

## IMCG Bulletin: August 2017

### Word from the Secretary-General



[www.imcg.net](http://www.imcg.net)

Dear mire friends

With deep pain in our hearts we have to report, that shortly after we had said goodbye to each other at the end of our fieldtrip in the Russian Arctic, on August 27 our IMCG member Maria (Masha) Noskova (\*1971) has lost her life. Together with her husband Dmitry and their ten-year-old daughter Nastya, she died in a fire caused by an electricity short-circuit in their house in Vsevolozhsk near St. Petersburg. Masha had sheered up our excursion with her pleasant character and several of us had made concrete plans for further cooperation. Her departure again reminds us how precious life is and how much we must appreciate the beautiful devoted people we may meet in our joint struggle for mire conservation. We will miss her...



*Masha (l.) during the IMCG Field Symposium at the border of Nenets Nature Reserve. Photo: Tatiana Minajewa.*

After the first contributions in the July issue, in this Bulletin more impressions of the 2017 IMCG Arctic Field Symposium and news items from all over the world. And, as always, a list with relevant recent peatland literature. Keep sharing your ideas and experiences by sending news, photographs, papers and other contributions for the September Bulletin by October, 5, 2017 to Hans Joosten at [joosten@uni-greifswald.de](mailto:joosten@uni-greifswald.de).

## IMCG News

### Masha

*Tatiana Minajewa ([tania.minajewa@gmail.com](mailto:tania.minajewa@gmail.com))*

Masha Noskova was the youngest and last PhD student of Marina Botch and the one most close to her. Masha was the daughter of one of the greatest conservationists of North-West Russia, Georgy Noskov, who passed away in January this year, and Masha was keeping the traditions of her father. With the same energy and devotion, Masha struggled for solving both very small local environmental problems as well as in large business projects, together with her husband Dmitry, who was also a very passionate conservationist. They were incredibly happy together with their daughter Nastya and two funny dogs. They build their own house near Sankt Petersburg, which was open to all friends and like-minded people.

Masha recently came back to science and with impressive success, because she always did what she loved most in science. And Masha loved Sphagna – and thus she prepared the best illustrated field guide for *Sphagnum* species in Russia. Masha loved Nizhnesvirsky nature reserve, where her father had maintained a unique ornithological station. And she was running unique long term monitoring projects on very interesting mires, which she had started together with Marina Botch.

Masha really wanted to join the IMCG excursion: to see the peatlands of the Arctic and the Polar Urals was her dream. She had no money for the whole trip but could join us in the Naryan-Mar part. She warmed up all gathering with her unique “Madonna- like” smile: a unique bright person, carrying to people love, warmth, calm and understanding. That is our memory of Masha.

On October 5<sup>th</sup> the Mire Group of the Russian Botanical Society is organising a meeting devoted to Masha. Who can join: please come to Komarov Botanical Institute in Sankt Petersburg, 16.30h, Geobotany department.

Contact person for potential participants is Victor Smagin: [amgalan@list.ru](mailto:amgalan@list.ru)



*Masha making a presentation on her monitoring studies in Naryan Mar. Photo Juergen Nauber.*



*Masha during excursions. Photos: G.Malkova.*

### **International Field Symposium**

#### **Mire ecosystems of Northeast Europe - Ecological restoration in permafrost zone**

#### **Backgrounds for discussion of IMCG**

Tatiana Minajewa ([tania.minajewa@gmail.com](mailto:tania.minajewa@gmail.com))

Dear IMCG members,

We thank all of you who participated in the IMCG excursion to the North-East of Europe: the Polar Urals and Nenets Okrug of the Russian Federation. You all were a great team and very good guests. We thank you all for your patience and support, for your understanding and acceptance of our failures and sharing with us your findings and good moments. We thank you for your expertise and eagerness to discuss not easy questions of mire conservation and restoration of ecosystems.

Now the time has come to draw some conclusions. We would be very glad if you could contribute to the discussion of the following issues which came up during the trip:

- 1) The diversity, typology and distribution of frozen peatlands – palsas and polygonal mires
- 2) Traditional land use and mire degradation – how to regulate reindeer pressure on natural peatlands?
- 3) The management of National Park Yugyd va as a UNESCO World Heritage site: perspectives of ecological restoration of accumulated damage
- 4) The management of National Park Yugyd va as a UNESCO World Heritage site: is the presence of a “sleeping” mining area a threat?
- 5) What are the main factors to limit development projects? Can the presence of rare species stop project development and how?
- 6) Is tourism a threat or an opportunity for the National Park within the vulnerable environment?
- 7) Is developing Nenetsky State Nature Reserve into a biosphere reserve a solution for the presence of reindeer herders within the protected area?
- 8) Is it possible to restore permafrost and natural ecosystems under permafrost conditions?





*The chaos of IMCG we love... Photo: Tatiana Minayeva.*

#### **Comments to the IMCG field symposium and workshop, with comparisons to Scandinavia.**

Asbjørn Moen ([asbjorn.moen@ntnu.no](mailto:asbjorn.moen@ntnu.no))

##### Introduction

I am thankful to the organizers and all helpers for a very interesting and well-organized field symposium that lasted 18 days, including our travel from Norway. The field symposium included two full days with scientific seminars/workshops (in Syktyvar and Naryan Mar) with more than 40 presentations/talks. Most of the time was used in the field where we visited a large number of mire localities in the Republic of Komi (including five days in Ural mountains) and in the Nenets Autonomous Okrug (Bolshezemelskaya tundra, Pechora delta, Barents sea coast). For me the landscapes and mires in Ural mountains and the enormous wetlands and arctic polygonal mires in Nenets were spectacular and of greatest interest. However, I enjoyed all excursions and the whole tour, including the outlook to the landscapes from flights, trains, busses, caravans, boats and helicopter. We also visited many interesting museums and exhibitions.

I will give some notes on the variety in the nature we experienced in Northern Russia, as seen from a Scandinavian perspective. I will concentrate on the Ural mountains, with special attention to mires and regional variety. The very interesting excursions in the far north, where we crossed the border between boreal and arctic vegetation zones and studied polygonal mires etc. will not be dealt with in this short report. I start with commenting the very well prepared and important material our organizers gave us as soon as we arrived.

##### Proceedings, field guides, books etc.

The proceedings of the field symposium (Mire ecosystems of Northeast Europe and Ecological restoration in permafrost zone) were prepared as a book of 176 pp. All together 33 papers, all in both Russian and English languages, are included. About half of the presentations are related to the excursion sites, giving important information on the visited mires. In addition to the proceedings, we received printed programs for the excursions and workshops, e.g. informative booklets for excursions in the Urals/Komi area and the Nenets area. Further, some folders (e.g. an instructive presentation of the "Yugyd va" national park), reprints and books

were given to us. All this material was well presented and of greatest value, both as guides in the field and afterwards for more intensive studies.

I was happy to receive copies of three books of greatest importance for my understanding of the landscapes, restoration projects and localities we visited. Two of the books are written in English, one in Russian with English summary. Not all participants of the field symposium seem to be aware of these important books, so here are some comments, and full references.

The book of Zagirova & Schneider (2016) (in English) deals with results from studies in one mire complex in the Middle Taiga (southern boreal) vegetation zone, north of Syktyvkar in Komi (we visited two localities in this area on July 29). The 13 chapters (24 authors) include a variety of topics, with emphasis on development and functions of boreal mire ecosystems, including exchange of greenhouse gases and energy. The Minayeva et al. (2016) book includes contributions from 16 authors. The book is written in Russian and my comments are based on the Summary. The book presents methods and approaches to the restoration of damaged Arctic ecosystems. During our excursions, we visited some of the study areas described in the book, and articles in the proceedings include results from the restoration experiments. I am impressed by the quality and results of the restoration projects we visited and it is certainly of interest to bring the results from this research, including more general aspects related to restoration of arctic ecosystems, to the larger audience. Both books are based on international cooperation and funds and are made in co-operation with the Russian Academy of Sciences.

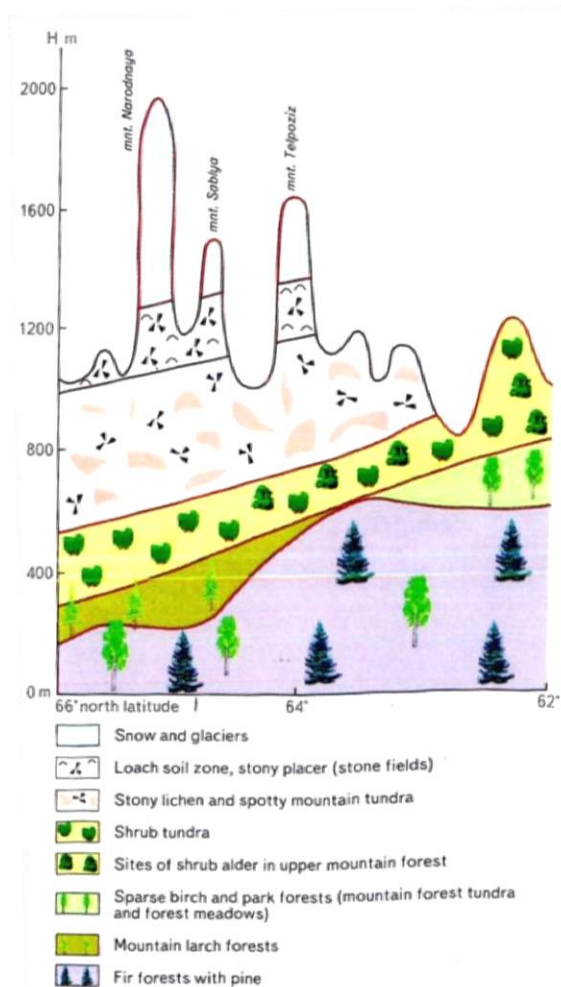


Figure 1 Altitudinal zones (belts) of vegetation of the Northern and Pre-Polar Urals (From Taskaev 2006 p. 73).

The “Virgin forest” book (Taskaev 2006) gives good descriptions of the nature in Komi, including a large number of excellent photos, and instructive maps. Main focus is on forests (as the title of the book tells) and rivers; with descriptions of flora, vegetation and animal life. A considerable part of the book deals with mythological matters related to nature. Among the illustrative maps of Komi, I mention: Physical maps, Map of intact forest landscapes (Russia’s European North), vegetation zones (seven zones, from Southern taiga to Southern (shrub) tundra; in terminology of Joosten et al. 2017: from Boreonemoral to Southern Arctic) and a vegetation map (including Wetlands as one of the 11 units). Figure 1 shows the altitudinal vegetation zones of the Northern and Pre-Polar Urals. The localities of our fieldwork in the Urals were just north of Norodnaya mountain (1895 m a.s.l., at 65°10' north). In this area, the “Shrub tundra” reaches ca. 600 m a.s.l. and the “Mountain larch forests” nearly 400 m a.s.l. (see my comments later).

In this excellent popular book, I miss a closer description of the mires of Komi. They certainly make up a very large variety from raised bogs in the south to palsa mires in the north. However, now we have an up to date description of the mires with extensive list of references of European Russia in the European Mire Book (Sirin et al. 2017)!

### Ural Mountains

During five days, we stayed in the Yugyd Va national park in the centre of the sub-polar Urals, in the Balbanyu river valley. The valley bottom is at 600-650 m a.s.l., with mountains reaching to more than 1500 m (the highest 1895 m). We registered the woodland limit (woodland: >10 trees higher than 2 m with cover >10%), mainly



formed by *Larix sibirica*, to occur at ca. 650 m a.s.l. (in fig. 1 about the upper limit of “Shrub tundra”). Along the rivers *Salix dasyclados* and other *Salix* species make woodland communities, even higher than 650 m a.s.l. Scattered trees of *Larix sibirica* and other trees may occur higher, but not as woodlands. As we went down the Balbanyu valley, more tree species occurred in the woodlands, including *Betula pubescens/tortuosa*, *Picea obovata*, *Pinus sibirica*, *P. sylvestris* and *Abies sibirica*.

Palsa mires and flat fens are common in the flat valley bottom, and fens also occur on sloping terrain. Springs are common, including large, eustatic (strong) springs. We visited such strong spring 680 m a.s.l. near Yerkusey mountain. The large spring is dominated by *Sphagnum* species, e.g. *Sphagnum girgensohnii* and *S. riparium*. The water had a pH of 5.6 and a very low electric conductivity ( $10\text{--}20\ \mu\text{S cm}^{-1}$ ). It seems reasonable that the cold, constant water flow comes from melting snow. A photo of the spring is published on p. 4 of IMCG Bulletin July 2017.

The landscape and vegetation in the visited areas of the Urals are very similar to those in the valley-mountain systems in the continental parts of northern boreal-alpine Scandinavia. As in Scandinavia the ice ages (the last one 10 000 years ago) have strongly shaped the mountain-valley systems, e.g. by depositing morainic material in the valleys. The climate in some upper boreal/alpine areas in the eastern mountains of Norway is very similar to that in this part of the Urals. In addition, the amount and duration of snow cover seems to be much the same. The distribution of the snow is more important in mountainous areas than in woody areas where the snow cover is relatively uniform, because the trees have a moderating effect. The development of palsas is dependent on a thin snow layer, and palsas occur in low alpine and upper boreal open areas with a continental climate.



Typical zonation in low alpine vegetation belt: exposed ridge with lichens at the top, *Betula nana*-dominated zone and leeward side with flowering *Phyllodoce caerulea*. Ural Mountains, south of Lake Grubependity, ca. 800 m a.s.l. Aug 25, 2017. Photo: Asbjørn Moen

The low alpine region is characterized by the alteration between ridge, lee-side and snow-patch vegetation, with the snow cover as the main environmental factor. This zonation is common all over the low alpine areas we visited. In areas with hard, base-poor mineral soil we had a very characteristic vegetation zonation: The most exposed ridges are characterized by *Loiseleuria procumbens*-*Empetrum nigrum*-lichen-bryophyte communities; *Betula nana* dominates the next zone; then follows the leeward side with *Vaccinium myrtillus*-*Phyllodoce caerulea* heath, further down the grass snow patch (*Deschampsia flexuosa*, *Nardus stricta*); in the

snow beds Dwarf willow (*Salix* sp.)-*Cassiope hypnoides* communities; and furthest down with a very long lasting snow cover bryophyte communities. In areas where seepage takes place (below a snowdrift), the soil is moist throughout the summer, with grassland and fen vegetation. In areas with calcareous soil the same main profile occurs, but with a more species-rich vegetation.

In upland/low alpine areas in inland (continental) Scandinavia with base-poor mineral soil we have the same zonation in the vegetation from ridges to snow-beds as in the Urals, including exactly the same listed species (shown in Fig. 12 in National Atlas of Norway. Vegetation, Moen 1999).

Palsa mires are common also in the northeastern parts of Fennoscandia, and include, as in the Urals both domed and flat palsas. There are also small areas of palsa mires in the eastern mountains of Central Norway, at about 1000 m a.s.l. These southernmost palsa mires in Europe are threatened by climate change. An up to date distribution map of palsa mires in Europe is published in the European Mire Book (Joosten et al. 2017; p.128). In addition, the vegetation of palsas is very much alike between Fennoscandia and Northern Russia.

### References

- Joosten, H., Tanneberger, F. & Moen, A. (eds.) 2017. Mires and peatlands of Europe. Status, distribution and conservation. 780 p. Stuttgart: Schweizerbart Science Publisher.
- Minayeva, T. (ed.) 2016. Ecological restoration in Arctic: review of the international and Russian practices. 288 p. Syktyvkar-Naryan-Mar: Russian Academy of Sciences.
- Moen, A. 1999. National Atlas of Norway: Vegetation. 199 p. Hønefoss: Norwegian Mapping Authority.
- Sirin, A., Minayeva, T., Yurkovskaya, T., Kuznetsov, O., Smagin, V. & Fedotov, Y. 2017. Russian Federation (European Part). In: Mires and peatlands of Europe. Status, distribution and conservation (ed. by H. Joosten, F. Tanneberger, & A. Moen), pp. 589-616. Stuttgart: Schweizerbart Science Publisher.
- Taskaev, A.I. (ed.) 2006. Virgin forest of Komi. The UNESCO world cultural and natural heritage site. 288 p. The RIA Moscow: Russian Academy of Sciences Ural Branch, Komi Scientific Centre.
- Zagirova, S. & Schneider, J. (eds.) 2016. Ecosystem of a mesooligotrophic peatland in northwestern Russia: development, structure, and function. 172 p. Syktyvkar: Russian Academy of Sciences Ural Branch, Komi Scientific Centre.



Wetlands/peatlands along the Pechora river. Photo: Hans Joosten.



## Field symposium in the European Russian Arctic

Michael Trepel ([mtrepel@ecology.uni-kiel.de](mailto:mtrepel@ecology.uni-kiel.de))

Traveling with IMCG from subpolar Ural Mountains to the tundra at Cape Bolvansky in Northeast European Russia was an inspiring experience. In the Urals, we got in contact with a rich flora, permafrost and low palsa mires. The spring mire at the mountain foothills was very special. The sound of slowly flowing water, small hills formed by mosses and all this fresh green against a dark grey rock surface gave the site a holy atmosphere. Another highlight was experiencing the wide Pechora river delta with its flooded sedge reeds and in the north the low-mound tundra. We were able to study different palsa mires during our excursion and again it is fascinating how a few Sphagnum species can form such a variety of mirescapes. I was also impressed that the – for me – remote part of Northeast Russia both in the Urals and also around Naryan-Mar is under heavy pressure from tourists, berry pickers, reindeer herders, motor traffic and oil and gas industry. We saw signs of human disturbances everywhere and vegetation needs especially long time under the harsh climatic conditions to recover from these pressures. Therefore it was also good to see, that small environmental groups have started restoring sites and that they cooperate with the oil and gas industry, which is responsible for the impact.

Northeast European Russia is still far away from Western Europe; however, its nature is not untouched. The area needs our attention for a better protection of the wide tundra landscape with a variety of mire types.

## A short IMCG-Field Symposium 2017 – Quiz (... not to be taken too seriously)

Jenny Hammerich ([Jenny.Hammerich@hnee.de](mailto:Jenny.Hammerich@hnee.de)) & Christin Dammann ([Christin.Dammann@hnee.de](mailto:Christin.Dammann@hnee.de))

Please note that more than one answer can be correct!!!

### 1. Which one of these vehicles did the group take during the IMCG Field Symposium 2017?


☐

☐

☐

☐

☐

☐

### 2. How many hours - roundabout - did it take the average west European mire scientist to see the first mire during the IMCG Symposium 2017 (from home to the slope mire in Ural Mountains (excursion day 1))?

- ☐ 15 hours
- ☐ 36 hours
- ☐ 72 hours



**3. What does an Ural Mountain truck driver think when he sees what is shown in the picture below?**



- ☐ "Oh nice. Just a normal river in the Urals"
 ☐ "Perfect, I am thirsty and can fill up my water"
 ☐ "Finally a good road!"

**4. Which is the National Belarussian Mire Song?**

- ☐ My boggie is all in erosion (sung like "My bonnie lies over the ocean" – Scottish Folksong)  
☐ The Reindeer sleeps tonight (sung like "The lion sleeps tonight" by The Tokens)  
☐ Birch tree (sung like "lemon tree" by the fools garden)

**5. How fast can a reindeer (-calv) run?**

- ☐ Around 30km/h
 ☐ Around 50km/h
 ☐ Around 80km/h

**6. Which are the three IMCG Field Symposium 2017 yoga positions?**

- ☐ The Siberian pine
 ☐ The peeing reindeer
 ☐ The rubber boot  
☐ The palsa mire
 ☐ The Siberian larch
 ☐ The polygon mire

**7. How many Sphagnum Samples did K. I. Flatberg collect during all excursions?**

- ☐ Around 25
 ☐ Around 50
 ☐ Around 75

**8. How long can a full grown reindeer pee?**

- ☐ <10 sec.
 ☐ Around 30 sec
 ☐ > 60 sec.

*Results:*

1. All of them AND MORE
2. 72 hours
3. All of them, but as experienced mainly "Finally a good road"
4. "My boggie is all in erosion"
5. Around 80 km (grown reindeer), no speed limit found for a calv
6. The peeing reindeer, the palsa mire, the Siberian larch
7. Around 75
8. As experienced: over 60 seconds

**Mires and Peat**

Find the journal online at <http://mires-and-peat.net/>. New papers published in August 2017 included

- Indicative effects of climate change on groundwater levels in Estonian raised bogs over 50 years. [E. Lode, M. Küttim & I.-K. Kiivit] Volume 19: Article 15. [http://mires-and-peat.net/media/map19/map\\_19\\_15.pdf](http://mires-and-peat.net/media/map19/map_19_15.pdf)
- The history, present status and future prospects of the Russian fuel peat industry. [P.S. Tcvetkov] Volume 19: Article 14. [http://mires-and-peat.net/media/map19/map\\_19\\_14.pdf](http://mires-and-peat.net/media/map19/map_19_14.pdf)
- Investigating the internal structure of four Azorean Sphagnum bogs using ground-penetrating radar. [D. Pereira, E. Dias & M. Ponte] Volume 19: Article 13. [http://mires-and-peat.net/media/map19/map\\_19\\_13.pdf](http://mires-and-peat.net/media/map19/map_19_13.pdf)

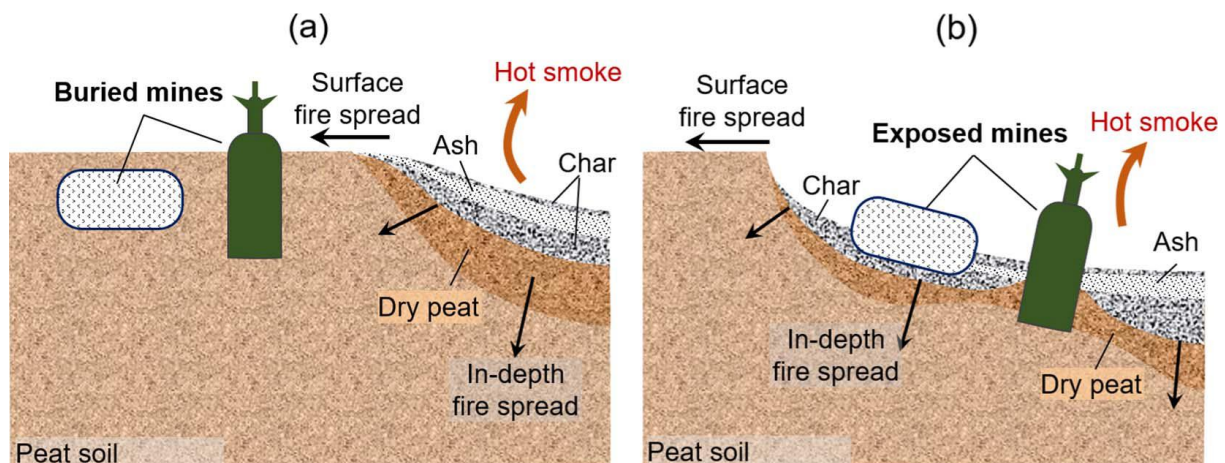
Send your new manuscripts on any topic relating to mires, peatlands and peat to the Editor-in-Chief Olivia Bragg: [o.m.bragg@dundee.ac.uk](mailto:o.m.bragg@dundee.ac.uk)

## News from the regions

### Global

#### Smouldering peat used for unearthing minefields

Researchers from Imperial College London have developed a technology called O-Revealer that ignites peat, causing a smouldering fire that strips the upper layer of soil to reveal the landmines – making it easier to dispose of them. The O-Revealer technology consists of an electric power source and a heating coil that is inserted into the top layer of peat. When switched on it slowly heats the peat to 500 degrees Celsius, which ignites it causing a smouldering peat fire. The researchers have so far successfully tested the device in the lab with dummy landmines that were buried in peat soil. They used a fan to simulate wind conditions, which affect the intensity and direction of a smouldering fire, and showed how they could partially unearth the buried landmines. The engineers who wrote the [study](#), published in the journal *Experimental Thermal and Fluid Science*, have also shown the areas in the world where O-Revealer may be of most benefit. They did this by cross-referencing world maps of minefields with maps of peatlands. Areas with mine burdened peatlands most likely to benefit from O-Revealer technology include the Falkland Islands/Malvinas, Vietnam, Burma, Laos, Uganda, Zimbabwe and former Yugoslavia. Dr Guillermo Rein, the lead author from the [Department of Mechanical Engineering](#) at Imperial, said: “The insidious threat of landmines and their impact on people is well documented around the world. However, the technical and safety challenges in removing these minefields are huge. Even a rich and technologically advanced country such as the UK faces challenges.



Only 5,000 landmines out of the original 20,000 anti-personnel and 5,000 anti-tank landmines have been cleared in the Falkland Islands/Malvinas. “The British Government, for example, had a legal responsibility to remove landmines from the Falkland Islands by 2009, but due to the slow rate and high costs of conventional mine removal techniques they’ve had to request a ten-year extension to their programme.”

The landmine problem worldwide is rising. It is estimated that two to five million landmines are laid every year. Globally, blast injuries caused by landmines currently exceed 26,000 people per year. However, the clearance of these minefields is ten times slower than the rate at which they are laid, for example, more than 30 years since the 1982 war between Argentina and the United Kingdom only 5,000 landmines out of the original 20,000 anti-personnel and 5,000 anti-tank landmines have been cleared in the Falkland Islands/Malvinas. “That is why a study like ours is important as we need to find quicker and safer methods for revealing landmines so that they can be removed,” added Dr Rein. In the lab, the Imperial team replicated two of the most common types of landmines – the Italian SB-33 (widely used in the Falklands/Malvinas) and the Serbian PROM-1 (used widely worldwide). In terms of the potential environmental impact of burning peat, the team say that their method would be carefully controlled if used in the field. The smouldering fires would be very small. The researchers also say the impact would be minimised by choosing at what time of the year they burn peat. The next steps will see the team trialling the technology in the field. They predict that the O-Revealer is around five years from being used in the field.

[http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news\\_22-8-2017-10-3-52](http://www3.imperial.ac.uk/newsandeventspggrp/imperialcollege/newssummary/news_22-8-2017-10-3-52)



### Preview IPS Jubilee Symposium 2018

The Dutch National Committee of the International Peatland Society (IPS) invites all IPS members and other interested persons to the IPS 50 Year's Jubilee Symposium "Peatlands: past, present and future" (working title) in 2018. The venue will be in Rotterdam and the dates are set now to 11 - 13 September 2018. The preliminary programme includes keynote speeches and parallel sessions as well as an icebreaking party on Tuesday, lectures on 4-6 sites on Wednesday (focusing on landscape history, soils subsidence, CO<sub>2</sub> emissions and water control) plus a gala party on the same evening, followed by visits to high tech horticulture and peat application sites on Thursday. Discussions will deal with social, economic and environmental aspects of peat and peatlands, including worldwide peat demand forecasts, with special focus on Asia. The event will be closed by a panel discussion. Also additional excursions are possible, e.g. to flower auctions, potting soil companies or machinery and other suppliers.



*Peatland desertification in Ukraine. Photo: Hans Joosten.*

### UN Convention to Combat Desertification

The Thirteenth Session of the Conference of the Parties to the UN Convention to Combat Desertification is taking place 6-16 September 2017 in Ordos, Inner Mongolia, China. The UNCCD is the centerpiece in the international community's efforts to combat desertification and land degradation in the drylands. The Convention was adopted on 17 June 1994 and currently has 195 parties. The UNCCD recently recognizes the importance of peatlands within her tasks. Below are some quotes from UNCCD's recent report on the role of 'land' in climate change mitigation:

- "Setting Priorities: The transition to climate-smart land management practices, including for example low-emissions agriculture, agroforestry and the restoration of high carbon-value ecosystems, such as forests and peatlands, will require sectoral coordination, multi-stakeholder engagement and new approaches to integrated land use planning."
- "Global soils act as a large "safety deposit box" for carbon. In fact, more carbon resides in soil than in the atmosphere and all plant life combined: some 2,500 billion tonnes of carbon in soil compared with around 800 billion tonnes in the atmosphere and some 560 billion tonnes in plant life. However, due to the poor management and intensive cultivation of soils, we have lost between 25-75% of the original stocks of soil carbon."

- “Forests, peatlands and mangroves represent high carbon-value ecosystems. Reducing the rates of loss and degradation of these natural ecosystems offer cost-effective strategies that deliver immediate climate action. For tropical forests, which have the largest carbon pool, their preservation would reduce emissions by 1.3 - 4.2 GtCO<sub>2</sub>e per year in 2030.<sup>27</sup> It is thought that 25-30% of all terrestrial carbon is in peatlands and, by conservative estimates, the decomposition of drained peatland generates 1.3 GtCO<sub>2</sub>e emissions per year.”
- “The restoration of peatlands offers perhaps the greatest and most actionable opportunity for carbon sequestration. While peatlands only cover 3% of the global land area, they contain the equivalent of twice the carbon stock of all forest biomass worldwide. A quarter of the world’s soil carbon is held in peatlands. In addition to the carbon benefits, restoring peatlands provides other important benefits to biodiversity, ecosystems and human communities. Many peatlands play an important role in filtering and regulating water flows into streams and reservoirs thus impacting the quality and quantity of drinking water. Immediate action to rewet and restore degraded peatlands is well within reach for many of the large emitting countries.”

[http://www.unccd.int/Lists/SiteDocumentLibrary/Publications/2015Nov\\_Land\\_matters\\_For\\_Climate\\_ENG.pdf](http://www.unccd.int/Lists/SiteDocumentLibrary/Publications/2015Nov_Land_matters_For_Climate_ENG.pdf)



*Desertified peat soil in Ukraine. Photo: Hans Joosten.*

#### **Further interesting reads:**

- <http://www.climatechange.ie/undiscovered-peatlands-might-be-the-most-important-thing-you-learn-about-today-heres-why/>

## **Asia**

### **Indonesia**

#### **80% of Bornean orangutans live outside protected areas**

Four fifths of wild orangutans in Kalimantan, the Indonesian portion of Borneo, live outside national parks and other protected areas, according to a new [study](#) by the Indonesian government. The study, called the 2016 Orangutan Population and Habitat Viability Assessment, was led by the Ministry of Environment and Forestry. Released last month, it is the third of its kind, with the last one done in 2004. The study confirms that orangutan populations have plummeted as their forest habitats continue to be flattened by the expansion of



industry. So too has an illegal pet trade taken its toll on remaining populations. The study estimates that 57,350 critically endangered Bornean orangutans (*Pongo pygmaeus*) remain in Kalimantan. That's 13-47 individuals per 100 square kilometers, down from around 45-76 in 2004. If an orangutan's habitat isn't protected by the government, it usually falls within a vast tract of land allocated to one or more logging, plantation or mining companies. Some firms try to conserve stretches or fragments of forest within their concessions, while others simply clear it. By contrast to their Bornean cousins, some 65 percent of orangutans on Indonesia's main western island of Sumatra, the only other place where the primates are found, live inside protected areas. The study's finding is expected to influence the way stakeholders protect Bornean orangutans, with additional focus on how to do so outside conservation zones.

In a joint [statement](#) with Forum Orangutan Indonesia, a coalition of groups that participated in the study, the ministry called for "more serious efforts" to protect orangutans whose forest habitats lie within company lands. Other strategies identified by the report for mitigating threats to Bornean orangutans include slowing or stopping deforestation and strengthening law enforcement.

<https://news.mongabay.com/2017/09/80-of-bornean-orangutans-live-outside-protected-areas/>

### **Greenpeace calls upon the Indonesian Government to get serious about saving Orangutans**

The Indonesian "Orangutan Conservation Strategy and Action Plan" was launched in 2007 as a ten year program to ensure the survival of orangutans in Indonesian Borneo( Kalimantan ) and Sumatra. The plan was tagged as a way for Indonesia to not only save the orangutans but also to reduce its carbon emissions when orangutan habitats are protected. Quoting from this article for 2007: "...In the last 35 years about 50,000 orangutans are estimated to have been lost as their habitats shrank. If this continues, this majestic creature will likely face extinction by 2050...The fate of the orangutan is a subject that goes to the heart of sustainable forests ... To save the orangutan we have to save the forest, said Indonesian President Susilo Bambang Yudhoyono at the launch of the plan."

We are getting close to the end of the ten year plan and a press release issued by the Ministry of Forests and Environment on the "Current Status of Orangutan Population and Habitat" implied there was an increase in orangutan populations. The increase in populations seemed to contradict other predictions in the same report that only 38% of the current population will be viable in the next 100-500 years. In a press release issued on the same day as the Ministry of Forests and Environment, Greenpeace was much clearer on the status of orangutans in Indonesia: " The number of orangutans in Indonesia continues to decline. From the latest estimates in the 2016 Indonesian Population and Habitat Viability Assessment (PHVA) report released today, the density of orangutan populations on Bornean land (including Sabah and Sarawak) declined from 0.45 to 0.76 individuals / km<sup>2</sup> (PHVA 2004 ) to 0.13-0.47 individuals / km<sup>2</sup>.

In a press statement last month, the Minister of the Environment and Forests, Siti Nubaya was quoted as saying: " One of the efforts is the Ministry of Environment and Forestry is committed to protect the forest areas that become the habitat of orangutans and other protected animals. This is also done in commemorating World Orangutan Day which is commemorated every August 19."

The ministry continues to stress that saving the forests will require the participation of communities, civil societies and industries. However, in order to save forests and orangutan habitats the first step that must be taken has to be legislation from the government to give these areas official protection. Only then, can we talk about full participation from communities and civil societies to realize sustainable forests and well preserved biodiversity.

- [http://www.huffingtonpost.com/entry/greenpeace-calls-upon-the-indonesian-government-to\\_us\\_59ad9e08e4b0c50640cd611b](http://www.huffingtonpost.com/entry/greenpeace-calls-upon-the-indonesian-government-to_us_59ad9e08e4b0c50640cd611b)
- [http://news.xinhuanet.com/english/2017-08/22/c\\_136546886.htm](http://news.xinhuanet.com/english/2017-08/22/c_136546886.htm)

### **Sungai Putri forest threatened by development despite new rules**

In a remote corner of Borneo, an Indonesian company and its Chinese partner are pushing ahead with an industrial wood plantation in a tropical forest and orangutan habitat, apparently flouting government regulations intended to prevent a repeat of disastrous fires in 2015. Photos and drone footage taken by activists in late July show an extensive drainage canal full of water, heavy earth-moving equipment on the land and planting of seedlings despite an order in March from the Environment and Forestry Minister Siti Nurbaya to cease operations. The exploitation of the 57,000-hectare Sungai Putri forest, which is home to as many as 1,200 critically endangered orangutans, and Chinese investment in a related wood-processing plant is supported by provincial and district officials in West Kalimantan. But it is in conflict with the central

government's unevenly enforced moratorium on the drainage and exploitation of Indonesia's extensive peatlands, which was instituted after massive dry season fires in 2015.

A representative of local communities in Sungai Putri said villagers didn't know about the government freeze on peatland drainage when the Indonesian company, Mohairson Pawan Khatulistiwa, sought their agreement for what it called a trial plantation and digging of a canal to transport wood to a factory. They now want the agreement, which involved \$300 of compensation for each hectare of land taken by the canal, canceled. "At that time we did not know that canals should not be created on peatlands," said Abram, who uses one name. "So, frankly speaking, we felt lied to."

The Indonesian company is working with a Chinese wood-processing business Benshang Advanced Materials Co. which according to the website of the Ketapang district government in West Kalimantan is investing 4 trillion rupiah (\$300 million) in the area, including a factory. The government's commitment to protecting and restoring peatlands has become muddled following pressure from industry and provincial governments. An April 25 letter from the governor of West Kalimantan province to President Joko "Jokowi" Widodo asserts that restricting use of peatlands will threaten nearly 90,000 jobs and jeopardize billions of dollars of exports. Jokowi in July said that ministries should not issue new regulations that scare away investors, which local media reported as a rebuke to the Forestry and Environment Ministry.

Abram said the companies have continued to work on the plantation. Earlier in August month the Indonesian side visited villagers and told them not to make a fuss and also asked for a letter from the community approving of the canal, which was rejected, he said. The chief of Ketapang district, Martin Ratan, said he welcomes investment in the region and the bankrolling of the plantation by the Chinese company will provide 2,000 jobs. He said communities should not cancel their agreements because they will lose out on economic opportunities. He insisted that work on the canal, which was envisaged as 60 kilometers long, had stopped and the company was only planting. "Drainage canals will not continue in the peatlands, and they plan to carry out their products with lorries, they plan to build a road for their lorries but that has not yet begun," he said.

Greenpeace has warned that drainage of the Sungai Putri peatlands will create a significant fire risk that threatens communities and the orangutan population. Palm oil plantations around Sungai Putri burned extensively in the 2015 fires, it says. Indonesia's disaster mitigation agency said on August 22 that one third of the more than 500 fires now burning across Indonesia in the current dry season are in West Kalimantan.

"This company appears to be not only ignoring government instructions but also restarting its operations," said Greenpeace forests campaigner Ratri Kusumohartono. "If the government is serious about stopping fires it must stop this company from developing on peatland and protect this critical peatland forest."

- [http://www.kpvi.com/news/national\\_news/indonesia-forest-threatened-by-development-despite-new-rules/article\\_22be39f2-54eb-5438-a0d7-32699905c0b8.html](http://www.kpvi.com/news/national_news/indonesia-forest-threatened-by-development-despite-new-rules/article_22be39f2-54eb-5438-a0d7-32699905c0b8.html)
- <https://www.pressreader.com/myanmar/the-myanmar-times/20170824/281741269543355>

### **Peatland regulation requires accurate map support**

The Department of soil science and land resources, Faperta Insitut Pertanian Bogor (IPB) argues, that the government needs a large-scale map of at least 1: 50,000 and complete data on the extent of the area as a reference to make peat regulation. The 1: 250,000 peatland maps are still too rough. If peat regulation is 'forced' only by referring to incompatible maps, there will be a lot of problems coming up. "Improper understanding and inaccurate data should not be the basis for regulation. Moreover, if the regulations that could have a major impact on the lives of many people," said DR Darmawan MSc from the Department of land science and land resources, Faperta IPB, at a national seminar on peat. Detailed mapping and analysis of hydrotopography and peatland cover as a basis for the physical work of peat restoration, is required for an accurate peat restoration plan. Darmawan added that a map without detail also causes data on peat area to vary. According to the Ministry of Environment and Forestry the peat area is more than 20 million hectares. Meanwhile, the geospatial information agency (BIG) called the 'agreed' data of the Ministry of Agriculture, and KLHK only about 14 million. <http://en.industry.co.id/read/1113/peatland-regulation-requires-accurate-map-support>

### **Final round of the Indonesian Peat Prize**

On July 26, the Scientific Advisory Board (SAB) has announced the finalists of the Indonesian Peat Prize Contest. Each of the remaining teams was given the opportunity to present and discuss their solution with the Board and to showcase their work to the broader public. The Indonesian Peat Prize Contest was launched in May



2016 in order to find a more accurate, affordable and timely way of mapping Indonesia's vast stores of underground peat — an important step toward its sustainable management. A \$1 million prize purse will be awarded to the winning team. An initial 44 teams hailing from Indonesia, the United States, Australia, the United Kingdom, Canada, the Netherlands, Germany, Hungary, Malaysia and Singapore participated in the contest. The five finalist teams selected include Applied GeoSolutions, DAG4Peat and SkyTeam, Deltares, Exsa-Intermap-Forest Inform and International Peat Mapping Team (IPMT). The five finalists have to submit their final report by January 12, 2018. <http://indonesianpeatprize.com/>



*Peat coring in Sumatra with dr. Muh Bambang Prayitno, Sriwijaya University, Palembang. Photo: Hans Joosten.*

#### **Palm oil company forced to restore rainforest and peatland**

For the first time ever, a palm oil company has been forced to restore rainforest and peatland in order to continue supplying the global market. Under pressure from customers and civil society, Malaysian palm oil company FGV has promised to restore over 1,000 hectares of the peat forest in West Kalimantan, Indonesia. FGV is a subsidiary of FELDA, the world's largest palm oil grower. With the new policy FGV pledges:

- "No deforestation, no conversion of High Conservation Value (HCV) areas, no new planting on peat land immaterial of size and depth and no new development of areas classified as having High Carbon Stock, irrespective of when the lands are acquired or owned by FGV Group;
- To adopt best management practices for existing peat land estates and endeavour to rehabilitate peatlands that have been planted after 25th August 2016; and
- To stop immediately all new development on peatlands irrespective of when the land was acquired or any previous RSPO New Planting Procedure approval."

The good news couldn't come at a better time for Indonesia's forests and its inhabitants. A report released end of August 2017 by Indonesia's Environment and Forestry Ministry confirmed that the number of orangutans has plummeted since 2004. Seemingly in total contravention of government regulations, photos and drone footage show heavy earth moving equipment and an extensive drainage canal full of water in Sungai Putri forest. The area is home to as many as 1,200 orangutans -- the third largest population in Indonesia. "The government is clearly failing to protect Indonesia's most iconic animal species, as companies continue to develop plantations in forests and peatland that are some of the last homes for orangutans," Greenpeace Forest Campaigner Ratri Kusumohartono said. "If the government is serious about stopping fires it must stop this company from developing on peatland and protect this critical peatland forest."

- <http://www.greenpeace.org/international/en/news/Blogs/makingwaves/its-official-orangutans-are-on-the-decline-an/blog/60137/>

- <http://www.thestar.com.my/news/nation/2017/08/31/fgv-to-restore-over-1000ha-of-rainforest-in-west-kalimantan/>
- <https://www.valuewalk.com/2017/09/felda-global-ventures/>
- <http://cleanmalaysia.com/2017/09/09/malaysian-palm-oil-company-agrees-rehabilitate-1000-hectares-peatland/>

### **Palm oil producers pledge to promote sustainability at UN forum**

Amid mounting international pressure, the Indonesian Palm Oil Association (GAPKI) has reassured the United Nations of its “strong commitment” to the sustainable production of palm oil in Indonesia. GAPKI chairman Joko Supriyono told a forum hosted by the United Nations Development Program (UNDP) in New York on September 5, that palm oil producers had no choice but to adopt the sustainable production of palm oil. “The industry has a strong commitment to implementing sustainable production of palm oil through various government regulations, particularly those related to deforestation and peatland,” Joko said. He said Indonesia had regulations to prevent further deforestation and protect peatland that companies had to abide by. Joko added that the commitment to sustainability is evident in the increasing number of companies adopting the Indonesian Sustainable Palm Oil (ISPO) standards, from only 10 companies in 2013 to 226 companies last year and 304 companies as of August 2017. Palm oil is Indonesia’s main non-oil and gas export, contributing US\$18.5 billion in exports last year. The sector also absorbs more than 5 million workers and encourages economic growth in rural areas. <http://www.thejakartapost.com/news/2017/09/06/palm-oil-producers-pledge-to-promote-sustainability-at-un-forum.html>



*Young oil palm plantation on peatland in South Sumatra. Photo: Hans Joosten.*

### **Indonesia to increase palm oil production to 42 million tons by 2020**

Indonesia is going to increase palm oil production to 42 million tons by 2020 to maintain its global lead,, Indonesian Palm Oil Producers Association (GAPKI) chairman Joko Supriyono said in New York on Wednesday September 6. “We will pursue this through increasing the productivity of our existing plantations, not through the expansion of new plantation areas,” he said during the launch of the Good Growth Partnership at the UN headquarters. The new program, managed by the United Nations Development Programme (UNDP), brings together an integrated approach to the sustainable production of agricultural commodities, with a focus on palm oil, beef and soy. Joko said the productivity of smallholder plantations, which account for over 40 percent of palm oil production, was currently half or even one third of the productivity levels exhibited by corporations. Therefore, by improving the productivity of smallholders, Indonesia will maintain its lead in the world market, he said. Indonesia produced 35 million tons of palm oil last year, around 55 percent of global production.



Environmentalists have criticized Indonesia's palm oil expansion over the past 20 years, which they claim has degraded forests and peat land. Responding to the criticism, the government has halted the issuance of licenses for new plantations. "We support the moratorium, to protect primary forests and peat land. But as an industry, we have to continue to grow," Joko said.

<http://www.thejakartapost.com/news/2017/09/08/indonesia-to-increase-palm-oil-production-to-42-million-tons-by-2020.html>

#### **Jambi: peat fires continue**

While the number of hot spots in some areas across Sumatra is declining with the onset of the rainy season, peatland and forest fires in Jambi continue to break out. The Jambi administration's Land and Forest Fire Task Force data shows that fires in the province cover 488 hectares in seven regencies. One of the task force's information personnel, Maj. Jasman Bangun, said the task force was fighting fires using water bombs and through land operations. "Two aircraft have carried out 65 water bombings to extinguish the fires. But because of the fires are extensive and on peatland, fire fighting efforts must be continued," he added. Jasman said limited equipment and personnel had hampered the efforts. "The fires are on peatland. We must ensure that the fires, which burning far below the soil surface, are fully extinguished."

<http://www.thejakartapost.com/news/2017/09/06/jambi-land-forest-fires-continue.html>

#### **Sixth province declares emergency as fires spread**

The number of dry season fires burning across Indonesia has jumped to more than 500 and a sixth province has declared a state of emergency, the disaster mitigation agency said on August 22. Spokesman Sutopo Purwo Nugroho said satellite images show 538 fires across 23 provinces, up from about 160 early in the month. Nugroho said Central Kalimantan was the latest province to declare a state of emergency. Last month five provinces — Riau, Jambi, South Sumatra, West Kalimantan, and South Kalimantan — declared emergencies in anticipation of a worsening of the fires and to enable measures to mitigate the choking smoke that peatlands generate when burned. He said the agency has deployed 21 helicopters to help extinguish fires in Sumatra and Kalimantan as well as a Casa 212 aircraft to induce rain in Sumatra.

More than one-third of the fires are in West Kalimantan on the Indonesian part of Borneo and one quarter are in the easternmost Indonesian region of Papua. Typically the fires have affected Sumatra and Kalimantan the most, but plantation companies have found new frontiers in Papua's wilderness, exposing it to greater fire risk.

<http://macaundaytimes.com.mo/indonesia-sixth-province-declares-emergency-fires-spread.html>

#### **BRG earmarks Rp10bn for South Kalimantan peatland restoration**

The Peatland Restoration Agency (BRG) chairman Nazir Foead has announced that South Kalimantan received only Rp10 billion out of Rp24 billion proposed for peatland restoration. Nazir said that the funds have been reduced as the central government slashes its budget. In May 2017 the state had allocated Rp865 billion for the BRG for 2017 to restore peatland in seven priority provinces. Nazir is confident that the restoration program in South Kalimantan will continue despite the decision. He added that more funds will be provided next year.

In South Kalimantan, BRG will restore this year 105,023 hectares of peatland spread across four peatland hydrological units (KHG). In addition, BRG will be focusing on restoring burned peatland and 12,798 hectares of land as well as restoring peat domes that have been turned into 45,836 hectares of plantation areas. The BRG will also protect 33,398 hectares of undisturbed peatland. In Central Kalimantan, Nazir estimated that 55 percent of peatland are degraded and 45 percent are in good condition. "Some are already cleared, dried out and neglected. We will restore them by engaging locals to maintain the hydrology of peatland during the dry season," Nazir said. According to Nazir, the BRG will focus on canal blocking, well drilling, and irrigation channels construction. BRG and South Kalimantan Reforestation Team built 50 drilled wells in 2016. Nazir said that the method will keep peatland moist for agriculture during the dry season. "We will take into account conservation, plantation and support zones," he said. Besides South Kalimantan, the BRG is tasked with restoring 2 million hectares of peatland across seven provinces. Nazir is optimistic that the agency will complete the restoration program by 2020.

- <https://en.tempo.co/read/news/2017/08/14/206899691/BRG-Earmarks-Rp10bn-for-South-Kalimantan-Peatland-Restoration>
- <https://en.tempo.co/read/news/2017/05/17/206875988/Govt-Allocates-Rp865-Billion-for-Peatland-Restoration>



## Singapore

### **#GoHazeFree campaign encourages Singapore restaurants to use sustainable palm oil**

The People's Movement to Stop Haze (PM Haze) is promoting citizen action to stop haze pollution by convincing restaurant owners in Singapore to use sustainable palm oil in their kitchens. Haze pollution is a recurring problem in Southeast Asia, mainly caused by deforestation and burning of peat lands in western Indonesia to make way for the expansion of palm oil plantations. This causes haze to descend not only on Riau, Indonesia, but also in the nearby countries of Singapore and Malaysia.

According to PM Haze, more than 50 percent of products in supermarkets contain palm oil, which motivated the group to launch a campaign in 2015 enjoining consumers to boycott companies engaged in unsustainable palm oil production. This year, PM Haze hopes to "raise awareness among the public and eatery owners about haze-free palm oil" through the #GoHazeFree campaign. The group's initial research revealed that more than 90 percent of popular restaurant chains in Singapore use palm oil and none are haze-free.

Sustainable palm oil means it is sourced from haze-free plantations. Based on the standards set by the Roundtable on Sustainable Palm Oil (RSPO), haze-free plantations "use zero-burning method to clear land, respect land rights and work with local communities to minimize use of fire, protect forests and plant on open land, avoid new planting on peat and properly manage water level in existing plantations on peat, and they have sufficient manpower and equipment to detect and stop fires early."

- <https://globalvoices.org/2017/09/01/gohazefree-campaign-encourages-singapore-restaurants-to-use-sustainable-palm-oil/>
- <https://www.theonlinecitizen.com/2017/08/16/gohazefree-campaign-targets-use-of-unsustainable-palm-oil-in-eateries/>

## Europe

### Belarus



*IMCG swarming out over Sporauski mire (2014), one of the Clima East project sites. Photo: Hans Joosten.*

### **EU project assists in preserving peatlands in Belarus**

Fighting climate change, preventing soil degradation and peat fires and preserving biodiversity of peatlands were just a few of the topics discussed during a workshop organised by the EU-funded project Clima East in the "Sporauski" biological reserve in Belarus on 15 August. The seminar gathered representatives of green projects

to share experiences in sustainable management of Belarusian peatlands. Clima East demonstrated the work of equipment necessary for biomass harvesting and transportation, which it provided for the Sporauski reserve in 2016. The workshop was preceded by Sporauski hayfields festival on 8-9 August, where Clima East demonstrated its nature protection projects implemented in Belarus.

The Clima East pilot project in Belarus aims to address the most critical problems of the country's peatland conservation and management, seeking to demonstrate innovative approaches to ecosystem-based climate mitigation and adaptation at peatlands. As the project is coming to an end, the event's agenda focused on the results of work done to ensure conservation and sustainable use of wetlands in Belarus, finding methods of solving problems. "Some of the results obtained during the project implementation are a new experience for us," said Mikhail Nikiforov from the Belarusian Science Academy. "Many approaches and scientific ideas were used for the first time." Participants of the seminar inspected the project's pilot territories and visited the alternative energy station. They also reviewed the work of equipment used to harvest peatland biomass.

The European Union funded Clima East Programme assists Eastern Neighbourhood Partnership Countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) and Russia in implementing approaches to climate change mitigation and adaptation. Clima East consists of a policy component and a pilot projects component. The policy component is aimed at fostering improved climate change policies, strategies and market mechanisms. Pilot projects have been implemented in the partner countries by UNDP to support the development and show the feasibility of ecosystem-based approaches ([www.climaeast.eu](http://www.climaeast.eu)).

- <http://www.finchchannel.com/~finchannel/world/67505-eu-project-summarises-results-of-its-assistance-in-preserving-peatlands-in-belarus>
- <http://www.euneighbours.eu/en/east/stay-informed/news/eus-clima-east-project-helps-preserve-belarusian-peatlands>
- <http://www.climaeast.eu/news/pilot-project-in-belarus-undp-green-projects-teamed-up-to-share-experience-on-sustainable-management-of-belarusian-peatlands>



*IMCG members Wendelin Wichtmann (l.) and Andi Haberl (both Succow Foundation) participating in the 2015 Sporauski hay-mowing competition. Photo: Galina Sidarovich.*



## Ireland

### International support for curlew conservation on lodge bog

The Irish Peatland Conservation Council (IPCC) have received international support from Seacology for their efforts to conserve peatland habitat for the breeding Curlew of Lodge Bog. The distinctive 'cry' of the Curlew was once a familiar sound echoing around the Irish countryside during the summer months, but sadly today the Curlew is one of Ireland's most threatened bird species. The National Parks and Wildlife Service (NPWS) has reported a 98 per cent decline in Curlew populations since 1980, with less than 125 breeding pairs remaining in Ireland. 71% of the Irish native Curlew breed on peatlands. Although the Curlew has returned to Lodge Bog year-on-year, 2017 was the first instance of confirmed breeding of Curlew, and the successful hatching of a live chick. The Curlew feeds by probing its long, curled beak into the wet peatland pools. As peatland habitats are freshwater, they have the potential to freeze during the winter months. To ensure they can continue to feed throughout the winter, the Curlew retreats to coastlines, returning to the peatlands around Ireland to breed and rear their young in spring. Ireland has lost 80 per cent of their peatland habitats and the decline in Curlew populations can be directly linked to habitat fragmentation and even complete loss of breeding habitat due to the exploitation of Irish peatlands. With this international support from Seacology, the IPCC will continue restoration works on Lodge Bog to ensure suitable habitat for breeding Curlew into the future and raising awareness of the plight of the Curlew in Ireland. "If we don't act now the Curlew, an Irish bird, faces extinction by 2025," Nuala Madigan, IPCC, Education Officer, commented. "IPCC plan to raise the profile of the Curlew throughout the Island of Ireland and do all we can to prevent the extinction of this iconic peatland bird."

<https://greennews.ie/international-support-curlew-conservation-lodge-bog/>

## Russia



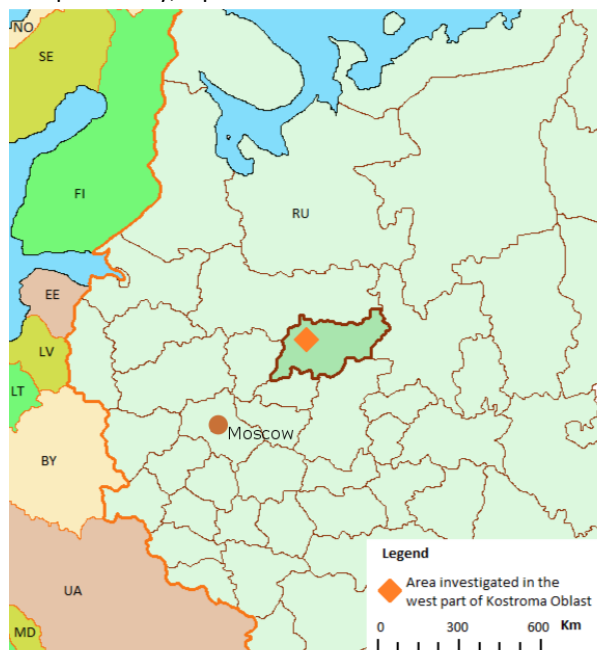
*Soltsy mire. Photo: Artem Leostrin*



### Discovering the uniqueness of Middle Russian rich fens: 1st step.

Artem Leostin ([ALeostin@binran.ru](mailto:ALeostin@binran.ru))

An interregional group of Russian mire scientists has in August 2017 visited a complex of minerotrophic mires located in Kostroma region (Middle Russia). Kostroma region is one of the least investigated areas in Middle Russia and there are only very few data on mires of this region. The aim of the study was to collect basic data on plant diversity, peat composition and ecological parameters of surface and ground waters in the mire complex Soltsy, a planned conservation area.



The study area (left) with *Ligularia sibirica* (right)- Photo: Artem Leostin

The mire complex is located in the Vocha river valley (Upper Volga basin) at the northern part of Middle Russia (Kostroma region). The exact location of the mire remained unknown until 2013 and was revealed by a hundred years old herbarium label of *Ligularia sibirica* stored in the Herbarium of Moscow State University.

The vascular flora of Soltsy mire counts more than one hundred species and includes a number of rare and IUCN red listed ones. The mire complex is uniquely characterized by sedge-grassy communities with local dominance of *Schoenoplectus tabernaemontani*, *Ligularia sibirica* and some orchid species rare in Middle Russia and by mire ponds that are the habitat of several rare stonewort species (*Chara* spp.). The pH of the surface water in these ponds reaches 8.45, electric conductivity over  $800 \mu\text{S cm}^{-1}$ .

The Soltsy mire complex represents a combination of spring fen and bog mire sites where vascular plants and mosses of different ecological preferences grow together. The formation history of Soltsy mire is until now unclear and needs further work. Besides, this mire presents an excellent place for monitoring as a complex of semi-natural communities that has been mowed until the 1960-70s.

It is worth noting that Soltsy mire was in the 1770s visited by I. G. Georgi, a famous naturalist, who found remains of an old salt extraction factory and recorded some rare plant species in this place. The highly mineral rich groundwater feeding Soltsy mire was a source of salt extraction for the local community in the 16<sup>th</sup> to 19<sup>th</sup> century. Current floristic survey indeed revealed the presence of a number of rare halophytic plant species like *Cladium mariscus*, *Schoenoplectus tabernaemontani* and *Angelica palustris* in this place. Soltsy mire is thus a unique wetland complex in Middle Russia offering excellent opportunities for future investigations.

The area is very sparsely populated and population has the tendency to further decrease. All former agricultural lands in the vicinity of Soltsy mire are abandoned and are overgrowing with trees. So, the only threat to the state of the mire is commercial logging nearby the borders of the planned conservation area causing changes of water table.

The research is supported by the Rufford Small Grants for Nature Conservation ([http://www.rufford.org/projects/artiom\\_leostin](http://www.rufford.org/projects/artiom_leostin)). All data obtained in this project will contribute to the establishment of a new protected area.



*Dmitriy Philippov and Olga Galanina coring Soltsy mire. Photo: Artem Leostrin*

## **Sweden**

### **Climate Smart Agriculture on Organic Soils**

Peatlands store a major share of the world's soil organic carbon. Many European peatlands have been drained and cultivated in the past centuries. This fosters land surface subsidence and peat mineralization. Therefore, drained organic soils are a large source of greenhouse gases (GHG) emissions and, at the same time, at a high risk of being degraded and lost. At this International Conference on 23-24 November 2017 in Uppsala, Sweden,, we want to discuss options for maintaining production on organic soils while reducing GHG emissions and buffering climate change. More information: <http://www.slu.se/CAOSconference>

## **United Kingdom**

### **Festival celebrates Peak District moors**

BogFest, which takes place September 21 to 23 at venues throughout the Edale, is set to celebrate the iconic moorland of the Peak District and South Pennines. BogFest is being jointly organised by the Moors for the Future Partnership and the IUCN UK Peatland Programme, encapsulating a conference programme for invited delegates alongside a range of engaging activities and sessions for all ages of the public. Events that members of the public can look forward to include a poetry evening, feature documentary, talk on sphagnum moss, yoga, introduction to sketching and guided walk. There will also be activities, stalls and entertainment on offer. Full details of all the events taking place as part of BogFest, as well as booking information, can be found by visiting the Moors for the Future Partnership website [www.moorsforthefuture.org.uk/public-events](http://www.moorsforthefuture.org.uk/public-events)

### **UK's damaged peatlands win new support to tackle climate change**

A national initiative to conserve the UK's peatlands has won a five year extension in a bid to stem the threats of climate change and flooding and tackle critical water supply issues. The IUCN (International Union for the



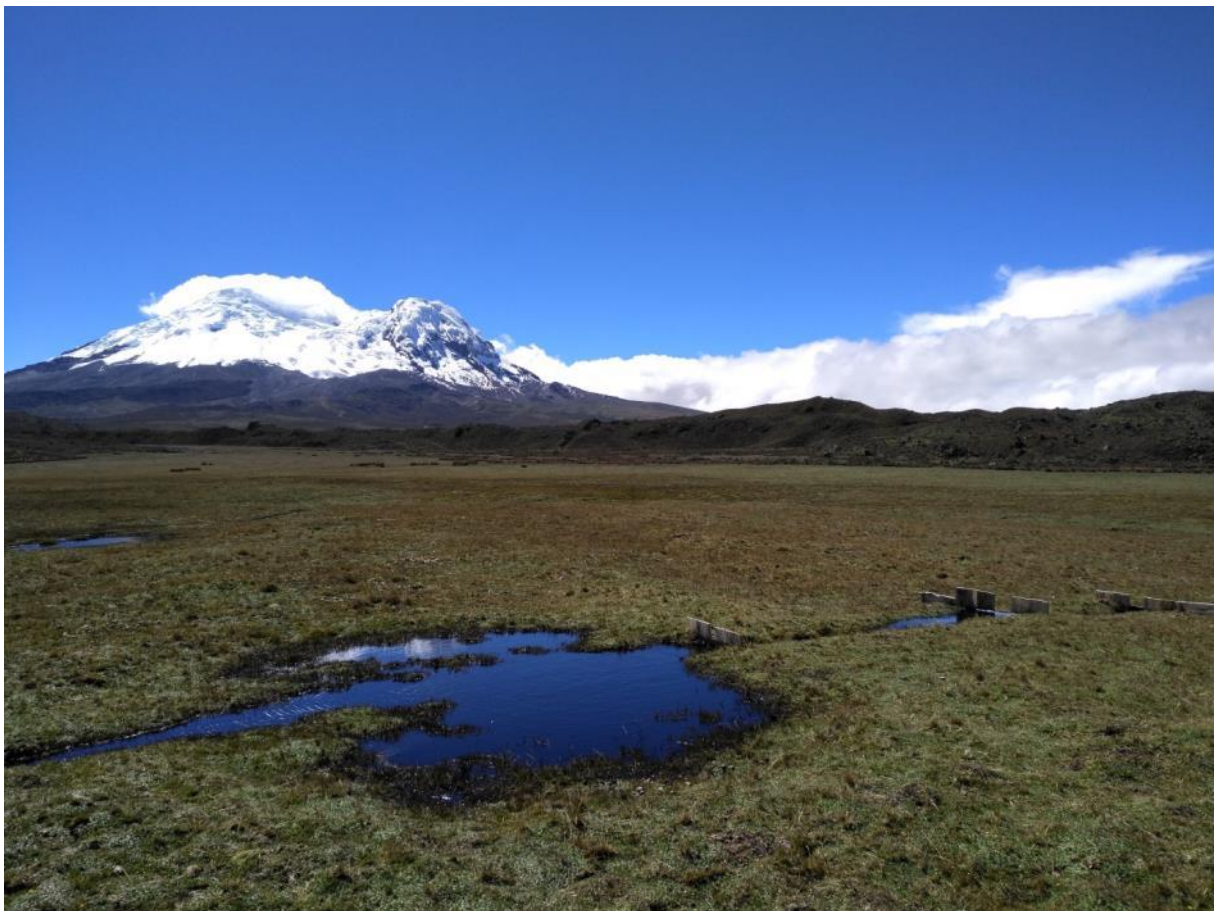
Conservation of Nature) UK Peatland Programme, a partnership of Government organisations, environmental charities and scientific institutions, has been awarded £500,000 to tackle the UK's damaged peatlands.

Evidence from the programme so far has highlighted the huge importance of UK peatlands to wildlife, climate change, drinking water supply and flood management. However, it also shows that more than three quarters of the nation's peatlands are now in a degraded or deteriorating state and not able to play their part.

In terms of peatland area, the UK is one of the world's top twelve countries out of 175 nations with peat deposits and is in the top 20 countries with the most damaged peatlands. Scotland holds 60% of the UK's peatland. Huge areas of bog have been drained and damaged in the past, and the carbon that was locked in the peat for thousands of years is now rapidly being released to the atmosphere. Dr Rob Stoneman, Chair of the IUCN UK Peatland Programme said: "The new funding is vital because it will help us keep a strong focus on securing our peatlands for future generations amidst what is a time of great political and environmental change. "Above all, it will help build a lasting legacy where peatlands are looked after and recognised for the benefits they provide."

The work of the Peatland Programme is overseen by a coalition of partner bodies including Defra, Moors for the Future Partnership, Natural England, Natural Resources Wales, RSPB, Scottish Natural Heritage and Yorkshire Wildlife Trust. The funding has come from three charitable trusts: The Peter De Haan Charitable Trust, Esmée Fairbairn Foundation and the John Ellerman Foundation and will support the Programme in its work to bring science, practice and policy together and deliver collaborations to achieve the best outcome for UK's peatlands.

<https://www.waterbriefing.org/home/biodiversity-and-ecoservices/item/14339-uk%E2%80%99s-damaged-peatlands-win-new-support-to-tackle-climate-change>



*Rewetted paramo peatland at the foot of the Antisana Volcano, Ecuador (5704 m). Photo: Bert de Bievre.*



## South America

### Ecuador

Bert De Bievre ([bert.debievre@fonag.org.ec](mailto:bert.debievre@fonag.org.ec))

Quito's Water Fund (FONAG) started with a pilot Project on rewetting of paramo peatlands at the foot of the Antisana Volcano (5704 m). This area was purchased by Quito's water utility in 2010. At this point, simple wooden weirs are introduced in the drainage channels that were dug by the former owner, cattle ranchers. The area used to be home to 4000 cattle and 15000 sheep (in 7000 ha). The intervention is promoted as both adaptation to and mitigation of climate change: hydrological regulation capacity that is being lost with glacier retreat on Antisana, is being recovered with restoration of the wetland, while the carbon accumulation potential is estimated huge (more than cloud forest). It is one of a series of interventions of the first REDD+ project funded in the world by the Green Climate Fund.



*Rewetted paramo peatland in Ecuador: Photo: Bert de Bievre.*

## Peatland conservation relevant papers August 2017

Collected by Hans Joosten: [joosten@uni-greifswald.de](mailto:joosten@uni-greifswald.de)

1. The spatial distribution of soil organic carbon in tidal wetland soils of the continental United States: <http://onlinelibrary.wiley.com/doi/10.1111/gcb.13811/abstract>
2. Detection of landmines in peat soils by controlled smouldering combustion: Experimental proof of concept of *O-Revealer*: <http://www.sciencedirect.com/science/article/pii/S0894177717302121>
3. Modeling hydrologic controls on sulfur processes in sulfate-impacted wetland and stream sediments: <http://onlinelibrary.wiley.com/doi/10.1002/2017JG003822/abstract>
4. Climate change, carbon market instruments, and biodiversity: focusing on synergies and avoiding pitfalls: <http://onlinelibrary.wiley.com/doi/10.1002/wcc.486/abstract>
5. Effect of harvest time and frequency on biomass quality and biomethane potential of Common Reed (*Phragmites australis*) under paludiculture conditions: <https://link.springer.com/article/10.1007/s12155-017-9866-z>

6. Ecological and environmental transition across the forested-to-open bog ecotone in a west Siberian peatland: <http://www.sciencedirect.com/science/article/pii/S0048969717317035>
7. Marsh wetland degradation risk assessment and change analysis: A case study in the Zoige Plateau, China: <http://www.sciencedirect.com/science/article/pii/S1470160X17304119>
8. Indicators of Diptera diversity in wet grassland habitats are influenced by environmental variability, scale of observation, and habitat type: <http://www.sciencedirect.com/science/article/pii/S1470160X17304430>
9. Variability of soil carbon stocks in a mixed deciduous forest on hydromorphic soils: <http://www.sciencedirect.com/science/article/pii/S0016706116307911>
10. Composition variability of spent mushroom substrates during continuous cultivation, composting process and their effects on mineral nitrogen transformation in soil: <http://www.sciencedirect.com/science/article/pii/S0016706117312181>
11. Predicting peatland carbon fluxes from non-destructive plant traits: <http://onlinelibrary.wiley.com/doi/10.1111/1365-2435.12891/abstract>
12. Spring fed raised peat hummocks with tufa deposits at the Farbeberg hills (Northwest-Germany): Structure, genesis and paleoclimatic conclusions (Eemian, Holocene): <http://quaternary-science.publiss.net/issues/81/articles/930>
13. Spatial variations in the surface water chemistry of subtropical peatlands (Central China) linked to anthropogenic pressures: [www.mdpi.com/2073-4441/9/7/505/s1](http://www.mdpi.com/2073-4441/9/7/505/s1)
14. Evaluating the classical versus an emerging conceptual model of peatland methane dynamics: <http://onlinelibrary.wiley.com/doi/10.1002/2017GB005622/abstract>
15. Pure and mixed litters of *Sphagnum* and *Carex* exhibit a home-field advantage in Boreal peatlands: <http://www.sciencedirect.com/science/article/pii/S0038071717305655>
16. Boreal peat properties link to plant functional traits of ecosystem engineers: <https://link.springer.com/article/10.1007%2Fs11104-017-3291-0>
17. Linear growth and production of *Sphagnum* mosses in the middle taiga zone of West Siberia: <http://journals.eco-vector.com/index.php/EDGCC/article/view/6948>
18. ORCHIDEE PEAT (revision 4596), a model for northern peatland CO<sub>2</sub>, water and energy fluxes on daily to annual scales: <https://www.geosci-model-dev-discuss.net/gmd-2017-155/gmd-2017-155.pdf>
19. Low evapotranspiration enhances the resilience of peatland carbon stocks to fire: <http://onlinelibrary.wiley.com/doi/10.1002/2017GL074186/pdf>
20. The  $\delta^{13}\text{C}$  of cellulose from modern plants and its responses to the atmosphere – From the peatland records of Daijihu, China: <http://journals.sagepub.com/doi/abs/10.1177/0959683617729444>
21. Are circumpolar hunter-gatherers visible in the palaeoenvironmental record? Pollen-analytical evidence from Nunalleq, southwestern Alaska: <http://journals.sagepub.com/doi/abs/10.1177/0959683617729447>
22. Response to Editor to the comment by Delarue (2016) to our paper entitled ‘Persistent high temperature and low precipitation reduce peat carbon accumulation’: <http://onlinelibrary.wiley.com/doi/10.1111/gcb.13559/abstract>
23. Experimentally increased nutrient availability at the permafrost thaw front selectively enhances biomass production of deep-rooting subarctic peatland species: <http://onlinelibrary.wiley.com/doi/10.1111/gcb.13804/abstract>
24. Soil thermal dynamics, snow cover, and frozen depth under five temperature treatments in an ombrotrophic bog: Constrained forecast with data assimilation: <http://onlinelibrary.wiley.com/doi/10.1002/2016JG003725/abstract>
25. Soil CO<sub>2</sub> concentrations and efflux dynamics of a tree island in the Pantanal wetland: <http://onlinelibrary.wiley.com/doi/10.1002/2017JG003877/abstract>
26. Relative sea level rise, site distributions, and Neolithic settlement in the early to middle Holocene, Jiangsu Province, China: <http://journals.sagepub.com/doi/pdf/10.1177/0959683617729442>
27. Local peoples’ appreciation on and contribution to conservation of peatland swamp forests: Experience from Peninsular Malaysia: <https://link.springer.com/article/10.1007/s13157-017-0941-1>