

Paludiculture Newsletter

With this newsletter the Greifswald Mire Centre (GMC) aims to keep a growing community informed on peatlands and paludiculture. You will find news from research, practice, politics, as well as announcements of conferences and other events and recommended publications. Sign up per e-mail to communication@greifswald-moor.de for upcoming issues! The newsletter is currently provided by the BOnaMoor project coordinated by the Greifswald Mire Centre and financed by the German Federal Ministry of Food and Agriculture through the Agency for Renewable Resources (FNR).

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1. General information and news on peatlands and paludiculture

1.1. Peatland pavilion, peatland map, Michelle and why it was important to be at COP26



Picture 1: Svenja Schulze, then German Federal Environment Minister, visiting the Peatland Pavilion at the COP with Dr Franziska Tanneberger (2nd from right) and Jan Peters (1st from left) (Photo: GMC)

Without the protection and rewetting of peatlands, the global climate crisis cannot be countered. Peatland experts from Greifswald were able to make this clear to delegates, politicians, celebrities, practitioners and scientists from all over the world at the two-week World Climate Conference (UNFCCC COP26) from 31st October to 12th November in Glasgow. They are optimistic that the new knowledge about these climate protection potentials will now be incorporated into the policies and actions of many countries.

At the World Climate Conference in Glasgow, peatlands were presented [for the first time in a separate pavilion](#) organised by the Succow Foundation and the Greifswald Mire Centre together with the UN Environment Programme, IUCN UK Peatland Programme and other members of the Global Peatlands Initiative. The world peatland map developed at the Greifswald Mire Centre attracted visitors directly at the entrance. The [twelve-day hybrid lecture programme](#) offered a comprehensive overview of peatland science, protection and policy on all continents. Prominent visitors such as the former First Lady of the

United States Michelle Obama, the Executive Director of the UN Environment Programme Inger Andersen, numerous ministers and other government representatives, as well as known environmental journalists such as Chris Packham of the BBC came by.

"Hundreds of delegates and observers to the Climate Change Convention looked at our huge peatland map. Many countries don't even know they have peatlands. Their representatives are taking away from Glasgow that peatlands are important for climate protection. Our presence here was as effective as peatlands are as carbon sinks." said Dr. Franziska Tanneberger, Director of the Greifswald Mire Centre. A special highlight was a water drop made of reeds and willow built by peatland experts from the University of East London, in which a sofa was placed - probably the most popular seat in the whole pavilion. This construction was an impressive eye-opener for many visitors as to what building materials from paludiculture can be used for.

The Succow Foundation and the Greifswald Mire Centre as a whole organised many events in the hybrid Peatland Pavilion e.g. "Organic Soils and Peatlands in the Baltic States: Greenhouse Gas Mitigation Measures and Paludiculture" on 8th November, "Peatland Protection in Germany" and "Peatlands in the Nile River Basin as a Nature-Based Solution" on 10th November, and the launch of a European Peatland Protection Initiative on 12th November. The Greifswald Mire Centre - with a large format printout on site and Dr. Alexandra Barthelmes as speaker in Greifswald - presented the world peatland map on 9th November.

The [virtual Peatland Pavilion](#), which is in English, will continue to be available online to interested parties with multifaceted information on peatlands worldwide even after the World Climate Conference.

1.2. The German Environmental Award 2021 for peatland scientist Hans Joosten!

This year, the German Federal Environmental Foundation (DBU) honoured peatland scientist Prof. Dr. Dr. h.c. Hans Joosten with the [German Environmental Award](#), one of the most highly endowed awards of its kind in Europe. With character, passion and the occasional morsel of peat, he has contributed to publicising the importance of wet peatlands for global climate protection. Joosten, who describes "everything related to peatlands" as his hobby, shares the prize endowed with 500,000 Euros with the internationally renowned scientist in biodiversity Prof. Dr. Katrin Böhning-Gaese. Both were awarded the prize by Federal President Frank-Walter Steinmeier on 10th October in Darmstadt in award ceremony moderated by news anchor woman Judith Rakers. Joosten intends to use the prize money to expand the peatland library [PeNCIL](#) - the world's largest peatland library with currently around 25,000 publications based at the Greifswald Mire Centre - into a global knowledge and cultural centre on peatlands.



Pictures 2-4: Peatland expert Hans Joosten at the award ceremony of the German Environmental Award with Federal President Frank-Walter Steinmeier and presenter Judith Rakers (Photos: DBU/ P. Himsel)

Among others, Hans Joosten received congratulations from Svenja Schulze, Federal Minister for Environment, Nature Conservation and Nuclear Safety:

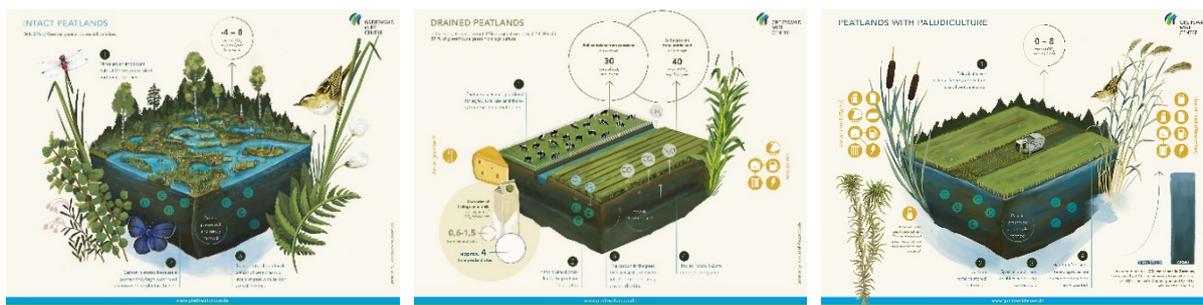
"Professor Hans Joosten has played a very significant role in bringing peatland protection into the public eye in recent years. "Peatlands must be wet!" - There is no more succinct way to sum up the importance of wet peatlands for climate and biodiversity. In doing so, he made it very clear to us that the decades-old policy of draining peatlands, which was one-sidedly geared to increasing yields, is an economic and ecological dead end, and that we need to change course as soon as possible. It is thus also a good example that politics and society are well advised to listen to the warnings of science, especially in the climate crisis. The well-founded expertise of the peatland expert has therefore also been incorporated into the development of the National Peatland Strategy, which the Federal Ministry for Environment has presented and with which we are creating the basis for the urgently needed restoration and rewetting measures."

and by Manuela Schwesig, Prime minister of the federal state Mecklenburg-Vorpommern:

"I am very pleased that - with the peatland scientist Prof. Hans Joosten - a top researcher from Mecklenburg-Vorpommern is receiving one of the most highly endowed environmental prizes in Europe! Congratulations! He has helped the peatland and climate research of the University of Greifswald to achieve a reputation in Germany and worldwide. Prof. Joosten's research makes very clear: Peatlands help us in the fight against the climate crisis - but only when they are wet. Especially in Mecklenburg-Vorpommern, which is rich in peatlands, we must and will make even greater efforts for peatland protection and thus also for climate protection."

1.3 For everyone: Beautiful peatland illustrations in six languages

Complex, comprehensible and beautiful – [Sarah Heuzeroth](#) and the Greifswald Mire Centre put peatland into the picture three times over - peatland intact, drained and in a future use in paludiculture. The illustration of the intact peatland shows how peat forms under the exclusion of water, how much carbon can be stored in this process, which animals live in the wet habitat and, simply, how beautiful it is. How much CO₂, on the other hand, originates from drained peatlands used as grassland or arable land, and what size is the footprint of the associated dairy products, is depicted in the illustration of drained peatlands. A third illustration shows what peatlands in paludiculture can offer: Area for human land use, new habitat for rare, specialised peatland plant and animal species, and a reactivated carbon store for more climate protection.



Pictures 5-7: Illustrations of intact and drained peatlands as well as peatlands in paludiculture by illustrator Sarah Heuzeroth

The [illustrations can be downloaded free of charge](#) from the Greifswald Mire Centre website. To ensure that many people interested in peatlands can use the illustrations, they are also available in English, French, Russian and Spanish and will soon be available in Polish and other languages. The German version of the three illustrations combined is also available as a poster. In addition, the Greifswald Mire Centre and Sarah Heuzeroth developed four motifs as postcards. Besides Aquatic warbler, cattail and peat moss, a peat profile shows which plant remains can be found in which peat layers - including depth and time scale.

The material is available to all interested licensed under [Creative Commons CC BY-NC-ND](#).

1.4. How to put peatlands into CAP Strategic Plans

- recommendations in [new position paper](#)

The title says it all – Michael Succow Foundation, partner in the Greifswald Mire Centre, together with Wetlands International and supported by other organisations published a new position paper [Opportunities for Peatlands and Paludiculture in the EU Common Agricultural Policy \(2023-2027\) - Recommendations for EU Member States for their CAP Strategic Plans](#). It urges EU Member States to make paludiculture eligible for payments either direct, in eco-schemes or other. The Common Agricultural Policy (CAP) as the EU's largest public funding mechanism could thus be used to make a change for climate and ecology within the next five years. The CAP strategy must not be adapted neglectfully and maintain damaging business-as-usual practices since within the EU emissions from drained peatlands account for c. 5% of its total greenhouse gas emissions. In paludiculture they offer a basis for a circular bioeconomy, for future resilient and profitable business models for farmers and landowners, and contribute to climate protection, biodiversity, water security, flood management and fire protection.

2. A paludiculture project presented: EUKI – Carbon capturing by Baltic peatland farmers

More peatland climate farmers are needed to press ahead climate protection through sustainable use of wet peatlands - also in the Baltic States. Therefore, the Succow Foundation together with partners in the Baltic countries just launched the project [Carbon capturing by Baltic peatland farmers - Practical exchange for paludiculture & peatland carbon farming](#). In the Baltic States, drained peatland soils are responsible for 53% (Lithuania), 65% (Estonia) resp. 71% (Latvia) of all greenhouse gas emissions



Picture 8:
Workshop on Wet Peatland Management in the Baltic States (Photo: A. Haberl)

from the Baltic agricultural sector, although they cover only 5-6% of the agricultural soils in the Baltic States. The users of these peat soils, primarily farmers and foresters, cannot change this on their own. In order to switch to wet and climate-smart land use, they need support. To enable them to produce renewable biomass in paludiculture for carbon-neutral or even carbon-negative products in the food, construction or energy sectors, the Succow Foundation and its partners impart knowledge and practical experience on climate-neutral management of peatland sites.

In cooperation with Baltic agricultural extension services the Project partners develop training programs and trains farmers in workshops. Paludiculture exhibitions are compiled and then presented at relevant events. Baltic practitioners will travel to German paludiculture pilot sites along a study tour. The project monitors paludiculture pilots and establishes a Pan-Baltic network for paludiculture and peatland climate economy. Furthermore, it develops compensation plans for paludiculture and peatland climate management. For policy advice the project will funnel these plans in the political institutions in the Baltic States from local to national level.

The Succow Foundation is implementing this project as part of the European Climate Initiative (EUKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) together with the Baltic partners Estonian Fund for Nature (ELF, Estonia), Lake and Peatland Research Centre (LPRC, Latvia), and the Foundation for Peatland Restoration and Conservation (FPRC, Lithuania).

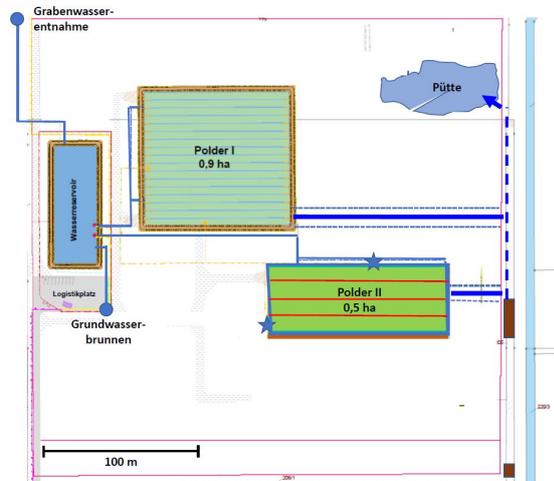
3. News from other paludiculture projects

This section compiles news from current projects and initiatives on paludiculture from various regions and countries.

3.1. Project CANAPE: Completion of the Barver peat moss paludiculture site

Barely 18 months after the first *Sphagnum* paludiculture area went into operation, the installation of an extension area was completed in December. The highly mineralised topsoil from the cultivation site was used to fill ditches and create embankments at the edge of neighbouring waterlogged areas.

The land consolidation authority allowed the removal of approx. 3,000 m³ topsoil free of charge to create a levelled 1 hectare polder area for peat moss cultivation. After the topsoil removal there is fen peat partly covered by black peat. However, there are hardly any white (*Sphagnum*) peat layers.



Graphic 9: Schematic representation of the Barver Sphagnum Farm with two production polders



Picture 10: NDR television crew films the rolling of the peat mosses (Photo: J.-U. Holthuis)

Infiltration tests showed that the southern half of the polder bottom is permeable to the bottom over a large area ($k_f: > 10^{-4} - 10^{-6} \text{ m} \times \text{sec}^{-1}$) and thus unsuitable for paludiculture. This led to a redesign with a halved polder area. The construction of a surrounding dam was waived.

The spreading of the peat mosses was the centrepiece and at the same time the final sprint establishing the site. Shortly before the peat moss application, precipitation in the irrigation ditches led to a rise of the water level, leading to a well water-saturated peat when peat mosses were applied. The prepared cultivation area in this way was manually inoculated at the beginning of December 2021 with fragmented, mechanically harvested donor material (predominantly *Sphagnum papillosum* and *S. palustre* from the Emsland, along with highly bog-typical accompanying vegetation such as sundew, cotton grass and cranberry) in an evenly thin layer. The volume applied was 40 m³ per ha (4 l / m²). Finally, the fragments were lightly rolled to establish capillary contact with the wet peat (Picture 10). Since the water level of the polder area could be raised to just below the surface immediately after spreading and because low transpiration losses are to be expected during the cool, humid winter months, a shading top layer of straw was not applied. The manpower required to establish 0.5 ha of land was 50 man-hours.

Project manager Jens-Uwe Holthuis (Stiftung Naturschutz im Landkreis Diepholz) is satisfied: "We profit a lot from our know-how for the installation of our second polder. The network of suitable and well-established companies that has been created in the meantime and the short official channels to the administration have also greatly accelerated the project. We think that our system is a good model for successful paludiculture in south-western Lower Saxony." In the medium term, the district and the Foundation for Nature Conservation expect the facility to become a magnet for the professional public.

As the peat moss lawn begins to establish itself, routine operation will start in spring 2022: maintenance and development work, utilisation issues, further technician trials, maintenance work. For the continued existence of the entire *Sphagnum* paludiculture site, a new operating concept that is also sustainable in the long term is required. With the Greifswald-based company Paludimed, a first co-operator of the polder has been found, who wants to produce sundew for pharmaceutical purposes

on the coming peat moss lawn in the future, which will also diversify the utilisation chain of the *Sphagnum* paludiculture site.

On 10th December, the NDR programme "Hallo Niedersachsen" reported on the current restoration measures. The report is available in the [ARD Mediathek](#) (from min 11:55).

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3.2. Successfully drenched - BOnaMoor field day on haymaking in wet meadows



Pictures 11 and 12:

Lectures on paludiculture and demonstration of harvesting technology at the field day (Photos: N. Körner)

Despite the bad weather forecast, about 50 participants joined the field day about haymaking on wet peatlands for heat production near Neukalen on 15th October. The BOnaMoor project presented rewetted fen areas at Lake Kummerow and the Peene river. Besides a lot of rain, there was a lot of information. The [BOnaMoor](#) scientists presented their research results on vegetation and optimised biomass harvesting times. Henning Voigt from the Voigt farm described how about 1,000 t of reed canary grass, reeds and sedge hay are harvested annually as energy biomass on about 300 ha. In addition to harvesting and transport technology, the farmer showed a bale-loading trailer with an on-board crane that can be used to clear wet and difficult sites without damaging the soil.

Scientists from other projects at the Greifswald Mire Centre reported on their research on nearby areas. In the [PRINCESS](#) project, for example, they studied the biodiversity of plants, breeding birds and insects on mown areas and will assess greenhouse gas fluxes and peat accumulation over the next two years. In addition to the presentation of the state of the art in the Paludi-[PRIMA](#) project, which focuses on cattail cultivation on rewetted fen, the [MoKli](#) project reported about landscape walks and peatland days as new formats that can bring different stakeholders into conversation about rewetting and sustainable uses of peatlands.

Pretty drenched, the participants then visited the [Agrotherm GmbH heating plant](#) in Malchin. Since 2014, it has been burning biomass from the wet meadows of the Voigt farm and generates 4,000 MWh of heat (= 350,000 l of heating oil) annually for 490 households, two schools and other public buildings. Here in the dry, the BOnaMoor scientists presented results on the fuel properties of different fen biomasses and explained how heat production can be optimised here.

3.3. Paludi-Tiny House on tour

– project honoured as excellent example of science communication

End of November Anja Karliczek, former Federal Minister of Education, honoured the [roadshow with Paludi-Tiny House](#) as a very successful example of university communication. The project of the Greifswald Mire Centre was thus highlighted within the virtual closing event of the nationwide Science Year 2020|21.



Picture 13 Paludi-Tiny House on tour (Photo: T. Galke)



Picture 14: Guests at the Paludi-Tiny House: Dr. Till Backhaus, Minister of the Environment MV (left), and BMU State Secretary Jochen Flasbarth (right) (Photo: St. Busse)

In the Paludi-Tiny House, there is cattail in the walls, reed in the sound insulation and alder in the panels. The mobile house is a demo object and a prototype for what can be built from construction materials from paludiculture and what can be created from wet peatlands with great plus for climate protection and bioeconomy. It is also carrying a small exhibition with exhibits to touch and lots of information material. A team of peatland and climate scientists and practitioners of the Greifswald Mire Centre took the tiny house on tour for almost two weeks in September and stopped at seven locations across northern Germany. On field days or at trade fairs, the team showed farmers, craftsmen, manufacturers, politicians and many other interested parties that peatland plants can be cultivated and regionally processed into ecological building materials, fuels, packaging or disposable tableware.

Within these two week roughly 1,500 people visited the Paludi-Tiny House. Impressions and opinions of the visitors are documented in a [tour diary](#). During the roadshow the team noticed very clearly: building materials from paludiculture, ecological building materials in combination with CO₂ reduction, hit the nerve of the time in the professional world as well as with people privately. After the tour, the Greifswald Mire Centre received enquiries from farmers willing to rewet peatland areas and craftsmen interested in purchasing paludiculture building materials. There were requests on Paludi-Tiny Houses as student homes. It also met the interest of municipalities currently discussing the designation of building areas for tiny houses.

The tour was made possible by the [Hochschulwettbewerb „Zeig deine Forschung“](#) von [Wissenschaft im Dialog](#).

3.4. Premiere in Germany:

[Greifswald is the first municipality to employ a peatland manager](#)

In October 2021 Greifswald was the first city in Germany and perhaps even worldwide to hire a municipal peatland manager. In its urban area there are approx. 472 hectares of peatlands, which produce approx. 7,600 t CO₂-eq. annually. The city of Greifswald owns further 610 ha of agriculturally

used peatlands outside this urban area, emitting another approx. 14,000 t CO₂-eq. per year. In addition, the city of Greifswald owns other non-agricultural peatland areas. Their exact size and emissions are not yet known. All of these areas are currently an enormous burden on the city's carbon footprint, but at the same time they offer great potential for reduction.

The municipal peatland manager Annie Wojatschke is to promote local peatland climate protection projects and develop the net reduction of greenhouse gas emissions from urban peatlands strategically. The city of Greifswald is a master plan municipality funded by the National Climate Initiative. With the master plan for 100% climate protection, the city wants to reduce its greenhouse gas emissions by at least 95% by 2050. With a resolution by local politicians, a year ago the city decided to create human resources for peatland climate protection measures. The GMC estimates the effectiveness of the position via the [Vorpommern-Connect](#) project over the next two years.

3.5. Paludiculture on fens is climate-friendly and promotes biodiversity

- that's how it works! Fact sheets and report now online

The project [Climate-friendly, biodiversity-promoting management of fen soils \(KLIBB\)](#) viewed paludiculture in Germany from different angles from 2018-2019. [The report](#) with the same title, now published in the series BfN-Schriften, presents criteria for an area setting of wet and humid fen management and offers GIS-supported area maps for three federal states (Schleswig-Holstein, Brandenburg, Baden-Württemberg). The report describes different management regimes for wet and humid fens and how they affect greenhouse gas emissions and biodiversity. Based on these the project developed nature conservation guidelines for fen management which avoid undesirable developments at an early stage. The report also looks at the economic aspects of management practices on humid and wet fens.

In a separate collection of fact sheets on [Sustainable agriculture and forestry on fens](#), the KLIBB project has compiled information on fen management for six crop species and five livestock species. Where to plant and when, what to harvest, what to grow and how to process it? What products are already available from these plants, are there subsidies available, are any permits necessary? The 15 factsheets answer these questions and many more in a concise summary for farmers, processors and generally interested parties.

The KLIBB project was funded by the Federal Agency for Nature Conservation with funds from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

3.6. Biomass foamed + dried - new board from paludiculture material

A board made of cattail and reed for insulation and construction with better properties than comparable boards made of wood has been developed by the University of Greifswald together with the Fraunhofer Institute for Wood Research - [Wilhelm-Klauditz-Institut \(WKI\)](#). The scientists have thus not only created a substitute for synthetic polymer foams. Attractive products made from paludiculture biomass are also an incentive to rewet agricultural peat soils and to develop further positive effects for society, e.g. in climate protection.



Picture 15:
Boards from foamed *Typha angustifolia* 50 x 50 cm

For the prototypes, the scientists tested the most important grass-like paludiculture plants from Mecklenburg-Vorpommern: reeds, cattails, sedges and a mixture of sedges and reed canary grass. These were processed into "biomass slime" with a solid content of approx. 10-12%, foamed with biodegradable leavening agents and then dried. These boards are similar to the classic "wood foams" and partly even surpass their properties, e.g. in mechanical tensile and compressive strength. Depending on the plant species and time of harvest, boards could also absorb more water than wood foam boards, conduct little heat and pass the flame test.

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4. Events on peatlands and paludiculture

28.03.22	Berlin	Closing conference of the MoKli project
08.04.22	Vienna	EGU European Geosciences Union General Assembly
14.06. bis 16.06.22	Arles, France	17th Society of Wetland Scientists Europe Chapter

5. Literature

Scientific papers

Aitkenhead, M., Castellazzi, M., McKeen, M., Hare, M., Artz, R., Reed, M. (2021) Peatland restoration and potential emissions savings on agricultural land: an evidence assessment. Edinburgh Research Archive. <http://dx.doi.org/10.7488/era/974>

Bianchi, A., Larmola, T., Kekkonen, H. et al. (2021) Review of Greenhouse Gas Emissions from Rewetted Agricultural Soils. *Wetlands* 41, 108. <https://doi.org/10.1007/s13157-021-01507-5>

Ewert, St. , Abel, S. (2021) [The Transition to Sustainable Life on Wetlands: How the Sustainable Use of Peatlands Appears on the Political Agenda](#). *Transitioning to Sustainability Series* 15, 171–89.

Ekawati, S. et al (2021) [Factors affecting communities in adopting sustainable peat cultivation techniques and strategies for implementation \(a case study in Pulang Pisau, Central Kalimantan\)](#). Earth Environ. Sci. 917 012022

FAO and ITPS (2021) Recarbonizing global soils – A technical manual of recommended management practices. Vol. 1-6. <https://www.fao.org/global-soil-partnership/areas-of-work/soil-organic-carbon-manual/en/>

Giesen, W. (2021) Tropical Peatland restoration in Indonesia by Replanting with Useful Indigenous Peat Swamp Species: Paludiculture p. 411-441. Tropical Peatland Eco-management. https://doi.org/10.1007/978-981-33-4654-3_14

Kreyling, J., Tanneberger, F., Jansen, F. *et al.* (2021) Rewetting does not return drained fen peatlands to their old selves. Nature Communications <https://doi.org/10.1038/s41467-021-25619-y>

Kuprina, K., Seeber, E., Schnittler, M., Landeau, R., Lambertini, C., Bog, M. (2022) Genetic diversity of common reed in the southern Baltic Sea region – Is there an influence of disturbance? Aquatic Botany, Vol. 177, <https://doi.org/10.1016/j.aquabot.2021.103471>

Miller, M. A. (2021) Market-based commons: Social agroforestry, fire mitigation strategies, and green supply chains in Indonesia's peatlands. Transactions of the Institute of British Geographers, 00, 1– 15. <https://doi.org/10.1111/tran.12472>

Noon, M.L., Goldstein, A., Ledezma, J.C. *et al.* (2021) Mapping the irrecoverable carbon in Earth's ecosystems. Nature Sustainability. <https://doi.org/10.1038/s41893-021-00803-6>

Tarigan, S., Zamani, N. P., Buchori, D., Kinseng, R., Suharnoto, Y., Siregar, I. Z. (2021) Peatlands Are More Beneficial if Conserved and Restored than Drained for Monoculture Crops. Frontiers in Environmental Science, Vol. 9. <https://doi.org/10.3389/fenvs.2021.749279>

Volkova, P. A., Bobrov, A. A. (2022) Easier than it looks: Notes on the taxonomy of *Typha* L. (Typhaceae) in East Europe. Aquatic Botany, Vol. 176, <https://doi.org/10.1016/j.aquabot.2021.103453>

Vroom, Renske *et al.* (2021) Paludiculture Crops And Nitrogen Kick-Start Ecosystem Service Provisioning In Rewetted Peat Soils. Plant and Soil. <https://doi.org/10.21203/rs.3.rs-826749/v1>

Yuwati, T., Rachmanadi, D., Mendham, D. (2021) [Paludiculture species options for restoration of degraded tropical peatland in Central Kalimantan, Indonesia](#). Conference paper of the 16th International Peatland Congress, Estonia.

Ziegler, R., Wichtmann, W., Abel, S., Kemp, R., Simard, M., Joosten, H. (2021) Wet peatland utilisation for climate protection – An international survey of paludiculture innovation. Cleaner Engineering and Technology, Vol. 5. <https://www.sciencedirect.com/science/article/pii/S2666790821002652>

Proceedings of the Greifswald Mire Centre

Martin, N. & Couwenberg, J. (2021) [Organic soils in national inventory submissions of EU countries](#). Proceedings of the Greifswald Mire Centre 05/2021 (self-published, ISSN 2627-910X), 86 p. + [Download data for Martin & Couwenberg 2021 \(xls file\)](#)

Geist, S. (2021) [unbezahlbar wie Atmen ist](#). Proceedings of the Greifswald Mire Centre 04/2021 (self-published, ISSN 2627-910X), 8 p. + [Audio](#) (in German, 5 MB)

Hebermehl, L. (2021) [A first assessment of the potential distribution of peatlands in Uzbekistan](#). Proceedings of the Greifswald Mire Centre 03/2021 (self-published, ISSN 2627-910X), 113 S. + [download Geodata \(GPKG\) of all sample sites \(5,2 MB\)](#) + [download peatlands maps \(pdfs, 11-20 MB\)](#)

Reichert, F. (2021) [Treibhausgas-Emissionen aus organischen Böden in Brandenburg](#). Proceedings of the Greifswald Mire Centre 02/2021 (self-published, ISSN 2627-910X), 11 p. (in German) + download [map 'Greenhouse gas emissions from organic soils in Brandenburg'](#) (jpg in high resolution, 9,5 MB)

Tegetmeyer, C., Barthelmes, K.-D., Busse, S. & Barthelmes, A. (2021) [Aggregated map of the organic soils of Germany. 2nd, revised version](#). Proceedings of the Greifswald Mire Centre 01/2021 (self-published, ISSN 2627-910X), 10 p. (in German) download [map 'Organic soils in Germany'](#) (jpg in high resolution) + [download data ESRI-Shapefile](#) (zip, 366 MB)

Press:

Viney, M. (2021) Another Life: Business case grows for Irish plants with healing properties. The Irish Times. <https://www.irishtimes.com/news/environment/another-life-business-case-grows-for-irish-plants-with-healing-properties-1.4655966>

Further new publications on peatlands and mires, restoration and rewetting of peatlands as well as nature conservation can be found in the IMCG bulletins, which are regularly published on the IMCG homepage: <http://www.imcg.net/pages/home.php>

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