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Peatlands International

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International Peatland Society

Midsummer 2020 in Estonia?

Be there.

16th International Peatland Congress

Peatlands and Peat - Source of Ecosystem Services

Tallinn, Estonia

14 - 20 June 2020

www.ipc2020.com

Komeet Café. Photo: Kroot Tarkmeel, Tallinn City Tourist Office & Convention Bureau

Editorial

International Collaboration & Synergies for Peatlands

EB member Sabine Jordan and IPS Secretary General Gilbert Ludwig. Photo: IPS

From May 21-24, the beautiful Nature Reserve of the Isle of Vilm in Northern Germany, was basis for a highly interesting workshop entitled Exploring Synergies for Peatlands - Detecting and enhancing the global importance of peatlands in achieving the Sustainable Development Goals.

Organized by the German Federal Agency for Nature Conservation (BfN), the Global Peatlands Initiative, the UN Environment Programme, the Secretariat of the Ramsar Convention, the Greifswald Mire Centre, and Wetlands International, the workshop focused on contributing to the implementation of the recent UNEA resolution which "urges Member States and other stakeholders to give greater emphasis to the conservation, sustainable management and restoration of peatlands worldwide".

In addition to the organizing parties, the workshop was attended by other major Multilateral Environmental Agreements (MEA, e.g. UNFCCC, CBD, CMS, UNCCD), International Organizations (e.g. FAO), Non-Governmental Organizations (IPS, IMCG), Environmental Regional Initiatives (IUCN UK Peatland Programme, Nile Basin Initiative, Swedish Environmental Protection Agency, Care For Ecosystems) as well as representatives from research institutes and national governments from Austria, Canada, South Africa and Ukraine. Jack Rieley and I participated on behalf of the International Peatland Society.

In a nutshell, the workshop was about encouraging synergies for peatlands in the context of United Nations Sustainable Development Goals:

- Identify and better understand international synergies deriving from coordinated actions on peatland among MEA and International Organisations
- Discuss major gaps and limitations for securing peatland ecosystem services based on emerging collaboration and systematic synergies
- Discuss suitable policies and instruments, such as a joint declaration, and actions for the implementation by different stakeholders
- Sketch a possible road map of multi actor activities

Peatlands International is the global magazine of the International Peatland Society (IPS). It provides the more than 1,400 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. To receive Peatlands International in your email every three months, visit www.peatlands.org/join-us and sign up as a member or subscribe for € 60/year.

Impressum

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Cover: Excursion participants at Gramoflor GmbH & Co. KG in Vechta near Bremen in May. Photo: SW

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to support processes and activities for conserving, sustainably managing and restoring
- Find new partners and strengthen capacity towards peatland conservation and restoration

The workshop culminated with a schematic and tentative MEA synergy time plan, split into a MEA event roadmap and processes as well as key actions such as reports and podcasts.

The workshop was a clear indication that international collaboration and multi-actor synergies are increasingly invoked to safeguard peatlands and the ecosystem services they provide.

During the workshop IPS made big steps in consolidating its relations with many MEAs, International Organisations and eNGOs, highlighting thereby the importance of being part of the dialogue.

Dialogue and collaboration between multiple actors and stakeholders are key to solutions. It's time to work together.

Gilbert Ludwig

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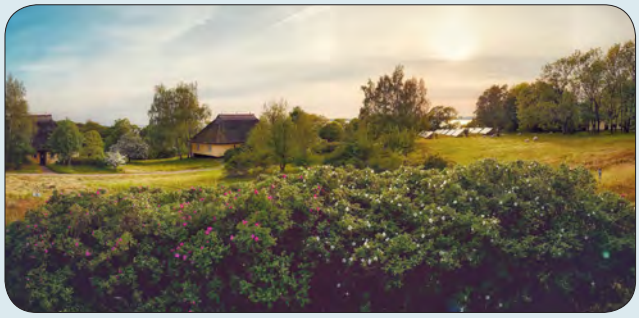

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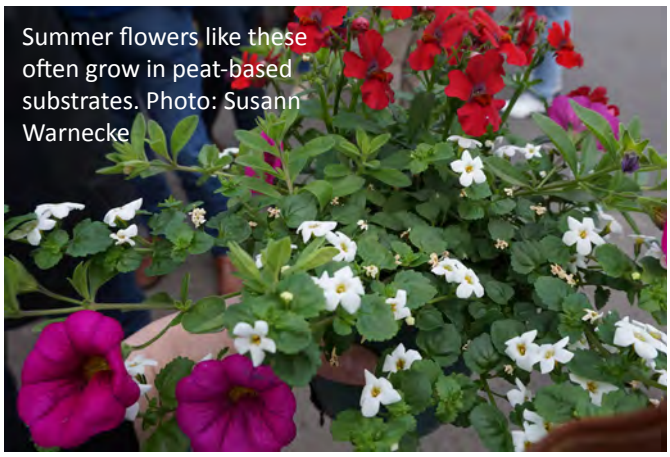
Horticulture main topic at the DGMT-IPS Convention in Bremen. Dankeschön!

The IPS held this year's annual convention in cooperation with the German Peatland Society (DGMT) in Bremen from 13 to 15 May. More than 120 participants from 18 countries came to the northern German city to listen to presentations from invited speakers on" Future Use of Peat and Substitutes in Horticulture".

The topic was well chosen, as "Economy meets Environment and Society" is a matter within the sustainability framework, that concerns all peatland specialists. Balancing the environmental challenges that are arising from climate, biodiversity and ecosystem impacts of peatlands - while maintaining high quality products from horticulture, plus mitigating social impacts of structural changes.

Many speakers agreed that solutions to further substitute peat by other materials should be found - but this remains an extremely challenging task. Professional growers, as well as private consumers demand reliable and high-quality growing media in sufficient quantities for reasonable costs. Replacement does take place, for instance by using coir, bark, mineral wool and other materials, and for certain species, but this is not always easy. Adding complexity to the issues is the reality that each constituent has their own environmental, social and economic footprint, which needs to be taken into consideration when comparing alternatives.

Welcoming speech by DGMT Chair Dr. Andreas Bauerochse. Photo: Susann Warnecke



Summer flowers like these often grow in peat-based substrates. Photo: Susann Warnecke

In detail, the following presentations were given: Opening speeches were delivered by Dr. **Andreas Bauerochse**, Chair of the DGMT; **Gerald Schmilewski**, President of the IPS, Dr. **Joachim Blankenburg**, Vice Chair DGMT, and Professor Dr. **Michael Schulz**, CEO MARUM, who explained in detail the tasks and responsibilities of our interesting venue and its staff.

After the introductory talks, Dipl.-Ing. agr. **Silke Kumar**, Chair DGMT Section II and Quality manager MoKuRa, gave a very interesting overview on "Growing media yesterday and today", which shed a new light on the history of peat use, especially for growing media, and the challenges and obstacles we are facing today, including peatland restoration, paludiculture, peat alternatives, and Sphagnum farming.

Most attendees were then truly surprised by the "Present situation and development of the peat industry in China", introduced by Professor Dr. **Meng Xianmin**, Northeast Normal University, Changchun.

According to his presentation and impressing figures, the demand for peat as growing medium in China will virtually explode over the coming years, with growth expectations of +100% of the current world extraction. Such an increase will surely have a large impact on markets, but also its own environmental footprint.

Paul Short gave then an introduction into the work of the Canadian Sphagnum Peat Moss Association on "Canadian peatlands: Horticulture use in growing media and responsible management of ecosystem services". Canada has a long history of bringing together science and the private sector and is renowned for their active large-scale restoration of harvested peatlands, plus the Veriflora certification scheme.


Josef Gramann showed us around his company, Gramoflor GmbH & Co. KG in Vechta. Photo: Susann Warnecke

Back in Europe, MSc. **Erki Niitlaan**, Chair of the Estonian Peat Association introduced the industry's long-term responsibility in managing Baltic peatlands. Estonia produces currently approximately 750,000 tons of peat each year, mostly for export, and using mostly degraded peatlands. Cooperation with the government and local universities and NGOs is ongoing. Estonia will also host the 16th International Peatland Congress in June next year.

As delivered in Rotterdam, "Growing media volumetric potentials for meeting developments in the period 2020-2050" were presented by Ir. **Chris Blok**, Greenhouse Horticulture, Wageningen University and Research, Bleiswijk, the Netherlands. His figures underline the impact of urbanisation, food security and human wellbeing demands, which will most likely also increase the use of peat on a worldwide level. A compelling question was identified in how to deal with this situation, when resources are getting smaller, due to climate and environmental concerns, and alternatives are limited.

Potential solutions may be found through international, regional and national peat policies, as presented by Professor Dr. **Jack Rieley**, IPS Executive Board member and Coordinator of the IPS Expert Group Conventions and International Affairs. IPS is strongly involved in the work of the Ramsar Convention on Wetlands, UNFCCC, IPCC, UNEP, FAO and many other conventions and stakeholder organisations that need detailed expert knowledge on peat and peatlands for their important work.

Practical insights on "Sustainable growing solutions for international markets" were then given by **Juha Mäkinen**, CEO of Kekkilä-BVB Oy. The company, created as a result of last year's merger between Finnish Kekkilä and Dutch Bas van Buuren, is actively developing its products, taking into consideration both market requirements and responsible management of its peatland resources.

"Peat uses in Europe - results of an IPS survey", was introduced by MSc. **Hannu Salo**, Coordinator of the IPS Expert Group Growing Media and Energy Peat, Finland. Figures on our industry are often hard to obtain but the group did its best to give an estimation on the current situation of the sector.

After lunch, Growing Media Europe AISL's Chairman of the Board, Msc. **Stefaan Vandaele,** spoke about "Growing media - a challenge towards a sustainable future". The presentation gave a positive outlook on the development of horticulture over the next few years. It also asked peat producers to keep pace in meeting the expectations of modern societies, that require large amounts of healthy food and ornamental plants, but also care for the environment and climate at the same time.

The afternoon continued with presentations in German, illustrated by English slides. Dr. **Jan Köbbing**, Head of


During the Annual Assembly in Bremen. Photo: Susann Warnecke

Dr. Gerfried Caspers (this picture, left) and Nick van de Griendt received their well deserved Honorary Member certificates from IPS President Gerald Schmilewski onboard the famous "Alexander von Humboldt" in Bremen. Photo: Susann Warnecke

Sustainability Management, Klasmann-Deilmann GmbH (KD), started with "Alternatives to peat in growing media in the context of international markets". KD has put much effort into researching peat alternatives, including a large Sphagnum Farming project.

The German Peat Reduction Strategy, by the Federal Ministry of Food and Agriculture, was afterwards presented by Dr. **Thomas Schmidt**, from Berlin. There continues to be a demand for further research into backgrounds and impacts of the strategy on national and international level.

Dr. **Arne Hückstädt**, Coordinator of the Department Growing media, potting soils, constituents in the Industrieverband Garten gave a critical view on "Growing media in Germany - an industry with a future?". As permissions are hard to obtain, and competition for land use with agriculture is strong, it seems that production will phase out in a relatively short time, however peat import will continue. Is this what German customers truly want?

Excursion participants at Melle. Photo: Nick van de Griendt

"Approaches using sustainable raw materials for growing media" was explained in detail by Professor Dr. **Elke Meinken**, University of Applied Sciences Weihenstephan-Triesdorf, Germany, showing some examples on performance of different peat-alternatives and their impacts on growth of healthy plants.

During the last presentation, Dipl.-Geograph **Bernd Hofer**, Chair of IPS Commission Peatlands and Environment and Business Manager Hofer & Pautz GbR gave an

overview on the "National and global regulatory challenges for the peat industry - with a particular focus on growing media".

The concluding discussion period dealt with topics raised following the presentations in more detail. These included mainly the availability and quality of constituents, growth expectations for Europe and China, the climate impact of peat and its alternatives, permission processes and certification schemes.

It appears that although the horticulture sector is addressing the challenge of replacement or at least reduction of peat, in practice this remains a difficult task. The material is obviously an excellent substrate, pressure on growers remains high, and consumers demand high-quality end products. However, it must be kept in mind that peat for horticulture and energy is extracted on only 4,000 km^2 worldwide, about 0,1% of the total peatland area (4 million km^2). This is not much, compared to the area of degraded peatlands, often under agriculture and forestry use, and to the share of pristine peatlands (80%). (SRPM 2010)

Discussions will continue at the "International Symposium on Growing Media and Quality of Life" in Qingdao, China, during 16 - 21 September 2019, as introduced by Professor Dr. Xianmin Meng - all IPS members are welcome to attend this impressive event.

Erki Niitlaan also warmly invited all guests to the "16th International Peatland Congress: Peat and Peatlands - Source of Ecosystem Services" which will be held in Tallinn, Estonia, 14 - 20 June 2020. This will involve the Baltic industry, researchers from all over the world, and international decision-makers in a unique cinema-like atmosphere.

On Wednesday, the symposium offered two interesting excursions. The first group visited the Teaching and Experimental Institute Bad Zwischenahn and the commercial grower LÜSKE, while the second group saw growing media production, mixing, packaging, restoration plant trials and rewetting after extraction in the field at Gramoflor, as well as *calluna* growing and summer flower sales at commercial grower Melle. Both field trips were very interesting, and the grower's explanations mostly underlined what had been said on the day before. We want to replace peat, but alternatives must be reliable, available in large amounts and economically viable.

In the evenings, there was much time to discuss new ideas and meet old colleagues. Most of the participants joined the ice breaking reception on Monday at the MARUM, including a view at the interesting eight posters.

On Wednesday, on board the famous "Alexander von Humboldt" sailing ship delegates enjoyed dinner, and the presentations for the IPS honorary member certificates to Dr. Gerfried Caspers and Nick van de Griendt. In addition, the ten Allan Robertson Grant winners 2019 were announced (see page 21).

The symposium website and all abstracts can still be found at www.ips2019.com, selected presentations are available at www.peatlands.org -> publications -> document database, and the printed book of abstracts (15 copies) can be ordered from https://holvi.com/shop/peatlands. We warmly thank all who came with us to Bremen, especially the speakers and organizers, the DGMT volunteers, and all others who did a great job to provide us with new data and experiences.

Susann Warnecke

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Huge thanks to the main organisers, among many others Andreas Bauerochse, Joachim Blankenburg and his wife, and new IPS honorary member Gerfried Caspers (left to right). Photo: Lulie Melling

IPS Annual Assembly held in Bremen

The formal Annual Assembly of the IPS took place after the IPS Executive Board meeting and National Committee Round Table on 13 May. Thirteen National Committee representatives attended, together with around 20 observers.

The meeting approved the annual report and financial statements 2018 as well as agreed on the plan of activities, budget and membership fees for 2019 and interim 2020. Participants were encouraged to participate even more in the work of IPS, provide knowledge, write for our publications and organise joint symposia and workshops on peat and peatland matters.

Currently the IPS has slightly over 1,400 members in 39 countries - let's fully use this unique network. Next year, in 2020, we will elect a new Executive Board – are you ready to come in?

Why are international Conventions and Agreements important for the Responsible Management of Peatlands and Wise Use of Peat?

Jack Rieley, Co-ordinator
Expert Group: Conventions and International Affairs

Mire excursion in Finland. Photo: Susann Warnecke

The future of Earth's human population - 7.8 billion today and estimated to reach 9.8 billion by 2050 - survival of the Planet's biodiversity and sustainability of its natural resources depend on how the latter are managed for the benefit of future generations.

Peatlands and peat have provided support services to human communities for thousands of years, especially for food, fuel, shelter, water regulation and others but in this modern world with a much larger global population peatlands have become important as major reservoirs of biodiversity and store of soil carbon; peatlands can be affected by climate change but can also be contributors to it.


Jack Rieley (third from right) speaking at the IPS Expert Meeting in Amsterdam last year. Photo: Susann Warnecke

Since the end of World War 2 when the United Nations was established there has been increasing regulation of many aspects of human life including environment and peatlands. Initially, this process began slowly but speeded up in the 1980s and 1990s and some international regulatory bodies are still being formed.

The first, United Nations Educational, Scientific and Cultural Organisation (UNESCO) was established in the belief that political and economic agreements are not enough to build a lasting peace and that humanity's moral and intellectual solidarity are also essential. UNESCO promotes education, intercultural understanding, protection of heritage, scientific co-operation and freedom of expression, aspects of which were consolidated in later international conventions and agreements.

IPS Conventions Guide

In 2014 the International Peatland Society (IPS) published a review of International Conventions, Agencies, Agreements and Programmes that were involved in formulating or implementing policies on responsible management of peatlands and/or wise use of peat.

This review was prepared in response to a request by peat and peatland stakeholders to provide information and guidance on the most important international conventions, agencies and programmes that influence decision-making processes on peatland management and wise use. Initially 20 organisations were found to have some involvement and, following a revision of the document in 2019, this was increased to 23 (see references).

Most of these were established by the United Nations or an agency of the UN. Some have general remits that cover important global issues of which peatlands form part, for example the UN Development Programme (UNDP) focusses on sustainable development and relief of poverty while the UN Environment Programme (UNEP) has a mandate for global environmental issues and manages the Global Environment Fund (GEF).

A few, such as Ramsar Convention on Wetlands (Ramsar) and International Union for Conservation of nature (IUCN) were formed in response to specific environmental conservation needs and pressures, independently of the UN but linked to it and committed to by large numbers of nation states and other bodies, including environmental NGOs.

Which international conventions, organizations and initiatives have the greatest impact on responsible management of peatlands and wise use of peat?

The most important are international conventions to which nation states, in some cases regional groupings of states (e.g. European Union) or customs unions, have signed up to because they agree with the aims and objectives and decisions taken at Conferences of the Parties (COP). This group includes the Convention on Biological Diversity (CBD),

Peat is still the most important raw material for horticulture. Ornamental plant sales in Germany. Photo: Susann Warnecke

WTO is an informal international organisation, without legal status, that arose out of the former 'General Agreement on Tariffs and Trade' (GATT) that originated in 1948 and ended in 1994. WTO deals with the rules of trade between nations at a global scale. WTO formulates regulations for the international trading of commodities such as peat and it administers the Sanitary and Phytosanitary (SPS) regulations on animal and plant health that are prepared by the International Convention on Plant Protection (IPPC) and other similar organisations.

UN Framework Convention on Climate Change (UNFCCC), Intergovernmental Panel on Climate Change (IPPC), World Meteorological Organisation (WMO), Ramsar and the Convention on International Trade in Endangered Species (CITES).

Others are Agencies of the UN, established for specific purposes, for example, Food and Agriculture Organisation of UN (FAO) and International Maritime Organisation (IMO), the former to reduce poverty and defeat hunger, especially in developing countries while the latter sets standard for transporting commodities between countries by sea.

UNDP and UNEP were established more than 40 years ago with wide mandates. They have been responsible, together with FAO, for establishing other international organisations.

For example, UN-REDD and MICCA programmes were established much more recently with very specific mandates, the former for reducing GHG emissions by avoiding deforestation in developing countries and the latter by mitigating GHG emissions in agriculture and other land uses.

IUCN, which was formed as a result of an initiative of the first director of UNESCO is a non-UN international organisation dedicated to conserving the integrity and diversity of nature. It is a network of NGOs, governments, scientists, businesses and local communities and others that provides a neutral forum to find practical solutions to conservation and development challenges. IUCN established CITES that is another non-UN international convention regulating the trade in endangered animal and plant species highlighted in the IUCN 'Red Data Books'.

Finally, there is a small group of international organisations that may appear to have little influence on peatlands, peat or peat industry, namely Consultative Group on International Agricultural Research (CGIAR), Centre for International Forestry Research (CIFOR) and World Trade Organisation (WTO). CGIAR manages 15 international research centres of which CIFOR is one. CGIAR has close relationships with FAO, UNDP and World Bank while CIFOR provides information to UN-REDD, UNFCCC and CBD.

What are the implications of the international organisation for responsible management of peatlands and wise use of peat?

1. Management of peatlands, peat use, and its commercial supply chain are influenced by the decisions taken and policies formulated by international conventions, agencies and programmes summarised. Peat industries are affected by these decisions, and ensuing policies enacted by governments.
2. The most important international bodies that protect and promote peatland environmental quality are CBD (biodiversity), UNFCCC (GHG emissions and climate change), FAO (drained peatlands and GHG mitigation), IUCN (nature conservation) and Ramsar (wetland/peatland wise use).
3. Other international organisations affect peatlands, peat use and peat industry in more specific ways, for example, regulating international trade (IMO and WTO), formulating sanitary and phytosanitary standards (IPPC and SPS) and enforcing them (WTO) and focusing on reducing GHG emissions from tropical peatlands by preventing deforestation (UN-REDD) or implementing mitigation measures for drained peatlands (FAO/MICCA).
4. Stakeholders involved in peatland management, peat use, and the peat supply chain should **become acquainted** with the international bodies mentioned in this article and the implications for their own activities and business.
5. In addition, they should **update themselves** regularly

on any changes to the aims, objectives and policies of these bodies, to be alerted to any new implications for peatland management and peat use as a result.

6. It is clear that while peat industry organisations such as Growing Media Europe (GME), Energy Peat Europe (EPE) and Canadian Sphagnum Peat Moss Association (CSPMA) can lobby their own governments (EU or Canada) they cannot influence or participate in the work of the international bodies whose decisions affect their member companies. The same applies to individual companies or groups of companies within countries.
7. **IPS can participate** in the policy making processes of these international organisations.


Our children will depend on today's decisions on peatlands. IPS Tropical Peatland Round Table excursion in Indonesia, November 2017. Photo: Susann Warnecke

In this respect IPS should:

- Attend or liaise with the advisory committees of the most important conventions affecting peatlands and peat;
- Promote or participate in side-events at the COPs of CBD, UNFCCC and Ramsar (and others if appropriate), either on its own or in partnership with other international organisations including ENGOs;
- Maintain its formal relationship with Ramsar, UNFCCC, GPI, FAO and liaise with others as appropriate.

Some of the most important international organisations influencing responsible management of peatlands and wise use of peat:


Peat as we all know it. Photo: Susann Warnecke

Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD) is a comprehensive, binding agreement between governments covering the conservation and use of biodiversity. It was signed at the 1992 UN Conference on Environment and Development (UNCED) in Rio de Janeiro and came into force on 29 December 1993.

The Convention on Biological Diversity is one of the most important conventions affecting the management of peatlands and use of peat through far reaching international agreements for the conservation of key ecosystems and the protection and enhancement of endangered habitats and species. Wetlands, of which more than 50% by area are peatlands, are prominent on the CBD target list and activities on these that lead to a reduction in biodiversity are discouraged.

United Nations Framework Convention on Climate Change (UNFCCC)

The UNFCCC is a "Rio Convention", one of three adopted at the "Earth Summit" in 1992.

The ultimate objective of the Convention is to stabilise greenhouse gas concentrations "at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to

ensure that food production is not threatened, and to enable economic development to proceed in a sustainable manner."

The UNFCCC has important implications for industries utilizing peat and peatlands because GHG emissions associated with peat extraction, processing and use, as well as emissions due to peatland forestry and agriculture, must be accounted for in national GHG inventories. Some studies show that, in the short to medium term, peatland forestry can be a net carbon sink. Peat is regarded as having properties similar to fossil fuel when used for energy. Drained peatland may emit non-CO_2 GHGs (e.g. N_2O) and this must be accounted for.

Food and Agriculture Organization of the United Nations (FAO)

The Food and Agriculture Organization of the United Nations (FAO) is a specialised agency that leads international efforts to defeat hunger. FAO acts as a neutral forum where all nations meet as equals to negotiate agreements and debate policy. FAO is also a source of knowledge and information and helps developing countries and countries in transition modernise and improve agriculture, forestry and fisheries practices, ensuring good nutrition and food security for all.

Since it was formed the emphasis of FAO has changed from providing advice on wetland and peatland drainage for their conversion to agriculture to promoting strategies for reducing greenhouse gas emissions through measures such as rewetting, re-wilding and alternative forms of production.

United Nations Environment Programme (UNEP)

UNEP's activities cover a wide range of issues regarding the atmosphere, marine and terrestrial ecosystems, environmental governance and green economy. It has played a significant role in developing international environmental conventions, promoting environmental science and information and illustrating the way these can be implemented. UNEP is working on the development and implementation of policy with national governments, regional institutions in conjunction with environmental non-governmental organizations (NGOs). Together with FAO, UNEP established the Global Peatlands Initiative (GPI) of which the IPS is a founding partner.

UNEP may not affect users of peatland and peat directly, but it was a partner with UNDP and FAO in establishment of the UN-REDD Programme, with the WMO in forming IPCC, and with FAO in establishing GPI. UNEP is active in all UN countries and is a major funder of international environmental projects some of which have been on

Rewetted peatland after peat extraction in Central Finland. Photo: Susann Warnecke

peatland. It has influence on other international conventions, agencies and programmes.

The Ramsar Convention on Wetlands

The Ramsar Convention is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands, including peatlands, and their resources. Unlike other global environmental conventions, Ramsar is not part of the United Nations system of Multilateral Environmental Agreements, but it works very closely with the MEAs and is a full partner in the "biodiversity-related cluster" of treaties and agreements.

The Ramsar Convention provides the framework for national action and international cooperation for the conservation and wise use of wetlands, including peatlands, and their resources. It has long been regarded by the IPS as the most important international convention for peatlands and peat and IPS has been closely associated with the RC from 1999 through observer status on the STRP. IPS was influential in raising the profile of peatlands within RC through the 'Guidelines for Global Action on Peatlands (GGAP)' that was accepted at COP8 in Valencia in 2002.

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Jack Rieley

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New Members of the IPS and Invoicing

New members (or new contact persons for corporate and institute members) are mainly approved by our National Committees. In 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 11 June)

To join us, simply fill in our online membership form at www.peatlands.org or contact the National Committee in your country.

Individual members:
Bulgaria: Ina Agafonova
Myanmar: Peter Hanington
Australia: Samantha Grover

Student members:
Ethiopia: Haymanot Tesfaye

Corporate members:
Finland: Nina Kinnunen (Kekkilä-BVB)
Georgia: Iulon Bezhanishvili (LTD LAGI21)
Germany: Isabelle Eckhoff and Christina Somplatzki (Brüning Euromulch GmbH)

Membership fees are collected by each of our 16 National Committees on their own conditions and timetables.

For members in other countries, invoices were sent directly by the IPS Secretariat in May. Check your email and pay by 30 June at the latest.

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

Thank you very much!

Exploring Synergies for Peatlands

VILM 2019

This workshop was organised by the International Academy for Nature Conservation of the German Federal Agency for Nature Conservation, Isle of Vilm, Germany on **21-24 May 2019** to detect and enhance the global importance of peatlands in achieving the United Nations Sustainable Development Goals. It was co-sponsored by Ramsar Convention for Conservation of Wetlands, Wetlands International, Global Peatlands Initiative and Greifswald Mire Centre.

The International Peatland Society was represented by Gilbert Ludwig, Secretary General and Jack Rieley, Executive Board & Conventions and International Affairs Expert Group The motivation for this workshop is implementation of the United Nations Environment Assembly resolution on "Conservation and Sustainable Management of Peatlands" (UNEP/EA.4/L. 19) that was adopted at the 4th Session held in Nairobi, Kenya in March 2019.

Among others this resolution "Urges member states and other stakeholders (of UNEA) to give greater emphasis to the conservation, sustainable management and restoration of peatlands worldwide". The Workshop focussed on international processes, especially Multilateral Environmental Agreements (MEA) that provide opportunities to:

- Understand synergies better
- Identify and discuss major gaps
- Identify suitable policies
- Outline a potential roadmap
- Find new partners

In this context the Sustainable Development Goals provided a supportive framework to foster synergies of peatlands. The Workshop participants were representatives of MEAs on the expert level, international organisations and networks, environmental regional initiatives and national governments. Apart from the IPS there was no representative of the commercial/private sector.

Programme

Tuesday 21 May

Session 1: Setting the Scene

The Workshop commenced after dinner with an introduction to the Workshop and its broader context followed by a panel discussion of key issues and an interactive session aimed at identifying the scope of the expertise of participants.

The 2.5 km long and very tranquil island of Vilm is located close to Rügen island in Northeast Germany. Photo: Gilbert Ludwig

Jack Rieley and Catherine Farrell at the Vilm workshop. Photo: Gilbert Ludwig

Wednesday 22 May

Session 2: Identifying Synergies to Safeguard Peatlands and their Ecosystem Services

Participants described their organisations' focus, interest, functions, capacity, strengths and gaps regarding peatlands. This was followed by presentations from:

- Jan Peters (GMC): information on peatlands; concepts, data availability and gaps, harmonisation, monitoring and reporting.
- Franziska Tanneberger: From international decisions to national policy - making use of synergy.
- Tatiana Minayeva: Implementation mechanisms of MEAs - synergy for effective use.

Session 3: Input in Fostering Synergies of Peatlands

Sub-session 3.1: Input to synergy from MEAs

Inputs were provided on Ramsar Convention, UN Convention on Biodiversity, Convention on Migratory Species, UN Framework Convention on Climate Change, UN Convention to Combat Desertification, Water Convention.

Sub-session 3.2: Potential synergies from the viewpoint of international and national organisations including UNEP, IUCN, FAO, WCMC, IPS and others.

In the evening case studies on peatland activities were presented that would benefit from making use of synergies:

- Stephan Glatzel (Austria) - Experiences in implementing SDGs for mires and peat soils in Austria
- Leonard Akwany (Kenya) - Nile Basin Initiative
- Piet-Louis Grundling (South Africa) - The role of formal and informal initiatives in southern Africa
- Randy Milton (Canada) - Contribution of peatland related work in Canada to MEAs implementation
- Stuart Brooks and Clifton Bain (UK) - IUCN UK Peatland Programme
- Franziska Tanneberger (Germany) - The Greifswald Mire Centre's (GMC) work on peatlands
- Jan Peters (Germany) - GMC's efforts for implementation of peatland conservation, restoration and sustainable use (paludification)

Thursday 23 May

Session 4: Best Use of Existing Frameworks

Sub-session 4.1: United Nations Environment Assembly resolution on peatlands
Sub-session 4.2: SDG's and Synergies on Peatlands

SDGs were considered a framework for synergies followed by an interactive session on "peatland action" contributing to SDGs.

Session 5: Developing Specific Follow-up Steps and a Roadmap for better Utilising Synergies

Reports from the previous sessions were summarised and discussed and actions proposed in an interactive session; followed by summing up and agreeing a draft road map

Friday 24 May

Session 6: Excursion to view rewetted farmland near to Greifswald.

Jack Rieley & Gilbert Ludwig

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Tobias Salathé of Ramsar speaking to participants. Photo: Gilbert Ludwig

25th PERG Symposium Report

On 19 February 2019, the 25th Peatland Ecology Research Group (PERG) Symposium was held at Université Laval in Quebec City. This event was a success, involving the participation of 60 representatives from the peat industry, various universities across Canada, private organizations, and provincial and federal ministries.

To highlight the 25 years since the first symposium, Line Rochefort (Université Laval, PERG director) began with the presentation of the PERG mission, while thanking the founders and collaborators who have greatly contributed to the development of research in peatland ecology. Subsequently, keynote speaker Maria Strack from the University of Waterloo (Ontario) talked about developing and evaluating best management practices to protect carbon stocks.

The first session of presentations began with a videoconference by William Shotyk and Kevin Devito (both from the University of Alberta, Edmonton) about the variability in major ions and nutrients in surface waters from natural and disturbed continental (Alberta) and maritime (New Brunswick) bogs. Subsequent presentations focused on Sphagnum farming and technical aspects and indicators to estimate biomass accumulation.

The second session of presentations dealt with the restoration of peatlands disturbed by oil sand extraction infrastructure. Bin Xu from the Northern Alberta Institute of Technology (NAIT) gave an excellent presentation on current and future projects to fill the knowledge gap in peatland restoration in this context. Anna Dabros of Natural Resources Canada discussed the effect of seismic lines on soil properties and vegetation in North-western Alberta.

The third session of presentations focused on diverse topics such as peatland restoration following cranberry farming, the effects of mechanical compression on the restored bog at Bois-des-Bel (Québec), and a comparative study on the response of Sphagnum and vascular plants to warming, nitrogen and phosphorus input in the Hani peatland of the Changbai Mountains, China.

The last presentation session of the day explored a range of topics including the assessment of the recolonization of peatlands by birds, hydrological changes following the rewetting of raised bog (Grande plée Bleue, Québec), the restoration of pools in peatlands, and measurable vegetation parameters to assess the success of peatland restoration.

The invited speaker: Maria Strack. Photo: P. Guérin

The best student presentation award went to Tasha-Leigh Gauthier (MSc) from the University of Waterloo. Congratulations to the winner!

To celebrate the 25th anniversary of the PERG Symposia, participants were invited to a cocktail party where appetizers and drinks produced by student associations at the Université Laval were offered.

The abstracts of the 25th PERG Symposium are available on the PERG website, at www.gret-perg.ulaval.ca.

We thank our sponsors the Centre for Northern Studies and the Faculté des sciences de l'agriculture et de l'alimentation of Université Laval!

Christine Isabel & Claire Boismenu

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Tasha-Leigh Gauthier was awarded the prize for the best student presentation. Photo: N. Ambec

Address by Line Rochefort during the cocktail buffet celebrating the 25th anniversary of the PERG Symposia. Photo: P. Guérin

Bonding with Butterflies

Enhancing habitat for breeding butterflies in Co. Kildare, Ireland

Lullymore West Bog Nature Reserve is located in Co. Kildare. The site is owned and managed by the Irish Peatland Conservation Council (IPCC). It was used for industrial peat extraction in the late 20th century and has naturally regenerated with birch woodland and grassland habitats.

IPCC's conservation objective for the reserve is to enhance habitats for butterflies and in particular the rare and endangered Marsh Fritillary that breed there. Lullymore West Bog provides a refuge for 22 out of the 35 butterflies occurring in Ireland. IPCC have counted over 3000 individuals in one season running from April through to September from a butterfly transect that runs through the site.

Butterflies prefer open sunny and sheltered places with lots of variation in the habitats present - such as mature or tall trees, some dense undergrowth, sunny glades, patches of recently cleared ground and regenerating open wildflower grassy areas.

This diverse structure creates the variety of habitats necessary for butterflies - many beautiful flowers providing nectar for adult butterflies or food for their caterpillars, the perfect breeding habitat and shelter over the winter.

In order to maintain and enhance the diversity of butterflies on the site, habitat management is vital. IPCC are working to enhance the habitat for breeding butterflies on Lullymore West Bog in a variety of ways outlined in this article and are engaging with the local community through training workshops and open days to transfer skills and build awareness for butterfly conservation in Ireland.

Our work is guided by a conservation management plan - "Lullymore West Bog, Co. Kildare Conservation Management Plan 2018-2025".

Habitat Condition Assessment

The first habitat condition assessment for breeding Marsh Fritillary on Lullymore West Bog was undertaken in 2016.

Lack of grazing and the encroachment of scrub including: Birch, Willow and Gorse were degrading the habitat.

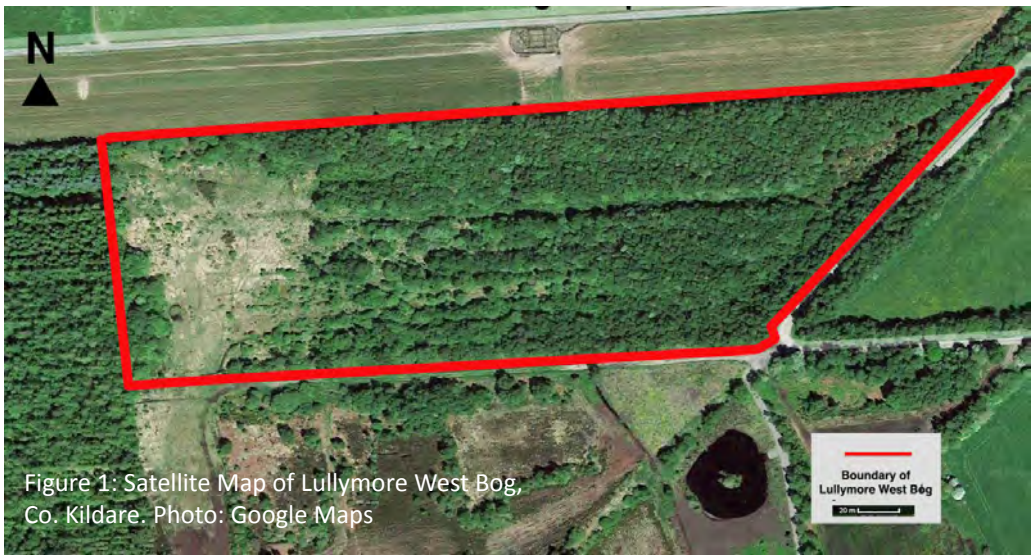

Figure 1: Satellite Map of Lullymore West Bog, Co. Kildare. Photo: Google Maps

Grazing

In 2017 IPCC introduced a grazing regime on the reserve. Two donkeys grazed the site from May to August. They ate the grass controlling the height of the vegetation and created an uneven (structured) vegetation height through poaching.

Habitat condition assessments in 2017 and 2018 showed

Marsh Fritillary Butterfly caterpillars on the leaf of Devil's Bit Scabious (*Succisa pratensis*).
Photo: Katie Geraghty

Marsh Fritillary Butterfly laying eggs.
Photo: Katie Geraghty

an improvement in the habitat with an increase in the abundance of Devil's Bit Scabious (*Succisa pratensis*), the food plant of Marsh Fritillary larvae.

However, the assessment indicated that grazing must continue and that scrub encroachment was a major issue.

Scrub Removal

In October 2018, thanks to funding from the Community Foundation for Ireland, IPCC hired a contractor to mechanically clear all scrub from 1ha of the site.

This work has opened up the site and increased the suitable habitat for the Marsh Fritillary and many other butterfly species. IPCC will continue to cut back scrub by organising bi-annual volunteer scrub clearance work camps.

Butterfly Survey

Weekly butterfly surveys are undertaken from April to October each year as part of the Irish Butterfly Monitoring Scheme run by the National Biodiversity Data Centre. The numbers of each butterfly species recorded annually on the site since 2007 are shown in Table 1.

There has been an increase in the overall abundance since grazing was introduced. IPCC conduct an annual Marsh Fritillary larval nest survey on the site. There has also been an increase in the number of nests recorded on the reserve since the grazing regime was put in place.

Vegetation Mapping

As part of the monitoring of the reserve IPCC are conducting a vegetation survey of Lullymore West Bog in 2019. The first vegetation and habitat map was drawn up in 2007. Through this work IPCC will be able to track the longer term changes observed in the vegetation present.

Table 1: A summary of the results of the butterfly monitoring scheme on Lullymore West Bog, Co. Kildare from 2007-2018. The number of each butterfly species seen during the year is given.

Species/Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
	Number of each butterfy species recorded											
Brimstone	19	6	32	54	35	15	71	62	65	58	40	102
Common Blue	42	30	18	34	48	33	13	42	31	15	13	143
Dark Green Fritillary	-	1	-	-	-	-	-	-	-	5	3	-
Dingy Skipper	31	12	14	17	12	34	12	11	28	14	53	38
Gatekeeper	-	-	-	-	-	1	-	-	-	-	-	-
Grayling	-	-	1	-	-	-	-	-	-	-	-	-
Green-veined White	19	23	27	90	46	87	93	50	26	34	50	67
Holly Blue	-	1	-	-	-	-	-	1	-	-	-	-
Large Heath	-	-	-	1	-	-	-	-	1	-	2	-
Large White	2	10	12	17	7	2	13	7	7	3	4	17
Marsh Fritillary	32	34	35	30	12	6	13	12	10	6	20	49
Meadow Brown	33	42	53	81	29	55	100	122	84	64	79	137
Orange-tip	27	6	8	26	44	20	12	29	10	13	36	5
Painted Lady	10	-	57	17	-	-	-	-	-	6	23	12
Peacock	76	15	152	87	14	107	356	183	117	242	319	538
Red Admiral	13	-	47	11	9	3	3	20	13	22	48	16
Ringlet	42	101	220	241	175	163	220	213	208	273	329	306
Silver-washed Fritillary	-	1	-	22	5	6	21	30	24	27	60	268
Small Copper	-	-	2	14	2	5	2	5	-	1	4	16
Small Heath	29	27	36	25	47	29	19	15	7	6	2	-
Small Tortoiseshell	133	12	24	221	21	193	130	38	38	111	61	143
Small White	2	85	69	30	4	-	22	21	30	13	20	11
Speckled Wood	101	54	153	148	80	105	103	151	135	209	296	285
Wall Brown	5	2	2	5	-	-	1	-	-	-	-	1
Cryptic Wood white	44	23	11	13	18	4	6	24	17	11	25	17
No. of walks	27	21	27	26	26	24	20	21	22	25	24	24
Total number of species	18	19	20	21	18	19	19	19	19	20	21	19
Total number of butterflies	660	485	973	1184	608	869	1210	1036	854	1082	1487	2171

Donkeys graze Lullymore West Bog for 4 months each year to help improve the structure of the vegetation making it more suitable for wild flowers which encourage a diversity of butterflies. Photo: Katie Geraghty

Community Engagement

IPCC are engaging with the community through hosting Marsh Fritillary monitoring workshops and public awareness events during Heritage Week and Biodiversity Week.

Future Actions

- Grazing and scrub removal to continue
- Monitoring butterflies to continue
- Increases in butterfly abundance expected
- Community engagement events to continue
- Bonding with butterflies expected

Thank You!

This project is supported by The Community Foundation for Ireland under the Community Biodiversity Grant Scheme 2018, Kildare County Council under the Heritage Grant Scheme 2019 and IPCC Friends of the Bog.

Dr Catherine O'Connell, Katie Geraghty and Paula Farrell

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Volunteer removing invasive trees from the grassland habitats on Lullymore West Bog. This opens up the habitat creating conditions preferred by butterflies. Photo: Catherine O'Connell

Mechanical removal and shredding of larger trees and Gorse scrub from Lullymore West Bog is a vital part of the on-going maintenance of the grassland habitats used by butterflies. Photo: Katie Geraghty

Allan Robertson Grant recipients 2019

The International Peatland Society launched the Grants for Research Students and Young Professionals in Peatland Management in memory of Allan Robertson, First Honorary President of the IPS, in 2015. The Grants are awarded to young peatland and peat researchers carrying out research or practical work or young professionals in early stages of their career in managing peatlands or peat industry. Grant recipients are normally under the age of 30. Undergraduates are ineligible. Payment is made by bank transfer.

Successful applicants must agree to provide a report on their project or work that will be published in the IPS magazine Peatlands International and/or give a presentation of it at an international IPS event at the latest 12 months after the grant funding has been paid to them. Funding is kindly provided by Allan's family and the National Committees of UK, Estonia, Malaysia and single IPS members. **This years' winners are:**

- Monika Aarniste (EST), Tallinn University of Technology: Digitalized database of Estonian peatlands
- Luke Andrews (WAL), University of York: Peatlands and climate change: Using the past as a key to the future
- Scott Davidson (SCO), University of Waterloo: Impact of wildfire on methane emissions from a continental boreal peatland
- Ian Detrey (ENG), The University of the Highlands and Islands: Bog in a box; long term peat storage for rehabilitation
- Abigail Gwynn (ENG), University of Exeter: Effects of Peatland Forest Fires on Orangutan Behaviour and Health
- William Jessop (ENG), University of York: Creating Sustainably Wooded Peatlands
- Claire McVeigh (IRL), Queen's University Belfast: Weathering below blanket bogs and potential impacts on carbon dynamics
- Christopher Schulze (GER), University of Alberta: Pathways of nitrogen in thawing permafrost peatlands in subarctic Canada
- Amanda Sinclair (AUS), RMIT University: Physical and chemical properties of tropical peat informing peatland restoration
- Lauren Thompson (CAN), University of Alberta: Mercury export from thawing permafrost peatlands.

Congratulations!

The Fifth European Conference on Permafrost

EUCOP5 in Chamonix, France

EUCOP5 was held between 23 June and 1 July 2018 at the Majestic Congress Centre in Chamonix, France, at the base of Mont Blanc. We were most impressed when we first saw the conference venue on our way to attend the opening ceremony on Monday, 25 June. With a backdrop of significant permafrost, we knew this conference would be unforgettable.

Personally, I think the conference was very well organized with various programmes, including icebreakers, workshops, keynote speakers, sessions, and local and regional excursions. According to statistics from the International Permafrost Association[1] more than 460 participants from 29 countries attended the conference. In total, 267 oral presentations and 217 posters were presented and discussed in 25 sessions, covering paleo-, planetary and sub-sea

The Majestic Congress Centre in Chamonix where EUCOP5 took place. Photo: Hui Zhang

View from the audience. Photo: Hui Zhang

I presented our findings on permafrost peatland carbon dynamics vs. climate changes in the Edgar Bouillette room, which was dark and crowded but cosy.
Photo: Sanna Piilo

permafrost, remote sensing, thermokarst, peatlands, geohazards, geophysics, hydrology, monitoring, engineering, and outreach and education.

It was pleasing to attend the interesting keynote speech on "The carbon cycle in the northern permafrost region", given by Dr Gustaf Hugelius from Stockholm University, Sweden, which is highly relevant to our ongoing project. In particular, his work has focused on improving the mapping of organic carbon stored in permafrost and peatlands of Arctic and boreal ecosystems. In his talk, he gave an overview of current research into northern circumpolar soil carbon stock and permafrost carbon issues. He pointed out some uncertainties that remain in the current mapping of carbon stock, such as the influence of fire and drought events on carbon dynamics., He also gave some advice concerning future studies, which inspired us to think about our work from a larger perspective and come up with some preliminary ideas for our next steps.

Several conference sessions that I attended were highly informative and insightful concerning their respective subjects. The session of particular interest was "Permafrost peatlands in a changing climate - past, present and uncertain future", which was organized on Tuesday afternoon by researchers Britta Sannel and Ylva Sjöberg (from Stockholm University, Sweden) and Sebastian Westermann (from the University of Oslo, Norway). The session included 10 oral talks and 11 poster presentations, covering studies on wide spatial scales (e.g., Canada, North Siberia, Norway, Finland

Impressive French Alps.
Photo: Hui Zhang

Beautiful Chamonix downtown. Photo: Hui Zhang.

and Mongolia) and temporal scales (thousands of years ago to the present) using different approaches (e.g., proxy-based palaeoecological methods, field measurements and modelling).

It was a very fruitful afternoon, and it was reassuring to see so many people interested in permafrost peatland topics. The room turned out to be too small for this popular session - some people had to sit on the floor, and we had to leave the door open for those who could not even squeeze into the room and were forced to stand outside in the corridor.

In this session, I gave an oral presentation entitled "Carbon accumulation in Arctic permafrost peatlands: a special focus on the response to global warming", revealing the responses of permafrost peatland carbon dynamics in Finnish Lapland and NEE Russia to climate changes, which is the main topic of my PhD project, carried out between 2014 and 2018 at the University of Helsinki, Finland.

I submitted my doctoral thesis entitled Responses of Arctic Permafrost Peatlands to Climate Changes Over the Past Millennia (https://helda.helsinki.fi/handle/10138/241222) for review just a month before EUCOP5. It was a great opportunity to discuss my work with peers, engage in discussion and respond to comments.

All in all, the EUCOP5 conference was especially interesting and enriched my experience by giving me more knowledge and beautiful memories.

Finally, I would like to take this opportunity to thank the International Peatland Society (IPS) for the Allan Robertson Grant 2018, which made this fantastic trip to Chamonix possible. I also wish to thank my PhD supervisor, Minna Väliranta, and colleague Sanna Piilo for their wonderful company in Chamonix, both up in the mountains and in the town below.

Reference:

[1] Strand, S.M., Christiansen, H.H. 2019. Report from the International Permafrost Association: Increasing regional activities on a global scale. Permafrost and Periglacial Processes. 30, 121-125.

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Adapting Peatland Research to Hydrologic Change: Data Collection in a Dynamic Boreal Fen

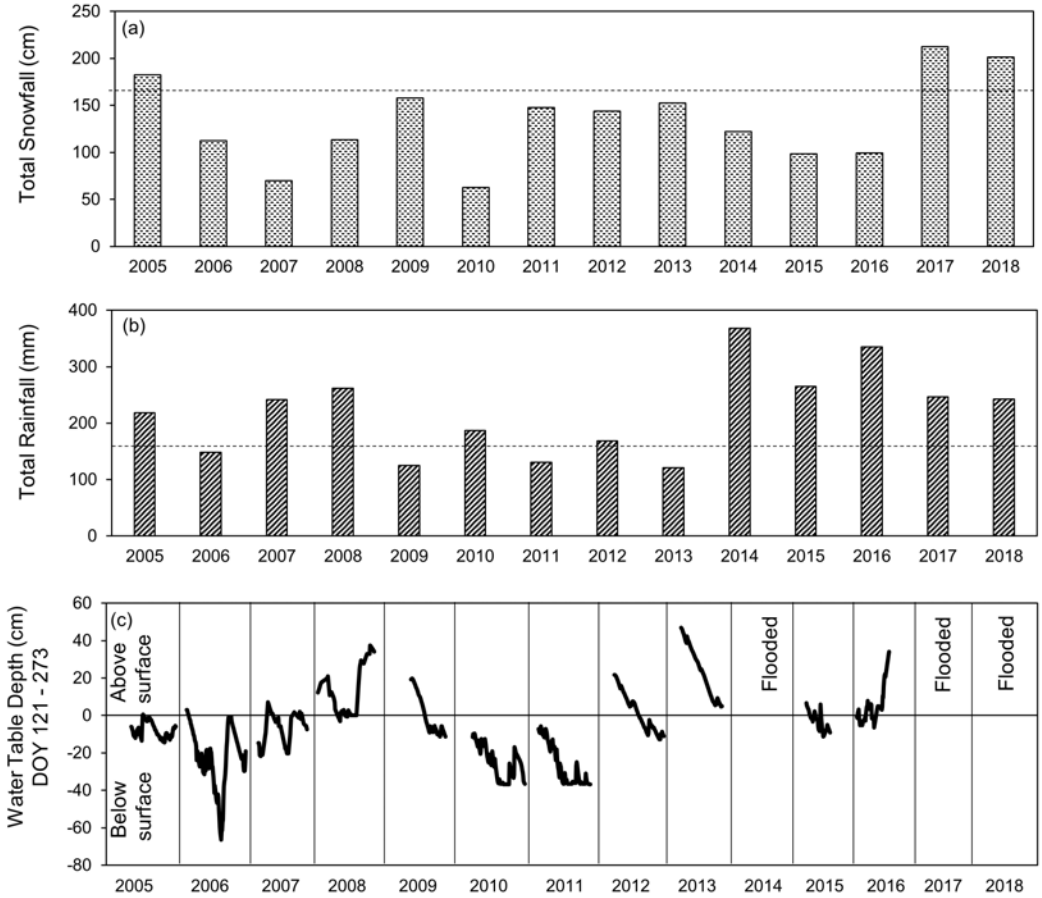
The Alaska Peatland Experiment (APEX) is a long-term ecological monitoring site within a boreal fen on the floodplain of the Tanana River near Fairbanks, Alaska. One of APEX's main objectives is to study the effects of changing hydrology on carbon cycling.

On the project's initiation in 2005, long-term water table treatments within the peatland were installed, including a control area, a lowered water table treatment, and a raised water table treatment. With a few exceptions involving intermittent flooding years, the water table treatments have been successfully maintained since 2005, supporting the collection of long-term CO_2 and CH_4 efflux measurements from each treatment, until July 2016.

That year, heavy rains caused the site to flood. Researchers expected the flood waters to subside the following field season, based on previous observations. However, the site remained inundated up to 1 m above the peat's surface for the duration of the 2017 and 2018 field seasons, due to river hydrology and weather patterns. Ironically, the very shift in hydrology that the researchers were trying to mimic in a hypothetical, controlled field experiment seemed to be naturally occurring on the field site as a whole.

With their field research plans thwarted for several seasons, researchers Catherine Dieleman (University of Guelph), Evan Kane (US Forest Service/Michigan Technological University) and Danielle Rupp (Michigan Technological) decided to

The APEX site, flooded, June 2016. Photo: Erik Kasischke



Precipitation data (snowfall and rainfall) and water table data from the control plot from the initiation of APEX in 2005 to 2018. Credit: Eugenie Euskirchen (unpublished data)

take advantage of the naturally occurring flooded "water table treatment" and adapt their research to be resilient to hydrologic change.

In the summer of 2018, the field team began collecting floating gas chamber measurements. Additionally, the field team, alongside phycologists Allison Rober and Kevin Wyatt (Ball State University), began collecting algal density estimates over the original submerged gas efflux collars to help quantify their biogeochemical significance to carbon cycling.

In the coming years, field data collection will be more resilient to meeting the fen at the forefront of hydrologic change. Field teams will conduct floating chamber measurements and algal surveys during flooding years, as well as maintain the water table treatments and associated measurements during normal years; however, it seems that "normal", as we know it, may be changing.

Danielle Rupp

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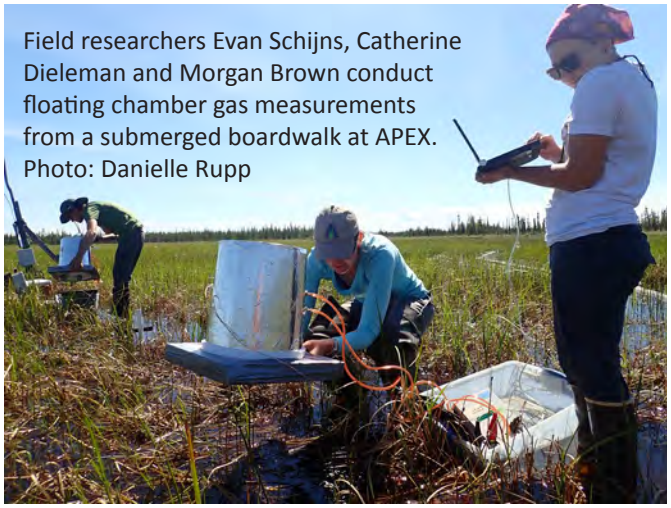


Field researchers Evan Schijns, Catherine Dieleman and Morgan Brown conduct floating chamber gas measurements from a submerged boardwalk at APEX. Photo: Danielle Rupp

Visual algal density estimate quadrat, placed over a submerged gas efflux collar. Visual density and sedge stems for analysis of chlorophyll are now collected during flood years. Photo: Morgan Brown

A Week Full of Science and Culture in Vienna

What would be a better way to spend a spring week than enjoying science and sunshine in beautiful Vienna? Every year, in April, the European Geosciences Union (EGU) General Assembly brings together thousands of scientists from all over the world in the Austria Centre Vienna (ACV), Austria, to share and discuss information on the latest discoveries and studies related to geosciences, as well as atmosphere, climate, planetary and space sciences.

Last year, I was honoured to be one of the recipients granted with the IPS' Allan Robertson Grant, which allowed me to join over 15,000 other scientists from 106 different countries at the annual EGU General Assembly from 8 to 13 April 2018.

I started my PhD study on methane and other volatile organic compound (VOC) emissions from boreal peatlands at the University of Eastern Finland (UEF) in spring 2016. The topic of my dissertation is timely related to climate change, as peatlands are known to be important carbon sinks and storage, but also a major source of methane which is a potent climate warming greenhouse gas.

In the first sub-study of my PhD dissertation, we investigated the spatial variability of methane emissions from a boreal bog by measuring methane fluxes from six different plant community types over three consecutive years. As a result, we only found slight variation in methane fluxes among plant community types. Peat temperature, as well as both the leaf area of plant species with air channels and that of all vegetation, was shown to be an important factor in controlling the fluxes. We also detected negative net fluxes indicating methane consumption each year.

While I had previously presented these results as a poster at other smaller conferences and symposia, at the EGU General Assembly, I had my first oral presentation as an early-stage researcher. What made it even more exciting was that the article about the sub-study (Korrensalo et al., 2018) was published in the journal Biogeosciences just prior to the EGU General Assembly.

I was happy to participate in my first major international conference together with our whole Peatland and Soil Ecology Research Group: Professor Eeva-Stiina Tuittila, Dr Anna Laine-Petäjäkangas, Dr Aino Korrensalo, Dr Jinnan Gong and early-stage researcher Nicola Kokkonen, as well as Professor Steve Frolking from the University of New Hampshire who was visiting us in UEF as a Fulbright Professor. Each of us presented our research as a poster or an oral presentation. Among hundreds of sessions and thousands of presentations at the conference, our main interest was in the three peatland-themed sessions.

Dr Korrensalo and Mrs Kokkonen presented their work related to vegetation changes in the session "Peatlands under pressure", which was co-organized by Dr Tuittila. Another session was dedicated to "Peatlands and the carbon cycle", in which Dr Tuittila and I gave our presentations.

Arriving at the EGU General Assembly in the ACV. Photo: Anna Laine-Petäjäkangas

Finally, the "Peatland hydrology" session concentrated on the newest studies regarding the key control of peatland ecosystems. Furthermore, interesting peatland studies were presented in the poster sessions by dozens of scientists include Dr Laine-Petäjäkangas, Dr Gong and Dr Frolking.

In addition to peatland research, the great variety of research topics at the General Assembly allowed us to catch up on the latest studies in the other fields related to our interests, such as plant traits, VOCs, greenhouse gases and climate change. I also enjoyed the chance to participate in some sessions on topics that were completely outside my own field and learn, for example, about the Cassini-Huygens Mission to Saturn.

Outside the sessions, there were useful opportunities to explore the exhibition by different companies and manufacturers, get to know about the newest measurement technology, and request quotations for devices that would be needed in future studies. How wonderful would it be to receive automated chambers on our study sites to continuously measure carbon fluxes!

One of the most important outcomes of the EGU General Assembly for an early-stage researcher like me was to be able to meet and discuss with other scientists in the same field. Networking is fundamental for a modern-day researcher; and, in the conference, I had many chances to catch up with familiar colleagues as well as make new contacts.

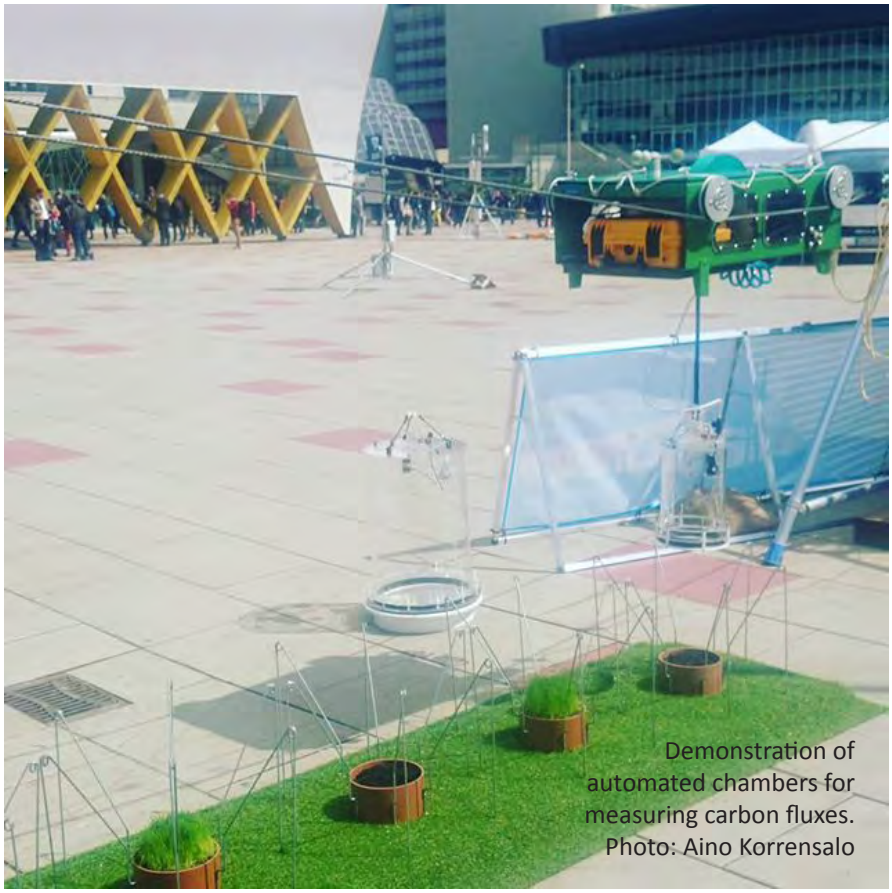
Besides the scientific mix and mingling during the poster sessions, the lunch breaks offered a more casual way to become more acquainted with my peers. One of the highlights of the week was on the Wednesday evening, when most of us peatland scientists gathered for a joint dinner in a lovely Austrian restaurant. The dinner and the General Assembly altogether were a valuable experience that really gave me a sense of being a part of the scientific community, which was motivating.

While the EGU General Assembly 2018 was my first time participating in such a big international conference, it was also my first time in Austria. Fortunately, my colleagues and I had time to enjoy some culture as well. We visited some of Vienna's art museums, took walks admiring the architecture of the city and went to see a concert by the amazing Vienna Symphony Orchestra.

Our successful trip was crowned by warm sunny weather and blooming trees, which was an almost surreal sight, compared to still-snowy Finland. To me, it was an inspiring week which combined science and culture, and I am already looking forward to my next opportunity to participate in the EGU General Assembly and further explore the beautiful city of Vienna.

Reference

Korrensalo A., Männistö, E., Alekseychik, P., Mammarella, I., Rinne, J., Vesala, T., Tuittila, E.S. 2018. Small spatial variability in methane emission measured from a wet patterned boreal bog. Biogeosciences, 15, 1749-1761. DOI:10.5194/bg-15-1749-2018.



Demonstration of automated chambers for measuring carbon fluxes. Photo: Aino Korrensalo

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About the IPS Grants

Allan Robertson was the First Honorary President of the IPS and loved by many.
The 500€ Grants are awarded to young peatland and peat researchers carrying out research or practical work or young professionals in early stages of their career in managing peatlands or peat industry.
Grant recipients are normally be under the age of 30.
Undergraduates are ineligible.
More info at: www.peatlands.org.

Peatland Condition Monitoring - How Small Grants Enable Large Improvements

In April 2018, the Allan Robertson Grant enabled me to invest in a set of photosynthetically active radiation (PAR) sensors, to be used in conjunction with my PhD project on "Assessing the condition of the Flow Country peatlands to support their future protection".

The project tries to bring together field-based greenhouse gas measurements, long-term high-resolution environmental data and unmanned aerial vehicle (UAV) imagery to define and assess the condition of peatlands in the north of Scotland. The project is funded through the European Social Fund and supervised by Dr Roxane Andersen, Dr Richard Payne, Dr Jason McIlvenny and Dr Neil Cowie.

Without delving into the details in terms of defining peatland condition– because there are multiple ways of approaching this – PAR is recognized as a helpful proxy for estimating vegetation productivity across ecosystems. If we want to start quantifying peatland condition, i.e., whether a peatland is in a stable/growing (carbon sink) or in a degrading state (carbon source), quantifying carbon fluxes is essential in understanding carbon cycling within this globally important carbon store and ecosystem.

Initially, two sites have been selected in the Flow Country, the largest expanse of blanket bog in Europe and a site of global significance, which is currently on the tentative list for World Heritage Site status. The target areas represent contrasting conditions and geographical settings and have been selected in collaboration with the Royal Society of the Protection of Birds (RSPB) and Plantlife in Scotland.

Environmental data logging set-up at Knockfin Heights, part of the RSPB Forsinard Flows Nature Reserve in the Scottish Highlands. One of the two purchased PAR-sensors is on the left. Photo: Henk Pieter Sterk

The Knockfin Heights is an eroded high-altitude (400 m above sea level) blanket bog, while the Munsary peatlands comprise a low-lying (<100 m above sea level) blanket bog in good condition.

To generate valuable new insights into GHG fluxes over the range of peatland condition sites present within the Flow Country, PAR sensors are necessary to understand short-

Calibrating the field radiospectrometer (NERC FSF) under high PAR conditions, subsequently used for obtaining spectral signatures at Plantlife's Munsary Peatlands Nature Reserve. Photo: Henk Pieter Sterk

and long-term fluctuations in solar radiation at each site in response to cloud cover and seasonality.

Adding up these fluctuations can help us to better understand the annual productivity of the vegetation cover across the blanket bog. The radiation data will be used to fill temporal gaps between in situ flux chamber measurements over the project's duration and provide important supplementary information to historic, current and future data collected at these sites.

Measuring carbon dioxide and methane fluxes forms the basis of a larger project with auxiliary parameters such as water table depth, temperature, precipitation and radiation to be collected in parallel. The field set-up includes obtaining GHG flux rates at specific sites characterized by different plant functional types, e.g., Sphagnum mosses, Ericoid shrubs and graminoids, along with pools and bare peat patches.

With the addition of coverage maps, created through the use of high-resolution aerial imagery from an UAV mounted camera, chamber measurements based on topographic variability and plant functional types will be upscaled to higher landscape units. Since both a near-natural peatland and a degraded peatland are monitored, the hypothesis is that the UAV imagery classification workflow should be applicable to peatlands of intermediate conditions as well. The multi-temporal component of this method will help in the assessment of peatland condition variability throughout the seasons, allowing for better long-term estimates of the response of carbon fluxes to future climate change.

So far, the IPS grant has enabled me to obtain highly needed and valuable continuous PAR measurements for my research. Alongside topographic information and UAV-derived aerial imagery, these radiation measurements are greatly improving the feasibility to upscale the collected flux measurements, both temporally and spatially, beyond the initial study sites.

Once achieved, the method will be verified in other northern peatlands across a peatland condition spectrum. To conclude, the ability to monitor long-term variables, i.e., photosynthetically active radiation, in the Flow Country will significantly improve the quality of the data produced from the project, increasing the data's value in understanding the carbon storage dynamics of the Flow Country and further afield.

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Seeing the Wood for the Trees: A Palaeoecological Approach to the Research into Past Natural Woodland in the Scottish Highlands

This PhD project concerns the reinstatement of natural woodlands in the Northern Highlands of Scotland. Areas of peatland in the Scottish Highlands were extensively afforested by Scottish Forestry (SF) during the 1980s and the early 1990s with non-native conifers, which affected the landscape and present ecosystems drastically.

Over the last few years, some of these plantations have been felled in order to restore the peatlands. In addition, SF, responsible for most of the management of the afforested peatland, is keen on developing policies on the reinstatement of natural woodland in the Scottish Highlands.

For this research, three sites under the care of SF were selected as sampling locations for this research: Braehour, Rowens and Dalchork (Fig. 1). Braehour is an afforested blanket bog site, whereas Rowens and Dalchork are afforested riparian bog sites (Fig. 2). At the three sites, peat cores were taken, with a depth ranging from 6.4 to 3.3 m, while palynological data (including pollen grains, charcoal and non-pollen palynomorphs) on each core were analysed and used to create long-term vegetation records, with a focus on past natural woodland.

The aims are to understand the composition of these woodlands, what caused their demise, and whether these woodlands can thrive in the present climatic conditions. This information will help future conservation strategies in the Highlands and potentially across Scotland.

The awarded Allan Robertson Grant 2018 has been used in the establishment of independent chronologies (by means of radiocarbon dating) of the peat cores, to gain a better understanding of the historic woodland development in the Northern Highlands. Two dates have been financed by the grant, with a total of 15 samples submitted to the Poznan Radiocarbon Laboratory and the SUERC Radiocarbon Laboratory to be processed for accelerator mass spectrometry (AMS) radiocarbon dating. In light of the two extra dates, the chronology at the research sites could be refined further, while two key periods of vegetational change recorded in the pollen studies could be accurately dated. An age-depth curve (Blaauw, 2010) was fitted to the radiocarbon data and interpolated to obtain an age estimate for every depth of the three cores.

As the age was calibrated for every depth within the three cores, it was possible to detect that past natural

Fig. 1. Site locations in Scotland: 1. Rowens, 2. Braehour, 3. Dalchork. (Modified from www.worldatlas.com/webimage/countrys/europe/outline/scotland.gif, accessed on 21 May 2019.)

Fig. 2. From left to right: Rowens, Braehour, Dalchork. Photos: Jasmijn Sybenga 2016

woodland had expanded differently over time and space. As an example, Fig. 3 shows the change in tree cover at the three research sites. The horizontal axis reflects the timing of events (ranging from the oldest/earliest events to the youngest/latest), starting at 11,000 years before the present (before 1950), while the vertical axis reflects the extent of total tree cover. The numbers 1 to 6 indicate important events in woodland development across the sites.

At 1, there is a low presence of tree cover at Rowens, indicating that, during this time, the landscape was largely open. At 2, there is a moderate presence of tree cover at Dalchork, but there is a high presence of tree cover at Rowens, suggesting that there was a denser woodland present at that time. At 3, there is dense woodland developing at Braehour, while, at the same time, woodland cover is lower at Dalchork and Rowens.

At 4, total tree cover is most dense at Dalchork, after which all tree cover seems to be in decline. A final peak for tree cover at Dalchork can be found at 5, reflecting a sudden increase in pine cover close to the coring site. At 6, there is a minor increase in total tree cover, highlighting the non-native coniferous tree planting during the 1980s and 1990s on a further peatland/dry heath-dominated landscape.

I would like to thank the IPS for the Allan Robertson Grant, which enabled me to obtain important data necessary to help me successfully finish my PhD project. For further information about this project, or any other enquiries please contact me.

References:

Blaauw, M. 2010. Methods and code for “classical” age-modelling of radiocarbon sequences. Quaternary Geochronology, 5(5), 512-518. https://doi.org/10.1016/j.quageo.2010.01.002.

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This PhD project is supervised by Dr Scott Timpany (UHI, Orkney College), Dr Roxane Andersen (UHI, Environmental Research Institute) and Dr Melanie Smith (UHI, Inverness College).

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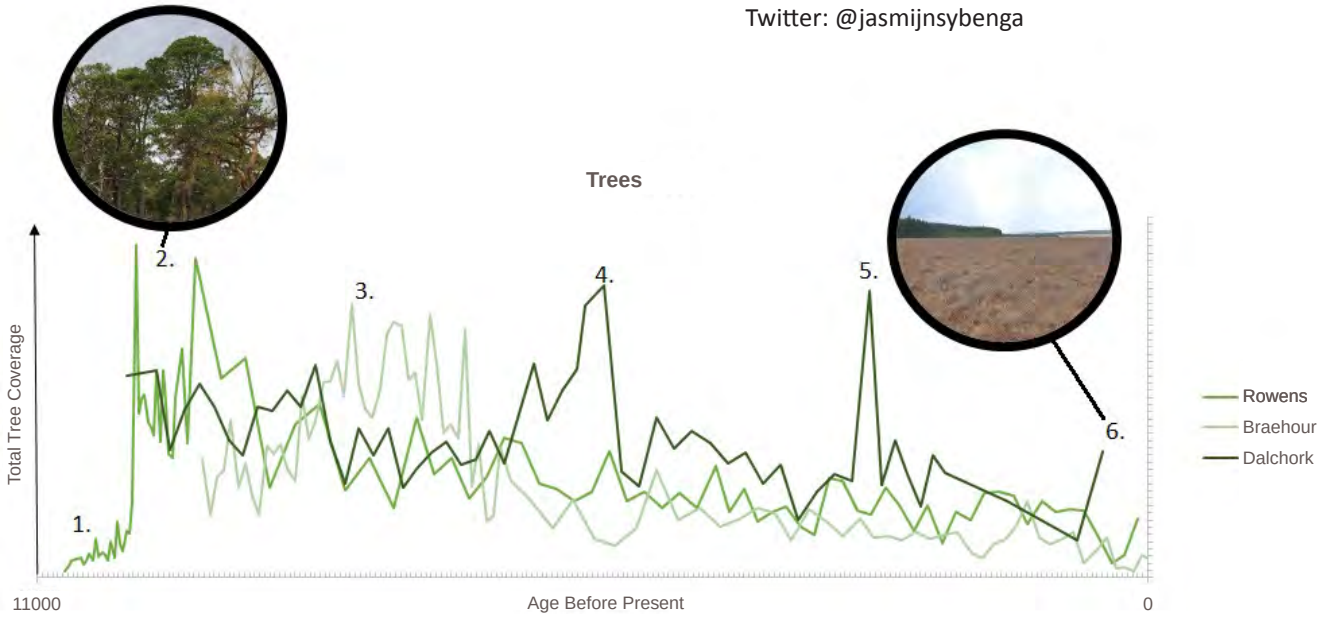

Fig. 3. Diagram showing the difference in tree expansion between the three research sites: Rowens (Row), Braehour (Brae) and Dalchork (Dalch). Graphics: Jasmijn Sybenga, 2019

Jan Astrup Joins the Board of Responsibly Produced Peat (RPP)


Jan Astrup. Photo: Pindstrup

Brussels, 13 June. At the RPP Board Meeting on 23 May 2019 in Copenhagen, Jan Astrup was elected as a new Board Member to represent Growing Media Europe (GME). Jan Astrup, CEO of Pindstrup Mosebrug and Board Member of GME, took over from Claes Boehlin, who had represented GME (and formerly EPAGMA) since the foundation of RPP and now stepped down in the course of his retirement.

Responsibly Produced Peat (RPP) is a certification system for the responsible use, management and restoration of peatlands in Europe (see also www.responsiblyproducedpeat.org). GME strongly supports RPP and is committed to further strengthen the link between the two organisations, ensuring optimum cooperation with industry. On executive level, this is supported by one of GME´s Board Members being actively involved in the RPP Board.

Jan Astrup is a chemical engineer and highly experienced in the fields of food manufacturing, sustainability certification and growing media production. He is also a Member of the Advisory Board of the CBIO Aarhus University Center for Circular Bioeconomy.

"I am highly motivated to personally contribute to the growing success of RPP while keeping an eye on the feasibility and effectiveness for producers of horticultural peat. All raw materials we use for growing media production must be responsibly sourced and produced, and RPP is a valuable system when it comes to peat extraction.", stated Jan Astrup after the vote.

Growing Media Europe thanks Claes Bohlin for his years of dedicated work and engagement in RPP on behalf of the growing media sector, wishing him all the best for his upcoming retirement.

As described in the recently published GME Sustainability Agenda, trusted certification systems and transparency with regards to environment, society and economy are key for any industry prepared to face future challenges. The European growing media sector relies on "responsible" peat in order to safeguard the use of this most important raw material for high quality substrates. RPP certified peat used in growing media is an important step on the road towards a more sustainable horticulture.

Cecilia Luetgebrune

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Peat and Peatland Events

ISHS-IPS III International Symposium on Growing Media, Composting and Substrate Analysis
Milan, Italy
24 - 28 June 2019
www.susgro2019.com

9th Trondheim Conference on Biodiversity
Trondheim, Norway
2 - 5 July 2019
https://trondheimconference.org

RSPO
Sustainable Palm Oil - A Shared Responsibility
Accra, Ghana
20 - 22 August 2019
https://rspo.org

Open-Ended Working Group
on the Post-2020 Global Biodiversity Framework
Nairobi, Kenya
27 - 30 August 2019
www.cbd.int

Baltic Peat Producers Forum
Palanga, Lithuania
4 - 6 September 2019
https://balticpeatproducersforum.eu

WETSCAPES Conference - Understanding the ecology of restored fen peatlands for protection and sustainable use
Rostock, Germany
10 - 13 September 2019
www.wetscapes.uni-rostock.de/en

Finnish National Committee
Excursion to Northern German Paludiculture Sites
15 - 20 September 2019
www.suoseura.fi

IPS Symposium
Growing Media for Food and Quality of Life &
1st International Peat-based Products and Technology Expo
Qingdao, China
16 - 21 September 2019
www.ips-cnc.com

8th World Conference on Ecological Restoration
Cape Town, South Africa
24 - 28 September 2019
www.ser2019.org

CBD 23rd meeting of the Subsidiary Body on Scientific, Technical and Technological Advice
25 - 29 November 2019
Montreal, Canada
www.cbd.int

UNFCCC COP 25, CMP 15, CMA 2
Santiago, Chile
26 November - 13 December 2019
www.cop25.cl/web/en

Southern Hemisphere Regional Conference on Permafrost of the International Permafrost Association (IPA)
Queenstown, New Zealand
4 - 14 December 2019
https://southcop19.com

Tenth International Symposium on Land Subsidence (TISOLS)
Delft-Gouda, the Netherlands
20 - 24 April 2020
www.tisols2020.org

Québec RE3 Conference 2020
From Reclaiming to Restoring and Rewilding
Quebec City, Canada
7 - 11 June 2020
www.re3-quebec2020.org

IUCN World Conservation Congress
Marseille, France
11 - 19 June 2020
www.iucn.org

16th International Peatland Congress
Tallinn, Estonia
14 - 20 June 2020
www.ipc2020.com
www.facebook.com/events/1162609177193984

Convention on Biological Diversity COP 15
Kunming, Yunnan, China
2020

II International Symposium on Growing Media, Soilless Cultivation, and Compost Utilization in Horticulture
Ghent, Belgium
22 - 27 August 2021
www.ishs.org/symposium/712

31st International Horticultural Congress (IHC)
Angers, France
14 - 20 August 2022
www.ihc2022.org

17th International Peatland Congress
Beijing, China
22 - 25 July 2024

More at: www.peatlands.org/events

Next issue...

You are welcome to write!

Please send your manuscript (max. 1,000 words, A4, Arial, no full cap lines, with author contact details, language proofread if possible, e.g. **www.englishproofread.com**), photos and illustrations (separate jpg or pdf files with the names of the photographers) and advertisements (pdf files, prices according to Media Kit) as soon as possible to the IPS Secretariat, susann.warnecke@peatlands.org.

Submission deadline: PI 3/2019: **1 September**

IPS Symposium “Peat for Food Production and Quality of Life” in Qingdao, China

Strategy for Responsible Peatland Management Review & Update 2019

IPS 2050 - Visions for the next three Decades of Peatland Management