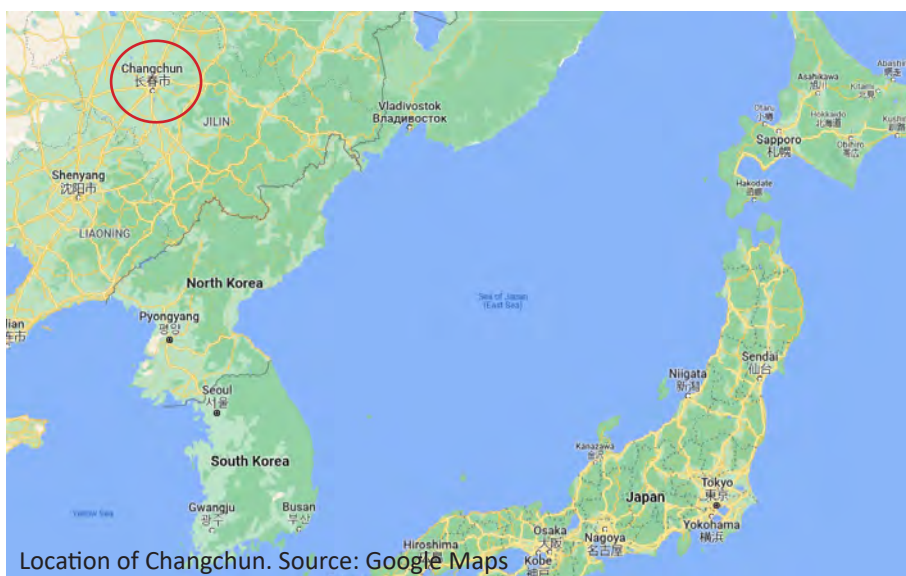
In our daily work, members of the IPS Scientific Advisory Board (SAB), led by Professor Jack Rieley, Second Vice President of the IPS, spend hours and days explaining the basics of peat and wetlands, and the true magnitudes of greenhouse gases emitted from peatlands so that the wider public as well as policy-makers can make informed decisions.

This includes the physical, biological and chemical properties of tropical peatlands, with which you are all familiar. The biodiversity of tropical peat swamp forests is truly amazing, and their climate impact is undeniable, but we must not forget that people in all regions need to make a living, feed their families and protect their health. It is sad but true that it is only when basic needs are fulfilled that people are truly ready to take a closer look at their environment and care about the climate.

Our next step to increase the effectiveness of the IPS is to hire a Scientific Officer to manage and implement the science and research requirements of the Society. This was suggested by the SAB and approved by the Executive Board this summer.

To communicate with audiences seems an easy task. Is it that effortless in reality?

The first challenge is to keep matters simple. When you explore deeply specialized research details, your brain has to work hard, even though you are well prepared with basic knowledge.





Secondly, if you chair a global organization, you can't efficiently reach out to every member, because of the size of the daily flood of information, and their differing interests. This means that the support of national committees is essential - not to mention the different languages involved!

Thirdly, if you need to convey important information from your point of view, it is crucial to find the right facts and convey them quickly. The real-life problem is that in most situations you simply do not have enough scientific data in a suitable form and at the right time.

In May, Dr Lulie Melling, our Malaysian host, visited Estonia. She brought presents with her from the beautiful island of Borneo. Guess what those gifts were?

Anyone who at least thought "black pepper" was on the right track. What else?

Laksa. Malaysian noodles. Nicely packed, sauces included. Truly delicious and spicy. However, there may not be such conveniently packaged and well-seasoned solutions in science.

The "best before" problem may also occur. We live in 2022, but we still see graphs where the latest data are from 2016 or even the 1990s. The world has moved on in the meantime. Peatlands grow slowly, but the appetite for fresh data is increasing at all levels.

What can you do to improve the situation?

Here are some basics on communication. Often, if a message does not arrive, the fault lies with the sender, not the recipient. Look in the mirror. What is the best way to convey information, at the appropriate time, via the most effective channel

and to the right people? The IPS has looked in the mirror.

We are therefore right now, as I said, looking for a Scientific Officer who has the ability to make compromises, as well as gather facts and communicate them. This should be based on scientific data and publications. This person must be able to get along with different stakeholders and make the exchange of ideas easy. The deadline for applications is 30th September. There may even be someone in this room who is the perfect person to fulfil this task.

With this new position, we hope to enhance the ability of the IPS to present and exchange verifiable information on the extent, importance and use of peat and peatlands. This will be accomplished, as in the past, by facilitating dialogue and debate on wise use and responsible management, but with additional significance, all over the world.

Last, but not least, you probably all know that peatlands are "service centres". I am referring of course to ecosystem services. In this room, for instance, we have Dr Ülo Mander from Estonia, who, together with co-author Kai Kimmel from Tartu University, counted 16 different ecosystem services altogether, including provisioning and regulating as well as cultural and supporting ones in 2010. People should be aware of such important functions.

As I stated before, the transfer of knowledge is crucial.

Finally, I want to thank the organizing committee of Asiaflux 2022 and of course encourage you to join the IPS.

Maybe you already have enough organizations to work with, but today's complicated family times allow for one more, and if involves peatlands, it is definitely the IPS.

Thank you very much!

Marko Pomerants

IPS President
marko.pomerants@peatlands.org

New Members of the IPS

New members (or new contact persons for corporate, NGO and institute members, and industry partners) are mainly approved by our National Committees. For all other countries, the approval is made by the Executive Board of the IPS.

Each National Committee is asked to compare their membership list to that of the IPS at least once a year (status below as of 26 October 2022). In some countries, IPS has both a National Committee and an industry association as a member.

In countries without a National Committee, member applications can be sent directly to the IPS Secretariat or online via www.peatlands.org/join-us. Members are currently not accepted from Belarus and Russia. Membership fees 2022 were invoiced in mid June.

Individual members:

Ireland: Maurice Ryan

Latvia: Sabina Alta, Uldis Ameriks, Linda Dobkevica, Inga Grinfelda, Zigfrīds Jurašs, Maris Klavins, Janis Krumins, Dagnija Lazdina, Andis Lazdins, Juris Nusbaums, Sergejs Osipovs, Oskars Purmalis, Inese Silamikele

USA: Peggy Jones

Corporate members and institutes:

Estonia: Anna-Helena Purre (Inseneribüroo Steiger)

Latvia: Karlis Volfs (Joint Stock Company "Latvia's State Forests"), Brivzemnieki-Melior LTD, Institute Silava, Laflora LTD

The Netherlands: Marco Zevenhoven (Stichting RHP)

Rwanda: Pierre Kalinganire (Rwanda Energy Company)

NGOs:

Latvia: Sabina Alta (NGO Plant innovation fund), Ilze Ozola (NGO Lake and bog research centre),

Students:

Portugal: Raquel Fernandes

You can ask for, change or delete your membership information any time by contacting the IPS Secretariat, susann.warnecke@peatlands.org.

More info and membership form: www.peatlands.org/join-us

Membership benefits:

4 issues of Peatlands International / year | 12 issues of Peatland Snippets / year | Significant discounts at IPS events, congresses and symposia & IPS online store. | Excellent networking possibilities with peatland science and peat-related industry.

Supporting the **only** peatland organisation worldwide that involves members from all sectors. Welcome!

Abbeyleix - the bog that came in from the cold

Abbeyleix Bog continues to grow on people

Abbeyleix Bog, the prototype project for successful community centred conservation in Ireland and the EU is continuing to make significant strides.

Not resting on their laurels, or rather their Sphagnum moss in this case, the Abbeyleix Bog Project continues to grow not just in terms of public awareness and popularity, but in terms of its physical footprint on the landscape.

This latest phase of groundworks at the Laois location is thanks to €75,000 funding from the

government's Peatland Community Engagement Scheme, an acknowledgement of the substantial progress and benefits demonstrated on the peatland site, over the past decade in particular. The works, expected to take about one month to complete, are being carried out by G Russell Plant Hire from Clonaslee, under civil engineering supervision by RPS Ireland.

The Abbeyleix Bog Project success story has encompassed not only demonstrable positive environmental and ecological progress, but educational and recreational benefits. It is all

down to hard work, ground-up community ownership and willing co-operation across a spectrum of stakeholders, but the dividends have been handsome too. Abbeyleix bog is hailed nationally and internationally as a textbook example of what can be achieved in such cases.

The landscape is being reclaimed and restored, the habitat recovered and replenished, the nature reserve a home for countless species and a recreational reserve for walkers and nature lovers of all ages. Small wonder that



An increase in visitor numbers during and after the recent pandemic necessitated maintenance and upgrade of the amenity infrastructure over the last two years by project volunteers. Photo: Abbeyleix Bog Project

Abbeyleix Bog Project continues to win more admirers as the case study to be emulated with a win-win for conservation and community alike.

The good work continues at the bog this month, with manpower and machines bringing further change, all for the better. These further improvements are building on past successes, proven results, scientifically verified metrics demonstrating that the bog and the habitats it harbours will replenish, revitalise, restore, and regenerate once respectfully managed.

The bog, which is a popular sanctuary too for walkers and nature lovers, will remain open to visitors during these latest phases of works, involving the building of ridges or berms, peat-dam features to assist the rewetting of the cutaway bogland on the periphery of the main raised bog. This intervention on the cutaway section and supportive hydrology will help support the core bog's restoration and protect the habitat and its sustainability overall.

This is good news for fans of Abbeyleix Bog who continue to flock to the rehabilitated bog in increasing numbers, as well as further enshrining its status, significance, and sustainability. This latest round of funding is a confirmation and acknowledgement of the prestige and importance of Abbeyleix Bog, not just at national level but within the wider EU conservation and carbon emissions context. So much so that Abbeyleix Bog has been selected as a 'knowledge site', a prototype for best practice in community collaborative projects within the EU Horizon 2020 WaterLANDS Projects.

"It's a really significant milestone for the bog and those of us connected with the project. The works bring renewed enthusiasm and drive to further rehabilitate our peat habitats which is massively positive in respect to climate action, for biodiversity and the community alike," outlines Garry Luttrell, Director and Acting Chair of the Abbeyleix Bog Project.

"This wouldn't have been possible without the help, input, support and collaboration from all our stakeholders, volunteers and the local community. We hope that this will only be the start of a new era in which community-led projects will benefit from monetary support and stakeholder expertise

Abbeyleix Bog Project



to improve our natural environment," adds Chris Uys, of the Technical Advisory Group to the Abbeyleix Bog Project.

Announcing the €75,000 funding in August, under the Department of Housing, Local Government and Heritage's Peatlands Community Engagement Scheme, the Minister for State for Heritage, Mr Malcolm Noonan stated that he was delighted to support active and determined community and volunteer groups like Abbeyleix Bog Project in their efforts to embrace and bolster nature and biodiversity. For further information please contact:

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Director and Acting Chair
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Creativity and Conservation: A Red List of the Creatures from Scandinavian Folklore

Linnéa Jägrud is a limnologist based in Gothenburg, Sweden. Over the course of a year, Linnéa travelled with photographer, Tore Hagman, across Sweden to trace the landscapes of Nordic folkloric creatures called 'vaesen'.

As Linnéa explains in this article, their search for vaesen revealed the deep-rooted, cultural and historical connections to nature in Swedish landscapes. These connections can, in turn, deepen our modern-day understanding of ecological conservation and restoration.

For thousands of years, we humans have changed our landscapes. The last century has been

particular difficult for nature. Our formerly rich environment has lost so much. Species have been forced towards the Red Lists of Threatened Species. We must take better care of our Earth, so that all Earthlings can continue to exist.

The Scandinavian folklore creatures known as 'vaesen' are inextricably linked to the landscape and for thousands of years, humans have passed on ancient stories regarding these Nordic vaesen.

Men and women have seen them hidden in the forest or in the dim light of the barn. A hint of them can be seen in the salt of the wave and the vortex of the stream. But what if the vaesen are more than just stories?



The Fairies. Photo: Linnéa Jägrud and Tore Hagman

Even worse. What if we were not alone, but we are now? Could it be that the landscape has changed so drastically that we have lost more than just birds, meadows, bats and lichen?

Could the vaesen also be on the Red List? And if so, what if we have also lost a piece of ourselves?

Living Folklore in Swedish landscapes

Like a tree, this project was once a seedling in the heads of Tore and I. Our idea rapidly grew into something more: a will to tell the story of the folkloric vaesen. By tracing the landscapes of the vaesen across Sweden through photography, we wanted to offer a new perspective on modern-day conservation and restoration imperatives to “save and restore”.

With a common love for nature, with joy and creativity, sweat, laughter and some drops of blood, Tore and I took 21 photographs depicting the Nordic vaesen in the environments which birthed their folklore. The vaesen are strongly connected to the landscape, and in the dark of the Swedish winter, it was easy to mistake a stump for a troll or a rat for a tomte (a sort of gnome).

Perhaps these sightings were not mistakes. Before electricity, the vaesen were often seen and thousands of stories are told about children being taken by trolls, women being drowned in the river or men being seduced by the beautiful but dangerous “Lady of the Forest”. However, there were equally as many stories about lost people who found their way thanks to the vaesen or fishermen who reported good catches after offering up a coin.

Creativity and Conservation: Photographing the Vaesen

It is commonly known that nature is, and always has been, a great inspiration for many artists and authors around the world. Some of the vaesen we photographed are still commonly known



Näcken, the Nix. Photo: Linnéa Jägerud and Tore Hagman

in Scandinavia, but not all of them. Through our work, we identified an obvious correlation between the fragmentation and domestication of the landscape and the loss of vaesen folklore. The conservation of landscapes is not only about biodiversity, but folklore too.

The further north in Sweden one goes, almost as far as Norway, the more time people spend enjoying nature in their daily lives. It is in these places that the vaesen folklore stays alive. Even further away, in Iceland, road construction is forced to take diversions around sites where folklore says that Icelandic elves dwell.

In central Europe, with its concrete, cities, intensive agriculture and irrigation systems, the beauty of nature is so often lost, biodiversity is degraded and the folklore which springs from the landscape disappears. As a consequence, when we lose the stories which tie us to a landscape, we may lose the feelings which prompt us to conserve and restore nature in that area. Moreover, if we lose our love of nature, we may no longer consider its preservation so important.

I chose the locations for the photo shoots, based on what would have been a suitable habitat for the vaesen. This required extensive background research with folklore experts and Facebook groups. For example, for one shoot, I needed to find a horse which could actually stand still without someone holding it; in addition, the horse needed to be in a lake with lily pads on its coat! Not all horses can do that, but eventually, after searching several social media groups, I found a

very calm and friendly horse named Brolle, who could do the job.

For the Kraken picture, we created a papier-mâché tentacle over three metres long and had to transport it and a small wooden boat out to sea. Papier-mâché, an ocean, a leaking wooden boat and rain are a very bad combination. The weather conditions were extremely important and at the very last second, the wind calmed down and we were able to take the shot.

The Lady of the Mine photograph required a visit to the mine of Taberg, south of Jönköping. It is a very old mine, but it closes during winter to protect the bats. Hence, we had to be swift and make our way between flying bats in the complete darkness of the mountain before it closed for half a year.

Using leftovers from an old Viking building, my husband, Johannes, and I built the exhibition frames for the photographs. We created “species-specific factsheets”, which included the last observation of the vaesen, its Red List category, biotope, threats and measures to save it, which were printed directly on to a metal plate.

The sounds which accompanied the photographic exhibition were also very important. I carefully chose the appropriate birdsong for each environment, in order to evoke the sounds of the landscapes depicted in the photographs.

Currently, the exhibition is being shown at Rydals Museum, on the west coast of Sweden. In the autumn, the exhibition will be ready to tour and will be shown in other places.

Freshwater Folklore: A Red List of the Vaesen

An important thing about these vaesen is their name. Many of the Scandinavian vaesen are named “rå” (raa). A rå is a vaesen that protects and takes care of a certain place. Hence, the Skogsrå, the lady of the forest, is not only a good-looking woman in the forest, she is the forest. She



Sjörrå, Lady of the Lake. Photo: Linnéa Jägerud and Tore Hagman

is a vital part of what we would call an ecosystem today. She takes care of the animals in the forest and guards the trees. Maybe that is why she used to seduce the timber men. Maybe she did not want them to cut the trees.

The Havsrå, the mermaid, is another rå, who takes care of the coastal areas and guards them. She decides whether or not the fishermen shall get fish.

There is also a rå in the mine; she seems to prefer the bats and keeps them safe during winter. Numerous stories tell that you must always be polite to the rå. Greet them by name and give them a small gift, and you shall receive many gifts in return. The Gruvrå (Lady of the Mine) could tell you if it was safe to enter the mountain and the mermaid could tell you when there was a storm coming in.

Our folkloric Red List is based upon how fragmented the vaesen’s environment is today. Trolls, for example, need very old forests and since almost all of these forests have been cut down, the trolls are left to survive in nature reserves and national parks.

The nix or Näckén in Swedish, is a water man that lives in strong, wild streams. He is traditionally pictured playing the fiddle and sometimes luring innocent humans into the stream. What will happen when a hydropower station is built? The stream will be lost and the music of the river will no longer be heard.

On the mire, we have at least two kinds of vaesen.

The old women of the mire or the mosekone is a Danish vaesen. She is said to have a magic cauldron, and when she brews, the fog will rise and spread over the landscape. It is also said that this fog keeps the bog alive. When the peatlands were drained, the water disappeared and the fog was gone. Since the mosekone could no longer do her magic brewing, the frogs and the dragonflies died.

The same fate befell the fairies. They were known for dancing in the fog, however, after the mires were drained, the mist disappeared and the fairies were no longer seen dancing.

Stories of Freshwater Restoration

The work with the Nordic Red Listed vaesen has made me think more about the story behind restoration. From a scientific perspective, we often talk about restoring landscape systems and the story behind the Red Listed vaesen actually says the same thing, but with another narrative.

We need to restore these vitally important freshwater environments, not only in terms of



Troll. Photo: Linnéa Jägrud and Tore Hagman

their ecology, but for their cultural importance, too.

We know that we have lost biotopes, habitats and species. That is a fact and should encourage everyone to take action immediately to promote conservation and restoration. But what if we have lost more than just species? What if we have lost a deeper connection to nature through the disappearance of the vaesen in everyday life?

Stories of the vaesen return magic to the landscape, therefore, what needs to be done is to bring people out into nature. Let them experience some magic. Let nature exist on more than one level and imagine the forgotten creatures that once roamed in different places. Hear the stories before they are completely lost.



Havsrå, Mermaid. Photo: Linnéa Jägrud and Tore Hagman

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Photos welcome! If you would like to contribute peatland and peat photographs to our publications and website - as well as social media, email us via ips@peatlands.org :)

Mary N. Scherbatskoy: My Land - An Agricultural Journey

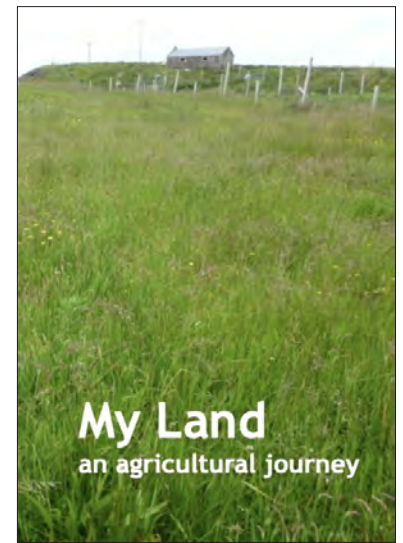
This is a small book with a powerful story of sustainable agriculture on the poor peaty soils of the islands of the north west of Scotland. It is also an insight to the evolution of a wet, acidic, waterlogged peatland landscape to a dark, fairly productive, drainable and cultivable dark soil which in the past supported the livelihoods of many families.

Because peatland and related shallow organic soils were the only farming substrate available to crofters a system of agriculture was developed that optimised the potential of this poor land for arable and pastoral farming. As a result of years of draining, cropping, fertilising (with animal manure and seaweed) the chemical and physical nature of the peat was changed to a dark soil, with an aerated crumb structure, earthworms and microorganisms which is now called Blackland.

The author's croft, Kenary, is 30 acres (12 hectares), a mixture of improved Blackland,

moorland and everything in between. Crofters used all this mosaic of land and soil types. As the author stresses: "This was characteristic of traditional crofting - everything was used, each in its own time."

I am not going to spoil your reading of this enthralling little book but just to say that the author writes it from her own experiences. What she took on was not only a challenge but against the advice of most authorities. She learned that most advice she was given did not fit her circumstances or



Book cover

requirements. She and a group of friends had to find their own solutions, improvise where appropriate, change and do something else when necessary. She challenges many tenets of modern agriculture and questions the nature and value of definitions of peat.

Mary Scherbatskoy doubts the usefulness of the word 'peat' to embrace all and every form of plant-based, organic material accumulation. There is an endless selection of types

View of Kenary croft on Grimsay, Uist.



of peat, but their location and history makes them different.

She points out that the Soil Survey of England and Wales distinguishes 'raw' (natural) and 'earthy' (worked) peats at Great Group level, whereas the Scottish system does not. Using only one word for all creates confusion. She makes a comparison with the Inuit use of twenty words to describe different types of snow. She says, "peat is like snow". She is of the opinion that this one for all definition of peat has led to lack of understanding of the variation within this organic resource, and as a result opportunities and funding to optimise its use and protection have been missed.

She goes even further with criticism of definitions and terminology by commenting that the use of new terms, for example peatland restoration and rewilding make it important to be clear what one is talking about. Terminology needs to catch up with reality. "This book asks questions about how land can best be used, and how to discover this. It counsels productive agriculture within the natural setting and building on the qualities of the land rather than obliterating them or abandoning it."



Hay crop on Blackland soil. Photo: Mary Scherbatskoy

This book is self-published and costs only £10. It is available from Ceann na h-Arigh, Grimsay, North Uist, HS6 5JA, UK, www.grimsay.org and www.blacklandcentre.org, ISBN 978-0-578-96041-8; 2021.

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Peatlands side events secured at UNFCCC COP27

The Global Peatlands Initiative (GPI) and members succeeded in securing two peatlands side events at the UNFCCC COP27, which will be held in Egypt in November 2022.

The first side event, titled "Enhancing climate action through peatlands", co-organized by Wetlands International, the Global Environment Centre, the United Nations Food and Agriculture Organization (FAO), the Ramsar Convention on Wetlands and UNEP-GPI, will be held on **14 November** and will present innovations for climate action in the land use sector.

The second side event, titled "State of the World's Peatlands - Global Peatlands Assessment: Evidence for action towards peatlands conservation", co-organized by UNEP-GPI, the Michael Succow Foundation for the Protection of Nature (MSF) and the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), will be held on **17 November**. This event will be the official launch of the Global Peatlands Assessment. Source: GPI

Where the Crawdads Sing

A movie review with maybe a few spoilers

You might remember that Juhani Päivänen reviewed the book, “Where the crawdads sing”, a few issues ago, motivated primarily by the fact that the Finnish title of the publication, “*suon villi laulu*”, mentions peatlands, *suot*. However, as we subsequently learned, the plot of the story actually plays out in the marshlands of North Carolina, which is rather a different ecosystem from a Finnish mire.

Nevertheless, this is a must-read publication for fans of mires and wetlands. This thick book has been a worldwide bestseller and after having spent several days and weeks reading it, more than a year ago, I felt compelled to watch the movie.

Similar to other voluminous books, I marvelled at how the directors had squeezed a very long story, beautiful scenes of nature and different timelines into a two-hour film, without compromising

essential parts of the magic from the original publication and without revealing certain mysteries too soon.

Suffice to say, I was not disappointed. The movie is stunning, beautiful and has managed to capture the essence of the book, despite the fact that the plot in the movie moves forward much more quickly than when one reads it. Unfortunately, this can, on occasions, result in a lack of atmosphere. It is difficult to comprehend the extent to which little Kya is lost and hungry when she meets Jumpin’, Mabel, Tate and the others who try to help, just a few moments after Kya’s parents and siblings have left for good! Therefore, the tragedy of her fate is less impactful than in the book, highlighted by her pretty clothes, which I found rather unexpected.

Pretty is a good word in this context. All actors (except Kya’s and Tate’s dads) look extremely attractive, are well dressed and cared for. This adds to the beauty of the movie, although some might view this as rather superficial.

Kya is played convincingly by Jojo Regina and then by Daisy Edgar-Jones, both portraying Kya’s true feelings of being shy like a wild animal but also mysterious and independent. Tate (Taylor John Smith) is extremely cute as a small boy and subsequently, has the appearance of a kind and trustworthy guy, which is actually the case and becomes apparent later in the movie.



Little Kya in front of her house. Photo: Sony Pictures

Chase (Harris Dickinson) looks stunning, however, similar to the book, he is portrayed as somewhat untrustworthy, although he tries hard to be likeable. Kya's conflicting feelings towards him are palpable, however, does she have a choice when everyone else has gone?

Tom Milton (David Strathairn), her defence lawyer, mirrors his description in the books. Retired, experienced, smart and kind, he tries to help the bullied and lonesome marsh girl in her time of despair. It is actually a well-organized plot in the movie with the murder taking place first, as in the book, but little Kya's story is only told when she meets Mr. Milton while sitting in jail. This solves the issue of different timelines very nicely, in my opinion.

You might not read on if you have not yet read the book or seen the movie. The story unfolds in the same sequence as the novel, if I remember correctly, but moves on more quickly, as previously mentioned. Suddenly, we are in the middle of a lawsuit in which arguments for and against the main murder suspect are exchanged. At the same time, we learn how Tate and Kya got to know each other better as teenagers and finally fell in love, true and deep love, sharing the same values and their love for nature and birds. Unfortunately, this beautiful story must be shattered, and when the guy disappears, this was neither the first nor the last time that people in the cinema needed suddenly their handkerchiefs.

To the horror or maybe the joy of readers and watchers, Kya is then lured into an affair with the rich and spoiled Chase, the most wanted bachelor in town. Their relationship seemed to blossom, which was rather unexpected, but there is always a dark side. Maybe this is too much of a cliché but people look for the best in one another and when Chase smiles now and then showing his clean teeth and shaved cheeks, it seems that there will be a happy ending, despite the couple's different interests. Of course, at this stage, we already know who is going to be killed - the question is, how, when, why and by whom.



Kya learning from Tate how to read and write. Photo: Sony Pictures

The director continues to tell the story of this incompatible couple until hell breaks loose again. Tate returns, promises and furniture are broken, and the viewers - in the same way as the inhabitants of the small village of Barkley Clove - witness tragic scenes. What happened to Chase? And why? Those who have read the book, know the ending. I am afraid, however, that most people in the cinema, and even some of the movie reviewers probably do not even understand the final scene of the movie! This could have been stage managed in a much better way.

In my opinion, this is the major drawback of the otherwise successful transformation of the book into the film: essential items are left out towards the end, although, for the most part, the plot follows the novel. For instance, the most



Chase who died on the very first pages of the book. Photo: Sony Pictures

fascinating person later on in the book - in my opinion - is a certain skinny man on a bus, and a person driving a boat very fast at midnight, too far away to be recognized by the fishermen or the hapless village police. These are not mentioned in the lawsuit, neither in the hearings; and they are not filmed at all. What a pity!

Actually, these were the only two things that I remembered from the book before having watched the movie! To be honest, I really wanted to SEE them, finally, but I was disappointed. I would have loved to discover how these could have been shown without revealing too much. Instead, the lawyer, witnesses and jury exchanged technical details, schedules and hours which were perhaps difficult to follow, if someone had not read the whole book, with the opportunity to flick back between pages (as I did). The location of the hotel was essential, and certain fibres, but the reader knew much more!

In addition, I remember that in the book Kya visited the village of the black people and it became clearer why these people did not speak up in the first place or would not have been believed at all - racism and underprivileged elements in society still characterized daily life in the 1960s/1970s. Were these left out for the purposes of timing, costs or political correctness? Similarly, I believe that Tate's father had red hair like a Scottish or Irish immigrant, which I am unable to verify at this moment, as I am 58th (!) in the queue for the book at the local library. A small detail, but if the rest of the story is so much like the book that one can be disappointed by minor things.

Despite these few flaws, the movie is a gem and is highly recommended. The filming has been carried out beautifully, showing both the stunning marsh landscape, as well as the different characteristics of the main actors.

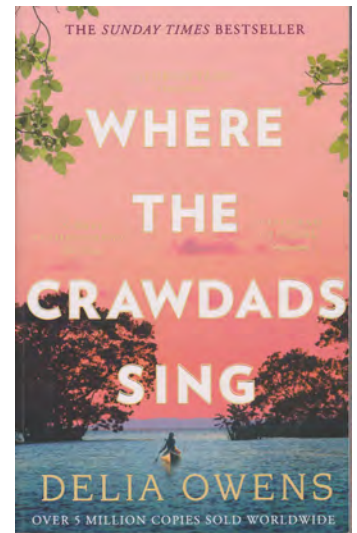
Birds are introduced at sea, on land and in the air, and it is amazing to see Kya's drawings and books on screen, particularly on the big screen, as the effects on TV would not be sufficient. As in the book, the story is disturbing but also touching, beautiful and sad at the same time. Moreover, the slow, thick southern accent is just marvellous and easily understandable; I did not even have to read the subtitles.

Certain slush can be observed throughout the movie, and there is intense physical attraction at times, but we all know how acute these feelings can become. Fortunately, other clichés, like the construction of a new bathroom (cringe...), the establishment of a nature conservation area, which was also rather exaggerated, as well as Kya's first period, were not in the movie. Maybe not even Amanda's poems? The jail cat, Sunday Justice, was there. One piece of advice: watch the ending carefully and listen to what Kya writes and says, particularly during dinner with the publisher.

All in all, take a look for yourself and read the book if you have not yet done so. There is plenty of time now during the dark season. I intend to read the Finnish version now once I find time.

Susann
Warnecke

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The book.



Kya and her lawyer in the courtroom. Photo: Sony Pictures

The Dreaming Bog

New Film on Scottish and Finnish Peatlands highlights global Climate Change

July 2022: A new film that aims to highlight the unique shared landscape of northern Scotland and Finland has just been completed.

'The Dreaming Bog' is an eco-poetic story on Climate Change told through the lens of the bogs & peatlands of northern Scotland and the mires & swamps of Finland. The film is based on the opening act of an epic new poem by Caithness Makar, George Gunn, 'Six Thousand Years of Sunlight', and was produced by Sutherland born filmmaker, Robert Aitken.

The film seeks to seed a new wave of discussion on climate change where humans are placed back into the heart and narrative of nature, and honour

that place. Although a complete telling, the film has been created as the opening of a larger body of work continuing an eco-poetic discourse and engagement with the remaining stanzas of George Gunn's modern epic.

As George says; "I was honoured when Robert wanted to use some of my poem for his new film, 'The Dreaming Bog'. The subject matter of the Caithness and Sutherland bog lands is very close to my heart given the Clan Gunn literally, culturally and historically, come out of the bog." Speaking on the artistic collaboration on the project George adds; "I also think that poetry and film have a shared disciplinary aim in as much that the former hones language so that it shines; the latter sheds light on the everyday and the strange. I think they



go well together sharing the virtue of brevity and visualisation. I hope people get to see the film and enjoy its visual music."

Filming took place at the end of 2021 under challenging circumstances. As Robert explains; "After a difficult birth including; a pandemic, a lock down, two storms and multiple cancellations due to Covid and illness, it's just incredible 'The Dreaming Bog' got made at all. Much of the planned live content ended adapted as recorded video chats over the internet. Given events elsewhere in the world however I give gratitude that I, and many others involved, could openly express views and create this film. In a strange way the challenges in production echo the wider situation and how we can overcome adversity."

The global bogs, mires and peatlands are an incredible gift of life, but are in danger of degradation through human-related activities. They are often seen as unexciting landscapes, not fit for much use, but this couldn't be further from their past story and inherent nature. These places are home to an immense variety of plants and wildlife, and historically, humankind has lived and worked in the bogs of northern Scotland since the arrival of hunter-gatherer. Arguably the greatest

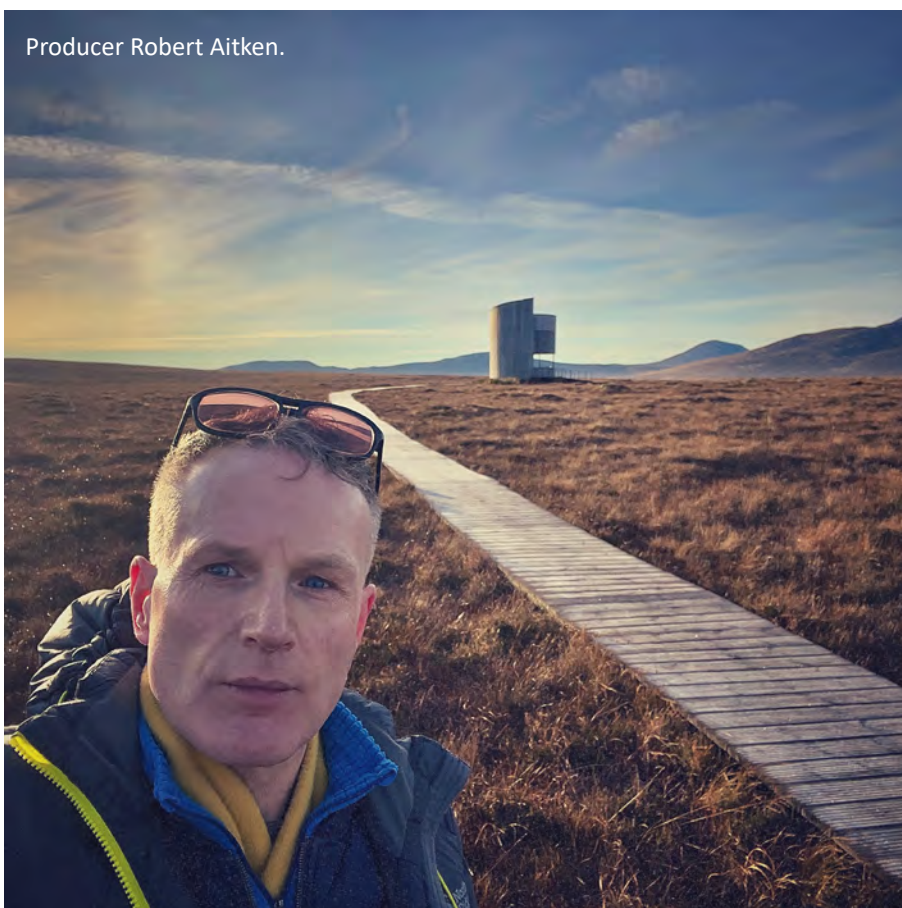
gift of certain bog types is that they are the best carbon keepers on earth, up to four times more efficient at storing gas, poisonous to human life, than the rain forests. The last 200 years has seen more change and damage to the bogs than the previous 6,000 years of civilisation.

'The Dreaming Bog' also contains heartfelt comment from those who actually live and work in the bogs of Caithness and Sutherland as well as Finland - informed testimony from passionate researchers, heritage curators and scientists, all who have delved deep in to the legacy of the peatlands and their rich story. Writer, ethnologist and archaeologist Cáit O'Neill McCullagh says: "As a landscape of course the peatbogs preserve a tremendous amount of archaeology because it's an anaerobic environment, an oxygen free environment. Its specific conditions preserve things that wouldn't normally survive."

Cáit, who is currently completing a PhD around highly vulnerable environments, adds; "The bogs of Northern Europe are well known as places where people would have deposited important things for ritual purposes. Hoards of expensive precious metals, materials that would have been fashioned in to swords or cauldrons but also for simply preserving things like you or I would put things in the fridge."

Heritage and Digital curator at Timespan Arts in Helmsdale, Jacquie Aitken, continues on the theme of preservation; "Wood was not readily available to the township folk of far north of Scotland so they would have gone up to the bogs and dug up peat as fuel. They'd also come across old roots of trees preserved in the bogs. It's these hard bits of wood that they would utilise and make furniture out of, such as chairs. It's a wonderful example of vernacular furniture that's been derived from the peat bogs."

Other footage and comment was supplied by film partners from the University of Eastern



Producer Robert Aitken.

Finland's Mire Trend Project. With Finland's landmass being one-third peatlands, the Mire Trend Project looks at various influences of mires on Finnish society. Project lead, Kirsi Laurén, says; "I'm really interested in people's relationships to mires and peatlands, the cultural aspects and what kind of values and symbols they have connected to them."

Fellow Researcher Pauliina Latvala-Harvilahti adds; "I'm interested in nature and the broader cultural aspects of present culture and society. I have mainly conducted my research through interviews." On the Mire Trend Project Kirsi comments; "I have noticed there is something new happening on our mires. Now people like to go to peatlands to relax, to have some well-being aspects when they go there. People also want to go there with their friends and to enjoy themselves, play soccer or soft volleyball, these kind of carnivalistic things. So, something is happening in our cultural relationship to mires which is different to our history in which people had to go and work there."

The topic of climate change is very much at the forefront of the global energy crisis with concerns on our reliance on fossil fuels versus the need for deliverable renewables. For the most part planet Earth has paid little attention to human civilisation over the past 6,000 years. Only since the industrial revolution has this relationship fractured; a mere 200 years and Earth has seen its air, water, ice and rock begin to act directly due to human activities.

As Robert says; "We all want the human journey to continue but our efforts thus far have failed. We have widely known about the direct sign of the emerging Anthropocene, global warming, for at least 50 years and done collectively nothing to deal with it." Adding Robert says; "Getting a message out there with a narrative that connects with people requires a different approach. It's ultimately humanity that needs to change so I find a lot of the messaging and terminology in the current arguments a barrier to any real progress. In short, we need a new story."

Social scientist at UHI's Environmental Research Institute in Thurso, Magnus Davidson, comments on his work on the Caithness Peatlands, known locally as the Flow Country; "I try to understand the social history of the Flow Country, to better

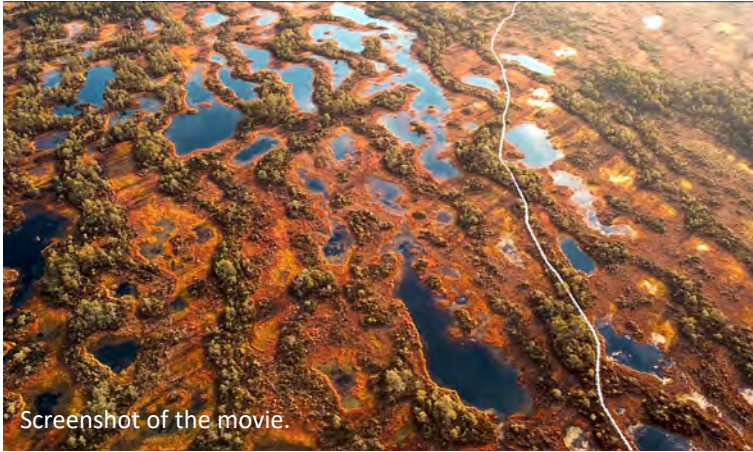


Pauliina Latvala-Harvilahti and Kirsi Laurén.

understand how we as a society might use the Flow Country in the future, but also understand the environmental degradation and as we look to restore the environment around it."

Magnus goes on to highlight an important point often missing in current climate change debate; "I would love to see the restoration of people and environment. I work with colleagues who would love to see the restoration of nature back as well. In both discussions I think these two are complimentary. An outside observer may think you're trying to take it backwards, but in reality you're trying to restore nature, you're doing it for a reason. You're trying to build a climate resilient landscape that retains the storage of carbon, sequesters more carbon storage as well as enhances biodiversity, because we're in the middle of a climate crisis as well as a biodiversity crisis."

It's this need for a new perspective on climate change that led Robert to make this film on the global bogs. Given the importance to our past and current existence on earth the bogs act like a planetary storage facility, physically and metaphysically. Due to the chemical make-up of the vegetation the bogs hold a geological record of earth from millennia ago and act as a



Screenshot of the movie.

Stewart says; “its voiced and woven into a dreamscape narrative; a sensory journey; an imagining - echoing memory, language, history and our relationship to mother nature’s silent nurturer’; the carbon rich peatbog.” Robert is keen to stress that he sees George’s poem as a chronicle of our time; “The Norse Edda, the poems of Ossian and Chaucer’s Canterbury Tales all act as a record of their age. I see ‘Six Thousand Years Of Sunlight’ in that mould but very relevant for our current era.”

depository of our activities; a living and breathing vast record of our collective actions on Earth. As Robert explains; “The idea that the bogs are like a mighty subconscious entity greatly appealed to me, repositories of human history and memory; ecosystems and evolution - it even looks like a gigantic brain from the air. I then wondered what it be like to digitally enter this huge living organism, to witness the synapses of visions flashing all around, seeing and feeling its dreams.”

Music plays an important role in ‘The Dreaming Bog’ with one special score, 'Embodying the Peatlands: Flow', by cellists and composers, Emily and John De Simone. The piece is based on peatland research, ecology and restoration of the Flow Country. The music adds the exact tone that Robert was seeking for his film.

“I came across John at the Sound Festival, heard some of his work and knew this was a music creator whose work transcends deep to the core of the subject. ‘Embodying the Peatlands: Flow’ just evokes the subconscious sound of the bogs I was seeking. Trying to imagine what the Bogs have seen, experienced and absorbed over the period of human civilisation. These life-giving entities are captured with such humility in this music.”

Summing up what it was about George Gunn’s poem that appealed so strongly, Robert says; “When George told me he written a poem about the bogs, I was expecting a few stanzas in a well-crafted poem. What I received was much, much more. ‘Six Thousand Years Of Sunlight’ is epochal in vision and read like a film script. I knew I had found the basis to not only make this film but a larger body of work, a series of films on climate change.” Expanding on George’s poem in ‘The Dreaming Bog’ film, screen-story writer Alison

Robert ultimately sees his film as a pared down response to the over-hyped content that dominates our screens - a stripping away of the materialism and mass of conflicting information that has confused much our lives. “I see the ancient method of storytelling through mythologising as a more effective gateway to convey a message about climate change; to be illuminated by a story of what it means to be human, to share and nurture this planet that is all our home”

Screen-story writer Alison Stewart surmises; “It’s only by disrupting patterns of thought we will survive as a species. Can we be more mindful in the preservation of Earths most precious carbon keeper? Can we think towards our human origins, embrace ideas of healing and regeneration so that ecosystems can flourish once more?”

What are our dreams - portent or paradigm? Perhaps it’s time we let our human sunlight sing itself back into the peat...”

For news and dates of live screenings of The Dreaming Bog please visit: www.aitken.online

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In Memoriam:



Neil Godsman 1937-2022

Neil Godsman, an Honorary Member of the IPS, has died at the age of 85. As well as being a successful farmer and businessman, with extensive interests in Scotland and Estonia, and a long-serving Rotarian, Neil was also a noted bon viveur with a cheery word for everyone.

In addition to his farming interests Neil was busy at home managing the family peat business, Northern Peat and Moss Limited that was started by his grandfather at Tillinamilt, New Pitsligo, in 1905. He went on to buy peat bogs at Lambhill, Craiggulter and Redhouse in 1966 and another in Caithness in partnership with a local farmer, and later Blackhills, St Fergus. The last is where the peat processing plant is located.

He developed the company into a big business and in the 1970s was sending as much as 18,000 tonnes of peat a year on boats to fuel community

heating schemes in Sweden. Today the main customer is the Scotch whisky industry to create peat smoke to malt barley for the distilling process.

Neil was an expert in the mechanics of draining and extruding peat and his expertise was much sought after by peat producers all over the world, including Islay, and as far away as the Falkland Islands.

Neil had been a member of the International Peatland Society from its beginning more than 50 years ago and was known and respected worldwide. He travelled the world attending peat conferences, peat producer association meetings, visiting customers and dealing in machinery.

In one respect Neil Godsman was larger than life, but in others he was soft, sympathetic, generous, and kind. He was well-known at International Peatland Society events and field trips where he would discuss and visit peatland sites. He and former IPS Honorary President Allan Robertson were like Mutt and Jeff and went everywhere together. They were a Scottish double act at international events. Neil attended his last peat event when he attended the annual meeting of the Baltic Peat Producers Forum in Riga, Latvia only three weeks before he died.

For several years Neil was Chairman of the UK Peatland Society of IPS, and I was Secretary. We got to know each other well. The last time we met was in early May this year in Aberdeen when I was up north attending a meeting in Mar Lodge. We had a meal and a drink (only one and no Scotch!) as he had driven down from Longside and had to drive back the same evening.

Away from business, Neil was a member of Peterhead Rotary Club for many years with a penchant for raising money for charity, including an annual ploughing match. He was not a committee man but was a founder member of the potato co-operative, Aberdeen Seed Potato Organisation (ASPO) and served as a director of the Royal Highland and Agricultural Society of

Scotland for many years where he was actively involved in several aspects of the Royal Highland Show. He and his late wife, Pat, were very keen on accordion and fiddle music and were regular attenders at the Cuminestown Fiddle Club.

Neil frequently invited me to visit him at home and stay over but I never seemed to have the time. Now I never shall. I regret that. Neil was a larger-than-life person. He impressed and inspired everyone he met. There is much more I could write about Neil because my memories of him are many.

Neil was pre-deceased by his wife two years ago and they had no immediate family. He is survived by his brother-in-law and four nephews and a niece. A service of remembrance took place at Longside Church, near Peterhead, Aberdeenshire, on Tuesday 18 October when the eulogy was given by his friend, Robert Lovie, a well-known Scottish entertainer. The service was live streamed and may still be viewed at <https://youtu.be/UfFV7yO4Xq4>

On behalf of Neil's world-wide peatland and peat family

Jack Rieley

IPS Second Vice President
Secretary UK Peatland Society

Current IPS Honorary Members

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Ireland: Paddy Hughes
Latvia: Ansis Snore
The Netherlands: Nick van de Griendt
Poland: Piotr Ilnicki
United Kingdom: Richard S. Clymo, Neil Godsman
USA: Donald N. Grubich, Thomas Malterer

Russian and Belarusian members are paused in support for Ukraine. Proposals to EB.

Rauno Ruuhijärvi 1930-2022

Professor Rauno Ruuhijärvi succumbed to rapidly advancing cancer at the age of 91 in his home in Vantaa, Finland, on 18 June 2022. He was born in Hankasalmi on 4 September 1930.

His family soon moved to Kauhava, where Ruuhijärvi spent his childhood and adolescence. The expansive landscapes of Ostrobothnia, in addition to camping with friends and spending a summer digging for gold in Lapland together with his teacher as a high school student, indled his interest and love of nature.



Photo: family archives

Ruuhijärvi began his studies in the sciences at the University of Helsinki in 1951. Botany became his major focus, and his doctoral dissertation discussed the topic of plant life and the territorial zoning of peatlands in Northern Finland.

Ruuhijärvi's ideas for his thesis and his awareness of the endangered status of peatland flora and fauna finally matured on the vast expanses of Sompio, where he led the nature surveys of the Lokka reservoir area in the summers of 1958-1960.

His dissertation, titled “Über die regionale Einteilung der nordfinnischen Moore” (1960), distinguished the flora of raised bogs from that of aapa bogs in the so-called Karelian amalgamation region in Ostrobothnia and the interior of Finland. The eccentric raised bogs had previously been considered aapa bogs and the status of various moss fens had been unclear in the existing categorisation. The drier aapa bogs of the south, which differ from the “classical” wet aapa bogs of southern Lapland, had also been classified as aapa bogs. His basic zoning of peatland flora was reminiscent of Aarne Kalela’s zoning of the forest type, although the zones did not exactly match.

Ruuhijärvi married classmate Liisa Tenhunen in 1956 and three sons followed in 1958-1965. They built their family home in Korso in 1964. Ruuhijärvi taught plant ecology as an Assistant Professor at the University of Helsinki from 1963 onwards. The field courses were held at the biological station in Lammi, where Ruuhijärvi served as a supervisor for over 30 years. The trips to Lapland and northern Norway that he led were also memorable.

He steered research projects in aquatic, bog and forest ecology and supervised dozens of dissertations and theses. He began to teach the protection of nature and the environment at university in the 1960s, which was critical for the awareness and preservation of Finnish biodiversity, and continued on that path until his retirement.

His administrative duties were naturally expanded in positions of trust at the Ministry of Education when the Universities of Jyväskylä and Joensuu were planned and academic degrees were reformed in the 1960s and 1970s. Similarly, he served as the first chairperson of the Central Committee of Environmental Research and as a member of the Central Committee of Sciences from 1986 to 1989 at the Academy of Finland. At the university he worked as the Vice Dean and Dean of the Department of Mathematics and Science until his retirement in the 1990s.

Rauno’s volunteer work in nature preservation began as the Secretary of the Finnish Association for Nature Conservation’s research committee on the Kemijoki River reservoirs, and as the leader of field research on the Kemihaara bogs in Pelkosenniemi in 1958-1960. The Supreme

Administrative Court cancelled the Vuotos reservoir project in the autumn of 2002.

Furthermore, Rauno was a key expert involved in the protection activities of the Ounasjoki and Kyrönjoki rivers and the drafting of the rapids protection programme, as he was a pioneer of scientific investigation, especially regarding the more northern reservoirs. As a result, the reservoir plans were either downsized or stopped in their tracks.

Systematic peatland protection in Finland began when Ruuhijärvi took on the role of Chair of the Peatland Protection Committee of the Finnish Peatland Society (Suoseura) and the Finnish Association for Nature Conservation in 1965-1972.

The first major peatland protection plans were prepared for government lands that were largely protected by decisions made by Metsähallitus, the Finnish forest administration. After this, peatland protection efforts expanded into systematic surveys of the natural state and biodiversity of peatlands. As a result, the peatland protection working group of the Ministry of Agriculture and Forestry created a national basic plan for the protection of peatlands for the years 1976-1982, and the government pledged to implement the programme.

When nature preservation duties were transferred to the Ministry of Agriculture and Forestry in 1972, Rauno gradually became a reliable expert in over 30 working groups, commissions and committees of the Ministries of Agriculture and Forestry, Environment and Trade and Industry, as well as the Office of the Council of State, which dealt with research, the founding of nature reserves and questions of environmental protection.

As a result of weak environmental administration, the Finnish Association for Nature Conservation (SLL) handled many official-like duties in the areas of environmental awareness, communication and training. Rauno was the longest-serving Chair of the SLL, with a term spanning from 1978 to 1990. He also later acted as the Honorary Chair. During Rauno’s term, the SLL’s renown and influence reached their peak. In these years the major national environmental questions and Ruuhijärvi’s most important focal points involved the struggle

to establish the Ministry of the Environment, as well as affecting change in parliament and legislation, in addition to the founding of peatland preservation areas and national parks, the reorganisation of the National Board of Waters and cooperation with the Finnish World Wide Fund for Nature (WWF).

The SLL was the first non-governmental organisation to receive the Finnish Parliamentary Medal. The cultural and social significance of nature reserves was also deemed invaluable.

Ruuhijärvi continued his nature preservation work even in retirement with the forest and peatland protection groups of the Finnish Environment Institute and the Finnish-Russian nature preservation working group. His last publications from this year discussed the ecological state of the palsa bogs of Fell Lapland and the birch fens of the aapa bog region.

In 1978-1985, Rauno served as a member of the joint commission on environmental protection between Finland and the Soviet Union and participated in shared nature protection efforts. This work continued as the Chair of the Finnish contingent of the nature preservation working group that worked under the Ministry of the Environment from 1986 to 2002. Rauno was the most renowned and respected Finnish specialist in the 1990s and 2000s among Russian nature preservation authorities and experts.

Rauno Ruuhijärvi was a lover of photography and literature, and he was knowledgeable about both poetry and classic paintings. He retained his excellent memory and ability to discuss and present arguments until the end. His grandchildren and great-grandchildren were very dear to Rauno. They were able to enjoy Grandpa's warm lap, as well as stories and bounty from his candy cupboard, both at the cottage in Padasjoki as well as in the family home in Korso.

Let us return to the summer spent on the gold fields of Lapland that had such an impact on Rauno's future. Did they find any gold? Some; it was made into jewellery for his wife Liisa, which a burglar stole from the family's home in Korso. So, the gold dug up by Rauno in the fields of Lemmenjoki continues in its eternal circulation!

Another event that affected Rauno's outlook was when he was walking in the gold fields on one occasion and suddenly realised he was in the middle of a minefield laid by the Germans. Should he go back or continue on to the other edge of the field? As a forward-looking person, Rauno of course chose to advance, and he carefully made his way across and emerged unscathed. However, this experience soured him on landmines, and he was a proponent of the Ottawa Treaty banning them.

Rauno Ruuhijärvi was the Vice Chair of the Finnish Peatland Society's Board from 1963 to 1964. He was named an honorary member at the its 50th Anniversary Gala in 1999. He also received numerous commendations and awards for his work, including the Global 500 Award from the United Nations Environment Programme (UNEP), commendations from the Alfred Kordelin Foundation and the Finnish WWF, an environmental award from the Maj and Tor Nessling Foundation, an honorary one from the Finnish Cultural Foundation, an honorary doctorate from the University of Joensuu and a golden badge of merit from Metsähallitus and the Finnish Association for Nature Conservation. He was also granted the title of Honorary Chair by the Association for Nature Conservation.

To honour Ruuhijärvi's 90th birthday on 4 September 2020, the city of Vantaa established a 53-hectare nature reserve in Korso and named it the Forest of Rauno and Liisa Ruuhijärvi.

Rauno Ruuhijärvi was one of the most renowned and respected Finnish naturalists, an educator of many generations of biologists and a third-sector influencer both at home and abroad. His diverse and skilful life's work for the betterment of Finnish nature spanned decades and is one of the most impressive of our time.

*Harri Vasander,
Pekka Salminen &
Jukka Ruuhijärvi*

Translated from the Finnish original
by Apropos lingua

Peat and Peatland Events

International Conference on Geotechnical Aspects
of Peatland Restoration and Management
Amsterdam, the Netherlands
3 - 4 November 2022
<https://waset.org>

Ramsar COP14
Wuhan, China and Geneva, Switzerland
5 - 13 November 2022
www.ramsar.org/event/14th-meeting-of-the-conference-of-the-contracting-parties

UNFCCC COP27
Sharm el-Sheikh, South Sinai, Egypt
7 - 18 November 2022
<https://unfccc.int>

Cultural heritage and conservation of peatlands
Osnabrück, Germany (part II, in German)
8 - 9 November 2022
www.dgmtev.de

Growing media - Enabling nature restoration and
saving natural resources by Growing Media Europe
Brussels, Belgium
9 November 2022
<https://forms.gle/x5tohtz6Mq6WBAAU9>

IPS Executive Board Meeting 131
MS Teams
25 November 2022

UN Biodiversity Conference COP15
Montréal, Canada
7 - 19 December 2022
www.cbd.int/meetings/COP-15

Global Peatlands Initiative
4th Partners Meeting
Lima, Peru
21 - 26 February 2023
www.globalpeatlands.org

IPS Executive Board Meeting
Jyväskylä, Finland
March 2023

TISOLS
10th International Symposium on Land Subsidence
Delft-Gouda, the Netherlands
17 - 21 April 2023
www.tisols.org

4th World Peatlands Day
2 June 2023
#worldpeatlandsday

IPS Annual Assembly 2023
Québec City, Canada
13 June 2023

RE3 Conference: Reclaim, Restore, Rewild
1st International Symposium on Growing Media,
Compost Utilization and Substrate Analysis for
Soilless Cultivation
Québec City, Canada
11 - 15 June 2023
<https://re3-quebec.org/en>

17th International Peatland Congress
Changchun, China
5 - 11 August 2024

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